Safety & Loss Prevention Briefings Compendium 2023

Compiled by IIMS

A COLLECTION OF WORLDWIDE MARINE INCIDENT AND ACCIDENT REPORTS, LOSS PREVENTION BRIEFINGS AND CASE STUDIES PUBLISHED IN 2023


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Welcome by Mike Schwarz,
Chief Executive Officer,
International Institute of Marine Surveying

Dear Colleague

Welcome to the third edition of the ***Safety & Loss Prevention Briefings Compendium***, compiled and published by the International Institute of Marine Surveying. I had hoped this year's edition would contain information about fewer disasters, but sadly that is not the case, which reminds us of the perennial dangers of the sea and being on water, either for work or pleasure purposes.

Editing and compiling this publication is straightforward enough, but it becomes far too easy to lose sight of some of the catastrophic tragedies and consequent devastation that have led, in many cases, to significant loss of life in 2023. I would, therefore, like to send my condolences to the partners, families, and friends of all those who have lost loved ones over the past year as a result of a maritime tragedy.

The aim of the Compendium is not to shock readers, rather to pull together a factual round up of incident and accident reports, coupled with loss prevention advice from the last year. That said, some of the contents are shocking and horrific. As editor, it is my job to put the facts before you and leave you to read them and draw your own conclusions.

Of course, some accidents beggars belief when one reads the reports some months or even years later, caused as they are sometimes by sheer stupidity. Others have just been unlucky, for example when an unexpected weather event happened and sometimes it was just a case of being in the wrong place at the wrong time. But whatever the outcome, it is important that marine surveyors and the wider maritime world learn from these events. Sadly, too often it seems we do not for the same issues keep repeating themselves.

One of the newer and deadly threats to shipping and boating is lithium-ion battery fires. Although not so common, when there is such a fire at sea, the results are spectacular and destructive, often causing total loss to the vessel and its cargo, to say nothing of the threat it poses to human life. The debate on this subject is raging right now. With that in mind I have brought together a series of stories that have been published across the year to highlight what we know. Insurers are rightly getting tetchy about this subject too.

And on the subject of not learning lessons, I have given myself a history lesson by reviewing the most appalling tragedy that should never have happened back in 1878, which I share with you in this publication. The Princess Alice collided with the Bywell Castle on the River Thames in London resulting in around 640 deaths – the final death toll was never known. The article towards the end of the Compendium makes compelling reading. Surely history teaches us something.

In conclusion, I would like to thank Peregrine Storrs-Fox from TT Club and Peter Broad, President of the International Institute of Marine Surveying, for their insightful comments in their introductory columns. Also, thanks to Geoff Waddington who closes this edition with his own forthright views on regulations. I would also like to extend my personal gratitude to the many executives in P&I Club loss prevention departments, many of whom are unsung heroes in my opinion. Their knowledge and output, much of it published in this Compendium, is of huge importance and we should take and heed their advice.

The Compendium front cover image shows people in Mauritius carrying out the long and arduous cleanup following the MV Wakashio oil spill, a completely avoidable accident.

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Introduction by Peregrine Storrs-Fox, Risk Management Director, TT Club

Cargo packing matters

As a longtime advocate of safe and secure packing of cargo in CTUs, leading freight insurer TT Club maintains that the process matters crucially. And its significance grows ever more important. Peregrine Storrs-Fox, TT Club's Risk Management Director considers the trajectory of changes and improvements in the safety of the global supply chain.

> "Emerging risks need to be controlled and mitigated. Regulatory change may help mitigate these risks, but it is the responsibility of all in the freight supply chain not just to abide by the rules but to lead the safety charge wherever and whenever they can."

Emerging risks need to be controlled and mitigated. Regulatory change may help mitigate these risks, but it is the responsibility of all in the freight supply chain not just to abide by the rules but to lead the safety charge wherever and whenever they can. . Furthermore, it is important for the industry to recognise that regulations merely set the 'baseline' in safety performance. In the complex world of logistics, where any subsequent party in the supply chain has to rely substantially on the integrity of all previous counterparties, full and transparent communications are critical. No more obviously so than in relation to goods that should be considered regulated by reason of being classified within the Dangerous Goods List. This is governed by UN agencies and contained in the UN Model Regulations[1]. In the maritime mode the IMO[2] has responsibility for the implementation of these regulations.

The latest version of the International Maritime Dangerous Goods Code (IMDG code[3]), being Amendment 41-22, will enter mandatory application on 1 January 2024. Consequently, TT has, in conjunction with UKP&I, updated the well-established 'Book it right, pack it tight'[4] publication to provide general assistance and a route map to the industry in these important matters.

While there have inevitably been numerous changes[5] embedded in this IMDG Amendment, a number of consequential debates remain underway at this inter-governmental level. IMO committees are, for example, currently seeking to reach finalisation on how to fashion a revised safety framework regarding the transport by sea of Charcoal / Carbon (UN 1361). This vexed issue[6], frequently resulting in fires while in the supply chain, has encountered protracted debate.

The topic arguably giving rise to most debate in the transport and logistics industry – lithium ion batteries, in their various forms – has yet to reach centre-stage at regulatory level. The exponential growth in this trade, together with serious incidents at sea and on land, fuels much concern. Since the science and practice for this important commodity remains so uncertain, the call has to be for all stakeholders to work together to ensure that it can be produced, moved, stored and used in safety. International regulations will offer scant mitigation of the hazards for the time-being.[7, 8]

Since the container inspection[9] findings that are reported to IMO annually continue to be too sparse to guide decision-making, it is heartening that NCB is repeating a broad-based inspection initiative* to shed more light on general container packing safety.

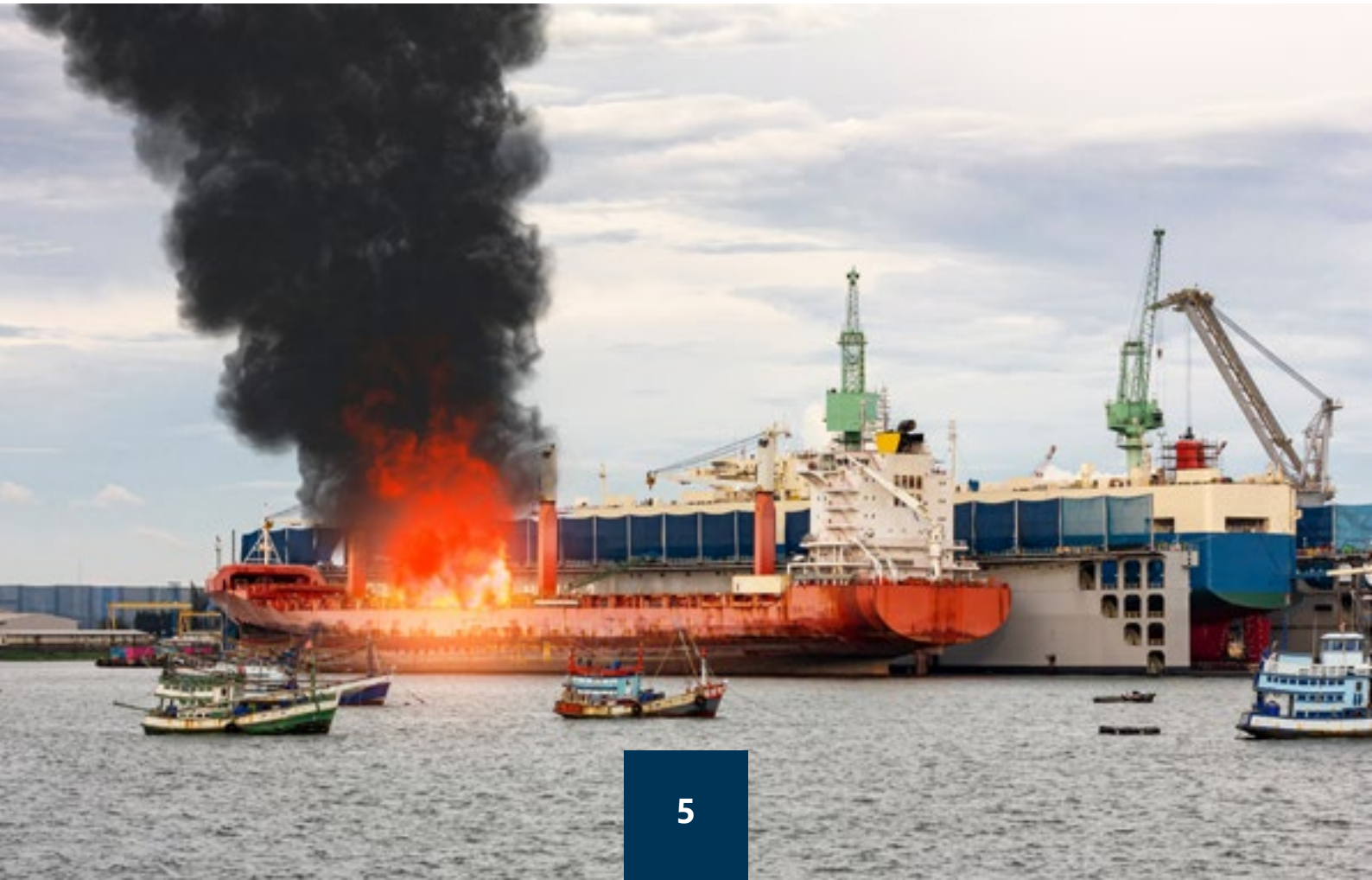
Alongside this, the work of the Cargo Integrity Group, where TT was a founding partner, continues to be highly important in promoting safe packing practices**, linking to the IMO/ILO/UNECE CTU Code***.

Perhaps a ground-breaking initiative is the Cargo Safety Program**** recently announced by World Shipping Council that seeks to standardise cargo screening across the liner shipping industry, combining this with container inspections.

It is in everybody's interest to improve certainty of outcome; innovations and initiatives such as these have the potential to deliver far beyond regulatory change.

> "It is in everybody's interest to improve certainty of outcome; innovations and initiatives such as these have the potential to deliver far beyond regulatory change."

[1] About the Recommendations | UNECE
[2] International Maritime Organization (imo.org)
[3] The International Maritime Dangerous Goods (IMDG) Code (imo.org)
[4] Book it right and pack it tight (ttclub.com)
[5] IMDG Code Free Summary of Changes 41-22 - Exis Technologies
[6] TT Talk - Charcoal conundrum (ttclub.com)
[7] Lithium-batteries-whitepaper-updated.pdf (ttclub.com)
[8] CINS-lithium-ion-batteries-guidelines-24-march-2023.pdf (ttclub.com)
[9] Press release | TT Club urges IMO Member States to increase container and cargo inspections and submit reports urgently
* NCB Container Inspections Safety Initiative - NCB % (natcargo.org)
** Cargo Integrity - Securing Cargo: Loss Prevention | TT Club
*** IMO/ILO/UNECE Code of Practice for Packing of Cargo Transport Units (CTU Code)
**** Cargo Safety Program — World Shipping Council



Introduction by Peter Broad FIIMS, IIMS President

I'm not sure that I should say that it is a 'pleasure' to be writing this introduction again to the latest edition of The IIMS Safety & Loss Prevention Briefings Compendium because this means that there are still marine incidents and accidents to report. These will, I believe, not stop in the near future as shipping is an industry that has so many dynamic features that influence a 'craft' on the open ocean, coastal waters and inland waterways. I use the word 'craft' (a boat or ship) as we are talking about all vessels, even smaller pleasure craft that 'will' have accidents.

It is a pleasure to write this introduction actually, as this publication has gone from strength to strength and has received very high acclaim across the marine industry. Some of you may remember that the old Salvage Association, founded in 1856, (maybe you're not that old) was founded by marine underwriters to provide technical support to the London marine insurance market. Unfortunately, the SA as we knew it ceased to exist in 2003 and was taken over by Braemar. I had the privilege of working for Braemar, incorporating the Salvage Association, for a few years and we used to prepare and deliver monthly briefings at Lloyds of London, in the Old Library. I believe that the IIMS Safety & Loss Prevention Briefings Compendium is following these traditions of knowledge sharing and professional interaction across the marine surveying industry, not just in the UK, but with global input and articles related to all types of marine incidents and accidents.

> "While we may consider that we have progressed in many ways with technology in the past twenty or so years, this very technology has brought its own risks and hazards."

Unfortunately, marine accidents occur every day and seafarers die. While we may consider that we have progressed in many ways with technology in the past twenty or so years, this very technology has brought its own risks and hazards. You will read in this Compendium about Lithium Ion (LI) batteries and fires that have occurred in many ships transporting the batteries as cargo; on car carriers carrying LI-powered vehicles and; on other recreational LI-powered devices. Is LI the future or just an interim power supply concept that will be superseded soon by something safer and more sustainable?

We have to be concerned about the 'dark' fleet of tankers and bulkers that ply the oceans under Flags of Convenience, who are happy to help the owners change and re-flag vessels with little or no inspections or surveys. This dark side of the shipping industry has become more prevalent in recent years as more international conflicts occur and sanctions are brought to bear on these countries. More incidents and accidents are occurring on these old tonnage tankers, being used for unauthorized ship-to-ship transfers which have required military intervention to assist authorities to take action against the ship and their unscrupulous operators.

One common theme through many incidents and accidents is the 'human factor'. Generally, if humans (crew) are well-trained and well-motivated and provided with the necessary resources to operate and maintain their vessels, then the number of incidents and accidents is significantly reduced. However, the trend of reduced manning and the reliance on automation is creating a worsening situation, not improving it. There is a skills shortage across the marine industry and at the moment Artificial Intelligence (AI) cannot carry out the maintenance required to run a ship. AI can perhaps replace the 'operator', but not the skilled engineers to carry out hands-on planned maintenance to avoid breakdowns; or the skills of captains and navigating officers on the bridge who have full situational awareness and can react to all dynamic aspects of the ship's operations. Crew training and crew competency have been talked about for years, but we still have too many unavoidable accidents. Are AI and Autonomous Shipping the answer?

Finally, I must congratulate Mike and his team at IIMS for preparing and publishing this Third Edition of the Safety & Loss Prevention Briefings Compendium, it is a thought-provoking read and a reminder that we live and work in a dangerous industry, but we can mitigate risks if we are prepared to invest in training, good equipment, maintenance, and positive leadership. Stay Safe.

Peter Broad, *CEng, CMarEng, FIIMS, FIMarEST. IIMS President*

THE REPORT

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The following Safety Briefings are taken from Edition 103 of The Report Magazine

MARCH 2023

EXTRACTS FROM
ACCIDENT REPORTS

The alert was transmitted because a deckhand had been partially dragged over the side of the fshing vessel during net hauling operations.

The investigation concluded that the boat's exhaust gas, which contained carbon monoxide, had likely been funnelled into the cockpit by an inflatable towable ski ring that was suspended from the transom of the vessel.

The available man overboard recovery equipment was not supplemented by the training and equipment necessary for the recovery of an unconscious person.

Safety Briefings

FIRE DUE TO MISDECLARATION OF CONTAINER: CASE STUDY

The recently published Casebook by The Swedish Club highlights an incident when the Master of a ship noticed smoke coming from the forward part of the vessel. At the same time the fire detection system for cargo hold 2 sounded on the bridge. The Master described the smoke as being white at first and then greyish. The Chief Officer, however, described the smoke as being "dark grey, almost black".

Probable cause
The container where the fire started was not declared as dangerous cargo but was actually loaded with calcium hypochlorite and had been misdeclared by the shipper.

The charterer had loaded the container as per the rules of the IMDG code. As per the manifest, the container was allowed to be loaded in the cargo hold, but as the cargo was calcium hypochlorite it should not have been loaded below deck or in the position it was stowed in.

Lessons learned
Cargoes that fall into this category include calcium hypochlorite and other oxidising solids. They are often used for swimming pool sterilisation and fabric treatment (bleaching or washing).

These materials do not oxidise but they can be relatively unstable chemicals that decompose slowly over time, evolving oxygen. This self-decomposition can evolve heat. A self-heating process can therefore happen in which the material towards the middle of a body of cargo becomes hotter, so the rate of decomposition and heating increases.

This can lead to 'thermal runaway' with very rapid self=-decomposition and evolution of heat and gases, sometimes including further oxygen. The effects of this in a hold can be similar to an explosion. The heat and oxygen produced can lead to fire spreading.

Potential causes of self-decomposition incidents include:
- Exposure to heat e.g. solar radiation (before or after loading), cargo lights and heated fuel tanks.
- Cargo formulation.
- Contamination of cargo at manufacture.
- Spillage and thus reaction between cargo and combustibles e.g. timber.
- Excess quantity of cargo in containers giving insufficient dissipation of heat Inadequate separation of packages in containers, also giving insufficient dissipation of heat.

CARGO LIGHTS IGNITED CARGO ONBOARD BULKER: CASE STUDY

In a recently published casebook featuring four case studies, The Swedish Club has shared information about an incident where floodlights caused a cargo fire on a bulk carrier.

Two days into the voyage the crew noticed smoke coming from cargo hold 2. Hot spots were discovered in hold 2 on the transverse hatch coaming, both forward and aft on the portside, and an additional hot spot was also discovered on hold 3 on the transverse hatch coaming, on the portside aft.All hot spots were located adjacent to recesses in the coamings for the cargo holds' floodlights. The crew isolated the electrical power to the floodlights. Because of the increased temperature of the hot spots in hold 2, the Master released CO2 into the hold.

The CO2 did not extinguish the fire but reduced its severity for a while. When the vessel arrived at the discharge port the cargo hatches were opened, and flames broke out from hold 2. At the same time a plume of smoke escaped from hold 3. The top layer of cargo in hold 2 had been burned.

Lessons learned

- The subsequent investigation revealed that the cargo floodlights were not connected according to the approved 'as built' circuit diagrams delivered with the vessel. It was not clear on board which lights were controlled by which keyswitch.
- The fire was caused because a number of cargo lights were operating while cargo covered them, so the lights ignited the cargo. There was a lack of information on board about how the light circuits were connected and how the light system should be operated. There was also a lack of records concerning use of the lights.
- Many bulk carrier/general cargo holds have fixed cargo lights. Halogen-type lights can easily ignite combustible cargoes such as grain, animal feed, wood chips, pulp and paper if they are too close to the light.
- Cargo lights in holds need to be properly isolated before cargo is loaded. This is best done by removing fuses or other physical links in the electrical circuits so that the lights cannot be switched on by mistake. In container ships the lights need to be properly placed so that they do not overheat cargo or other combustibles and thus cause damage or fire. Lights in car carriers and ferries are usually fluorescent, which are unlikely to cause ignition. Nonetheless it makes sense to leave lights switched off when they are not needed, particularly in cargo areas where combustibles are present.

WARNING: CRANE COMPONENTS MUST COMPLY WITH MANUFACTURER RECOMMENDATIONS

The Bureau of Safety and Environmental Enforcement (BSEE) has published details of a potentially serious near-miss recently which occurred on a Gulf of Mexico energy facility. While using the platform crane to suspend a wireline lubricator, the pin holding the hook on the crane stinger backed out, resulting in the hook and lubricator falling.

The incident investigation found that the cotter pin at the end of the hook pin had sheared, which allowed the washer to fall and the pin to back out. Following the backing out of the pin, it caused the ear on the connection to distort, resulting in the hook failing.

The BSEE investigation found there was an inadequate pin configuration design. The pin installed on the hook assembly had a smooth composition. The operator determined that a threaded bolt with nuts and keepers was the proper pin design for ensuring the stinger remains secure throughout lifting operations. Following this event, the operator inspected their other facilities and found the same improper arrangement on additional cranes.

Lessons learned

- Be sure to inspect all cranes on the facility and verify that the hook assembly has a threaded pin with nuts and keepers.
- Retro-fit any stingers equipped with an improper stinger hook pin configuration.
- Verify all crane components are in alignment with current manufacturer recommendations.
- Add assessment of the pin condition into the pre-use inspection checklist, which should be completed before conducting lifting operations.

EXTRACTS FROM
ACCIDENT REPORTS

During the investigation, it was found that significant deterioration of the lower end of the support post for the release hook had occurred due to corrosion.

While using the platform crane to suspend a wireline lubricator, the pin holding the hook on the crane stinger backed out, resulting in the hook and lubricator falling.

Initial investigation indicated that this hose appeared to be of a different type from most of the hoses onboard which were made up with an aluminium 'floating' flange.

MAIB REPORT: FAILURE OF A SUSPENDED BUOY ON WORKBOAT ANNIE E WITH ONE PERSON INJURED

At approximately 1315 on 3 April 2021, a deckhand on board the workboat Annie E was injured when he was struck by a grid buoy that had been lifted out of the water by the workboat's forward crane at a fish farm off the Isle of Muck.

Annie E's skipper had noticed that the grid buoy was out of position and needed to be lifted in order to recover and re-lay its mooring anchor. The workboat's forward crane was used to lift the buoy and its anchor connection out of the water. The buoy was suspended 9m above the water when its metal components experienced a mechanical failure, resulting in the buoy falling and striking the deckhand.

First aid was administered to the injured deckhand, who was evacuated by a coastguard helicopter to hospital, where he underwent surgery. He has since received further surgery and treatment.

Safety Issues

- the deckhand was injured when he was struck by a falling grid buoy that had been lifted by Annie E's forward crane
- the deckhand was standing near to the suspended buoy, contrary to the workboat owner's risk assessments, method statements, lifting plan and industry guidelines
- the risk assessments and method statements did not fully mitigate the risks associated with a suspended load
- the grid buoy was not certified as lifting equipment and the lifting technique used did not comply with the manufacturer's recommended procedure, which the vessel's owner and crew were unaware of
- the grid buoy's metal components were worn and the top washer was missing, both of which resulted in its failure
- there was no record of the buoy having been inspected before installation or routinely checked in accordance with manufacturer's guidelines while in service

Recommendations

In view of the actions taken by the organisations involved in this accident, no safety recommendations have been made.

Download the report at **https://bit.ly/3k3rSWy**. Or scan the QR code.

Photo: Tibbie Adams via TSB

POOR MAINTENANCE AND LACK OF REGULATORY SURVEILLANCE CONTRIBUTED TO FISHING VESSEL SINKING

The Transportation Safety Board of Canada (TSB) has published its investigation report into the August 2020 sinking of the fishing vessel Arctic Fox II near Bamfield, British Columbia. The incident resulted in the death of two crewmembers.

The TSB said the master and crew were unfamiliar with the instructions for deploying the liferaft and, in their efforts to deploy the raft, its painter line was disconnected from the vessel and went overboard. Shortly afterwards, the master and one of the crew members entered the water with their immersion suit only partially zipped and with ankle straps unsecured. Consequently, they were exposed to the elements and eventually drowned.

The familiarisation of the life-saving equipment that the crew received was insufficient for them to successfully abandon the vessel, and the crew's response was guided only by their limited experience. The one surviving crew member who managed to reach the liferaft was later rescued by the US Coast Guard.

The investigation found that insufficient vessel maintenance and the absence of regulatory surveillance contributed to the vessel taking on water and eventually sinking. This occurrence highlights the need for Transport Canada to provide more surveillance and monitoring to effectively ensure that vessel owners and authorised representatives take ownership of their safety responsibilities and comply with regulatory requirements.

FLEXIBLE FUEL HOSE FAILURE CAUSES FIRE ONBOARD BULKER

The Transportation Safety Board of Canada (TSB) has released its report into the engine room fire onboard the bulk carrier Tecumseh while transiting the Detroit River off Windsor, Ontario.

Flexible fuel hose assembly on the inboard side of the starboard main engine (Photo credit: TSB)

Probable cause

The investigation determined that the fire on board the Tecumseh originated on the port main engine after a flexible fuel hose assembly supplying fuel to the main engine failed. The analysis examined engine room maintenance, the effectiveness of the vessel's structural fire protection and emergency equipment, and the decision to re-enter the engine room after the fire had been initially suppressed by the carbon dioxide (CO_2) fixed fire suppression system.

Causes and contributing factors:

- A fuel hose assembly of unknown origin and integrity failed on the port main engine, which allowed fuel oil to spray on to local sources of ignition, leading to the fire.
- Multiple unsealed deck cable penetrations between the engine room and the engine control room (ECR) deck allowed the fire to propagate to the ECR main switchboard, leading to the complete destruction of the ECR.
- Because the maintenance opening for the emergency fire pump compartment was not secured, smoke entered the emergency fire pump compartment and prevented the crew from being able to access the fire pump to troubleshoot it. Consequently, for approximately 2 hours, the fire pump was unavailable to the crew for boundary cooling.
- Approximately 3 hours after the CO_2 was released, crew re-entered the engine room from the steering gear flat with a charged fire hose. Re-entry into the engine room allowed fresh air to enter the engine room, which most likely re-ignited the fire.
- Without local shore-based firefighting resources to assist, the vessel was forced to await the arrival of additional firefighting resources, which meant that the fire burned for many hours without on-board firefighting capability.

Download the full report at **https://bit.ly/3HREGcP**. Or scan the QR code.

WATER FLOOD IN CARGO HOLD CASE STUDY

According to the Swedish Club, water was flooding from the cargo hold after the crew of a containership were washing down the main deck and cargo hatches. Here are the learnings.

It was morning and outside there was a light breeze and some drizzle. The crew of the container vessel was preparing to wash down the main deck and cargo hatches before arrival in port the same afternoon. They had the rare opportunity to do this as there were no containers on deck, only in the cargo hold.

Fire hoses were connected, and the decision was made to use two fire pumps, and to close the valves on the fire line for the anchors. These valves are normally left open, but this action would increase the water pressure. The crew left for their lunch break leaving the fire pumps switched on and the valves closed.

The engineer on duty in the Engine Control Room noticed that the bilge alarms for cargo hold 1 and 2 had been activated. He acknowledged the alarms but did not carry out any further investigation as he assumed the alarms were activated because of the drizzly weather conditions outside. After lunch the bosun noticed that there was water in cargo holds 1 and 2. At this time there was about 0.5 metres of water in both holds. The Master told the bosun to immediately investigate the origin of the leak. At the same time the Master started to discharge the water overboard. When the bosun entered the cargo hold he could see water flood over the edge of the void space. He also noticed that water was leaking from the fire lines both port and starboard side. The fire pumps were immediately stopped.

The Master informed the Chief Engineer of the flooding. He advised that the alarms warning of a high level of bilge water had been activated several times, but that the duty engineer had not investigated them. None of the void spaces were fitted with sensors which would indicate the presence of any water. The void spaces adjacent to cargo hold 1 and 2 had openings connecting them to the cargo holds. Unlike the other void spaces on the vessel, these void spaces were not watertight. A couple of days later the crew opened up all void spaces and also found water in the void spaces adjacent to holds 3 and 4.

Inside the void spaces they also found that the rubber gaskets positioned between the sections of the main fire line were damaged.

It was evident that the closed valves had increased the water pressure so much that it had damaged the rubber gaskets and caused the water to flood the cargo holds. The crew replaced these with new gaskets made of hard plastic instead of rubber.

Lessons learned
Ask yourself the following questions:

- What were the immediate causes of this accident?
- Is there a risk that this kind of accident could happen on our vessel?
- How could this accident have been prevented?
- What sections of our SMS were breached if any?
- Is our SMS sufficient to prevent this accident?
- If procedures were breached, why do you think this was the case?
- How often are void spaces inspected?
- How often are cargo hold inspections carried out?
- What are the procedures when a bilge alarm is activated?
- How often are lines and pipes in tanks, void spaces and other spaces that are not usually entered inspected?
- Are inspections like this included in the PMS?
- Do we have any sensors in void spaces or tanks that will show if any water is present?
- Was it acceptable to pump the water overboard?
- How much water can enter our cargo holds until there is a risk to stability?
- Do we have risk assessment procedures onboard that address these risks?
- Would a work permit have identified these risks?

LESSONS LEARNED FROM WET DAMAGE STEEL PRODUCT CLAIMS

John Southam, Loss Prevention Executive, and David Richards, Director (Claims), both from North P&I Club, offer lessons learned and discuss avoidable claims related to the carriage of finished and semi-finished steel products which continue to remain an issue.

The issues highlighted by North P&I include the importance of recording the preload condition and defending yourself against allegations of unseaworthiness with strong evidence.

In some recent cases it became apparent that the preload condition of the steel cargo was poor, whether it was physical damage through impact or corrosion damage from wetting. And when such damage to the cargo is noted at discharge, a high value claim can result.

Precautionary survey

Precautionary surveys on steel cargoes are in two parts. The first part covers the monitoring and recording of the apparent order and condition of the cargo being loaded (or being nominated for loading).

If there are issues with the cargo condition, then the two usual options are to either clause the mate's receipts and bills of lading as appropriate, or to replace the damaged cargo with sound cargo.

The second function of the steel preload survey is the hatch cover test, where the hatch covers and other cargo hold openings are thoroughly checked for weathertightness. Contemporaneous evidence of properly conducted weathertightness testing is vital in proving seaworthiness and defend against allegations of poor vessel maintenance. While hose tests are acceptable, it should be noted that ultra-sonic testing (UST) is more accurate as it considers hatch cover compression and therefore its sealing ability when in a dynamic condition.

As North Club P&I says, there are instances where part of the cargo of steel is loaded onto the vessel in good condition, but then wet cargo is loaded into the same hold. This usually occurs when it rains during loading, and the remaining steel for the same hold has been wetted whilst sat on the quay. When the wetted cargo is later loaded on top of the dry cargo, that too becomes damaged. What's more, there have been cases where steel cargo has been worked in rain conditions, despite the Master's initial protests. Charterers then may offer to issue a 'rain letter' in exchange for owners agreeing to continue loading.

NEW PORT SAFETY GUIDELINES ISSUED BY NEW ZEALAND

New Zealand port safety has taken an important step forward when employers, unions, the Port Industry Association and government regulators, working together as the Port Health and Safety Leadership Group, published detailed new guidelines for setting up a fatigue risk management system.

'Building a Fatigue Risk Management System: Good practice guidelines for the ports industry' focuses on understanding what fatigue is, the science behind it and how to implement a fatigue risk management system. It includes 16 appendices, which are examples and templates that organisations can adapt and use.

The Chair of the Leadership Group, Maritime NZ Chief Executive, Kirstie Hewlett, said the formation of the Port Health and Safety Leadership Group, and its collective leadership across the sector, is critical to improving safety on Ports, and the Leadership Group is proud to release the fatigue guidelines, which will be the first of many outputs from the Leadership Group.

Download the guidelines at **https://bit.ly/3CIsVll**. Or scan the QR code.

EXTRACTS FROM
ACCIDENT REPORTS

The fact that cabling, conventionally encased in plastic, ran inside the bilge of the fishing vessel with no special additional protection was a risk factor.

The risks associated with working in the vicinity of a hazardous environment (cargo hold loaded with coal) had not been identified, a risk assessment was not carried out.

Contributing to the capsizing of the vessel was the lack of a watertight collision bulkhead and subdivision or compartmentalization below the main deck, which allowed for progressive flooding.

Safety Briefings

GREAT CARE SHOULD BE TAKEN WHEN CONTAINERS ARE LOADED ON VESSELS

In a recent communiqué from the American Club, it focuses on container losses in general. This is a phenomenon that is much too common the Club says and needs addressing.

Containers are routinely being lost at sea from container ships, from barges, and from non-cellular vessels carrying containers. There are several causes including incorrect container weight declarations by shippers, improper weight distributions in the stow, cargo misdeclarations, inadequate packing of cargo inside the containers, inadequate stowage plans, and inadequate cargo securing.

Great care should be taken whenever containers are loaded and secured on vessels not designed to carry containers. Particular attention should be paid to the condition of deck fittings and whether there is a sufficient number of securing points. The deck fittings may be unsuitable if they have been poorly maintained. When deck fittings become heavily corroded, they can lose much of their strength. Additionally, the twist locks used to secure the containers to the deck fittings may not hold properly due to corrosion or wastage of the deck fitting.

The vessel may not have sufficient quantities of lashing gear. Lashing gear should be inspected frequently to ensure it is in good condition. Some vessels have tried to use alternative lashing gear that is not designed for the task or not verified to be sufficiently strong enough to ensure the containers remain securely stowed. When in use, lashing gear must also be checked regularly to ensure it remains tight and has not become loose due to cargo shifting and shipboard vibration.

Containers lost overboard are rarely recovered successfully. The contents are almost always a total loss. And some containers lost overboard remain afloat for days. Since they are unlit and tend to float low in the water, they are a serious hazard to navigation for both large commercial vessels, private vessels, the fishing fleet and small craft. Some containers with toxic cargos have released toxins and killed marine life too.

MATERIAL FATIGUE OF PRESSURE GAUGE PIPE CAUSES FERRY FIRE IS REPORT FINDING

The German Bureau of Maritime Casualty Investigation (BSU) has published its report on the German flagged ferry BERLIN, which suffered a fire en route to Rostock on 13 August 2020.

At about 0245, when the ferry was in the approach fairway about 2.6 nm off the sea channel, alarms sounded in the engine control room (ECR) and in the workshop. The IMAC Alarm, "gear oil sump level low" sounded first. The ship's mechanic 1 (SM 1) acknowledged the alarm in the workshop and proceeded to the source of the alarm at main engines (ME) 1 and 2 (the two main engines that drive the controllable pitch propeller together with ME 3, via a common reduction gearbox). There he detected a leakage from a double nipple on top of the gearbox (from the pressure gauge connection).

The ship's mechanic 2 (SM 2) meanwhile reached the scene via Deck 1. He saw flames and smoke in the area of ME 2 turbocharger. At 14:46, the smoke detector in the main engine room went off. However, the object protection system did not trigger automatically, as this only happens when two detectors detect an alarm.

Due to material fatigue, the double nipple of a pressure gauge on the pipe of a gear oil pipe broke. This resulted in gear oil spraying far into the engine room and onto hot surfaces, where it ignited. At the same time, this caused the oil pressure in the system to drop.

Probable cause
The cause was determined to be material fatigue of a pressure gauge pipe that could not have been foreseen. It had broken, releasing a jet of gear oil onto insufficiently insulated engine parts, where it predictably ignited.
1 Extinguishing measures: The Scandlines crews have above-average training levels in practical firefighting and also tactics. This is achieved through regular safety drills on board and large-scale exercises with ship firefighting units of the professional fire department, as well as through regular participation in so-called 'Live Fire Trainings'. These 'Live Fire Trainings' were developed years ago for cruise vessels and ferries and go far beyond the required training for STCW. All kinds of scenarios are trained under realistic conditions, such as engine room fires, cabin fires, or fires in vehicle decks.

In addition to high-quality STCW training, Advanced Fire Fighting (AFF) refresher courses in defensive fire protection should also be introduced for crew members at ratings level, if they are members of fire protection squads, not only for licensed officers.

2 Legal framework: In the course of the investigation, it became apparent that uniform standards must be developed that specify periodic and repair-dependent inspections of the "hot surface situation" in terms of fire prevention for engines and machinery.

Download the BERLIN BSU report at **https://bit.ly/3XkKtfl**. Or scan the QR code.

EXTRACTS FROM
ACCIDENT REPORTS

Examination of the RIB showed that there were insufficient handholds available for three people to sit safely on the sponsons when the craft was underway.

The heat cables were designed to be installed on fixed piping systems. They were not designed to be used on hoses or in applications which subjected the heat cables to movement.

Abuse of alcohol was tolerated by senior ofcers and the events leading up to the grounding were indicative of a lack of responsibility at every level of management on board.

ONBOARD TRAINING FOR OPERATING HATCH COVERS IS ESSENTIAL

Hong Kong authorities have issued an investigation report following a fatal accident that happened on board a bulk carrier, when it was en route to Port Hedland, Australia to load a cargo of salt in bulk.

During the voyage, the crew of the vessel was engaged with the main deck cleaning work and the cargo hold lime-coating work, while the C/O was co-ordinating the lime-coating operation on the main deck. When the C/O placed his body underneath the partially opened folding type hatch cover to check the condition of the cargo hold and take photos, the hydraulic oil hose of the hatch cover operating system ruptured, resulting in the sudden closure of the hydraulic operated hatch cover. The C/O was crushed to death by the hatch cover on the spot.

Probable cause
The investigation revealed that the main contributory factors to the accident were:

- A lack of safety awareness by the C/O on operating the hatch cover, and he did not hold a valid permit to work aloft as required; the crew failed to carry out maintenance of the hydraulic operating system in compliance with the requirements of the shipboard manual, namely "Operating and Maintenance Manual for the Hydraulic Operated Folding Hatch Cover" (the Manual);
- The shipboard Safety Management System (SMS) failed to identify the hydraulic system as an item that required maintenance in order to comply with the requirements of the Manual;
- The crew failed to follow the requirements of "Code of Safe Working Practices for Merchant Seafarers" (the Code) and the Manual when operating the hatch cover.

Lessons learned
In order to avoid a recurrence of similar accidents during operation of hacth covers in the future, the ship management company, all masters, officers, and crew members should note the following items:

- To enhance safety awareness and training onboard in operating the hatch cover including effective risk assessment, and the requirement for a valid permit to work aloft;
- To strictly follow the requirements of the manual to carry out maintenance of the hydraulic operating system of the hatch cover;
- To strictly follow the requirements of the Code and the shipboard hydraulic operated folding hatch cover operating manual to operate the hatch cover;
- To consider revising the shipboard SMS to ensure the hydraulic operating system of the hatch cover is included in the shipboard maintenance manual. Besides, to conduct an internal audit on the vessel to ensure that the crew strictly follow the requirements of the shipboard maintenance manual when carrying out the aforementioned system maintenance onboard.

RETURN LINE FUEL LEAK ON MAIN ENGINE CAUSES FERRY FIRE IS REPORT FINDING

The Marine Casualty Investigation Board (MCIB), the Irish government agency for investigating maritime accidents and incidents, has released its report on the ferry fire that broke out onboard the "Frazer Tintern" midway between Ballyhack, Co. Wexford and Passage East, Co. Waterford.

On the morning of 5 August 2021 a deck crewmember of the ferry "Frazer Tintern" reported to the Master that he smelled diesel fumes coming from the No.1/No.4 engine compartment. Upon further visual investigation, a diesel fuel leak was discovered where a fuel return line had become disconnected on the No.1 engine.

The engine was shut down and a phone call made to the company's marine engineer to report the situation. As the engineer was unavailable at the time to attend the problem, the decision was taken to call out a local marine mechanic who had previously carried out repairs on the vessel.

The leak was repaired by the mechanic by refitting the return line and securing it with a hose clip and verified by the Master who ran up the engine to check the repair. The Master had worked on the vessel since its arrival in Ireland and was familiar with operating the machinery. The area around the No.1 engine compartment was cleaned by the crew with detergent and deemed free of diesel residue, as was the deck plating adjacent to the engine compartment. The engine compartment was monitored hourly by the crew and there were no further reportable events for the remainder of that morning shift.

On the evening of 5 August a strong smell of diesel fumes was noted by the Master and simultaneously by one of the deck crewmembers who called this over the radio to the wheelhouse. The same crewmember informed the Master that he was going to investigate the source of the diesel fumes by approaching the starboard machinery space access.

When the crewmember arrived at the mesh gate on the starboard side leading to the compartment of No.1/No.4 engines, he discovered smoke and flames pouring from the compartment and immediately informed the Master of the source and location of the fire. The Master immediately shut down No.1 engine and switched off the engine room fans. The fire flaps and fan shutdown for the starboard machinery space were inaccessible due to the location of the fire.

The return fuel lines on the main engines on the vessel were seen to be fixed using three distinct methods. The original fixing by the manufacturer was by use of spring clips, but other pipes were attached using cable ties or hose (jubilee) clips. The repair to the fuel line on the morning of the incident was made by fitting a hose clip. This may have contributed to return fuel line failure.

The fire suppression system for the machinery space was not operated as the Master did not want to lose all propulsion at the time and deemed it safer to complete the short run and land the passengers at Passage East, Co. Waterford.

The fire was most likely caused by a return line fuel leak on No.1 main engine providing fuel to the area. The volume and pressure of the fuel was greatly increased by the fuel return line being blocked or shut off. The ambient high temperature and swirling air flow in the vicinity assisted in the atomisation of the fuel.

The operators have stated that prior to the incident they carried out fire drills. There are no records of these being carried out or what was involved in the drills. Post incident, drills are carried out on a weekly basis with at least one of each drill (Man Overboard/Fire in Accommodation, Car Deck or Engine Room/Abandon Ship) carried out per month.

Download the report at **https://bit.ly/3X4Q2i4**. Or scan the QR code.

POOR WIRING RESULTS IN SHIP'S DETENTION

Photo credit: The American Club

The American Club has shared a case where a ship was detained due to an ISM deficiency, arising from poor wiring.

As there was no electrician onboard, the vessel's third engineer was sent to investigate why the vessel's forward anchor light was out. He found the wiring in extremely poor condition. The insulation was missing in some areas and heavily cracked in others. The wire itself was shorted out against the side of the deck penetration. He made repairs using some wire he had in his tool belt and a lot of electrical tape. He then reported that the problem was fixed.

Two days later, with the vessel still at anchor, a Port State Control inspector observed the poor wiring and detained the vessel for an ISM deficiency. In the course of investigating the cause of the detention, the Chief Engineer and Master were upset that the third engineer's repair had been so poor. However, they were more upset that the third engineer had not recognized or reported the need for more permanent repairs consistent with the vessel's safety management system.

The physical damage to the vessel was minimal. However, the vessel was detained until the wiring was correctly repaired and an external ISM audit was conducted. The wiring was properly repaired for less than $250.

A poor repair could have caused the forward anchor light to fail again. That would have increased the risk of a collision and increased the potential confusion for other vessels manoeuvring into and out of the anchorage. Additionally, the poor electrical repair created an electrical shock hazard.

EXTRA CARE REQUIRED WHEN INSPECTING WIRE ROPES FOR EVIDENCE OF WEAR DUE TO FRICTION

Photo credit: BSEE

The Bureau of Safety and Environmental Enforcement (BSEE) has published details of an incident involving an auxiliary line's abrading that caused a rope guard to fail and presents the resulting lessons that were learned.

The BSEE investigation found that chronic scraping and rubbing by an auxiliary line created enough damage to the main line idler sheave carrier side plate, pin boos, rope guard, and auxiliary line that it caused the guard of the main load line idler sheave carrier to fail.

The rope guard fell approximately 100 feet, landing near personnel working below. This type of damage occurs when the auxiliary line is used at high speed, thus causing the auxiliary line to jump onto the main line idler sheave.

BSEE confirms that this particular incident involved an American Aero OM 450 crane. Other cranes with a similar configuration could see the same issue and personnel involved with the inspection and maintenance of such equipment are asked to be vigilant.

Key lessons learned

- Inspect idler sheaves and wire ropes for wear indicative of friction and abrading when performing pre-use inspections described in API RP 2D.
- Replace single main load line idler sheave carriers with a double sheave idler.

TOO MUCH RELIANCE ON NAVIGATIONAL AIDS LEADS TO COLLISION IS REPORT FINDING

The Norwegian Safety Investigation Authority (NSIA) has published its report about the collision between the 118-metre-long cargo ship 'MS Edmy' and the fishing vessel 'MS Tornado' in Langesundsbukta Bay. As a result of the collision, significant material damage was sustained by the fishing vessel.

The collision caused the fishing vessel to lean to the side, and her course was turned almost 180 degrees. Once clear of the cargo ship, the fishing vessel still had propulsion, and the crew were able to turn her in the right direction. The crew were physically unharmed and proceeded to check the status of the vessel. She had sustained considerable damage to the port bow bulwark. The forward cargo hold was also checked, but no damage was observed. The skipper therefore continued the hauling process, as they had only had time to haul about 100 metres of wire and had 600 metres left.

Analysis

The sequence of events that appears in the first part of this report describes a situation where active navigation was not carried out over a period of time. NSIA has chosen to focus on some of the contributing factors to the accident. This is to highlight factors that NSIA believes provide the most universal safety learnings.

The navigator of the cargo ship checked the radar for potential dangers, without identifying the fishing vessel. The NSIA believes this was because the fishing vessel was only shown on the radar as an echo, with no AIS information on the radar or ECDIS displays. Use of navigational aids such as ECDIS and AIS allows navigators to rely more on the technology and thereby engage less actively in traditional outlook-based navigation. The NSIA believes that the expectation that most vessels transmit AIS information can lead to a false sense of security, as there is a possibility that not all dangers are identified.

The bridge navigational watch alarm system is a tool that can help navigators to maintain attention over time. The system was deactivated on the cargo ship during the day, and the NSIA believes that the system would have contributed to safer navigation had it been active, because then the navigator had to acknowledge the alarm at the navigation instruments at the front of the wheelhouse.

Measures implemented

The following has been implemented on board all vessels:

- Watchkeeping procedure was updated by adding the requirement on the minimum setup of navigation bridge and lookout for various sailing scenarios.
- Established minimum recommended CPA/TCPA values were established and posted next to radars / ARPAs.
- Bridge change-over check list was reviewed and updated with additional check points, such as status of BNWAS, ARPA's CPA settings, listening watch on appropriate VHF channel and Ch16.
- Departure check list was reviewed and updated with additional check points, such as status of BNWAS, ARPA's CPA settings, listening watch on appropriate VHF channel and Ch16.
- The Master's standing orders were updated and re-issued reflecting above items as well as statement prohibiting paper work and use of IT equipment when there is no back up lookout.

All the above was communicated to all vessels with request to review watchkeeping routines onboard and propose further improvements where necessary.

Download the report at **https://bit.ly/3GAde0z**. Or scan the QR code.

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THE REPORT

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The following Safety Briefings are taken from Edition 104 of The Report Magazine

JUNE 2023

EXTRACTS FROM
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The boat had covers that could not be secured, contrary to the vessel's stability instructions and commercial fishing vessel regulations.

The investigation determined that the probable cause of the flooding and sinking of fishing vessel was uncontrolled flooding of the engine room from an undetermined source, likely a failure of the doubler-plated hull below the engine room.

Investigators determined that the fire was caused by undetected cracks in the starboard muffler, which allowed exhaust gases to ignite wooden structures in the accommodation space.

Safety Briefings

MAIB SAFETY BULLETIN: POTENTIAL SAFETY HAZARDS FROM FLEXIBLE HOSE INSTALLATIONS

On Sunday 19 September 2021, fire broke out in the auxiliary engine room on board the Finland registered roll-on/roll-off cargo ship Finnmaster while departing Hull, UK. The fuel source for the fire was identified as coming from a small-bore flexible hose that failed due to being overheated by an exhaust gas leak from the outboard turbocharger of auxiliary engine 2.

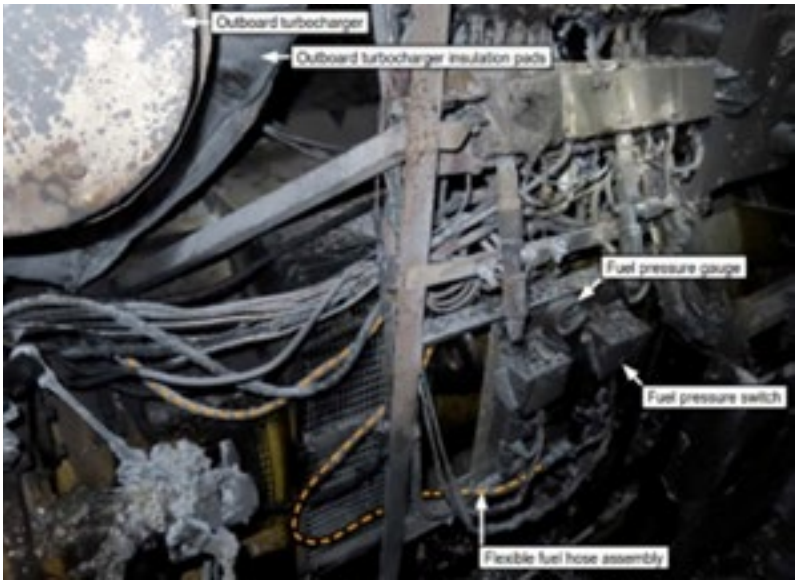
The flexible hose assembly was part of a modification made to the auxiliary engine alarm system more than 15 years prior to the fire. It was contrary to requirements and relevant guidance, as it was too long and had been routed close to hot surfaces. The hose had not been approved or surveyed by the classification society when it was installed. Furthermore, despite being replaced a number of times in the intervening period, the material, length and routing of the hose had remained the same throughout and the risk it posed had not been identified or mitigated.

The key safety issues identified were:

- The risks associated with a modification on safety critical equipment should be considered before and during the work being completed. The relocation of the pressure switch closer to the cartridge filters would have removed the need for a long hose; if this was not possible, a rigid metal pipe secured with clamps and routed at an appropriate distance from the engine's exhaust might have been a safer option.
- Flexible hoses are recognised as having a higher risk of failure than a properly fitted metal pipe. An isolation valve fitted at the point of supply allows a flexible hose to be safely isolated in the event of leakage.

This accident remains under investigation and the detailed causes and circumstances will be published in an investigation report in due course.

Download the safety bulletin at **https://bit.ly/3GdossJ**. Or scan the QR code.



WARNING FOR UK POWERED WATERCRAFT USERS AS NEW LEGISLATION COMES INTO FORCE

New legislation, which came into force on 31 March 2023 puts the responsibility on users, operators and owners of powered watercraft to make sure they protect not just themselves but other water users from harm. If someone on a powered watercraft causes serious injury or death they can be prosecuted. There are also provisions allowing prosecution for other dangerous uses of a powered watercraft.

Under the new law, the parts of the Merchant Shipping Act designed to keep all those on the water safe from accidents now apply to powered watercraft as well as to fishing vessels and larger ships. The new law also mean powered watercraft must obey the 'rules of the sea', which are designed to prevent collisions.

Maritime Minister Baroness Vere said:
" While it's great to see more and more people enjoying our country's coasts and waters, safety will always be our top priority. "Our new law will help to ensure anyone using watercraft like jet skis dangerously can be more easily prosecuted, helping to prevent avoidable accidents and tragedies."

Serious breaches of the legislation could see users facing a fine or imprisonment. Details of the new legislation can be found at **https://bit.ly/3ZpFc6Q**.

Posting on LinkedIn, Jenny Vines, an independent maritime consultant adds some useful context. She said, "This is a very positive move to finally close a known UK loophole that was publicly exposed after an accident in 2004 where a later court ruling went on to establish that a watercraft (in this case a jet ski) is neither a ship nor capable of navigation and so was deemed to fall outside of the Merchant Shipping Act and its framework of MS Regulations.

The new Watercraft Order and supporting MGN 684 give new powers covering the use of powered watercraft including application under COLREGs. It also establishes penalties meaning that watercraft will be seen in law alongside fishing vessels and ships.

The 2006 ruling arose following a collision between two jet skis (one moving, one stationary) in Weymouth Bay in 2004 in which one of the riders suffered a serious injury and was unconscious for 2 days. The other rider was charged under section 58 of the Merchant Shipping Act 1995 and initially sentenced to a 6 month jail term. The original judge decided that the jet ski was a 'ship' as far as the Act was concerned and the Act was applicable.

