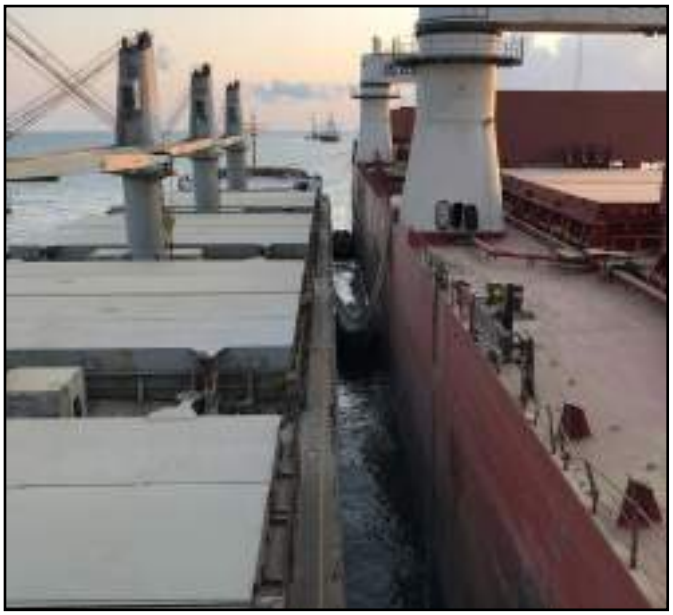
ANNUAL REPORT

2022

Marine Accident Recommendations and Statistics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July 2023

MAIB
MARINE ACCIDENT INVESTIGATION BRANCH

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The Marine Accident Investigation Branch (MAIB) examines and investigates all types of marine accidents to or on board UK vessels worldwide, and other vessels in UK territorial waters.

Located in offices in Southampton, the MAIB is a separate, independent branch within the Department for Transport (DfT). The head of the MAIB, the Chief Inspector of Marine Accidents, reports directly to the Secretary of State for Transport.

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2022 saw the publication of MAIB's new-look safety digest

Each edition contains a collection of anonymised articles based on investigations and administrative enquiries, with an emphasis on the lessons to be learned.

- Featuring introductions by selected stakeholders from the merchant, fishing and recreational industries.
- Now reproducing MAIB safety flyers as well as safety bulletins published since the last edition.

The next edition is published on 2 October 2023

https://www.gov.uk/government/collections/maib-safety-digests#safety-digests

INTRODUCTION

I am pleased to introduce MAIB's annual report 2022. For many reasons, as I outline below, it was a challenging year, but the branch remained focused on improving safety at sea and kept up its usual output of safety investigation reports, safety digests and safety bulletins. Across the year, the branch received 1,263 reports of marine casualties and marine incidents involving UK vessels worldwide or other nations' vessels in UK waters and commenced 16 investigations.

Year	Marine Casualties and Marine Incidents	Investigations started	Investigations started involving loss of life
2022	1,263	16	8
2021	1,530	22	14
2020	1,217	19	10
2019	1,090	22	13
2018	1,227	23	7

SAFETY ISSUES

Merchant Ships

The deaths of three stevedores on board the Isle of Man registered bulk carrier *Berge Mawson* in the middle of the year was a stark reminder that the industry still has much work to do to mitigate the hazards posed by noxious atmospheres. The human drive to assist someone in danger is powerful, which is why so often a second person succumbs to the noxious atmosphere before realisation dawns, access is controlled and a properly equipped rescue starts. On this occasion, three stevedores had entered the space before access control was restored. This is not the first time in recent years that stevedores have been caught out in this fashion. We will have more to say in the investigation report, but the safety lessons of ensuring that comprehensive safety briefs are conducted before working cargo, and that ship's crews take full ownership of access control, bear repeating here.

The investigation into the engine room fire on board the roll on/roll-off ferry *Finnmaster* commenced in late 2021 and continued throughout 2022. Fortunately, no lives were lost in the accident, but the investigation has identified multiple failures of critical safety systems. Of particular concern was the failure of the CO_2 fixed firefighting system to fully discharge, which prompted the branch to issue Safety Bulletin 1/2022 warning of the risk that pilot hose couplings might not allow the passage of gas (see page 16).

Following industry feedback, 2022 saw the branch call for reports of pilot boarding accidents and incidents of noncompliant boarding arrangements. Subsequent checking with industry indicates that the branch captured about 50% of the variously reported incidents, which has enabled an initial analysis of the issues to be conducted. Our summary of the 2022 data follows this introduction (see page 4), and the branch will continue to collect data throughout 2023.

Commercial Fishing Vessels

2021 was a particularly bad year for fatalities in the commercial fishing industry, so I am cautious about reading too much into the much lower, but still tragic, figure of three fatalities recorded in 2022. That said, the data indicates that the accident rate for boats of less than 15m length overall was much lower across the board than in previous years (see tables 16 and 22 on pages 53 and 59, respectively). There is a

huge amount of effort going into safety campaigns and education, from the online messaging of the Home and Dry[1] campaign to the, literally, immersive experience of the environmental pool training events where fishers get to experience falling in without a personal flotation device. If the downward trend of accidents continues these efforts will have paid off, so I am keeping my fingers crossed.

Conversely, the number of larger fishing vessels – 15m to 24m and over 24m registered length – that were lost is the highest it has been since 2015. The nature of the accidents tells its own story (see the summary of investigations started on page 9), but more generally we are seeing an increase in the number of collisions, groundings and flood-related founderings among the larger vessels. Of particular note has been the number of recent flooding incidents that can be attributed to trawl doors striking and penetrating the underside of the hull during hauling. With crews focused on recovering the fishing gear, flooding has often been well advanced before it was discovered, leaving crews little time to react.

OTHER INVESTIGATIONS

The report of the investigation into the Haverfordwest stand up paddleboard tragedy was published during the year, in which we highlighted concerns about the governance and oversight of the increasingly popular activity of paddleboarding (see pages 17 and 28). Work is ongoing in this area, but since the report's publication the branch has received a number of reports from water users concerned about the hazards of their local weir (see image below). As the MAIB's report points out, the risk can range from benign to extremely hazardous as the flow and height of water on either side of the weir changes. I make no apology for repeating here, as the UK summer approaches, the need for river and waterway authorities to carry out weir risk assessments and, as necessary, adopt appropriate safety measures.

Haverfordwest Town Weir the day after four lives were lost

RECOMMENDATIONS

In 2022, the MAIB made 38 recommendations to 21 separate recipients, of which 36 (94.7%) were *accepted* and half of those already *implemented*. One recommendation was *partially accepted*, and one recommendation was *rejected* (see page 11). While this is an excellent acceptance rate, and a significant improvement on last year, it is disappointing that a number of recipients of older recommendations were unable to provide a target date for their implementation.

[1] https://www.homeanddry.uk/

BRANCH ACTIVITY AND DEVELOPMENT

In the MAIB Annual Report 2021, I reported that the branch aspired to streamline and simplify the reporting of Marine Casualties and Marine Incidents by the development of an online portal/app, and to provide public access to the statistical element of the MAIB's database. The discovery phase for both project elements has been completed, and the public access element is now proceeding to the formal scoping phase. With a fair wind, both scoping and development will be delivered within the year; however, the discovery phase identified that simplifying the reporting of marine accidents by the provision of an app was unlikely to improve the number or quality of reports made to the branch. Consequently, this element of the project has been paused while we focus on better understanding the apparent barriers to accident reporting.

Two significant issues impacted workload and, therefore, outputs during 2022.

The first, as foreshadowed in my introduction to last year's annual report, was the branch commenced an investigation into a tragedy on 24 November 2021 when at least 27 migrants lost their lives while attempting to cross the Dover Strait from France to the UK. At the time of publishing this year's annual report, the draft migrant boat report has completed its consultation phase and the responses are being reviewed. This investigation has trodden new ground for the branch, and it has been particularly demanding on resource; partly because of the complexity and interplay of the assets and agencies involved, but also because the UK's response to migrant crossing events continues to evolve.

The second saw an unusually high outflow of experienced staff from the branch during 2022 either on retirement or to return to industry. The consequence was an influx of inexperience to almost all branch processes, which have slowed down throughout. With time, experience is being gained and productivity restored. However, the post COVID-19 green shoots of recovery that I reported on last year have still to fully develop and the branch is still not operating at its usual pace.

FINANCE

The annual report deals principally with the calendar year 2022. However, for ease of reference, the figures below are for the financial year 2022/23, which ended on 31 March 2023. The MAIB's funding from the DfT is provided on this basis, and this complies with the government's business planning programme.

£k	2022/23 Budget	2022/23 Outturn
Costs – Pay	3,429	3,440
Costs – Non Pay	1,435	1,286
Totals	**4,864**	**4,726**

Captain Andrew Moll OBE
Chief Inspector of Marine Accidents

Securing - shackles 25%

Poor condition 23%

No or incorrect stanchions 13%

Other 39%

PILOT LADDER INCIDENTS AND ACCIDENTS

The MAIB canvassed 105 UK Competent Harbour Authorities for their 2022 pilot transfer statistics. This revealed that almost 700 marine pilots conducted over 96,000 transfers underway using a pilot ladder, during which there were over 400 incidents or accidents.

Just over half of these were reported to the MAIB, the most serious of which resulted in the pilot suffering a fractured ankle when they lost their grip on the handhold stanchion and fell 3 metres onto the pilot boat. The preliminary assessment found that the vessel's handhold stanchions were not fit for purpose, as their design prevented the pilot gaining a firm grasp as they reached the top of the ladder (Figure 1).

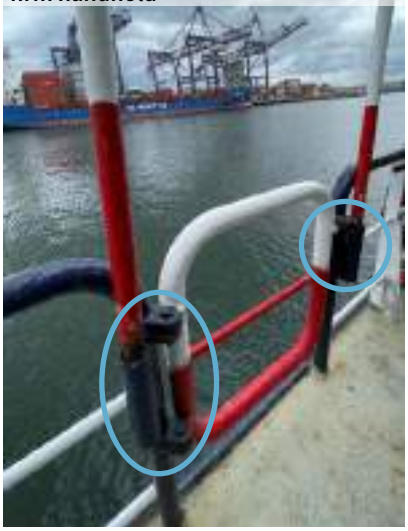


Figure 1: The poorly designed handhold stanchions (circled) that prevented the pilot from gaining a firm handhold

Analysis of the pilot ladder incidents and accidents reported to the MAIB revealed:

- **25%** were because shackles rather than rolling hitches[2] were used to secure the pilot ladder side ropes (Figure 2)
- **23%** occured because the material condition of the pilot ladder was poor (Figure 3)
- **13%** happened because handhold stanchions were not fit for purpose (Figures 1 and 4)

The remaining 39% of reported incidents and accidents involved issues such as the length of the ladder, its position against the hull and incorrect rigging of the tripping line, among other noncompliance.

Figure 2: Shackle arrangements (circled) cause the ladder to slip under excessive load when the pilot steps onto it

Figure 3 : Pilot ladder in poor condition

[2] SOLAS Chapter V, Regulation 23 and IMO Resolution A.1045 (27).

Figure 4: Second example of a noncompliant handhold stanchions for the transition from pilot ladder to deck

ACTIONS TO PREVENT THESE INCIDENTS AND ACCIDENTS

- **Check that the pilot ladder is properly rigged**
  Associated British Ports' *Pilot Boarding Arrangement Requirements – Best Practice information* poster provides useful guidance on some of the most common mistakes and how to rectify them:

https://www.portskillsandsafety.co.uk/safety-alerts/pilot-boarding-arrangement-requirements-best-practice-poster-shared-abp

- **Inspect the ladder before use**
  While old ladders are more likely to be in poor condition, new ladders are also at risk of damage; the pilot ladder should be thoroughly checked before each use and replaced or retested after 30 months of service. Useful guidance on pilot ladder maintenance, use and replacement is free to download via:

https://www.ptrholland.com/pilot-ladder-maintenance-use-replacement-inspection-record-book/

- **Handhold stanchions must be fit for purpose**
  The pilot is at particular risk of falling when they transition between the top of the ladder and the vessel's deck. The handhold stanchion design must allow the pilot a firm grip as they make this transition. The Designated Person Ashore must be notified and arrangements made to fix the issue if the existing on board arrangements do not meet this requirement.

- **Continue to report pilot ladder incidents and accidents to the MAIB**
  It is concerning that MAIB has been unable to undertake full analysis of the cause of pilot ladder incidents and accidents due to little more than half of these occurrences being reported to the branch. MAIB is happy to receive reports of unsafe pilot ladders via the UK Maritime Pilots Association (UKMPA) pilot ladder defect reporting app, which is very easy to use:

https://ukmpa.org/pilot-ladder-defect-reporting-app-launched

This analysis indicates that 99.6% of pilot transfers while underway were completed safely and without incident or accident during 2022. However, the potential consequence of the pilot falling from a ladder can be fatal and the low tech, high risk embarkation and disembarkation of the pilot by ladder requires continued management and oversight.

The MAIB intends to include similar statistics in its next annual report.

PART 1: CASUALTY REPORTS TO MAIB IN 2022

The MAIB received reports of 1,263 accidents (casualties and incidents[3]) to UK vessels worldwide or any vessels within UK coastal waters during 2022. A total of 1,351 vessels were involved.

Of the reports received, 516 accidents were outside the scope of this overview; as an example, accidents to people that did not involve any actual or potential casualty to a vessel have been omitted.

Chart 1 represents the remaining 747 accidents, involving 800 commercial vessels, reported in 2022 according to severity. Charts 2 to 5 further subdivide the data by vessel type.

[3] As defined in Annex B on page 62.

Chart 1: Accidents involving UK commercial vessels or non-UK commercial vessels in UK waters

