MAIB
MARINE ACCIDENT INVESTIGATION BRANCH

SAFETY BULLETIN

SB1/2024 FEBRUARY 2024

Extracts from The United Kingdom Merchant Shipping (Accident Reporting and Investigation) Regulations 2012 Regulation 5:
"The sole objective of a safety investigation into an accident under these Regulations shall be the prevention of future accidents through the ascertainment of its causes and circumstances. It shall not be the purpose of such an investigation to determine liability nor, except so far as is necessary to achieve its objective, to apportion blame."

Regulation 16(1):
"The Chief Inspector may at any time make recommendations as to how future accidents may be prevented."

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NOTE
This bulletin is not written with litigation in mind and, pursuant to Regulation 14(14) of the Merchant Shipping (Accident Reporting and Investigation) Regulations 2012, shall be inadmissible in any judicial proceedings whose purpose, or one of whose purposes is to attribute or apportion liability or blame.

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Fatal injury to a deckhand following a chain failure on the scallop dredger *Honeybourne III* (PD905) approximately 16 nautical miles south of Newhaven, England on 6 October 2023

Honeybourne III

MAIB SAFETY BULLETIN 1/2024

This document, containing safety lessons, has been produced for marine safety purposes only, on the basis of information available to date.

The Merchant Shipping (Accident Reporting and Investigation) Regulations 2012 provide for the Chief Inspector of Marine Accidents to make recommendations at any time during the course of an investigation if, in his opinion, it is necessary or desirable to do so.

The Marine Accident Investigation Branch is carrying out an investigation into the fatal injury to a deckhand following the failure of a chain on the scallop dredger *Honeybourne III* (PD905).

The MAIB will publish a full report on completion of the investigation.

Captain Andrew Moll OBE
Chief Inspector of Marine Accidents

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BACKGROUND

At about 2345 on 6 October 2023, the lifting arrangement for the dredging gear that was suspended from the raised port derrick on the UK registered scallop dredger *Honeybourne III* (PD905) fell to the deck without warning. The gear struck a deckhand working below, causing serious head injuries.

The crew of *Honeybourne III* alerted His Majesty's (HM) Coastguard and administered first aid to the unconscious deckhand. HM Coastguard tasked a search and rescue helicopter and a Royal National Lifeboat Institution (RNLI) lifeboat to assist, but the deckhand was declared deceased by the attending helicopter paramedic.

INITIAL FINDINGS

The ongoing MAIB investigation has found that a section of chain in the port dredging gear quick-release assembly failed as the gear was being retrieved. A 32mm chain link, which was led over a static steel pin at the derrick head **(Figure 1)**, parted **(Figure 2)** and allowed the towing block, monkey face block and associated gear to fall to the deck below.