On appeal, this conviction was quashed and it was deemed that since a jet ski was not capable of making a passage nor standing up to heavy weather it was not a 'ship' and therefore the Act did not apply. This decision was upheld i.e. no offence was committed under this Act."

A report by Dr Roger Tyers was published in 2021 which provides good background - go to **https://lnkd.in/e6EGspDg**.

EXTRACTS FROM
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Other findings included a lack of any evidence of poor visibility enclosed space rescue drills or escape drills using Emergency Escape Breathing Devices.

The deckhand fell overboard while attempting a repair to the trawl gear. There was no attempt to stop and consider the repair and the activity was not effectively risk assessed or mitigated.

It wase determined that the probable cause of the crane fire on board was an undetermined electrical ignition source in the crane's battery compartment.

AMSA FOCUSING ON WATERTIGHT AND WEATHERTIGHT INTEGRITY AT PORT STATE CONTROL

Photo credit: AMSA

The Australian Maritime Safety Authority (AMSA) has announced they are carrying out ongoing watertight and weathertight integrity inspections during routine Port State Control (PSC) throughout 2023.

The aim of this PSC campaign is to support foreign-flagged and regulated Australian ships with information to help operators avoid water ingress and the associated safety and financial risks. Ship inspection data shows that watertight and weathertight integrity remains a persistent and concerning issue for ships in Australian ports, making up 9% of detainable deficiencies in 2021.

Newly information and resources are now available on the AMSA website, including guidance on regular checks and the importance of including watertight and weathertight components in maintenance plans.

Watertight and weathertight elements are part of the design of a ship. Watertightness is required for all openings located below the ship's waterline, for example, shaft tunnels, ballast tanks, and bow thruster compartments. They must be designed and maintained to prevent ingress and egress of water during continuous submersion. Weathertightness is required for all other ship components, which must be designed and maintained to prevent water from entering the ship in any sea conditions.

AMSA Manager Vessel Operations, Dr Michelle Grech, said AMSA takes an intelligence-led and risk-based approach to compliance. She said, "With our data showing detainable deficiencies for watertight and weathertight integrity on the rise, we are reminding all ships entering Australian waters to find it, fix it, and keep your ship watertight." She also highlighted the importance of "committing to routine checks and planned maintenance for all watertight and weathertight components".

Watertight and weathertight deficiencies identified during a port State control inspection often reflect a failure of the planned maintenance program to address watertight and weathertight integrity issues in areas such as:

- watertight doors
- ballast tanks and cargo hold venting
- cargo hatches and hatchways
- overboard sea water valves.

"The price of conducting proper maintenance is far less than the potential cost of detention or banning, and certainly worth it to avoid the potential consequences which include injury, death, dry docking, labour costs, or even lawsuits over environmental damage," Dr Grech commented.

RULES FOR CERTIFICATION OF TRAINING PROVIDERS OF SERVICE PERSONNEL FOR LIFE-SAVING APPLIANCES PUBLISHED BY RINA

Classification Society RINA has published the Rules for the Certification of Training Providers in accordance with ISO/DIS 23678 Standard on Service Personnel for Life Saving Appliances. The document became effective from 15th April 2023. These Rules set out the procedures:

a) to verify that the Training & Competency Management (TCM) system of a Training Provider responsible for the training of "Service personnel for the maintenance, thorough examination, operational testing, overhaul and repair of lifeboats (including free-fall lifeboats) and rescue boats (including fast rescue boats), launching appliances and release gear" is in compliance with the International Standard ISO/DIS 23678, Parts 1 to 4, hereinafter named the "ISO Standard" as per [2.7];
b) to issue a Training & Competency Management Certificate (TCMC) to the Training Provider enabling it to issue the Training & Competency Qualification Certificates (TCQC) to its students in accordance with the ISO Standard; and
c) to carry out the periodical verifications of compliance with the requirements of these Rules.

RINA reserves the right to carry out additional verifications as deemed necessary in pursuance of its internal Quality System or as required by external organizations.

INDUSTRY BODIES UNITE TO PRODUCE GUIDELINES FOR SAFE TRANSPORT OF LITHIUM-ION BATTERIES IN CONTAINERS

The Lithium-ion Batteries in Containers Guidelines seek to prevent the increasing risks that the transport of lithium-ion batteries by sea creates, providing suggestions for identifying such risks and thereby helping to ensure a safer supply chain in the future. Together with its partners, the Cargo Incident Notification System Network (CINS) has compiled a comprehensive publication covering the properties of these batteries and their potential to explode, initiate fires and emit toxic gases.

Extensive measures to safely transport what is an exponentially increasing volume of lithium-ion batteries, in their various states or charge and when also contained in electronic devices are fully examined including, classification and regulation, container packing, landside storage, stowage onboard ships, incident detection and fire suppression, and loss prevention and risk mitigation.

"We strongly urge all stakeholders in the production, supply, transport, handling and sale of lithium-ion batteries whether as individual components or integrated into an electronic device, vehicle or other product to recognise their responsibilities in maximising safety when in transit," comments Dirk Van de Velde, who is Deputy Chair of CINS and a board member of the association of cargo handlers, ICHCA.

"As our experience of transporting lithium-ion batteries widens and the technology surrounding their chemical composition, production and application rapidly evolves, risk controls and loss prevention measures need to keep pace. The work encapsulated in these Guidelines will, of necessity, continue and be undertaken in collaboration with all relevant stakeholders to increase our knowledge and understanding of the risks posed by carriage of lithium – ion batteries in containers by sea.

Peregrine Storrs-Fox, Risk Management Director at freight transport insurer TT Club concludes, "As the pressure on all forms of economic activity for decarbonisation increases, the use of these batteries will inevitably escalate at rates we have previously not experienced. Air transport has been heavily restricted already and it is clear that surface modes will be called upon to transport these goods. As an adaptable unit, the container will remain a focal point for safe transport, including for EVs alongside other vehicle carriers."

Download the guidelines at **https://bit.ly/3nHQoyt**. Or scan the QR code.

EXTRACTS FROM
ACCIDENT REPORTS

An inspection of the 24V DC control panel found several other unsecured wires, demonstrating that the risk remained for a similar event to happen again.

The report concluded the probable cause of fire was the failure of contractor and vessel personnel to identify and then either remove or adequately protect combustible materials near hot work.

The nets stowed at the stern were not lashed, contrary to the vessel's risk assessment and the two men who fell overboard were not wearing personal flotation devices.

MAIB SAFETY DIGEST APRIL 2023 PUBLISHED

The Marine Accident Investigation Branch has published the MAIB Safety Digest April 2023, the first of its two biannual publications featuring a wide selection of case studies.

Here is an extract from the introduction written by Andrew Moll OBE, Chief Inspector of Marine Accidents.

"Welcome to MAIB Safety Digest April 2023. In my opinion, this is the more important of the MAIB's biannual Safety Digests because it is published as the northern hemisphere emerges from winter. This is not simply an observation that the leisure boating season is about to start, though the digest does give us the opportunity to re-emphasise some good safety tips before going afloat. More to the point, anyone can be caught out as the air warms and layers of clothing are shed. Strong sea breezes that develop as the sun heats the land can add significant wind-chill that turns a pleasant day into a cold one, and anyone entering the water, deliberately or otherwise, will find the sea temperature is still very cold.

Case 12 interested me because it involves the failure of a component that was not the subject of routine maintenance or periodic replacement. Safety critical systems are full of such components; in this case it is a fuel actuator valve, but it could be a limit switch (see case 6), a pressure relief valve or any number of other items. Ships can be in service for 25 to 30 years and while many components are inspected, maintained and routinely replaced, others soldier on until they fail. When you have done all the easy jobs, start thinking about the onboard systems you take for granted, and what might happen if they were to fail suddenly. If you do find out the hard way, please let us know and we will include your story in these digests so others can learn from your experience."

Finally, the Reul A Chuain safety flyer, reproduced at the back of this digest, helps me make the point that it is too late to start thinking about man overboard procedures when you have someone in the water. One of MAIB's key safety messages for 2023 is not just to think about how you would recover an unconscious man overboard, but to actually practice it as realistically as possible. Put simply, if your risk assessment identifies a risk of falling or being knocked overboard, especially if one of the mitigations is wearing a personal flotation device, then should that occur the next task will be man overboard recovery. Putting a lifejacket on is easy; recovering a man overboard is not – please practice it. I hope you enjoy reading the MAIB Safety Digest April 2023 and, when you have finished, please pass the digest on so others can benefit too."

Download the Safety Digest at **https://bit.ly/3K8R1sn**. Or scan the QR code.

Photo credit: US Coast Guard

ADHERENCE TO INSTRUCTIONS FOR INFLATABLE BOATS IS CRUCIAL SAYS USCG SAFETY ALERT

The United States Coast Guard (USCG) has released a safety alert to addresses the importance of proper maintenance and adherence to manufacturer's recommendations for filling and/or inflating buoyancy chambers on some models of inflatable boats.

During a recent investigation of an incident that occurred involving foreign cruise vessel operations in the Antarctic, a US passenger was severely injured due to a Zodiac MILPRO model FC 580/MK5 keel bladder failure while underway on a sightseeing excursion. In calm weather, the keel bladder suddenly ruptured, sending the passenger several feet into the air before landing onto the deck and sustaining serious injuries including a fractured femur. Another passenger was thrown overboard into the freezing water, risking hypothermia.

An investigation has identified that the keel bladder suffered a rupture due to excessive pressure in the tube. The recommended operating pressure by the manufacturer is 3.4 pounds per square inch (p.s.i) or 240 millibar pressure (mb). An on-scene survey of multiple inflatables on board the cruise ship noted pressures up to and exceeding 9 p.s.i. (620 mb) in other keel bladders. The keel bladder is not protected by a safety relief valve, and the manufacturer recommends that they be inflated with a foot pump to reduce the chance of overpressurization. However, crewmembers were routinely using an air compressor to fill the buoyancy chambers (including the keel tube) prior to the incident. In addition, pressure levels were not being checked using a manometer as recommended by the manufacturer.

The Coast Guard strongly recommends that operators of cruise ships and other companies employing inflatable boats:

- Review all manufacturer recommendations for inflatable boat filling and maintenance to verify those procedures are being followed prior to any boat operations including passenger excursions.
- Use manufacturer recommended inflation devices (e.g., a foot pump) and appropriate pressure measurement tools to avoid over-pressurization.
- Verify that company policy addresses manufacturer recommendations and that crews are properly trained before operating and performing maintenance on inflatable boats.
- Contact the manufacturer of your inflatable boats for any additional recommendations and/or training options they may offer.

ABS PUBLISHES GUIDANCE NOTES ON STRUCTURAL DIRECT ANALYSIS FOR HIGH-SPEED CRAFT

The American Bureau of Shipping has published the Guidance Notes on Structural Direct Analysis for High-Speed Craft. This document was issued on 1 April 2023 and became effective on the same date.

These Guidance Notes are an extensive revision of and supersede the ABS Guidance Notes on 'Dynamic Load Approach' and Direct Analysis for High-Speed Craft (February 2003). This revision is effective 1 April 2011.

These Guidance Notes provide information about the analysis procedure for Structural Direct Analysis, which is available to assess the strength of high-speed craft and light warships, patrol, and high-speed naval vessels.

In addition, they provide guidance to be followed when submitting required direct analyses or such analyses submitted in place of standard calculations.

Download the Guidance Notes at **https://bit.ly/3K3J5Zu**. Or scan the QR code.

EXTRACTS FROM
ACCIDENT REPORTS

The chance of survival was reduced because a personal flotation device was not being worn and a personal locator beacon was not carried.

The GCU was not equipped to detect an air damper closing during operation, and its flame scanners were ineffective in detecting the abnormal condition as per the manufacturer's risk assessment.

The towline pennant broke at about 52% of its original minimum breaking load and was not fit for purpose and the wheelhouse windows were designed to withstand water pressure and not intended to withstand impact from a towline.

Safety Briefings

IMPROPER USE OF HEAT CABLES IS A FIRE HAZARD

The US Coast Guard (USCG) has recently investigated a fire on board an inspected towing vessel which resulted in the vessel suffering a loss of propulsion. The source of the fire was determined to be heat cables (also referred to as heat tracing cable or heat tape), which were improperly installed to prevent condensate from forming and freezing within hoses used to transmit compressed air for the vessel's air-operated engine throttle control system.

The heat cables were designed to be installed on fixed piping systems. They were not designed to be used on hoses or in applications which subjected the heat cables to movement. This installation had the heat cables wrapped around hoses connected to a retractable pilot house, which would move whenever the pilot house was raised or lowered. This movement subjected the cables to stresses from flexing and bending for which they were not designed.

USCG strongly recommends that vessel owners, inspectors, and third-party surveyors:

- Inspect the installation of all heat cables installed on board vessels to ensure they are designed, installed, and maintained in accordance with all manufacturer installation instructions and warnings. This includes strict adherence to bend radius limitations and the use of Ground-Fault protected electrical circuits.

- Heat tracing cables should be listed to meet UL 515 and in consultation with the cable manufacturer, be verified safe for both use in the marine environment and in the intended application on board the vessel3. This is critical to ensuring safe vessel operations and to protect personnel from electrical hazards, to include fire and electric shock.

- For heat cable installations involving vital systems (i.e., propulsion controls, steering systems), a review of potential vulnerabilities of the effected vital system should be conducted. Implement steps to minimize the risk of an unexpected failure of the vital system resulting from a heat cable failure or the Ground-Fault circuit protection tripping off-line

- Implement an inspection and maintenance program as required by the heat cable manufacturer's instructions. This typically requires insulation resistance readings taken post-installation, and at specified intervals to ensure the insulation is not breaking down. Heat cables with insulation resistances found below the manufacturer's specified values should be removed and replaced as soon as possible.

KEY ITEMS TO CHECK FOR ENHANCED FIRE SAFETY ON SMALL PASSENGER VESSELS

Photo credit:
Tambrey Laine/Pasco County Sheriff's Office, via Associated Press

Over the past year, fires on several small passenger vessels (SPVs) have highlighted the need for a renewed focus on fire safety, says the US Coast Guard (USCG) and consequently has issued a Marine Safety Information Bulletin to address key areas of concern.

USCG has initiated a focused self-assessment by owners and operators of all small passenger vessels, and a Coast Guard-led concentrated inspection campaign. The Coast Guard's concentrated inspection campaign will include additional inspections of some SPVs initially certificated prior to 1996 that carry 100 or more passengers.

The focus of the inspection aligns with the list below.

Owners and operators are encouraged to conduct their self-evaluation prior to the Coast Guard's scheduled attendance.

USCG advises owners and operators of all small passenger vessels to conduct an assessment of each vessel, using the following checklist:

- Review emergency duties with the entire crew to ensure everyone understands their role in the event of fire, flooding, man overboard, abandon ship, or other type of emergency. Regularly conduct training and drills to ensure each crewmember is familiar with the use of onboard firefighting, lifesaving, and safety systems.
- Review the frequency and content of crew training and drills. Ensure each event is logged.
- Review the vessel's Certificate of Inspection (COI) and ensure crewmembers are aware of the number of passengers permitted, minimum manning requirements, and operational limits such as route, safe speed, or weather conditions.
- Review procedures for recording passenger count. Ensure that the passenger safety orientation includes the location of emergency exits, survival craft, and ring life buoys; locations of and instructions for donning life jackets; and any other instructions pertinent to the particular vessel's operations. Consider conducting emergency escape drills with passengers, especially when they have access below the main deck.
- Ensure all firefighting and fire protection equipment is on board and operational including fixed suppression systems, portable extinguishers, fire doors, and smoke and heat detectors. Verify integrity of installed structural fire insulation.
- Ensure every means of escape is unobstructed, marked with "EMERGENCY EXIT, KEEP CLEAR," and can be operated by one person from either side, including in the dark.
- Ensure extension cords are used only in temporary applications and power strips are used sparingly. Identify lingering or outstanding electrical problems and provide a repair proposal to the local Officer in Charge, Marine Inspection (OCMI).
- Verify that flammable or combustible materials, such as cardboard boxes, rags, and garbage, are not stored near sources of heat, such as machinery, stoves, and space heaters. Remove any accumulation of oil, trash, and debris from bilges. Ensure stoves and surrounding areas are free of grease buildup.
- Ensure all written procedures, instructions, checklists, and manuals are accurate and used by the crew. Determine which onboard practices for operations, maintenance, emergency response, or training are not documented and create written procedures, instructions, checklists, or manuals.

RESCUE BOAT LIFTING ARRANGEMENT FAILURE

The Republic of the Marshall Islands (RMI) Maritime Administrator has recently been notified of a marine casualty which occurred aboard an RMI-registered ship's rescue boat that resulted in the injury of two crewmembers.

During a planned drill, the ship's rescue boat was being lowered to the water with two crewmembers aboard when the release hook support post failed. The rescue boat and two crewmembers fell about 9 meters to the water. The two crewmembers were quickly recovered from the water and transported ashore for medical treatment. Immediately prior to the incident, the rescue boat had been hoisted, swung over the side, and lowered several meters without anyone on board.

During the investigation, it was found that significant deterioration of the lower end of the support post for the release hook had occurred due to corrosion. The lower side of the release hook support post was below the deck and only visible following removal of a portable fuel tank.

The Jiangyin Wolong model "JY40KR" rescue boat involved in this incident was manufactured in 2008. No defects or issues were noted when the boat was tested in 2019 or in November 2022 during the last annual inspection.
The Administrator recommends that owners, operators, and Masters of RMI-registered vessels fitted with Jiangyin Wolong "JY40KR" rescue boats thoroughly inspect the release hook and entire support post, including mounting hardware, for signs of deterioration.

Additionally, the Administrator recommends that owners, operators, and Masters ensure monthly inspections of life-saving appliances include thorough inspections of lifting arrangements for all onboard lifeboats and rescue boats with specific emphasis on hidden or hard to access components.

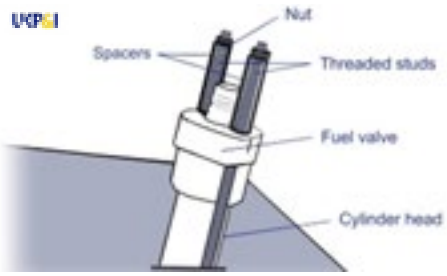
ABS RELEASES PORT STATE CONTROL DEFICIENCIES FROM QUARTER 4 IN 2022

Port State Control inspections have proven to be an effective tool for eliminating substandard vessels that may be in operation, which may impact maritime safety and the marine environment.

A ship is regarded as substandard if the hull, machinery, equipment or operational safety and the protection of the environment is substantially below the standards required by the relevant conventions or if the crew is not in conformity with the safe manning document.

Evidence that the ship, its equipment, or its crew do not comply substantially with the requirements of the relevant conventions or that the master or crew members are not familiar with essential shipboard procedures relating to the safety of ships or the prevention of pollution may be clear grounds for the PSC inspector to conduct a more detailed inspection. Good ship and crew preparation is always essential, in keeping up to date with all International, National and Port State requirements.

Download the full report at **https://bit.ly/3ZNo238**.
Or scan the QR code.



UK P&I CLUB RELEASES VIDEO ON CORRECTLY SECURING FASTENERS AFTER AN OVERHAUL

The Loss Prevention team at the UK P&I Club has produced its latest 'Inside Ship' animated training video, focused on correctly securing fasteners to prevent equipment failures during an overhaul.

The proper installation of fasteners is essential to avoiding preventable engine room incidents. Threaded studs have a variety of critical uses on board, including to secure engine fuel injectors, pumps and monitoring instruments in place. If these studs are incorrectly fastened, they can stretch beyond their elastic limit and shear. This can lead to engine room fires, potentially immobilising the vessel, causing significant damage and presenting a danger to crew.

The Club's on board risk assessments have revealed most fastener-related failures can be traced back to human error. Use of incorrect fasteners, overtightening, poorly calibrated tools or only tightening fasteners by hand after an overhaul have resulted in preventable incidents.

View the video at **https://vimeo.com/799412822**.

OUTBOARD ENGINE FIRE CAUSES YACHT TO SINK

Now, a Marine Casualty Investigation Board (MCIB) report is recommending that racing yacht owners should ensure their auxiliary engines provide the necessary power for their craft to make a safe passage. In addition, the MCIB says risks associated with refuelling outboards at sea need to be highlighted.

The Beneteau First Class 8 (FC8) yacht, Black Magic, was motor sailing using a 3hp outboard and mainsail, on route from Crosshaven, Co Cork to Kinsale Harbour for winter lay-up in December 2021. The owner and skipper of the yacht the sole person onboard for the approximately 19-mile passage.

The report states that around 15 minutes after refuelling the outboard, the skipper saw flames coming from the outboard.

The fire rapidly spread to spare drums of petrol that were in the cockpit. The skipper, who was afraid he would be trapped if he went into the cabin if the petrol tanks exploded, went up to the bow area and made a MAYDAY distress call. He was picked up by a fishing vessel, and the yacht, which was destroyed by the fire, sank.

The MCIB report states that the yacht had been bought by her new owner six months previously and had been raced in Cork Harbour. The report concludes that the engine had not been serviced recently and was likely to have suffered a significant mechanical failure.

In addition, while achieving the speed necessary to deliver the yacht to its appointed destination on time, the engine was operating at the upper limits of its mechanical and power operating envelope and its sub-optimal capacity was a contributory factor to the loss of the yacht, together with spilled fuel from the refuelling operation.

The report states that 10hp is the recommended minimum horsepower for a yacht of Black Magic's size.

Risks associated with dirty engine room bilges

The Shipowners Club would like to highlight the potential hazards associated with oily engine room bilges and the checks and steps that a ship's crew should undertake to assist mitigate the associated possible issues. It is common for bilge water to accumulate during the routine operation of machinery in the engine room spaces. However, engine room bilges contaminated with oil can pose hazards if not managed properly and could indicate a wider problem on board.

Bilge water can accumulate due to air condensation in the machinery space, condensation from air systems (such as air conditioning equipment, air compressors, compressed air vessels etc.), and the routine cleaning of the surrounding and connected areas. However, if the machinery, associated pipelines, and valves are not well-maintained, the associated leakage may seep into and contaminate the bilges.

A bilge filling up with oil or water could also be a tell-tale sign of a more significant problem, such as a leaking propeller shaft, stern seal, or cracks in the hull or tank bulkheads.

Associated Risks

- Fire – While an oily bilge may not be the immediate source of a fire, any fire that arises in an engine room or machinery space can escalate and spread rapidly. The presence of oil accumulated in bilges or drip trays acts as additional fuel to sustain burning and increases the likelihood of the fire reaching other areas. Rags that may be used to clean oily bilges if not disposed properly may further increase this risk.
- Pollution – Bilge water can be contaminated from various sources, such as oil leakage from machinery, sediments or cleaning agents used for machinery space cleaning. Contaminated bilge water, if not appropriately managed, can pose a pollution risk if the international/ local requirements on the discharge of bilge water are not complied with.

– Detention and fines – Port State Control officers increasingly classify oily bilges as a detainable deficiency. Illegal discharge of bilges may subject the vessel to heavy fines and the potential for the crew to face charges, including imprisonment.
– Machinery breakdown – Various leakages in the machinery, pipelines and valves may be signs of poor maintenance or an inherent failure which may lead to machinery/equipment breakdown.

Best Practices

– Engine room bilges should always be kept clean and free of oil.
– Engine room bilges should be painted in a light colour to visually assist in identifying a fresh leak.
– Chemical cleaning should be carried out periodically. On vessels fitted with an Oily Water Separator (OWS), the chemical used should be confirmed as compatible.
– Any identified source of any oily water in the bilge should be thoroughly investigated.
– Machinery, equipment, pipelines and valves should be periodically inspected and maintained as per Planned Maintenance System (PMS) and Manufacturer's Instructions.
– The OWS overboard discharge valve should be secured in the closed position with an appropriate notice clearly posted to warn against unauthorised opening.
– Proper recordkeeping of the transfer, discharge, or disposal of bilge water should be maintained.
– The Safety Management System / ship-specific procedural system should allow for periodic checks on the engine room bilges and written procedures regarding oily bilge transfer and discharge operations.

NEW EMSA CARGOSAFE STUDY INVESTIGATES RISKS FROM CARGO FIRES

Based on a safety risk study on containerized cargo fires, the European Maritime Safety Agency (EMSA) has released the CARGOSAFE study, with the goal of identifying cost-effective risk control options for cargo fires. It assesses the dimensions of the problem for both existing ships and newbuilds.

The CARGOSAFE study examines the risks associated with fires on container ships and evaluates measures to control these risks in terms of prevention, detection, firefighting, and containment. CARGOSAFE follows the Formal Safety Assessment (FSA) structure for use in IMO rule-making process. A dedicated risk model has been developed to assess the risks for the loss of life, cargo, ship, environment, and salvage. Finally, the study presents the results of a cost-effectiveness assessment (CEA) of the identified Risk Control Options (RCOs) for three generic ship types (feeder, twin island, single island).

Definition of the problem

The high-risk areas which need to be addressed according with each protection layer are:

– Prevention: reduce the fire occurrence, particularly in relation to the misdeclaration/undeclaration or dangerous cargo.
– Detection: detected sufficiently early to try a local extinguishment by crew or release a first shot of extinguishing agent.
– Firefighting: extinguishing or at least control the fire in the hold of origin for a long period of time.
– Containment: control the fire at the bay of origin or the bay above the hold of origin.

Fires on containerships, in particular originating in containers, have gained increasing visibility in the last five years, even though cargo fires are already a known characteristic accident occurrence for such ship types. The increased attention to cargo fire accidents is well aligned with an increase in the size of these ships, with a fleet which has seen a close to 30% capacity increase in the VLCS and ULCS categories over the last two years.

Download the study at **https://bit.ly/3KcAow7**. Or scan the QR code.

THE REPORT

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EXTRACTS FROM
ACCIDENT REPORTS

The risks associated with a modification on safety critical equipment should be considered before and during the work being completed.

The turbocharger inlet had become fractured by excessive movement of the engine on its mounts. This had happened over time because the engine's fixed stays and some support brackets had sheared off through vibration and stress.

Both liferafts exhibited deficiencies that raised servicing and certification concerns and are likely to have contributed to the port liferaft failure.

Safety Briefings

FIRES IN LITHIUM-ION BATTERIES CAN BE A CHALLENGE TO EXTINGUISH

A recent Safety Flash from IMCA (International Marine Contractors Association) focuses on an incident in which water got into Lithium-ion batteries in equipment for use subsea causing an explosion.

Inspection of the equipment after a successful deployment identified a potential leak from one of the metal tubes. However, other work priorities meant that the technician in charge of the equipment decided to leave it in its storage area and delay the removal and further examination of the battery. Seven hours later, the vessel's bridge team heard a loud bang followed by a fire detection system warning for the deepwater equipment storage area. The attending crew members discovered a scorched and damaged metal battery tube lying on the deck. There were no injuries.

Examination of the battery tube indicated that sea water had leaked into the battery compartment and contaminated the Li-ion battery, which caused pressurised gasses to build up and self-combust and resulted in a brief explosion. The remaining battery tubes were removed to a secure storage area for further checks.

Lessons learned

- Lithium-ion batteries are widely used in IMCA members' operations, and they are potentially very hazardous. A 1kg Li-ion battery can store the same amount of energy as a 6kg NiMH (Nickel metal hydride) or lead acid battery.
- Lithium-ion battery failures do occur; fires in Lithium-ion batteries can be difficult to extinguish.
- Lithium reacts intensely with water, which can corrode or damage the internal battery safety devices and cause it to overheat, ignite, rupture or leak. Some of the chemicals produced by burning Lithium-ion batteries can be very dangerous.
- A Li-ion battery that is found to be damaged or affected by water should not be used or charged. Remove the battery to a secure place where it can be monitored and potential spontaneous combustion can occur safely. In the event of a fire, use an appropriate fire extinguisher to put it out.

MAIB REPORT ISSUED INTO PERSON OVERBOARD FROM CREEL FISHING VESSEL WITH LOSS OF LIFE

At about 0736 on 28 August 2021, the owner and skipper of the lone-operated creel fishing vessel Harriet J accidentally entered the water while shooting the fishing gear. The unmanned vessel motored away and the skipper was neither able to reboard the vessel nor call for assistance. There were no witnesses to the accident and the alarm was raised by the skipper of another fishing vessel working in the area, who observed the unmanned vessel at 0745.

A search was carried out by local fishing boats and emergency services and just before 0900, the skipper was recovered unconscious from the water. He was airlifted to hospital but was declared deceased at 0955. The immediate cause of death was drowning.

Harriet J's skipper was working alone, although in the same area as other fishing vessels, and probably entered the water when his foot became entangled in the chain weight at the end of the fleet of creels that was being deployed at the time. He was neither wearing a personal flotation device (PFD) nor a personal locator beacon (PLB).

Safety Issues

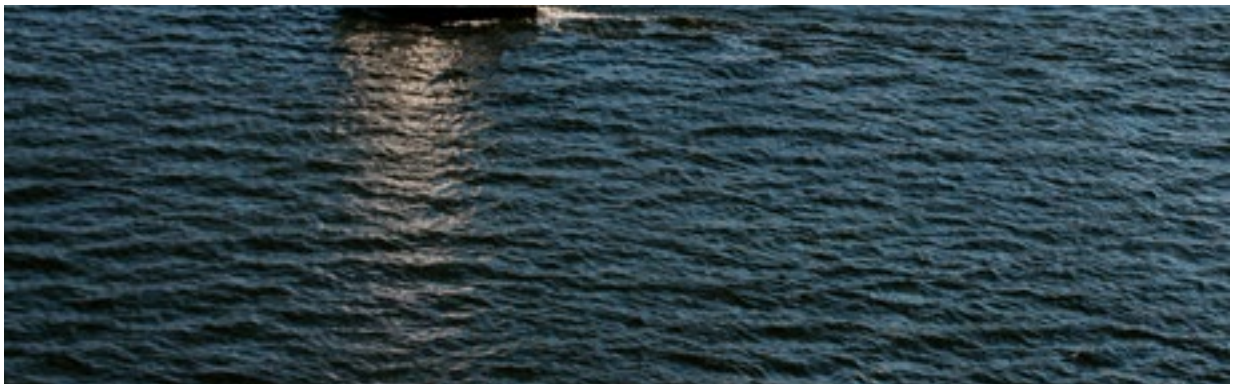
- the chance of survival was reduced because a personal flotation device was not being worn and a personal locator beacon was not carried;
- there was no effective way for the skipper to enter the working deck to clear a snag without the risk of being entrapped in the fishing gear;
- the risks of becoming entrapped and pulled into the water hadn't been fully assessed or mitigated;
- once in the water, there was no means for the skipper to remotely stop the engine;
- promulgation of safety information related to safety in this sector of industry continues to be problematic.

Recommendations

Fishing Industry Safety Group (FISG) has been recommended (2023/101) to expedite the delivery of the outcomes of its working group on lone-operated fishing vessels, taking into account the work commissioned by the MCA and Seafish.

A safety flyer issued following the loss of the skipper from the lone-operated creel fishing vessel Harriet J (AH180) west of Fast Castle Head, south-east Scotland, on 28 August 2021. The document summarises the circumstances and contains four key points reminding fishers of safety steps that could help save lives. These are especially critical when operating a vessel alone.

Download the report at **https://bit.ly/3XrpQzm**. Or scan the QR code.



EXTRACTS FROM
ACCIDENT REPORTS

The report concludes that the engine had not been serviced recently and was likely to have suffered a significant mechanical failure.

Investigators found the probable cause of the mechanical failure and resulting fire aboard the offshore supply vessel was the replacement of a crankshaft main bearing with an incorrectly sized bearing during an engine overhaul.

Records and documentation were systematically falsifed on board to satisfy audit and inspection requirements and avoid sanction or delay.

Safety Briefings

MGN 681 (M) FIRE SAFETY AND STORAGE OF SMALL ELECTRIC POWERED CRAFT ON YACHTS

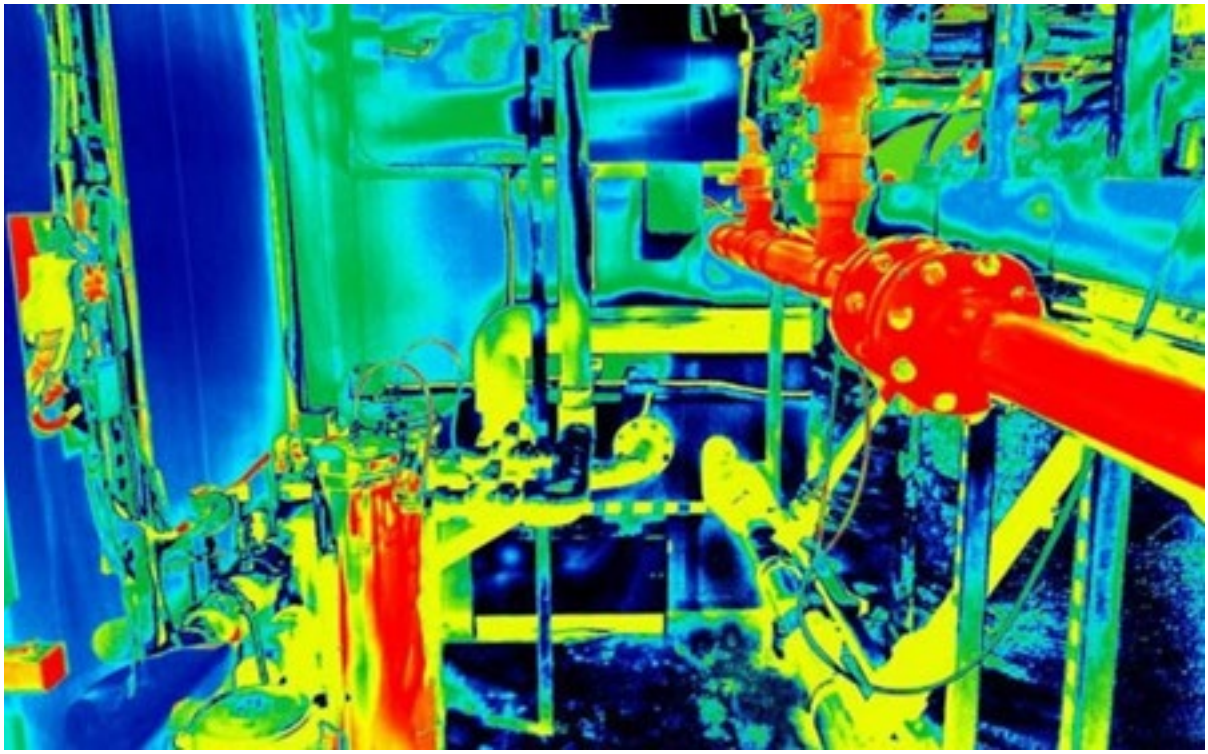
Notice to all shipowners, masters, deck and engineer officers, certifying authorities and surveyors involved with yachts. This MGN notice should be read with the Red Ensign Group Yacht Code Parts A and B.

Small electrically powered craft and other vehicles (such as personal watercraft) are becoming more commonly used in place of similar petrol-powered craft or vehicles stowed on yachts. Whilst electric craft do not necessarily represent a greater fire risk than petrol craft, there are considerable differences in best practice for fire prevention, storage, fire detection and fire suppression of such craft, which should be considered when they are stored onboard. This guidance is provided for use where lithium-ion (Li-ion) batteries are used as the source of electrical power. Batteries with alternative chemistries may present a different risk profile during charging or stowage.

There has recently been an increase in the number of fires on yachts, with industry groups estimating 16 total losses due to fire between August 2021 and August 2022; whilst the source of some of these fires are explained and have no relation to the measures proposed in this guidance (for example arson, collateral damage from another fire, etc.) around half have not had their cause established yet; one potential explanation for the unexplained fires, out of many potential causes, could be lithium-ion (Li-ion) battery fires. There has been an increase in the use of small electrically powered craft and other vehicles such as electric tenders, electric jet skis, electric foils (e-foils) and other personal watercraft powered by Li-ion batteries. However, there has not been a thorough consideration of whether the fire prevention, detection and suppression measures previously in-place on large yachts for previous generation petrol-fuelled craft, are appropriate for the newer-battery powered craft.

Download the MGN at **https://bit.ly/46bBdzx**.
Or scan the QR code.

FUEL LEAKS AND UNSHIELDED HOT SPOTS IN ENGINE ROOMS



The majority of fires onboard ships start in the engine room and the frequency of such fires is on the rise. Although the main cause of these fires may not be identical, there are certain similarities in the underlying patterns of the fires. Every year fires on board ships lead to loss of lives and severe damage to the ships themselves. Most fires on board ships originate in the engine room where the three ingredients for a fire, namely fuel, oxygen and a source of ignition, exist in abundance. These do not only start the fire but also feed and intensify it further. Fire safety is not only about detecting and fighting a fire, but also about preventing it from igniting in the first place.

How do most engine room fires start?
A review of Gard's hull and machinery claims for the years 2017-2021 related to fires and explosions on vessels, shows that nearly 60% of all such fires originated in the engine room. Nearly two thirds of these engine room fires occurred on the main and auxiliary engines or their associated components such as turbochargers. The majority of these incidents were caused by a failure in a flammable oil system, most often in the low-pressure fuel oil piping, allowing spray of oil onto an unprotected hot surface.

Case study
A copper pipe that was part of the fuel oil pressure gauge supply pipework for one of the auxiliary engines fractured. Due to a missing metal spray shield the fuel sprayed onto the unprotected hot surfaces of the nearby turbocharger and the exhaust system which had temperatures of more than 400 °C. The fuel ignited causing extensive damage to auxiliary engines and power distribution cables. The vessel was out of service for 40 days to carry out repair works. Investigation by experts showed that the copper pipe that fractured did not match the original design and had a lower wall thickness. There was no record of any previous repairs carried out to the fuel system pipework. The pipe assembly on the other three auxiliary engines appeared to be of original installation comprising of a steel pipe. The spray shield was removed during maintenance and not re-installed. Insulation was also suspected to be inadequate since exposed sections around the exhaust manifold and turbocharger were noticed on other three auxiliary engines. The investigators concluded that the heat shielding arrangements on the fire damaged auxiliary engine did not meet the relevant SOLAS regulations, II-2/2.2.6.1.

In this case, there are two main aspects which need to be highlighted.

The first is the leakage of flammable oil; and second is the inadequate protection to prevent highly flammable fuel from coming in contact with a source of ignition.

EXTRACTS FROM
ACCIDENT REPORTS

The solenoid valves installed on the gas combustion unit's air fan discharge damper actuators were of the incorrect specification.

The investigation found that the communications between the firefighting teams and the unified command were ineffective. The unified command was unaware that the firefighting teams were unable to locate the engine room emergency hatch.

The investigation found the probable cause of the grounding of the towing vessel was a loss of steering, likely due to a wiring harness within an electrical generator that was improperly positioned during a maintenance inspection.

Safety Briefings

Some of the most commonly occurring causes of fuel spraying from low pressure piping systems are listed below. The list is by no means exhaustive, but a review of past Gard cases has shown that below listed failures occur frequently.

- Piping, piping connections and other associated components, such as o-rings, were not original parts or of a type recommended by the manufacturer. In some cases, modifications had been done by the crew under existing management, whilst in others the crew were not aware of such modifications as they had been done under previous ownership or management.
- Piping connection had not been tightened to the required torque and with time it loosened due to, for example, vibrations. Another reason may be incorrect assembly after maintenance.
- Bolts for flanges or filters breaking due to fatigue caused by overtightening over a period of time. In some cases, securing bolts were also found loose or missing altogether.
- Fatigue fracture of pipes. Such pipes are typically not well supported along their entire length, which causes excessive stress due to vibrations. Lack of support may be attributed to the design or failure to reinstall the holding brackets after maintenance.
- Fuel oil filter covers coming loose and displacement of the spindle from the top cover for various reasons.
- Rupture of rubberized hoses due to degradation caused by the heat generated from nearby machinery.

Oil coming in contact with hot surfaces
Shielding can either be by insulating hot spots with thermal insulation or anti-splashing tapes, and/or by using physical barriers such as spray shields. Some typical issues with insulation that have been seen are:

- The quality may differ from yard to yard;
- It can deteriorate with age;
- It may not have been fixed back properly after maintenance, and;
- It can become soaked with oil over a period of time due to minor leakages.

As for physical barriers

- They may not have been part of the original design and therefore not fitted, or;
- Where fitted, they may not have been installed back in place after maintenance has been carried out on the oil system.
- Older vessels need more attention.

One of the factors which must be considered when assessing fire risks in engine rooms is the age of vessels. The risk of leakages from machinery may increase as ships grow older. Protection of hot surfaces may degrade, with the quality of insulation deteriorating increasing the probability of ignition and risk of fires. Older vessels can face cuts to their maintenance and safety budgets as they near the end of their service life. A vessel may have changed ownership and management a number of times during its life, and this can have a direct impact on the consistency of maintenance in the engine room.

Typical hotspots in the engine room
Based on previous fire incidents handled by Gard, the source of ignition in most cases are listed below. The temperature of these areas can easily exceed 500 °C which may be well above the oil's auto ignition temperature.

- Exposed areas of boilers.
- Turbochargers.
- Indicator valves on cylinders.
- Heater for purifier units.
- Exhaust manifold, pipes and associated flanges.
- Electrical wires/components and switchboards.
- Melting or smouldering of cables can also contribute to the transmission of heat.

DE-RISKING THE CARRIAGE OF LITHIUM-ION BATTERIES

At the heart of efforts to draw attention to the hazards inherent in transporting lithium-ion batteries, specialist freight insurer TT Club now urges debate leading to a balanced, yet realistic awareness of the dangers, and a united approach to enhancing their safe carriage. Improved regulatory clarity is required and auto manufacturers need to address transport safety issues more thoroughly.

Rapid development of battery technology and the uncertainties created by these developments, particularly concerning safety when the energy packs are being transported require the logistics industry to have a clear understanding of the dangers which can include fire, explosions and toxic gas emissions. Moreover, there needs to be increased efforts to minimise the risks, and if necessary, make sure there is an effective response to any catastrophic event.

Alarmist reports in the media can overstate the number of incidents involving electric vehicles. Indeed Peregrine Storrs-Fox, Risk Management Director at insurance mutual TT Club points out that "Lithium-ion (li-ion) battery fires are not an everyday occurrence. But when thermal runaway does happen, the result is release of toxic gases such as carbon monoxide and hydrogen cyanide, a very high temperature fire and can spread very fast."

The release of toxic fumes may be the first alert, but fire with temperatures higher than 1,000degs centigrade can be reached in a matter of seconds and, as the mix of chemicals and metals ignites, devastation can ensue.

Such concerns regarding the battery packs within electric vehicles (EVs) have been raised in the US and the National Transportation Safety Board (NTSB) has carried out a study. The forum heard that EVs were reported to have incurred fewer fire incidents than internal combustion engine (ICE) cars. However, there are a few provisos to be highlighted here – not least that there are far fewer electric cars on the road than ICE vehicles.

Secondly it is understood that newer batteries are less likely to ignite or explode than used batteries, effectively the older the li-ion unit, the greater the chance of an incident. As a result, it is not clear how the batteries will perform through the intended life, given that the switch to EV's is only now gathering pace and most battery packs are new.

Regarding the rapid spread of fire, Eva Mckiernan, the technical director at firefighting consultancy Jensen Hughes highlighted the dangers of thermal runaway as the most pressing issue after ignition. She explained that these energy packs are thermo-dynamically unstable. When the batteries are damaged, they can release hot and poisonous gases into containers or onto car decks of ro-ro ships and other vehicle carriers within seconds. When the batteries explode those extraordinary temperatures can be reached.

"Thermal runaway occurs when the heat and chemical reactions reach a certain level, they are effectively self-sustaining and very difficult to extinguish," she added.

Of course, EVs are just one use for li-ion batteries, which can be found in a variety of goods including e-bikes and scooters, as well as computers and mobile phones. All of these goods are transported with batteries in containers. Whilst transported as new, it may be reasonable to expect appropriate packaging, although state of charge is variable, used and damaged batteries present considerable uncertainty for the transport supply chain.

"Currently li-ion batteries are classified as one of four UN numbers, depending on power output or the weight of lithium in them and whether they are contained within devices or shipped separately. All four are Class 9 in the IMDG Code – Miscellaneous dangerous substances and articles," explained Storrs-Fox. "Class 9 is the least hazardous ranking and dates from a change in IMDG Class from 4.3, which was made in the late eighties. Clearly there is a need for a radical review of this classification, as the size and energy capacity of these batteries has altered dramatically since then. As has the volume being carried in container ships."

This raises concern that li-ion batteries are not classified as sufficiently hazardous and the range of potential Special Provisions increases complexity and uncertainty. All this may have serious ramifications when a container is being accepted for shipment or a ship stowage plan is being compiled. Storrs-Fox concludes, "In addressing the commercial opportunity in the answering the agenda to move away from fossil fuels, there needs to be urgent engagement from manufacturers and OEMs to resolve the justifiable concerns of the logistics industry – ahead of regulatory strengthening."

EXTRACTS FROM
ACCIDENT REPORTS

Contributing to the incident was the absence of a fire-activated automatic fuel oil shutoff valve on the fuel oil inlet piping before the burner, which would have stopped the fuel feeding the fire shortly after it started and limited the spread of the fire.

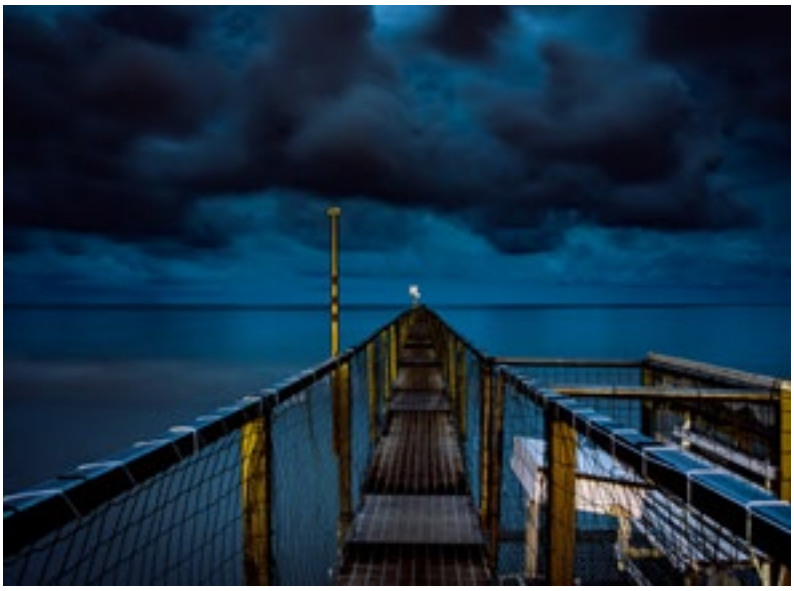
The investigation concluded the probable cause of the mechanical failure of the no. 3 main engine, resulting in fire aboard the offshore supply vessel was the replacement of a crankshaft main bearing with an incorrectly sized bearing during an engine overhaul due to the engine service technicians not identifying the removed bearing's part number.

Safety Briefings

TSB PUBLISHES ITS ANNUAL REPORT

The Transportation Safety Board of Canada (TSB) has released its annual report for the fiscal year 2022-23, highlighting significant safety issues in the country's transportation system. For marine, TSB received 1209 reports of marine transportation occurrences in 2022 (241 accidents and 968 incidents), including 7 fatalities. As in previous years, the highest proportion of the fatalities (three of the seven) was related to commercial fishing (Canadian-flag vessels in Canadian waters). According to Transport Canada, 2022 marine activity (commercial vessel-kilometres) for Canadian commercial non-fishing vessels with a gross tonnage of over 15 (excluding passenger vessels and cruise ships) was 10% above the 2013-to-2021 average while the 2022 accident rate was 3.0 accidents per million commercial vessel-kilometres, lower than the 2013-to-2021 average of 4.0.

Download the full report at **https://bit.ly/3rhUUp2**. Or scan the QR code.



RMI STRESSES THE NEED FOR PROPER INSPECTION AND MAINTENANCE OF IMMERSION SUITS

The Republic of the Marshall Islands (RMI) Maritime Administrator has published a Marine Safety Advisory to reaffirm the importance of proper inspections and maintenance of immersion suits. The RMI Maritime Administrator continues to observe a significant number of deficiencies (both during flag and port State inspections) relating to the condition of immersion suits. Since 1 January 2023, immersion suit defects account for nearly one-third of all lifesaving related deficiencies issued during flag State inspections of RMI-flagged ships. Commonly observed defects include:

- Defective or inoperable zippers
- Failed seams
- Holes or other defects in immersion suit material
- Inoperative or missing light and/or whistle
- Overdue air pressure testing

Deteriorated or inoperable zippers account for the largest percentage of observed defects. Defects of the zipper rarely affect only one immersion suit on board. Many times, numerous suits are found with the same defect when closely examined following the identification of one unacceptable immersion suit.

Defects or failures of seams of immersion suits are the next most commonly observed defect. Deficiencies issued following flag State inspections indicate that the seams at the hands, feet, and zipper are most susceptible to failure. Similar to defective zippers, the Administrator's records indicate that seam failure rarely is found isolated to only one immersion suit, often with many found on board in the same condition.

Issues related to the overall condition of immersion suits on board RMI-flagged vessels are often identified during inspections. This includes deterioration or defects in the suit's material, overdue air pressure testing, and missing or inoperable light and/or whistle (for suits designed to be worn without a lifejacket).

In several instances, immersions suits manufactured in China by "Dongtai City Jianghai Lifesaving & Firefighting Equipment Limited Company" and "DongTai City Dong Fang Marine Fitting Co., Ltd.," were found to be significantly deteriorated despite being only about five years old.

Recommendations

The Administrator recommends that all owners, operators, Masters, and crewmembers of RMI-flagged vessels take the following actions to raise awareness of the importance of properly inspecting and maintaining immersion suits:

- Review the requirements on immersion suits and thermal protective aids contained in RMI Marine Notice 2-011-37, Life Saving Appliances and Systems;
- Review the requirements prescribed by the Company's safety management system (SMS) relating to the periodic (monthly) inspection of all immersion suits to ensure they adequately address the requirements contained in IMO Circular MSC/Circ.1047;
- Ensure zippers are fully closed and opened during monthly check to ensure smooth operation throughout the zipper's length;
- Ensure crewmembers responsible for conducting periodic inspections of immersion suits are properly trained and knowledgeable in the inspection procedure;
- Review the requirements prescribed by the Company's SMS relating to air pressure testing of all immersion suits to ensure they adequately address the requirements contained in IMO Circular MSC/Circ.1114;
- Confirm that the number of immersion suits required on the Safety Equipment Certificate Form E are on board, in serviceable condition, and immediately available at the locations prescribed in RMI Marine Notice 2-011-37;
- Ensure that all crewmembers are familiar with the location on board where immersion suits are stored;
- Immediately notify the Administrator if defective immersion suits are identified and the number of immersion suits in satisfactory condition does not meet that required by Form E.