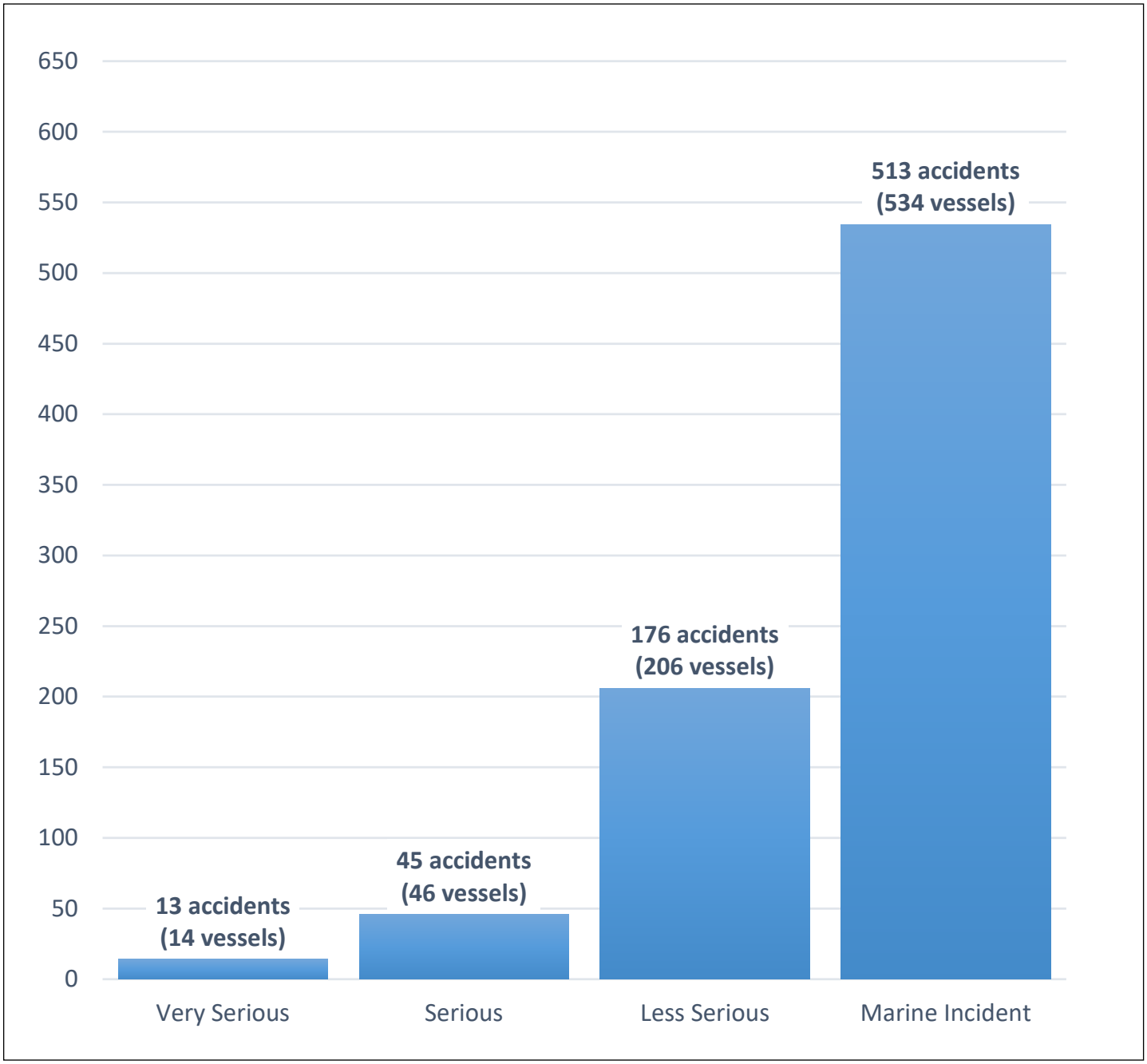


Chart 2: UK merchant vessels of 100gt or more

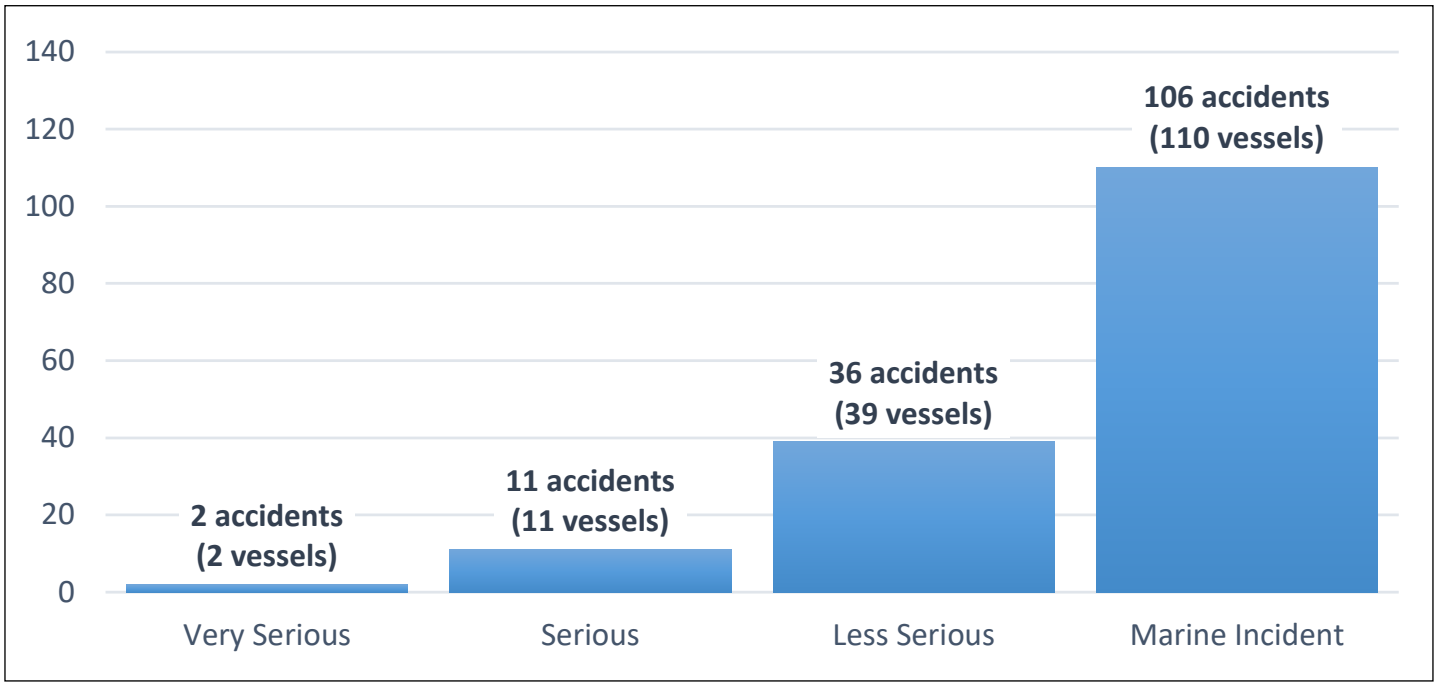


Chart 3: UK merchant vessels of under 100gt

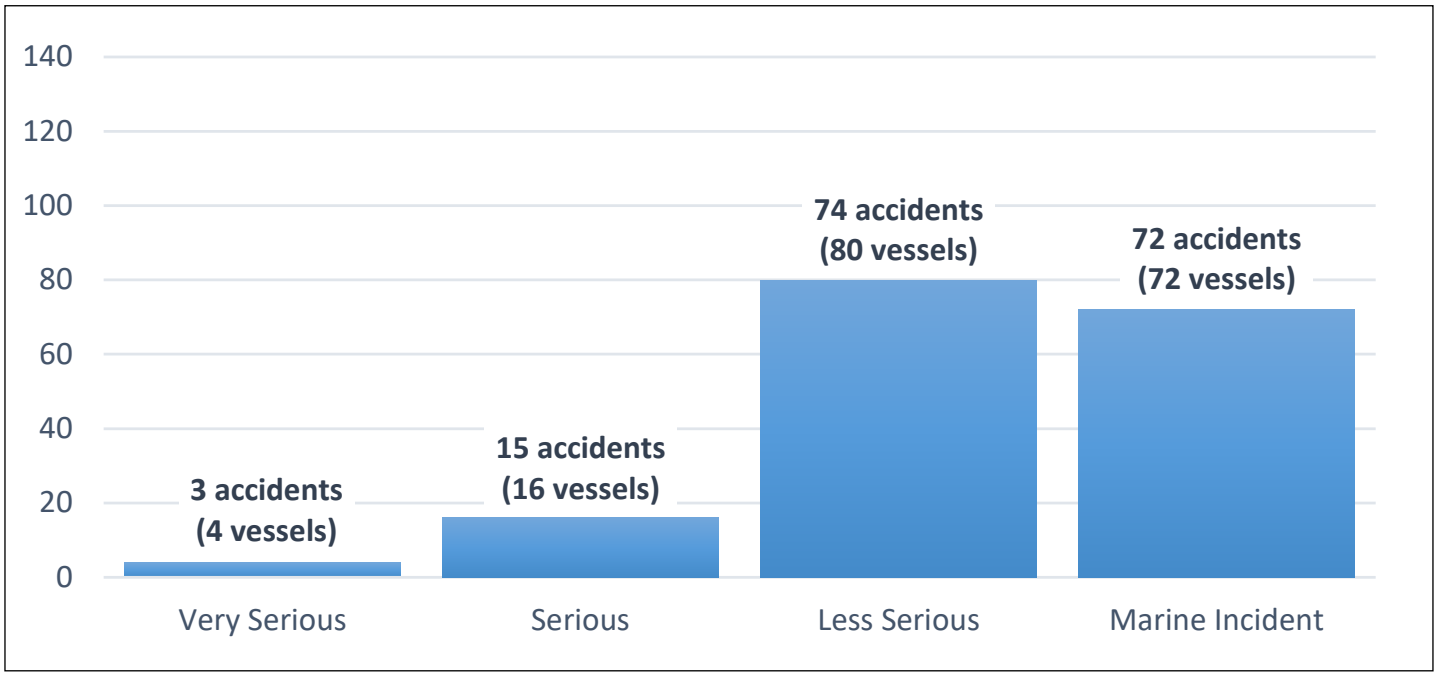


Chart 4: UK fishing vessels

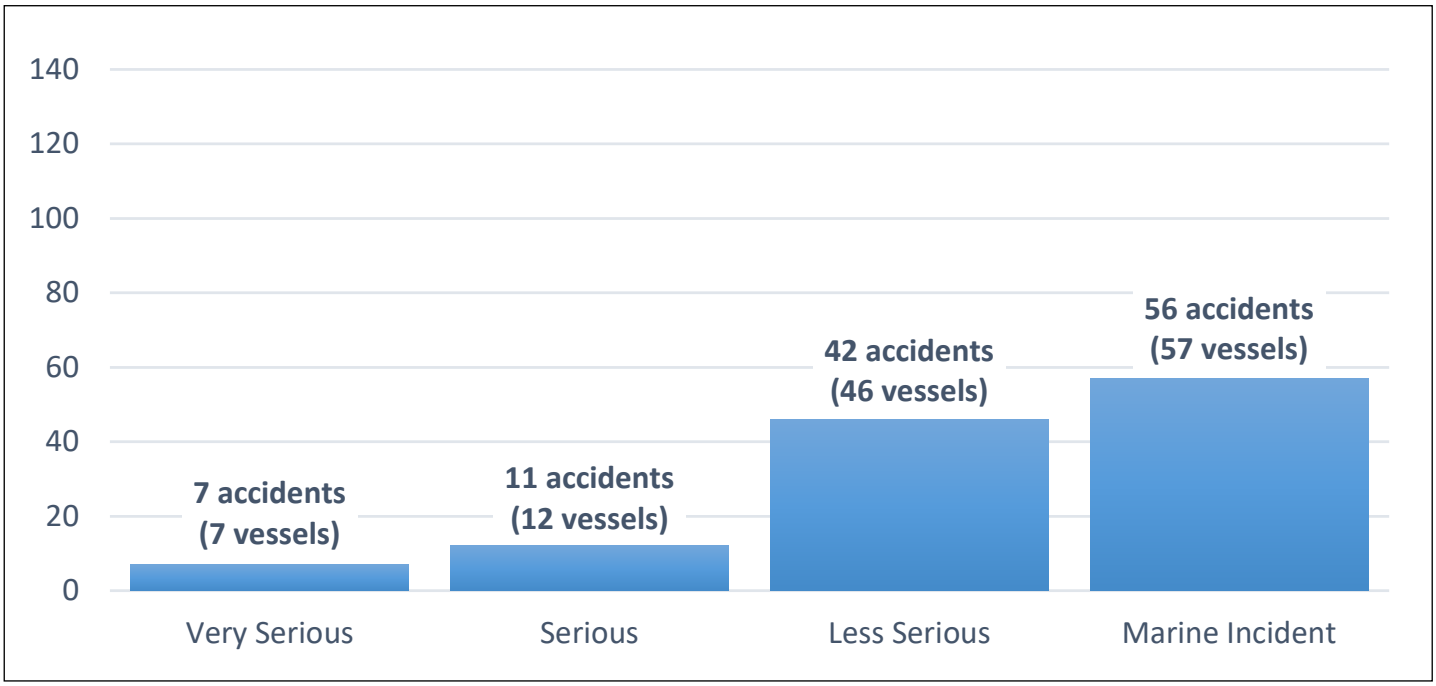
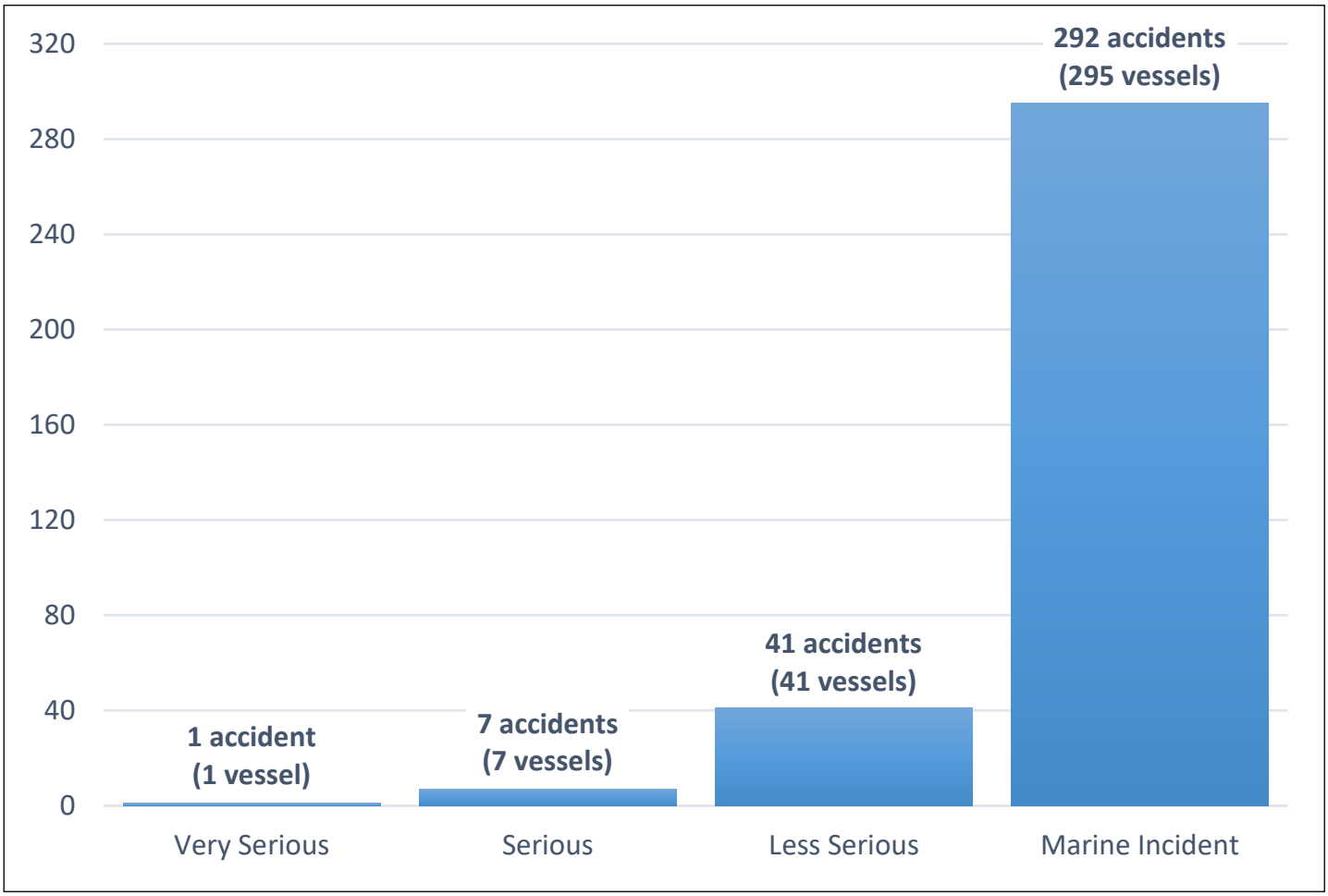


Chart 5: Non-UK commercial vessels in UK 12 mile waters



SUMMARY OF INVESTIGATIONS STARTED IN 2022

Date	Occurrence details
12 Jan	Double fatality on board motor cruiser ***Emma Louise***[4], berthed at Hamble, England.
6 Mar	Capsize and foundering of UK registered stern trawler ***Njord*** **(SH 90)** in the North Sea, approximately 100 miles west of Stavanger in Norway, resulting in the death of 1 crew member.
1 Jun	Foundering of UK registered fishing vessel ***Piedras*** **(FD 528)** approximately 77nm SW of Mizen Head, the Republic of Ireland. The crew were rescued from the vessel's liferaft uninjured.
8 Jun	Capsize of the wheelyboat vessel ***Wheelyboat 123*** on Roadford Lake in Devon, England resulting in 2 fatalities.
24 Jun	Collision between the fishing trawler ***Kirkella*** **(9808405)** and the moored tug ***Shovette*** **(7341518)** in King George dock, Hull, resulting in the sinking of the tug.
27 Jun	Fatal injuries to three stevedores in a cargo hold on board Isle of Man registered[5] bulk carrier ***Berge Mawson*** **(9738868)** while loading coal at Bunyu anchorage, Indonesia.
5 Jul	Grounding of UK registered ro-ro passenger ferry ***Alfred*** **(9823467)** on Swona Island, Scotland.
16 Aug	Serious injury to a deck officer while operating a deck crane during operations on board UK registered anchor handling tug supply vessel ***Kommandor Orca*** **(9352377)** alongside in Portland, England.
1 Oct	Person overboard from keelboat ***LimBitless*** off Cowes, Isle of Wight, England with loss of 1 life.
2 Oct	A mechanical failure and the consequential uncontrolled turn of powerboat ***Awesome***, causing the ejection of 10 of the 11 occupants, resulting in multiple injuries and the loss of 2 lives off Tortola, British Virgin Islands[6].
6 Oct	Collision between UK registered pair trawlers ***Guiding Light*** **(H 90)** and ***Guiding Star*** **(H 360)**, 34nm south-east of Fair Isle in the North Sea, resulting in the flooding and sinking of ***Guiding Star***.
7 Oct	Man overboard, presumed deceased, from UK registered fishing vessel ***Eder Sands*** **(UL 257)** in the Atlantic Ocean, approximately 220nm south-west of Shannon, the Republic of Ireland.
24 Oct	Grounding and loss of UK registered fishing vessel ***Ocean Maid*** **(BA 55)** on Cairnbulg Point, Aberdeenshire, Scotland. The crew abandoned to a liferaft and were rescued uninjured.
25 Oct	Collision of Malta registered chemical tanker ***Ali Ka*** **(9451226)** with a berth at Canvey Island in the Thames Estuary, England, resulting in damage to both vessel and berth.
12 Nov	Capsize and loss of 7.47m UK registered fishing vessel ***Crig-A-Tana*** **(SC 25)** 3.7nm south-east of Bass Point, Cornwall, England. The two crew abandoned to a liferaft and were rescued uninjured.
14 Dec	Sinking of a migrant boat while attempting to cross the English Channel, resulting in 4 confirmed fatalities. The exact number of persons in the boat has not yet been established.

[4] The accident investigation report was subsequently published on 27 April 2023: **https://www.gov.uk/maib-reports/carbon-monoxide-poisoning-on-board-the-sports-cruiser-emma-louise-with-loss-of-2-lives**

[5] Under investigation on behalf of the Isle of Man Ship Registry in accordance with the Memorandum of Understanding: **https://www.gov.uk/government/publications/mou-between-maib-and-reg-category-1-registries**

[6] Under investigation on behalf of the government of the British Virgin Islands.

PART 2: REPORTS AND RECOMMENDATIONS

INTRODUCTION

The following pages list the accident investigation reports and safety bulletins published by the MAIB during 2022. Where the MAIB has issued safety recommendations following an investigation, the current status of the recommendation and any applicable comments made by the MAIB accompany the entry*.

Recommendations from previous years that remain open are also included on the following pages.

For details of abbreviations, acronyms and terms used in this section please refer to the glossary on page 64.