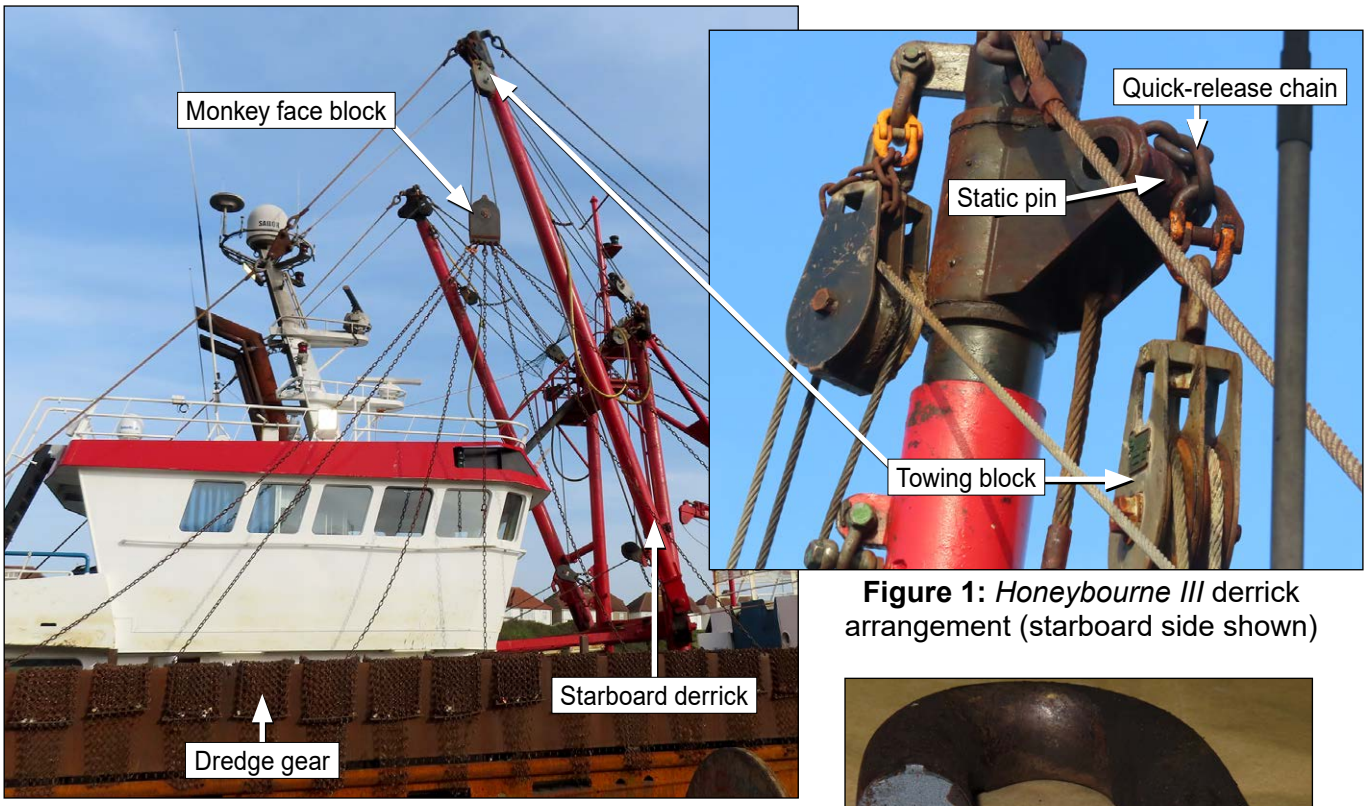

Figure 1: *Honeybourne III* derrick arrangement (starboard side shown)

Figure 2: Failed chain link on *Honeybourne III*

The configuration of a chain led over a static pin as part of a quick-release gear is commonly used on board scallop dredgers and beam trawlers. Such arrangements are known to have failed previously and chain fractures have been identified during routine inspections of quick-release gear **(Figure 3)**.