CRACKS IN A MUFFLER LED TO FIRE ON TOWING VESSEL REVEALS NTSB REPORT

Cracks in a muffler coupled with the use of combustible materials in accommodation spaces caused a fire on a towing vessel last year on the Gulf Intracoastal Waterway near Freeport, Texas, is the key finding in the National Transportation Safety Board's (NTSB) report.

On June 25, 2022, the towing vessel, Mary Dupre, left Port Comfort, Texas, bound for Houston. She was pushing a single barge loaded with bio-diesel fuel. The fire broke out the following day. No injuries were reported, and nearby Good Samaritan towing vessels retrieved the barge, extinguished the fire, and evacuated the crewmembers. However, the Mary Dupre was a total loss, with damages estimated at $1 million.

The fire started behind wood-paneled bulkheads in the pilot's stateroom, which was located between the stacks containing engine exhaust mufflers and piping. Cracks in the welds of the muffler inside the starboard stack allowed hot exhaust gases to escape into the stack area.

Whilst investigating, NTSB discovered that a disconnected exhaust blanket on a muffler left a section of it uninsulated, which allowed heat to radiate into the stack area. This, combined with leaking exhaust gases from a crack in the muffler, is believed to have raised the temperature in the stack area. The crew was unaware of cracks or disconnected blanket due to the size of the stack preventing personnel from entering the space.

NTSB determined that the fire on the Mary Dupre was caused by undetected cracks in the starboard muffler, which allowed exhaust gases to ignite wooden structures in the accommodation space. Contributing to the damage was the use of combustible materials in the joinery, outfitting, and furnishings.

"Engine and other machinery exhaust systems generate heat—which can radiate from exhaust components—and are potential ignition sources," the report said. "These systems often run through tight spaces that are difficult to access and inspect and are often located near materials or equipment that obstruct entry and direct observation. It is good practice to include these areas in periodic fire safety inspections. When conducting inspections of these systems, vessel owners and operators should consider using handheld equipment—such as inspection mirrors, video equipment, or thermal imaging equipment—to detect deficiencies."

Download the NTSB report: **https://bit.ly/3PL4bAf**. Or scan the QR code.

CARGO FIRE & LOSS INNOVATION INITIATIVE CALLS FOR FIRE DETECTION SOLUTIONS

The Cargo Fire & Loss Innovation Initiative is calling for innovators to come forward with solutions for early-stage fire detection, one of the most important issues in the drive to mitigate container loss.

Following extensive knowledge sharing among the group, the need for improved fire-detection systems in container cargo holds has been identified as the most pressing area of focus. The Initiative is therefore calling on technology companies to come forward with suitable solutions in early-stage fire detection for cargo holds.

This open call is looking for low-cost, robust solutions with the appropriate form factors to operate in the cargo-hold environment. Interested technology companies should outline how the proposed solutions will deliver these requirements. Early fire detection, or identifying a fire-risk prior to ignition, is critically important to minimise the likelihood of a large-scale fire, therefore advancing successful containment without the creation of significant loss and any associated marine impact.

Launched in February this year by Safetytech Accelerator, the programme comprises Lloyd's Register, Seaspan, Evergreen Line, HMM, Maersk, the Offen Group and ONE and was established with the aim of reducing cargo loss at sea by shaping joint requirements, identifying technology solutions, undertaking carefully designed trials and developing best practices and recommendations.

"Ships are larger in size and have exponentially increased their carrying capacity, including dangerous goods, increasing the risk of threat to the safety of lives, vessel, cargo, and the environment," said Alfred Gomez, Director Marine Standards and Designated Person Ashore (DPA) at Seaspan Corporation.

MAIB REPORT PUBLISHED INTO THE DEATH OF ONE PERSON OVERBOARD FROM STERN TRAWLER COPIOUS

At about 0300 on 18 February 2021, a deckhand fell overboard from the twin rig stern trawler Copious (LK 985) approximately 30 nautical miles south-east of the Shetland Islands. The deckhand was conscious, wearing a lifejacket and was quickly brought alongside the vessel. However, the crew's attempts to recover the casualty back on board were unsuccessful. He was unresponsive when recovered from the water by a coastguard helicopter and pronounced dead on arrival at hospital.

Safety Issues

- The deckhand fell overboard while attempting a repair to the trawl gear. There was no attempt to stop and consider the repair and the activity was not effectively risk assessed or mitigated.
- When he lost consciousness in the water, the incorrectly worn lifejacket did not hold his airways clear and he drowned due to complications of immersion.
- The available man overboard recovery equipment was not supplemented by the training and equipment necessary for the recovery of an unconscious person.

Recommendations

A recommendation (2023/102) has been made to the Maritime and Coastguard Agency to amend regulations to require fishing vessels to have an efficient means to recover an unconscious person from the water that is demonstrable during surveys and inspections.

Download the report at **https://bit.ly/43fEomO**

MAIB has also issued a safety flyer following this accident. The document summarises the circumstances and contains four key points reminding fishers of safety steps that could help save lives. This is especially important if recovering an unconscious person from the water.

Download the safety flyer: **https://bit.ly/3O1xhKB**

OILY RAGS WERE THE CAUSE OF LUXURY YACHT FIRE ARE ACCIDENT INVESTIGATION FINDINGS

The marine environment takes a toll on coatings, and to keep up with maintenance, most ships' crews use oil-based paints and finishes almost every day that the weather allows. These materials come with an inherent fire risk, the National Transportation Safety Board (NTSB) has warned, because waste and rags from cleanup can easily combust. For finishes containing linseed oil – a common ingredient in wood finishes – the risk is elevated by the material's tendency to self-heat and ignite. Left alone, a linseed-soaked rag can catch fire without any external source of ignition as the crew of the yacht Pegasus discovered last year.

At about 0200 hours on July 15, 2022, a fire broke out aboard the Pegasus at a marina in Gig Harbor, Washington. No one was on board to detect it, and the blaze had about one hour to spread before a bystander noticed and reported it. Another half hour passed before firefighters were able to bring hoses to bear on the blaze. As firefighting went on, Pegasus' stern slipped below, and the bow slowly settled as the boat took on more water. The fire was finally put out at 0430 when the Pegasus' main deck cabin was immersed.

The wreck was salvaged, and a county fire inspector came aboard to examine the damage. The transom and aft deck were heavily burned, and under a table on the aft deck was a hole burned through into the engine room. Components near the overhead in the engine room were melted, but below they were undamaged, suggesting that the heat came from above.

The location of the origin of the fire was on the aft deck, where the owner and his employee had been working the day before the fire. They had been refinishing wood on board the yacht using teak oil, and the employee had taken the towels used to wipe up the excess oil, put them in a plastic bag and set the bag under the table. The teak oil formulation contained linseed oil, and it had a manufacturers' warning about the self-combustion risks of any wastes soaked in the product.

There were no indications of other possible causes of the fire, and security camera footage from that night showed no signs of human activity. The county fire marshall determined that the oil-soaked rags were the likely cause of the fire, and NTSB agreed. Once the fire started and burned undetected for an hour, NTSB determined, it was unlikely that the yacht could have been saved. The case was very similar to a fire aboard the passenger vessel Safari Spirit in 2012, which likely started when rags soaked in teak oil were laid out to dry and caught fire on a railing.

NTSB reminded mariners to follow manufacturers' instructions for disposing of oil-based paint and finish wastes, and in particular to avoid piling up or bagging oil-soaked rags, which allows heat to build up and increases the risk of self-ignition.

THE REPORT

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DECEMBER 2023

EXTRACTS FROM
ACCIDENT REPORTS

The investigation found that a critical interlock device on the lifeboat davits had heavily corroded due to lack of maintenance.

The authorities found that for all seven sample loading conditions that matched the loading conditions in the 2002 stability instructions, the vessel failed one or more of the stability criteria.

The probable cause of the engine room fire was a crewmember insufficiently swaging a compression fitting ferrule during the installation of fuel oil return tubing for a main engine's cylinder.

Report on engine room fire on Moritz Schulte with loss of one life

At 0918 on 4 August 2020, the liquefied petroleum gas/ethylene carrier Moritz Schulte suffered an engine room fire while discharging a cargo of ethylene alongside the port of Antwerp, Belgium. The newly promoted third engineer, who was working on an auxiliary engine fuel filter, had not effectively isolated the fuel system and both he and an adjacent auxiliary engine's hot exhaust were sprayed with fuel under pressure. The fuel spray penetrated the exhaust insulation and ignited.

Prompt actions by the crew closed down the space to limit the spread of fire. The subsequent crew muster identified that the third engineer was missing and had last been seen in the engine room. The master prohibited the release of the CO2 fixed firefighting system and ordered the fire party to search for and recover the third engineering officer.

The vessel's search and rescue team made two attempts to enter the engine room, both of which were unsuccessful due to smoke and heat. The third attempt made a sweep of the area of the engine room where it was assessed that the third engineer would be, but he was not found. A shore fire team located him an hour after the start of the fire. He was recovered ashore but died 9 days later from the effects of smoke inhalation.

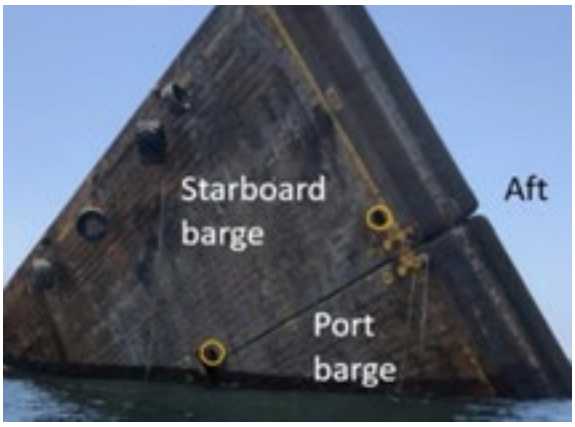
The investigation found that, despite the vessel having a full range of safe systems of work in place, the third engineer, who had worked for the company for over 5 years, died while attempting an unnecessary job conducted in an unsafe way at an inappropriate time, without a risk assessment and in the absence of any direct supervision of the task. Analysis of the third engineer's training programme activity log found that only two of the 65 rank-specific tasks he was required to undertake before his promotion to third engineer had been completed with the requisite evidence. It also found that the training system permitted line management to confirm that training had been completed without evidence being provided. This facilitated his promotion twice when he was not ready.

Other findings included a lack of any evidence of poor visibility enclosed space rescue drills or escape drills using Emergency Escape Breathing Devices.

The company's investigation identified 32 actions relating to: communication, crew and competence management, safety management and technical management. The company has since equipped its four vessels that were built before July 2003 with additional Emergency Escape Breathing Devices.

Download the report at **https://bit.ly/3LBvQRa**.
Or scan the QR code.

Lack of hull inspection and maintenance led to sinking is report finding



The National Transportation Safety Board (NTSB) has issued an investigation report into the capsizing and sinking of crane barge Ambition that was towed by Karen Koby.

On 15 June 2022, about 0400 local time, the vessel Karen Koby was towing the crane barge Ambition when the barge capsized and sank in the Gulf of Mexico, about 48 miles southeast of Cameron, Louisiana. There were no persons on the barge, and none of the Karen Koby's four crew were injured. The Ambition was partly submerged in about 54 feet of water, where it was later salvaged. The sunken barge released an estimated 1,980 gallons of oil. The Ambition and its crane were determined to be a total loss, with damages estimated at $6.3 million.

Probable cause
NTSB determined that the probable cause of the capsizing and sinking of the crane barge Ambition was the barge owner's lack of an inspection and maintenance regime, and not conducting permanent repairs, which resulted in the failure of the hull and subsequent flooding.

Contributing to the capsizing was likely down flooding through an open deck hatch due to the tow operator's failure to ensure adherence to its procedures for barge watertight integrity before getting underway, despite being aware of deficiencies with the watertight integrity of the barge.

Lessons Learned
- Effective Hull Inspection and Maintenance
- To protect vessels and the environment, it is good marine practice for vessel owners to conduct regular oversight and maintenance of hulls, including between drydock periods.
- An effective maintenance and hull inspection program should proactively address potential steel wastage, identify hull and watertight integrity deficiencies, and ensure corrosion issues are repaired in a timely manner by permanent means.

Download the report at **https://bit.ly/48s3pPv**. Or scan the QR code.

Ensuring safe access to Australian domestic commercial vessels

The Australian Maritime Safety Authority (AMSA) has published a safety alert to raise awareness of the risks involved with getting on and off domestic commercial vessels. Accessing a vessel while at berth is a routine activity and is sometimes taken for granted. The requirement for safe access can be overlooked, particularly where there are limited berthing options, or a vessel is only berthed for a short period. Failing to provide safe access can result in serious risk to people. This is heightened by bad weather or extreme tidal variations. Under the Australian National Law, the owner and master are responsible to ensure the safety of people boarding a domestic commercial vessel.

1 **Assess the risks.**
What are they? What could make them worse? What could happen to a person if things go wrong? How bad would the impact be?

2 **Implement ways to control those risks.**
These may include:
- Ensuring a 'safe design' gangway
- Securing platforms or gangways firmly and clear of the wharf edge or other potential hazards
- Limiting access in bad weather and if necessary, during extreme tidal variations
- Providing adequate lighting around the gangway, especially at night to increase visibility
- Including instructions on when and how to safely board the vessel—and when not to—in your crew safety inductions and signage. Under the general safety duties, crew, passengers and other visitors must follow these instructions
- Encouraging crew to report hazards and incidents associated with getting on and off the vessel.
- Developing emergency procedures for possible incidents associated with access to the vessel i.e. falls, person overboard.
- Ensuring crew are clear about what they need to do—if there is no safe access, do not proceed (report any issues related to safe access)
- Identifying, documenting and managing the risks will help you implement effective risk controls. These could include safe work procedures, regular inspections and maintenance of equipment, appropriate training, induction and supervision of crew.
- Document these risks and controls in your safety management system and review them periodically to make sure they are still relevant and practical.

EXTRACTS FROM
ACCIDENT REPORTS

The master was working at the aft-facing chart table on the bridge, but had become engrossed in paperwork and lost track of time.

Investigators determined that the probable cause of the capsizing and sinking of the crane barge was the barge owner's lack of an inspection and maintenance regime and not conducting permanent repairs, which resulted in the failure of the hull and subsequent flooding.

The grid buoy's metal components were worn and the top washer was missing, both of which resulted in its failure.

Final Dutch report into fatalities due to wood rot on traditional craft due shortly

The Dutch Safety Board says its final report into another fatal marine accident involving wood rot on a traditional craft is due to be issued shortly. The board initiated an investigation last year after a fatal incident on 31 August 2022, on a historic sailing ship from Harlingen, which claimed the life of a person on the deck when the vessel's boom broke.

The board's "follow-up investigation" on this incident set out to examine "to what extent lessons can be learned, and what is needed to prevent these types of accidents in the future". It says that "the inspection phase of the investigation has been completed".

"The comments received from the parties involved on the draft report have been incorporated. The final report will be adopted shortly and is expected to be published in the foreseeable future," the board said.

The Dutch Safety Board has previously investigated two previous cases. A total of four people died in incidents occurring on 21 August 2016 and on 20 March 2019, when part of the mast broke off and landed on individuals. "In both cases, part of the mast broke off because it was affected by wood rot," the board said. In the 2016 incident, a wooden mast that broke suddenly on a Dutch historic sailing ship and killed three people on its deck had been rotting for at least four years beforehand, the board found.

The investigation report recounted how the captain of the historic sailing ship the Amicitia was just about to turn his ship into the port of Harlingen, after a week's sailing on the Wadden Sea, when "catastrophe struck". The three people on the foredeck did not survive the accident, which the safety board has traced to wood rot. This was caused by water penetrating the mast which could not drain out again and was trapped.

In this case, it says there was "no maintenance plan for the mast in question, and it was not inspected periodically". "This meant that changes and vulnerable spots were not identified. Because the captain himself did not have the relevant expertise, he relied on the maintenance personnel he engaged. However, they did not have the necessary specific expertise concerning wooden masts either," the report says.

Safety warning issued by MAIB after serious injury during a rigid inflatable boat ride

On 7 June 2023, a passenger on a sea safari rigid inflatable boat (RIB) suffered a spinal injury that left them paralysed from the waist downwards. Twelve passengers had boarded the RIB and, once it was clear of the jetty, the two crew gave them a safety briefing and instruction on the wearing of lifejackets. The RIB then proceeded out to sea and was increasing speed in choppy sea conditions when it encountered a steep-sided wave. The boat fell off the wave and slammed violently into the trough, dislodging the passenger from a seat at the forward end of the boat.

Safety issues

- there is a significantly higher risk of spinal fractures to people seated in the front area of RIBs, regardless of speed;
- seated individuals may have little or no understanding of boat movement or how to mitigate its effects.

Safety lessons

Owners and operators of small commercial passenger vessels are strongly advised to:

- urgently review operations and risk assessments, referencing the guidance linked below to mitigate risks outlined in the safety bulletin;
- review passenger pre-departure briefings and bring into line with current guidance.

A full investigation report into the accident will be published by the MAIB in due course.

Download the safety bulletin at **https://bit.ly/48zZwYX**. Or scan the QR code.

Fatal pilot ladder accident has enduring lessons is report finding

Managers of the two vessels involved in a fatal crew transfer accident off Brisbane, Australia, had not ensured personnel had a common and complete understanding of how the transfer would be conducted, an Australian Transport Safety Bureau (ATSB) investigation has concluded.

On 9 August 2021, crew were being transferred to and from the bulk carrier Formosabulk Clement via the launch boat PT Transporter in the Port of Brisbane anchorage, about five nautical miles off the coast. The operation involved multiple visits from PT Transporter to transfer crew on and off the anchored bulk carrier. While the vessels were separated during a break from transfers before the accident, the bulk carrier turned about its anchor, exposing the transfer area to prevailing weather.

Language difficulties between the crews meant the bulk carrier's main engine was not used to correct this issue, prior to the launch coming back alongside. As PT Transporter approached, a crewmember of the bulk carrier climbed down the vertical pilot ladder without the knowledge of the ship's master, or the skipper of the launch.

A wave, larger than previously encountered, then lifted the PT Transporter higher than expected, sufficient for the smaller vessel to make contact with the crewmember, knocking them into the water. While the crewmember was quickly recovered from the water, they had sustained fatal injuries.

"This was a tragic accident, involving a seafarer who had been at sea for more than 400 days due to global border restrictions during the COVID-19 pandemic," ATSB Chief Commissioner Angus Mitchell said.

Mitchell said the investigation highlights clear safety lessons for all operators conducting crew transfers like this one, as there was no common or complete understanding amongst the personnel on board either vessel in terms of how the transfer would be conducted.

Since the accident, the operator of the launch has updated crew transfer arrangements and procedures, with a traffic light system for operational assessment and control. The system is designed to be less constrained by language, and amenable to being shared beforehand to assist in achieving the shared mental model of the task among all participants.

The operator of the bulk carrier has also completed investigations and held multiple safety meetings and training exercises to share details of, and lessons learned from, the accident.

Download the report at **https://bit.ly/46utZpz**.

Proper sampling of liquid cargoes is vital advises Gard

Gard P&I Club has highlighted the importance of taking proper samples of liquid cargoes to protect shipowners' interests, particularly when allegations of cargo contamination arise.

Cameron Livingstone, Claims Executive, Arendal and Robert Skaare, Senior Claims Adviser, Arendal have highlighted that if a cargo is found to be "off-spec" when the vessel arrives at the discharge port, and there is no evidence of contamination from the load port, the vessel could be faced with a potentially large claim even if the vessel is not at fault.

The crew should always take their own manifold and final tank samples, irrespective of whether cargo surveyors also take samples. The most important sample is the 'manifold' sample taken before the start of loading. Having your own set of 'evidence' is vital.

Read the article in full at **https://bit.ly/3PGt8LM**.

NTSB renews call for US Coast Guard to require an SMS policy for passenger vessels

Four years after the fire aboard the Conception dive boat claimed 34 lives, the National Transportation Safety Board renewed its call for the US Coast Guard to require safety management systems (SMS) for passenger vessels. The recommendation, which the NTSB reissued following its investigation of 2 September 2019 into the fire aboard the Conception, remains open. NTSB Chair Jennifer Homendy sent a letter to the Coast Guard Commandant emphasizing the need to issue the regulations within 30 days.

"While the Coast Guard has implemented so many of our recommendations from the Conception investigation, we've yet to see the necessary action taken on one of the most important ones: safety management systems," said NTSB Chair Jennifer Homendy. "We've been advocating for SMS on passenger vessels for nearly two decades. The public can't afford to wait any longer."

The NTSB has advocated for SMS for passenger vessels since 2005, and in 2010, Congress explicitly granted the Coast Guard the authority to require such systems. Progress has been stalled since January 2021 when the Coast Guard took initial steps to address the NTSB's recommendation.

An SMS is an enterprise approach
to risk management. It is a formal organizational tool, comprising policies, procedures, checklists and corrective measures to ensure that vessel crews are operating a vessel in accordance with regulations, company requirements and best practices, with a goal of continuous improvement.

In December 2021, the Coast Guard issued interim rules addressing many of the recommendations the NTSB issued as a result of its investigation of the Conception casualty, but not for the SMS recommendation. The Elijah E. Cummings Coast Guard Authorization Act of 2020 mandates that the Coast Guard carry out all of the NTSB recommendations issued or reiterated as a result of the Conception investigation.

All 33 passengers and one crewmember died of smoke inhalation after they were trapped in the berthing area while a fire raged on the deck above. Both exits from the berthing area led to the same fire- and smoke-filled area above. The NTSB concluded that had an SMS been implemented, Truth Aquatics, Inc., owner and operator of the Conception, could have identified unsafe practices and fire risks on the Conception and taken corrective action before the casualty occurred.

Grains and soya beans cargo claims review

The Swedish Club has released a detailed analysis of cargo claims in relation to grains and soya beans having reviewed 200 bulk carrier claims. To be included in the statistics the claims had to have generated a cost of at least $5,000 and have been made between 2018 and 2022.

The average frequency for the five-year period is 0.056, which means that 5.6% of all bulk carriers have made a grain claim. Since 2019 the Club has seen a steady increase in the frequency of claims.

Grains
During the five year period of the report the most common claims were for shortage (63%) especially during discharge (68%) and these were seen most commonly in North Africa and China.

About 70% of shortage claims occur due to discrepancies between the vessel's figures and shore figures. In this five-year period there were few claims in China until 2021, but since then Swedish Club said that it had seen a steady increase in the region. Over the entire five-year period, however, most claims were in North Africa.

The increase of claims in China over the last couple of years could be related to the pandemic, Swedish Club said. The severe lockdowns that were seen in many cases delayed the vessel. They also made it difficult for surveyors to attend the vessel for inspection. Crew and stevedores were also more hesitant to interact with each other because of the risk of becoming infected. This led to the crew not being able to verify the cargo operation and taking draft figures. The Club said that it had seen a similar picture with soya bean claims.

Shortage contributed to 44% of the total claims cost, with an average claim cost of $35,000. Although shortage claims appeared to be of relatively low value, the aggregate cost of these claims was significant.

Non contribution towards General Average (GA) contributions made up 20% of the total cost. The average claim cost was $800,000, but this type of claim was not common.

Wet damage made up 13% of the total cost, with an average claim cost of $37,000.

Most cargo claims occurred at the discharge port. These contributed to 68% of all claims and were mainly driven by shortage. Claims during the voyage accounted for 16%, with only 10% of claims taking place in the loading port.

Any errors in manifests regarding quantity, or description of cargo, are subject to customs fines in Tunisia. If a spillage was experienced, the Club said that the crew should record details of the spillage and check the calibration and accuracy of the shore scale. "Take photographs of the cargo spillage from the grabs, hoppers and trucks", the Club advised.

Soya beans
The global trade of soya beans has undergone continued expansion in recent times, in part due to the increasing demand in China, the largest soya bean importer, for animal feed. The largest soya bean exporters are Brazil and USA, which account for around 80% of the global export market.

The frequency for the five-year period saw 1.1% of all bulk carriers place a soya bean claim. The average claim cost was $54,000. The pandemic had an impact, with vessels forced to stay at anchor for extensive periods. These delays could lead to heat damage – a significant concern with soya bean cargoes.

The most common claim was for shortage at 29%, followed by spontaneous heating at 19% and contamination at 16%.

When compared with grains, shortage made up a considerably smaller percentage of claims (29% vs 44%). This was partly a trading issue, but in addition the statistics were influenced by Covid-related delays.

Spontaneous heating accounted for 41% of the Club's total cargo claims cost in this category, with an average claim cost of $115,000. Shortage made up 16% of the total cost, with an average claim cost of $29,000. Physical damage contributed to 13% of the total cost, with an average claim cost of $103,000.

The most common cause of damage claim was damage prior to loading, at 23% of total claims. When considering the damage that leads to these claims, 43% of these claims were observed in the loading port, 29% during the voyage, and 14% at the discharge port.

The second most common cause was inherent vice, at 19%. This manifests at the discharge port 50% of the time and during the voyage at 33%.

The third cause was improper cargo handling ship side, at 16%. This category of claim relates to heating damage and wet damage, often caused by rain during loading and discharge.

EXTRACTS FROM
ACCIDENT REPORTS

The safety equipment survey had failed to identify that the davit installation was not compliant with SOLAS.

It is thought the sinking of the towing vessel was caused by unsecured or open aft deck hatches, which resulted in the flooding of the vessel's aft compartments from water on deck and progressive flooding to other compartments through openings in watertight bulkheads.

Contributing to the severity of the fire was the lack of a fire detection and fixed fire extinguishing system in the engine room.

Maltese authorities issue commercial yacht manning advisory

A commercial yachting notice has been issued by the Maltese Merchant Shipping Directorate (MMSD) to remind all yacht owners about manning responsibilities. Under Section 17 of the Malta Commercial Yacht Code (CYC), all yachts of 24m and above in length have to carry a valid Minimum Safe Manning Certificate, while yachts under 24m must follow the minimum safe manning requirements as detailed in Section 17.

The Minimum Safe Manning Certificate (for yachts > 24m) and the Safe Manning Scales (for yachts < 24m) are applicable for all international and domestic voyages. As detailed in Section 17 of the CYC, the number of crew may be reduced when a yacht is not operational and is laid-up and/or wintering at berth.

In these latter instances, the requirements of the Minimum Safe Manning Certificate/Scales are no longer applicable. In such cases the yacht's owners and managers are responsible to ensure the necessary manning requirements of the yacht.

The number of crew may be reduced below the minimum safe manning levels following a risk assessment carried out by the yacht's Master in order to ensure that:

- necessary maintenance on board can continue to be carried out. For yachts ≥ 500GT additional consideration should be given to ensure that the safety management system (SMS) can continue to be operational and maintained;
- any possible emergency which may occur on board such as fire, unmooring and mooring can be safely and effectively responded to and handled by experienced crew on board;
- the ship security plan (SSP) can continue to be maintained as necessary (for yachts ≥500GT);
- the maximum hours of work and minimum hours of rest shall remain in compliance with MLC requirements;
- any requirements which may be stipulated by the local Port Authorities and/or the yacht's insurance are complied with as required;
- full assistance is provided during any unannounced Port State Control inspection.

Yacht owners/operators do not have to inform the MMSD when the manning levels have been reduced during lay-up unless they have received notification of a possible flag state inspection. In such cases the MMSD should be informed when the yacht is expected to resume operations with its full crew. All onboard surveys shall be carried out with the necessary crew members on board.

Be vigilant when loading scrap metal is the warning

Following increases in the issues with the carriage of scrap metal cargo, NorthStandard P&I Club has highlighted the need for extra vigilance at loading.

The IMSBC Code states that scrap metal should be kept as dry as possible before loading and not loaded in the rain. The main reason for this is that when scrap metal is wet it will accelerate the oxidisation process. Should the cargo contain swarf, turnings, or other contaminants such as timber or rags, this can lead to fire.

From various recent incidents and reports, NorthStandard attributes the causes of these incidents are due to a combination of factors:

- The cargo is sprayed on loading: Stevedores or longshoremen may spray the cargo on load to reduce dust generation.
- The cargo is loaded during rain: Sometimes there is a request to load the cargo in rain, with shippers/charterers offer to issue a 'rain letter' in exchange for owners agreeing to continue loading. This should be resisted as P&I cover is at risk where an owner loads or discharges a cargo in the rain in circumstances where it was entitled to refuse to do so. In such circumstances a rain letter, under which the issuer indemnifies the carrier against the consequences of loading or discharging in the rain may stand as an alternative to cover.
- The cargo contains swarf: Often there is a large proportion of swarf, cuttings, borings and shavings in the cargo which means that the cargo does not meet the requirements to be considered a Group C 'SCRAP METAL' cargo.
- The cargo contains contaminants: Typically, the cargo is contaminated with rags or timber. However, more recently in Ghent there have been more instances of lithium batteries being found in the cargo. The presence of these contaminants significantly increases the risk of fire once heated. On one occasion issues were caused by a scrap metal cargo containing gas canisters which still contained flammable gas.

NorthStandard advises that cargo should be closely monitored for swarf, contaminants and to avoid loading in rain.

Collision between a general cargo vessel and a split hopper investigation report

The UK Marine Accident Investigation Branch (MAIB) has published its investigation report into the collision between the general cargo vessel Scot Carrier and the split hopper barge Karin Høj.

The collision resulted in the capsize of the barge with two fatalities in the Bornholmsgat traffic separation scheme. On 13 December 2021, the UK registered general cargo ship Scot Carrier and the Denmark registered split hopper barge Karin Høj collided in the precautionary area adjacent to the Bornholmsgat traffic separation scheme, Sweden. As a result of the collision, Karin Høj capsized and its two crew lost their lives.

The vessels collided after the second officer on board Scot Carrier altered course at a planned waypoint without checking the traffic in the area or that it was safe to execute the manoeuvre. Following the collision, Scot Carrier's second officer did not immediately call the master or raise the alarm, but returned the ship to its original course and speed.

Danish and Swedish coastguards were alerted to the incident following the activation of Karin Høj's emergency beacon and determined that the two ships might have collided. The Swedish Coast Guard subsequently questioned the second officer about the track of Scot Carrier via very high frequency radio and, 17 minutes after the collision, the master was finally alerted to the situation and sounded the general alarm.

Investigation
The investigation found that neither vessel had posted a lookout during the hours of darkness. It further established that Scot Carrier's second officer was distracted throughout his watch by the continual use of a tablet computer and had also consumed alcohol before taking over the watch. It was not possible to establish what actions were taken by the crew of Karin Høj because the vessel was not fitted with a voyage data recorder and there were no survivors.

Download the full report at **https://bit.ly/3RvoeDM**. Or scan the QR code.

EXTRACTS FROM
ACCIDENT REPORTS

The interlock cylinder piston rod was not inspected, and no comment was made on its condition.

We found that the lack of regulations or classification standards related to diesel oil-fired air heating furnace construction, installation, safety shutdowns, and system alarms poses a risk to life and property if the equipment is not installed and maintained to standards similar to those in place for other oil-fired equipment.

Bananas are sensitive cargoes

Bananas, though said to be the world's most transported and consumed fruit, are also among the most sensitive cargoes that can be carried on a ship according to Skuld. Before a banana ends up on the shelves it has been exposed to numerous external factors which all have a bearing on how the fruit is finally presented.

It is an essential part of the banana export trade that the bananas are harvested in a "green" condition. This way, the ripening progression can be controlled during transport up and until presentation to the consumer markets. The ripening process of the bananas is irreversible if the bananas are allowed to enter the "climacteric" phase before transport.

As Skuld says, the cargo must be loaded in a careful manner and stowed in a way which allows for proper air circulation. If air circulation is blocked, the cargo will be unevenly cooled. This may cause some of the cargo, typically the cargo stowed farthest away from the air delivery point, to ripen prematurely. A difference between the Delivery Air Temperature (DAT) and the Return Air Temperature (RAT) indicates that the cargo stow is blocking air circulation.

Whenever a cargo of bananas arrive with signs of damage, local correspondents and surveyors will routinely be appointed to record the events and assess the damages. Should the damage turn out to be serious, it is highly recommended to instruct expert surveyors to attend as soon as possible even where this involves cross-border travels.

It is essential that the expert surveyor arrives on site when the evidence is fresh, as expert reports prepared on basis of pictures and third-party reporting will carry less weight and value in the defence against cargo claims. Preferably, the expert surveyor should get in place when the vessel is still at discharge port so that the crew can be properly interviewed, and all relevant documentation can be collected. The expert surveyor should also assist in taking representative samples of the cargo and ensure that the testing methods are appropriate, which again will assist in determining the exact cause of the damage.

The following pages are devoted to a series of loss prevention bulletins, advice and guidance issued between January and November 2023 that have been published on the IIMS web site. Much of the content has been originated and disseminated by the P&I Clubs and maritime regulators relating to activities they see going wrong and case studies. There are links to the web site allowing you to read the detailed articles. Or scan the QR codes and access the articles and reports instantly on your device.

Loss prevention articles published on the IIMS website in 2023

London P&I Club guidance regarding Flexible Intermediate Bulk Containers and Dry Chemicals

Published on the IIMS website on 3 December 2022

The London Club published guidance regarding Flexible Intermediate Bulk Containers (FIBCs) and Dry Chemicals. The guide presents common hazards, as well as lessons learned for a safe operation onboard.

Download the guidance in pdf format at **https://bit.ly/3UyHCO7**. Or scan the QR code.

Whitepaper Ammonium Nitrate fire risk on board ships

Published on the IIMS website on 5 December 2022

The risks posed by poor conditions of storage of this common compound, which is used extensively in the Fertilisers and Explosives industries, have been well documented but awareness of the dangers of fire during transportation by sea is less well known. The objective of this guide, entitled 'Ammonium Nitrate Fire Risk on Board Ships' is to outline best practice with respect to the management of risk on vessels chartered to ship the compound through ports around the world.

Download the whitepaper in pdf format at **https://bit.ly/3Isq81V**. Or scan the QR code.

Bulk carrier safety: be aware of vessel structural limitations

Published on the IIMS website on 14 December 2022

Not long ago, a Gard member's vessel was detained at the load port because the density of the solid bulk cargo being loaded exceeded the maximum allowable cargo density for that particular vessel. Recently, Gard was also approached by another member because the master of a capsize bulk carrier had refused the charterer's request for alternative hold loading due to serious concerns about the ship's safety.

Read the full article at **https://bit.ly/3Ynt7Q9**. Or scan the QR code.

Risk and resilience guidelines for ports, harbors and terminals published

Published on the IIMS website on 17 January 2023

The International Association of Ports & Harbors (IAPH) has published its new risk and resilience guidelines for ports, as well as details of a new risk inventory portal aimed at sharing best practices on risk mitigation and management for ports.

Download the guidance in pdf format at **https://bit.ly/3HadUeR**. Or scan the QR code.

Boat owners beware of sticky fuel

Published on the IIMS website on 17 January 2023

Over the past year, River Canal Rescue, says it's witnessed an uncharacteristic peak in fuel-related component breakdowns due to a new problem callled 'sticky fuel'. RCR said its marine engineers now respond to two-three cases per week on the inland waterways and managing director, Stephanie Horton, is keen to alert the wider marine community to the issue.

Read the article at **https://bit.ly/3CUJVFd**. Or scan the QR code.

Risks of in-transit fumigation leading to phosphine gas explosions

Published on the IIMS website on 25 January 2023

Aluminium phosphide, the precursor compound from which phosphine gas is generated, is available in different forms and can be supplied in aluminium bottles as tablets of about 3g each or as pellets of about 1g. Alternatively it can be supplied in fabric 'socks' or strips of cojoined paper sachets which enable the fumigant residues to be easily removed in the situation where it is undesirable to have fumigation residue remaining in the cargo. Generally, and as a rule of thumb, Degesch state that one 3g tablet of aluminium phosphide formulation will generate about 1g of phosphine gas.

Read the full article at **https://bit.ly/3sE3r6z**. Or scan the QR code.

Image used for illustrative purposes only

Safety alert issued after flare explosion fatality

Published on the IIMS website on 31 January 2023

The Dutch Safety Board has published an urgent Safety Alert following a recent accident that killed a sailor as he fired a flare. The incident happened on board a Dutch sailing ship in the Pacific Ocean. Complying with the flare's requirements and instructions, the experienced sailor fired the flare. The flare did not launch as intended but exploded immediately with fatal consequences.

Read the full article at **https://bit.ly/3xw4RiI**. Or scan the QR code.

Condemned fire extinguishers must be discarded

Published on the IIMS website on 2 February 2023

The Nautical Institute has shared some lessons learned from an incident that involved a corroded fire extinguisher, which had been condemned and subsequently its malfunction proved fatal.

Read the full article at **https://bit.ly/3EkoP39**. Or scan the QR code.

GAO makes recommendations for USCG to improve fishing vessels safety

Published on the IIMS site on 3 February 2023.

The US Government Accountability Office (GAO) has identified several actions that the US Coast Guard (USCG) needs to take to help prevent future fishing vessel losses and related fatalities and has made six key recommendations. According to GAO, USCG hasn't fully implemented 17 of 22 statutory requirements to improve commercial fishing vessel safety.

Download the recommendations at **https://bit.ly/3YHNQhA**. Or scan the QR code.

The stricken Felicity Ace photographed before sinking. Photo credit: Portuguese Navy

The advice from the US Coast Guard is to avoid loading electric vehicles with saltwater damage on ships

Published on the IIMS website on 9 February 2023

The US Coast Guard (USCG) has issued a warning to the shipping industry about the extreme risk of loading electric vehicles (EV) with damaged lithium-ion batteries onto commercial vessels. Marine Safety Alert 01-23, published by USCG, addresses the issue and provides recommendations to vessels, ports, shippers and regulators.

Read the full article at **https://bit.ly/3qVItj3**. Or scan the QR code.

Early detection key to preventing electric vehicles fires

Published on the IIMS website on 9 February 2023

Following several high-profile ship fires involving electric vehicles (EVs), Survitec has produced some valuable advice for operators of vessels transporting hybrid and EVs, such as ferries, ropaxes, RoRos, PCCs and PCTCs, on how best to prevent and control fire onboard ships involving lithium-ion battery powered vehicles.

Read the full article at **https://bit.ly/415NHFY**. Or scan the QR code.

IMPA safety campaign on pilot ladders reveals ongoing persistent non-compliance

Published on the IIMS website on 15 February 2023

This year's International Maritime Pilots' Association (IMPA) Safety Campaign on pilot ladders highlighted there is still a lot of work to do as the requirements of SOLAS regulation V/23 (Pilot transfer arrangements), its associated IMO Assembly resolutions, and the ISO 799 series standards are considered as the bare minimum requirement and not an aspirational target according to IMPA.

Read the full article at **https://bit.ly/3R3MYCX**. Or scan the QR code.

International safety guide for inland navigation tank-barges and terminals revised

Published on the IIMS website on 16 February 2023

Oil Companies International Marine Forum (OCIMF) and the inland navigation sector, with the support of the Central Commission for the Navigation of the Rhine (CCNR), have collaborated with other European organisations to produce the second edition of the International Safety Guide for Inland Navigation Tank-barges and Terminals (ISGINTT).

Download the safety guide as a pdf at **https://bit.ly/3YXXEok**. Or scan the QR code.

Recent fire draws safety alert on engine room exhaust hazards

Published on the IIMS website on 16 February 2023

Following a recent marine casualty resulting in an engine room fire onboard a commercial fishing vessel, the US Coast Guard (USCG) has published a Safety Alert to address the importance of installing noncombustible materials in machinery space boundaries with dry exhaust systems.

Read the article online at **https://bit.ly/3P1mY8E**. Or scan the QR code.

Safe handling and carriage of scrap metal in bulk

Published on the IIMS website on 21 February 2023

In recent years, Gard P&I Club has handled a number of claims involving the carriage of scrap metal in bulk and, from time to time, they get enquiries from Members for guidance on the handling and carriage of this cargo. Ship operators and masters should be aware of the risks related to scrap metal carriage and take risk mitigation actions accordingly.

Read the full article at **https://bit.ly/3EmtSjV**. Or download the QR code.

Proper EPRIBs use is critical says the Marshall Islands

Published on the IIMS website on March 13

The Republic of Marshall Islands (RMI) Maritime Administrator has issued an important reminder after an increase in both false Emergency Position Indicating Radio Beacon (EPIRB) distress alerts and issues with their registration.

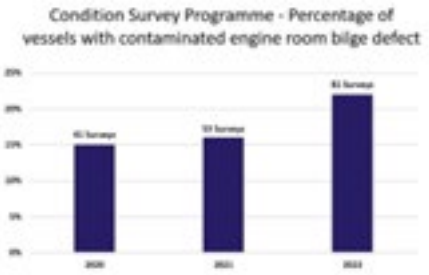
Read the article in full at **https://bit.ly/3yWqwRF**. Or scan the QR code.

Key guidance for machinery space deficiencies

Published on the IIMS website on 21 March 2023

The Republic of Liberia has issued guidance to alert shipowners and operators, masters and surveyors and recognised oganisations based on recent trends observed during the inspection of machinery spaces.

Read the full article at **https://bit.ly/3lBeFpm**. Or scan the QR code.



Risks associated with dirty engine room bilges

Published on the IIMS website on 24 March 2023

The Shipowners Club would like to highlight the potential hazards associated with oily engine room bilges and the checks and steps that a ship's crew should undertake to assist mitigate the associated possible issues.

Read the article in full at **https://bit.ly/3LPBQXC**. Or scan the QR code.

Image by Thomas V. Myers courtesy of the National Pest Management Association

Biosecurity: Insect infestation on ships

Published on the IIMS website on 26 April 2023

Insects are one of the major concerns for ships as they can cause significant damage to the cargo being transported, and a ship can face severe penalties and delays from the authorities for breaches of biosecurity protocols.

Read the full article at **https://bit.ly/45AFsnr**. Or scan the QR code.

MGN 276 (M+F): Fire protection – maintenance of portable fire extinguishers updated

Published on the IIMS website on 3 May 2023

Fatalities have previously occurred due to people operating marine portable fire extinguishers which have been attributed to corrosion of the extinguisher bases. The structure in these cases was weakened to such an extent that the extinguishers exploded when activated.

Download MGN 276 at **https://bit.ly/44DNUkk**. Or scan the QR code.

Deficiencies and non-conformities involving pilot ladders are on the increase

Published on the IIMS website on 1 June 2023

RightShip has presented four different case studies to highlight an alarming trend which has emerged from incident and inspection data over the last two years with regards pilot ladders and transfer arrangements. The organization has observed several deficiencies while the ladders are not in use. However, critically, it is when an inspector is not present, and ladders are being rigged or utilised, that those deficiencies with high-risk potential can result in incidents.

Read the full article at **https://bit.ly/3EmNe8o**. Or scan the QR code.

The issue of cargo fires needs to be tackled further

Published on the IIMS website on 12 June 2023

Cargo fires are a well known challenge amongst shipping industry stakeholders. Fire onboard can result in major casualties, including loss of life. Yet, fire safety remains the most common ship deficiency area.

Download the report at **https://bit.ly/482Nbw0**. Or scan the QR code.

Maritime and Coastguard Agency

MGN 681 (M) Fire safety and storage of small electric powered craft on yachts

Published on the IIMS website on 12 June 2023

Notice to all shipowners, masters, deck and engineer officers, certifying authorities and surveyors involved with yachts. This MGN notice should be read with the Red Ensign Group Yacht Code Parts A and B.

Download the MGN at **https://bit.ly/46bBdzx**. Or scan the QR code.

Preventing small passenger vessel fires

Published on the IIMS website on 12 June 2023

The United States Coast Guard (USCG) has issued a Safety Alert in response to ongoing investigations being conducted in collaboration with the National Transportation Safety Board (NTSB) into fires onboard two certificated small passenger vessels.

Read the full article at **https://bit.ly/3sFIB6Q**. Or scan the QR code.

Planning and preparation vital to reduce man overboard fatalities

Published on the IIMS website on 5 July 2023

At a special event to mark UK Maritime Safety Week event, a demonstration of man overboard recovery techniques highlighted how little time there is to effect a successful rescue.

Read the full article at **https://bit.ly/3Z0hr6M**. Or scan the QR code.

Transportation of electric vehicles containing lithium batteries damaged by extreme weather events

Published on the IIMS website on 10 July 2023

The U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) has issued this safety advisory notice to inform the public and raise awareness of the risks involved in the transportation of electric vehicles (EVs) powered by installed lithium batteries that may have been damaged due to submersion in waters during extreme weather events.

Read the full article at **https://bit.ly/47S9zYW**. Or scan the QR code.

London Club sees cargo damage claims from the carriage of dry chemicals in FIBCs

Published on the IIMS website on 11 July 2023

The London P&I Club has continued to see cargo damage claims arising from the carriage of dry chemicals in Flexible Intermediate Bulk Containers (FIBCs), more commonly known as "jumbo bags", which have been stowed in the same holds as breakbulk cargoes.

Read the full article at **https://bit.ly/3sGhFnx**. Or scan the QR code.

Beware cargoes which may liquefy not listed in the IMSBC Code

Published on the IIMS website on 14 July 2023

Mark Russell, Vice President, Head of Cargo Claims, Gard P&I Club, presents cases involving cargoes that may liquefy but are not listed in the International Maritime Solid Bulk Cargoes (IMSBC) Code as Group A cargoes and therefore are not declared as such.

Read the full article at **https://bit.ly/47ZaVRE**. Or scan the QR code.

Lithium-ion battery fires on vessels remain one of the biggest safety issues

Published on the IIMS website on 7 August 2023

Allianz has highlighted that battery fires on vessels remain one of the biggest safety issues facing the shipping industry. There have been a number of serious fire incidents in recent years where Lithium-ion (Li-ion) batteries have been reported as the source of or contributing to fires on vessels.

Read the full article at **https://bit.ly/3qYXPDr**. Or download the QR code.

Be vigilant when loading scrap metal is the warning

Published on the IIMS website on 10 August 2023

Following increases in the issues with the carriage of scrap metal cargo, NorthStandard P&I Club has highlighted the need for extra vigilance at loading.

Read the full article at **https://bit.ly/3RD1KAL**. Or scan the QR code.

Grains and soya beans cargo claims review

Published on the IIMS website on 18 August 2023

The Swedish Club has released a detailed analysis of cargo claims in relation to grains and soya beans having reviewed 200 bulk carrier claims. To be included in the statistics the claims had to have generated a cost of at least $5,000 and have been made between 2018 and 2022.

Read the full article at **https://bit.ly/3rwdHh6**. Or scan the QR code.

ClassNK releases guidelines on the safe transportation of electric vehicles

Published on the IIMS website on 31 August 2023

In a bid to bolster the safety of maritime transportation of electric vehicles (EV) at a time of major concern for the shipping industry, ClassNK has unveiled a set of new guidelines and measures.

Download the guidelines at **https://bit.ly/3EVYIQG**. Or scan the QR code.

Bananas are sensitive cargoes

Published on the IIMS website on 31 August 2023

Bananas, though said to be the world's most transported and consumed fruit, are also among the most sensitive cargoes that can be carried on a ship according to Skuld. Before a banana ends up on the shelves it has been exposed to numerous external factors which all have a bearing on how the fruit is finally presented.

Read the full article at **https://bit.ly/3tcGUOA**. Or scan the QR code.

IUMI publishes "Best practice & recommendations for the safe carriage of electric vehicles"

Published on the IIMS website on 6 September 2023

There are growing concerns within the shipping community, including marine underwriters, about fires breaking out on car carriers and ro-ros with the assertion that many of these fires are attributable to electric vehicles.

Download the best practice guide at **https://bit.ly/3t6cy01**. Or scan the QR code.

NCB launches second container inspection initiative to battle the dangers of misdeclared cargo

Published on the IIMS website on 6 September 2023

National Cargo Bureau (NCB) has launched a second container inspection initiative to combat the persistent threat posed by misdeclared cargo. In a determined response to these sobering revelations and escalating concerns around ship fires, particularly those stemming from lithium-ion batteries, NCB is enhancing its inspection initiative.

Read the full article at **https://bit.ly/3PRpVKv**. Or scan the QR code.

Proper sampling of liquid cargoes is vital advises Gard

Published on the IIMS website on 8 September 2023

Gard P&I Club has highlighted the importance of taking proper samples of liquid cargoes to protect shipowners' interests, particularly when allegations of cargo contamination arise.

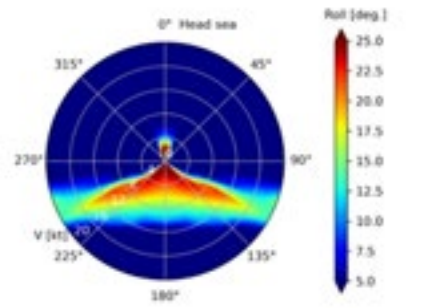
Read the full article at **https://bit.ly/3PGt8LM**. Or scan the QR code

Safety warning issued by MAIB after serious injury during a rigid inflatable boat ride

Published on the IIMS website on 19 September 2023

On 7 June 2023, a passenger on a sea safari rigid inflatable boat (RIB) suffered a spinal injury that left them paralysed from the waist downwards. Twelve passengers had boarded the RIB and, once it was clear of the jetty, the two crew gave them a safety briefing and instruction on the wearing of lifejackets.

Download the safety bulletin at **https://bit.ly/45Yv0WZ**. Or scan the QR code.



Addressing the growing threat of cargo losses at sea: Fresh guidelines

Published on the IIMS website on 25 September 2023

With growing container ship capacity and increased numbers of container losses at sea coinciding, ClassNK has recently published two sets of guidelines to help improve cargo safety at sea.

Read the full article and download the guidelines at **https://bit.ly/3tabOHe**. Or scan the QR code.

Guidance on how to comply with PSC focus on firefighting and clean machinery spaces

Published on the IIMS website on 25 September 2023

The Liberian Administration has released guidance on how to comply with the recent focused trend of inspection of machinery spaces by various Port State Control (PSC) regimes.

Read the full story at **https://bit.ly/4a1hu7x**. Or scan the QR code.

Cargo fumigation: An overview for the maritime sector

Published on the IIMS website on 10 October 2023

Britannia P&I Club warns against the risks of cargo fumigation and presents steps people onboard can take in order to mitigate those risks.

Download the guidance document at **https://bit.ly/3F9vei3**.
Or scan the QR code.

The issues around the transport of microplastic pellets

Published on the IIMS website on 12 October 2023

There are a number of concerns surrounding the transport of microplastic pellets, but whilst the debate rages as to how to mitigate the risks to the maritime ecosystem, those arising through the entire freight supply chain need to be recognised, so says TT Club in a recent highlight.