*Status as of 25 May 2023

Background

Recommendations are a key element of MAIB investigations. They are issued to promulgate the lessons from accidents investigated by the MAIB, with the aim of improving the safety of life at sea and the avoidance of future accidents. The issue of a recommendation shall in no case create a presumption of blame or liability.

Following an investigation the MAIB will, normally, make a number of recommendations. These will be contained within the published report but will also be addressed in writing to the individuals or senior executives of organisations concerned. Urgent safety recommendations may also be made in safety bulletins or by letter from the Chief Inspector to the organisations involved, which can be published or issued at any stage of an investigation.

Recommendations are made to a variety of addressees who might have been involved in, or have an interest in, the accident. These can range from those organisations that have a wider role in the maritime community, such as the Department for Transport (DfT), the Maritime and Coastguard Agency (MCA) or an international organisation, through to commercial operators and vessel owners/operators.

The *Merchant Shipping (Accident Reporting and Investigation) Regulations 2012* require that the person or organisation to whom a recommendation is addressed considers the recommendation and replies to the Chief Inspector within 30 days of its receipt. The reply shall include details of the plans to implement the recommendation or, if it is not going to be implemented, an explanation as to why not. Under the Regulations, the Chief Inspector must annually *inform the Secretary of State of those matters* and make them publicly available. This Annual Report to the Secretary of State for Transport fulfils this requirement.

RECOMMENDATION RESPONSE STATISTICS 2022

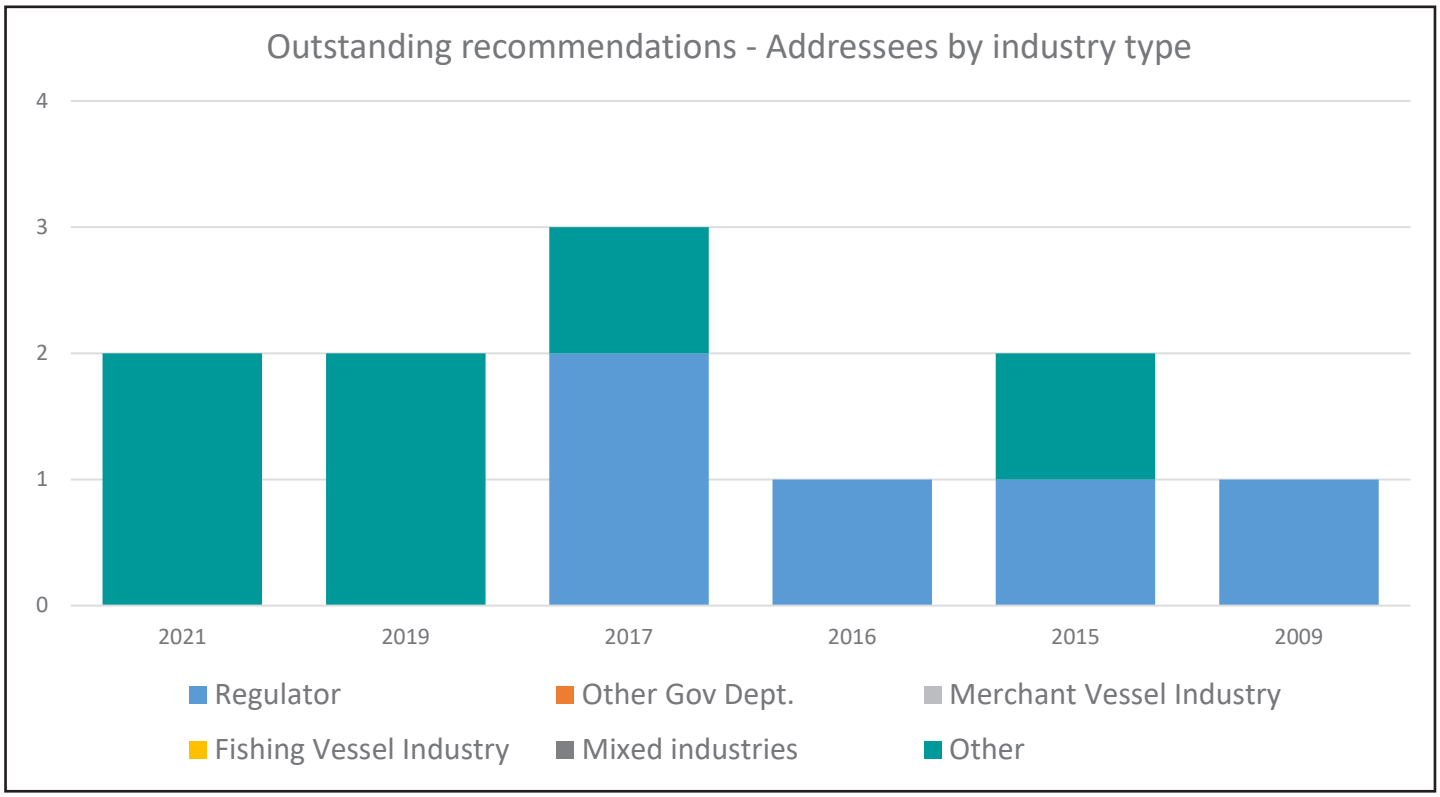
38 recommendations were issued to **21** distinct addressees[7] in 2022. The percentage of all recommendations that are either **accepted and implemented** or **accepted, yet to be implemented** is **94.7%**.

Year	Total*	Accepted Action		Partially Accepted	Withdrawn	Rejected	No Response Received
		Implemented	Yet to be Implemented				
2022	38	19	17	1	-	1	-

*Total number of recommendations issued

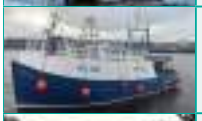
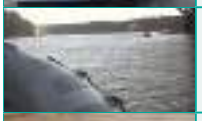
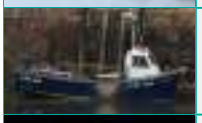
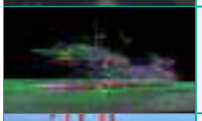
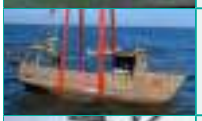
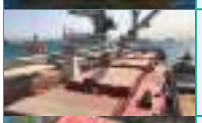
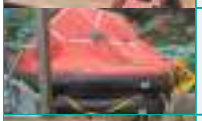
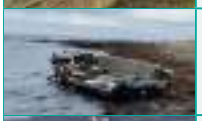
RECOMMENDATION RESPONSE STATISTICS FROM PREVIOUS YEARS

The chart below shows the number of recommendations issued under the closed-loop system that remain open at the time of this publication. There are no outstanding recommendations from 2004 to 2008, 2010 to 2014, 2018 and 2020.



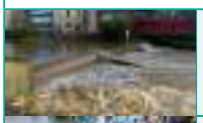
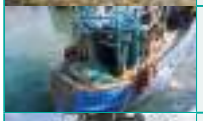
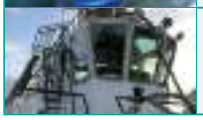
[7] For the purposes of these statistics, recommendation S2022/107M to all companies identified as having been supplied with the affected hose assemblies by Geeve Hydraulics B.V., with couplings sourced from HSR Hydraulics B.V. page 16 has been classed as 1 distinct addressee. Recommendations 2022/134, 135 and 136 to the UK National Sports Councils (page 28) are classed as 1 distinct addressee.

LIST OF PUBLICATIONS AND RECOMMENDATIONS ISSUED IN 2022

Vessel name(s)		Category	Publication date (2022) and report number	Page
	*Galwad-Y-Mor*	Serious Marine Casualty	20 January No 1/2022	14
	*Diamond D*	Very Serious Marine Casualty	9 February No 2/2022	14
	*Rib Tickler*/Personal watercraft	Very Serious Marine Casualty	17 February No 3/2022	15
	*Finnmaster*	Serious Marine Casualty	10 March No SB1/2022	16
	Stand up paddleboards	Very Serious Marine Casualty	n/a, recommendation issued pre-publication by letter[8]	17
	*Wight Sky*	Serious Marine Casualty	28 April No 4/2022	17
	*Diamond Emblem 1*	Very Serious Marine Casualty	5 May No 5/2022	19
	*Saint Peter*	Very Serious Marine Casualty	16 June No 6/2022	22
	*Joanna C*	Very Serious Marine Casualty	22 June No 7/2022	22
	*Nicola Faith*	Very Serious Marine Casualty	23 June No 8/2022	23
	*Teal Bay*[9]	Very Serious Marine Casualty	14 July No 9/2022	24
	*Piedras*	Very Serious Marine Casualty	n/a, recommendation issued pre-publication by letter.	25
	*Bella*	Very Serious Marine Casualty	2 September No 10/2022	26
	*Goodway*	Very Serious Marine Casualty	22 September No 11/2022	27
	*Annie E*	Serious Marine Casualty	2 December No 12/2022	27

[8] This recommendation was also listed as an action taken by MAIB in the subsequent accident investigation report (13/2022) published in October 2022.

[9] Under investigation on behalf of the Isle of Man Ship Registry in accordance with the Memorandum of Understanding: https://www.gov.uk/government/publications/mou-between-maib-and-reg-category-1-registries

Vessel name(s)		Category	Publication date (2022) and report number	Page
	**Stand up paddleboards**	Very Serious Marine Casualty	8 December No 13/2022	28
	***Reul A Chuain***	Very Serious Marine Casualty	16 December No 14/2022	29
	***Svitzer Mercurius***	Serious Marine Casualty	22 December No 15/2022	29

Preliminary Assessment summaries published on the MAIB's website in 2022

Vessel name(s)	Category	Description	Publication date (2022) and report number
Maud/Gardenia Seaways	Marine incident	Close quarters near miss between cruise vessel and a ro-ro ferry near the North Shipwash Buoy, England on 4 November 2021.	25 February No PA1/2022
Chem Alya	Marine incident	Grounding of a chemical tanker in the Needles Channel, England on 25 October 2021.	18 March No PA2/2022
Francisca	Serious marine casualty	Loss of 34 containers overboard from a cargo vessel near Duncansby Head, Scotland on 31 October 2020.	13 April No PA3/2022
Thorco Angela	Marine incident	Fumigant poisoning on a general cargo vessel in Liverpool, England on 11 October 2021.	18 May No PA4/2022

2022 RECOMMENDATIONS - PROGRESS REPORT*

*Status as of 25 May 2023

Galwad-Y-Mor

Report number: 1/2022

Fishing vessel (BRD116)

Accident date: 15/12/2020

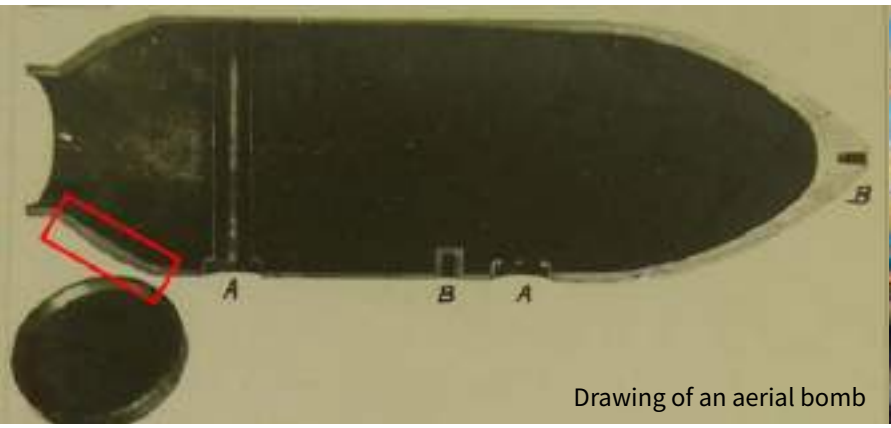
Subsea explosion resulting in crew injuries and vessel damage while hauling crab pots off Cromer, England

Safety Issues

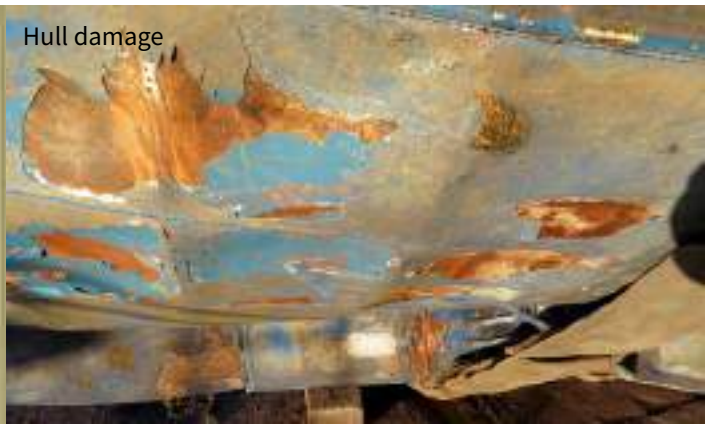
- Procedure for Unexploded Ordnance (UXO) when encountered at sea
- Importance of training and emergency preparedness

Based on this accident's circumstances, no action was taken by external stakeholders and MAIB made no recommendations.

The aim of MAIB's report was to highlight the dangers that still exist with unexploded ordnance in the seas around the UK, and the actions to take should fishers encounter any. In this case, the skipper and crew could not have foreseen the explosion and their level of preparedness to deal with such an emergency saved lives.



Drawing of an aerial bomb



Hull damage

Diamond D

Report number: 2/2022

Fishing vessel (SN 100)

Accident date: 16/8/2020

Flooding, capsize and foundering north-east of Tynemouth, England

Safety Issues

- Hull breached due to repeat impact from trawl doors as crew attempted to uncross towing wires
- Bilge alarms unnoticed because the wheelhouse was unmanned and crew were task-focused

Although no recommendations are made in this report, it should nevertheless serve as a reminder to fishing vessel crews to be prepared for flooding emergencies, to regularly check under waterline spaces and to wear PFDs at all times while working on deck.

Rib Tickler

Report number: 3/2022

Rigid inflatable boat/ Personal watercraft

Accident date: 8/8/2020

Collision resulting in one fatality in the Menai Strait, Wales

Safety Issues

- Uncoordinated high-speed manoeuvres in close proximity
- Inappropriate leisure craft training, knowledge and skills
- Inadequate compliance with the Port Marine Safety Code (PMSC)
- Inconsistent approach to national governance

No	Recommendation(s) to:	Isle of Anglesey County Council

Take measures to improve the effectiveness of its governance of the Menai Strait by:

2022/101 Engaging with and seeking best practice advice from bodies and organisations with expertise in safe waterspace management, including the Personal Watercraft Partnership;

Appropriate action implemented

2022/102 Reviewing the current legislation governing the waters at Menai Bridge and, if appropriate, seeking to amend and improve its powers via a Harbour Revision Order;

Appropriate action planned: 31 July 2023

2022/103 Ensuring the council's maritime team is adequately resourced to discharge its duties effectively.

Appropriate action implemented

No	Recommendation(s) to:	Royal Yachting Association and Personal Watercraft Partnership

2022/104 Collaborate to formalise the creation of a cross-industry forum, focused on the safe and consistent management of personal watercraft in the UK's coastal and inland waters. Items for consideration by the forum should include, among other things:

- Membership of the forum, which it is anticipated will include; the Maritime and Coastguard Agency, British Marine, the UK Harbour Masters Association, the British Ports Association, and the Local Government Association's Coastal Special Interest Group, plus other organisations and stakeholders as appropriate;
- The effective dissemination to all relevant authorities of the Personal Watercraft Partnership's publication, Managing Personal Watercraft, A guide for local and harbour authorities;
- The adoption of nationally consistent launch site signage relevant to personal watercraft;
- The adoption of a nationwide voluntary registration scheme for all personal watercraft.

Appropriate action planned: no date

Finnmaster

Safety bulletin number: SB1/2022

Ro-ro cargo vessel

Accident date: 19/9/2021

Blockage of fixed CO_2 fire extinguishing system pilot hoses identified following an auxiliary engine room fire while departing Hull, England

Safety Issues

- Ineffective quality assurance process during the manufacture of safety critical hose assemblie
- Ineffective onboard installation and service testing procedures for safety critical fire-fighting systems
- Unapproved components used in the manufacture of safety critical hose assemblies

No	Recommendation(s) to:	Geeve Hydraulics B.V.
S2022/105	Provide a copy of this safety bulletin to all customers supplied with hose assemblies fitted with couplings supplied by HSR Hydraulics B.V. that do not meet the required type approval, and draw attention to the safety issues raised and the need for immediate action to identify and rectify any defects found in safety critical systems.	**Appropriate action implemented**
S2022/106	Amend its purchasing and quality control procedures to ensure that hose assembly components are procured in accordance with the relevant type approval requirements.	**Appropriate action planned: 30 September 2023**

No	Recommendation(s) to:	All companies identified as having been supplied with the affected hose assemblies by Geeve Hydraulics B.V., with couplings sourced from HSR Hydraulics B.V.
S2022/107M	Take immediate remedial action to identify and rectify any blocked pilot hose assemblies and pilot system leaks on potentially affected CO_2 fire extinguishing systems.	**Appropriate action implemented**

MAIB comment: **The investigation identified that more than 33,000 hose assemblies had originated from the same supply chain and the recommendation was issued to 50 companies that had received the affected hose assemblies. A total of fourteen blocked hose assemblies on four individual fixed fire extinguishing systems were subsequently reported, including five affected hose assemblies installed on a large drill ship, as well as one blocked hose assembly held in stock. The recommendation was therefore successful in averting the potentially catastrophic consequences of a failure of the affected onboard safety critical systems.**

Paddleboards

Recommendation letter issued by the Chief Inspector

Stand up paddleboards

Accident date: 30/10/2021

Four fatalities during commercial river tour at Haverfordwest Town Weir, Wales

Safety Issues

- Lack of weir risk assessment to establish the hazard it posed to public safety
- Inadequate signage to alert river users to the extreme hazard posed by the weir

No	Recommendation(s) to: Dŵr Cymru Welsh Water
2022/108	In conjunction with Pembrokeshire County Council, Milford Haven Port Authority and other stakeholders as appropriate, is recommended to conduct an immediate risk assessment of the hazard posed to river users by Haverfordwest Town Weir, and to implement control measures as appropriate to mitigate that risk. Such measures could include, inter alia, riverside signage, warning marker buoys and, if deemed necessary, physical barriers.