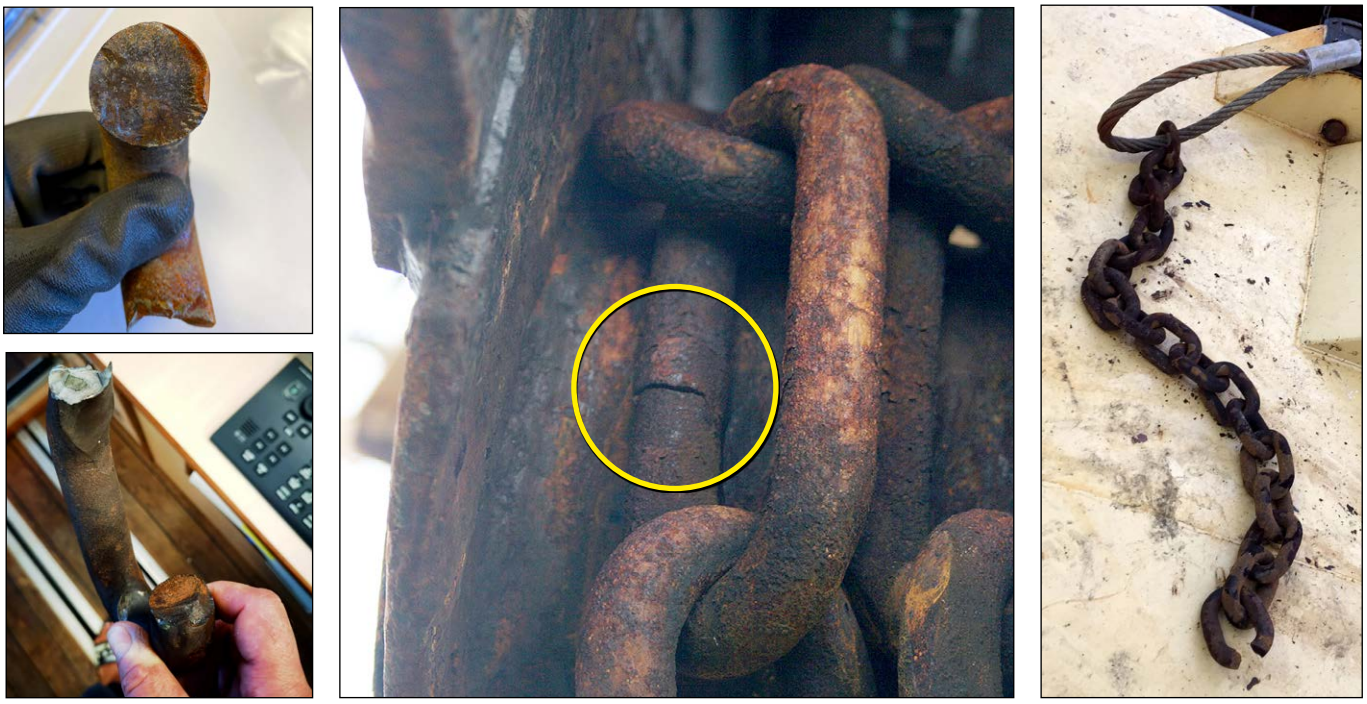

Figure 3: Identified chain defects in static pin arrangements

In February 2021, the failure of a similar chain to that which failed on board *Honeybourne III* resulted in the death of a deckhand on board the beam trawler *Cornishman* (PZ512). As a result, the Maritime and Coastguard Agency (MCA) issued Safety Bulletin 20[1] in August 2021. The safety bulletin highlighted the need for action by owners, operators, skippers, crew and safety advisors to ensure that for vessels under their control they:

- *Have an inspection regime sufficient to inspect all items of lifting equipment including those likely to be subject to high load, high wear and high impact;*
- *Have provided the competent person sufficient opportunity under appropriate conditions to be able to make an assessment for continued operation – which may require inspection techniques other than visual;*
- *Have determined the parameters within manufacturer's recommendations for continued acceptance of items of lifting equipment;*
- *Have determined the frequency of inspection, and where the risk indicates possibility of premature failure, to increase the frequency of inspection in accordance with the Regulations[2];*
- *Have a system to record all inspections and changes to lifting equipment.*

Safety Bulletin 20 built on concerns raised in MCA Safety Bulletin 17, issued in October 2020[3], regarding the safety of lifting operations on fishing vessels. That safety bulletin noted that:

> *It is the owner's responsibility to identify key areas of risk in respect of lifting operations in accordance with the Fishing Vessels (Health and Safety at Work Regulations 1997 (SI 1997/2962)…*

[1] MCA Safety Bulletin 20: Safety concern over lifting equipment inspections on fishing vessels (https://www.gov.uk/government/publications/safety-bulletin-20-safety-concern-over-lifting-equipment-inspections-on-fishing-vessels).

[2] Merchant Shipping and Fishing Vessels (Lifting Equipment and Lifting Operations Regulations) 2006 (SI 2006/2184).

[3] Safety Bulletin 17: Safety concern over lifting operations on fishing vessels (https://www.gov.uk/government/publications/safety-bulletin-17-safety-concern-over-lifting-operations-on-fishing-vessels).

> *…If a lifting operation cannot be undertaken safely then it shall not continue.*

In May 2022, the MAIB issued an interim report on the investigation into the fatal accident on board *Cornishman*. The interim report highlighted that an arrangement containing a chain passing over a static pin makes it *very difficult to calculate the tensile strength of the arrangement and makes it more susceptible to failure*. The interim report further stated that:

> *It is therefore imperative in the short-term that these types of release mechanisms and derrick head pins are subject to regular inspection and replaced at the earliest sign of wear.*

Alternative arrangements for the quick-release mechanisms at the derrick head that either do not include a chain passing over a static pin, or remove the risk of the gear falling in the event of a failure, have been fitted to vessels to mitigate the risk of gear falling from height in the event of a failure of the chain arrangement. The alternative configurations observed by the MAIB have included the use of wire and sheave arrangements **(Figure 4)**, the replacement of the derrick head arrangement with a swinging arm mechanism **(Figure 5)**, and the provision of warp tension monitoring and release systems. Options have also been suggested for a secondary means of retaining the gear, in addition to the chain, to prevent the gear from falling in the event of a chain failure while still allowing the release of the gear in an emergency **(Figure 6)**.