Read the full story at **https://bit.ly/46DqexJ**. Or scan the QR code.

Bulk cargoes casebook by The Swedish Club

Published on the IIMS website on 13 October 2023

As part of its commitment to improving safety at sea, The Swedish Club widely shares its claims experiences to help the and shipping community to understand the factors that can lead to common incidents and to learn from the decisions that were made on board at the time and to understand the lessons learned.

Download the casebook in pdf format at **https://bit.ly/49WgS2U**. Or scan the QR code.

Stern tube damage is on the increase in concerning trend

Published on the IIMS website on 16 October 2023

The number of claims for stern tube damage has increased considerably over the last few years and such damages are now one of the more frequent claim types handled by Gard under their hull and machinery policies. A recent Gard analysis has shed light on the issue.

Read the full story at **https://bit.ly/3QZbQdo**. Or scan the QR code.

Battery electric vehicles carriage risk guidance published by AMSA

Published on the IIMS website on 10 November 2023

The Australian Maritime Safety Authority (AMSA) has issued the Guidance on Risks Associated with the Carriage of Battery Electric Vehicles. The safety alert provides guidance to operators of domestic commercial vessels (DCVs) on risks associated with the carriage of battery-powered electric vehicles (BEVs) on roll-on, roll-off (RORO) ferries, and how best to deal with these risks.

Read the full story at **https://bit.ly/47IyJbN**. Or scan the QR code.

Ensuring safe access to Australian domestic commercial vessels

Published on the IIMS website on 27 November 2023

The Australian Maritime Safety Authority (AMSA) has published a safety alert to raise awareness of the risks involved with getting on and off Australian domestic commercial vessels. Accessing a vessel while at berth is a routine activity and is sometimes taken for granted.

Read the full story at **https://bit.ly/3N72Cuq**. Or scan the QR code.

The next few pages contain a wide variety of incident and accident reports that have been released from a number of sources during 2023 and published on the IIMS web site. In most cases the links will take you to the full articles and reports, which can be downloaded. Or use the neat QR codes to access the information directly on your device.

Incident and accident reports published on the IIMS website in 2023

Photo used for illustrative purposes only

Onboard training for operating hatch covers is essential

Published on the IIMS website on 16 December 2022

Hong Kong authorities have issued an investigation report following a fatal accident that happened on board a bulk carrier, when it was en route to Port Hedland, Australia to load a cargo of salt in bulk.

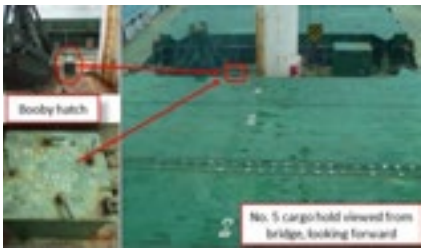
Read the full article at **https://bit.ly/47ThMvX**. Or scan the QR code.

Securing arrangements on deck in a poor state led to the loss of containers from APL England

Published on the IIMS website on 16 December 2023

The Australian Transport Safety Bureau (ATSB) has published its final report into the loss of containers from the vessel APL England off the coast of Sydney in 2020. One of the key findings noted is the importance of vessel fixtures being regularly maintained to ensure they are secure and stable.

Download the report in pdf format at **https://bit.ly/3qUi314**. Or scan the QR code.



Fatality due to cargo hold's low oxygen concentrations says investigation report

Published on the IIMS website on 19 December 2022

The Transport Safety Investigation Bureau of Singapore (TSIB) has released its accident investigation report on the incident onboard the bulker Nozomi when a seafarer died after entering a cargo hold as a result of an from oxygen deficient atmosphere.

Download the report in pdf format at **https://bit.ly/45X8v4p**. Or scan the QR code.

Return line fuel leak on main engine causes ferry fire is report finding

Published on the IIMS website on 5 January 2023

The Marine Casualty Investigation Board (MCIB), the Irish government agency for investigating maritime accidents and incidents, has released its report on the ferry fire that broke out onboard the "Frazer Tintern" midway between Ballyhack, Co. Wexford and Passage East, Co. Waterford.

Download the report at **https://bit.ly/3X4Q2i4**. Or scan the QR code.

Electrical component failure causes flame discharge

Published on the IIMS website on 2 February 2023

The Australian Transport Safety Bureau (ATSB) has published its investigation report on the liquified hydrogen (LH2) carrier Suiso Frontier. According to the report, the failure of an incorrectly-fitted electrical solenoid valve led to the brief propagation of flame.

Download the report in pdf format at **https://bit.ly/3L6QGrp**. Or scan the QR code.

Failure of fire hose couplings case study

Published on the IIMS website on 14 February 2023

A recent Safety Flash published by the International Marine Contractors Association (IMCA) focuses on an incident in which a fire hose fitting failed at the neck of the stub inserted into the hose during routine pressure/leak testing.

Read the full article at **https://bit.ly/3xxhIRA**. Or scan the QR code.

Combustible materials near hot work led to fire is report finding

Published on the IIMS website on 16 February 2023

Combustible materials left unprotected near hot work led to a fire on the passenger vessel Natchez in New Orleans, the National Transportation Safety Board (NTSB), has said in its accident report. The fire resulted in $1.5 million in damages to the vessel.

Download the report in pdf format at **https://bit.ly/44yVb4T**. Or scan the QR code.

Serious injury to crew members during maintenance work reveals Transport Malta Investigation

Published on the IIMS website on 13 March 2023

Transport Malta has published an investigation report about an incident which resulted in serious injury to three crew members during maintenance work on the fire jockey hydrophore tank on 23 February 2022. The 'violent' dislodging of the inspection cover was the result of a pressurised hydrophore.

Download the report at **https://bit.ly/45Cv7qZ**. Or scan the QR code.

Outboard engine fire causes yacht to sink is finding in MCIB report

Published on the IIMS website on 24 March 2023

Now, a Marine Casualty Investigation Board (MCIB) report is recommending that racing yacht owners should ensure their auxiliary engines provide the necessary power for their craft to make a safe passage. In addition, the MCIB says risks associated with refuelling outboards at sea need to be highlighted.

Read the full article at **https://bit.ly/3lHo0vR**. Or scan the QR code.

Improper use of heat cables is a fire hazard

Published on the IIMS website on 12 April 2023

The US Coast Guard (USCG) has recently investigated a fire on board an inspected towing vessel which resulted in the vessel suffering a loss of propulsion. The source of the fire was determined to be heat cables (also referred to as heat tracing cable or heat tape), which were improperly installed to prevent condensate from forming and freezing within hoses used to transmit compressed air for the vessel's air-operated engine throttle control system.

Read the full article at **https://bit.ly/3AqspXA**. Or scan the QR code.

Emma Louise fatal carbon monoxide poisoning report published

Published on the IIMS website on 28 April 2023

On the morning of 12 January 2022, two men were found unconscious on board the sports cruiser, Emma Louise, which was berthed in Port Hamble Marina, on the River Hamble, England. It was later established that both men had died because of carbon monoxide poisoning.

Download the report at **https://bit.ly/3AA5IjJ**. Or scan the QR code.

Safety issues of ship engine cooling systems need to be addressed

Published on the IIMS website on 9 May 2023

The Transport Accident Investigation Commission (TAIC) has called on Maritime New Zealand to address critical safety issues with the maintenance and management of ship engine cooling systems. The call was detailed in a preliminary report as part of the Commission's inquiry into the loss of power experienced by the KiwiRail Interislander passenger ferry Kaitaki, leaving it drifting close to the coast in Cook Strait.

Read the article in full at **https://bit.ly/3qXuut0**. Or scan the QR code.

Investigation report into mechanical failure due to wrong-sized bearing issued

Published on the IIMS website on 2 June 2023

The National Transportation Safety Board (NTSB) has issued an investigation report regarding a diesel generator engine failure on board Offshore Supply Vessel Ocean Guardian. On May 27, 2022, about 1435, the offshore supply vessel Ocean Guardian was conducting sea trials in Shilshole Bay near Seattle, Washington, when its no. 3 main diesel generator engine suffered a mechanical failure that resulted in a fire in the engine room.

Download the report at **https://bit.ly/3sG0zWZ**. Or scan the QR code.

Engine Room Safety Alert: Pipe Compression fittings and Fire Prevention

Published on the IIMS website on 29 June 2023

Lloyd's Register has released an Engine Room Safety Alert following the conclusions of a recent maritime safety report by Federal Bureau. It has again highlighted the need for constant vigilance, maintenance and safety procedures. In particular, care is required when positioning and fitting compression fittings involving possible flammable liquids and oils that can impinge on nearby hot surfaces, which then combine to ignite, causing a serious fire in the engine room/machinery space.

Read the full article at **https://bit.ly/3sG6UBL**. Or scan the QR code.

Cracks in a muffler led to fire on towing vessel reveals NTSB report

Published on the IIMS website on 30 June 2023

Cracks in a muffler coupled with the use of combustible materials in accommodation spaces caused a fire on a towing vessel last year on the Gulf Intracoastal Waterway near Freeport, Texas, is the key finding in the National Transportation Safety Board's (NTSB) report.

Download the report at **https://bit.ly/3PL4bAf**. Or scan the QR code.

Doubler plate failure likely cause of fishing vessel Grace Marie sinking

Published on the IIMS website on 14 July 2023

The National Transportation Safety Board (NTSB) has issued its investigation report about the flooding and subsequent sinking of fishing vessel Grace Marie on 8th July 2022.

Download the report at **https://bit.ly/3Z5cZUr**. Or scan the QR code.

Report on the sinking of the cargo vessel Bjugnfjord due to partially liquefied soil

Published on the IIMS website on 17 July 2023

Cargo displacement of 1,900 tonnes of partially liquefied soil was, according to the Norwegian Safety Investigation Authority's (NSIA) assessment, the cause why the bulk carrier MS Bjugnfjord sank on its way out of the Kattegat. According to the NSIA investigation, it is in practice difficult to have an overview of the characteristics of different masses in these type of freight assignments.

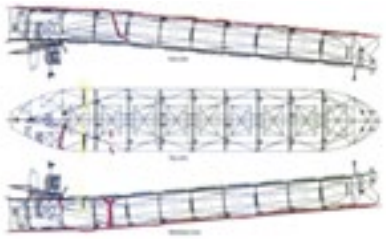
Read the full article at **https://bit.ly/45WbXMt**. Or scan the QR code.

US Coast Guard issues final report on fatal liftboat capsizing

Published on the IIMS website on 20 July 2023

The US Coast Guard Office of Investigations and Casualty Analysis has published an investigation report about the capsizing of the liftboat Seacor Power in the Gulf of Mexico. The accident claimed the lives of 13 people.

Download the report at **https://bit.ly/3R7Azh3**. Or scan the QR code.



Wakashio report by the Panama Maritime Authority issued 3 years after Mauritius grounding

Published on the IIMS website on 21 July 2023

Almost 3 years after bulk carrier, the Wakashio, ran aground and spilled oil along the coast of Mauritius, the Panama Maritime Authority's investigation report into the accident has been made public.

Download the report at **https://bit.ly/3rvBLAC**. Or scan the QR code.

Report on engine room fire on Moritz Schulte with loss of one life

Published on the IIMS website on 18 August 2023

The newly promoted third engineer, who was working on an auxiliary engine fuel filter, had not effectively isolated the fuel system and both he and an adjacent auxiliary engine's hot exhaust were sprayed with fuel under pressure. The fuel spray penetrated the exhaust insulation and ignited.

Download the report at **https://bit.ly/3LBvQRa**. Or scan the QR code.

MAIB Safety Digest 2/2023 October published

Published on the IIMS website on 3 October 2023

This Safety Digest, the second edition of 2023, is a compendium of anonymous articles involving vessels from the merchant, fishing and small craft sector which draws the attention of the marine community to some of the lessons arising from investigations into recent accidents and incidents.

Download the pdf at **https://bit.ly/3RMEroa**.

Coronial Findings into Boating Incident

Published on the IIMS website on 5 October 2023

The coroner found Alan Bruce Beeby died as 'a result of an inherent defect in the vessel Eliza 1 causing it to capsize resulting in drowning' whilst 16 nautical miles offshore and about 15 nautical miles north of Seal Rocks.

Read the full story at **https://bit.ly/3uGnani**.

Injury during MOB training on a rigid inflatable boat

Published on the IIMS website on 6 October 2023

The Marine Accident Investigation Branch (MAIB) has completed a preliminary assessment summary injury during MOB training overboard 1/23: Midsummer.

Read the full story at **https://bit.ly/3Rv3OKR**.

EMSA marine casualties and incidents 2023 annual overview

Published on the IIMS website on 1 November 2023

The EMSA marine casualties and incidents 2023 annual overview has been published. The report presents statistics on marine casualties and incidents that cover the period from 1st of January 2014 to 31st of December 2022, reported by EU Member States.

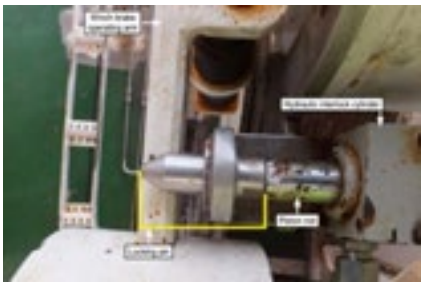
Download the overview in pdf format at **https://bit.ly/47qFpLP**.

Spirit of Norfolk: fire onboard passenger vessel investigation report published

Published on the IIMS website on 1 November 2023

NTSB found that the fire originated in the Spirit of Norfolk's engine room, most likely due to the ignition of combustible materials stored near the exhaust pipe of the operating port generator. Due to regulatory exemptions, the Spirit of Norfolk was not required to have an engine room fire detection system; the lack of a fire detection system in the engine room delayed the discovery of the fire and allowed for its growth.

Download the report in pdf format at **https://bit.ly/46DqMnh**.



RRS Sir David Attenborough lifeboat davit failure report issued

Published on the IIMS website on 3 November 2023

The MAIB has issued an accident investigation report into the lifeboat davit failure aboard RRS Sir David Attenborough. On the 4 March 2021, the port lifeboat from RRS Sir David Attenborough fell into the water while the crew were practising lifeboat drills.

Download the report in pdf format at **https://bit.ly/3Gmx7sv**.

Safer Seas Digest 2022 published by the NTSB

Published on the IIMS website on 6 November 2023

The National Transportation Safety Board (NTSB) has published its Safer Seas Digest 2022. In the digest, NTSB highlights the most important lessons learned from 29 maritime tragedies that took place in 2022. Safer Seas Digest 2022 details the lessons learned from these maritime tragedies involving capsizings, contact, collisions, fires, flooding and groundings.

Download the digest in pdf format at **https://bit.ly/3QYWkhx**.

MPV Everest engine room fire report published

Published on the IIMS website on 27 November 2023

The Australian Transport Safety Bureau (ATSB) has published an investigation report into the Bahamas-registered, 145m multi-purpose vessel MPV Everest engine room fire, which suffered a fire in the port engine room.

Download the report in pdf format at **https://bit.ly/3T3XQSi**.

Fishing vessel FREYJA: Report released by BSU after fire in engine compartment

Published on the IIMS website on 28 November 2023

The fire on board the fishing vessel FREYJA resulted in the destruction of most of the boat. The fire-induced foundering of the vessel made it impossible to identify usable evidence of the cause of the fire or the exact starting point of its development during the investigation of the wrecked parts.

Download the report in pdf format at **https://bit.ly/3T6rjLd**.

Crude tanker S-Trust fire caused by lithium-Ion battery is finding

Published on the IIMS website on 28 November 2023

Investigators found the remains of three batteries (one nickel-metal hydride and two lithium-ion) on the communications table. The single nickel-metal hydride battery (all of its six cells) was intact; one of the lithium-ion batteries (both cells) was found intact in the remains of the chargers (one nickel-metal hydride charger and one lithium-ion charger). Investigators only found components of the second lithium-ion battery (a two-cell battery).

Download the report in pdf format at **https://bit.ly/3utRpgT**.

MPC

THE MARITIME PROFESSIONAL COUNCIL OF THE UK

Promoting excellence in professional maritime standards

The purpose of the **Maritime Professional Council of the UK** is:

- To promote the professionalism and esteem within the British Merchant Navy and to those organisations directly concerned with the sector.
- To provide a central point from which professional opinion on maritime matters can be offered to the Maritime Community, Industry, Government and the Media.
- To provide independent expert advice and guidance based on our combined professional knowledge and experience unhindered by any financial or commercial interests.
- To provide guidance to regulators and employers on the professional training standards adequate for our maritime professionals.maritime standards

www.mpc-uk.org

Over the next few pages, we share details of a series of new worldwide regulations that came into force last year, as well as looking ahead to some of those set to become law in 2024.

Regulation news published on the IIMS website in 2023

New International Code of Safety for Ships Carrying Industrial Personnel

Published on the IIMS website on 13 December 2022

The IMO has adopted a new mandatory International Code of Safety for Ships Carrying Industrial Personnel (IP Code), anchored in a new SOLAS Chapter XV. The code enters into force on 1 July 2024 and enables cargo ships and high-speed cargo craft to transport and accommodate industrial personnel working offshore. A growing offshore energy sector, including renewable energy construction projects, has triggered the need for clear requirements to facilitate the safe and efficient transfer of technicians serving offshore installations.

Read the full article at **https://bit.ly/3YXKmbq**. Or scan the QR code.

New law will improve DUKW boats' safety, says NTSB chair

Published on the IIMS website on 5 January 2023

National Transportation Safety Board (NTSB) Chair, Jennifer Homendy, has welcomed maritime safety improvements in the James M. Inhofe National Defense Authorization Act for Fiscal Year 2023, which the President signed into law at the end of last year. The legislation advances NTSB recommendations for amphibious vessels known as DUKW boats and requires the U.S. Coast Guard to provide an initial response to new NTSB recommendations within 90 days.

Read the full article at **https://bit.ly/3ZpcBQ8**. Or scan the QR code.

Reckless UK jet skiers to face prison and unlimited fines thanks to law change

Published on the IIMS website on 18 January 2023

New legislation is being introduced on 31 March 2023 to crack down on the dangerous misuse of watercraft such as jet skis, with the Maritime and Coastguard Agency (MCA) being granted more powers to prosecute perpetrators of accidents.

Read the full article at **https://bit.ly/3ZKgaAG**. Or scan the QR code.

Gibraltar updates its guidance for periodic servicing and testing of fire protection systems

Published on the IIMS website on 14 February 2023

The Gibraltar Maritime Administration has issued a revised Shipping Guidance Notice (SGN) regarding periodic inspection, testing, and maintenance of fire extinguishers, compressed gas cylinders, and fixed fire-extinguishing systems onboard Gibraltar registered vessels. This SGN superseded SGN 028, 028(a), and 028(b) and was published on January 26th, 2023.

Read the full article at **https://bit.ly/3IwhvnY**. Or scan the QR code.

IACS adopts new unified requirement on buckling strength assessment of ship structural elements

Published on the IIMS website on 15 February 2023

Ship operations take place in hostile and corrosive environments meaning that the structural strength of the ship's hull may deteriorate with time leading to buckling or structural instability. Buckling has long been recognised as one of the main modes of failure of ship structural elements and IACS has, for many years, had in place a number of Resolutions to address this.

Read the full article at **https://bit.ly/3k3di1V**. Or scan the QR code.

BV issues rules for the classification of harbour equipment

Published on the IIMS website on 23 March 2023

This Rule Note gives the requirements for construction and classification of harbour equipment intended to be operated as floating dock, floating bridge, floating door and other storage or working unit floating in smooth stretches of waters. NR612 is to be applied for structural elements of the hull and for components of the machinery and electrical installations of harbour equipment.

Click to download the new rules at **https://bit.ly/412lAGZ**. Or scan the QR code.

After two decades of negotiating UN adopts the historic new BBNJ agreement

Published on the IIMS website on 20 June 2023

The UN's 193 Member States adopted a landmark legally binding marine biodiversity agreement following nearly two decades of fierce negotiations over forging a common wave of conservation and sustainability in the high seas beyond national boundaries covering two-thirds of the planet's oceans.

Read the full story at **https://bit.ly/3uF01Bx**.

Canada introduces mandatory wastewater regulations for cruise ships with immediate effect

Published on the IIMS website on 28 June 2023

Citing the importance of strengthening Canada's environmental standards, government officials have announced that effective immediately they have moved from voluntary to mandatory measures governing cruise ship wastewater discharges.

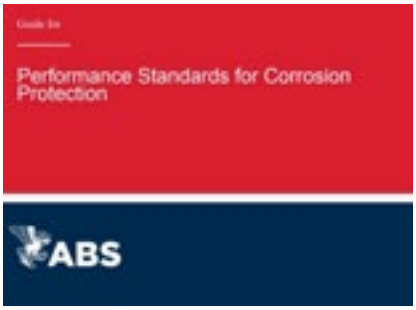
Read the full story at **https://bit.ly/3t1E3rN**.

Revised Port State Control procedures effective from January 2024

Published on the IIMS website on 7 August 2023

The Sub-Committee on the Implementation of IMO Instruments (III) 9th session took place 31 July to 4 August 2023 where, among other things, the draft amendments to the Procedures for Port State Control were finalised.

Download the summary report at **https://bit.ly/47zujEX**.



ABS publishes the January 2024 Edition of Guide for Performance Standards for Corrosion Protection

Published on the IIMS website on 22 September 2023

The American Bureau of Shipping has published the January 2024 Edition of Guide for Performance Standards for Corrosion Protection. Corrosion protection requirements are specified in SOLAS Chapter II-1/3-2 for protective coatings of dedicated seawater ballast tanks in all types of ships and protective coatings of double-side skin spaces of bulk carriers, and in SOLAS Chapter II-1/3-11 for protective coatings or corrosion resistance materials of cargo oil tanks of crude oil tankers.

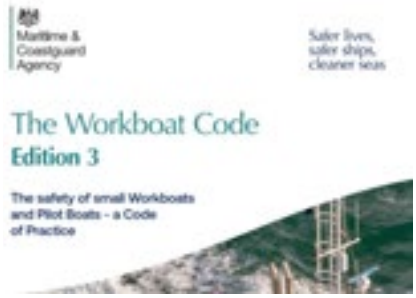
Download the standard at **https://bit.ly/3ERYSIP**.

Towing and mooring equipment regulation effective from January 2024

Published on the IIMS website on 21 November 2023

Amendments to SOLAS II-1/Reg.3-8 "Towing and mooring equipment" were adopted by the Maritime Safety Committee at MSC 102 and will enter into force on or after 1 January 2024. In particular, these amendments introduce new safety requirements for design, selection, inspection, maintenances and replacement of mooring and towing arrangements in conjunction with MSC.1/Circ.1175/ Rev.1, MSC.1/Circ.1619 and MSC.1/Circ.1620.

Download the details at **https://bit.ly/3RkVXPK**.



MCA Workboat Code edition 3 becomes law

Published on the IIMS website on 28 November 2023

Following many months of protracted discussions and consultation earlier this year, Workboat Code edition 3 is set to become law from 13 December 2023. From this date onwards this Code must only be used for new workboats and pilot boats.

Download the new code at **https://bit.ly/40VL3Df**.

Amendments to shipping regulations from December 2023 onwards

This article offers information and an overview of various amendments which have either just become regulations, or which will do so over the coming months.

IMSBC Code - December 2023

Adopted by MSC 105.

Updates to the International Maritime Solid Bulk Cargoes (IMSBC) Code, to include new definitions (including an updated definition for group A cargoes), references and requirements for cargoes which may undergo dynamic separation. Section 7 will be amended to cover cargoes that may liquefy or undergo dynamic separation.

SOLAS Chapter IV amendments - January 2024

Modernisation of the Global Maritime Distress and Safety System (GMDSS). Adopted by MSC 105.
The Global Maritime Distress and Safety System (GMDSS), adopted in 1988, has been subject to review and modernisation with the aim to adapt to modern communication systems and remove carriage requirements for obsolete systems. MSC 105 adopted SOLAS amendments to modernize the GMDSS requirements, as well as consequential amendments to the High-Speed Craft (HSC), Special Purpose Ships (SPS) and Mobile Offshore Drilling Units (MODU) Codes.

SOLAS records of equipment, FSS code, IGF code and LSA code - January 2024

Adopted by MSC 101.

Amendments to the appendix to the annex to the 1974 SOLAS, concerning the addition of a footnote to Forms C, E and P in the Records of Equipment. Amendments to chapter 15 of the International Code for Fire Safety Systems (FSS Code), relating to inert gas systems.

Amendments to parts A and A-1 of the International Code of Safety for Ships using Gases or other Low-flashpoint Fuels (IGF Code), including those relating to regulations on loading limit for liquefied gas fuel tanks, regulations for fuel distribution outside of machinery space, regulations for internal combustion engines of piston type and fire protection for fuel storage hold space; and amendments relating to the protection of the fuel supply for liquefied gas fuel tanks, aimed at preventing explosions.

Amendments to chapters IV and VI of the International Life-Saving Appliance Code (LSA Code), relating to general requirements for lifeboats and launching and embarkation appliances.

SOLAS Chapter II-1 - Towing and mooring equipment - January 2024

Adopted by MSC 102.

Amendments to chapter II-1 of the International Convention for the Safety of Life at Sea (SOLAS) related to towing and mooring. The amendments to SOLAS regulation II-1/3-8 (Towing and mooring equipment), require appropriate and safe-to-use designs of mooring arrangements, and introduce a maintenance and inspection regime, as well as proper documentation.

Related guidelines were also adopted, covering the design of mooring arrangements and the selection of appropriate mooring equipment and fittings for safe mooring; and inspection and maintenance of mooring equipment including lines; as well as revised guidance on shipboard towing and mooring equipment. Amendments to parts B-1, B-2 and B-4 of SOLAS chapter II-1 related to watertight integrity requirements.

SOLAS Chapter II-1 - Water level detectors on multiple hold cargo ships other than bulk carriers and tankers - January 2024

Adopted by MSC 103.

New SOLAS regulation II-1/25-1 requiring water level detectors on multiple hold cargo ships other than bulk carriers and tankers.

SOLAS Chapter III - Survival craft embarkation and launching arrangements - January 2024

Amendments to SOLAS regulation III/33 and the LSA Code, aiming to remove the applicability of the requirements to launch free-fall lifeboats to test their strength with the ship making headway at speeds up to 5 knots in calm water on cargo ships of 20,000 GT and above.

FSS Code Chapter 9 - Fixed fire detection and fire alarm systems - January 2024

Chapter 9 of the International Code for Fire Safety Systems (FSS Code) relating to fault isolation requirements for individually identifiable fire detector systems installed in lieu of section identifiable fire detector systems on cargo ships and passenger ship cabin balconies; and clarifying the acceptability of less complex and costly section identifiable fault isolation for individually identifiable fire detector systems on cabin balconies; and clarifying the acceptability of less complex and costly section identifiable fault isolation for individually identifiable fire detector systems.

Revised Annexes to the International Convention on Load Lines - January 2024

Adopted by MSC 104.

A minor amendment to chapter II (Conditions of assignment of freeboard), as well as amendments to chapter III (Freeboards) of annex I (Regulations for determining load lines) of Annex B to the 1988 Load Lines Protocol, concerning watertight doors on cargo ships, and associated amendments concerning watertight doors on cargo ships to chapter 2 (Ship survival capability and location of cargo tanks) of the International Code of the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code).

IMDG Code - January 2024

Adopted by MSC 105.

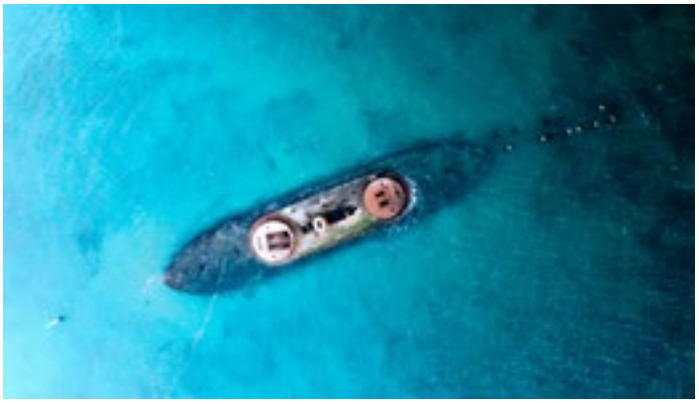
Updates to the International Maritime Dangerous Goods (IMDG) Code in line with the updates to the United Nations Recommendations on the Transport of Dangerous Goods, which set the recommendations for all transport modes. Contracting Governments to the SOLAS Convention are invited to apply the amendments from 1 January 2023 on a voluntary basis.

Revised FAL Convention - January 2024

Adopted by FAL 46.

Amendments to the Facilitation (FAL) Convention which will make the single window for data exchange mandatory in ports around the world, marking a significant step in the acceleration of digitalization in shipping. Other amendments adopted include lessons learned from the COVID-19 pandemic and add new and amended Recommended Practices to prevent corruption and illicit activities in the maritime sector.

Mandatory Single Window - The amendments update the provisions of the FAL Convention on mandatory electronic data exchange in ports for ship clearance. The amendments to the annex of the Convention will make it mandatory for public authorities to establish, maintain and use single window (SW) systems for the electronic exchange of information required on arrival, stay, and departure of ships in ports.



MARPOL Annex I - watertight doors - January 2024

Adopted by MEPC 78.

Chapter 4 – Requirements for the cargo area of oil tankers.

MARPOL Amendments - Annex I, II, IV, V, & VI - May 2024

Adopted by MEPC 79.

Mediterranean Sea Emission Control Area for Sulphur Oxides and particulate matter - designation of Mediterranean Sea, as a whole, as an Emission Control Area for Sulphur Oxides and Particulate Matter, under MARPOL Annex VI. In such an Emission Control Area, the limit for sulfur in fuel oil used on board ships is 0.10% mass by mass (m/m), while outside these areas, the limit is 0.50% m/m.

Mandatory garbage record books for smaller ships - amendments to MARPOL Annex V to make the Garbage Record Book mandatory also for ships of 100 gross tonnage and above and less than 400 gross tonnage. This extends the requirement for mandatory garbage record books to smaller ships, which will be required to keep records of their garbage handling operations, namely discharges to a reception facility ashore or to other ships, garbage incineration, permitted discharges of garbage into the sea, and accidental or other exceptional discharged or loss of garbage into the sea. The move supports the implementation of IMO's Strategy and Action Plan to address marine plastic litter from ships.

Protecting seas in the Arctic - regional arrangements for port reception facilities - amendments to the MARPOL annexes to allow States with ports in the Arctic region to enter into regional arrangements for port reception facilities. The amendments relate to MARPOL Annexes I (oil), II (noxious liquid substances), IV (sewage), V (garbage) and VI (air pollution).

EEXI, CII, and rating values - amendments to appendix IX of MARPOL Annex VI on the reporting of mandatory values related to the implementation of the IMO short-term GHG reduction measure, including attained EEXI, CII, and rating values to the IMO Ship Fuel Oil Consumption Database (IMO DCS).

Fuel flashpoint in bunker delivery note - amendments to appendix V of MARPOL Annex VI, to include the flashpoint of fuel oil or a statement that the flashpoint has been measured at or above 70ºC as mandatory information in the bunker delivery note (BDN). 1 July 2024 MARPOL HFO in Arctic waters prohibition Adopted by MEPC 76.

Entry into effect of amendments to MARPOL Annex I (addition of a new regulation 43A) to introduce a prohibition on the use and carriage for use as fuel of heavy fuel oil (HFO) by ships in Arctic waters on and after 1 July 2024. The prohibition will cover the use and carriage for use as fuel of oils having a density at 15°C higher than 900 kg/m3 or a kinematic viscosity at 50°C higher than 180 mm^2/s.

The International Marine Contractors Association

The International Marine Contractors Association (IMCA) is a leading trade association representing the majority of contractors and the associated supply chain in the offshore marine construction industry worldwide.

Their members play a key role in the offshore oil, gas, and renewable energy industry sectors. Principally, this is through the engineering, procurement, construction, and installation of offshore wind farms and hydrocarbon production facilities, together with the ongoing life of field support and maintenance requirements of these assets. IMCA runs the successful eCMID inspection programme, accredited on their behalf by the Marine Surveying Academy, which encompasses a wide range of specialist vessel types from anchor handling tugs to jack-up barges.

IMCA was formed in 1995 through the merger of the Association of Offshore Diving Contractors (AODC) established in 1972, and the Dynamically Positioned Vessel Owners Association (DPVOA) established in 1989. IMCA uses its strong technical and safety focus to develop comprehensive best practice operating standards for the industry to improve its performance.

IMCA Safety Flashes are released at regular intervals each year. Current and back copies of safety flashes can be found at **https://bit.ly/3nqy9cX**.

The next few pages are dedicated to some of the safety reports issued in 2023 that are of most relevance to marine surveyors and vessel inspectors.

Near miss: dropped object during lifeboat testing

During launch testing of a lifeboat, a turnbuckle and shackle weighing 7kg fell 23m from the davit onto the boat, landing within a metre of a worker hooking up the falls at the lifeboat hatch. The worker was physically unharmed; there was some cosmetic damage to the lifeboat.

What went wrong?

There was a mechanical failure – the turnbuckle was of a "closed" design that did not allow visual inspection of the thread engagement through the buckle. The threaded end of this turnbuckle was just 13cm and had one thread securing it into the buckle (see location of nut in illustration) on the threaded end. The bottom end was lost at sea.

Davit hook failures

A member reports two separate instances where a workboat davit hook, and life raft davit hook components, have failed.

Incident 1: During a weekly inspection of lifesaving equipment, the workboat davit hook on one vessel failed resulting in the hook releasing and dropping the workboat to the sea. No persons were in the workboat at the time and there were no injuries. However, the workboat itself was badly damaged.

Incident 2: A subsequent inspection of similar davit hooks on a sister vessel found the top shaft screw had sheared on a life raft davit hook, with the nut having dropped to deck. The shaft remained in place, holding the hook in position.

Image 1 - Davit Hook failed, releasing and dropping the workboat (vessel 1)

Image 2 - Davit Hook Top Shaft failed (vessel 2)

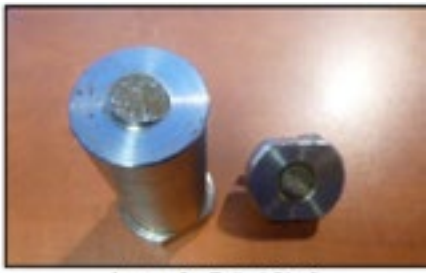


Image 3 - Failed Shaft (vessel 2)

Fire-fighting equipment in poor condition

Several 50kg wheeled dry powder fire extinguishers on board a vessel were found to have low pressure and heavy signs of corrosion. This was discovered during an audit walk-around by shore-based personnel.

Fire extinguishers being absolutely crucial safety equipment on a vessel, they should be maintained to the very highest standards in full readiness for use in an emergency. Regular thorough inspection of fire-fighting equipment to verify that this is so, is a regulatory requirement in some countries including the UK.

Fire extinguisher failed during pressure testing

An IMCA member reported an incident involving the failure of a 5kg CO2 fire extinguisher during hydrostatic pressure testing. The extinguisher, rated to 200bar, was being tested to a pressure of 300bar. The incident occurred when the test pressure reached 196 bar. The extinguisher was 13 years old. No-one was harmed.

General Wear and Tear: Over time, fire extinguishers are subjected to various environmental factors and conditions that can lead to wear and tear. This wear and tear may include corrosion, stress, or weakening of materials due to exposure to temperature fluctuations and external elements. It is essential to regularly inspect and maintain fire extinguishers to ensure their integrity.

Uncertified bosun's chairs

An IMCA member conducting management visits to vessels discovered three separate cases where "Bosun's Chairs" or similar support structures for working at height activities related to painting and repair works, had been fabricated by crew from wooden boards and ropes.

It should be noted that using uncertified fall arrest equipment, including a "Bosun's Chair", can pose significant hazards and risks to the user. Fall protection equipment, such as harnesses, lanyards, and anchors, should always be sourced from a reputable manufacturer, appropriately certified, and in accordance with local regulatory requirements.

Fire in diesel generator following tests

There was a small fire in the engine room on a vessel in port. The incident occurred when a diesel generator was being maintained by a third-party maintenance team. On completion of a change of alternator bearings, the generator was tested at idling speed, and no problem was found. But when the generator was tested at operational speed, after a few minutes fire came out of the non drive end exciters. The alarm was raised; the diesel generator was brought to an emergency stop and the fire was put out with an extinguisher.

Incompatible hydraulic hose blistered during use

Hose with application information

Improper use and application of high-pressure hoses

The United States Bureau of Safety and Environmental Enforcement (BSEE) has published Safety Alert 465 relating to the improper use and application of high-pressure hoses.

During a recent offshore inspection, a BSEE inspector observed operator personnel installing a 30m high pressure hose, with a Maximum Working Pressure (MWP) of 5000 psi, to test pressure safety valves on pipeline pumps. The hose used was designed for hydraulic fluid and was not suitable for high-pressure nitrogen; when nitrogen gas at 2500 psi was injected into the hydraulic hose, the hose blistered, allowing nitrogen gas to leak.

Clogged tumble-dryer exhaust fan – potential for fire

During a weekly inspection of the laundry room on a vessel, rags and lint twisted together were found in the exhaust fan of one of the dryers. Further investigation revealed more accumulated lint in the dryers' outlet exhaust pipe. When the end of the outlet pipe was removed to check the inside, it was found to be almost completely blocked with lint. It would only have taken a small spark, short circuit or static electricity inside the drying machine for there to have been a fire.

Blocked emergency exit hatch

An engine room emergency exit hatch could not be opened. The emergency exit hatch providing egress from the engine room to the vessel's main deck on the starboard side at the stern, was found blocked during the Master's routine inspection/walkaround. The hatch could not be opened from the engine room compartment.

It was discovered that the hatch was blocked by wire ropes left on top of it during recent spooling works on the main deck area. These activities had been observed on deck, as part of anchor handling preparation process conducted by a contractor party. The used wires left on top of emergency hatch was not noticed by the deck crew.

Uncertified lifting gear found in use

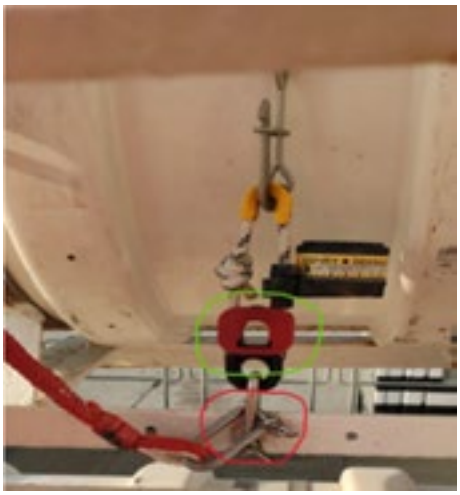
A number of shackles and other lifting equipment were observed in use onboard a vessel with no certification or inspection reports available. Some equipment was colour coded by the crew and deemed as being in good condition; other equipment was not included in the vessel lifting gear register, nor was it colour coded. Further investigation revealed that lifting equipment had been left onboard and not removed after the end of the previous project, on which client-supplied lifting equipment was used.

Company lifting equipment inspection processes were not followed: "Authorized competent person to conduct the lifting gear inspection process on an 6 monthly basis with further issue of inspection report."

Life raft secured incorrectly on cradle

During an onshore visit to a vessel, it was observed that a life raft was attached/connected incorrectly to the life raft cradle. The life raft painter rope was connected to the cradle instead of to the weak link on the Hydrostatic Release Unit.

It was installed incorrectly and there was no post-installation check carried out. What inspection there had been, had been a visual check of condition with no check of whether the life raft was or was not correctly installed and secured.



Gantry crane wire parted causing injury

A gantry crane hoist wire parted causing a load to drop, causing injury and damage to equipment. Engineers were overhauling a large diesel generator, using the engine room's overhead gantry crane to lift a 1200kg cylinder liner into position above the engine. This required the electric winch motor to raise the crane hook to its maximum lift height, at which point the crane's hoisting wire suddenly parted. The suspended cylinder liner fell onto the engine, causing damage to both pieces of equipment, and struck the left foot of an engine room fitter who was standing nearby. The crew member was treated in hospital for a broken toe.

Battery disconnect switch

switchboard

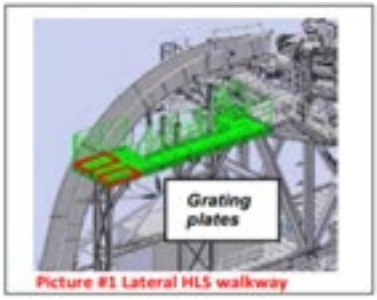
damaged switch

Battery explosion during routine maintenance

A chief engineer suffered minor injuries in a battery explosion when disconnecting a cable from the battery. The incident occurred onboard a harbour tug. The chief engineer was planning to replace a battery disconnect switch that had failed. While disconnecting the positive terminal, both terminals were inadvertently short-circuited with a spanner and the battery exploded causing injuries to the chief engineer. Operations were stopped, first aid was given and the tug returned alongside. After assessment at hospital the chief engineer returned to the tug with only minor injuries. The tug was out of service for four hours.

Unprotected openings in floor grating – work stopped

Two workers removed grating panels at height on a horizontal lay system, in order to gain access to lift points for further removal of a lateral walkway section. The removed grating created an open hole with the likelihood that someone could have fallen through it. None of the team involved were wearing the required PPE for working at height and no tool lanyards were used. The area around the horizontal lay system had not been barricaded. The activity was immediately stopped. No-one was injured; no dropped object resulted.



Picture #1 Lateral HLS walkway

Picture #2 Stern grating plates removal positions (at the time of the Stop the Work Authority)

Electrolytic corrosion: failure of fire hose couplings

During routine pressure/leak testing, a fire hose fitting failed at the neck of the stub inserted into the hose. As part of annual testing of the fire hydrant hoses, two crew were assigned to conduct leak testing of the main deck fire hoses. A Number 3 hose (20m x 52mm (2")) was connected to a fire hydrant valve and nozzle and visual inspections of the hose and valve conducted prior to testing. During the test it was noted that one end of the fire hose had disconnected. The test was stopped, and further investigation was conducted.

MAIB: Lithium-ion battery fire

Water got into Lithium-ion batteries in equipment for use subsea, causing an explosion. Inspection of the equipment after a successful deployment identified a potential leak from one of the metal tubes. However, other work priorities meant that the technician in charge of the equipment decided to leave it in its storage area and delay the removal and further examination of the battery. Seven hours later, the vessel's bridge team heard a loud bang followed by a fire detection system warning for the deepwater equipment storage area. The attending crew members discovered a scorched and damaged metal battery tube lying on the deck. There were no injuries.

Job stopped safely: safe working load limits exceeded

Work was stopped during the practical evaluation portion of rigger training in an onshore industry. It was discovered that the application of eye-nuts were not consistent with their intended use. The task was to install rigging and lift a something using a 4-leg bridle chain with adjustable length legs. The attachment points, for the 4-leg bridle chain to the load were four machined eye-nuts (see illustration). A student questioned the safe working load limit of the 1/2" eye-nut, which was assumed to be installed by the manufacturer of the item being lifted. After researching the eye-nut, a note was found accompanied with the load chart stating that the eye-nut installed was "for in-line picks only." At that point, work was stopped. The rigging plan to be used involved rigging on the eye-nuts at a 60° angle. Not only were the eye-nuts not being used as intended, but additionally when picking with sling-angles, load capacities are reduced, which would have put the eye-nuts above their safe working load limit.

High potential near miss: Crane part fell to deck

During a vessel transit during which the crane was unused in its boom rest, a crew member observed a piece of metal debris lying under the crane boom tip. It was discovered that one of the three Crane Whip Line Block Catcher Limit Switches (3.6kg) had fallen off and tumbled 6.5m to the deck. There were no injuries.

Location of the limit switch at the time when it was noticed

The following was noted:

- Inadequate design verification – the cross-sectional area of the broken plate was not sufficient to bear the stress applied to the limit switch;
- The bolt spring was acting as a strong point and was creating unbalanced forces on the limit switch plate;
- There was insufficient preventive maintenance or inspection of this area;
- The equipment was not being used as it was originally designed;
- The maintenance schedule recommended by the crane manufacturer, was not adequate.

Maintenance and control of fire doors

An IMCA member discovered instances of mandatory fire doors onboard their vessels being in a poor state of maintenance, and in some cases modified to alter the closing mechanism or tied back to prevent closing.

It was noted that in recent months there have been repeated internal and external audit findings related to inadequate maintenance, unapproved modification and the incorrect functioning of fire doors onboard their vessels. This has included Port State Control Inspection deficiencies that have raised safety concerns and been communicated to the Flag State Authorities.

Inadequate maintenance and unapproved modifications reduce the effectiveness of fire and smoke boundaries significantly, with potentially serious consequences during a fire and increased risk to crews and assets.

Fire Doors and Closing Mechanism

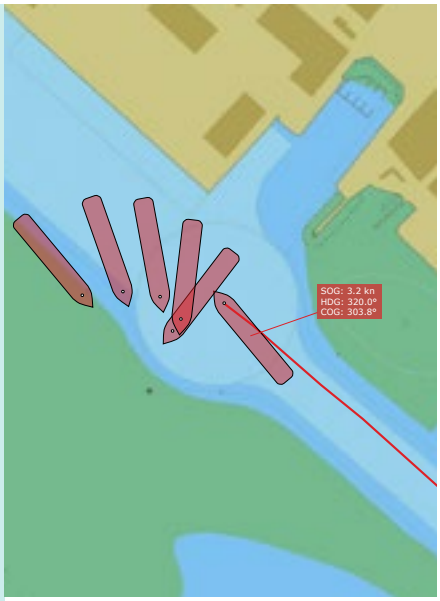
Case studies follow extracted from the MAIB Safety Digest April 2023

MAIB
MARINE ACCIDENT INVESTIGATION BRANCH

SAFETY DIGEST

Lessons from Marine Accident Reports

1/2023



Featuring introductions by Ashley Nicholson MBE | Hazel Bennett | Andrew Flanagan

Too hot to handle

passenger vessel | accident to person

The propulsion engine of a small coastal passenger vessel began to overheat while on passage to its next port. One of the vessel's engineers stopped the engine and cleaned the sea water strainer, which had become clogged with debris and was restricting the flow of cooling water to the engine. The engineer also noticed that the engine's cooling system expansion cap (Figure 1) looked loose; he protected his hand with a rag and attempted to tighten the cap, which suddenly blew off. The engineer responded by instinctively turning his back to the unit but was sprayed with scalding hot water from the engine's pressurised cooling system.

The engineer sought assistance on board and was placed in a shower to cool the extensive burns to his back while the emergency services were called. He was evacuated ashore by a Royal National Lifeboat Institution (RNLI) lifeboat, from which he was transported to a local hospital and treated for superficial burns.

It was later found that the securing lugs for the engine cooling system expansion cap were bent (Figure 2), which had possibly prevented the cap from sealing correctly.

Figure 1: Expansion cap in the fully closed position

Figure 2: The bent securing lug

The Lessons

1. **Observe →** Always allow an engine to cool down before attempting to conduct maintenance on a pressurised cooling system.

2. **Risk →** Ensure you refer to the risk assessments. These exist to alert operators to potential hazards and the mitigation measures that should be implemented before the task is undertaken. The risk assessment method statement is a clear explanation of how you are going to manage the identified risks.

3. **Procedure →** The company issued a safety flash that highlighted the dangers identified in this case. Familiarise yourself with manufacturers' manuals and ensure that you know how to complete a task correctly and safely.

It has to go somewhere!

oil tanker | risk assessment

An oil tanker was anchored off the south coast of the UK when an auxiliary room fire alarm activated. The ship's firefighting team went to the engine room to investigate and discovered smoke emanating from an overheating sea water pump (see figure); they stopped the pump, allowed it to cool down and found that there was little damage.

The pump supplied cooling water to several items of machinery. Three days before the incident, one of the ship's engineers had closed the valves to one piece of the machinery in preparation for planned maintenance but did not know that all of the other pieces of equipment were also isolated.

The cooling water had nowhere to go when the valves were closed and there was no flow through the cooling pump, which caused its mechanical seal to gradually overheat and generate smoke.

Figure: The sea water pump

The Lessons

1. **Communicate →** Maintenance should be effectively planned and communicated. It is vital to consider the effects of isolation on running equipment that may not be directly related to the job in hand. The use of isolation logs and lock-out/tag-out notices can help engineers monitor the status of their systems and prevent mishaps.

2. **Aware →** All of the human senses play a part in the detection of issues that electronic or mechanical sensors may fail to pick up. The application of touch, smell, sight and sound while moving through a space are powerful tools in the armoury of a watchkeeping engineer and provide early warning of a developing problem.

A nerve-racking accident

cargo vessel | accident to person

A stevedore suffered nerve damage, sickness and disorientation after handling cans of fumigant while unloading sweet potato pellets from a general cargo vessel. The fumigant was later identified as aluminium phosphide. It had been placed among the bags of cargo by the vessel's crew during loading to control insect infestation. The fumigant had not been deployed by specialist fumigators due to COVID-19 access restrictions that were in force at the loading port.

The untrained crew incorrectly deployed the fumigant, which did not fully volatilise or disperse during the 5-month voyage to the cargo's discharge port and so presented both a fire hazard and poisoning risk. The crew did not record the use of fumigant on board and the discharge port was unaware of its presence among the cargo. The ship's cargo holds were tested for oxygen levels, carbon dioxide, carbon monoxide, hydrogen sulphide and lower explosive limit before the stevedores discharged the cargo. When the stevedores started working in the holds they soon began to find the cans of fumigant among the bags of sweet potato pellets (see figure). The cans were marked with hazard symbols and the stevedores showed them to their supervisor; however, the cargo work was not suspended for several hours, by which time some of the stevedores had been in contact with the aluminium phosphide. The next morning one of the stevedores became unwell and required hospital treatment for sickness, disorientation and nerve damage to his hand.

Several hundred cans of fumigant were later removed from the cargo vessel's holds by a specialist contractor. It took several months for the injured stevedore to recover and be fit enough to return to work.

The Lessons

1. **Qualified →** Fumigation of a ship's cargo is a specialised operation that should not be undertaken by untrained crew or stevedores.
2. **Risk →** Before unloading operations start, fumigated cargo holds must be tested by qualified fumigators and any residual fumigant removed. Port operators are reminded to be vigilant for potentially risky cargoes and to check with ship operators whether fumigants have been used on board.
3. **Hazard →** Cargo holds can be a hazardous environment; stop work if you find something unusual and check if it is safe to proceed.

Figure: Stevedores unloading the bags of sweet potato pellets and (inset) a can of fumigant

4. **Equipment →** Appropriate personal protective equipment (PPE), including coveralls, gloves, face masks and respirators, must be worn when handling fumigants.