Appropriate action planned: no date

Wight Sky

Report number: 4/2022

Ro-ro passenger ferry

Accident dates: 26/8/2018 and 14/12/2018

Two catastrophic engine failures, first at the entrance to Lymington River resulting in a fire and the second while berthing at Lymington Pier, near Southampton, England.

Safety Issues

- Insufficient technical oversight of main engine maintenance and operating parameters
- Problems with main engine auxiliary system design and configuration
- Lack of clear ownership for engine maintenance and engine condition monitoring
- Errors during factory and workshop assembly

No	Recommendation(s) to: Wightlink Ltd
2022/109	Ensure competent technical oversight of maintenance on board its vessels, through resourced procedures, so that technical issues are identified and escalated to senior management as necessary.

Appropriate action implemented

No	Recommendation(s) to:	Volvo Penta AB
2022/110	Identify all affected D16 MH customers to inform and resolve the identified oil filter bypass anomaly.	

Appropriate action implemented

No	Recommendation(s) to:	Lloyd's Register
2022/111	Assess the need to introduce within its rules and regulations the time taken to declutch a main propulsion engine from the drive shaft in the event of an emergency shutdown, to prevent the engine from being driven and increasing the risk of serious injury and damage.	

Appropriate action planned: 28 July 2023

No	Recommendation(s) to:	RK Marine Ltd
2022/112	Provide its customers with all manufacturers' safety bulletins applicable to the engines in use.	

Rejected

MAIB comment: **RK Marine Ltd confirmed that it no longer conducts work on commercial vessels as an authorised service provider for any engine manufacturers and that it was therefore not able to provide any manufacturers' safety bulletins to its customers.**

Diamond Emblem 1

Report Number: 5/2022

Motor cruiser

Accident date: 19/8/2020

Fatal person overboard at Great Yarmouth Yacht Station, River Bure, England

Safety Issues

- Fall into the water near a moving propeller
- Inadequate guardrail around the motorboat's stern
- Loss of control caused heavy impact
- Insufficient knowledge of dual helm controls
- Unclear visual positive indication of the active helm at either helm position
- Incomplete boat handover and documentation provided to the group

No	Recommendation(s) to:	Association of Inland Navigation Authorities, in consultation with its members
2022/113	Provide its members with comprehensive best practice guidance on processes for the administration and oversight of compliance with The Code for the Design, Construction and Operation of Hire Boats, commonly referred to as the Hire Boat Code, in order to support their adoption of the code as mandatory in 2022.	

Appropriate action planned: 31 July 2023

No	Recommendation(s) to: Broads Authority
2022/114	Make the British Marine and VisitEngland Quality Accredited Boatyard Scheme a requirement of the Broads Authority's Hire Boat and Hire Operators licensing provisions in addition to its own internal inspection regime.

Appropriate action implemented

2022/115 Review its licensing conditions for hire boat operators to ensure that:

- Licences are only issued when a complete set of the required signed and dated documentation is submitted by the operators.
- An appropriate level of verification is conducted on a change of ownership of companies to ensure that the new owners are operating their vessels in accordance with the applicable requirements.

Appropriate action implemented

2022/116 Retain a copy of Declarations of Conformity and other associated information demonstrating compliance with the requirements of the Recreational Craft Directive for all boats operating in their waters.

Partially accepted - action implemented

MAIB comment: **The intent of this recommendation was for the Broads Authority to retain a copy of the associated Recreational Craft Directive (RCD) related documentation throughout the period that a boat is operating on the Broads in order to maintain a record of its original design. The Broads Authority has confirmed that it will continue to retain RCD certification only for a period of 7 years after a boat enters into service. However, it will retain documentation associated with a boat's compliance with both the Boat Safety Scheme standard and the Hire Boat Code for the full period that the boat continues to operate in its waters, and it considers that this provides an appropriate level of documentary oversight given the context and enforcement of these standards.**

No	Recommendation(s) to: A J & J Cator t/a Ferry Marina
2022/117	Review and amend its hire boat handover procedures to ensure that at the commencement of all hire periods:

- A comprehensive and thorough handover is conducted to include all aspects of the boat's propulsion and steering control systems, especially where multiple helm control positions are present;
- An in-water demonstration is conducted both to ensure that users have a practical understanding of the boat's control systems and to allow the competence of those expected to drive the boat to be assessed, irrespective of their previous experience or the length of the hire period; and
- Detailed and accurate records of all handovers are maintained.

Appropriate action implemented

2022/118 Ensure that appropriate documentation is made available to operators of their hire craft that provides comprehensive details of the:

- Boat's specific technical and safety systems, including a detailed explanation of the functionality of the control systems;
- Best practices in onboard communications required to safely navigate and control the boat; and
- Hazards and risks associated with operating the boat, including the required controls and actions to be taken to mitigate the risks.

Appropriate action implemented

2022/119 Undertake a suitable and sufficient risk assessment relating to the risks of people falling overboard from all areas on each of its hire craft, and implement appropriate control measures, which not only meet the requirements of the Recreational Craft Directive and other applicable standards, but, if considered necessary, also exceed the minimum standards to ensure that the risks are mitigated to a tolerable level.

Appropriate action implemented

2022/120 Implement a means of providing positive visual indication of the active helm control position on any boats they operate with multiple helm control positions so as to comply, where possible, with the requirements of the technical standards outlined in ISO 25197:2020.

Appropriate action implemented

2022/121 Incorporate interlocks on any boats they operate with multiple helm control positions to prevent inadvertent engine operation from an inactive helm control position.

Appropriate action planned: 31 December 2023

2022/122 Ensure that safety critical controls, such as engine stop buttons, on any boats that they operate are easily identifiable, including the provision of clear labels.

Appropriate action implemented

No	Recommendation(s) to:	Boat Safety Scheme

2022/123 Conduct a review of the Boat Safety Scheme requirements for hire boats with multiple helm control positions or systems with the intention of:

- Aligning the requirements with the technical standards outlined in ISO 25197:2020 to require positive visual indication of the active helm control position and that the transfer of command between helm control positions can only be completed at the intended active helm control position; and
- Including a requirement to incorporate system interlocks in order to prevent inadvertent engine operation from an inactive helm control position.

Appropriate action planned: no date

Saint Peter

Report number: 6/2022

Creel fishing vessel (LH 22)

Accident date: 2/5/2021

Fatal man overboard off Torness Point, near Dunbar, Scotland

Safety Issues

- Inadequate means of separating crew from gear on deck during shooting operations
- Lack of rigged method of self-recovery from the water
- No means of raising an alarm once in the water as a personal locator beacon (PLB) was not carried on board

No MAIB recommendations were made given the existing industry guidance on the risks of single-handed fishing operations and recommendations previously made in the *Sea Mist* report: https://www.gov.uk/maib-reports/man-overboard-from-single-handed-creel-boat-sea-mist-with-loss-of-1-life.

Joanna C

Report number: 7/2022

Scallop dredger (BM 265)

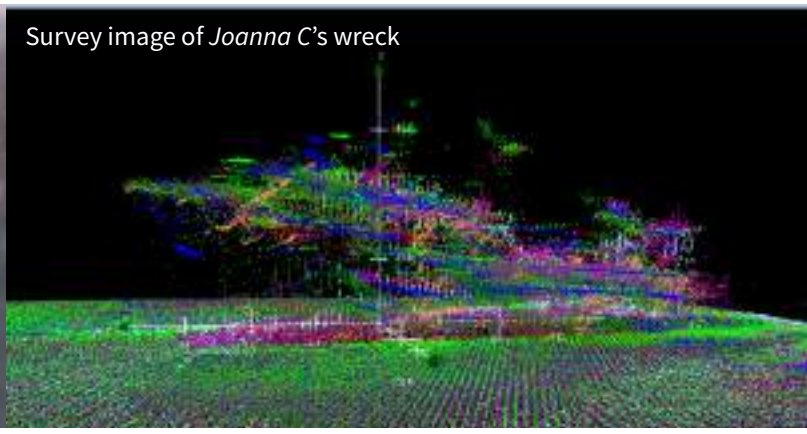
Accident date: 21/11/2020

Capsize and sinking off Newhaven, England with the loss of two of the three crew

Safety Issues

- Low margin of stability left the vessel vulnerable to capsize
- Eroded margins of stability due to extensive through-life modifications
- Incomplete stability analysis led to missed opportunities to detect deficiencies
- Unrestricted operation permitted by flag state despite the vessel's unknown stability condition
- Insufficient uninflated liferaft buoyancy due to no existing standard for non-SOLAS liferafts

Joanna C's uninflated liferaft floating mid-water



Survey image of *Joanna C*'s wreck

No	Recommendation(s) to:	Maritime and Coastguard Agency
2022/124	Ensure that fishing vessel stability compliance activity is effectively monitored such that stability requirements for small fishing vessels are applied as intended. Where stability checks are required, fishing operations should be suspended until a vessel's stability has been satisfactorily assured.	

Appropriate action planned: no date

Nicola Faith

Report number: 8/2022

Whelk potter (BS 58)

Accident date: 27/1/2021

Foundering in Colwyn Bay, North Wales with the loss of three lives

Recovery of *Nicola Faith*'s whelk pots and gear

Safety Issues

- Eroded margins of stability due to extensive vessel modification
- Unsafe operation due to overloading of the vessel to the point of instability
- Noncompliance in respect to the provision of mandatory safety equipment and wearing of a personal flotation devices (PFD)
- Insufficient guidance on modifications provided for MCA surveyors

No	Recommendation(s) to: Maritime and Coastguard Agency
2022/125	Revise the wording in MSN 1871 Amendment No. 2 (F) *The Code of Practice for the Safety of Small Fishing Vessels of Less than 15m Length Overall* to refer to a load limit rather than a catch limit.

Appropriate action planned: 30 June 2028

2022/126	Review and enhance the guidance to surveyors contained in MSIS 27 Chapter 3 to clarify what level of modification triggers further investigation into a vessel's stability.

Appropriate action implemented

No	Recommendation(s) to: Big Ship Limited
2022/127	Ensure that a written agreement is in place to identify the organisation or person with responsibility for the operation of any vessels it may own.

Appropriate action implemented

Teal Bay

Report number: 9/2022

Cargo vessel

Accident date: 30/8/2021

Mooring deck accident resulting in one fatality at Kavkaz South anchorage, Russia

Safety Issues

- Unsuitable mooring arrangements for ship-to-ship transfer – potential for an upward lead to develop
- Inadequate planning for mooring and warping evolutions
- Insufficient crew available to undertake the warping evolution
- Hazardous position of the chief officer during the mooring operation
- Uncoordinated emergency response led to medical delay

No	Recommendation(s) to: Isle of Man Ship Registry
2022/128	Promulgate the safety lessons from this fatal accident to owners and operators of vessels on its register.

Appropriate action implemented

Piedras

Recommendation letter issued by the Chief Inspector

Fishing vessel (FD 528)

Accident date: 1/6/2022

Foundering approximately 77 nautical miles off the south-west coast of Ireland

Safety Issues

- Incorrect routine servicing led to liferaft failing to function as designed
- Insufficient actions by the authorised service station repeatedly failed to ensure liferaft checks complied with certification regulations
- Ineffective oversight of the actions of the authorised service station to identify liferaft servicing issues
- Concerns that other non-deployed liferafts may not operate correctly if needed in an emergency

No	Recommendation(s) to: Survitec Group Limited
2022/129	Ensure that the corrective actions identified during the audit of its authorised service station 375, in July 2022 are verified as completed and that there is an appropriate level of oversight to confirm that the future servicing of liferafts by this station is rigorous and in accordance with statutory requirements.

Appropriate action implemented

MAIB comment: **Survitec Group Limited terminated the station's approval to act as an authorised service provider due to the seriousness of the issues identified during its audit in July 2022, including several non-conformities, and has also been liaising with the Spanish maritime authorities regarding the situation.**

2022/130	Take urgent action, as appropriate, to provide robust assurance that all liferafts serviced by the authorised service station 375 within the past 5 years are fully functional and comply with statutory requirements. This should include informing all affected customers of the potential risks that their liferafts may not be compliant and of any immediate actions required to ensure their effectiveness.

Appropriate action planned: 31 December 2023

MAIB comment: **Survitec Group Limited are continuing to work with stakeholders to assure the condition and functionality of the affected liferafts, and have issued an Alert Service Bulletin to its approved service stations in support of its recall of the liferafts. The MAIB is currently working towards preparing a safety bulletin to further raise awareness of the safety issues.**

Bella

Report number: 10/2022

Survey workboat

Accident date: 6/7/2021

Flooding and sinking in the approaches to Lynmouth, England

Safety Issues

- Insufficient reserves of buoyancy as a result of vessel modification
- Incorrect certification for commercial operation due to overreliance on Recreational Craft Directive information
- Inexperienced and unqualified crew led to underestimated risk of operating in open sea
- Crew familiarity with lifesaving appliances and wearing of PFDs increase chances of survival – and ensured a successful rescue in this instance

No	Recommendation(s) to:	Maritime and Coastguard Agency
2022/131	Provide guidance to Certifying Authorities regarding the application of the Recreational Craft Directive when certifying vessels for commercial operation.	

Appropriate action planned: 1 January 2024

MAIB comment: **It is anticipated that this recommendation will be addressed with proposed amendments to the Workboat Code Edition 3, which is expected will be published by the end of 2023.**

No	Recommendation(s) to:	Geosight Limited
2022/132	Implement a safety management system for its vessels that follows the principles of the ISM Code.	

Appropriate action implemented

Goodway

Report number: 11/2022

Creel fishing vessel (FR 23)

Accident date: 16/10/2021

Capsize with the presumed loss of one life, near Cairnbulg, Scotland

Safety Issues

- Single-handed fishing is a high-risk activity
- Noncompliance with regulatory requirement of PLBs to transmit to satellites on 406MHz
- Failure of surveyor to recognise incorrect type of PLB during MCA vessel inspection

No	Recommendation(s) to: Maritime and Coastguard Agency
2022/133	Issue an Advice Note to remind surveyors of the diferent types of PLBs that they may encounter and which of these are acceptable alternatives to the vessel being equipped with an EPIRB.

Appropriate action implemented

Annie E

Report number: 12/2022

Workboat

Accident date: 3/4/2021

Fall of a suspended buoy resulting in serious injury to a deckhand off the Isle of Muck, Scotland

Safety Issues

- Risk of serious injury during lifting operation
- Infringement of documented safety procedures by the injured deckhand
- Inadequate mitigation of risk from suspended loads within risk assessments and method statements
- Uncertified lifting equipment and noncompliant lifting technique in use
- Undocumented installation inspection or routine service history for the grid buoy

Since the accident the owner made changes to company risk assessments and method statements on workboat grid buoy lifting operations and also received guidance issued by the fish farm owner on the correct grid buoy lifting method to follow when undertaking maintenance to fish farm infrastructure. Based on these actions, no MAIB recommendations were made.

Paddleboards

Report number: 13/2022

Stand up paddleboards

Accident date: 30/10/2021

Four fatalities during a commercial river tour at Haverfordwest Town Weir, Wales

Safety Issues

- Inadequate planning and preparation for the tour overlooked the treacherous conditions at the weir
- Unsuitably qualified tour leaders
- Lack of weir risk assessment to establish the hazard it posed to public safety
- Inadequate signage to alert river users to the extreme hazard posed by the weir
- Participants were not wearing quick release waist leashes
- Inconsistent UK stand up paddleboard (SUP) safety messaging and no means for participants to judge the competence of the business providing the tour

No	Recommendation(s) to: UK National Sports Councils
2022/134	Complete their review of the governance of stand up paddleboarding in the UK and urgently ensure that the recognised national governing body(ies) have the resource, support and expertise to issue advice and guidance, including appropriate training standards to control risk to those who take part in this fast-growing sport. **Appropriate action planned: no date**
2022/135	Review and develop as necessary its criteria for conferring recognition as a national governing body, to include the management of safety and adherence to good practice by the governing body and any organisation or companies it accredits. **Appropriate action planned: no date**
2022/136	Develop and publish a national governing body Guide to Good Practice. **Appropriate action planned: no date**

Reul A Chuain

Report number: 14/2022

Fishing vessel (OB 915)

Accident date: 24/6/2021

Fatal man overboard in the Sound of Rùm, Scotland

Safety Issues

- Neither of the crew was wearing a PFD
- No restraint arrangement was in place to prevent a fall overboard
- Failure to practice man overboard drills resulted in crew being unfamiliar with the equipment.
- Failure to follow documented risk assessments

In view of the messages in the safety flyer published alongside the report, and other guidance currently promulgated to the fishing industry, no MAIB recommendations were made.