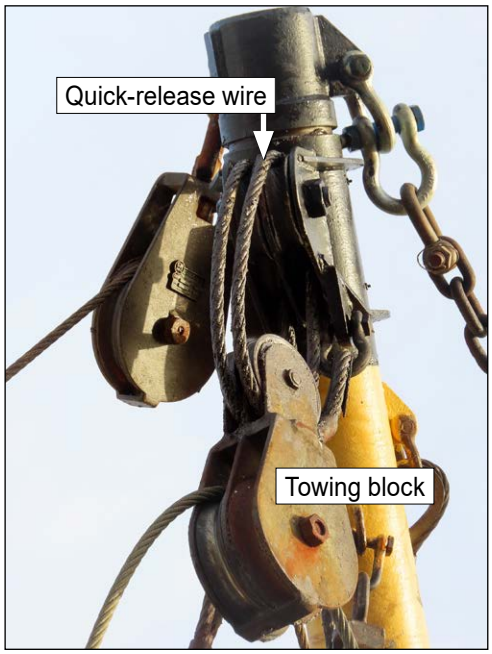

Figure 4: Quick-release arrangement with derrick head quick-release wire and sheave

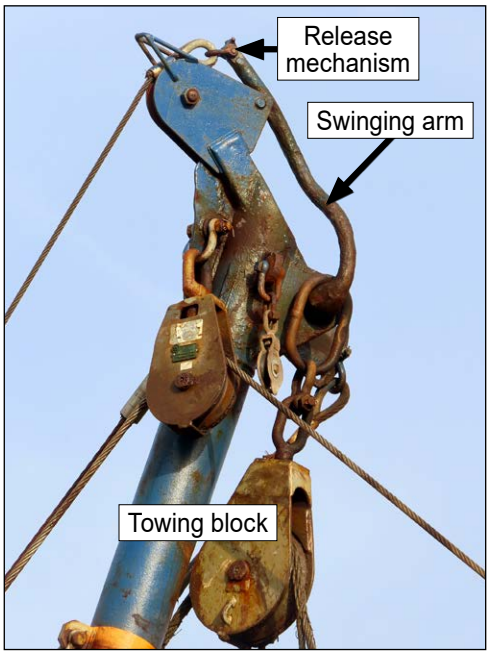

Figure 5: Quick-release arrangement with derrick head swinging arm

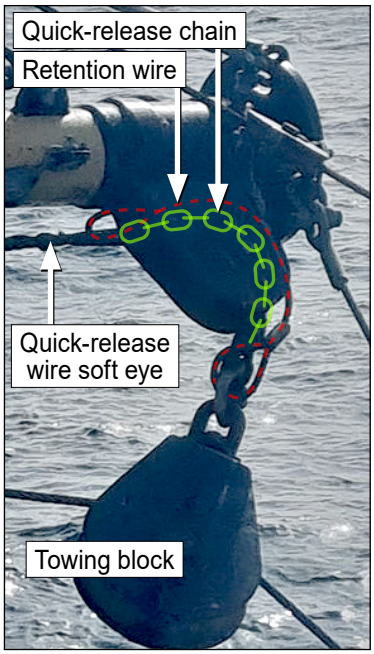

Figure 6: Quick-release arrangement with secondary means of gear retention

SAFETY ISSUES

The initial stages of the investigation have identified that:

- The recent recorded accidents and failures of chain links leading over a static pin as part of a quick-release mechanism indicate the significant risk of such arrangements failing when loads are applied to the chains. These arrangements can induce complex loading forces in the chain links, leading to excessive wear on the chain links and significantly reducing the chain strength.

- The location of the chain links at the derrick head and the fact that the deterioration of the chain links may not be easily visible mean that it can be difficult to inspect and identify issues with the quick-release arrangement.
- The potential failure of chains used in this manner presents an unacceptable level of risk to crew members working on the deck below.

RECOMMENDATIONS

The **Maritime and Coastguard Agency** is recommended to:

S2024/101 Conduct a focused inspection campaign on board UK scallop dredgers and beam trawlers fitted with derrick head quick-release mechanisms that incorporate chain to:

- raise awareness among skippers and crews of the significant hazards associated with the use of chain links passing over a static pin as part of the derrick head quick-release mechanism;
- confirm that the risk of a failure of the derrick head quick-release mechanism has been assessed, mitigated and documented by the owner, operator and/or skipper of the vessel; and
- verify that the crew has been informed of the findings of the risk assessment and the measures taken for their protection in the event of a failure of the derrick head quick-release mechanism.

All owners, operators and skippers of UK scallop dredgers and beam trawlers that use chain as part of the derrick head quick-release mechanism on board their vessels are recommended to:

S2024/102M Urgently ensure that a suitable and sufficient assessment of the risk of a failure of the derrick quick-release mechanism chain has been undertaken and documented, noting the safety issues identified in this safety bulletin, and that:

- mitigations are identified and immediately implemented to reduce the risk to the crew associated with a failure of the derrick quick-release mechanism to a level that is as low as reasonably practicable; and
- the crew are informed of the findings of the risk assessment and the measures taken for their protection.

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