5. **Procedure →** Masters, owners and charterers are reminded of the contents of IMO Circular MSC.1/Circular.1264 – *Recommendations on the Safe Use of Pesticides in Ships Applicable to the Fumigation of Cargo Holds*, which details the safe use of fumigants, measurement of fumigant levels on board ships and the responsibility to notify port authorities of the potential presence of fumigants on board.

A dizzying loss of control

tug | capsize

In the early hours of the morning, the master of a twin azimuth stern drive port tug ordered the main engines to be started and for the crew to "*Let go*" the mooring lines in preparation for meeting an inbound vessel. The tug had been laid alongside another tug at a floating pontoon.

After accepting propulsion control from the engineer in the engine room, the master struggled to break clear due to the strong tidal stream. To prevent a collision with the other tug, full astern was being used on both engines when the port propulsion unit alarm sounded and the tug began to spin clockwise to starboard, narrowly missing both the moored tug and the floating pontoon (Figure 1).

The tug continued its spin to starboard while the master tried to respond to the problem. The darkened bridge meant that it was difficult to see the azimuth direction indicators (Figure 2) as he attempted to arrest the spin. The port shaft revolutions indicator was not working and the master had to rely on the starboard shaft indicator for his information. He sounded the general alarm to warn the other two crew that he had a problem. Having let go as

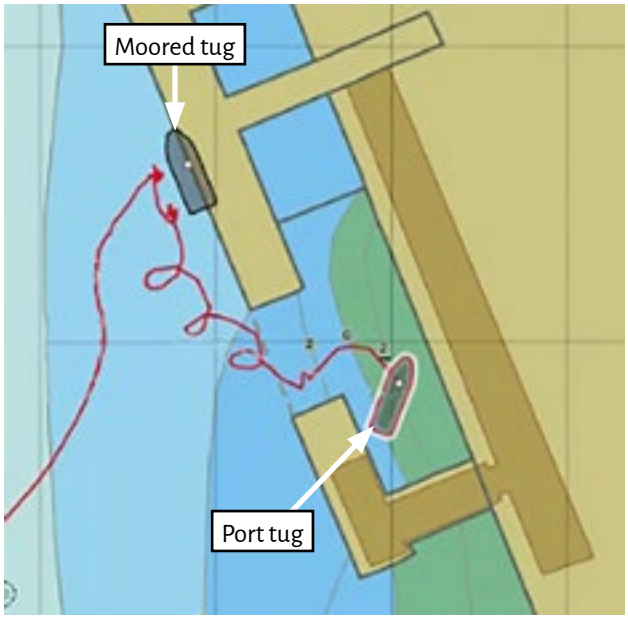


Figure 1: Uncontrolled track and final position of the port tug

The Lessons

1. **Check →** The qualified and experienced master, mate and engineer joined the tug 6 days before the incident and had completed nine jobs over 5 days, three of which occurred at night. Their regular tug was undergoing a refit and they had operated this tug infrequently over several years. However, the tug spun four times over a 4-minute period before being brought under control, demonstrating incomplete propulsion system operational knowledge and insufficient emergency response skills. The clockwise spin to starboard after the master went full astern on both propulsion units indicates that the master only had control of the starboard unit. Proper pre-departure checks of the propulsion system would likely have identified that control of the port propulsion unit had not been successfully transferred to the wheelhouse.

2. **Aware →** The vessel familiarisation forms for the master and chief engineer required detailed knowledge of the tug's propulsion systems and what actions to take in an emergency situation such as a blackout and loss of propulsion. The wheelhouse reflected the vessel's age and comprised several different types of controls, various means of portraying information and a range of different alarm and indicator methods. Each control function was fitted with a dimmer to adjust the brightness of the indicators at night. Familiarity with such an inefficient layout requires time and experience, particularly when working with dimmed indicators at night, and the master must maintain a good lookout. Familiarisation forms should be recognised for their training and safety benefits rather than considered an unnecessary hurdle before letting go the mooring lines.

Figure 2: The azimuth direction indicators

instructed, the mate returned to the wheelhouse and, to try and assist the master, operated the wheelhouse buttons to ensure they had correctly engaged when propulsion control was taken from the engine room.

The tug's bow made hard contact with an adjacent floating pontoon's handrails and pontoon air tank. Its port quarter then made heavy contact with a moored rigid inflatable boat (RIB), the impact of which caused the RIB to capsize and its landing stage to sink (Figure 3). The tug's stern and starboard side then rotated close to the shore before full propulsion control was regained and the master manoeuvred the tug out into the river.

The master informed the port's vessel traffic services (VTS) of the incident and advised the pilot on board the inbound vessel of the tug's propulsion fault. He then returned the tug to its berth for a closer inspection of the damage.

Figure 3: The capsized RIB

3. **Risk →** The azimuth directional indicators were hard to read due to the glass covers becoming less transparent with age. The port shaft indicator had failed a day earlier after an attempt to replace the internal lamps resulted in a broken indicator needle. A temporary needle repair was unsuccessful and the master, unable to adjust the brightness of the new lamps, resorted to covering the indicator with a piece of paper. A defect report submitted on the same day stated: *(Still) able to operate equipment* and *requires repair asap*. As a result, the master relied on the starboard shaft indicator for both shafts. Risk assessments are essential to identify the potential hazards arising from inoperative or ineffective propulsion controls and indicators and when to keep the vessel in operation or withdraw it from service for repairs.

4. **Communicate →** Many of the wheelhouse and engine room controls were labelled in Dutch and only a few had been relabelled in English. This, coupled with the crew's lack of familiarity with the vessel, exacerbated the potential for errors and misunderstandings. Incorrect assumptions about the meaning of a switch label can have expensive consequences.

An unfortunate fitting start to a new vessel

cargo vessel | fire

A recently built specialist cargo vessel was on passage when a temperature probe in the main propulsion system gearbox became detached from its fitting. Operating at 25 bar, the gearbox oil ejected the probe from the orifice followed by an oil jet that impacted engine room air supply trunking and sprayed a major part of the engine room (Figure 1), including one of the running main engines.

The gearbox low oil pressure alarm sounded on the bridge and within a few minutes the vessel's engineers had attended the engine room and declutched and stopped the engines. The master was informed of the extent of the oil spray and the vessel went to emergency stations; the designated firefighting crew got dressed and donned their breathing apparatus.

The oil had saturated the main engine exhaust lagging, which had started to smoke. Proactively, the engineers had prepared for ignition and brought wheeled foam fire extinguishers to the scene. A few minutes later, the oil-soaked lagging ignited but was quickly smothered in foam; subsequent small fires were similarly dealt with.

The vessel was able to make its way to port, where an investigation was started that involved the shipbuilder and gearbox manufacturer. Before the vessel could leave port, the contaminated lagging was replaced, electrical cable trays and affected electrical connections were cleaned and checked, various electrical motors were overhauled and the engine room was washed down.

The investigation identified that the temperature probe was held in place by a pipe compression fitting (Figure 2) that had not been fully tightened during the vessel build. Once the fitting slackened further, there was nothing to stop the oil pressure forcing the probe out of the gearbox.

The Lessons

1. **Action →** The crew responded well to an unexpected event that could easily have resulted in a major fire. Not only did they quickly go to emergency stations but they placed foam extinguishers near the oil-soaked engine so that lagging fires could be quickly dealt with. Knowing your emergency procedures and equipment pays dividends when a real situation occurs.

2. **Monitor →** New vessels always have snags, some of which only make themselves known once the vessel is underway. A heightened level of equipment monitoring during the first few months of a new vessel's life can catch some but not all; a good understanding of the different systems on board will therefore be vital in mitigating the consequences when the unexpected happens.

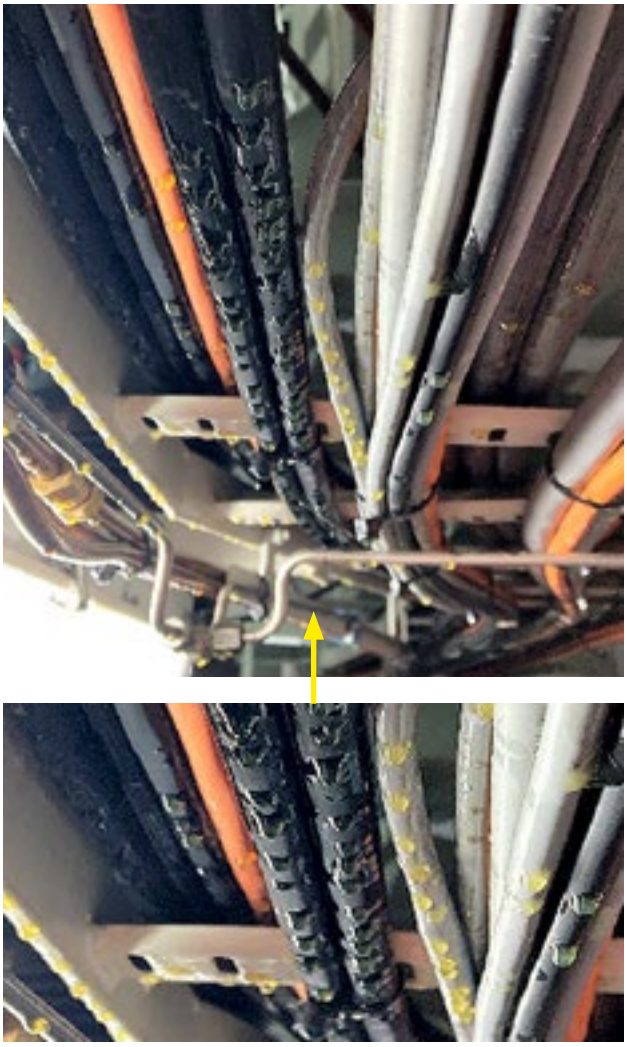


Figure 1: Oil dripping from engine room cables

Figure 2: The original temperature probe fitting

Figure 3: The new temperature probe fitting

3. **Equipment →** Although it was a marine gearbox, the design of the probe fitting was insubstantial in terms of the operating environment and the consequences of it coming loose. Poorly designed equipment increases the risk of injury to the crew and can force them into undesirable workarounds. In this case, the manufacturer produced a redesigned fitting and probe housing that would prevent reoccurrence and allow the probe to be changed while the propulsion system was working (Figure 3).

Li-ion +H_2O = explosion

deep-sea vessel | explosion

A specialist deep-sea vessel was using equipment capable of operating at extreme depths to conduct deepwater experiments, the on board power supply for which was provided by lithium-ion (Li-ion) batteries that were encased in several metal tubes attached to its framework.

An inspection of the equipment after a successful deployment identified a potential leak from one of the metal tubes. However, other work priorities meant that the technician in charge of the equipment decided to leave it in its storage area and delay the removal and further examination of the battery.

Seven hours later, the vessel's bridge team heard a loud bang followed by a fire detection system warning for the deepwater equipment storage area. The attending crew members discovered a scorched and damaged metal battery tube lying on the deck (Figure 1).

Figure 1: Damaged battery tube

Examination of the battery tube indicated that sea water had leaked into the battery compartment (Figure 2) and contaminated the Li-ion battery, which caused pressurised gasses to build up and self-combust and resulted in a brief explosion. The remaining battery tubes were removed to a secure storage area for further checks.

Figure 2: Water ingress and damage

The Lessons

1. **Risk →** Li-ion batteries are both commonplace and a popular choice; a 1kg Li-ion battery can store the same amount of energy as a 6kg nickel metal hydride or lead acid battery. However, Li-ion battery failures do occur and have often resulted in fires that are difficult to extinguish.

2. **Hazard →** Lithium reacts intensely with water, which can corrode or damage the internal battery safety devices and cause it to overheat, ignite, rupture or leak. Salt water is far more conductive than fresh water, which means that the battery can discharge more quickly, and the electrical current will break down the salt by electrolysis, producing hydrogen and chlorine gas. Put simply, a Li-ion battery should not be exposed to water or moisture.

3. **Maintain →** A Li-ion battery that is found to be damaged or affected by water should not be used or charged. Remove the battery to a secure place where it can be monitored and potential spontaneous combustion can occur safely. In the event of a fire, use an ABC[1] or BC[2] powder fire extinguisher to put it out. Other methods include misting the fire with chemically exfoliated vermiculite or dousing it with large quantities of fresh water.

[1] Suitable for use with class A, B and C fires involving combustibles, flammable liquids and energised electrical equipment.

[2] Suitable for use with class B and C fires involving flammable liquids and energised electrical equipment.

Even screws need some tender loving care

car carrier | fire

A large car carrier suffered a fire inside the fuel purifier room while on passage. The crew evacuated the engine room, stopped the ventilation and closed the fuel supply to the engines before deploying the carbon dioxide (CO_2) fixed firefighting system. The bulkhead temperatures were monitored and the fire was declared successfully extinguished when these had reduced to a safe level. The vessel was left without power as a result of the fire and had to be towed into port for repair.

Subsequent inspection identified that this short but intense fire had caused severe damage to the fuel purifier room, including the purifiers, fuel booster modules, heaters, associated electrical plant and cabinets (Figure 1). The adjacent space deckhead wiring and electrical cabinets in the engine room had also been impaired, albeit to a lesser extent.

Examination of the equipment indicated that the fire had likely broken out due to gas oil spray emitted from a gas oil purifier system three-way

Figure 1: Fire-damaged fuel purifier room

The Lessons

1. **Action →** The crew's response to the rapid escalation of the fire prevented further widespread damage and risk to life and, despite being left without power, the vessel was able to be towed to port and eventually repaired. Knowing how to respond effectively to the outbreak of a fire is imperative to avoid potential devastation.

inlet fuel valve actuator (Figure 2). The actuator had become detached from the valve body and the whole assembly was severely damaged by fire and heat (Figure 3). Separation of the actuator and valve actuator spindle from the valve body allowed the fuel, operating at 2 bar pressure, to escape and spray over nearby heating and electrical equipment. On closer examination, the screws that secured the two parts of the actuator to the valve body were found to be slack.

Figure 2: Example of a fuel valve actuator

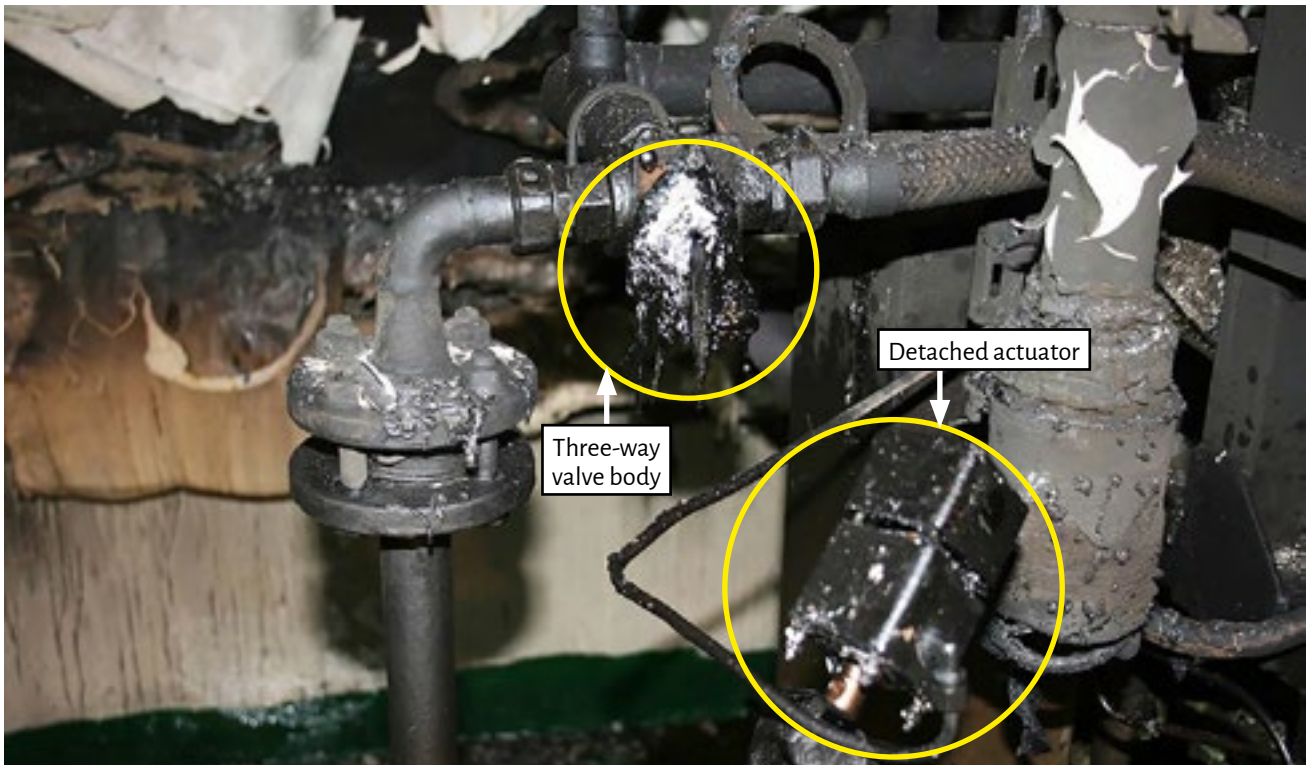


Figure 3: Fire-damaged fuel valve actuator

2. **Observe →** Vigilance during engine room rounds mitigates the risk of unwanted breakdowns. However, spotting loose screws on an actuator in a hot purifier space would test many of us. Seemingly insignificant components can have a considerable impact on crew and vessel safety; it is well worth applying a little tender loving care to check that even small parts such as these are correctly fitted and maintained.

MOB recovery is time critical

transfer vessel | man overboard

A crew transfer vessel in a northern European port had come alongside a cargo ship (Figure 1) to transfer two passengers and their luggage. The first passenger successfully climbed the pilot ladder (Figure 2) and boarded the cargo ship. The second passenger had started to ascend the ladder while the transfer vessel moved clear of it; as he continued to climb, first one foot and then the other slipped from the rung. Unable to either regain his footing or support himself, he fell from a height of 2m into the water between the two vessels.

The crew transfer vessel was immediately moved astern and its skipper continued to back it away from the cargo ship until the casualty could be seen in the water, drifting down the side of the ship's hull. His lifejacket had inflated correctly and he was floating, with his head supported clear of the water. The skipper of the transfer vessel called "Mayday" on very high frequency (VHF) channel 16. Meanwhile, the ship's crew threw a life ring and a separate line, which the casualty was able to grab hold of. They used the line to pull the casualty back along the hull towards a point close to where the pilot ladder would be lowered, ready to recover him onto it. However, the casualty was unable to climb the ladder after it was prepared and lowered and, despite a crew member descending the ladder to assist him, he lost his grip on both the ladder and the lines and once again drifted away along the ship's hull.

Figure 1: The transfer vessel alongside the cargo ship

The skipper of the transfer vessel decided to attempt a recovery and manoeuvred into a position from which his crew were able to securely catch hold of the casualty with a boat hook. The skipper then left the helm and assisted his crew to follow the vessel's man overboard (MOB) procedure and recover the casualty using a boarding ladder and davit. Despite being in the water for about 10 minutes, the casualty was able to walk to the waiting medical care when he was recovered ashore.

The Lessons

1. **Hazard →** On this occasion the casualty was successfully recovered; however, dependent on environmental conditions and the individual's health, 10 minutes is often the upper time limit to complete an MOB recovery before the victim becomes incapacitated by cold water. Even with the assistance of a crewman, the casualty quickly lost the ability to self-recover once the pilot ladder was lowered and had to rely on others to rescue him from the water.

2. **Risk →** The hazard of an MOB during crew/passenger transfers via pilot ladder requires risk mitigation such as the preparation of a detailed emergency response, conducting regular practical drills and discussing which vessel will take the lead in recovering the casualty. It may be too late to start thinking about MOB procedures when you or a colleague are in the water.

Figure 2: The cargo ship pilot ladder

3. **Equipment →** It almost goes without saying that the use and automatic inflation of the casualty's lifejacket was instrumental in keeping him afloat, minimising the expenditure of valuable energy and helping to manage the inevitable stress of suddenly being submerged in cold water. Without the lifejacket an increased level of medical intervention would have been likely. It is imperative that lifejackets are well maintained and correctly worn to increase the chances of a successful MOB recovery.

A cracking lesson

supply vessel | risk assessment

A supply vessel was in port and loading six containers of cargo in preparation for its next trip out to an offshore rig. Each container held about 7500 litres of liquid nitrogen.

The ship's crew suspended cargo operations for the night and were awoken early the next morning by a loud bang. The crew mustered on the bridge and saw that ice was forming on the deck beneath one of the nitrogen tanks, indicating a leak from the container (Figure 1).

The crew recognised that they were faced with a hazardous situation and stopped anyone going near the leaking nitrogen or into the spaces in the decks below it. A specialist was called in to conduct tests of the atmosphere to make sure it was safe.

The cargo deck was constructed from low carbon steel and, although suitable for shipbuilding, was not designed to withstand the very low temperature of -196°C that the evaporating nitrogen generated.

Steel becomes brittle as its temperature drops and when the deck cargo was removed the crew found that a 4m² area of deck plating and the supporting steelwork had cracked due to their exposure to the low temperature (Figure 2).

A post-incident inspection found that both the main outlet valve and the bleed valve on the nitrogen container, which was not locked, were slightly open and had allowed the nitrogen to leak out through the open bleed valve (Figure 3).

Figure 1: Icing of deck beneath nitrogen tank container

The Lessons

1. **Risk →** The carriage of cryogenic gases requires careful consideration of the risks they pose to materials. In this case the simplest hazard control, which was that of keeping the nitrogen in the tank designed to contain it, failed because the valves were unsecured and vulnerable to being knocked open.

2. **Action →** Once the crew had spotted the leak they made the right decision not to go dashing into areas where the atmosphere could be unsafe. Instead, they properly considered the risks before taking action.

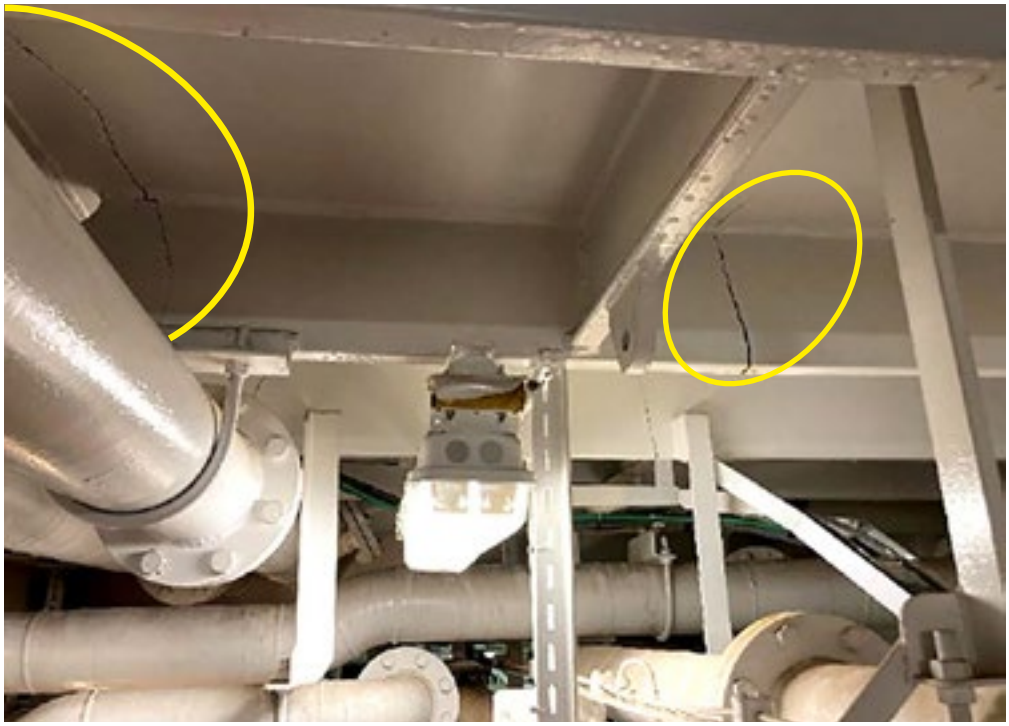


Figure 2: Cracks in the supporting steelwork

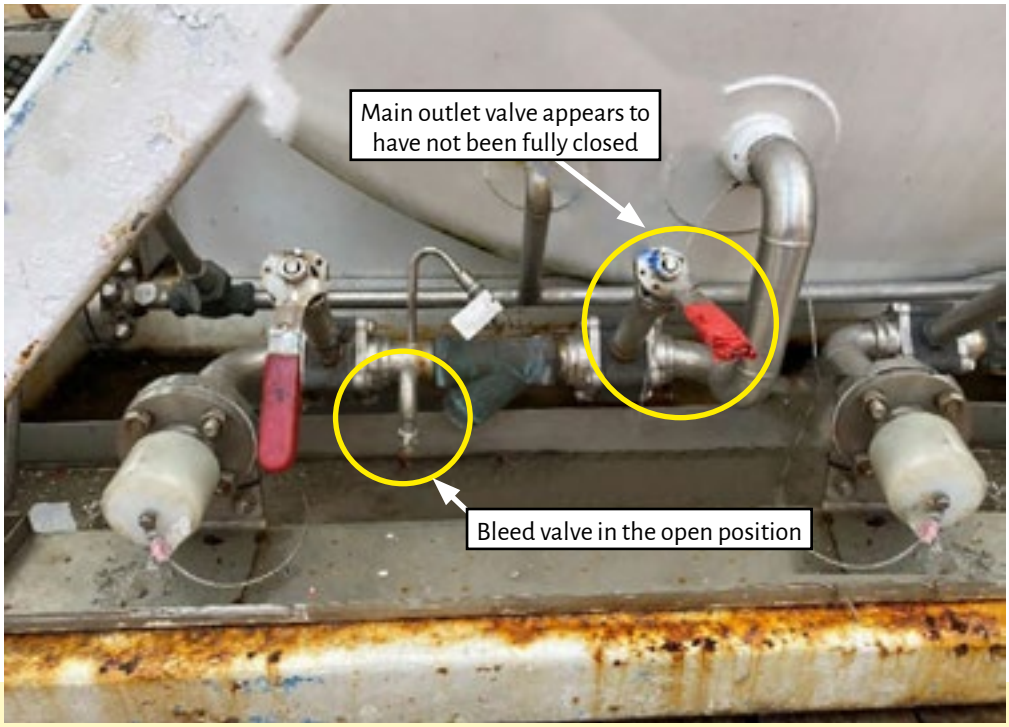


Figure 3: Tank outlet valves

3. **Monitor →** It is likely that the main outlet valve was knocked open when the nitrogen was loaded, and a long time passed before the leak was noticed. An inspection of the cargo once it was on board and an effective deck watch overnight could have identified the leak much sooner and prevented damage to the ship.

Nail your maintenance

potter | foundering

Early one grey and wet December morning, the owner of an 11-metre clinker built wooden potting vessel (see figure) arrived at the boat to discover that it had sunk overnight while securely moored alongside its regular quayside pontoon in its home port.

The 50-year-old vessel had been out of service due to bad weather and seasonal fishing patterns when, within 24 hours of the owner's last inspection, its watertight integrity failed and it was found submerged and resting on the seabed at a depth of 2 metres. The vessel had been checked at regular intervals while in use and when laid up; however, there had also been periods of 24 hours or longer when it was left unattended.

The wooden hull was fastened with nails, some of which the owner had identified in recent years as rusted below the waterline; these had been marked up and replaced when the vessel was lifted out of the water during its repair periods, although this had not taken place within the previous 12 months. The sunken vessel was eventually raised and the source of the leak was found to be failure of its hull due to a rusted and badly corroded nail.

Figure: The potting vessel

The vessel's electric bilge pumps were powered by its service batteries and activated by float switches. The reserve voltage held in these batteries was insufficient to power the bilge pumping system for longer than a few hours. The batteries were quickly drained of power when the water started to enter the hull during the night and the bilge pumps had stopped working before the owner arrived early the next morning.

The Lessons

1. **Check →** It is essential that unmanned vessels are checked at regular intervals either in person or by remote monitoring systems as this can help with the early detection of emerging issues such as water entering the bilges.
2. **Revise →** Consider alternative means of charging if a vessel is left unattended for lengthy periods without shore power, or generators to maintain its service batteries. The installation of a small solar panel power system or wind turbine generator could help to prevent depletion of the battery reserves that are used to power bilge pumping systems.
3. **Maintain →** Older vessels can be more susceptible to issues regardless of what material they are constructed from and so frequent out of water hull inspections are required to monitor their condition; faults will also need to be promptly rectified before the vessel is refloated.

Biting the hand that feeds you

sailing yacht | accident to person

Two family groups of experienced sailors chartered a yacht to sail around the west coast of Scotland and were looking forward to exploring remote islands and sailing in challenging conditions. On the evening of their first day, the genoa sail failed to stow easily and so one of the crew went forward to help rotate the furling gear and secure the sail.

The furling gear continued to be problematic on the second day and the same crew member needed to manually intervene every time the genoa sail was stowed. He noted that the line guard housing had started to work loose (see figure) but managed to operate the furling gear successfully enough with a bit of effort.

While out sailing on the third day the wind was due to pick up again and so the crew sought shelter in a secluded bay and set about stowing sails as they motored towards their destination. By this time the line guard around the furling gear had loosened further and the crew member once again went forward to help furl the genoa sail. As he rotated the furling gear the genoa sail suddenly released and started furling quickly, catching the crew member's fingers between the line guard and the drum. The pressure was intense enough to amputate the tips of the index and middle finger on his right hand.

The remote location of the yacht made it challenging for the crew to raise the alarm. They eventually contacted the coastguard but language difficulties and pronunciation of local landmarks made obtaining an exact location difficult. The injured crew member was eventually rescued and transferred to a hospital for treatment. The holiday had come to an abrupt halt.

The Lessons

1. **Maintain** → It can be tempting to ignore defects and make the most of precious holiday time. However, reporting problems to the charterer at the earliest opportunity can save everyone a deal of pain and heartache. Some repairs will be quick and allow a speedy return to the holiday, others may take much longer; the impact of avoidable injuries will last a lifetime. Be safe and get it fixed.

2. **Qualified** → The beauty of the remote Western Isles is counterbalanced by the fact that they are difficult to access and help is not always on hand. All crew must know how to raise a distress message and be able to clearly communicate the vessel location and nature of the problem to the coastguard.

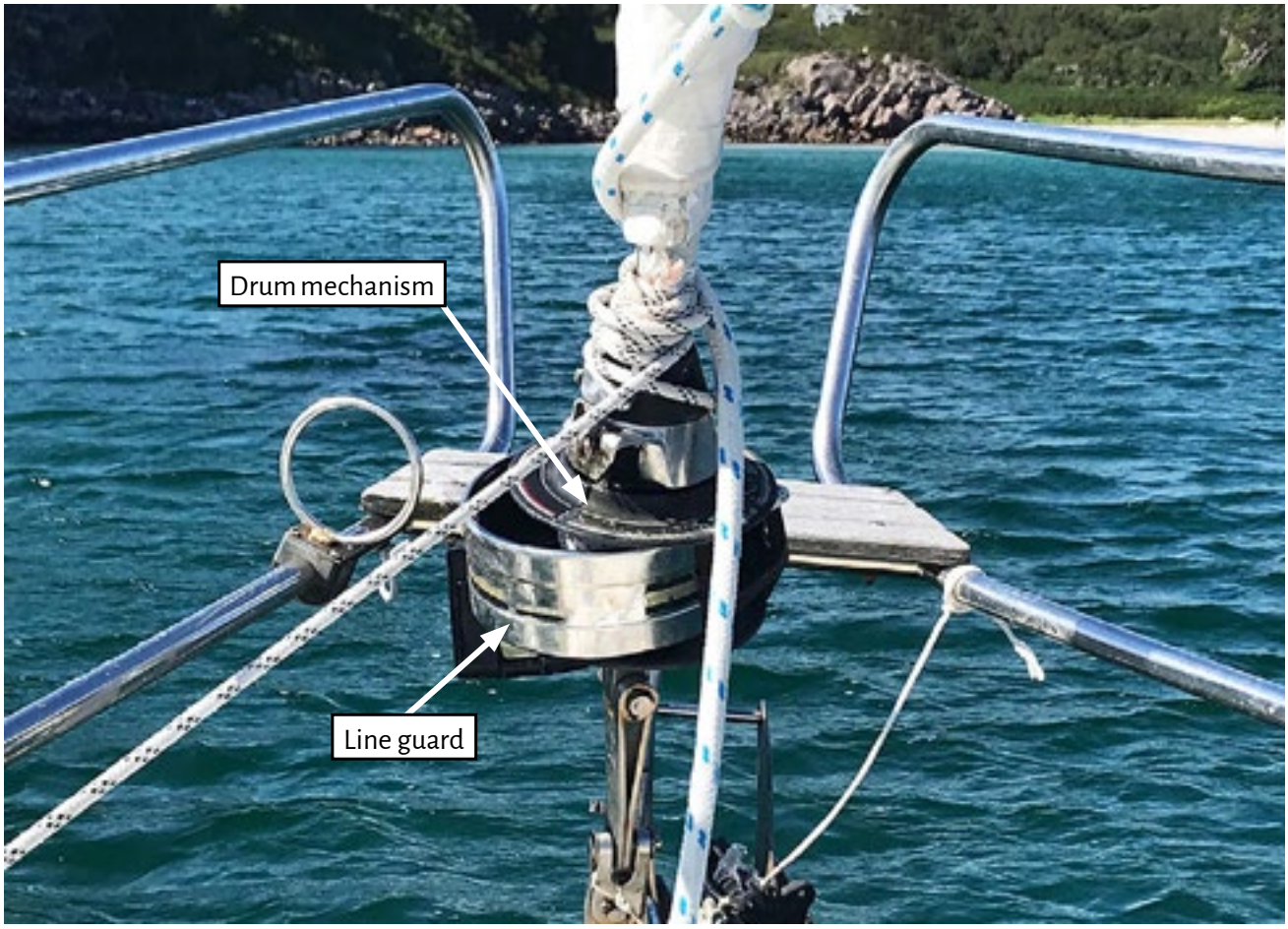


Figure: Defective furling gear with a gap between the line guard and the drum

3. **Revise →** This was not the first time that the furling gear on this yacht had needed repair. The equipment itself was well made and serviced competently but its location above the anchor cable exposed it to damage. Additionally, the furling line was misaligned and did not feed into the centre of the drum mechanism. These two separate issues meant that the problem was set to recur no matter how often the furling gear was serviced and repaired. Time spent learning lessons is seldom wasted.

Giving up smoking is not easy

motor cruiser | fire

A 40ft private motor cruiser had travelled out to a secluded bay so that its skipper and crew member could enjoy a relaxing meal on board, after which their plan was to set off again in the early evening and practice some night navigation in preparation for a longer trip later in the year.

Following the meal, the crew member popped forward to switch on the cabin heater and charge their e-cigarette and mobile power bank. The skipper was at the helm, focusing on the encroaching darkness. The crew member returned to the galley to do the washing-up and then relaxed on a couch seat in the main lounge and talked with the skipper about potential destinations for their planned trip further afield.

The skipper began to realise that he could detect a faint smell of smoke and asked the crew member to take over at the helm while he checked the engine bay. All was fine with the engines so he went down into the forward cabin area. The main cabin was clear but, as the skipper opened the door to the crew member's cabin, black smoke belched out and he caught a brief glimpse of a fire. The skipper ordered the crew member to launch the liferaft and grabbed a fire extinguisher but was beaten back by the flames. He sent an undesignated digital selective calling (DSC) distress on his radio, collected the emergency grab bag and headed to the liferaft.

Once clear of the burning boat (Figure 1) the skipper called the coastguard on his handheld VHF radio and then attended to his crew member, who had badly twisted their ankle while scrambling to get into the liferaft. A nearby pilot boat diverted to attend the scene and was soon joined by the lifeboat. The skipper and crew member were recovered safe and well. The boat was lost (Figure 2).

The Lessons

1. **Hazard →** Mobile devices, e-cigarettes and power banks are all at risk of overheating when on charge. The fire and rescue service advise only using the individual chargers supplied with the device and charging such items on a clean, flat surface away from anything that could easily catch fire. In this case the items were left to charge out of sight on a bed and with the compartment door closed. It is fortunate that the skipper investigated the source of the smoke and took swift and decisive action on discovering the fire.

2. **Communicate →** The coastguard and nearby vessels had the chance to react in good time because the alarm was raised rapidly. Early use of the DSC alert is fundamental to improving a casualty's chance of survival. Good use was made of the portable VHF to give the coastguard a full understanding of the nature of the distress.

3. **Plan →** A well-prepared grab bag can make a huge difference. Consider what goes in this bag and who on board knows its whereabouts and contents; it can save lives in an emergency.

Figure 1: RNLI video still, showing cabin engulfed in flames

Figure 2: RNLI video still, showing whole cabin destroyed by flames with only the hull remaining intact

The RYA provides advice on grab bags and what to keep in them. It is useful if the grab bag is waterproof, brightly coloured and can float. Contents can vary dependent on whether a liferaft is available but should address your chances of rescue within the shortest time possible and enable you to:

- indicate you are in distress;
- attract the attention of nearby vessels;
- support your survival (sea sickness tablets, sun cream, energy bars, sunglasses, etc.); and
- help yourself once rescued (passport, credit cards, spare keys, insurance documentation, etc.)

This list is not exhaustive and can vary according to your individual circumstances.

Visit https://www.rya.org.uk/blog/grab-bags-what-do-you-keep-in-yours for more information.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Case studies follow extracted from the MAIB Safety Digest October 2023

MARINE ACCIDENT INVESTIGATION BRANCH

SAFETY DIGEST

Lessons from Marine Accident Reports

2/2023

Featuring introductions by Simon Graves | Duncan Murt | Andy Murray

Unforeseen fall

bulk carrier | accident to person

A bulk carrier was alongside in port late one afternoon. The cargo discharge had been completed and the second officer (2/O) and able seaman (AB) were standing on the midship port side catwalk, preparing for the loading of the next cargo by lowering the upper rails around the hold hatches (Figure 1). Once the rail was released, the rail would hang vertically downwards and allow the cargo to be loaded without interference from the rail.

The 2/O was leaning towards the unsecured rail when it suddenly started to fall outboard. The 2/O, who was not wearing a safety harness fixed to the catwalk, lost their balance (Figure 2) and fell about 3.5m to the concrete quay below. The 2/O was in hospital for more than 10 days, having broken both legs in an attempt to land on their feet.

Figure 1: Bolts being removed from a section of upper rail

For illustrative purposes only: not to scale

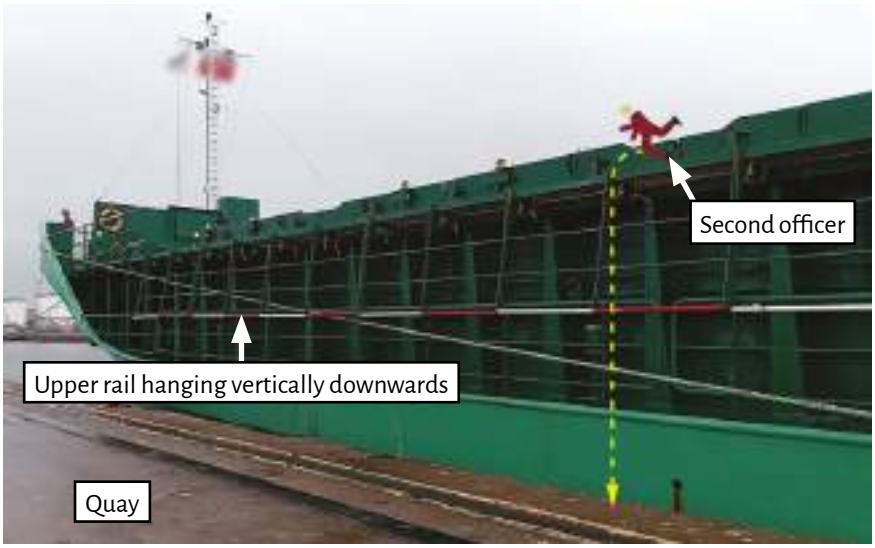


Figure 2: Illustration of the second officer falling to the concrete quay

The Lessons

1. **Procedure →** The shipboard risk assessment for this task required anyone working aloft or over the ship's side to wear a fall arrester. Following safety procedures increases the opportunity to identify hazards and determine what equipment or control measures are needed to mitigate them and keep people safe.

2. **Equipment →** A safety harness and appropriate restraint tether would have prevented the fall. Personal protective equipment (PPE) may be deemed uncomfortable to wear and will likely require adjusting to allow you to work effectively, but it is essential when carrying out high-risk tasks such as working at height.

Flash, bang, wallop!

container ship | explosion

A container ship was on passage. In the engine room, the electrician was pondering how to repair a fault with the ship's ballast water treatment system (BWTS), which needed to operate on arrival into port the next day. The power supply to the BWTS could not be reset, leading the electrician to believe the fault might lie with the circuit breaker. The defect only emerged after that morning's work planning meeting. The electrician started their investigation anyway, opening the panel on the main switchboard to gain access to the circuit breaker. The chief engineer (C/E) observed this and instructed the electrician to close the panel and refer to the electrical drawings to try to identify the source of the problem. A short time later the C/E found the electrician still working in the switchboard. Repeating the instruction to the electrician not to work inside the panel, the C/E went to eat lunch.

The circuit breaker was designed to be removed without the need to isolate the base unit (Figure 1); however, the electrician was unfamiliar with this arrangement and had loosened one of the live connections on the input to the base unit (Figure 2). The electrician used rubber gloves to insulate themself from the live 440 volt (V) alternating current terminals when working on the connections.

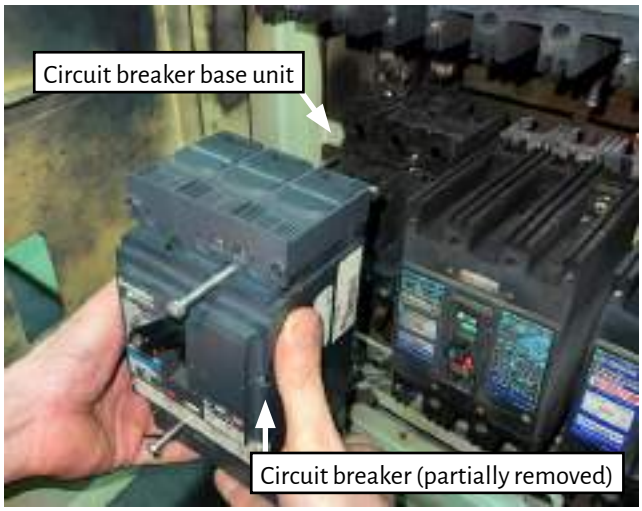


Figure 1: The circuit breaker arrangement

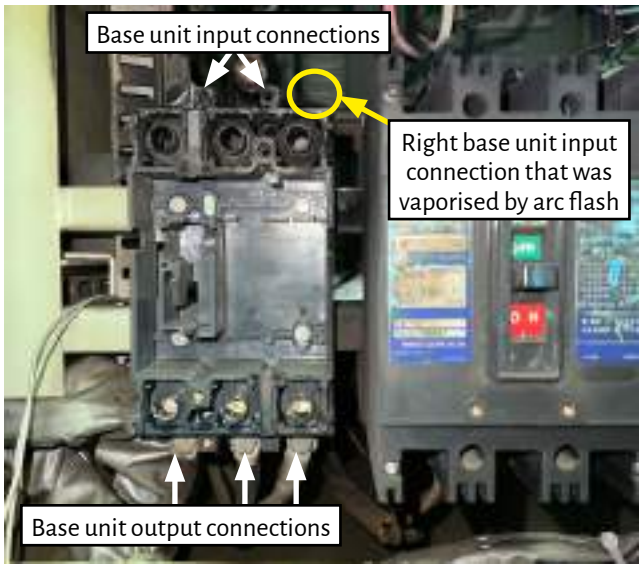


Figure 2: The base unit connections

The Lessons

1. **Risk →** Taking the time to fully understand the arrangement of the circuit breaker and base unit assembly would have enabled the electrician to safely remove the circuit breaker and reduce the risk of injury or death to an acceptable level. The safest equipment to work on is that which is not live; in this case, the arrangement of the circuit breaker and base unit meant that it was unnecessary to disconnect the cables.

2. **Plan →** Working alone without a permit to work, LOTO procedure or agreed safe system of work increases the risk of an accident. The work was unexpected and therefore not included in the day's planning meeting. New work requires a new plan, regardless of time pressures. Maintenance or repairs to live equipment must undergo thorough risk assessment before starting work and, in all cases, should only be completed in exceptional circumstances and under the strictest control.

After the C/E left the engine room, the electrician tried to reconnect the cables to the base unit using a socket extension on the head of the bolt and a spanner to hold the nut in position at the rear of the connections. As the electrician tightened the bolt on the live input connection, the nut rotated and the steel spanner touched an uninsulated copper conductor on the adjacent circuit breaker base unit. This caused a short-circuit between two phases of the switchboard (Figure 3).

The short-circuit caused a high current to flow, vaporising the copper conductor and part of the spanner in an arc flash creating extreme heat and blinding light. A burst of hot gas and molten metal exploded from the panel onto the electrician's face and chest (Figure 4).

The ship's engineers were alerted to a problem with the switchboard when the remote machinery alarm system sounded in the mess room. As the engineers headed to the engine room, the electrician arrived on the ship's bridge with serious burns to their face and chest. The following day, the electrician was transferred to hospital for medical treatment and later repatriated to recuperate at home. There was significant damage to the ship's main switchboard.

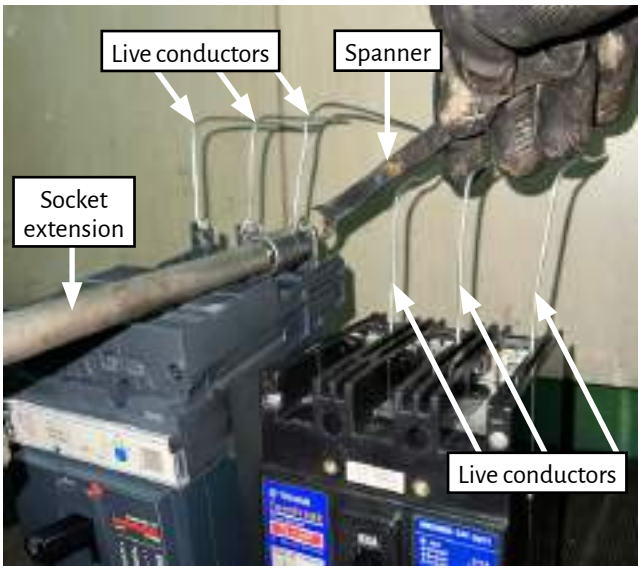


Figure 3: Reconstruction of the accident

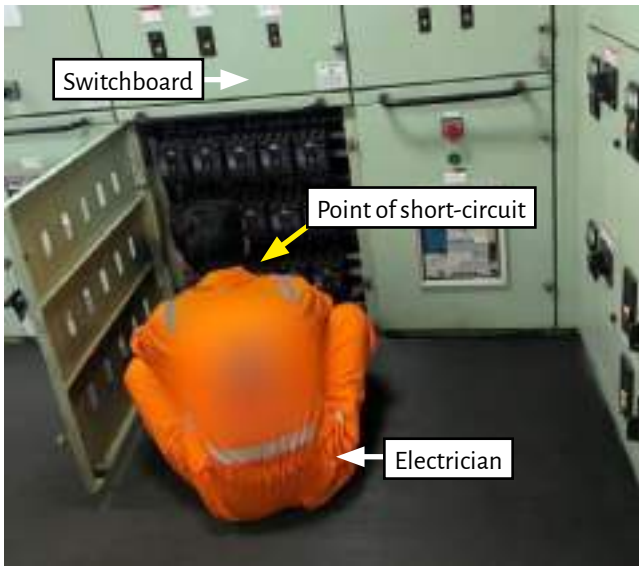


Figure 4: Position of the electrician

3. **Observe →** This accident was avoidable because there were opportunities to stop the work and reassess the risks. Everyone has a responsibility to be alert to what is happening around them and should feel empowered to intervene and stop any work that raises safety concerns.

4. **Equipment →** Working near live electrical equipment requires specific tools and PPE. The use of uninsulated tools while working in a live switchboard invited a short-circuit and the electrician, who was not wearing face protection, was lucky not to lose their eyesight in the accident.

Let down by the ladder

bunker tanker | pilot ladder

A pilot was embarking a moored bunker tanker via its pilot ladder in calm conditions. Once alongside the tanker, the pilot tested the ladder and then stepped onto it. As the pilot began to climb, the ladder suddenly dropped by over a metre and the pilot fell from it into the water (Figure 1).

Seeing the pilot fall, the pilot vessel's coxswain instinctively manoeuvred the vessel clear to avoid crushing the pilot between the two vessels. In the water, the pilot's auto-inflate lifejacket kept them afloat until they were safely recovered uninjured by the crew of the pilot vessel.