Svitzer Mercurius

Report number: 15/2022

Tug

Accident date: 22/12/2019

Failure of a towline pennant resulting in injury to the crew in Southampton, England

Safety Issues

- Insufficient induction for temporary crew due to commercial pressure
- Ineffective vessel condition assessment
- Ineffective tow winch maintenance led to its contamination and subsequent slippage
- Failure to identify the condition of the pennant as unfit for purpose
- Inability of the wheelhouse windows to withstand towline snapback impact

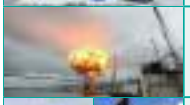
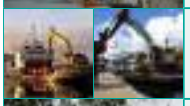
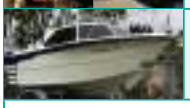
No	Recommendation(s) to: Det Norske Veritas
2022/137	Take the findings of this investigation to IACS, with respect to the failure of the wheelhouse window glazing, and propose the development of a unified requirement to minimise the risk of injury to personnel within the tug wheelhouse from broken window glazing and/or broken skylight glazing, in the event of impact from a recoiling towline.

Appropriate action planned: 2 October 2023

No	Recommendation(s) to: Svitzer Marine Limited
2022/138	Undertake a fleetwide risk assessment to determine the level of risk associated with towline failure and snapback and the potential for impact by a line recoiling into wheelhouse windows, and, where appropriate, employ appropriate laminated glass or other defences to mitigate against the risk of flying glass injuring its tug crews.

Appropriate action planned: 31 December 2023

PROGRESS OF RECOMMENDATIONS FROM PREVIOUS YEARS

Vessel name		Publication date/report number	Page
2021 recommendations - progress report			32
	*Joanna C*	n/a, recommendation(s) issued pre-publication by letter	32
	*Stolt Groenland*[10]	20 July 2021 No 9/2021	32
	*Shearwater/Agem One*	9 September 2021 No 11/2021	33
	*Norma G*	14 October 2021 No 13/2021	34
2020 recommendations - progress report			34
	*Rib Tickler*/Unnamed Personal Watercraft	n/a, recommendation(s) issued pre-publication by letter[11]	34
2019 recommendations - progress report			35
	Unnamed Rowing Boat (throw bag rescue line)	31 January 2019 No 2/2019	35
	*CV30*	20 June 2019 No 7/2019	35
2018 recommendations - none outstanding			35
2017 recommendations - progress report			36
	*CV21*	12 April 2017 No 7/2017	36
	*Osprey/Osprey II*	18 May 2017 No 10/2017	36
	*Nortrader*	7 December 2017 No 26/2017	37
2016 recommendations - progress report			37
	*JMT*	7 July 2016 No 15/2016	37

[10] Investigated on behalf of Cayman Islands Government in accordance with the Memorandum of Understanding: https://www.gov.uk/government/publications/mou-between-maib-and-reg-category-1-registries

[11] The accident investigation report was subsquently published on 17 February 2022: https://www.gov.uk/maib-reports/collision-between-rigid-inflatable-boat-rib-tickler-and-a-personal-watercraft-with-loss-of-1-life

Vessel name	Publication date/report number	Page
2015 recommendations - progress report		38
 *Cheeki Rafiki*	29 April 2015 No 8/2015	38
2014 to 2010 recommendations - none outstanding		39
2009 recommendations - progress report		39
 *Celtic Pioneer*	21 May 2009 No 11/2009	39
2008 recommendations - none outstanding		39


Cheeki Rafiki


Celtic Pioneer


Osprey/Osprey II

Images: Three long-standing recommendations are finally expected to be addressed along with 2022/131, with the expected publication of The Workboat Code Edition 3 by the end of 2023

2021 RECOMMENDATIONS - PROGRESS REPORT*

*Status as of 25 May 2023

Joanna C

Recommendation letter issued by the Chief Inspector

Fishing vessel (BM 265)

Accident date: 21/11/2020

Capsize and foundering off Newhaven, England with loss of two lives

No	Recommendation(s) to:	British Standards Institution
2021/116	Propose to the International Organization for Standardization that the revised ISO 9650 standard includes a buoyancy requirement for uninflated canister-packed liferafts when intended for use with float free, automatic inflation devices. The buoyancy requirement should be sufficient to exceed, by a suitable factor of safety, the force required to activate the liferaft's inflation mechanism.	

Appropriate action implemented

Stolt Groenland

Report number: 9/2021

Chemical tanker

Accident date: 28/9/2019

Cargo tank explosion and fire at Ulsan, Republic of Korea

No	Recommendation(s) to:	Cayman Islands Shipping Registry, through the UK as the Member Government for the Red Ensign Group to the International Maritime Organization
2021/117	Propose to the IMO a revision to Section 15.13 of the IBC Code to: • Include in the certificate of protection the actions to be taken in the event of a cargo falling outside of the manufacturer's specified oxygen and temperature limits, and that • Any actions should be realistic, taking account of the limitations on board ships regarding the monitoring, adding, and mixing of inhibitor during the voyage.	

Appropriate action planned: no date

No	Recommendation(s) to: Chemical Distribution Institute
2021/120	Amend its publication '*Chemical Tanker Operations for the STCW Advanced Training Course – A Practical Guide to Chemical Tanker Operations*' to make it clear that: • The stowage of heated and inhibited cargoes can result in a dynamic situation in which the degree of heat transfer may be complex and difficult to predict. • One tank separation between heated and heat sensitive cargoes might not be sufficient. • Promulgate this report to its members. **Appropriate action planned: 2 October 2023**

No	Recommendation(s) to: Plastics Europe (Styrene Producers Association)
2021/121	Work with its members to incorporate the lessons learned from this accident in its *Styrene Monomer: Safe Handling Guide*. **Appropriate action implemented**

Shearwater/Agem One

Report number: 11/2021

Dredger/Unmanned barge

Accident date: 9/4/2020

Immobilisation and flooding of a dredger after repeated collisions with an unmanned barge near Kinlochbervie, Scotland

No	Recommendation(s) to: Maritime and Coastguard Agency
2021/123	Adopt measures to ensure that the certification of vessels over 24m load line length and under 500gt includes the application of all appropriate regulatory conditions taking full account of the vessel's intended function and area of operations. **Appropriate action implemented**

Norma G

Report number: 13/2021

Motor cruiser

Accident date: 25/5/2020

Capsize in the Camel Estuary, Cornwall, England with loss of one life

No	Recommendation(s) to: Padstow Harbour Commissioners
2021/129	Update their port passage plan and navigation guide to provide up-to-date chart information and unambiguous guidance to mariners entering or leaving the River Camel.

Appropriate action implemented

2020 RECOMMENDATIONS - PROGRESS REPORT*

*Status as of 25 May 2023

Rib Tickler/Unnamed Personal Watercraft

Recommendation letter issued by the Chief Inspector

RIB/Personal Watercraft

Accident date: 8/8/2020

Collision resulting in one fatality in the Menai Strait, Wales

№	Recommendation(s) to: Royal Yachting Association
2020/136	Review and amend its Personal Watercraft and Start Powerboating handbooks to provide guidance on: • The importance and conduct of the over-the-shoulder pre-manoeuvre check; • How to safely operate in company with other craft, with particular focus on communication and safe distances; • The oversight of inexperienced/untrained helms in an informal setting; • Crossing waves and wakes, with particular focus on control of personal watercraft and safe distances from vessels creating wake, and: • Disseminate to their members a summary of the safety messages from this accident prior to the start of the 2021 boating season. Consideration should also be given to including the above topics in the relevant training course syllabi.

Appropriate action implemented

2019 RECOMMENDATIONS - PROGRESS REPORT*

*Status as of 25 May 2023

Unnamed Rowing Boat

Report number: 2/2019

Rowing boat

Accident date: 24/3/2018

Failure of a throw bag rescue line during a capsize drill at a rowing club in Widnes, England

№	Recommendation(s) to:	British Standards Institution
2019/105	Develop an appropriate standard for public rescue equipment ensuring that the topic of throw bags and their rescue lines is addressed as a priority.	

Appropriate action planned: 31 May 2025

CV30

Report number: 7/2019

Commercial racing yacht

Accident date: 18/11/2017

Fatal man overboard approximately 1500nm west of Fremantle, Australia

№	Recommendation(s) to:	British Standards Institute Committee
2019/110	Review and amend ISO 12401 and ISO 15085 at the earliest opportunity in light of lessons learned from this accident to: • Ensure the danger of snagging of tether hooks is highlighted and suitable precautions are taken for terminating jackstays. • Clarify that the ISO 12401 standard test assumes that the tether is loaded longitudinally and that the hook must be free to rotate to align with the load, and lateral loading of the hook must be avoided. • Clarify what force should be applied during an accidental hook opening test. • Consider including a requirement for a tether overload indicator.	

Appropriate action planned: 31 December 2025

2018 RECOMMENDATIONS - PROGRESS REPORT

There are no outstanding recommendations for 2018.

2017 RECOMMENDATIONS - PROGRESS REPORT*

*Status as of 25 May 2023

CV21

Report number: 7/2017

Commercial racing yacht

Accident dates: 4/9/2015 and 1/4/2016

Combined report on the investigations of the fatal accident while 122nm west of Porto, Portugal on 4 September 2015 and the fatal person overboard in the mid-Pacific Ocean on 1 April 2016

№	Recommendation(s) to:	Royal Yachting Association/World Sailing[12]/British Marine
2017/109	Work together to develop and promulgate detailed advice on the use and limitations of different rope types commonly used, including HMPE, in order to inform recreational and professional yachtsmen and encourage them to consider carefully the type of rope used for specific tasks on board their vessels.	

British Marine – Appropriate action planned: 30 September 2023

Osprey/Osprey II

Report number: 10/2017

RIBs

Accident date: 19/7/2016

Collision between two rigid inflatable boats on Firth of Forth, Scotland resulting in serious injuries to one passenger

№	Recommendation(s) to:	Maritime and Coastguard Agency
2017/115	Include in its forthcoming Recreational Craft Code with respect to commercially operated passenger carrying RIBs: • A requirement for the certificated maximum number of passengers to be limited to the number of suitable seats designated for passengers. • Guidance on its interpretation of "suitable" with respect to passenger seating. • A requirement for passengers not to be seated on a RIB's inflatable tubes unless otherwise authorised by the Certifying Authority and endorsed on the RIB's compliance certificate with specified conditions to be met for a particular activity.	

Appropriate action planned: 1 January 2024

MAIB comment: **It is encouraging to note that this long-standing recommendation is finally expected to be addressed, along with recommendations 2009/126 and 2015/120, with the expected publication of The Sport & Pleasure Vessel Code by the end of 2023.**

[12] Actions taken by the Royal Yachting Association and World Sailing have previously been accepted by MAIB.

Nortrader

Report number: 26/2017

General cargo vessel

Accident date: 13/1/2017

Explosion of gas released from a cargo of unprocessed incinerator bottom ash while at anchorage in Plymouth Sound, England

№	Recommendation(s) to:	Maritime and Coastguard Agency
2017/154	Update The Merchant Shipping (Carriage of Cargoes) Regulations 1999 with appropriate references to the IMSBC Code.	

Appropriate action planned: 31 October 2023

2016 RECOMMENDATIONS - PROGRESS REPORT*

*Status as of 25 May 2023

JMT

Report number: 15/2016

Fishing vessel (M99)

Accident date: 9/7/2015

Capsize and foundering of a small fishing vessel 3.8nm off Rame Head, English Channel with loss of two lives

№	Recommendation(s) to:	Maritime and Coastguard Agency
2016/131	Require skippers of under 16.5m fishing vessels to complete stability awareness training.	

Appropriate action planned: 30 April 2024

2015 RECOMMENDATIONS - PROGRESS REPORT*

*Status as of 25 May 2023

Cheeki Rafiki

Report number: 8/2015

Sailing yacht

Accident date: 16/5/2014

Loss of a yacht and its four crew in the Atlantic Ocean, approximately 720 miles east-south-east of Nova Scotia, Canada

№	Recommendation(s) to:	British Marine Federation[13]
2015/117	Co-operate with certifying authorities, manufacturers and repairers with the aim of developing best practice industry-wide guidance on the inspection and repair of yachts where a GRP matrix and hull have been bonded together.	

Appropriate action planned: 30 September 2023

№	Recommendation(s) to:	Maritime and Coastguard Agency
2015/120	Include in the SCV Code a requirement that vessels operating commercially under ISAF[14] OSR should undergo a full inspection to the extent otherwise required for vessels complying with the SCV Code.	

Appropriate action planned: 1 January 2024

MAIB comment: **It is encouraging to note that this long-standing recommendation is finally expected to be addressed, along with recommendations 2009/126 and 2017/115, with the expected publication of The Sport & Pleasure Vessel Code by the end of 2023.**

[13] British Marine Federation is now known as British Marine.

[14] International Sailing Federation (ISAF) is now known as World Sailing.

2014 TO 2010 RECOMMENDATIONS - PROGRESS REPORT

There are no outstanding recommendations for 2014, 2013, 2012, 2011 and 2010.

2009 RECOMMENDATIONS - PROGRESS REPORT*

*Status as of 25 May 2023

Celtic Pioneer

Report number: 11/2009

RIB

Accident date: 26/8/2008

Injury to a passenger during a boat trip in the Bristol Channel, England

№	Recommendation(s) to:	Maritime and Coastguard Agency
2009/126	Review and revise the deck manning and qualification requirements of the harmonised SCV Code taking into account the speed of craft and the type of activity intended in addition to the distance from shore and environmental conditions.	

Appropriate action planned: 1 January 2024

MAIB comment: **It is encouraging to note that this long-standing recommendation is finally expected to be addressed, along with recommendations 2015/120 and 2017/115, with the expected publication of The Sport & Pleasure Vessel Code by the end of 2023.**

2008 RECOMMENDATIONS - PROGRESS REPORT

There are no outstanding recommendations for 2008.

PART 3: STATISTICS

For details of reporting requirements and terms used in this section please see Statistics Coverage on page 61 and Glossary on page 64.

Table 1: Loss of life reported to the MAIB in 2022

Date	Name of vessel	Type of vessel	Location	Accident description
Merchant vessels 100gt and over				
8 Jan	*Greenwich*	General cargo	Su'ao Bay, Taiwan	Bagged cargo fall from height into a hold, resulting in one fatality to a stevedore.
19 Feb	*Iona*	Cruise	Southampton, Hampshire, England	Passenger fall in accommodation, resulting in a head injury. The passenger later (within 1 year) developed pneumonia due to the injury and died.
13 Dec	*Pacific Explorer*	Cruise	South Pacific	Passenger fall overboard from a cruise ship.
Merchant vessels under 100gt (including commercial recreational)				
8 Jun	*Wheelyboat 123*	Passenger	Roadford Lake, Devon, England	Capsized wheelchair accessible motor vessel, resulting in two fatalities.
2 Jul	*Swallow II*	Motorboat	Looe, Cornwall, England	Passenger fall on a chartered angling vessel, resulting in severe internal injuries and fractures. The passenger died two days later during surgery for their injuries.
3 Jul	*Frolika*	Sailboat (aux. motor)	Loch an Draing, Highland, Scotland	Crew member fall down a step into the cabin of a commercial yacht, resulting in a fatal head injury.
1 Oct	*LimBitless*	Sailboat (sail only)	The Solent, off Cowes, Isle of Wight, England	Crew member fall overboard from a charity sailing vessel, resulting in one fatality.
29 Oct	-	Motorboat	Lough Erne, County Fermanagh, Northern Ireland	Missing person from a hired motorboat. The boat was recovered the next day and the occupant was recovered from the water 2 weeks later and declared deceased.
Fishing vessels				
22 Jan	*Jolanna M*	Stern trawler	Peterhead, Scotland	A non-crew member fell overboard from a fishing vessel while reportedly under the influence of alcohol. The person was recovered from the water but died in hospital shortly after.
6 Mar	*Njord*	Stern trawler	Open waters, North Sea	Capsized fishing vessel, resulting in one fatality.
29 May	*Hendrika Jacoba*	Fishing vessel	Thyborøn, Denmark	Crew member fall overboard while boarding, resulting in one fatality. The person was reportedly under the influence of alcohol.
7 Oct	*Eder Sands*	Gillnetter	North Atlantic Ocean	Person overboard while shooting nets and remains missing, presumed deceased.

Date	Name of vessel	Type of vessel	Location	Accident description
Pleasure craft (excluding commercial recreational)				
12 Jan	*Emma Louise*[15]	Motorboat	Hamble, Hampshire, England	Carbon monoxide poisoning while moored alongside, resulting in two fatalities.
2 Feb	-	Rigid Inflatable Boat	Poole Harbour, Dorset, England	A RIB, belonging to the recreational sailing yacht *Fargo*, made contact with a cardinal mark, resulting in one fatality.
27 Mar	-	Kayak	Loch Doon, Ayrshire, Scotland	Capsized inflatable kayak with two people on board, resulting in both persons in the water and one loss of life.
21 Apr	*JJ Boat*	Sailboat (aux. motor)	Marsaxlokk, Malta	Grounding on rocks due to parted moorings. The occupant was found deceased nearby.
30 Apr	-	Sailing dinghy	Keyhaven, Hampshire, England	Crew member entanglement in rigging during a race, resulting in one fatality.
17 May	-	Kayak	Loch Torridon, Highland, Scotland	Kayaker, wearing buoyancy aid and separated from the vessel, found floating face down in the water and declared deceased.
2 Jul	*Budweiser*	Motorboat	Port Ellen, Isle of Islay, Scotland	Person fall overboard from a motor cruiser while assisting a yacht. They were recovered from the water shortly afterwards but did not survive.
14 Jul	-	Other craft	Conwy, Wales	Stand up paddleboarder became trapped beneath a pontoon by the force of the water, resulting in one fatality.
20 Jul	*Stiletto*	Sailboat (aux. motor)	West of Ramsgate, Kent, England	Crew member fall overboard from a sailing yacht during a race, resulting in one fatality.
11 Aug	*Kraken*	Motorboat	Liverpool, England	Crew member overboard while the vessel was inside a lock, resulting in one fatality.
17 Aug	*Tumbleweed*	Motorboat	Plymouth, England	Two persons overboard from a moored recreational craft, resulting in one loss of life.
27 Aug	*Mudlark*	Sailboat (aux. motor)	Belfast, Northern Ireland	Foundering of a recreational vessel with two persons on board. The occupants were recovered from the water but one was subsequently declared deceased.
10 Nov	*Alithia*	Sailboat (aux. motor)	Coast of Morocco, Africa	Passenger struck by the hydraulic main sheet when the sailing vessel crash gybed, resulting in one fatality.
19 Nov	*New Dawn*	Motorboat	Port William, Dumfries and Galloway, Scotland	An attempt to free a grounded motor vessel from rocks resulted in it sinking while under tow. The sole occupant was recovered from the vessel and later declared deceased.
15 Dec	*Free Agent*	Motorboat	Whitby, England	Person overboard while boarding a motor vessel in icy conditions.