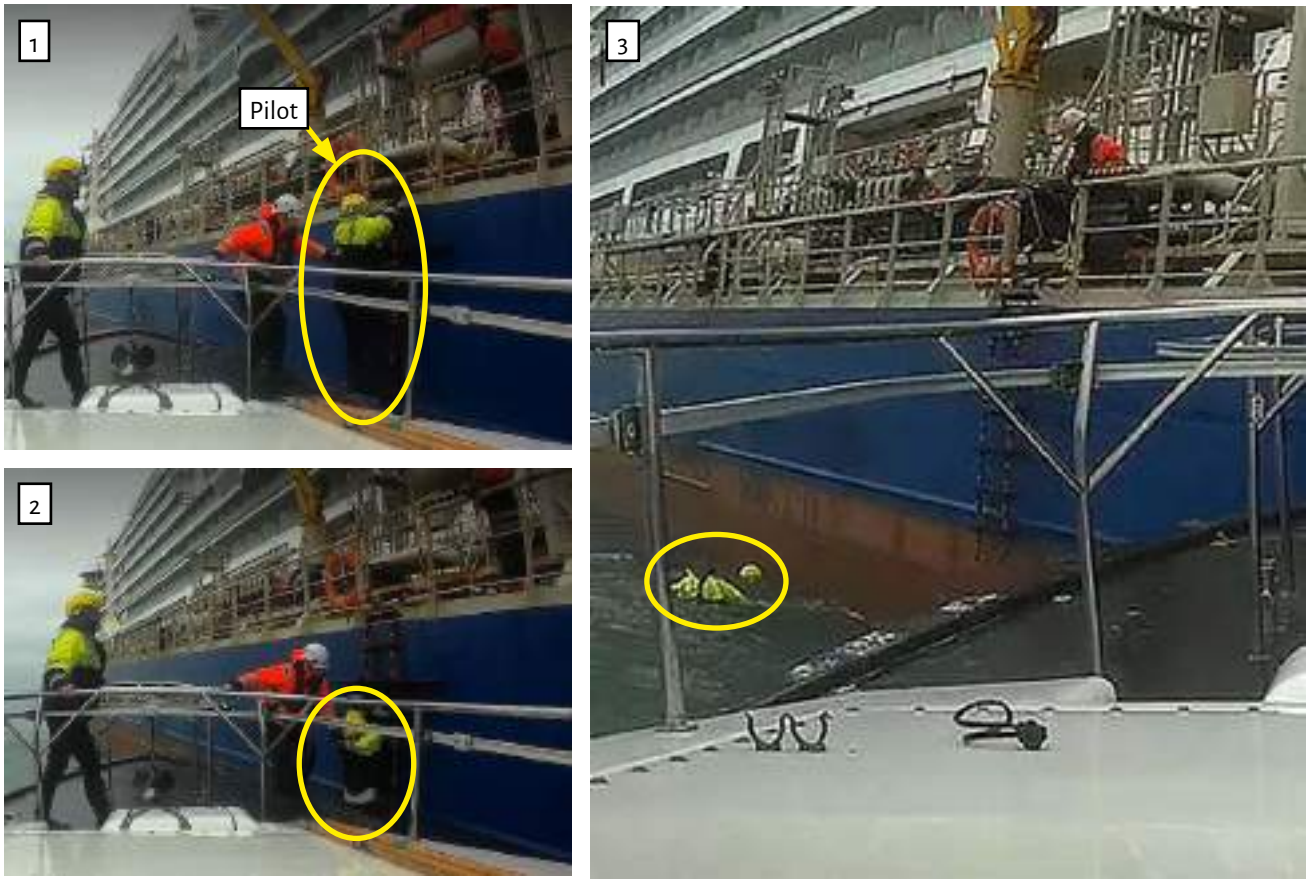


Figure 1: The fall sequence

The Lessons

1. **Check →** A responsible officer must check that the pilot ladder is correctly rigged and ready for use before the pilot boards. In this case a rung of the pilot ladder had become caught on a deck fitting and when the pilot put their weight on the ladder it unexpectedly dropped, causing them to lose their handhold and fall into the water.

2. **Equipment →** A post-accident inspection of the tanker's pilot boarding arrangements found that the tanker's guard rail handholds were more than 80cm apart and its boarding arrangements were therefore assessed as noncompliant with SOLAS[1] regulations. Figure 2 shows the arrangements at the time of the accident and after the owner's modifications to provide compliant handholds.

1 International Convention for the Safety of Life at Sea, 1974.

Figure 2: Guard rail gate at the top of the pilot ladder before (inset) and after modification to make it compliant

3. **Prepare →** Practice makes perfect. As soon as the coxswain of the pilot vessel saw the pilot fall, they manoeuvred the vessel clear of the tanker to allow the pilot to enter the water uninjured. Thereafter, the crew's well-drilled procedures ensured the pilot's safe recovery.

The cost of administration

workboat | collision

It was another busy day of operations for a workboat at an offshore wind farm. Sailing early, the workboat was due to transfer two teams to carry out maintenance tasks on two different wind turbines. Equipped to push onto a wind turbine tower platform with its protected bow section, this catamaran workboat was well designed and allowed easy transfer of the maintenance crew to and from the wind turbine towers. The workboat's crew of master, mate and crewman were relatively new to the wind farm and still adjusting to local practices and their new contract. Having delivered the two work teams, the master found themself with some time to spare before the next scheduled job and decided to crack on with some paperwork.

The company's standing orders did not permit workboats to secure to wind turbine platforms during standby, nor to use autopilot while navigating through wind farms. Hoping that they would have time to complete the administration task, the master decided to set minimum power ahead and steam on a course between the wind turbines. Meanwhile, the mate was on the aft deck completing some familiarisation training and the crewman busied themself organising the on board stores. The master was working at the aft-facing chart table on the bridge, but had become engrossed in paperwork and lost track of time. The workboat was travelling at 5kts and, without the autopilot switched on, started turning slowly to starboard (Figure 1).

The master was shocked to see one of the wind turbine towers looming ahead when they looked up and turned to face forward. The collision happened before there was chance to react.

Figure 1: The navigational track of the workboat, showing its slow turn to starboard

The Lessons

1. **Procedure** → It is important to keep administrative tasks up-to-date, but crew and vessel safety remains the priority. Where paperwork must be completed, for example updating the bridge logbook while on watch, ask someone else to keep watch or post a lookout to maintain proper and effective visual navigation.

2. **Monitor** → The slow turn to starboard may not have been evident from the bridge windows alone and watchkeepers should monitor all available sensors and equipment to establish an accurate navigational overview. Regular checks of data from an Electronic Chart Display and Information System (ECDIS), rate of turn indicator, and directional gyro, etc. allows the watchkeeper to identify hazards and take preventative action to avoid an accident.

Figure 2: The moment the workboat bow collided with the wind turbine tower platform

The workboat took the brunt of the impact on its off-centre protected bow section (Figure 2) and unsecured items were thrown forward across the deck as the vessel came to a jolting standstill. The crewman was thrown against a shelf and sustained two broken ribs. The master assessed the crewman's injury and the damage to the workboat and returned to harbour to evacuate the crewman for treatment at the local hospital. Fortunately, there was little damage to the workboat other than small dents and abrasions.

The master was left with a much larger paperwork mountain to climb.

3. **Communciate →** Raise concerns if paperwork becomes unmanageable or imposed procedures interfere with best practice. Communication is a two-way process and constructive feedback about what works well and what could be improved helps people and organisations understand the impact of their decisions. It is important that vessel reports are submitted in a timely fashion; talking about the challenges faced at sea reduces the opportunity for conflict between compliance and safety.

Getting in contact

tug | fire

A tug was being prepared for the day's operation when it lost all electrical power as the master pressed the main engine start button from the wheelhouse. An engineer went to the engine room and reset the main 24V direct current (DC) circuit breaker and alarms to restore power. The engineer attempted to start the engine locally and the tug once again lost all electrical power.

The engineer opened the 24V DC control panel and found that a small fire had ignited around one of the interior insulated brackets. The engineer isolated the panel and used a carbon dioxide fire extinguisher to put the fire out. The damage to the equipment was limited, but another tug needed to be mobilised to undertake the day's planned work while repairs were carried out.

The cause of the fire was traced to an unsecured wire inside the 24V DC control panel, which was touching the copper busbar that supplied starting power to the main engine. Over time, vibration had caused the insulation surrounding the unsecured wire to wear through until the wire's conductor made contact with the busbar. The powering up of the circuit caused a short-circuit and conducted a massive current. The circuit breaker protecting the system opened and interrupted the circuit when the master pressed the start button, and this was repeated when the engineer reset it and tried to start the engine again. The unsecured wire was not designed to withstand such a high current even for a short time and rapidly heated up, burning away its remaining insulation and starting a small fire (Figure 1).

An inspection of the 24V DC control panel found several other unsecured wires (Figure 2), demonstrating that the risk remained for a similar event to happen again.

The tug owners arranged a check of all control cabinets and any identified loose wires were properly secured.

The Lessons

1. **Check →** Circuit breakers and fuses generally trip for a reason. A quick check of equipment and wiring before resetting breakers can help avoid problems.
2. **Maintain →** Electrical wiring is more than just a means to transfer power from A to B. Wires must be securely fastened to prevent them rubbing against anything that could damage the protective insulation covering the inner conductor. Make sure new wiring is routed correctly, secured to cable trays and clear of any hard edges.
3. **Action →** During inspections of electrical panels engineers should be aware of the risk posed by poorly supported wiring and loose connections and take appropriate action to reduce it to a safe level: find it, isolate it, secure it.
4. **Risk →** An electrical system does not require high voltage to be dangerous; this case demonstrates that a short-circuit in a 24V DC power supply is able to start a fire and serves as a cautionary tale for all vessel operators, commercial or otherwise.

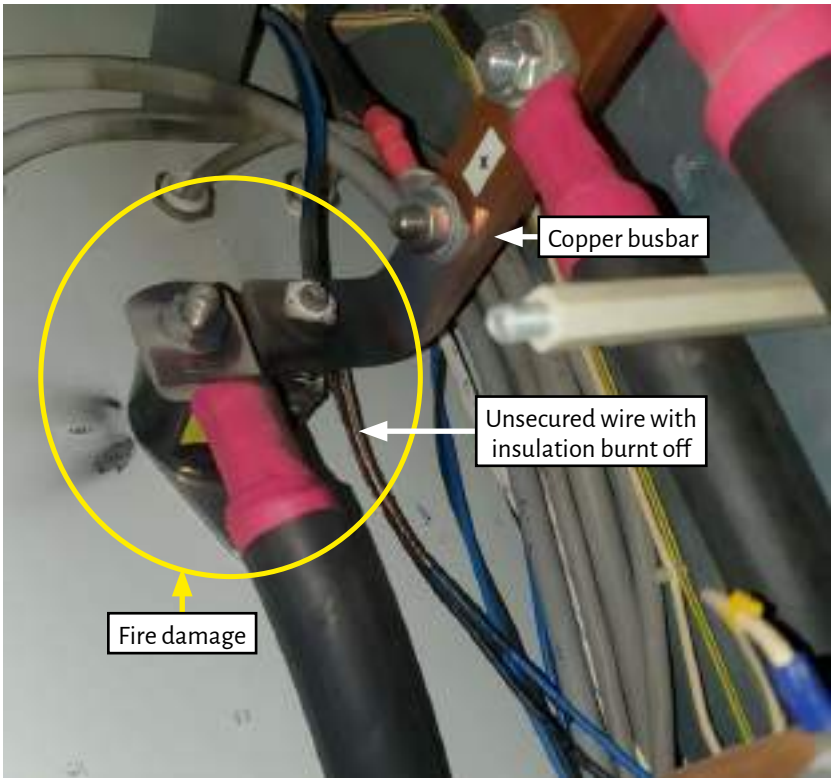


Figure 1: The burnt wire

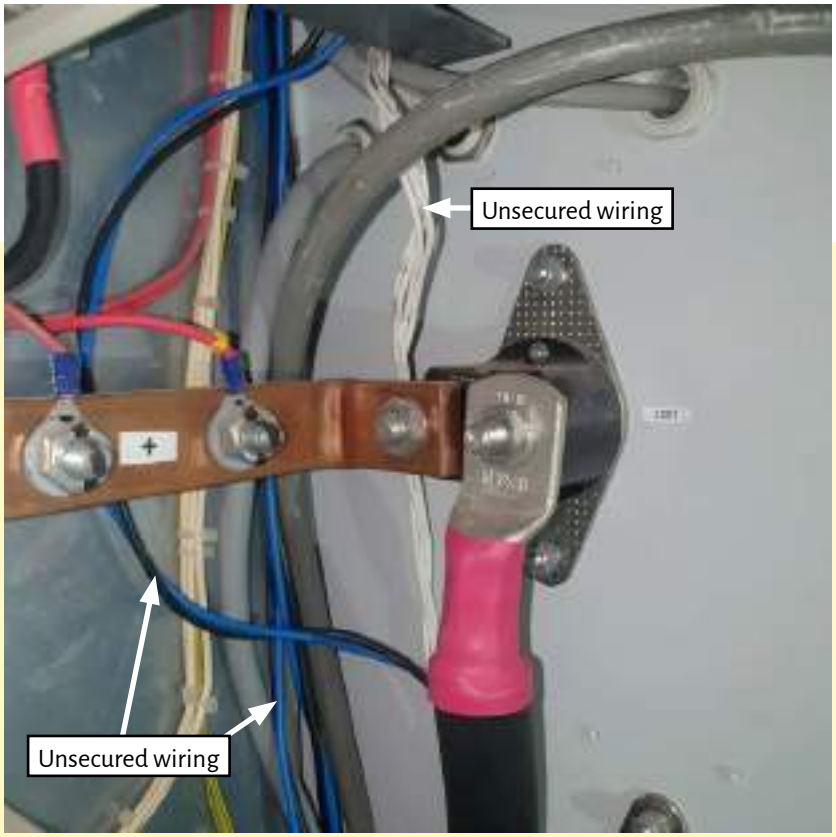


Figure 2: Unsecured wiring in the electrical control panel

Cry wolf

passenger ferry | fire

The master and crew of a high-speed passenger ferry had prepared for the day's scheduled runs. Shortly after starting the ferry's engines, and on the first run of the morning, the starboard engine space fire detection system alarm activated. The master slowed the ferry and checked the engine space CCTV but could see no signs of smoke or flames. The detection system was reset and the master increased the speed of the ferry and continued on passage.

A while later, the starboard engine space fire detection system alarm activated again. The master again slowed the ferry, checked the CCTV and could see no indication that anything was wrong. The fire alarm system was reset, and the ferry continued on passage. After a third occurrence, the master requested an engineer to check the fire detection system. The engineer found nothing wrong with the system and reported there must be an intermittent fault with the starboard engine space fire detection system. In response, the master isolated the starboard engine space fire detection system and resumed the day's scheduled runs.

Later, the master observed smoke and flames in the starboard engine space on the CCTV and immediately shut the starboard engine down and instructed crew to close the ventilation flaps for the area (Figure 1). The master then activated the fixed fire-extinguishing system, raised the alarm with the port's harbour master and brought the ferry alongside the nearest berth, manoeuvring on one engine. Once alongside, the passengers were disembarked and the master was met by the local fire brigade. There was no sign that the fire in the starboard engine space had escalated and the engine space remained sealed. After some time, the engine space's CCTV indicated that the smoke had cleared and the external temperature of the space had returned to ambient. One of the hatches to the space was carefully opened and it was confirmed that the fire had been extinguished.

The ferry's engineers found scorched lagging around the main engine turbocharger, along with signs that paint and oily debris had ignited on the engine (Figure 2). This happened because the exhaust inlet casing to the turbocharger had fractured, allowing hot exhaust gases to encroach the lagging and the engine.

The turbocharger inlet had become fractured by excessive movement of the engine on its mounts. This had happened over time because the engine's fixed stays and some support brackets had sheared off through vibration and stress (Figure 3).

The Lessons

1. **Check →** Fire detector alarms activate for a reason – never assume it is a fault. Fire detection systems are designed to be reliable and fault-free and most will have a self-diagnosis and fault alert built into the system to differentiate between a fire detector head alarm and a system fault. In this case, the fire detector head had activated due to the release of hot exhaust gases from the engine and initial scorching of the lagging. This happened before the signs of the fire were visible on CCTV and after the system had been isolated. It was fortunate that the master spotted the fire on the CCTV in good time and took correct action to extinguish it and keep crew and passengers safe.

Figure 1: CCTV still showing smoke in engine space

Figure 2: The seat of the fire (glowing orange)

Figure 3: Fractured engine support

Figure 4: Fractured bracket and missing bolt

2. **Maintain →** A thorough inspection of an engine during routine maintenance is essential for its safe operation. Check fittings are secure and fit for purpose, replace missing components and report, repair or replace fractured engine supports or brackets before further damage occurs (Figures 3 and 4).

3. **Action →** The swift and measured response by the master prevented the fire escalating and causing serious damage to the starboard engine space. The risk of the fire being reignited was also removed by the master's prompt actions to activate the fixed firefighting system after closing the ventilation flaps and keep the space secured until the fire had been extinguished and the boundary temperature reduced to a safe level.

See and be seen?

passenger ferry | accident to person

A stevedore was fortunate to escape with a fractured leg after being run over by a forklift truck on the stern ramp of a ro-ro ferry.

The ferry's staff were responsible for simultaneously supervising the offloading of cars and palletised cargo, which was undertaken using forklift trucks driven by stevedores. After the cars had been offloaded the crew prepared to back load excavators onto the ro-ro's deck, a process that required the positioning of lengths of heavy rope on the stern ramp. At the same time as two stevedores lifted the first length of rope and were moving it across the centre of the stern ramp, a forklift truck with a pallet of slate was being driven off the ferry (see figure).

The forklift truck driver did not see the stevedores on the stern ramp and the stevedore nearest to the approaching forklift truck was standing with their back to the ferry and did not see the oncoming forklift truck. The forklift truck driver was wearing ear defenders and did not hear a shouted warning from the crew in time to prevent the forklift truck striking the stevedore on the leg, causing multiple fractures.

Figure: Forklift truck and stevedores on ramp

All cargo operations were halted and immediate first aid was administered to the injured stevedore. The emergency services were called, and the stevedore received hospital treatment for their injuries.

This accident was both foreseeable and preventable given the frequency of accidents involving pedestrians and vehicles on vessel stern ramps.

The Lessons

1. **Hazard →** The accident happened because the stevedores moving the ropes were standing on the stern ramp at the same time as vehicles were being driven across the ramp. The forklift truck driver did not see the stevedores as the direct line of vision ahead was obscured by the palletised slate loaded onto the forklift truck and the driver expected that pedestrians would keep clear of moving vehicles. The stevedores were oblivious to the approaching forklift truck as they had become accustomed to working near moving vehicles. The strategy of *see and be seen*, with the onus on pedestrians to keep out of the way, was flawed as it did not account for a driver's restricted visibility or stevedores becoming distracted by the task. Industry codes of practice require that pedestrians and vehicles remain segregated by appropriate means.

2. **Procedure →** A system of control should have been established in the absence of a physical barrier to segregate pedestrians and vehicles and to prevent the requirement for people to be working on the stern ramp during loading and discharge operations. Such measures could include the safe positioning of a dedicated person near the stern ramp to control pedestrian and vehicle movements, or the introduction of a more complex system using technology to separate vehicles and pedestrians.

3. **Communicate →** Crew and shore staff must understand the risks involved in cargo loading and discharging operations. It is essential that those who supervise and manage these activities also work together to identify conflicts between each other's documented safety management system and reduce these to a safe level for all involved.

The gravity of the situation

research ship | accident to person

A research ship was unloading in port following its arrival from overseas and its crew had made a plan to offload a 20ft open-top container, which was filled with various pieces of equipment. A mobile crane on the jetty was being used to unload the ship; the crew prepared the lifting gear and attached four chains to the crane hook from the lifting lugs at each corner of the base of the container.

Three crew members were involved in the lift: the lift supervisor and banksman were positioned at the aft end of the container and the slinger was standing at the forward end. As the container was lifted it came clear of the twist locks that were securing it to the deck and rapidly swung aft and inboard. The lift supervisor was able to move out of the way, but the banksman suffered crush injuries when they were pinned between the container and the ship's handrails.

Nearly 8 tonnes (t) of weights had been stacked in the back corner of the container when the equipment was originally loaded into the container (Figure 1).

Figure 1: Weights loaded in container

When an unbalanced load is lifted, it will naturally swing to put its centre of gravity directly under the suspension point. Such a load will also alter the share of the weight that each part of the lifting gear bears. In this case, the imbalance from the stowed weights caused the container, which weighed more than 16t in total, to swing towards the banksman. There was nothing the crew could do to stop its movement (Figure 2).

The Lessons

1. **Plan →** The distribution of load is as important as the total weight when preparing a lift and its effect on the lifting operation should be carefully considered in the total lifting plan. In this case, neither the crew on board nor the crane driver were prepared for the swing that the unbalanced load caused when the container was lifted.

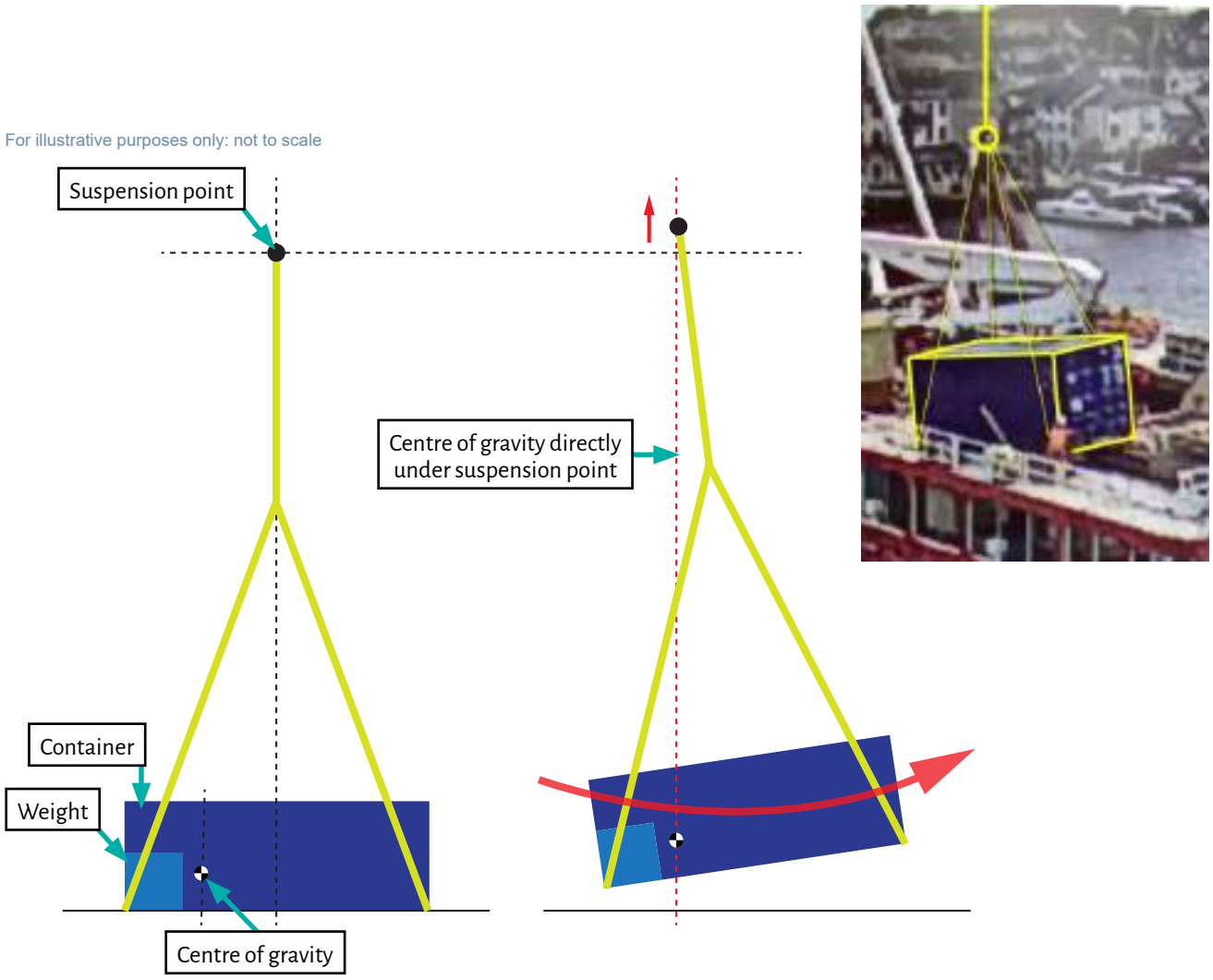


Figure 2: Effect of unbalanced load on lifting operation and (inset) CCTV still, showing container position following lift

2. **Risk →** Always have an escape route. While it goes without saying that a 16t swinging weight presents a huge hazard, make sure you stay alert and keep well clear of any suspended load just in case something goes wrong.

3. **Equipment →** There are occasions when an unbalanced load will need to be lifted. To facilitate this, you can either use slings of different lengths to lift the load directly above its centre of gravity or a spreader beam to evenly distribute the weight and make sure the load is lifted vertically.

From the ashes rise the roses of success

fishing vessel | fire

A fishing vessel was on a routine day trip when the peace was shattered by the sounding of the engine room smoke alarm. The crew went to investigate and found smoke emanating from a new alternator they had recently fitted to the engine. Despite their attempts to tackle it with portable extinguishers, the fire raged on and the crew were unable to reach the fuel supply shut-off valve (see figure) to stop the engine.

Thick smoke filled the engine room and the crew evacuated, closing the door as they left. From the safety of the upper deck the crew activated the fixed firefighting system and sent a distress message via the vessel's Global Marine Distress and Safety System (GMDSS). The engine was stopped and, with the fire appearing to be extinguished, the crew checked their lifesaving equipment and prepared for the vessel to be taken under tow. They continued to monitor the temperature of the engine room boundaries but, fearing the risk of reignition, did not re-enter the engine room.

The vessel lost all power but was towed back to harbour. Aside from some coughing due to the effects of smoke inhalation the crew were uninjured by the accident. The engine sustained minor smoke damage and the alternator was destroyed, but it was not long before the fishing vessel was repaired and returned to service.

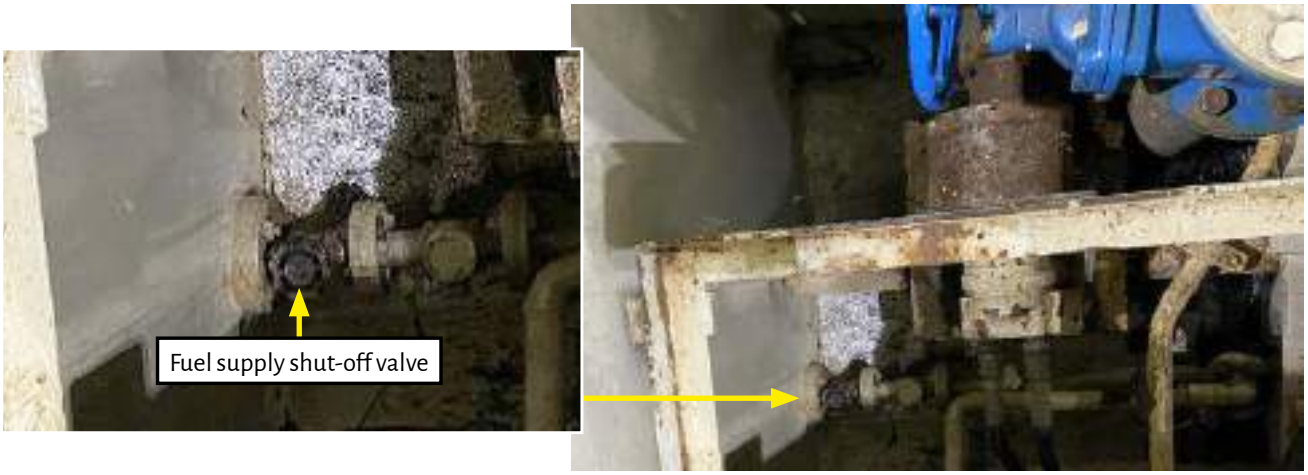


Figure: Fuel supply shut-off valve

The Lessons

1. **Action →** Accidents can and do happen. The crew were aware of the risks of an engine room fire, smoke inhalation and reignition; consequently, they withdrew quickly to assess the situation. Their prompt actions to activate the fixed firefighting system, relay the distress message and keep the engine room locked down afforded the crew and the vessel the best chance of survival.

2. **Equipment →** In an attempt to save money the owner had fitted a poor-quality alternator, which was replaced with a genuine spare part following the accident. Never be tempted to cut corners when repairing a vessel; the consequences can be expensive and could prove to be fatal.

3. **Revise →** The vessel's owner realised that, although compliant, the location of the remote fuel shut-off valve had made it difficult for the crew to manage the fire. A remote engine fuel shut-off valve was subsequently installed in the wheelhouse on advice from a surveyor. The safety of the vessel was improved by the owner's proactive approach to reviewing and learning from the accident.

Cold water? Shock!

single-handed creel | fatal accident

In the early hours of a cold and clear morning, the skipper of a single-handed creel vessel (Figure 1) set off for a day's fishing. They spent the next few hours recovering and shooting strings of creels a couple of miles offshore, in their regular fishing grounds.

A fleet of creels became tangled during the shooting operation and the skipper moved aft on the vessel's working deck to attempt to unsnag them. As they did so, their boot became caught in the fishing gear and they were pulled overside as the fleet of creels entered the water through the shooting door (Figure 2). The skipper's personal flotation device (PFD) automatically inflated on contact with the water, keeping them afloat and their face clear of the water. However, the skipper did not have an easy means by which to reboard their vessel and no method to raise the alarm while in the water and they succumbed to cold water immersion.

The unresponsive skipper was later recovered by the Royal National Lifeboat Institution and declared deceased.

Figure 1: The single-handed creel vessel

The Lessons

1. **Procedure →** Fishers are advised to follow industry guidelines to minimise the likelihood of being pulled or falling overboard; a barrier between the fisher and the fishing gear during every phase of the fishing process and the wearing of a tethered safety harness offers the best protection against unexpected events.

2. **Plan →** It is important to consider what methods of reboarding the vessel from the water are available. Emergency measures, such as rigging a man overboard ladder or having an overside tyre arrangement in place, can improve the chances of survival.

Figure 2: The shooting door (drop-in closing board removed)

3. **Equipment →** Fishers should always wear a PFD to help keep them afloat should they fall overboard. As this case demonstrates, cold water immersion can be fatal and it is vital to reboard as soon as possible. Wearing a personal locator beacon (PLB) that can be operated while in the water also improves the chances of rescue and survival.

4. **Risk →** Single-handed fishing is a risky profession; the preparation of realistic safety procedures and risk assessments provides the best protection against the unexpected to return fishers home safe and dry.

Hauled on board

stern trawler | man overboard

Early into the afternoon shift on a late autumn day, a coastguard Maritime Rescue Coordination Centre (MRCC) was alerted to an undesignated medium frequency Digital Selective Calling transmission, indicating a person overboard from a fishing vessel about 90 nautical miles off the coast. This was swiftly followed by calls from the MRCC's European counterparts, which had also received the alert. Initial investigations established that the GMDSS register had not been updated with the fishing vessel's current name. While this did not delay the rescue operation, it required additional work for the coastguard team to identify the vessel.

The alert was transmitted because a deckhand had been partially dragged over the side of the fishing vessel during net hauling operations. They had been tending the starboard guide pole during the haul and were standing between the net and the starboard bulwark of the vessel when, during the net's recovery, they had switched the guide pole from one position to another at the same time as the fishing vessel rolled to starboard. The effect of this was to drag the unconstrained net to starboard across the stern roller, trapping the deckhand's legs against the bulwark before pushing the deckhand bodily over the side. The skipper, who was controlling operations from the upper deck, quickly recognised what was happening and descended to the main deck and pulled the deckhand back on board as the vessel rolled to port, freeing them from the net (see figure).

The deckhand was subsequently airlifted to hospital and later discharged with broken ribs and significant bruising.

The Lessons

1. **Maintain →** Ensure that on board telegraphy and telephony equipment is updated to reflect the vessel's current name and details. This could prove vital to make certain you receive the help you need in time for a successful rescue.

2. **Plan →** The repositioning of the guide poles during hauling operations must be carefully controlled to minimise risk of entrapment by the net. Hauling nets is a frequent evolution, but it entails risk and vigilance must be maintained. On every occasion, take the time to reassess the risks involved, the manner in which the task is to be conducted and the effect of the environment on the job in hand.

3. **Hazard →** An unconstrained net during hauling is a significant hazard in anything other than the most benign conditions. The operation requires careful monitoring to prevent shortcuts being taken or complacency creeping in. Reminding crew of the hazards before they start working the net is advised.

4. **Observe →** The quick actions of the skipper in this case prevented a much more serious situation developing. Close observation of the crew and their activities during high-risk operational tasks ensures full awareness of the situation and enables swift action to be taken in the event of an emergency.

Figure: Reconstruction, showing the deckhand standing in working position between the bulwark and net

Brief encounter

motor cruiser | fatal accident

Boats can be used for many different things: a means of getting from A to B; to take part in sporting activities; or as a platform to fish. However, and as one family discovered, not using safety precautions can lead to tragic losses.

One late spring morning, three people left harbour on a wooden motor cruiser for a recreational fishing trip. The weather was fine and clear, with an easterly Beaufort force 3 to 4 wind and the tide ebbing in a south-westerly direction at a rate of about 0.6kts. Following the departure from its berth, the boat briefly grounded on a mud bank; the owner applied more engine power to free it and continued to follow the buoyed channel out to sea.

Shortly after leaving the sheltered channel, the boat began to take on water at such a rate that the bilge pumps were unable to cope. The owner was able to make a "Mayday" call using a portable VHF radio before all three occupants entered the water as the boat sank beneath them. No one was wearing a PFD, although the group did have two lifebuoys, which they used to keep themselves afloat. Two people were rescued but the third unfortunately drowned.

Figure: Recovered hull section

The Lessons

1. **Check →** The wooden motor cruiser had an unknown heritage and maintenance record. Further, the day of the accident was the first time that the owner had taken the boat out to the open sea. A post-accident examination of part of the boat's hull established that it was in poor condition (see figure). While surveys are not mandatory when buying a pleasure boat, they can inform a new owner of the vessel's condition and any repairs required to ensure its seaworthiness.

2. **Equipment →** Although the owner was able to use the VHF radio to raise the alarm, there was no time to activate the distress flares and no one considered donning one of the many PFDs that were available. This drastically reduced their chances of survival once they entered the water as the boat sank. Boat users are reminded to familiarise themselves with on board safety equipment: you never know when it might be needed.

3. **Plan →** The motor boat briefly grounded despite the calm weather conditions and owner's familiarity with the harbour. The damage sustained was sufficient to cause water ingress once the boat reached open seas. The importance of planning a safe passage cannot be understated, regardless the length of the trip.

Charging into danger

sailing yacht | fire

The lone skipper of a recently refurbished sailing vessel had just departed port for a weekend trip; the wind was light and the vessel was making way under engine power. The skipper had taken the opportunity to charge their laptop and two mobile phones in the below deck saloon area while the engine was running. They soon became aware of a large amount of smoke and, unable to avoid inhaling it, briefly entered the saloon to investigate the source.

A fire had started near the electronic devices that had been left to charge. The skipper considered using one of the handheld fire extinguishers on board but the fire appeared to be spreading rapidly and, recognising the gravity of the situation, they quickly grabbed their weekend bag and handheld VHF radio and headed back up onto the deck. Already wearing a lifejacket, the skipper was able to launch the tender along the windward side of the sailing vessel and abandon ship.

Figure: The remains of the vessel

The skipper used the VHF radio to transmit a "Mayday" call and was picked up by another sailing vessel and taken ashore. Fortunately, they had not sustained serious injuries and were treated for smoke inhalation and emotional shock; however, the sailing vessel burned down to the bilges and sank, eventually coming to rest on a sandbank (see figure).

The Lessons

1. **Hazard →** Lithium-ion (Li-ion) batteries present a fire hazard and should be used with this in mind, particularly when they are being recharged. Ensure that associated equipment such as charging cables and plugs are both compatible with Li-ion devices and undamaged before use. Never attempt to charge potentially damaged batteries. Items containing Li-ion batteries should be stored in a non-combustible area maintained at a temperature of 4°C to 26°C. Consider the consequences of activities that pose a combustion risk on board sailing vessels, which are often constructed of wood, plastic and fibreglass, and take steps to mitigate this by installing appropriate equipment such as fire extinguishers and fire blankets. The London Fire Brigade provides useful fire safety guidance on Li-ion chargers and batteries: https://www.london-fire.gov.uk/safety/the-home/electrical-items/batteries-and-chargers/

2. **Plan →** The skipper was unable to fight the fire due to the speed and ferocity with which it progressed. However, the readiness of their personal belongings packed in a single bag and a handheld VHF meant they were able to evacuate the area quickly and with the equipment needed to improve their chances of rescue. The skipper was also already wearing their lifejacket so were prepared to enter the water had they not had time to launch the tender.

3. **Action →** The skipper recognised the risk to their life and took immediate and effective action to ensure their survival. Taking the VHF with them meant they were able to call for rescue once safely in the tender and away from harm. The skipper remained calm in a fast-moving situation and evaluated their best course of action at each stage, including launching the tender on the windward side to avoid the smoke and flames as well as reducing the risk of the wreckage being blown down onto them.

Catastrophe

yacht | fire

A couple were enjoying a holiday cruising inland waterways on their 5-metre motor yacht when a careless slip led to tragedy.

Shortly after safely mooring the vessel in a marina, the owner decided to remain on board to carry out some maintenance work while their partner went for a walk. The owner started to clean the yacht's engine compartment with some solvent, which suddenly ignited because the engine was still hot; the resulting flames engulfed the engine compartment and caught the owner's clothes alight. Reacting fast, the owner jumped overboard into the loch and their burning clothes were extinguished.

By this time, the fire had developed rapidly on board the yacht. The owner climbed from the water onto onto the marina's pontoons and reboarded the yacht to attempt to save their two dogs who were trapped in the cabin. The gas cylinder for the yacht's stove exploded soon afterwards, ejecting the owner overboard and into the loch once again.

Figure 1: Emergency services attending the scene

The Lessons

1. **Risk →** Take a moment to consider the potential hazards before starting maintenance tasks on board your vessel. Solvents evaporate quickly and the resulting vapours are highly flammable. In this case, tragedy might have been averted by waiting for the engine to cool and applying a less volatile cleaner.

2. **Equipment →** Safety equipment such as fire blankets, handheld fire extinguishers and fixed fire suppressant systems can make all the difference when things do go wrong. Ensure you carry the right type of firefighting equipment for your vessel, that it is properly serviced and you know how to use it.

The emergency services arrived on the scene, having been called by marina staff. The fire brigade doused the yacht with water to extinguish the flames (Figure 1). The owner was recovered from the loch by police and medics and evacuated to hospital by helicopter, having suffered significant burns from which they were lucky to survive. Tragically, both dogs perished in the accident. The fire-ravaged motor yacht (Figure 2) later sank to the bottom of the loch.

Figure 2: The burned-out motor yacht just before it sank

3. **Action →** It is easy to react quickly and without thought for your own safety when faced with an emergency, especially when others are in danger. The owner's attempt to reboard the yacht to save their dogs was understandable, but introduced considerable risk to their own survivability. Sometimes, the safest option is to wait for the emergency services.

Accidents and incidents - 2023 Calendar -

IIMS kept a weekly log of maritime accidents throughout 2023 and recorded them as they were published by local media, various newspapers around the globe and on social media platforms. What you are about to read in the following pages is a limited representative sample from a much larger collection of disasters. Many of the reports are disturbing and feature accidents involving every type of vessel, craft, boat and ship imaginable, as well as port and harbour infrastructure too, resulting in mutiple deaths. The combined death toll runs into many hundreds. At this point it seems appropriate to praise and pay tribute to the various search and rescue services and crews, firefighters and good maritime Samaritans who attended the aftermath of these accidents and saved lives.

Reported in January 2023

Indian Coast Guard rescues 12 from sinking supply ship

The Indian Coast Guard (ICG) successfully rescued 12 members of the crew from a sinking supply ship in the Arabian Sea off the coast of Gujarat. The operation took place after a distress message received by the ICG Maritime Rescue Coordination Centre based in Mumbai. The Motorized Supply Vessel was reported to be flooded heavily and sinking.

Cargo ship sinks in strong winds in Taiwan

Four of five seafarers on a general cargo ship carrying containers are feared dead after going missing when the vessel sank on in heavy seas. The Mongolian-flagged 2001-built 890 dwt Long Shun, sailing around Matsu Islands in Lienchiang County, sent a distress signal, indicating that it was taking on water after hitting a large wave. The ship is said to be owned by Hua-yu Shipping, a Taiwanese company.

Cargo ship which disappeared in South China sea is presumed missing

The cargo ship Dai Cat 06 has been reported as missing in South China sea. There has been no communications for the past 10 days. The ship's Emergency Position Indicator Radio Beacon (EPIRB) was found 30 nm NW of Pemangkat, Indonesia. The ship with 5 crew onboard was carrying a cargo of iron rods. Malaysian authorities searched for traces of the disappeared ship.

Shuttle fast boat with foreign tourists sank in Bali waters

A shuttle fast boat with 29 people on board, including 23 passengers, sank in between Sanur port, Bali, and nearby Penida Island. Reports suggest the fast boat struck floating wood debris in poor visibility. All people on board were rescued, most of them being foreign tourists.

Boxship loses containers overboard as it takes on a severe list

A container feeder ship listed hard over at a pier at Mundra International Container Terminal, dropping a substantial quantity of cargo over the side. During cargo operations, the Sea Xpress listed hard over to port, dumping about 20 containers into the water. Photos from the scene suggest that before or after the accident, the vessel also listed hard to starboard. Broker Prevailing Shipping & Logistics India reported that the incident was likely caused by improper ballasting and the outboard orientation of the vessel's cranes.

Tanker split in half after explosion with two missing

Fears arose for two seafarers who went missing after an explosion split a tanker in half in Chinese waters. After the explosion, search and rescue teams managed to save 15 crew members from the stricken Hong Pu 6 tanker off Rizhao in the Yellow Sea.

Chinese general cargo ship sank off Jeju with large numbers of crew missing

A general cargo ship, the Jin Titan, reportedly sank in the East China south of Jeju Island, Korea. Korean and Japanese Coast Guards joined forces in a search and rescue mission and recovered several crew. Sadly, nine crew are missing feared dead.

Major fire erupts on cargo ship

Fire erupted in the engine room of the general cargo ship Fortuner, which was at anchor at Gresik Port, Indonesia. The ship in ballast was waiting to berth in readiness to load a cement cargo. Fire broke out and spread to the superstructure. All 17 crew were evacuated.

Fire engulfs Italian ferry

Fire erupted on the cargo deck of the ferry La Superba at Palermo, presumed to have been started by a lorry according to reports. The 184 passengers on board were evacuated along with the 80 strong crew.

Cargo ship capsized and sank in Taiwan Strait

An unnamed cargo ship in the Taiwan Strait reported water ingress and developed a portside list. She requested assistance. Some of the crew had to jump into water, but all 8 were rescued, understood by helicopter. All are safe. The ship subsequently capsized and sank.

Seven missing following tanker explosion in Thailand

The tanker Smooth Sea 22 suffered an explosion, followed by fire at a ship repair facility on Mae Klong river, west of Bangkok, Thailand. Seven people are reported as missing and four have suffered injuries. The tanker was undergoing maintenance repairs and it is reported that the explosion occurred during wielding works.

Five people hospitalised as boat hits pier in Melbourne

Australia's ABC News reported that five people were brought to hospital after the charter vessel on which they were riding struck a pier in the city of Melbourne. The 350-passenger Lady Cutler, which was formerly operated as a Sydney Harbour ferry, struck a pole in the waters off the Melbourne suburb of Docklands. Among the five people who were taken to hospital are two pregnant women.

Four missing after tug sank in the Caribbean

A tug, the Sea Voyager, is reported to have sunk in the Caribbean some 50 nm west of Cartagena, Colombia. Nine crew were on board. Four are missing and the others are understood to be safe.

Eight feared dead as cargo ship sinks off South Korea

The Hong Kong-flagged general cargo ship "Jin Tian" carrying lumber sank between South Korea and Japan. Eight crew are feared dead. A further 14 crew members were reported rescued after a distress call was sent out with the ship abandoned.

Reported in February 2023

Sailor squashed by hatch covers

An unfortunate accident occurred on board general cargo ship Ibrahim Simsek at the Kartal anchorage, Istanbul. One crew was caught between moving cargo hold folding hatch covers and was squashed to death.

Bulk carrier explosion in dry dock

An explosion occurred on board the dry docked bulk carrier Oriental Glory at Nosco ShipYard, Hai Phong, Vietnam. Eight workers were hospitalised with injures and burns.

Fire breaks out on a cruise ship docked in Sydney Harbour

About 600 people were evacuated off a cruise vessel in Sydney Harbour following a fire outbreak onboard. Fire and Rescue NSW were reportedly called to the White Bay Cruise Terminal after reports of a fire breaking out on the Viking Orion vessel. the blaze, which started in a passenger's cabin, was brought under control swiftly.

Six crew died onboard tanker

Six seafarers died during an unexplained accident on a tanker off Lagos, with Nigerian authorities confirming the incident. According to reports, "Halima" was undergoing tank cleaning work at the time, raising the possibility of asphyxiation as a cause.

Fire erupts onboard car carrier off Vietnam

The crew of a car carrier managed to put out a fire that took place onboard. Fire erupted onboard the "Ah Shin", with local media reporting that the incident left the Panama-flag ship adrift about 45km from the coast. No injuries were reported and investigators are working on the possibility that a car caught fire.

Container ships collide in Ho Chi Minh waters

Reports emerged about a collision between two container ships in Long Tau river, Ho Chi Minh. The ships involved were the Resurgence and Wan Hai 288. Resurgence struck Wan Hai 288 portside with her bow, inflicting heavy damages to the portside cargo deck area.

General cargo ship sinks in Persian Gulf

The general cargo ship My Princess reportedly sank at Sharjah Anchorage, UAE in the Persian Gulf. No other details about the incident are available at the time of publication.

Singaporean pilot dies in vessel transfer accident

A harbour pilot with Singapore's PSA Marine lost his life in a man-overboard accident while working near the Southern Islands. The Maritime and Port Authority of Singapore (MPA) safety control centre received an alert that a harbour pilot had gone overboard while transferring from a tugboat to a PSA Marine launch. The pilot was wearing a lifejacket, but was not immediately pulled from the water.

25m luxury yacht burns on the Danube

Around 20 firefighters, 4 fire engines and a fire boat were reportedly called to a marina in Budapest, Hungary when a 25-metre Mangusta 80 yacht Le St-James burst into flames at its berth on the river Danube.

Cargo ship capsized and sank in Gabon waters

The cargo ship Antoineta capsized and sank in Libreville waters. The cause of the accident is unknown. All people on board rescued the ship are reported safe.

General cargo ship broke in two and sank

General cargo ship Seamark, loaded with 3,000 tons of marble chips, broke in two and sank at Novorossiysk anchorage. The crew was Russian. Eleven crew were rescued, but one died on board and another one is in critical condition.

Lucky escape for 36 tourists rescued after tour boat capsizes

A group of tourists say they were lucky to survive after their tour boat capsized off the coast of the Algarve in southern Portugal and several lifejackets failed to activate. The National Maritime Authority of Portugal reports the vessel had 36 people on board, including four children, when it began rapidly taking on water around half a mile from the town of Carvoeiro.

Yacht ran aground spilling fuel into a marine sanctuary off Maui

A charter yacht went aground in a protected bay on Maui, spilling an unknown quantity of fuel and drawing concern from local officials. The 94-foot yacht Nakoa grounded on the north side of Maui's Honolua Bay, a protected marine sanctuary area. The owner told local media that the yacht's mooring line parted in a "freak accident," resulting in the boat drifting ashore.

Ship crane fails at Port Kembla

A ship crane cable broke causing a 24-tonne steel coil to fall onto the wharf at Port Kembla, New South Wales, Australia, while vessel Pan Ivy was unloading, the Australian Maritime Safety Authority has reported. No injuries were sustained as a result of the accident.

Tuna fishing vessel with 16 crew onboard missing in Indian ocean

All communications were lost with tuna fishing vessel Lien Sheng, which was engaged in fishing in Indian ocean. The crew comprised the Taiwanese skipper and 14 Indonesians. The vessel has been declared missing by Taiwanese authorities.

Two bodies of two crew recovered from capsized tug

The tug boat, called the Biter, which is operated by Clyde Marine Services, was escorting the Hebridean Princess cruise ship into the harbour when it was apparently pulled over. Two crew were trapped inside the vessel and their bodies have subsequently been recovered.

Bulk carrier catches fire in Ontario

Fire broke out in the superstructure of bulk carrier Algoma Discovery at Port Colborne, Ontario, Canada. Port Colborne Fire Service responded. The fire is reported to have broken out in the engine room, and was extinguished by activating firefighting system, according to Great Lakes and Seaway Shipping edition. The bulk carrier is in winter lay-up, undergoing maintenance repairs.

Tanker with 800 tons of oil has sunk

Product tanker Princess Empress is reported to have sunk off northeast coast of Mindoro island, Philippines, after being caught in rough weather. The tanker had a cargo of 800 tons of technical oil onboard. All 20 crew were rescued by the general cargo ship Efes.

Grounded asphalt carrier pollutes tourist destination off Sumatra

Pollution from the wreck of an asphalt carrier is spreading along the west coast of Nias, an island off Sumatra in the Indian Ocean, according to Indonesia's Ministry of Maritime Affairs and Fisheries. The Gabon-flagged Aashi went aground on a remote stretch of beach on Nias' west coast and it partially sank in the shallow water. It has begun spilling its cargo of 1,900 tonnes of asphalt, and sticky masses of the substance have been spotted as far as 15 nautical miles to the south of the wreck site.

Reported in March 2023

Fire disabled ferry in English Channel

Fire broke out in engine room of cross channel ferry Isle of Innisfree. The ferry was en route from Dover to Calais with 94 passengers and 89 crew on board. The fire was reported as small and was quickly contained. The ferry was towed to Calais. No injuries reported.

General cargo ship fire

General cargo ship Ho Chuang 996 reported a fire in the engine room and requested evacuation whilst 32 nm NW of Taipei in the Taiwan Strait. The 12 crew went into the life raft and were picked up by Taiwan Coast Guard ship.

Longliner sank in Indian ocean with loss of life

The longliner Linggar Petak 89 reportedly capsized and sank in the Indian ocean south of Bali island, Indonesia. Of 15 crew on board, 4 are reported rescued, 1 was found dead and and 10 remain missing.

Italian ferry fire

Fire broke out in the engine room of ferry Filippo Lipp off Salina island in the Tyrrhenian sea, Italy. The fire was reportedly to be quickly extinguished by crew, but the ferry was disabled and went adrift. No injuries reported.

Great Lakes marina fire affects 150 boats

Fire broke out at the Safe Harbor Great Lakes Marina in Muskegon in the US state of Michigan, reportedly causing millions of dollars in damage. Fire crews were called out to reports of smoke at building 3 of the marina. Speaking after the fire was extinguished, deputy fire chief Jay Paulson confirmed that every boat in the building — around 150 vessels — had "suffered some type of damage" from the fire, smoke or heat.

Eight people dead after two boats collide

At least eight people have died after two suspected smuggler panga boats crashed near Blacks Beach in San Diego County, California.

Cargo ship sank with two missing

The general cargo ship Tuan Tu sank while en route from Vung Tau to Phu Quy island in Vietnamese waters. It was carrying a cargo of construction materials. Five were rescued but two remain missing. Rough weather is thought to be the cause of the accident.

MSC vessel loses 46 containers off Bermuda

The MSC SHRISTI, a container ship travelling from Boston to the Dominican Republic notified the Bermuda Maritime Operations Centre via email that the ship had lost 46 empty shipping containers overboard at three different times due to bad weather.

Two dead in drug smuggling incident off Colombia

When Colombian authorities intercepted their latest drug smuggling boat catch, they recovered more than just cocaine. Alongside thousands of shrink-wrapped bricks, they found the bodies of two smugglers who had perished in the attempt to get the drugs out of the country.

One dead in tug sinking off Cebu

A Philippine landing craft struck a tugboat in the port of Cebu, sinking the tug and claiming the life of one crewmember.

Yacht attacked and disabled by orcas in Strait of Gibraltar

The Strait of Gibraltar's notorious orcas are back. This week, another sailboat was disabled off Cape Spartel by killer whales who attacked it until they had broken its rudder - a pattern all too familiar to sailors in the region.

Fatal Accident on Fuel Barge in NYC Harbor Prompts Safety Reminder

A fatal accident is serving as a reminder of the dangers when performing seemingly routine tasks. Reports are indicating that a 53-year-old crewmember working for Centerline, a tug and barge operator that provides fueling services and transports petroleum between refineries and terminals, was killed early Thursday morning.

Fishing vessel sank after collision with tanker leaving one dead and one missing

The product tanker Ocean Marine collided with fishing vessel in the Gulf of Siam, Thailand. The fishing vessel is reported to have sunk. Three fishermen were rescued, but one was recovered dead from the water, and another is missing.

Massive fire broke out at Seattle Boat Yard

A major fire broke out at the Seattle Boat Company yard in Seattle's University District. The Fire Department received a report that the yard had multiple boats on fire. The first crews on scene found that the dry rack storage shed at the yard was on fire, and about 30 boats were affected. No one was inside the structure. At the peak of the response, about 100 firefighters were on scene.

Greek bulk carriers collided at Ust Luga, Russia

A bulk carrier whilst unmooring at Ust Luga port, Russia struck a berthed bulk carrier Diva. Diva's mooring lines broke and her portside hull suffered damage and a possible breach. The other vessel, Marco, is understood to have sustained some damage too.

Tanker vessel fire: 3 missing

Three individuals have been reported missing after a tanker vessel caught fire off the coast of West Nusa Tenggara in Indonesia. The vessel was reportedly run by the state-owned oil firm of Indonesia, PT Pertamina, and this accident took place off the coast of the company's oil storage unit in Mataram city of the same province.

General Cargo Ship with Troubled History Grounds on Reef off Belize

Officials in Belize are detaining a general cargo ship after it went aground in a sensitive marine area while they work to determine the extent of damage suffered on the reef. The detention had begun while the vessel, which has a long history of deficient inspections, remains lodged on the reef in a key shipping channel off the coast near Belize City.

USCG launches investigation into fire aboard Boston Harbour cruise boat

The US Coast Guard has launched an investigation into a blaze aboard the harbour cruise vessel Spirit of Boston, which caught fire at the pier. The 150-foot Spirit of Boston is a whale-watching and dinner-cruise boat. She caught fire at her mooring and the Boston Fire Department responded with water-based and shore-based fire companies. Few if any flames were visible from the exterior, but the vessel's interior filled with heavy black smoke emanating from belowdecks. No injuries were reported.

At least 5 are dead in passenger ship fire

Fire broke out on the passenger ship Lady Mary Joy 3, which was docked at Baluk Baluk island pier in the Philippines. There were over 200 people on board, including crew as she was about to set sail. At least 5 passengers were reported dead, although the majority are said to have disembarked safely.

Reported in April 2023

Filipino crew member died trying to assist pilot boarding

A Filipino crew member of a Capesize bulk carrier the Hellasship fell into the water while trying to assist a pilot boarding the vessel in rough weather off Gijon, Spain. Despite a massive SAR, his body was found and recovered in the morning. He drowned despite wearing a life jacket.

Freighter sank in Mediterranean

General cargo ship Joe 2 sank off Kumluca, Antalya Province while en route from Iskenderun, Turkey to Izmail, Ukraine. Of 14 crew on board, 5 were rescued and a further 9 are missing.

Container ship struck wreck

The Greek Coast Guard reported an accident at Thessaloniki port when a container ship the Annaba struck a charted wreck while entering port, and suffered a portside hull crack which was under inspection.

Trawler fire broke out at Tacoma

A fire broke out onboard a Trident Seafood's factory trawler at Tacoma's Tideflats Port Facility, burning through the deckhouse and the wheelhouse. The fire progressed throughout the ship. The vessel was reported to have an estimated 55,000 gallons of diesel and 19,000 pounds of freon onboard.

3 crew of bulk carrier poisoned

Three crew members of the Taiwanese general cargo ship Vigor SW were poisoned by hydrogen sulfide gas at Son Duong Port, Vietnam. It is understood they were tasked with opening holds hatches in preparation for cargo offloading. All three were hospitalized. One died, one was in critical condition in a coma and another one was reported to be stable.

Vessel with 20 tourists onboard sank in Honduras

The Honduran Fire Department reported that a vessel carrying about 20 tourists sank, prompting search and rescue attempts. The fire agency noted that no deaths or injuries had been reported.

Hull of OS 35 shipwreck separates

The Gibraltar government has reported that the wreck of the OS 35 bulk carrier has shifted slightly from its position due to adverse weather conditions. This has caused a final separation of the bilge keel, resulting in the complete separation of the hull that was damaged previously. Some oil residue has been observed escaping from the wreck and coastal cleanup operations were underway.

Taiwanese fishing vessel rescues round the world yachtsman

A Taiwanese fishing vessel has rescued a sailor who got caught in a severe storm in the Golden Globe single-handed ocean race. Yachtsman, Ian Herbert Jones, contacted the Golden Globe Race coordination office by satphone and he advised the race organizers that he was in trouble. It is understood his yacht had been dismasted. He was trying to hand-steer the yacht downwind in 50-knot winds and confused seas. The conditions were so bad that he had twice been washed out of the cockpit by waves.

Collison leads to ferry sinking

A passenger ferry sank after it collided with a recreational vessel in the Bay of Islands in New Zealand. Initial reports said the wooden ferry Waitere and an unnamed pleasure boat collided with each other midway between the towns of Russell and Paihia. The damage suffered by the ferry was so severe that it sank a little over two hours later. Witnesses described the wheelhouse as having "disintegrated" due to the force of the impact. At least one passenger on the ferry was reportedly thrown into the water.

Samui ferry capsized in Thailand

The ferry Raja 10 capsized and rested starboard on the pier at Surat Thani Port, Thailand, Gulf of Siam. The vessel is reported to have lost stability and capsized during mooring before boarding started. No injuries reported.

26 crew rescued from burning fishing boat

The South African Maritime Safety Authority reported that 26 crewmembers were rescued and brought to shore after their fishing vessel caught fire south of the Cape of Good Hope near Cape Town. They are describing the rescue as "a frantic effort involving no less than three ships which had responded to a mayday call."

Tanker fire claims five lives

Fire is reported to have broken out in the engine room of the tanker Tiger Sea somewhere in Riau Archipelago waters, South China sea. Local informants said five Indonesian crew were lost in accident. The ship's condition and status are unknown, as is the fate of other crew members.

Cargo vessel runs into an offshore wind turbine

A cargo vessel collided with a wind turbine at the Gode Wind 1 offshore wind farm in the waters of the German North Sea. The German water police informed that it had sustained massive damage. The result was a 3 by 5 metre hole on the vessel's starboard side and water ingress.

Aframax caught fire off Singapore

25 crew were rescued by nearby ships following a fire onboard the crude oil tanker Pablo. However 3 crew were reported missing.

Ferry fire, grounding and water ingress

The ferry Pentalina suffered a fire in engine room and then ran aground near the pier at St Margaret's Hope, Orkney Islands, north coast of Scotland. All passengers on board were safely evacuated. The ship suffered hull breach with minor water ingress.

Brand new luxury yacht sinks in Red Sea

Luxury yacht Carlton Queen capsized and sank during her second voyage en route from Sha'ab Abu Nuhas reef, Hurghada, Egypt, to Sinai Peninsula after dives in the area. All on board were rescued by a nearby liveaboard vessel, said divemagazine.com.

Reported in May 2023

Three people rescued after Poole Harbour boat fire

Emergency services were called to a report of a rib on fire near to Russell Quay in Poole, UK. There were three people on board the boat, a dad and his two children. The crew found the people on the boat had managed to get to safety on the mud at Russell Quay.

Two crude oil tankers collided with two fishing vessels in Japan sea

Two crude oil tankers collided with two fishing vessels east off Ulsan, Korea in the Japan sea. Crude oil tanker SM NAVIGATOR collided with the 39-ton fishing vessel which remained under way and returned to her home port under own power. The tanker SWAN collided with the 34-ton Korean fishing vessel which was seriously damaged but managed to get to her home port under own power.

Ferry fire in Sunda Strait

Fire broke out on cargo deck of the ferry KMP ROYCE in Sunda Strait, Java, shortly after ferry left Merak port. A truck reportedly caught fire resulting in a lot of thick smoke. No casualties were reported.

Pilot died while boarding the Diamond Princess cruise ship in Japan

A Nagasaki Port pilot fell into the water while boarding the cruise ship Diamond Princess. The 69-year old man was rescued but 2 hours later was declared dead.

Boat accident in India kills at least 22 people

At least 22 people, including many children, were killed after a double-decker tourist boat capsized in the southern Indian state of Kerala. According to international news reports, the tourist boat capsized near Tuvalthiram beach in Malappuram. Officials do not know how many people were on board, but the number is estimated to be around 35. The dead included many children who had come for a ride on the boat during their school vacation.

Dive boat capsized off Egypt

A diving boat with 26 guests on board capsized off the coast of Hurghada, Egypt. All the guests and the yacht's nine crew survived. It is still unclear why the boat, which had only been refurbished last year, capsized on a day with calm conditions.

Chinese longliner with 39 crew capsized in Indian ocean

Fishing vessel LU PENG YUAN YU 028 with 30 crew onboard capsized in the Indian ocean south of the Maldives. The vessel left Cape Town believed to be destined for Busan. The crew consists of 39 fishermen, including 17 Chinese, 17 Indonesians and 5 Filipino. All are understood to be missing.

4 missing and 1 dead after fishing boat sinks off Alaska

The US Coast Guard were searching for four missing people after a fishing boat sank off the coast of Alaska. One person has been confirmed dead, and the body recovered. The boat was found intact and partly submerged, raising unanswered questions about the nature of the casualty. The vessel was found undamaged but partly submerged off Low Island, about 10 miles west of Sitka.

China continues to search as 7 bodies discovered at capsized fishing boat

Chinese state media reported that seven bodies have been recovered from the capsized commercial fishing boat in the Indian Ocean. The Australian Maritime Safety Agency (AMSA) reported that it was suspending its search effort after four days saying that China would lead the recovery efforts going forward. AMSA speculated in its final statement that the vessel likely capsized "due to the cyclonic conditions."

Product tanker stuck under bridge in Kobe

A South Korean-owned product tanker arriving in Kobe, Japan became stuck under one of the city's bridges and required assistance from local tugs. The Kobe Office of the Japan Coast Guard reports there was a "fresh breeze" blowing but weather conditions were considered to be fine at the time of the incident.

Fishing vessel sinks after collision with Virginia pilot boat

A fishing vessel has sunk after colliding with a pilot boat on the James River at the Port of Virginia. The US Coast Guard says it was alerted that the pilot boat, Swift, and a 38-foot deadrise-style fishing vessel, Miss Heather, had collided near the Newport News Small Boat Harbor, in the vicinity of the Newport News Channel. The two fishermen from the Miss Heather were taken aboard the Swift to shore as the fishing vessel rapidly took on water.

Lake Maggiore boat accident

Four people tragically drowned on the picturesque and popular lake south of the Swiss Alps. One was a former agent from Israel's spy agency Mossad, two were Italian intelligence officers and the fourth victim was a Russian woman.

Two Indian crew badly burned in tanker engine room

Bitumen tanker XANTE interrupted her voyage in the Arabian sea to call at Kochi anchorage, India, to medevac 2 crew of Indian nationality. They were badly burned in a working accident in the engine room. An Indian Coast Guard ship with paramedics team performed medevac. Both seamen were transferred to hospital.

British sailor dies during historic cross-Channel race, second person missing

One fatality has been confirmed, and a search for a second sailor stood down, after two separate man overboard incidents occurred during cross-Channel races. A British sailor fell overboard in French waters during the 43rd Royal Escape Race, between Brighton Marina and Fécamp in Normandy.

Dutch tall ship tips over in drydock

The Dutch tall ship Europa tipped over during a relaunch following a drydocking period in Cape Town, South Africa. The vessel was damaged in the accident, according to the operator, Rederij Bark Europa. During her return to the water, the vessel "partly fell over," the organization said in an update. One sailor aboard the sailing ship was injured but is in stable condition and is receiving care.

French tourists airlifted to safety as tour boat grounds off Norway

A small tour boat operating in Norway's extreme north near the Arctic went aground prompting an air rescue for the tourists as the vessel assumed a strong list. The governor of the Svalbard region, an archipelago lying between Norway's mainland and the Arctic, reports that everyone was safely evacuated and that there is no significant damage expected to the environmentally sensitive region.

Cargo ship damaged in collision off Greece

The Hellenic Coast Guard responded to the collision of two cargo ships sailing north northwest of the Greek island of Chios in the eastern Aegean near Turkey. Reports said there were no casualties although a Turkish-owned vessel was showing a large hole in its starboard side and was reportedly refusing assistance from the Greek teams.

Reported in June 2023

Irish fishing vessel grounded

The Irish Coast Guard responded to a grounded fishing trawler on the west coast airlifting nine crewmembers to safety. The Coast Guard reports it was a challenging situation but that everyone was safe and the vessel was eventually pulled from the rocks.

Indonesian Navy landing ship on fire

Indonesian Navy landing ship KRI TELUK HADING (538) caught fire in the Flores sea some 9 nm off Bira, southeast South Sulawesi, Indonesia. The ship was on patrol mission in Indonesia waters with 119 people on board, including 62 crew and 57 Army troopers. No casualties were reported.

Scrap fire in bulk carrier hold, Dordrecht

Fire broke out in the cargo hold of bulk carrier SILVER LADY, berthed at Dordrecht Netherlands, during scrap loading. Fire spread also to scrap piled at the quayside. The large firefighting response managed to take the fire under control. There was a lot of black toxic smoke.

3 missing after motorboat caught fire

According to Egyptian officials, three British tourists were missing and twelve had been rescued after a motorboat caught fire off the Egyptian Red Sea coast. It is suggested the fire was caused by an electrical short circuit on the boat, named Hurricane.

Passengers evacuated after experiencing engine room fire

According to U.S. Coast Guard, 67 people were safely evacuated from a small, expedition cruise ship, in Glacier Bay National Park in Alaska after the cruise ship reported an engine room fire.

Two bulk carriers collide at Tarragona port

Heavy damage has been caused as a result of two bulk carriers colliding in the Spanish port of Tarragona. The 75,500 dwt Elena Ve owned by Greece's Golden Union struck moored Polsteam's 82,100 dwt Karpaty while proceeding to berth with tugs' assistance. The 2013-built Polish kamsarmax sustained significant damage to the port side and the bow of the Greek panamax has also been severely damaged.

Tragic accident kills mother and child

A tragic incident occurred on the ferry STENA SPIRIT as she crossed the Baltic Sea. A child fell into the sea approximately 100km off the Polish coast. Upon witnessing the child falling into the water, the 36-year-old mother bravely jumped to rescue him. After about an hour, a Swedish search and rescue team picked up the mother and the child separately from the water. Despite efforts to revive them, they were pronounced dead.

Two injured after bulk carrier caught fire

According to news reports, a fire broke out onboard the Turkish-owned capesize bulk carrier Beks Force in the Sea of Japan. Two crew members of the twenty five people on board the vessel were injured.

One stowaway found dead on bulk carrier off the coast of Samsun

One of two Colombian stowaways, who had travelled on the ship Katya ATK without authorization, was found dead inside a container three miles off the coast of the northern province of Samsun.

One dead after vessel collision in Miami

The US Coast Guard has reported that a 30-foot boat collided with Fisher Island Ferry near Miami killing one person and injuring another.

Eighty plus British tourists rescued after boat caught fire

According to reports, 82 British tourists were rescued from the water after their wooden boat caught fire near the Greek island of Rhodes. One of the tourists, Shaun Williams, stated they were around 30 minutes into the trip when they saw smoke coming from the boat.

Three workers killed by ship's section collapse

A major accident occurred in a dry dock at Shanghai Waigaoqiao Shipbuilding resulting in three deaths. According to Caixin Media, it appears that a container ship was under assembly when a large block section mounted on the hull of the newbuild fell into the dry dock from a height of 25 meters.

Reported in July 2023

Tanker engulfed by fire after second explosion

As cargo of diesel and petroleum was being transferred from tanker O.T. SHAGOR NANDINI-2 an explosion rocked the vessel in the area of the cargo tanks. Fire engulfed the tanker and destroyed the superstructure a few days earlier following the first explosion but the cargo tanks had remained intact. At least at least 14 people have been injured or burnt according to reports. A further 7 were reported as missing.

Fire on Indonesian tug

The tug PAITON caught fire as she towed a coal barge in Musi river, Bangka Strait, Indonesia. All 10 crew were rescued, but 4 of them were hospitalised with burns.

Cargo ship coal fire

A cargo of coal caught fire on board the general cargo ship HANJIN GREEN, berthed at Koen Yeosu Power Plant, Jungheung-dong, Yeosu. The fire is believed to have started in the offloading conveyor belt. No injuries reported.

Two crew died on board hopper dredger

Two Russian crew died in the cargo section of hopper dredger Milford when the ship was by Varna Bulgaria. The cause of their death is unknown as of yet.

Two firefighters dead after cargo ship fire at Port Newark

Two firefighters were confirmed dead after a Grimaldi cargo ship caught fire in Port Newark. Officials said that multiple vehicles on the ship had caught fire, which then spread to the two floors above.

Pioneering EU electric ferry disabled by battery fire

The battery compartment of electric ferry Ellen caught fire and disabled this pioneering electric ship in Denmark. The fire was extinguished by the vessel's foam automatic firefighting system.

Car carrier sent crane crashing

The car carrier Don Quixote broke free from her moorings in strong gusty wind at the port of Bremerhaven. The vessel drifted across the basin and contacted the Lloyd Werft pier, knocking the gantry crane over. The incident inflicted what has been described as substantial damage.

Ro-ro drifted into Wolf Rock Lighthouse

The Maltese flagged ro-ro Mazarine lost power and went out of control due to mechanical failure and an hour and a half later drifted onto Wolf Rock. Reports suggest the ship was refloated an hour later and was proceeding on tow towards Penzance, Cornwall, UK.

Containers dumped into the sea after ship capsized off Ningbo

The container ship Xin Yuan Long collided with a sand carrier shortly after leaving Ningbo, China. The sand carrier sank. Xin Yuan Long suffered hull breaches, developed a heavy portside list and capsized dumping at least 40 containers into the water. The container ship crew was evacuated. No details were available about the crew onboard the sand carrier.

Japanese Panamax struck cargo ship

The bulk carrier BW MATSUYAMA reportedly collided with a cargo ship at Constanta Port, Romania while maneuvering. According to the reports locally, the ship struck sustained heavy and costly damages, totaling an estimated 1.4 million euros to include remedial work, destroyed ship's cranes and freight losses.

11,000-TEU container ship destroyed flour terminal in Cai Mep

The brand new 11,000-TEU container ship Wan Hai lost control while turning around in the Thi Vai river curve, Cai Mep, Ho Chi Minh, Vietnam as she planned to leave the container terminal. In doing so, she contacted the bulk carrier Vassos 2, which was berthed at the Interflour Terminal. The jolt and pressure on the pier construction caused 46 meters of pier to collapse, resulting in the destruction of conveyor and suction cargo handling equipment.

Cargo ship capsized and all crew reported missing

Cargo ship Tung Sung capsized near Kuching, Malaysia. It is understood all crew are missing. Although the exact number is not known it is at least 9 people.

15 people dead after passenger vessel capsizes off Sulawesi Island

According to media reports, an overloaded passenger vessel reportedly capsized off Sulawesi Island in Indonesia claiming the lives of 15 individuals. More than 30 people were rescued and survived.

Man dies of serious injuries at Port of Aberdeen

A man died as a result of an incident on board a vessel in Aberdeen South Harbour.

Ferry capsized in the Philippines with multiple fatalities

Coastguards said passengers panicked and moved to one side of the vessel before it flipped over. Authorities have promised to investigate the disaster and find out how many people were onboard. 27 people are known to have died in the accident.

Car transporter fire with 3,000 cars onboard leaves one dead

The Dutch coast guard reported that a fire on a freight vessel carrying 3,000 cars was burning out of control in the North Sea, claiming one life and injuring the rest of the crew. Efforts were being made to save the ship from sinking near an essential habitat for migratory birds.

Four Philippine Coast Guard service members lost on rescue mission

The Philippine Coast Guard has said that four of its service members who were dispatched to save the crew of a tugboat on the north shore of Luzon did not returned, and their aluminum launch was found floating at a position dozens of miles to the north.

Reported in August 2023

Hull breach causes oil spill from Great Lakes freighter

The U.S. Coast Guard was responding to a Great Lakes freighter that was leaking oil in Lake Michigan while anchored approximately 1.5 miles off the coast. Residents were briefly warned to stay away from the beaches, but in coordination with NOAA, the Coast Guard later said it was mapping the projected movement of the spill and that it was safe to go to the beaches.

11 missing crew members rescued in the Malacca Strait

The Indonesian authorities, with the assistance of fishermen, successfully saved all 11 missing crew members of a vessel that sank in the Malacca Strait.

Children safely returned to shore by Marine Rescue Port after boat began taking on water

Two children fishing with two adults were rescued from a vessel which was taking on water approximately six nautical miles (11kms) off Scarborough, Australia. The adult skipper of the distressed vessel called Marine Rescue NSW around 8am after the 6 metre open runabout began taking on a large amount of water on return from a fishing trip off Stanwell Park.

Kayaker killed by a barge

A kayaker was struck and killed by a barge on the Tennessee River, according to local officials.

Suez Canal tugboat collides with tanker

A Suez Canal tugboat sank and one of its crew was reported missing after it collided with a Hong Kong-flagged LPG tanker. The dead crew member, Sayed Moussa, was a mechanic from Port Said, his family said.

20m Baglietto yacht Cujo lost at sea following incident

The 20-metre Baglietto yacht Cujo has sunk around 35 kilometres off the coast of Beaulieu-sur-Mer, France. All seven passengers were already safely evacuated on a life raft. First responders were able to retrieve several items from the yacht, but Cujo ultimately sank to a depth of around 762 metres with approximately 7,000 litres of fuel on board.

Fire interrupts shipping at France's largest grain port

An early morning fire in the grain operation at the French port of La Rochelle on the Atlantic coast interrupted activity in the port and caused an evacuation and warnings for the residents to close windows and doors. Pictures and videos show a large smoke plume coming from the grain silos and spreading across the region.

Firefighters Investigating cause of Church Point Boat Fires

Fire and Rescue NSW (FRNSW) firefighters are working to identify the cause of a blaze which has destroyed three boats at a marina at Church Point on Sydney's northern beaches. Flames spread from one boat to two others nearby. Six FRNSW trucks and 22 firefighters arrived at the scene and crews managed to prevent the fire spreading to at least 20 other vessels.

12 injured as blast hits grain silos at Turkey's Derince Port

According to Turkish state media, at least 12 individuals have been critically injured by an explosion rocking the grain silos close to the port of Derince, located in western Turkey. Initial evaluations suggest that an explosion occurred due to wheat dust compression in the transfer of wheat from a vessel to the silo.

One dead in rig capsize in Nigeria

A drilling rig capsized in Nigeria's Delta State killing one and leaving three missing, according to the charterer. 92 crewmembers were rescued from the rig.

Luxury yacht destroyed by fire

Fire broke out on board the luxury yacht Irmao at Formentero La Savina marina anchorage in the Balearic Islands. The yacht was swiftly engulfed by fire. 12 passengers and 5 crew were lucky to escape the burning boat.

Russian freighter fire

Fire broke out in the cargo hold of general cargo vessel Terskiy Bereg at Arkhangelsk Port, Russia. It was reported that the cargo was on fire. No injuries reported.

Cruise ship breaks free from moorings and collides with a freighter

The P&O Cruise ship Britannia broke free from moorings and collided with a freight vessel during a storm in Mallorca, Spain. Only a small number of minor injuries were reported, and the ship was not compromised beyond superficial damage, according to passengers on board.

Two crew missing after cargo ship capsized off western Japan

Two crew were reported missing after two cargo vessels collided of the coast of Wakayama Prefecture, western Japan.

Two sailors rescued from sailing vessel in North Queensland

The sailing vessel with two people on board broadcast a mayday on VHF after running aground on a reef. A vessel was sent to assist the grounded ketch and another nearby private craft responded to the mayday. Both were recovered uninjured.

Major fire on general cargo ship

Fire erupted in the fore area of general cargo ship Kota Nabire, which was berthed in Sunda Kelapa Harbor, Jakarta. At least 15 engines and 70 firefighters responded, plus port tugs.

Ferry sunk assisting tug after collision

Ferry New Taima collided with an assisting tug while leaving Fuao port, Matsu islands, Taiwan. The tug aft hull was breached, the engine room was flooded and the vessel sank half an hour after the collision. 5 crew were reported safe.

Crew missing after Japanese freighter capsized

Izumi Maru collided with container ship Contship Uno. From the Japanese freighter's 5 crew, 3 were rescued and 2 were reported missing.

Boats destroyed in yard fire

A fire at Cantiere Nautica Feltrinelli in Gargnano on Italy's Lake Garda has damaged some 30 boats, of which around 10 appear to have been completely destroyed. The boats were stored at the historic shipyard which has been located on the Brescia side of Lake Garda since 1919, in Gargnano del Garda.

16 Injured after fuel dock explosion on Lake of the Ozarks

A great day on the water almost turned deadly as 16 people were injured in a fuel dock explosion on Lake of the Ozarks. Missouri State Police said the explosion occurred when the captain of a 2000 Carver cruiser turned on their ignition after refuelling at the Millstone Marina. An apparent spark in the engine bay caused an explosion, which ejected three people from the boat. Two people who were on the fuel dock were also injured.

Reported in September 2023

Greek Authorities investigate after man drowns trying to board departing ferry

A 36-year-old man who tried to board a passenger ship as it sailed from Greece's Piraeus port drowned after being pushed back by crew members off the vessel's stern ramp, the country's shipping minister said. Video footage released on social media showed crew members arguing with the man on the stern ramp just as the ferry was leaving Piraeus for the island of Crete.

Tour boat left high and dry in grounding

U.S. Coast Guard aircrews rescued 18 passengers and crew from a tour boat that had gone aground on a shoal in Columbia Bay, home of Southeast Alaska's Columbia Glacier. The vessel was high and dry, so all personnel were able to safely disembark onto solid ground for an aerial evacuation.

Singapore pilot boat caught fire

Fire broke out on a PSA Marine pilot boat in Singapore port waters. The fire was extinguished by a tug's water cannon in a short time, but the vessel suffered extensive damage. One or more persons on board were rescued with one treated for smoke inhalation.

Indonesian ferry fire

Fire broke out in the aft section of ferry KMP Muttara Berkah whilst berthed at Merak port, west Java. Thick black smoke was billowing from the ferry. All passengers disembarked without any injures or casualties. A number of land fire engines from shore side, and tugs with water cannons from seaside were deployed.

NOAA survey ship suffers fire in South Pacific

A survey ship with the National Oceanic and Atmospheric Administration suffered a fire in the exhaust stacks during operations off American Samoa. The fire has been extinguished and all 41 people on board are reported safe.

Three Chinese found dead in Panamax bulker cargo hold

Three Chinese seamen were found unconscious in the cargo hold of bulk carrier MSXT ECHO off Taiwan's eastern coast. Local authorities believe they died deom suffocation after they inhaled toxic emission.

Taiwanese fishing vessel sunk in Indian ocean

16 crew were rescued from a life raft by her sister fishing vessel after the Der Hae No 66 reportedly sank.

Chief and Second Officer hit by trailer

A tragic accident occurred on board the ferry Cartour Delta at Salerno Italy during cargo operations. The Chief and Second Officer were hit by a trailer truck when the trailer broke free from one of lashing points and rolled. The Second Officer died on the spot and the Chief Officer was hospitalised with serious injuries.

Cruise Ship ran aground in Greenland with 206 passengers onboard before being freed

A luxury cruise vessel is reported to have run aground in a remote area of Greenland with 206 individuals on board. The cruise ship has been successfully pulled free with the aid of a fishing trawler.

Over 100 passengers evacuated from grounded ferry aground in Bali Strait

Ferry KMP Gerbang Samudra 2 ran aground in the Bali Strait while en route from Ketapang, Java, to Gilimanuk, Bali. 114 passengers on board were safely evacuated.

Bulk carrier engine room fire

Fire broke out in THE engine room of bulk carrier Samudra Sakti III at Bandar Lampung anchorage, East Sumatra. The crew of 26 were evacuated. Tugs and firefighting boats were deployed.

Three navy sailors died

7 crew members were swept into the sea from South African Navy submarine SAS Manthatisi off Kommetjie in the Cape Town area, during a "vertical transfer" exercise. Foye were rescued but three died, among them Lieutenant Commander Gillian Elizabeth Hector, the first woman to navigate a submarine on the African continent. There was swell up to three meters height during exercise.

Bulk carrier cargo hold fire

Fire broke out in the cargo hold of bulk carrier Batavia Express west of Cape Town. No details of any casualties.

Man dies after whale collides with boat

One man died and another was in hospital in Australia after a whale struck and flipped their boat during a fishing expedition, authorities said. Police said one man was pulled unconscious from Botany Bay, off the coast of Sydney, and later died, while the other was taken to hospital in a stable condition, police said.

Accident on board Russian pipe-laying ship

During a pressurization test of a buoyancy pontoon deployed in underwater pipe-laying, a sudden decompression occurred injuring 4 people on board a Russian pipe-laying ship in Okhotsk sea.

Lampedusa ferry fire, passengers evacuated

Fire broke out believed to be on the cargo deck of the ferry Cossyra, understood on cargo deck in the Mediterranean north of Lampedusa with 175 people on board. The ship went adrift, Italian Coast Guard responded and coordinated rescue. All 175 were evacuated by patrol ship and transferred to Porto Empedocle.

Reported in October 2023

Tanker capsizes fishing vessel killing three

The Philippine Coast Guard has reported a fatal ramming involving a merchant vessel and a fishing boat in the South China Sea. The Philippine fishing vessel Dearyn was located about 85 nm to the northwest of Scarborough Shoal, with six crewmembers aboard. Another eight crewmembers were out using the mother vessel's small boats to fish nearby. In the dark, the crew aboard Dearyn did not notice an approaching vessel. The ship struck Dearyn, causing it to capsize, and three of the fishing vessel's crewmembers were killed, including the captain.

Coaster collided with tourist cruise boat

The general cargo ship WIJAYA KUSUMA 1 collided with the tourist cruise boat KLM SEHAT ELONA in the Flores sea, Indonesia. KLM SEHAT ELONA was carrying 18 foreign tourists and sustained heavy starboard damage. WIJAYA KUSUMA 1 sustained bow damage.

13 rescued from a sinking bulker

Chinese search and rescue authorities saved the crew of a coastal bulker that was listing dangerously off the coast of Shanghai. 13 crewmembers were aboard the ship and were in need of rescue.

Containership fire extinguished on Maersk Ship as reports suspect an EV involvement

The Hellenic Coast Guard is reporting that a small fire aboard a Maersk containership has been resolved but the vessel remains docked in the port of Piraeus awaiting inspections before resuming its voyage. While the fire appears to have been limited to a single container, questions are being raised after reports in the Greek media suggested that the container was transporting a used electric vehicle.

12 rescued after cargo vessel grounds off St. Thomas

A US Coast Guard boat crew rescued 12 people after they were forced to abandon a cargo vessel that was taking on water and ran aground just south of the airport in St. Thomas. All 12 people aboard the 195-foot Bonnie G, a Vanuatu-flagged roll-on/roll-off (ro-ro) vessel, were reported safe. No injuries have been reported to the Coast Guard.

Fire breaks out on livestock carrier carrying 3,600 cattle

A 21-year-old livestock carrier returned to port in Australia with its cargo of 3,600 cattle after a fire broke out in the engine room. Vroon's Brahman Express ran into difficulties shortly after leaving the port of Darwin yesterday bound for Indonesia. The fire was extinguished promptly. No injuries to crew or animals reported.

Fire has destroyed historic yacht club

A severe fire that broke out in Falmouth Harbour, Antigua, has caused significant damage to the historic Antigua Yacht Club Marina & Resort on the island's southeastern coast. The cause of the fire has not been confirmed. However, local reports have linked it to a lightning strike during tropical storm Philippe, which struck Barbuda.

Dismasting of historic Maine schooner kills one and injures three

The mast aboard a historic schooner operating cruises on the Maine coast broke killing one person and seriously injuring three others. The 141-year-old schooner Grace Bailey was returning to Rockland, Maine at the end of a four-day cruise when the mast broke.

Fire onboard tanker in Philippines kills two crew members

A tanker caught fire in the sea of Batangas, Philippines killing two crew members. One crew member was able to escape harm, but he suffered burns across his body. He was discovered by fishermen drifting at sea.

Tourist boat captain dies trying to dock at Portimão Marina

The captain of a tourist vessel died when trying to dock the boat with 16 people on board at the Portimão Marina. The captain was in the docking maneuver "when he fell into the water and the vessel passed over him", with the boat being stopped by the second commander. It appears no kill cord was in use. The remaining 14 tourists suffered minor injuries, 11 of which were treated on site.

Canadian Coast Guard looks for containers lost overboard in Nunavut

Local emergency responders in Iqaluit, Nunavut, were diligently monitoring and coordinating their response to a recent incident involving shipping containers that fell off a barge. According to the Canadian Coast Guard, out of a total of 23 containers involved, 16 have been successfully retrieved. Local boat operators have been urged to remain vigilant and adhere to navigational warnings in the area as efforts persist to recover debris and locate missing containers.

Four hospitalised in explosion on board a Turkish cargo ship

An explosion occurred on board Turkish cargo ship, SERENITY AC, which was anchored at Fethiye Bay, Turkey. Four crew were injured and hospitalised, one said to be in a critical condition.

Capesize bulk carrier collided with fishing vessel

The capesize bulk carrier FRONTIER YOUTH collided with a fishing vessel shortly after leaving Zhanjiang, Guangdong province, South China. One fisherman fell overboard and was later rescued; another one was seriously injured and was taken to hospital.

British freighter sank after collision with Polish bulk carrier

General cargo ship VERITY collided with the bulk carrier POLESIE in the German Bight while moving on crossing courses. VERITY sank soon after the collision. There were a number of rescue and auxiliary vessels and a cruise ship in the area engaged in the rescue efforts. The VERITY crew consisted of seven seamen. Two were rescued. One was reported dead with a further four missing.

Truck with EV bikes caught fire on ferry

A heavy truck on the cargo deck of ferry TRANSHIP 1 caught fire. The ship had 200 passengers on board and was about to berth in Bakauheni, southeast Sumatra. The ferry was shrouded in thick smoke as she berthed and the passengers disembarked without injuries. The truck in question was loaded with consumer goods, including electric bikes and foam mattresses.

Vessel ran aground causing oil spill

A ferry ran aground in Sweden resulting in a significant spillage of diesel fuel that has spread across several kilometres. According to local news sources, the Marco Polo TT-Line ferry, which typically operates between Trelleborg and Karlshamn, encountered an unexpected deviation from its regular course and ran aground. A ship inspector from the Transport Authority, the remaining crew, representatives of the shipping company and insurance companies carried out a damage inventory on board. The vessel has several holes in the hull and water has penetrated.

Sole survivor found adrift after Washington fishing boat sank

A survivor from a fishing boat that mysteriously vanished in Washington has been rescued. This miraculous rescue occurred after the Coast Guard had concluded its search for the vessel. The 43-foot commercial fishing boat named "Evening," departed from Washington's Olympic Peninsula but failed to return. Concerned, the daughter of one of the crewmembers notified the Coast Guard, prompting a search operation. The whereabouts of the one other crewmember from the boat remains unknown.

Orcas sink sailing yacht off Morocco

A pod of orcas has sunk another yacht off the coast of Spain, this time near the Strait of Gibraltar, according to Polish sail training operator Morksie Mile. As the yacht was westbound in the Strait just off Morocco, it was "attacked by a herd of killer whales," Morskie Mile reported. The whales repeatedly struck the rudder for 45 minutes, causing "damage and leakage."

Lithium-ion scooter fire on cruise ship

Fire broke out on the cruise ship IONA in the central hub area where vehicles for water activities are kept. It is said that the lithium-ion battery of a water scooter self-ignited, sparking a small fire. The ship was berthed at Southampton. It was quickly extinguished by the vessel's fire fighting system.

Reported in November 2023

Three seamen died on board of bulk carrier BLUE CECIL

The bulk carrier BLUE CECIL interrupted her voyage while en route from USA to Singapore. The Master reported 3 critically ill crew members and requested medical assistance. Later while still under way, he reported that they died.

Four semi-trailers overboard from ro-ro in Ligurian sea

Ro-ro cargo ship EUROCARGO MALTA lost 4 semi-trailers overboard in the Ligurian sea between Corsica and the Italian coast. One of trailers was loaded with sulfuric acid - all 4 semi-trailers were lost in an area with 900 meters depth. No traces of trailers have been found.

Bulk carrier cargo hold fire

The bulk carrier STAR APUS suffered fire in her cargo hold at Tilbury Docks, UK while loading metal scrap. The fire was contained and loaded scrap was offloaded in order to get to smouldering hotspots.

Tanker ran aground on the Amazon river

Product tanker MINERVA RITA ran aground on Amazon river some 30 nm downstream from Manaus. Reportedly the tanker hit rock and developed a portside list.

3,000 barrels of oil spilled in Nigerian waters by a Total Energies FPSO

Officials from Nigeria's spill response agencies have reported a spill of approximately 100,000 gallons of oil resulting from a loading accident involving the Total Energies owned FPSO 'EGINA.' A monitoring and cleanup operation is currently underway.

Lebanese freighter sank in Aegean sea: 13 crew missing

General cargo ship RAPTOR reportedly sank off the southwest coast of Lesvos island, Greece. The ship issued a distress signal after she was disabled in rough seas, and possibly suffered salt shifting cargo. Of 14 crew, 1 was rescued and 13 went missing.

Chinese containership rescued 16 crew from a chemical tanker

The crew of a Chinese containership successfully rescued sixteen crewmembers from a distressed chemical tanker that faced perilous conditions at sea.

Turkish cargo ship pushed onto breakwater probably sank

No AIS has been seen since KAFKAMETLER contacted a breakwater and the vessel was declared missing by media and officials. The most plausible explanation is that the ship sank after hitting a breakwater somewhere in Eregli. It is understood all 12 crew were rescued.

Cruise cut short due to severe storm

A cruise aboard the British flagged ship "SPIRIT OF DISCOVERY" was abruptly shortened due to a severe storm that left more than 100 out of the 980 passengers injured.

20 containers and other freight lost from lighter barge at Nunavut, Canada

20 containers and unspecified "assorted freight" fell into water at Iqaluit port anchorage, Frobisher Bay, Canada. The general cargo ship SIVUMUT arrived at Iqaluit anchorage from Becancour Canada and was carrying out cargo operations.

Lessons not learned:

The Maritime industry's ongoing failure to put safety first

Four major maritime disasters and why they happened

Worldwide, our navigable waters, from inland routes to vast oceans, are pivotal for trade, energy exploration, and recreation. While our historical connection to the sea is deep-rooted, so is the legacy of maritime accidents. In the days of early navigation, challenges like unpredictable weather and piracy were the norm. Today, in an age of technology and progress, we'd expect maritime safety to be a given.

Yet, four major maritime disasters in recent decades tell a different story...

Across centuries, despite massive advancements in technology, weather forecasting, and safety regulations, maritime disasters continue to injure crews, claim lives, and threaten the environment.

We're here to consider why.

While the nature of maritime and offshore work is inherently risky, it's evident that many of these risks are amplified by an industry that often fails to take its past mistakes to heart. Time and again, maritime employers and oil companies have demonstrated concerning amnesia, allowing history to repeat itself.

Maritime disasters, from the explosion of the Piper Alpha in 1988 to the loss of the El Faro in 2015, have highlighted the industry's most glaring issues and have even spurred legislation and other attempts to improve safety. However, the maritime and offshore oil and gas sectors are still falling short.

When you dissect the causes of these disasters, patterns emerge. The same issues crop up repeatedly, painting a picture of an industry stuck in a rut of its own making. History is rich with lessons, yet the maritime industry seems to skim rather than study. As we dive into this issue, our goal isn't to point fingers but to highlight the urgent need for change. After all, in a world of cutting-edge tech and accumulated knowledge, there's no reason for the same tragedies to continue.

Piper Alpha (1988)

The Piper Alpha disaster occurred on July 6, 1988, in the North Sea, off the coast of Aberdeen, Scotland. It remains one of the deadliest offshore oil rig accidents in history. Of the 226 workers on the Piper Alpha that day, 167 lost their lives, and many more were injured when the platform exploded and sank.

This incident's primary causes included:

Maintenance Procedures
Earlier in the day, a pressure safety valve was removed for routine maintenance, and its opening was temporarily sealed with a metal disc. Due to a series of communication failures, the night crew was unaware of this temporary fix.

Gas Leak
As production resumed, gas leaked from the temporarily sealed opening. The escaping gas reached ignition sources, leading to an explosion. This initial explosion set off a chain reaction, causing several other blasts and eventually leading to a massive fire.

Firefighting Systems Failure
The platform's firewalls were not designed to handle the type of explosion that occurred, allowing the fire to spread rapidly. Additionally, the platform's automatic firefighting systems had been turned off, and other safety mechanisms failed or were inadequate.

Deepwater Horizon (2010)

The Deepwater Horizon disaster occurred on April 20, 2010, in the Gulf of Mexico. It is one of the largest environmental disasters in history. 11 workers lost their lives when the offshore rig exploded and sank, and the subsequent spill lasted for 87 days, releasing an estimated 134 million gallons of oil into the Gulf.

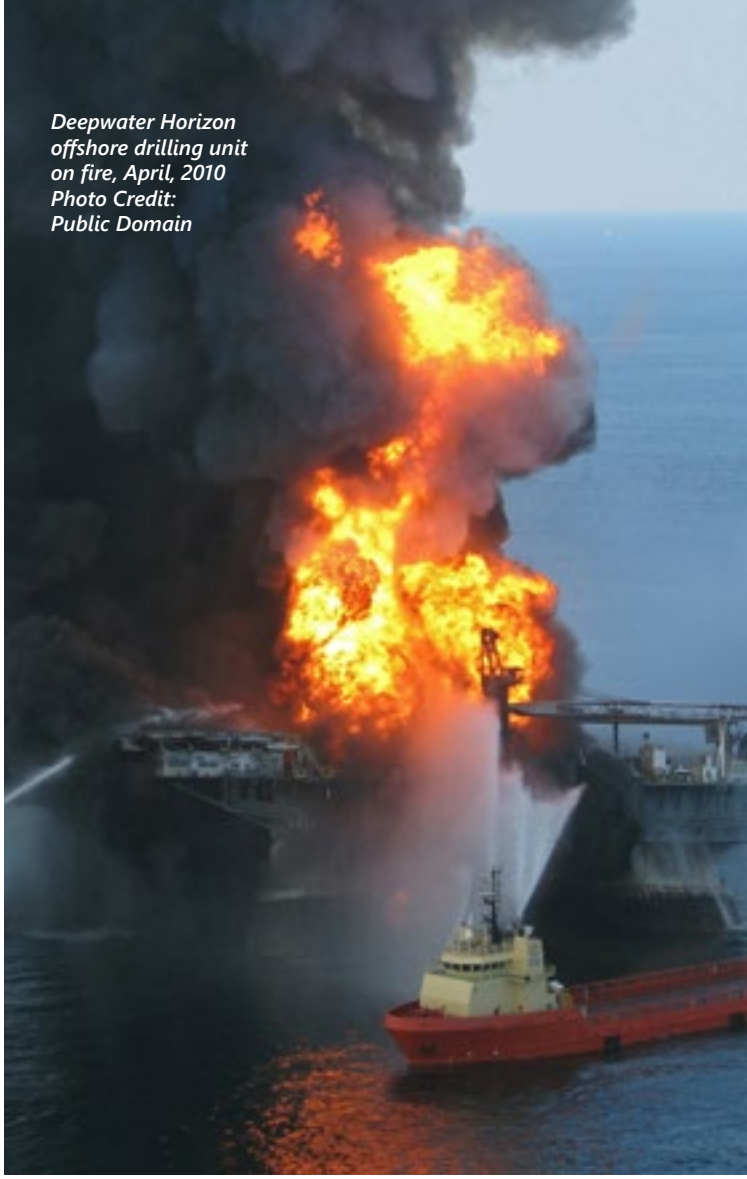
The incident's primary causes included:

Well Blowout
A surge of natural gas blasted through a recently installed cement core. This gas travelled up the rig's riser to the platform, where it ignited, causing a massive explosion.

Safety Systems Failures
The rig's blowout preventer, a last-resort safety device, failed to seal the well.

Management Failures
Decisions made by BP, Transocean, and Halliburton to cut costs and save time contributed to the disaster.

In 2011, a report from the White House oil spill commission pinpointed the root causes of the Deepwater Horizon explosion. The findings indicated the involved corporations—BP, Halliburton, and Transocean—lacked the necessary safeguards to prevent such a catastrophe. The commission highlighted a pattern where choices seemed to favour time and cost savings at the expense of increasing risks for those on board. Key oversights identified included the absence of a cement bond log to assess cement stability. This lapse led to unchecked, ultimately unstable cement. Furthermore, mud displacement in the riser pipe was overlooked, vital tests were bypassed, and lessons from past errors, which could have averted the disaster, were not adequately heeded.



Deepwater Horizon offshore drilling unit on fire, April, 2010 Photo Credit: Public Domain

El Faro (2015)

The El Faro, a US cargo ship owned by TOTE Maritime, sank on October 1, 2015, during Hurricane Joaquin near the Bahamas. All 33 crew members tragically lost their lives after the vessel steamed into the hurricane's eyewall. The National Transportation Safety Board (NTSB) investigated the incident and released a detailed report on what caused the El Faro to cross the storm's path and ultimately sink.

The incident's primary causes included:

Management & Oversight Failures
Ineffective bridge resource management.
Lack of formal crew training.
Insufficient tracking of El Faro's proximity to Hurricane Joaquin.
The absence of a comprehensive safety management system left the crew ill-equipped to handle emergencies like flooding, propulsion loss, and tilting.

Vessel's Seaworthiness & Equipment Concerns
Flooding in cargo holds due to open ventilation closures and an open scuttle.
Damage potentially caused by unsecured vehicles in a hold, affecting crucial systems.
Use of outdated, open lifeboats.

Captain's Decision-Making
Reliance on outdated weather information, insufficient route adjustments, and inadequate response to deck officers' concerns.

Images of Container Ship El Faro on the ocean floor. Photo Credits: NTSB Accident Report

A scaled illustration of El Faro's main hull as it rests on the ocean bottom. Photo Credit: Public Domain

Coast Guard crews respond to a dredge on fire in the Port of Corpus Christi Ship Channel, August, 2020. Photo Credit: US Coast Guard

Waymon L. Boyd (2020)

On August 21, 2020, the dredging vessel Waymon L. Boyd caught fire and exploded in the Port of Corpus Christi, Texas, after striking a submerged pipeline. The incident claimed five lives and caused several injuries, along with significant environmental damage due to the release of oil and other pollutants.

The NTSB identified that the primary cause of the accident was shortcomings in Orion Marine Group's planning and risk assessment procedures. These lapses led them to overlook how close their dredging activities were to the hazardous liquids pipeline, resulting in the dredge's rotating cutterhead hitting it. Compounding the problem, Schneider Engineering and Consulting provided flawed dredging plans. These inaccuracies further caused Orion to convey incomplete details to pipeline owner Enterprise Products during the coordination.

Uncovering a persistent, profits-first culture

Disasters like the Piper Alpha, Deepwater Horizon, El Faro, and Waymon L. Boyd reveal a disturbing and persistent theme: a profits-first culture in the maritime industry.

Each event, though unique, was marred by significant decision-making blunders, ranging from reliance on outdated weather forecasts to perilously close dredging operations. When combined with recurring equipment failures and communication breakdowns, the severity of these oversights becomes evident.

Why did the El Faro steam into the eyewall of a hurricane?

Why did the Deepwater Horizon's blowout preventer malfunction?

Why did each of these events, plus countless others, happen in the first place?

Beyond the individual mistakes lies a deeper, systemic issue. Time and again, maritime companies have shown their inclination to prioritize production, efficiency, and cost over safety.

Had BP, Transocean, and Halliburton put safety first, they would not have made the decisions that ultimately led to the Deepwater Horizon explosion. Instead, they would have safeguarded against it.

Had TOTE Maritime taken the time to train its crew and implement proper safety measures, not to mention maintain a seaworthy vessel, the El Faro would not have steamed into Hurricane Joaquin and sunk.

Investigations into every major maritime disaster have revealed critical decisions, acts, or failures that display an insufficient emphasis on safety. The rapid pace of operations, overlooked safety checks, and risky decisions underscore an entrenched culture that too often values expediency over human lives.

Hurricanes will come. Equipment will wear out. Ships will age. None of this is new.

It's time for the maritime industry to step up, learn from its past, and prioritize the safety of its workers.

Arnold & Itkin is the US leader in maritime law. The firm has helped after every major US maritime disaster in the past 20 years, representing individuals and families whose lives have been upended by the negligence and wrongdoing of large corporations. From representing the widows of three El Faro crew members to representing over one-third of the Deepwater Horizon crew, Arnold & Itkin has sought answers and accountability for those who have experienced the worst losses. The firm has won more than $15 billion for the injured.

This article was first published on the gCaptain website and is reproduced here with our thanks.

OPINION ARTICLE
by Mike Schwarz

Are lithium-ion batteries safe on yachts - and other vessels?

"Mike's suffering from mild hysteria", they said. Well perhaps I have been, yes. The cause of my hysteria? Lithium-ion batteries and fires caused by them! There are believed to have been nearly 70 fires last year alone involving large and superyachts. As more new information on this subject comes to light on a regular basis, I simply have to come back to it time and time again and share what we know. It is a massive and worrying subject and one that is consuming the finest technical minds in the marine world right now. We all need to be aware of the phenomenon for it will not resolve any time soon. As always, I say I understand fully the need to decarbonize and embrace this technology and am not against progress. But it comes at a price and one we need to be prepared to pay.

I recently attended an event hosted by Shoosmiths, a firm of maritime lawyers, based near Southampton. The event took the form of a panel discussion involving five expert panellists from different parts of the marine industry and was entitled "Are lithium-ion batteries safe on yachts?" It drew a sizeable audience of about 120 delegates to the event in person, way beyond their expectations and included marine surveyors, yacht management companies, regulators, underwriters, boat brokers and boat builders. As the event unfolded, I would describe the mood of the audience as engaged but concerned. In some cases, many seemed unaware of the immense threat posed by lithium-ion battery fires and all in the room were anxious for guidance. Guidance, however, was in short supply. One marina manager when asked what their policy is for berth holders to mitigate a lithium-ion battery fire disaster in one of their facilities said it is still too early for them and they are "only in the embryonic stages of developing a policy". That frankly sums it up!