[15] The accident investigation report was published on 27 April 2023: https://www.gov.uk/maib-reports/carbon-monoxide-poisoning-on-board-the-sports-cruiser-emma-louise-with-loss-of-2-lives

Table 2: Merchant vessel total losses in 2022

Date	Name of vessel	Type of vessel	Age	gt	loa	Casualty event
10 Jun	*Eleonora E**	Sailboat	20	141	41.48	Collision
24 Jun	*Shovette**	Tug	48	157	24.29	Collision

* Constructive total loss

Table 3: Merchant vessel losses — 2013-2022

Year	Number lost	UK fleet size	Gross tonnage lost
2013	-	1,392	-
2014	-	1,361	-
2015	-	1,385	-
2016	-	1,365	-
2017	-	1,356	-
2018	-	1,332	-
2019	-	929	-
2020	-	1,242	-
2021	-	1,199	-
2022	**2**	**611**[16]	**298**

[16] Current UK fleet (611) data excludes various vessel types, such as ro-ro passenger, offshore supply, and research vessels. Comparisons between 2022 and previous years should therefore used with caution. Equivalent figures provided by the UK Maritime and Coastguard Agency are 1,063 vessels totalling 10.31 million gross tonnage. Both sets of figures are published in data table FLE0100 as part of DfT's shipping fleet statistics:

https://www.gov.uk/government/statistical-data-sets/shipping-fleet-statistics#uk-ship-register-statistics

Caution around fleet data comparison is reiterated in the note accompanying data table FLE0302:

https://www.gov.uk/government/statistical-data-sets/shipping-fleet-statistics#uk-and-crown-dependency-registered-vessels-fle03

A detailed overview of data changes is published by DfT:

https://www.gov.uk/government/statistics/shipping-fleet-statistics-2022/shipping-fleet-statistics-2022-notes-and-definitions

Table 4: Merchant vessels in casualties by nature of casualty and vessel category in 2022[17]

Casualty event	Solid cargo ship	Liquid cargo ship	Passenger ship	Service ship	Commercial recreational	Total
Collision	2	1	6	10	1	**20**
Contact	1	-	4	-	-	**5**
Fire/explosion	-	1	3	1	-	**5**
Flooding/foundering	-	-	1	1	-	**2**
Grounding	2	-	3	4	-	**9**
Machinery	4	-	4	3	-	**11**
Total	**9**	**2**	**21**	**19**	**1**	**52**[18]

Table 5: Deaths and injuries to merchant vessel crew — 2013-2022

Year	Number of crew injured	Of which resulted in death
2013	134	1
2014	142	-
2015	141	2
2016	133	2
2017	153	-
2018	114	-
2019	105	3
2020	78	-
2021	74	-
2022	**85**	**-**

[17] Vessel groups include vessels operating on inland waterways.

[18] 52 casualties represents a rate of 85 casualties per 1,000 vessels on the UK Fleet sourced from commercially procured world fleet data, or 49 casualties per 1,000 vessels on the UK Ship Register. Sourced via Table FLE0100 published by DfT: https://www.gov.uk/government/statistical-data-sets/shipping-fleet-statistics#uk-ship-register-statistics (refer to the footnote accompanying table 3 on page 42).

Table 6: Deaths and injuries of merchant vessel crew by rank in 2022

Rank/specialism	Number of crew
Officer, deck	12
Officer, engineering	6
Chief mate	3
Assistant/cadet	2
Rating, deck	27
Rating, engine	1
Hotel service staff	22
Other crew member	12
Total	**85**

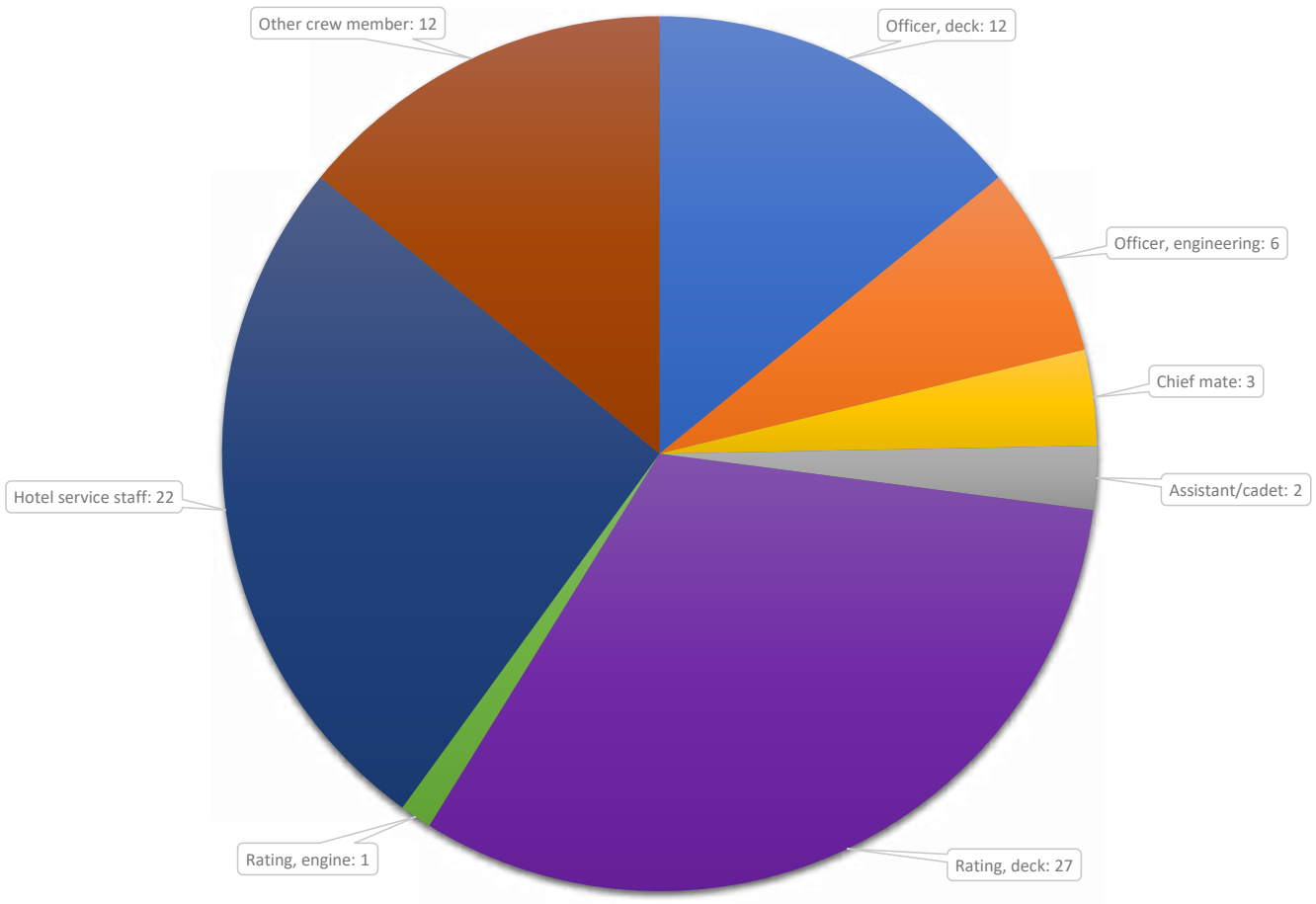


Chart 6

Table 7: Deaths and injuries of merchant vessel crew by place in 2022

Place	Number of crew
Accommodation	
Alleyway	2
Bathroom, shower, toilet	2
Cabin space – crew	5
Cabin space – passenger	2
Galley spaces	6
Gymnasium	1
Provision room	1
Restaurant/bar	5
Stairway/ladders	6
Theatre	1
Accommodation, other	2

Place	Number of crew
Cargo and tank areas	
Cargo hold	1
Open deck cargo space	2
Ro-ro vehicle deck ramp	2
Vehicle cargo space	3
Engine department	
Auxiliary engine room	1
Boiler room	1
Engine room	3
Workshop/stores	2

Place	Number of crew
Ship	
Deck	18
Gangway	2
Propeller/rudder/thruster	1
Stairs/ladders	2
Other	
Unknown	14
Total	**85**

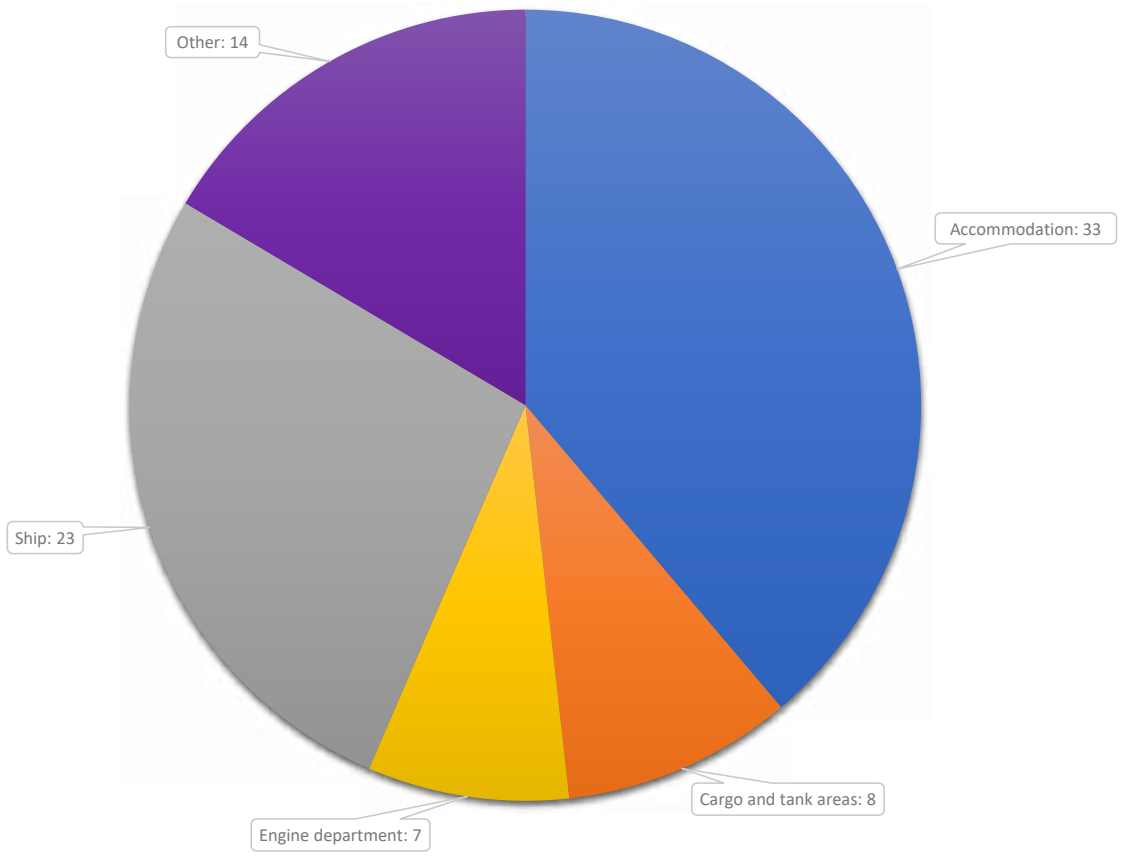


Chart 7

Table 8: Deaths and injuries of merchant vessel crew by part of body injured in 2022

Part of body injured	Number of crew
Whole body and multiple sites	
Multiple sites of the body affected	1
Head	
Ear(s)	1
Eye(s)	2
Facial area	4
Head, brain and cranial nerves and vessels	2
Head, multiple sites affected	1
Neck	
Neck, inclusive spine and vertebra in the neck	1
Upper limbs	
Finger(s)	15
Hand	7
Wrist	6
Arm, including elbow	6
Shoulder and shoulder joints	4
Back	
Back, including spine and vertebrae in the back	11
Torso and organs	
Chest area, including organs	1
Rib cage, ribs including joints and shoulder blade	2
Lower limbs	
Toe(s)	1
Foot	2
Ankle	8
Leg, including knee	9
Hip and hip joint	1
Total	**85**