There seemed to be a consensus that lithium-ion batteries, if installed in a new build boat or ship, and meeting all the latest requirements on keeping them in sealed metal containers, are no more inherently dangerous than conventional fossil fuelled vessels. Indeed, the evidence would seem to support that; and insurers confirmed they have no issues insuring an electric boat powered by lithium-ion battery propulsion. The picture is less clear to batteries that are retro fitted into older vessels. But the panel discussion focused heavily, perhaps surprisingly, on the other less thought about aspects such as the charging of devices powered by lithium-ion batteries onboard, particularly overnight, including mobile phones, laptops, tablets and superyacht toys, for this is where the major issues lie. Leaving them to charge unattended overnight is potentially dangerous as overcharging can cause thermal runaway resulting in a catastrophic fire. This applies equally to an onboard setting as it does to a land-based home one. There have sadly already been examples. I will never do this again; nor should you, and I would encourage you to pass on this information. Please tell anyone you meet not to do it either.

One of the panel also spoke passionately about the importance of using the right charger for each device and not some cheaper imitation replacement from an unknown supplier, which presents a further unnecessary risk. The advice is use the correct charging mechanism always and read the instructions.

There was an acceptance and understanding that firefighting systems are not yet developed sufficiently to extinguish a lithium-ion battery fire in most cases. Simply chucking the burning object overboard, whilst a highly dangerous thing to do and not recommended, will bring some peace of mind, but won't put out the fire! Early warning detectors of an imminent thermal runaway event are under development and will be available soon. But then we learnt about the lethal mass of unignited toxic gases which hang around at low levels that could easily go undetected and ignite, or simply kill.

Representatives from the insurance and underwriting industries admitted they are still grappling with this whole area. From their comments it seems likely that new clauses are certain to be written into consumer insurance policies to cover the use of lithium-ion powered devices on their vessel.

The discussion turned specifically to superyacht toys and other accessories, many of which are powered by lithium-ion batteries and have been the cause of several fires last year. That might include for example, the jet ski, the tender, the electric scooter or eBike. The list is long.

Whilst regulators are also grappling with this dilemma and trying to decide what regulations to implement, this is fine in the longer term for commercial vessels or boats that are subject to regulation. But what about the millions of pleasure boats worldwide that are unregulated? How do we as an industry get this message to them? I have no simple answer.

For now, it seems educating people to the dangers and encouraging them to use common sense and risk assess is the best way to make progress. But these things take time.

An employee from a large well known boat builder asked what advice they should pass on to their customers without alarming them. The reply was scant.

I mentioned earlier in this article that other developments have recently come to light about lithium-ion batteries. Let me tell you something about two of them.

Early detection key to preventing electric vehicles fires

Following several high-profile ship fires involving electric vehicles (EVs), Survitec has produced some valuable advice for operators of vessels transporting hybrid and EVs, such as ferries, ropaxes, RoRos, PCCs and PCTCs, on how best to prevent and control fire onboard ships involving lithium-ion battery powered vehicles.

According to Survitec there are a number of ongoing initiatives within the industry to improve safety in this area. There is a desire to develop early fire detection systems to better monitor and protect car decks and lithium-ion batteries installed in vehicles onboard.

Any slight deviation in their properties can provide an early indication that conditions are right for a fire and afford time to take preventative measures to protect or quarantine hybrids and EVs. Pre-ignition signs of a battery fire include heat and smoke from parts of the vehicle where the battery is usually placed, popping sounds from battery cells, and toxic gas emissions.

While early detection solutions are available, Rafal Kolodziejski, Survitec's Head of Product Support & Development Fire Systems, revealed that these systems are not yet adapted to allow for pre-fire conditions specific to lithium-ion batteries.

In my simplistic way as always, I ask why not?

The advice from the US Coast Guard is to avoid loading electric vehicles with saltwater damage on ships

The US Coast Guard (USCG) has issued a warning to the shipping industry about the extreme risk of loading electric vehicles (EV) with damaged lithium-ion batteries onto commercial vessels.

Marine Safety Alert 01-23 addresses the issue, and provides recommendations to vessels, ports, shippers and regulators. The safety alert comes just a few months after Hurricane Ian made landfall in South Florida. In the aftermath of the intense and destructive storm, first responders encountered numerous EV fires. Subsequent investigations and research have determined these were caused by exposure of the lithium-ion batteries to saltwater.

Exposure to saltwater can severely harm lithium-ion batteries, leading to a chemical reaction that creates a high fire risk. Records show there are over 7,000 EVs in Lee County, Florida alone with the potential for damage.

Wow, if you thought it could not get worse, it just did.

At the moment it feels to me like the marine industry is way behind the curve on this one, stumbling along towards a distant black hole, learning as we go and making up the rules to suit as best we can as new information emerges.

So, will it take a major incident involving the multiple loss of life before the regulators finally come up with something definitive, just as SOLAS was born out of the Titanic disaster over a century ago? Please, let's hope not!

What we have learned about the dangers of lithium-ion batteries and fires

By **Mike Schwarz**

The biggest topic for discussion in the marine world during 2023 has surely been the challenges associated with lithium-ion batteries and specifically dealing with the aftermath of fires that have made media news headlines around the world; and not just in the marine sector either. More column inches have been devoted to this technology than almost anything else it seems as the marine world continues its race to decarbonise. It appears we know far more now than we did a year ago, such as the use of metal boxes to contain a burning object and cooling the item as fast as possible to lower the temperature. These activities come with inherent risks of course. And once fire takes hold, as we have seen the result can be utterly devastating.

IIMS has written many words and published several associated articles on the subject and will continue to do so as more information comes to light in 2024, especially as official accident reports start to appear. The aim of this in-depth feature article is to reprise some of that content in scaled down format from the sheer volume of published material and to put it altogether in one place for the benefit of the surveying profession.

This story surfaced in July 2023 and caused some raised eyebrows when it was first published.

Safety Advisory Notice: Transportation of electric vehicles containing lithium batteries damaged by extreme weather events

The U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) has issued this safety advisory notice to inform the public and raise awareness of the risks involved in the transportation of electric vehicles (EVs) powered by installed lithium batteries that may have been damaged due to submersion in waters during extreme weather events. When transported in commerce, EVs containing these damaged batteries may present particularly significant hazards to the public, including property damage, injury, and even death.

PHMSA wishes to remind potential shippers of EVs - including vehicle owners, salvage companies, and vehicle transport companies - that they have a responsibility to assess EVs for potential damage to their installed lithium batteries and to observe the specific requirements in the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) for both the transportation of EVs containing lithium batteries, and for the transportation of damaged and/or defective lithium batteries in commerce.

Federal hazardous materials law authorizes the Secretary of Transportation (the Secretary) to "prescribe regulations for the safe transportation, including security, of hazardous materials in intrastate, interstate, and foreign commerce" 49 U.S.C. 5103(b)(1). The Secretary has delegated this authority to PHMSA in 49 CFR 1.97(b). PHMSA's regulations (i.e., the HMR) are designed to achieve three primary goals:

1. Ensure that hazardous materials are packaged and handled safely and securely during transportation. This document contains guidance provided to help the regulated community understand how to comply with regulations, but its contents are not substantive rules themselves and do not create legally enforceable rights, assign duties, or impose new obligations not otherwise contained in the existing regulations and standards.

2. Effectively communicate the hazards of the materials being transported to transportation workers and emergency responders.

3. Minimize the consequences of an accident or incident should one occur.

As part of its safety mission, PHMSA regulates the transportation of lithium batteries, including those that are installed in or are intended for use in EVs. Lithium batteries pose a risk in transportation, and the HMR contains provisions intended to address the risk in transport and ensure safety of the public whether the lithium batteries are installed in an EV being transported or are transported separately. Damaged or defective lithium batteries pose a unique risk because they are more likely to experience thermal runaway and ignite during transportation. Consequently, shipments of damaged or defective lithium batteries have additional restrictions – see 49 CFR 173.185(f) – compared to newly manufactured, used, or undamaged/properly functioning batteries. It should also be noted that damaged, defective, or recalled lithium batteries must be prepared for shipment in accordance with the relevant provisions of the HMR and may be shipped only by highway, rail, or vessel transportation and are strictly forbidden for commercial transportation by aircraft.

There have been fires associated with lithium batteries installed in EVs that were submerged in floodwaters following extreme weather events. Saltwater is especially harmful to lithium batteries as residual salt within the battery or battery components can form conductive bridges that can lead to short circuit and self-heating of the battery, resulting in fires. The time frame in which a damaged battery can ignite varies, from days to weeks, and EV battery fires can be extremely time – and resource-intensive for responders. In addition, responders face safety risks related to the emission of toxic and flammable gases from damaged lithium batteries, and the unpredictability of thermal runaway and reignition. As such, lithium batteries from EVs that have experienced flooding or other exposure to the elements in a manner other than designed are at significant risk of damage, resulting in elevated potential for producing a dangerous evolution of heat, fire, or short circuit.

PHMSA understands that assessing whether a battery is damaged may require input from the manufacturer and recommends that shippers consult with the manufacturer of the battery to assist in such a determination. However, it is ultimately the shipper's responsibility to determine when a battery is damaged and therefore requires additional consideration for packaging and transportation. Specifically, in accordance with 49 CFR 173.22(a), the shipper must properly class and describe the hazardous material being offered for transportation and determine whether the packaging or container is an authorized packaging. In addition, shippers are forbidden from offering for transportation or transporting electrical devices, such as batteries and battery powered devices—including EVs—that are likely to create sparks or generate a dangerous evolution of heat, unless packaged in a manner which precludes such an occurrence.

Lastly, when movement of an EV with a damaged lithium battery on a motor vehicle is necessary to protect life or property in an emergency, certain requirements of the HMR are waived. See 49 CFR 177.823(a)(3). Additionally, the National Highway Traffic Safety Administration has published guidance on their website for towing and recovery operators and vehicle storage facilities that describes how to properly handle EVs in the event of damage, fire, or flooding.

What are the packaging and marking requirements to transport damaged, defective, and recalled lithium batteries? See 49 CFR 173.185(f):

- Place the battery in an individual, non-metallic inner packaging that completely encloses the battery.
- Surround the inner packaging with non-combustible, electrically non-conductive, and absorbent cushioning material.
- Place each inner packaging into its own specification outer packaging rated to the Packing Group I performance level. This means only one damaged, defective, or recalled battery per inner packaging, and only one inner packaging per outer packaging.
- Mark the outer packaging as "Damaged/defective" and identify the battery type. The marking—reading "Damaged/defective lithium-ion battery" or "Damaged/defective lithium metal battery"—must be in characters at least 12 mm (0.47 inches) high.

What are the packaging requirements to transport EVs powered by lithium batteries that have not been damaged? See 49 CFR 173.220(d):

- EVs with their batteries installed are forbidden for transport aboard passenger-carrying aircraft.
- Lithium batteries contained in vehicles, engines, or mechanical equipment must be securely fastened in the battery holder of the vehicle, engine, or mechanical equipment, and be protected in such a manner as to

prevent damage and short circuits (e.g., by using non-conductive caps that cover the terminals entirely).

- Except for vehicles, engines, or machinery transported by highway, rail, or vessel with prototype or low production lithium batteries securely installed, each lithium battery must be of a type that has successfully passed each test in the United Nations (UN) Manual of Tests and Criteria, as specified in 49 CFR 173.185, unless approved by PHMSA's Associate Administrator.
- Where a vehicle could possibly be handled in other than an upright position, the vehicle must be secured in a strong, rigid outer packaging. The vehicle must be secured by means capable of restraining the vehicle in the outer packaging to prevent any shifting during transport that would change the orientation or cause the vehicle to be damaged.
- Where the lithium battery is removed from the vehicle and is packed separate from the vehicle in the same outer packaging, the package must be classified as "UN3481, Lithium-ion batteries packed with equipment" or "UN3091, Lithium metal batteries.

What are the additional stowage requirements to transport EV's powered by lithium batteries when carried on a vessel? See 49 CFR 176.905(a):

- For vehicles with batteries installed, the batteries shall be protected from damage, short circuit, and accidental activation during transport.
- Each lithium battery must be of a type that has successfully passed each test in the UN Manual of Tests and Criteria unless approved by PHMSA's Associate Administrator.
- A vehicle showing any signs of leakage or electrical fault—such as inability to start or move under its own power—or signs of prolonged exposure to water, is forbidden for transportation onboard a vessel.
- Where a lithium battery installed in a vehicle is damaged or defective, the battery must be removed and transported according to 49 CFR 173.185(f), unless otherwise approved by PHMSA's Associate Administrator.

Earlier in the year, the TT Club issued this press release.

Fire not the only danger with lithium-ion batteries

Devastating consequences of rapidly spreading, and often challenging to extinguish fires involving the batteries particularly in electric vehicles (EV) on board ships, and other parts of the supply chain have been well-documented in recent months. There is however less awareness of the highly toxic combustion products that are released and their respective impact to the health and wellbeing of those exposed to the gases.

Based on the evidence of past fires the time between the initiation of a failed battery igniting to a discharge of toxic vapour can be measured in seconds rather than minutes. This is due to a process known as thermal runaway. The rapid sequence of events typically occurs where an internal electrical short within one of the battery cells generates heat; this breaks down the internal structure of the battery, increasing the rate of the reaction in an ever-increasing cycle. There is often a dramatic release of energy in the form of heat and a significant emission of toxic gases.

Neil Dalus of TT endeavours to paint a picture of the dangers. "During a lithium battery thermal runaway event, research has shown that significant amounts of vapour can be produced per kWh (kilowatt hour). In many common supply chain scenarios, including ships' holds and warehouses, the reality is that such vapour clouds are likely to accumulate. Even when the clouds are able to disperse, the potential toxic effects may occur at lower concentrations."

Drivers, stevedores, ships' crews and first responders attempting to control the blazes encounter what might appear to be smoke but is in fact a mix of toxic gases, generated quickly and in large volumes. These gases once in the atmosphere behave differently to smoke, often pooling at floor level due to their density. "Traditionally where fires and smoke are concerned one would stay low to avoid inhalation, doing so where lithium battery fires are concerned is likely to prove problematic," observes Dalus.

The toxicity of gases given off from any given lithium-ion battery differ from that of a typical fire and can themselves vary but all remain either poisonous or combustible, or both. They can feature high percentages of hydrogen, and compounds of hydrogen, including hydrogen fluoride, hydrogen chloride and hydrogen cyanide, as well as carbon monoxide, sulphur dioxide and methane among other dangerous chemicals.

Early detection of such an incident can also be pivotal in managing the response, camera and thermal imaging could enable an expedient response. Such equipment might have already become commonplace for some modes, however conducting a thorough risk assessment for example when cargo is stored in warehouses would be prudent. As Dalus comments however, "Given the hazardous nature of this vapour, if any of these measures are not in place then the best course of action is to evacuate the area and leave the incident response to the emergency services, ensuring that the known risks are appropriately communicated."

The article in full can be read at
https://bit.ly/3ZPpFPw
Or scan the QR code.

Chubb launches Lloyd's consortium to address lithium battery risk

Lithium-ion batteries have certainly been exercising the finest minds in the marine insurance sector and here is the response from Chubb which is leading a new Lloyd's of London consortium to tackle this issue. This article first aired in September 2023.

A new initiative was rolled out and launched by Chubb. A new Lloyd's of London consortium has been created (which Chubb will lead) that is designed to provide insurance coverage for risks associated with the transit and storage of lithium batteries.

The consortium was created to address a lack of capacity in the marine cargo market for providing lithium battery transit and stock insurance. It provides a one-stop solution with limits up to $50 million for risk types associated with lithium batteries including transit, stock throughput, standalone stock and warehouse legal liability, and will include excess stock and part orders.

As mentioned, the consortium is being led by Chubb Global Markets (CGM), including its Lloyd's platform, and supported by 11 other Lloyd's syndicates. Chubb Global Markets will also draw on the capabilities of Chubb Climate+, the company's global climate business unit launched early in 2023.

Rob Wilson, Chief Underwriting Officer for Chubb Global Markets said that the work involved in managing lithium battery risks is extensive and brokers can now use this facility to gain access to capacity in this new risk area.

He added, "The consortium provides brokers and insureds with a single port of call to bind these risks, helping to shore up the lithium battery supply chain as demand continues to grow."

"The lithium battery industry is growing at a rapid rate and many businesses involved in moving and storing these batteries are increasingly in need of an experienced and reliable insurance partner and solution to support the ramp-up in production," said Matt Hardy, Leader of Chubb Climate+ for Chubb Overseas General.

He further commented, "The creation of a consortium dedicated to underwriting these risks aligns firmly with our commitment to harnessing our underwriting and risk engineering capabilities to support the transition to a low-carbon economy."

NCB launches second container inspection initiative to battle the dangers of misdeclared cargo

In September, the National Cargo Bureau released information about their second container initiative, which partially covers the issue of lithium-ion batteries.

National Cargo Bureau (NCB) has launched a second container inspection initiative to combat the persistent threat posed by misdeclared cargo. In a determined response to these sobering revelations and escalating concerns around ship fires, particularly those stemming from lithium-ion batteries, NCB is enhancing its inspection initiative. Several major shipping lines including Hapag Lloyd, Maersk and MSC have committed to the initiative, and container inspections have already commenced in various locations around the world.

Five years prior, NCB had again joined forces with industry leaders, Maersk, Hapag Lloyd, and MSC, in a trailblazing effort that laid bare the disconcerting realities within container transport safety.

Key findings from the analysis:

– 55% of inspected containers were non-compliant
– 43% of containers failed due to poorly secured dangerous goods
– 6.5% were found to be carrying mis declared dangerous cargoes.

Subsequent inspections, performed by NCB, have continued to reveal poorly stowed containers as well as undeclared and mis declared shipments of dangerous goods such as charcoal, flammable liquids, and used lithium-Ion batteries.

NCB expects this second round of inspections to expose further container deficiencies but, hopefully, reveal improvements since the first initiative.

Read the article in full at **https://bit.ly/3PRpVKv**.
Or scan the QR code.

IUMI publishes "Best practice & recommendations for the safe carriage of electric vehicles"

The International Union of Marine Insurance, which represents the cream of marine insurers weighed into the debate in September following the publication of their best practice guidelines, a most useful document.

There are growing concerns within the shipping community, including marine underwriters, about fires breaking out on car carriers and ro-ros with the assertion that many of these fires are attributable to electric vehicles. In response, the International Union of Marine Insurance (IUMI) has researched these claims and published recommendations on the safe carriage of electric vehicles (EVs).

Lars Lange, IUMI Secretary General, explains:

"Our paper draws on a body of scientific research which demonstrates that fires in battery EVs are not more dangerous than fires in conventional vehicles, nor are they more frequent. Although statistics continue to be gathered, they currently estimate that, in general, there are fewer fires from EVs compared with fires from conventional vehicles when driven over the same distance."

Research also proves that there is only a minor difference between total energy released during an EV fire and one that is related to an internal combustion engine vehicle (ICEV). Once established, vehicle fires are largely (approx. 80%) fuelled by the car body and interior parts rather than the propulsion system. However, the potential for thermal runaway (when the battery suffers an unstable chemical reaction) exists for EVs whereas it is not a consideration for ICEVs. Thermal runaway makes fires hard to extinguish, hence mitigation measures such as boundary cooling must be employed rapidly. Moreover, the risk of re-ignition is higher for an extended period of time.

In light of this, IUMI concludes:

- Early fire detection and verification/confirmation is critically important to reduce the time between detection and firefighting response to a minimum. Options, in addition to the conventional systems, could include thermal imaging cameras and AI powered systems.
- Drencher systems are effective for fire-fighting onboard roro and ropax vessels both for EV and ICEV fires and should be installed alongside video monitoring systems.
- CO_2 extinguishing systems, if applied quickly, are successful in fighting PCTC fires and their capacity should be doubled. High-expansion foam fire extinguishing systems have also proved to be effective to prevent heat transfer from one vehicle to another.
- Early detection, confirmation and a short response time are crucial to fight a fire successfully. On board PCTCs, fixed systems should always be applied before manual fire-fighting is employed.
- A clear policy is required on which cargo is accepted or rejected. Vehicles should be screened with used vehicles being checked carefully for hidden damage.
- Charging onboard ropax vessels should be permitted subject to relevant risk assessments and control measures. Safety mechanisms built into EVs are usually activated during charging.

Read the full article at **https://bit.ly/47DUBpa**.

ClassNK releases guidelines on the safe transportation of electric vehicles

A well-known and respected classification society, ClassNK, joined the debate in August 2023. They published a set of guidelines that focuses on the safe transportation of EVs.

In a bid to bolster the safety of maritime transportation of electric vehicles (EV) at a time of major concern for the shipping industry, ClassNK has unveiled a set of new guidelines and measures.

ClassNK has developed the Guidelines for the Safe Transportation of electric vehicles, which describes the characteristics of EV fires and provides guidance on how to respond, built upon dialogue with experts, operators, manufacturers, and other stakeholders.

Publishing these guidelines is a sensible move by ClassNK's part given the surge of challenges presented by climate change and global warming, the export of hybrid and EVs powered by lithium-ion (Li-Ion) batteries. There exists a faction of industry insiders who argue that the transport of these vehicles may not be completely safe.

In the case of a thermal runaway, the risks are considerably amplified. This dangerous occurrence involves an uncontrolled escalation in temperature within the battery, resulting in a swift and forceful discharge of energy. The consequences of such an event can be dire, potentially leading to catastrophic explosions or fires.

"Controlling li-ion battery fires are almost impossible, once the fire catches on to nearby vehicles their frames melt and the work to extinguish is extremely challenging", stated Henrik Meyer, senior quality manager, ports, terminals and stevedoring at Wallenius Wilhelmsen.

The aim of the guidelines is to assist in the development of fire safety measures for the maritime transportation of EVs and, thus, enhance the overall safety of such transportation for not only ships themselves but also for their respective crews.

Read the full article at **https://bit.ly/3EVYIQG**.

MGN 653 (M) Amendment 1 electric vehicles onboard passenger roll-on/ roll-off ferries

Maritime regulators are behind the curve and struggling to catch up given the speed of technological change as opinion and facts continue to form on the matter of lithium-ion batteries. But the MCA has issued an amended MGN in August that deals specifically with EVs.

The UK Maritime and Coastguard Agency has issued a Marine Guidance Note (MGN) amending the guidance on the safe carriage of electric vehicles on board passenger ferries. The MGN was released on 7 August 2023.

This MGN provides the UK shipping industry with best practice guidance to facilitate safe carriage, and potential charging of, electric vehicles onboard roll-on roll-off (ro-ro) passenger ferries. The MCA has developed this guidance in conjunction with, and at the request of industry. Amendment 1 includes new guidance in section 4 on the carriage of light electric vehicles such as e-bikes and e-scooters which have become an area of concern following a spate of fires.

This is a lengthy document and can be viewed in full online at **https://bit.ly/3ZLrGMq**.
Or scan the QR code.

Lithium-ion battery fires on vessels remain one of the biggest safety issues

Earlier this year Allianz highlighted that battery fires on vessels remain one of the biggest safety issues facing the shipping industry. There have been a number of serious fire incidents in recent years where Lithium-ion (Li-ion) batteries have been reported as the source of or contributing to fires on vessels. Allianz experts Capt. Rahul Khanna, Captain Randy Lund and Captain Anastasios Leonburg, share their thoughts on how electric vessels may impact safety onboard.

Decarbonization and electrification are increasing the number of shipping goods that contain Li-ion batteries, from electric vehicles (EVs) to a wide range of consumer and electronic goods. The global Li-ion battery market is expected to grow by over 30% annually from 2022 to 2030, according to a report by McKinsey.

Recently, the Fremantle Highway car-carrying vessel caught fire off the Dutch coast with over 3,000 vehicles on-board enroute from Germany to Egypt. A fire on board car carrier Felicity Age in February 2022, led to the vessel sinking in the Atlantic Ocean, along with its cargo of 4,000 vehicles. Li-ion batteries were cited as being a factor in keeping the fire ablaze. The Höegh Xiamen, caught fire in June 2020 in Jacksonville, Florida, resulting in the total loss of the vessel and its cargo of 2,420 used vehicles. An improperly disconnected battery in a used vehicle led to the fire, according to the official investigation.

In light of the growing number of fires on cargo ships, a spokesperson for IMO said that it will announce new safety standards for those transporting electric vehicles in 2024. The guidelines could include specifications on how fully a battery can be charged. The IMO said that chemicals for extinguishing fires, special fire blankets, equipment such as battery-penetrating jet extinguishers and bigger gaps left between electric vehicles on ships could also become mandatory.

Allianz explains that Li-ion batteries can be carried on board ships either as a cargo themselves or as part of the equipment for the electric vehicles (EVs) they provide power for. Many of these batteries are safely transported every day but fire risks are present in both scenarios, especially if the batteries are used or defective, damaged or improperly stored, packaged, handled or labelled.

The main hazards are fire, explosion, and 'thermal runaway', a rapid self-heating fire that can cause an explosion. They can also produce irritating, corrosive or poisonous gases that cause an explosion in a confined space. The main causes of Li-ion fires are substandard manufacturing or damaged battery cells or devices, over-charging, and short circuiting. Li-ion batteries are an important source of energy and do not necessarily burn more frequently than other goods. It is only when they ignite that they are more difficult to extinguish as they can burn more ferociously and are capable of spontaneously reigniting hours or even days after they have been put out.

Most ships lack the suitable fire protection, firefighting capabilities, and detection systems to tackle battery fires at sea, which has been made more difficult by the dramatic increase in ship size – container-carrying capacity has doubled in the last 20 years. We have seen many fires where malfunctioning or damaged batteries have been attributed as a contributing factor in recent years.

Allianz has long warned about the risks associated with Li-ion batteries and EVs in shipping for a number of years, first highlighting this issue in 2017. A recent report highlights a full list of loss prevention measures to consider including:

- All EVs should display clear and precise identification on the windshield detailing the battery type (e.g. Battery Electric Vehicle (BEV), Hybrid Electric Vehicle (HEV), Plug-in Hybrid Electric Vehicle (PHEV).
- EVs with low ground clearance should be clearly labelled as this can present loading and discharging challenges arising from the vessel's ramps, inner slopes, or deck appendages.
- All EVs with a Li-ion battery must have successfully passed pressure, temperature, crush, and impact tests as described in the UN Manual of Tests of Criteria – subsection 38.3 for transport of Li-ion batteries.
- All EVs must be fully functional, self-propelled, safe to drive and contain an undamaged battery system.
- There should be no charging of EVs during the passage.

All EVs must be properly secured to prevent any shifting during transport.

- One potential idea being explored by some car carrier operators, as part of fire-preventative measures, is the use of fire-proof blankets manufactured specifically for EVs.

Allianz experts conclude that the debate about EVs in the shipping industry is ongoing, with conversations about whether there is even a need for dedicated Ro-ro vessels for EVs.

"From an insurance perspective, this is something we would like to see – purpose-built vessels for transporting EVs, designed to substantially reduce the risk of fire. We have already seen shipping companies stop transporting EVs on their ships because of the potential fire risk," says Allianz.

Höegh Autoliners details EV fire mitigation measures aboard its ro-ro fleet

Recent fire incidents aboard electric vehicle (EV) carrying vessels have brought attention to factors such as thermal runaway, saltwater intrusion, and compromised battery cells or components. Industry stakeholders, insurers, and safety experts have underscored the need for vigilance. Höegh Autoliners outlined the measures it is taking to minimise the risks.

"Together with a clear decarbonisation target, safety is our top priority both on our existing fleet and when designing our new Aurora-class vessels. Fire safety has been a focus area and part of the design work from day one," said chief operating officer of Höegh Autoliners, Sebjørn Dahl.

To improve fire detection and the ability to handle a possible fire the carrier has, Höegh Autoliners has implemented an extended number of fire zones, and installed heat and smoke detecting cameras and fire blanket stations on all cargo decks, among other measures. It said that it also has more than the class required amount of CO_2, which serves as a highly efficient fire extinguisher, onboard its vessels. "We've also improved the onboard digital platform. This enables us to include early warning if any loaded unit would send out notification of anomalies such as elevated battery temperatures," said Dahl.

The carrier said it is not transporting second-hand EVs as they may represent a higher risk.

Prior to loading, it has a number of fire risk management procedures, based on the fact that high-voltage batteries in electronic and hybrid cars are charged ideally below 30 percent and not above 50 percent, limiting the energy density on the vessel's deck and thereby reducing the potential severity of fires.

Höegh added that its crew undergo regular refresher training on fire safety and firefighting techniques, and complete regular drills. In cooperation with local training centres, it is focusing on hands-on fire-fighting techniques as well as safety procedures for high temperature fires.

De-risking the carriage of lithium-ion batteries

At the heart of efforts to draw attention to the hazards inherent in transporting lithium-ion batteries, specialist freight insurer TT Club now urges debate leading to a balanced, yet realistic awareness of the dangers, and a united approach to enhancing their safe carriage. Improved regulatory clarity is required and auto manufacturers need to address transport safety issues more thoroughly.

Rapid development of battery technology and the uncertainties created by these developments, particularly concerning safety when the energy packs are being transported require the logistics industry to have a clear understanding of the dangers which can include fire, explosions and toxic gas emissions. Moreover, there needs to be increased efforts to minimise the risks, and if necessary, make sure there is an effective response to any catastrophic event.

Alarmist reports in the media can overstate the number of incidents involving electric vehicles. Indeed Peregrine Storrs-Fox, Risk Management Director at insurance mutual TT Club points out that "Lithium-ion (li-ion) battery fires are not an everyday occurrence. But when thermal runaway does happen, the result is release of toxic gases such as carbon monoxide and hydrogen cyanide, a very high temperature fire and can spread very fast."

The release of toxic fumes may be the first alert, but fire with temperatures higher than 1,000degs centigrade can be reached in a matter of seconds and, as the mix of chemicals and metals ignites, devastation can ensue.

In keeping with its mission to extend awareness and achieve a united front, TT Club was delighted to be part of a forum of interested parties which was held recently in London. Much was revealed by the speakers and valuable debate ensued. "Supply chain players including ship owners, carriers, forwarders, terminal and port operators and insurers are engaged with these debates. Indeed, the maritime regulator IMO (International Maritime Organization) has its guidance for carriage of these batteries under serious review," says Storrs-Fox. "But we need to bring manufacturers of EVs and the batteries that power them actively into the debate. Their ambitions for the development of more powerful, lighter and diverse battery cells must not be allowed to outstrip prioritising safety concerns surrounding their future transportation around the globe."

Such concerns regarding the battery packs within electric vehicles (EVs) have been raised in the US and the National Transportation Safety Board (NTSB) has carried out a study. The forum heard that EVs were reported to have incurred fewer fire incidents than internal combustion engine (ICE) cars. However, there are a few provisos to be highlighted here – not least that there are far fewer electric cars on the road than ICE vehicles.

Secondly it is understood that newer batteries are less likely to ignite or explode than used batteries, effectively the older the li-ion unit, the greater the chance of an incident. As a result, it is not clear how the batteries will perform through the intended life, given that the switch to EV's is only now gathering pace and most battery packs are new.

Regarding the rapid spread of fire, Eva Mckiernan, the technical director at firefighting consultancy Jensen Hughes highlighted the dangers of thermal runaway as the most pressing issue after ignition. She explained that these energy packs are thermo-dynamically unstable. When the batteries are damaged, they can release hot and poisonous gases into containers or onto car decks of ro-ro ships and other vehicle carriers within seconds. When the batteries explode those extraordinary temperatures can be reached.

"Thermal runaway occurs when the heat and chemical reactions reach a certain level, they are effectively self-sustaining and very difficult to extinguish," she added.

Of course, EVs are just one use for li-ion batteries, which can be found in a variety of goods including e-bikes and scooters, as well as computers and mobile phones. All of these goods are transported with batteries in containers. Whilst transported as new, it may be reasonable to expect appropriate packaging, although state of charge is variable, used and damaged batteries present considerable uncertainty for the transport supply chain.

"Currently li-ion batteries are classified as one of four UN numbers, depending on power output or the weight of lithium in them and whether they are contained within devices or shipped separately. All four are Class 9 in the IMDG Code – Miscellaneous dangerous substances and articles," explained Storrs-Fox. "Class 9 is the least hazardous ranking and dates from a change in IMDG Class from 4.3, which was made in the late eighties. Clearly there is a need for a radical review of this classification, as the size and energy capacity of these batteries has altered dramatically since then. As has the volume being carried in container ships."

This raises concern that li-ion batteries are not classified as sufficiently hazardous and the range of potential Special Provisions increases complexity and uncertainty. All this may have serious ramifications when a container is being accepted for shipment or a ship stowage plan is being compiled. Storrs-Fox concludes, "In addressing the commercial opportunity in the answering the agenda to move away from fossil fuels, there needs to be urgent engagement from manufacturers and OEMs to resolve the justifiable concerns of the logistics industry – ahead of regulatory strengthening."

UK Chamber of Shipping to examine risks of lithium-ion batteries

The UK Chamber of Shipping has established an ad hoc working group to gain a comprehensive understanding of the risks associated with lithium-ion batteries (LIBs). The group is to examine various aspects of batteries, including how to guard against such batteries going into thermal runaway and catching fire.

The group has participants from the Chamber membership, the Maritime and Coastguard Agency and expert specialists. It is aiming to develop:

- Proposals for regulations relating to the carriage of LIBs on ships
- Recommendations for training and information for ships' crews
- Procedures for detecting damaged or faulty LIBs
- Equipment that can be used in ports and on ships to help manage the risks effectively.

The carriage, stowage, and safety of electric vehicles is an issue the shipping industry aims to tackle. Lately, in order to reduce greenhouse gas (GHG) emissions and accelerate the energy transition, the marine industry has begun to incorporate batteries onboard ships. However, for marine stakeholders, batteries present both a unique set of opportunities and a challenge.

Batteries can be very dangerous cargo if not handled properly. Some of the reasons include:

- Fire (Li-ion batteries contain electrolyte, an ignitable liquid);
- Explosion (resulting from the release of ignitable vapor/gases in a confined space);
- Thermal runaway (a rapid self-heating fire that can cause an explosion);
- Toxic gases that these hazards can produce.

And what about lithium-ion challenges with superyachts and small craft?

If you have read this article and think it mostly concerns the commercial shipping industry, you are correct; it does. But there are some very real concerns from those operating in the small craft and workboat surveying sectors too. Several inland waterways surveyors in the UK have, for example, raised very real concerns about the configuration of lithium-ion battery installations on narrowboats. In addition, a number of small craft and yachts are being retrofitted with lithium-ion batteries, including in some cases, with batteries designed specifically for houses (which are cheaper) and not boats! The potential for catastrophe in those circumstances is very real. And the superyacht sector is not devoid of these major concerns either. Last year almost 70 superyacht fires were attributed to lithium-ion battery fires. However, in most cases these were caused not by the main superyacht battery installation itself, but by the lithium-ion powered toys and accessories.

This article entitled 'Are lithium-ion batteries safe on yachts – and other vessels?' will give you an insight to this particular issue and can be read at **https://bit.ly/48HUSIr**. Or scan the QR code.

Tragedy on the Thames: *The Princess Alice Disaster*

Original article by Rose Staveley-Wadham, published online on the British Newspaper Archive website and republished here with our thanks.

Opening comment by Mike Schwarz. *Whilst researching content for the 2023 Safety & Loss Prevention Briefings Compendium, I came across this awful tragedy about which, shamefully, I knew absolutely nothing. Unlike the high-profile Titanic and much more recent Costa Concordia incidents, this story has simply disappeared over the passage of time despite the loss of an estimated 650 lives. I wanted to share it for it highlights and illustrates that some of the causes of marine accidents on the face of it seem little changed since 1878. Yes, we have tighter maritime regulations of course and technology has come on in leaps and bounds, but the cause of this accident would seem to have been simple human error, something that is still ever present to this day in the boating and shipping world, nearly one hundred and fifty years on. We must learn the lessons that history teaches us. So, just how far have we advanced over time?*

'Perhaps the most terrible catastrophe that ever occurred on the Thames took place last night,' writes the Greenock Telegraph and Clyde Shipping Gazette on 4 September 1878, 'when the saloon steamboat Princess Alice, with about eight hundred passengers, was run down by a passing screw-steamer.'

This tragic incident, representing the largest loss of life on Britain's inland waterways, saw pleasure steamer the Princess Alice, laden with London day-trippers, cut almost in three as she collided with collier Bywell Castle.

The Princess Alice and the Bywell Castle collide | The Graphic | 14 September 1878

Although the exact death toll for this appalling incident was never known, due to there being no passenger lists kept, it is thought that between 600 and 700 people, women, men and children, died that fateful September night.

In this special blog, we take a look at how newspapers of the time reported on what was then labelled the 'Princess Alice Disaster,' and how the news quickly disseminated from London and across the country.

A Disaster Almost Unparalleled

Steamboat the Princess Alice had set out on 3 September 1878 from Swan Pier, near London Bridge, on what was billed as a 'Moonlight Trip.' Passengers would be conveyed to Sheerness, stopping at Rosherville pleasure gardens, and thence back to the city. But tragedy was to strike an hour after sunset, as she returned from Rosherville.

But what exactly had happened in the darkness of the river? The Greenock Telegraph and Clyde Shipping Gazette, only a day after, carried this report:

The steamboat was on her way from Sheerness to London, in completion of her day's excursion, and had got within sight of Woolwich, the tide running down strong, when a sharp corner had to be turned. It is supposed that in order to effect the manoeuvre the vessel was ported, so as to gain a greater scope for swinging. Whilst this was being done, a cargo steamer came down the river, and encountering the upward bound vessel almost broadside on, ran into her, striking the sponson the port side.

The article continues on, relating how 'the blow was fatal, as the side of the passenger steamer was torn down below the water line, and the vessel immediately began to sink; and amidst the shrieks of the perishing passengers, she went down in comparatively deep water, within five minutes of the collision taking place.'

One can only imagine the 'peculiar horror' and the confusion of the scene. And indeed, the Victorian press did imagine most vividly the last moments of the victims of the tragedy, with melodrama typical of the time:

Almost within sight of their own homes – far inland away from the treacherous sea, did these gay hearts sink beneath the muddy waters.

This piece from the Mansfield Reporter, from the 6 September, describes the 'disaster almost unparalleled in the annals of the history of our country,' noting how 'Many a mourning one will remember with tears the third of September.'

Anxious relatives inquire at the offices of the London Steamboat Company for news of their relatives | Illustrated London News | 14 September 1878

But other reports from the time were slightly more hopeful in tone, as the extent of the tragedy was not yet known. The Greenock Advertiser, on 4 September, reports how 'Hopes are entertained that the extent of the catastrophe may somewhat be lessened.' But in the course of the same article, such hopes were dashed. It was reported that 'only about 150 of those who were on board the Princess Alice were saved out of 700,' as she was sunk 'in 18 feet of water.'

Recovery Efforts

Soon after the Princess Alice went down, the recovery mission began. What aggravated the disaster beyond its initial horror was how she had sunk in a part of the river where raw sewerage had just been dumped. This led to survivors becoming sick, and the bodies of the dead becoming polluted beyond recognition.

On the 5 September 1878, it was being reported by the Leicester Daily Post that 'Divers have been employed to ascertain the position of the Princess Alice.' The next day, the Bradford Daily Telegraph printed particularly lurid rumours from the Standard, which stated that divers had found 'about 200 people in the vessel, some in a sitting position, and others huddled together as though sleeping.'

Meanwhile, The Times reported how divers had found 'cabins…full of bodies standing erect and packed together at the points of exit, where they must have crowded in the struggle to escape.' The Victorian press did not protect their readers from the horrors of what had unfolded, rather they embraced the graphic and macabre renderings of such a disaster.

However, there was some accuracy in these reports, as the Times wrote that 'there is too much reason to dread that between 600 and 700 have been sacrificed,' which would be the eventual toll agreed on.

Bodies are recovered from the wrecked front end of the Princess Alice | Illustrated London News | 14 September 1878

Identifying and Burying the Dead

The recovery mission also extended to the bodies of the victims. The Dundee Evening Telegraph reports on 6 September 1878 that 'twenty-two bodies have been recovered during the night and landed at Woolwich Dockyard.'

But the process for identifying the victims was thwarted by the condition of the bodies. The effluence in the river meant that the bodies were covered in slime, and as the Dundee Courier reports on 10 September, many were 'swollen and discoloured beyond recognition.'

The condition of the bodies also meant that they needed to be buried as soon as possible, as the Greenock Advertiser relays:

Further identifications were proceeded with…on the representation of the churchwardens as to the absolute necessity of burying a number of the bodies not yet identified, the coroner signed the burial orders for 74 bodies, which will be committed to the earth today.

The Dundee Courier further outlines how the unidentified bodies were to be 'immediately buried for sanitary reasons,' but describes how these victims were treated with the utmost care, dignity and respect:

Thirteen unidentified victims were buried yesterday, being conveyed to the cemetery on army service wagons, in charge of a mounted sergeant. The shops in Woolwich were closed. An immense crowd assembled, but their conduct was irreproachable.

The Greenock Advertiser describes how 600 bodies had been recovered by the 10 September, with 450 claimed. Many of the victims were washed on shore by the ebb tide at Tripcock Point, close to where the incident occurred. Identifications were still being made weeks later during the inquest, via the victims' clothing. According to the Shipping and Mercantile Gazette's report on the inquest, 25 September 1878:

Several persons came forward during the day came forward and gave evidence as to the identification of the clothing of deceased persons whose remains had been interred in the neighbourhood of Woolwich, and asked for permission to have the bodies disinterred. In all cases certificates were given.

The Best and Worst of Human Nature

But even in light of such tragedy, the worst of human nature came to the fore. The Penny Illustrated Paper reports on the 14 September 1878 how landlord Mr Bow had been approached by relatives of his dead tenants, a Mr Joseph Ellis, his wife and child who had all been killed in the disaster. Ellis's family wanted to take 'the goods and effects of his unfortunate lodger,' but his wife's family wanted the property to remain. In the end, Mr Bow was advised that he 'could not be wrong in delivering up the goods to the relatives of the husband.'

However, Victorian philanthropy was stirred into action as a result of tragedy. The Greenock Advertiser reports how 'the sufferers by the Thames disaster were again assured by Her Majesty's gracious sympathy.' A fund was set up by the Mansion House to relieve 'cases of distress,' which

amounted to £22,000 by the 25 September 1878 (over £1.3 million today). Meanwhile, the Mayor of Maidstone had also opened a subscription fund in aid of the survivors, and those who had been left behind.

The Inquest

But many were asking how this accident could have occurred, or as the Mansfield Reporter put it, 'Almost we all we can do at present is to…marvel that several hundred human beings could possibly be suddenly launched into eternity in the principal waterway of the Kingdom, and within so short a distance of the largest and richest city in the world.'

This of course was the purpose of the inquest, which heard from surviving crew members and passengers from the Princess Alice.

Recovery of the victims | Illustrated London News | 14 September 1878

The Princess Alice | Illustrated London News

The Aberdeen Press and Journal printed an account of the inquest, and the frantic moments before the collision:

Witness hearing the man forward shout 'Steamer ahead' looked and saw the light over the starboard bow a quarter of a mile distant. About four minutes later the captain shouted 'Where are you coming to?' and in three seconds they were struck.

The captain, William Grinstead, who died as a result of the collision, was described as a 'sober, steady, and careful man.' The Shipping and Mercantile Gazette reports also how he was 'perfectly sober and had declined refreshment, as he stated that a great responsibility rested on him.'
Eyewitness accounts were particularly harrowing, one witness describing how 'The Bywell Castle came into us as if she were a knife cutting bread…the blow she had received would have sunk an ironclad.'

The inquest found both vessels to be at fault, but with the main burden of responsibility falling on the Bywell Castle:

The Princess Alice starboarded, and showed her green light four minutes before the Bywell Castle ported and opened her red light. The Bywell Castle should not have ported when the green light of the Princess Alice was seen, and when it was evident that she had starboarded. The Princess Alice starboarded her helm to avoid two difficulties – being struck on the port bow, or coming in collision with a barge.

Further, separate, inquests were held on the victims of the disaster, including Miss Ellen Hanbury, who, according to the Shipping and Mercantile Gazette had 'expired…from the effects of immersion after the collision.'

Ellen had been on the Princess Alice with her sweetheart and friends. She was a good swimmer, and after the Princess Alice had sunk she had 'kept afloat for two hours,' remarkably getting 'nearly two miles from the scene of the wreck, when she was taken in a boat.' She was accompanied by her sweetheart, but there only being room for one in the boat, her sweetheart was left behind. With a tragic flourish of Victorian sentimentality, her sweetheart is reported as saying 'Good-bye, we shall meet in heaven,' before he was 'lost.'

Damages

In December, the London Steamboat Company, owners of the Princess Alice, brought damages of £20,000 against the owners of the Bywell Castle, who in turn had brought £2,000 against them.

The judge in this case, Sir R. Phillimore, according to the Ashby-de-la-Zouche Gazette, stated how it 'appeared that the Princess Alice was negligently navigated, and was therefore to blame for the collision,' but the Bywell Castle had taken a 'wrong manoeuvre' when faced with the impending impact.' Ultimately, he ruled that 'both vessels [were] to blame for the collision.'

And amidst the legal wrangling, it seems that the victims of this disaster were largely forgotten, swept away with the flood of the river. These were people from all walks of life, enjoying a day trip on London's famous waterway, and they should have all returned to their homes. But they didn't. Instead, they were victim to a catalogue of errors, from overcrowding to poor navigation, to the arrangements that saw raw sewerage being dumped in the Thames, a lack of lifeboats, amongst other failings.

This tragedy did produce change; sewerage was then taken out to sea, and the Metropolitan Police provided their Marine Police Force with steam launches instead of rowboats. But the damage had been done, and the newspapers of the day give us insight into this tragedy, and help us to remember it, over 140 years later.

"Progress is precisely that which rules and regulations did not foresee"

Quote by Ludwig von Mises

Last word by Geoff Waddington

HonFIIMS, *IIMS Immediate Past President*

"I am someone who has always been willing to 'stick their head above the parapet', 'throw a stone into the mill pond', or just simply raise the difficult subjects and ask the awkward questions."

I am someone who has always been willing to 'stick their head above the parapet', 'throw a stone into the mill pond', or just simply raise the difficult subjects and ask the awkward questions. Yes, that's me.

I don't wish to point fingers, support or criticise any particular political or professional bodies. This is just my observation. Some of you may have read something similar in my previous writings, so I will apologise if that is the case for repeating myself; but unless we all learn and things change, the lessons missed in the past will continue to be relevant.

I have been an engineer all my life and I have learned a few things. Sayings are often true - one such example is "If it ain't broke don't fix it". Another is "don't try and re-invent the wheel here". I also learned when to ask for help or advice because I am always happy to admit I don't know it all – no-one can. And I like to think that I learn something new almost every day.

Years ago, I was an engineer in the Royal Navy, thus working for the MOD and by duty I had to suffer whatever was decided by those in authority. I served on a new type of destroyer which had suffered due to the rigours of defence spending cuts during its design and production. As a result there were many things that we knew weren't right, but it took the loss of two of these in a war to put those things right!

Also, during my time, I served with a shipwright officer who was a very junior member of a committee whose job it was to design a new diesel electric (conventional) submarine. After many months and just as many meetings he waved his hand in the air at the end of the table and was permitted by those more senior and (therefore more knowledgeable members) to speak. Whereupon he informed the experts that they had laid the basics for a vessel which would certainly dive, but unfortunately could never return to the surface - in effect the very epitome of Sub-Marine.

I recall when in an effort to satisfy the needs to reduce global emissions a decision was made to make fossil fuels more environmentally friendly. This effectively meant putting (Bio), Fatty Acid Methyl Ester (FAME) claimed by some manufacturers to be gas to liquids technology, but better known as Methanol in the petrol and diesel fuel in our cars. But nobody bothered to ask the engine or fuel tank manufacturers what effect it might have. So, engines stopped working, vehicles and motorcycles burst into flames, stored fuel basically went off and so on. And then it was decided that this law was to apply to boats as well, but again nobody thought to ask what may happen when a hydroscopic and resin eating substance was to be placed inside a plastic floating object.

I recall when an Island decided it no longer wanted to have its directives, rules and laws decided by people from other countries. Does Spain know what Latvia needs? Does Poland know what Portugal needs? But apparently some unknown and un-elected person in another country knew best and once this became apparent the Island voted with its feet.

I recall when a government decided to pacify the activists and make an attempt to reduce global emissions, go green and faze out fossil fuel vehicles and switch to electric vehicles; but nobody seemed to have thought where all the power would come from, especially without a fossil fuelled power station to supply it, or how people would charge all these vehicles especially if you live in a terraced house or high rise flat or even just didn't have a driveway. So now we have to deal with cables running across footpaths, cars parked on pavements with cables stretching through downstairs windows and all the implications that has. We should also consider spending a larger sum of money to sit behind the wheel of what is effectively a giant computer without the knowledge of how it has been programmed. When your Morris Minor stopped working you got your spanners out, but what can you do when your state-of-the-art electric car – or boat for that matter - stops working?

As a control room operator with 56,000 shaft horse power at my fingertips I understood that being remote from the machinery and equipment removed vital elements of the decision making process; so I was trained that before flicking the switch to always remember that for every action there is a reaction.

We now have new battery technology to supply these needs but once again the advice, the rules and regulations required are lagging far behind. That means we are seeing superyachts, vehicles, ferries and cargo ships bursting into flames, as the fire fighters (those that survive) stand helplessly by. As in most instances, sadly the need for legislation tends to be measured by the level of loss of life, until such time as it is up to the individual to 'fly in the face' of current convention and take the necessary action.

I recall when the commercial compliance coloured vessel codes were to be superseded in the UK by a single document. Nobody asked for professional opinion and the document remained a Guide instead of the legislative standard which it was intended to be. The Professional Standards of those chosen to enforce these rules were to be set and committees were assembled in an attempt to achieve a consensus, but nobody could agree. At least when someone decided to rewrite the Workboat Code, we were asked to review and give comments, but now it seems nobody was or is listening to advice from industry. If you want to go to sea, ask a mariner, if you want to fly a plane ask a pilot, if you want to design a ship ask a naval architect; and if you want to set the rules for the commercial compliance survey of workboats ask and listen to the commercial compliance certifying authorities and the operators of ships, because they just might know a thing or two.

We all believe in education, so let's consider a classroom where the teacher asks questions but won't listen to the answers, or where children ask the questions and teachers won't give them the answers; the result SILENCE, because what's the point.

Perhaps democratically elected rule makers should realise that a democracy is designed to prevent a dictatorship.

Just my thoughts.

Geoff Waddington *HonFIIMS*
IIMS Immediate Past President

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