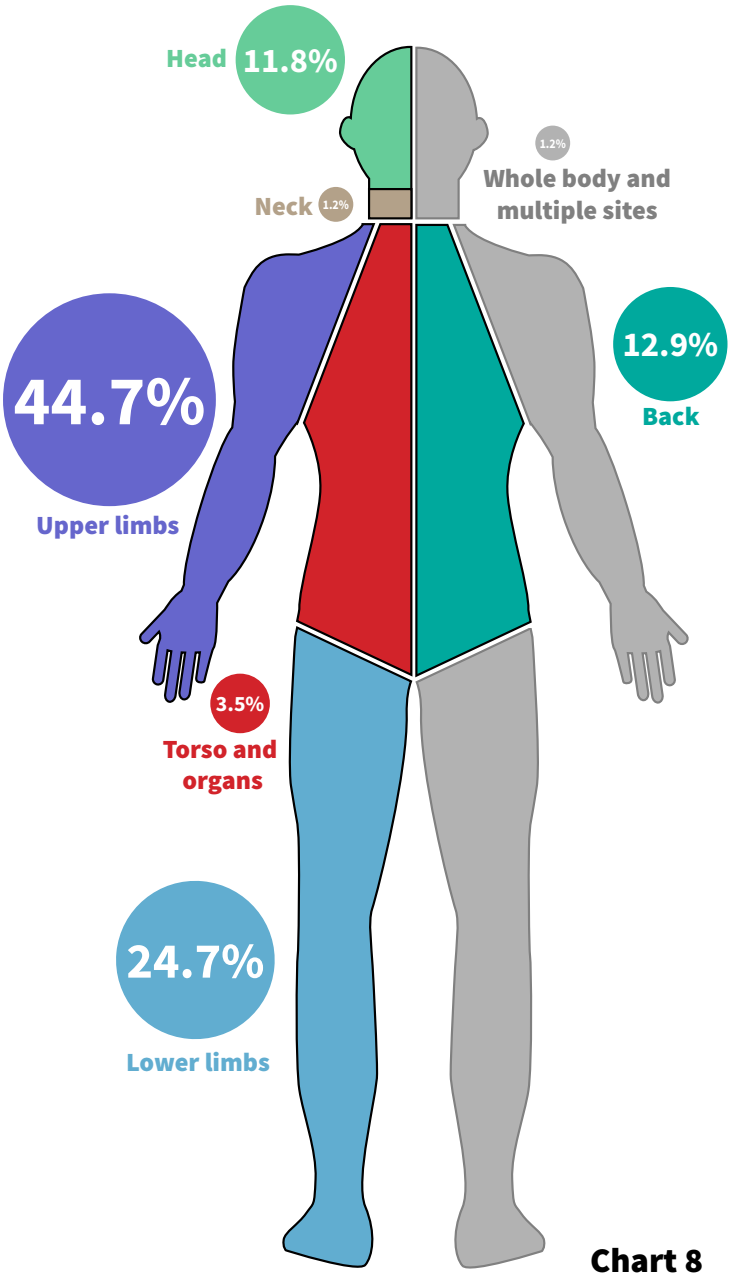


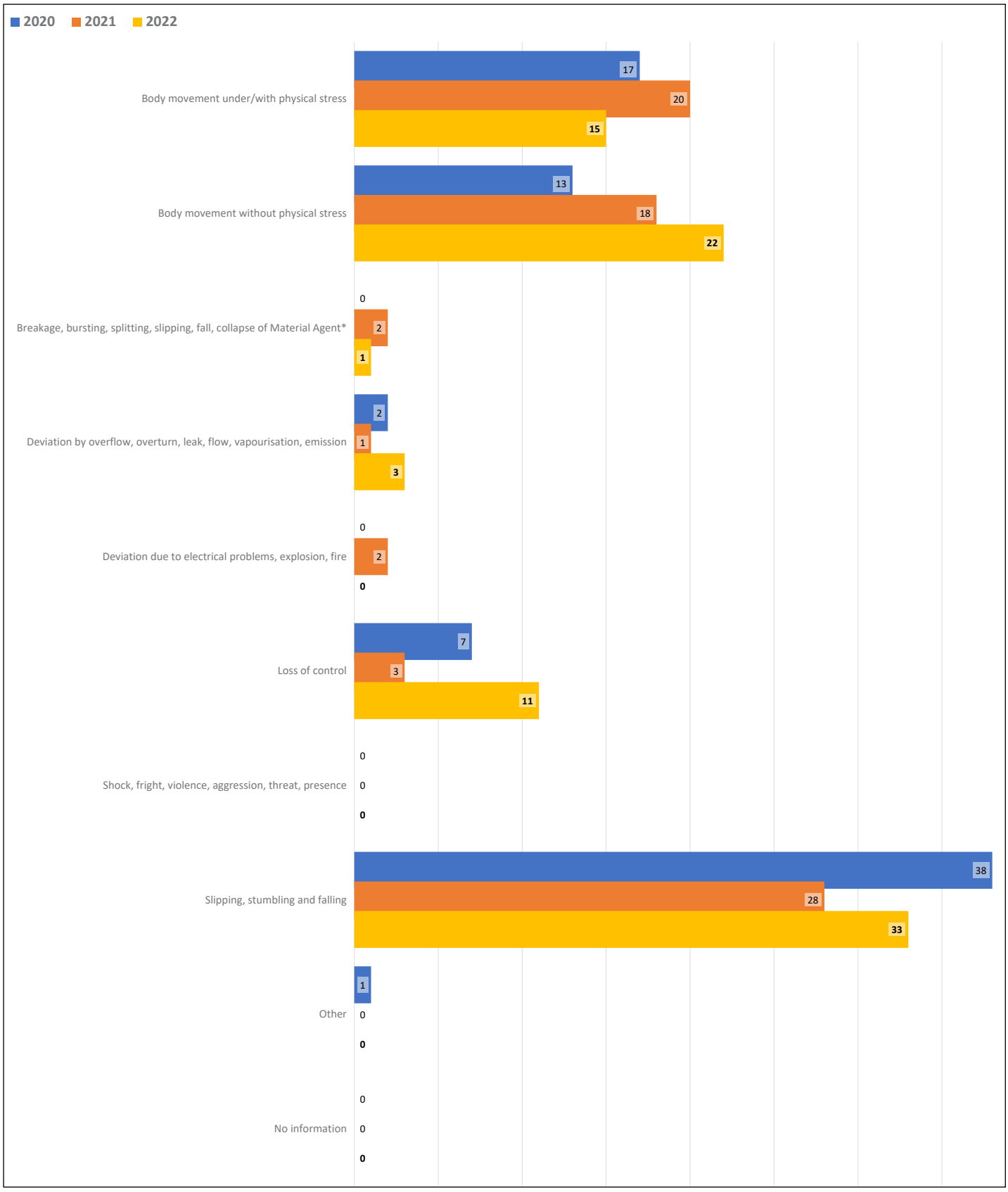
Chart 8

Table 9: Deaths and injuries of merchant vessel crew by deviation* in 2022

Deviation*		Number of crew
Body movement under or with physical stress (generally leading to an internal injury)	Lifting, carrying, standing up	11
	Pushing, pulling	1
	Treading badly, twisting leg or ankle, slipping without falling	1
	Twisting, turning	2
	Subtotal	**15**
Body movement without any physical stress (generally leading to an external injury)	Being caught or carried away, by something or by momentum	19
	Uncoordinated movements, spurious or untimely actions	3
	Subtotal	**22**
Breakage, bursting, splitting, slipping, fall, collapse of Material Agent*	Breakage, bursting – causing splinters (wood, glass, metal, stone, plastic, others)	1
	Subtotal	**1**
Deviation by overflow, overturn, leak, flow, vaporisation, emission	Gaseous state – vaporisation, aerosol formation, gas formation	*1*
	Liquid state – leaking, oozing, flowing, splashing, spraying	*2*
	Subtotal	**3**
Deviation due to electrical problems, explosion, fire		-
Loss of control (total or partial) of machine, means of transport or handling equipment, handheld tool, object, animal	Of means of transport or handling equipment (motorised or not)	2
	Of object (being carried, moved, handled, etc.)	8
	Of hand held tool (motorised or not) or of the material being worked by the tool	1
	Subtotal	11
Shock, fright, violence, aggression, threat, presence		-
Slipping – stumbling and falling – fall of persons	Fall of person – to a lower level	15
	Fall overboard of person	1
	Fall of person – on the same level	17
	Subtotal	**33**
Other		-
No information		-
	Total	**85**

*See Terms on page 64

Chart 9: Deaths and injuries of merchant vessel crew by deviation* — 2020 to 2022



*See Terms on page 64

Table 10: Deaths and injuries of merchant vessel crew by type of injury in 2022

Main injury		Number of crew
Bone fractures	Closed fractures	32
	Open fractures	4
Burns, scalds and frostbites	Burns and scalds (thermal)	1
	Chemical burns (corrosions)	2
Concussion and internal injuries	Concussion and intracranial injuries	1
	Internal injuries	4
Dislocations, sprains and strains	Dislocations and subluxations*	18
	Sprains and strains	5
Wounds and superficial injuries*	Open wounds	8
	Superficial injuries*	5
Traumatic amputations (loss of body parts)		2
Other specified injuries not included under other headings		1
Unknown or unspecified		2
	Total	**85**

*See Terms on page 64

Table 11: Deaths and injuries to passengers — 2013-2022[19]

Year	Number of injured passengers	Of which resulted in death
2013	46	-
2014	56	1
2015	55	1
2016	51	1
2017	26	-
2018	81	-
2019	107	-
2020	25	-
2021	23	-
2022	**72**	**2**

Table 12: Deaths and injuries of passengers by type of injury in 2022

Main injury		Number of passengers
Drowning and asphyxiation	Drowning and non-fatal submersions	1
Bone fractures	Closed fractures	59
	Open fractures	2
Concussions and internal injuries	Concussion and intracranial injuries	4
	Internal injuries	2
Dislocations, sprains and strains	Dislocations and subluxations*	3
Traumatic amputations (loss of body parts)		1
	Total	**72**

[19] From 2012 to 2019 this table excludes injuries/fatalities that were not in connection with the operation of a ship.

Table 13: Merchant vessels < 100gt — total losses in 2022

Date	Name of vessel	Type of vessel	loa	Casualty event
17 May	*Marine Fire 1* *	Search and Rescue (SAR) craft	8m	Collision

*Constructive total loss

Table 14: Merchant vessels < 100gt by nature of casualty and vessel category in 2022

Casualty event	Passenger ship	Recreational craft | Power	Recreational craft | Sail	Recreational craft | Other	Service ship | Search and Rescue (SAR) craft	Service ship | Other	Total
Capsizing/listing	1	-	1	1	2	1	**6**
Collision	4	6	3	1	10	7	**31**
Contact	-	-	-	-	-	1	**1**
Fire/explosion	-	-	-	-	-	2	**2**
Flooding/foundering	-	-	-	2	-	-	**2**
Grounding	1	3	18	-	18	3	**43**
Machinery	2	3	1	-	4	5	**15**
Total per vessel type	**8**	**12**	**23**	**4**	**34**	**19**	**100**
Deaths	2	2	2	-	-	-	**6**
Injuries	2	9	4	-	7	10	**32**

There were 5,105 UK registered fishing vessels at the end of 2022. During 2022, 65 casualties to vessels involving these vessels were reported to the MAIB. Figures in the following tables show casualties to vessels and injuries to crew involving UK registered vessels that were reported to the MAIB in 2022.

Eight fishing vessels were reported lost (0.16% of the total fleet) and there were 3 fatalities to crew.

Table 15: Fishing vessel total losses by vessel length in 2022

Date	Name of vessel	Age	Gross tonnage	Casualty event
Under 15m length overall (loa)				
7 Mar	*New Dawn*	40	9.4	Foundering
8 Sep	*Girl Errin**	47	15	Foundering
12 Nov	*Crig-A-Tana**	32	2.27	Capsizing
15m length overall - under 24m registered length (reg)				
18 Sep	*Arlanda*	46	68	Flooding
6 Oct	*Guiding Star*	9	261	Flooding
24 Oct	*Ocean Maid**	36	126	Grounding
Over 24m registered length (reg)				
6 Mar	*Njord*	30	257	Capsizing
1 Jun	*Piedras**	46	295	Flooding

*Constructive total loss

Table 16: Fishing vessel losses — 2013-2022

Year	Under 15m loa	15m loa to <24m reg	24m reg and over	Total lost	UK registered	% lost
2013	15	3	-	18	5,774	0.31
2014	9	3	-	12	5,715	0.21
2015	8	5	-	13	5,746	0.23
2016	5	2	1	8	5,745	0.14
2017	5	1	-	6	5,700	0.11
2018	8	-	-	8	5,603	0.14
2019	2	2	1	5	5,484	0.09
2020	7	1	-	8	5,443	0.15
2021	6	-	-	6	5,378	0.11
2022	**3**	**3**	**2**	**8**	**5,105**	**0.16**

Table 17: Fishing vessels in casualties — by nature of casualty in 2022

Casualty event	Number of vessels involved	Incident rate per 1,000 vessels at risk (to one decimal place)
Capsizing/listing	2	0.4
Collision	14	2.7
Contact	3	0.6
Flooding/foundering	8	1.6
Grounding	20	3.9
Machinery	18	3.5
Total	**65**	**12.7**

Table 18: Fishing vessels in casualties — by nature of casualty and by length range in 2022

Casualty event	Number of vessels involved	Incident rate per 1,000 vessels at risk (to one decimal place[20])
Under 15m length overall (loa) — vessels at risk: 4,582		
Capsizing/listing	1	0.2
Collision	6	1.3
Contact	1	0.2
Flooding/foundering	3	0.7
Grounding	13	2.8
Machinery	12	2.6
Total under 15m	**36**	**7.9**
15m loa - 24m registered length (reg) — vessels at risk: 406		
Collision	6	14.8
Contact	1	2.5
Flooding/foundering	4	9.9
Grounding	6	14.8
Machinery	6	14.8
Total 15m to 24m	**23**	**56.7**
24m reg and over — vessels at risk: 117		
Capsizing/listing	1	8.5
Collision	2	17.1
Contact	1	8.5
Flooding/foundering	1	8.5
Grounding	1	8.5
Total 24m or more	**6**	**51.3**
Fleet total[21]	**65**	**12.7**

[20] Rates may not add up due to rounding

[21] Total number of UK registered fishing vessels: *5,105*

Table 19: Deaths and injuries to fishing vessel crew by type of injury in 2022

Main injury		Number of crew
Drowning and asphyxiation	Drowning and non-fatal submersions	3
Traumatic amputations (loss of body parts)		5
Bone fractures	Closed fractures	6
	Open fractures	1
Burns, scalds and frostbites	Burns and scalds (thermal)	1
Concussions and internal injuries	Concussion and intracranial injuries	3
	Internal injuries	2
Dislocations, sprains and strains	Dislocations and subluxations*	3
	Sprains and strains	2
Wounds and superficial injuries*	Open wounds	3
	Superficial injuries*	1
Multiple injuries		1
	Total	**31**

*See Terms on page 64

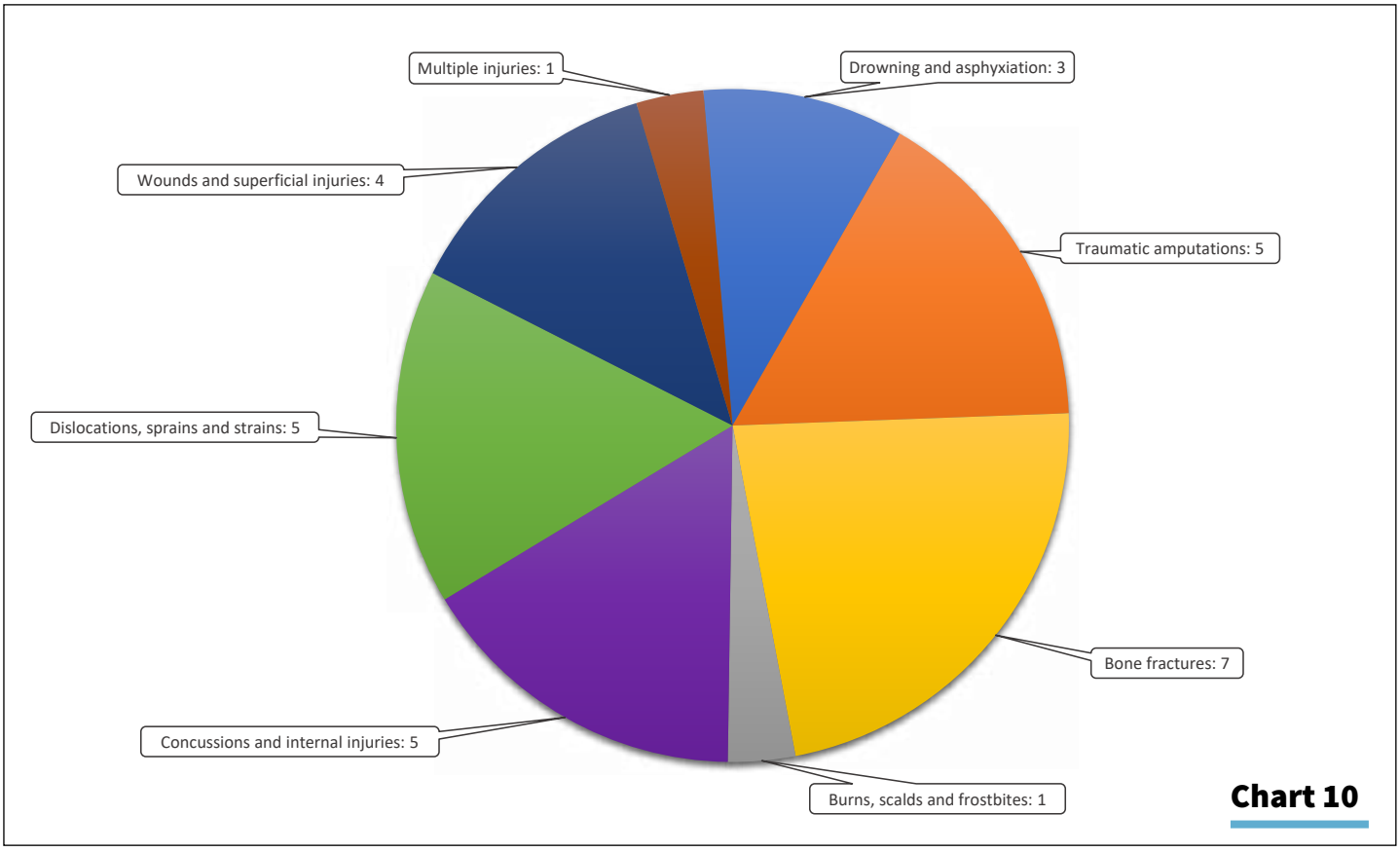


Chart 10

Table 20: Deaths and injuries to fishing vessel crew by part of body injured in 2022

Part of body injured	Number of crew
Whole body and multiple sites	
Whole body (systemic effects)	3
Multiple sites of the body affected	1
Head	
Eye(s)	1
Facial area	2
Head, brain and cranial nerves and vessels	1
Head, multiple sites affected	1
Upper limbs	
Finger(s)	5
Hand	3
Arm, including elbow	3
Shoulder and shoulder joints	3
Back	
Back, including spine and vertebrae in the back	3
Torso and organs	
Chest area, including organs	1
Lower limbs	
Foot	2
Leg, including knee	1
Hip and hip joint	1
Total	**31**

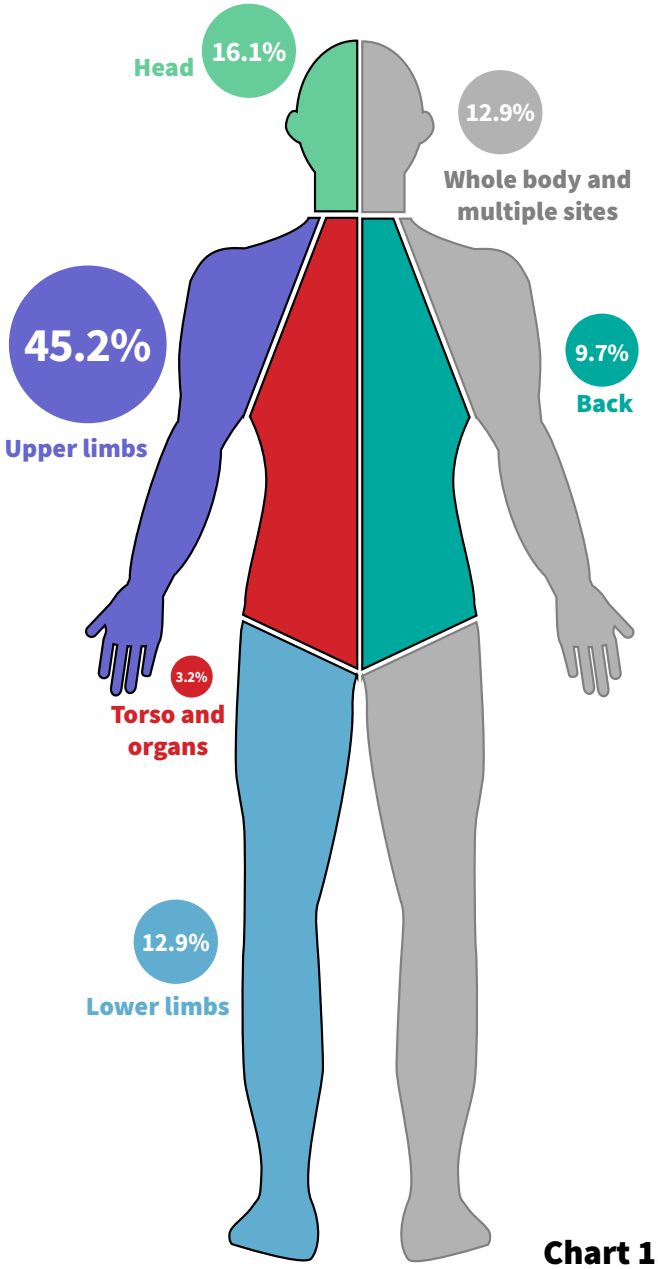


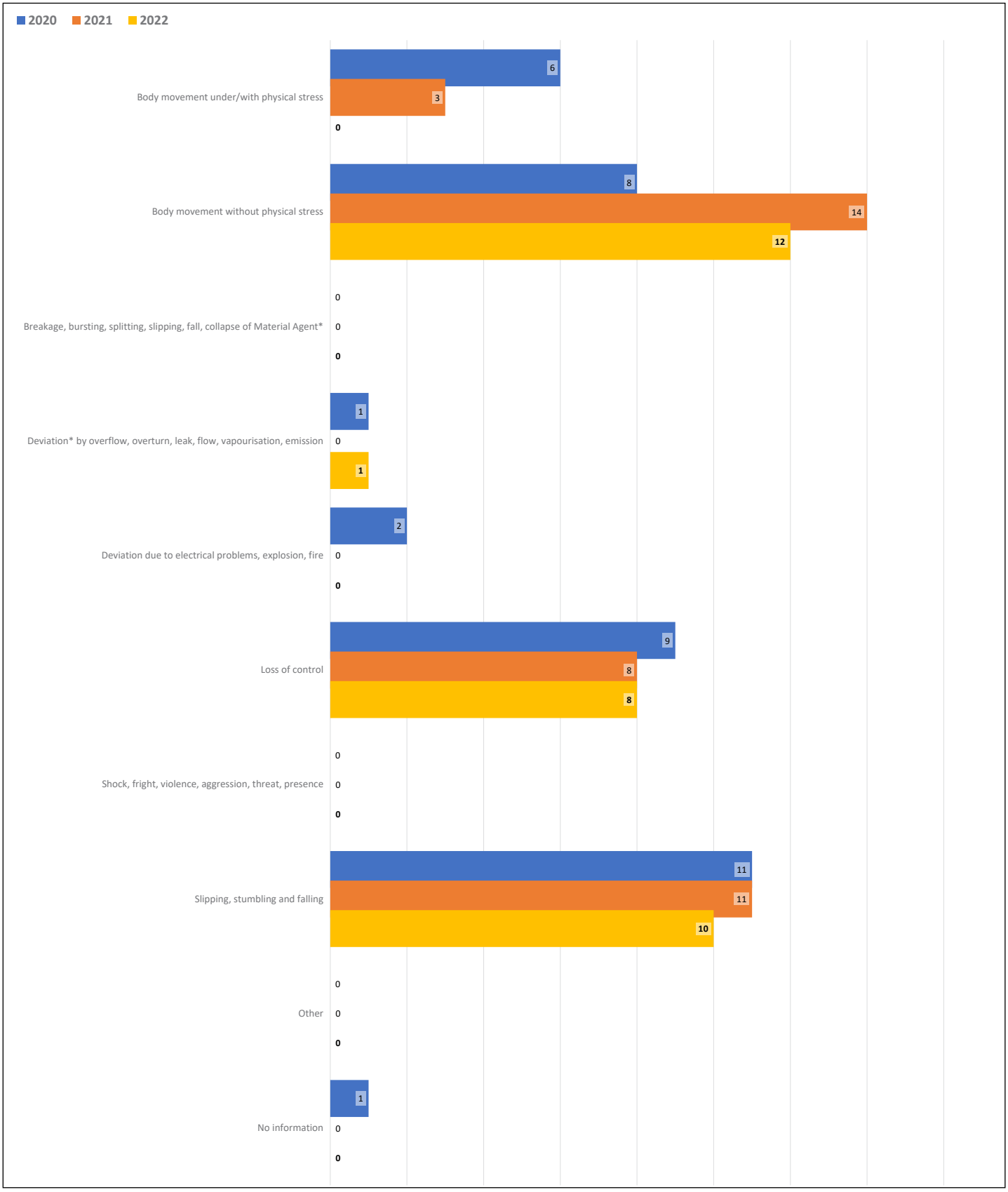
Chart 11

Table 21: Deaths and injuries of fishing vessel crew by deviation* in 2022

Deviation*		Number of crew
Body movement under or with physical stress (generally leading to an internal injury)		-
Body movement without any physical stress (generally leading to an external injury)	Being caught or carried away, by something or by momentum	12
	Subtotal	**12**
Breakage, bursting, splitting, slipping, fall, collapse of Material Agent*		-
Deviation by overflow, overturn, leak, flow, vaporisation, emission	Liquid state – leaking, oozing, flowing, splashing, spraying	1
	Subtotal	**21**
Deviation due to electrical problems, explosion, fire		-
Loss of control (total or partial)	*Of means of transport or handling equipment (motorised or not)*	*1*
	Of object (being carried, moved, handled, etc.)	*3*
	Of hand held tool (motorised or not) or of the material being worked by the tool	*3*
	Of machine (including unwanted start-up) or of the material being worked by the machine	*1*
	Subtotal	**21**
Shock, fright, violence, aggression, threat, presence		-
Slipping - stumbling and falling – fall of persons	*Fall of person – to a lower level*	*3*
	Fall overboard of person	*4*
	Fall of person – on the same level	*3*
	Subtotal	**10**
Other		-
No information		-
	Total	**31**

*See Terms on page 64

Chart 12: Deaths and injuries of fishing vessel crew by deviation* — 2020 to 2022



*See Terms on page 64

Table 22: Deaths and injuries to fishing vessel crew by vessel length (of which, deaths shown in brackets) — 2013-2022

	Under 15m loa		15m loa - under 24m reg		24m reg and over		Total	
2013	13	(3)	13	(1)	7	-	**33**	**(4)**
2014	22	(5)	14	(3)	10	-	**46**	**(8)**
2015	10	(4)	17	(1)	8	(2)	**35**	**(7)**
2016	16	(7)	19	(2)	5	-	**40**	**(9)**
2017	13	(3)	8	(2)	11	-	**32**	**(5)**
2018	14	(4)	18	(1)	6	(1)	**38**	**(6)**
2019	12	(3)	18	(1)	6	(1)	**36**	**(5)**
2020	12	(2)	16	-	10	-	**38**	**(2)**
2021	12	(7)	19	(2)	5	(1)	**36**	**(10)**
2022	**5**	**-**	**16**	**(1)**	**10**	**(2)**	**31**	**(3)**

Chart 13: Deaths and injuries to fishing vessel crew by year — 2013-2022

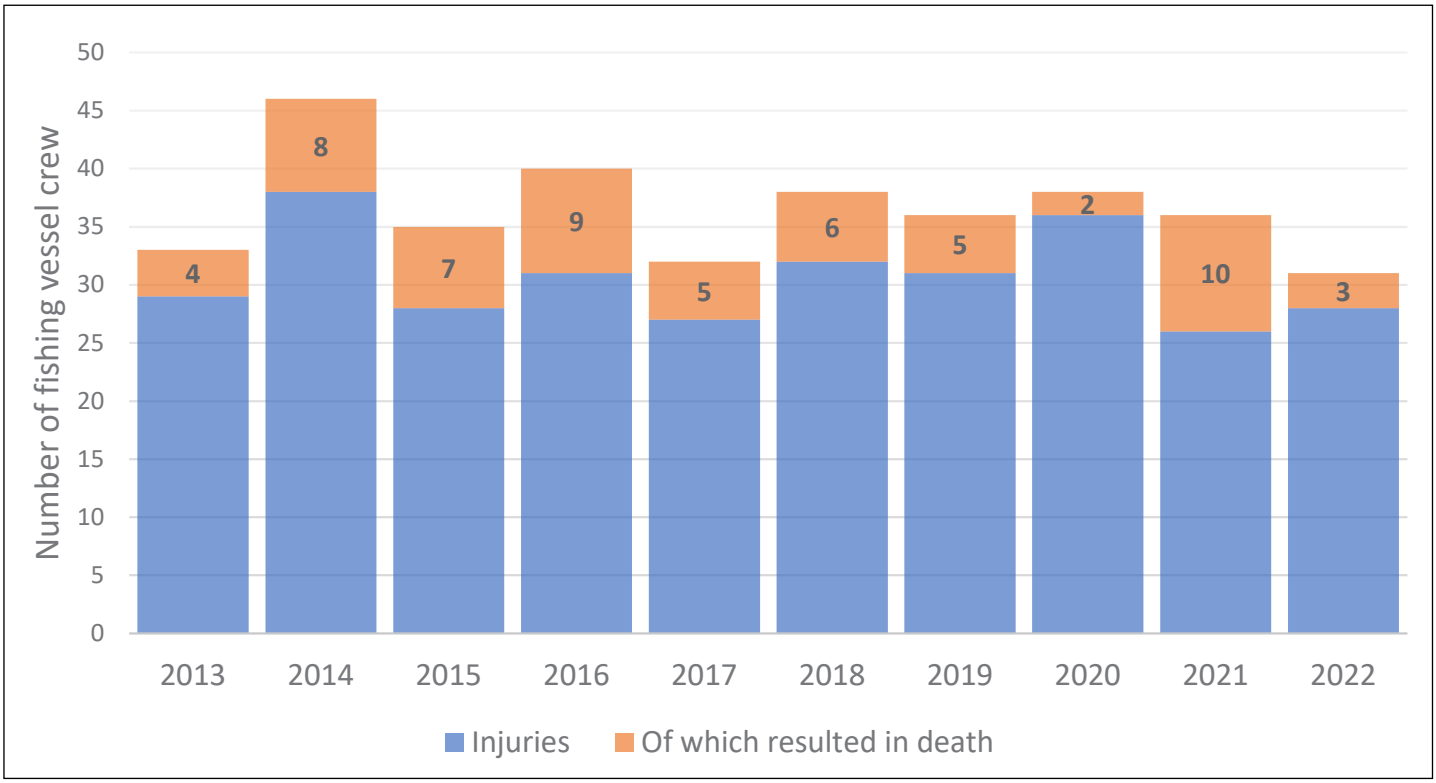


Table 23: All non-UK commercial vessels total losses in UK waters in 2022

Date	Name of vessel	Type of vessel	Flag	loa	Casualty event
14 Dec	Migrant vessel 2	Rigid Inflatable Boat	None	7.4m	Hull failure

Table 24: All non-UK commercial vessels in UK waters — by vessel type and by nature of casualty in 2022

Casualty event	Solid cargo ship	Liquid cargo ship	Passenger ship	Service ship	Fishing vessel	Recreational commercial	Total
Collision	5	3	-	-	-	-	**8**
Contact	5	1	2	-	-	-	**8**
Fire/explosion	1	-	-	-	-	-	**1**
Grounding	14	-	-	-	1	1	**16**
Hull failure	-	-	-	1	-	1	**2**
Machinery	8	3	-	1	2	-	**14**
Total per vessel type	**33**	**7**	**2**	**2**	**3**	**2**	**49**
Deaths	1	1	1	-	-	8	**11**
Injuries	11	3	15	5	1	-	**35**

ANNEX A: STATISTICS COVERAGE

1. Data is presented by the year in which the incident was reported to the MAIB. Historic data tables contain information from the past 10 years.
2. Not all historical data can be found in this report. Further data is contained in previous MAIB Annual Reports.
3. United Kingdom ships are required by the Merchant Shipping (Accident Reporting and Investigation) Regulations 2012[22] to report accidents to the MAIB.
4. Accidents are defined as being Marine Casualties or Marine Incidents, depending on the type of event(s) and the results of the event(s). See Definitions (Annex B) on page 62 or MAIB's Regulations for more information.
5. Details of vessel types and groups used in this Annual Report are providing as supporting information (Annex B) on page 63.
6. Non-UK flagged vessels are not required to report accidents to the MAIB unless they are within a UK port/harbour or within UK 12 mile territorial waters and carrying passengers to or from a UK port. However, the MAIB will record details of, and may investigate, significant accidents notified to us by bodies such as HM Coastguard.
7. The Maritime and Coastguard Agency, harbour authorities and inland waterway authorities have a duty to report accidents to the MAIB.
8. In addition to the above, the MAIB monitors news and other information sources for relevant accidents.

[22] https://www.legislation.gov.uk/uksi/2012/1743

ANNEX B: SUPPORTING INFORMATION

Definitions

Marine Casualty[23]

An event or sequence of events that has resulted in any of the following and has occurred directly by or in connection with the operation of a ship:

- the death of, or serious injury to, a person;
- the loss of a person from a ship;
- the loss, presumed loss or abandonment of a ship;
- material damage to a ship;
- the stranding or disabling of a ship, or the involvement of a ship in a collision;
- material damage to marine infrastructure external of a ship, that could seriously endanger the safety of the ship, another ship or any individual;
- pollution, or the potential for such pollution to the environment caused by damage to a ship or ships.

A Marine Casualty does not include a deliberate act or omission, with the intention to cause harm to the safety of a ship, an individual or the environment.

Each Marine Casualty is categorised as ONE of the following:

Very Serious Marine Casualty (VSMC) – A Marine Casualty where there is total loss of the ship, loss of life, or severe pollution.

Serious Marine Casualty (SMC) – A Marine Casualty where an event results in one of:

- immobilisation of main engines, extensive accommodation damage, severe structural damage, such as penetration of the hull underwater, etc., rendering the ship unfit to proceed;
- pollution;
- a breakdown necessitating towage or shore assistance.

Less Serious Marine Casualty (LSMC) – This term is used by MAIB to describe any Marine Casualty that does not qualify as a VSMC or a SMC.

Marine Incident (MI)

A Marine Incident is an event or sequence of events other than those listed above which has occurred directly in connection with the operation of a ship that endangered, or if not corrected would endanger, the safety of a ship, its occupants or any other person or the environment (e.g. close quarters situations are Marine Incidents).

Accident

Under current regulations Accident means any Marine Casualty or Marine Incident. In historic data, Accident had a specific meaning, broadly equivalent to (but not identical to) Marine Casualty.

Operation of a ship

To qualify as a Marine Casualty an event/injury etc must be in connection with the operation of the ship on which it occurs. MAIB's interpretation of this includes any "normal" activities which take place on board the vessel (e.g. a chef who cuts himself while preparing food is considered in connection with the operation of the ship).

[23] https://www.legislation.gov.uk/uksi/2012/1743/regulation/3

Vessel categories

Merchant vessels >=100gt

Trading and non-trading vessels of 100 gross tonnage (gt) or more (excluding fish processing and catching). Note that this category includes vessel types such as inland waterway vessels and vessels on government service that not all countries consider to be merchant vessels. It excludes Royal Navy vessels and fixed platforms and rigs.

Merchant vessels <100gt

Vessels of under 100gt known, or believed to be, operated commercially (excluding fish processing and catching).

Commercial recreational

May be a subset of either of the above two entries. Those over 100gt may, for instance, be a tall ship or luxury yacht. Those under 100gt may be a chartered yacht or a rented dinghy.

UK fishing vessels

Commercial fishing vessels registered with the UK Maritime and Coastguard Agency's Registry of Shipping and Seamen.

Passenger

In addition to seagoing passenger vessels this category also includes inland waterway vessels operating on inland waters.

Service ship

Includes, but not limited to, dredgers, offshore industry related vessels, tugs and SAR craft.

Recreational craft

Recreational craft may be commercial or non-commercial. In the statistics section of each Annual Report only "Table 1: Loss of life…" includes non-commercial recreational craft.

Non-UK vessels in UK waters

Vessels that are not known, or believed to be, UK vessels, and the events took place in UK territorial waters (12 mile limit).

GLOSSARY OF ABBREVIATIONS, ACRONYMS AND TERMS

Abbreviations and Acronyms

CO_2	-	carbon dioxide
EPIRB	-	Emergency Position Indicating Radio Beacon
GRP	-	glass reinforced plastic
gt	-	gross tonnage
IBC Code	-	International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk
IMO	-	International Maritime Organization
IMSBC Code	-	International Maritime Solid Bulk Cargoes Code
ISO	-	International Organization for Standardization
loa	-	length overall
LSMC	-	Less Serious Marine Casualty
m	-	metre
MCA	-	Maritime and Coastguard Agency
MI	-	Marine Incident
MSN (M&F)	-	Merchant Shipping Notice (Merchant and Fishing)
n/a	-	not applicable
OSR	-	Offshore Special Regulations
reg	-	registered length
RIB	-	rigid inflatable boat
ro-ro	-	roll-on/roll-off
SAR	-	search and rescue
SCV Code	-	Small Commercial Vessel Code
SMC	-	Serious Marine Casualty
STCW	-	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978, as amended (STCW Convention)
UK	-	United Kingdom
VSMC	-	Very Serious Marine Casualty

Terms

Deviation	-	The last event differing from the normal working process and leading to an injury/fatality.
Material Agent	-	A tool, object or instrument.
Subluxation	-	Incomplete, or partial dislocation.
Superficial injuries	-	Bruises, abrasions, blisters, etc.

CONTACT DETAILS AND ONLINE RESOURCES

Marine Accident Investigation Branch
First Floor, Spring Place
105 Commercial Road
Southampton
SO15 1GH

Email
maib@dft.gov.uk

General enquiries
+44 (0)23 8039 5500

24 hour accident reporting line
+44 (0)23 8023 2527

Press enquiries
+44 (0)1932 440015

Press enquiries (out of office hours)
+44 (0)30 0777 7878

Online resources

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