

**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 recreational diver after contact with the recreational diving support boat

Karin

in Scapa Flow, Orkney Islands, Scotland

on 28 September 2023



Representative image of a diver surfacing near a dive boat

MAIB SAFETY BULLETIN 2/2024

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 recreational diver after contact with the recreational diving support boat *Karin*.

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

On the morning of 28 September 2023, a recreational diver carrying out decompression stops died, almost certainly as a result of being struck by the rotating propeller of the UK registered diving support boat *Karin*. The diver was diving from a second dive boat that was also supporting divers exploring the wreck of the German battleship SMS *Markgraf* (**Figure 1**), which was lying at a depth of 45m in Scapa Flow, Orkney Islands, Scotland.

Reproduced from Admiralty Chart 0035-0 by permission of HMSO and the UK Hydrographic Office

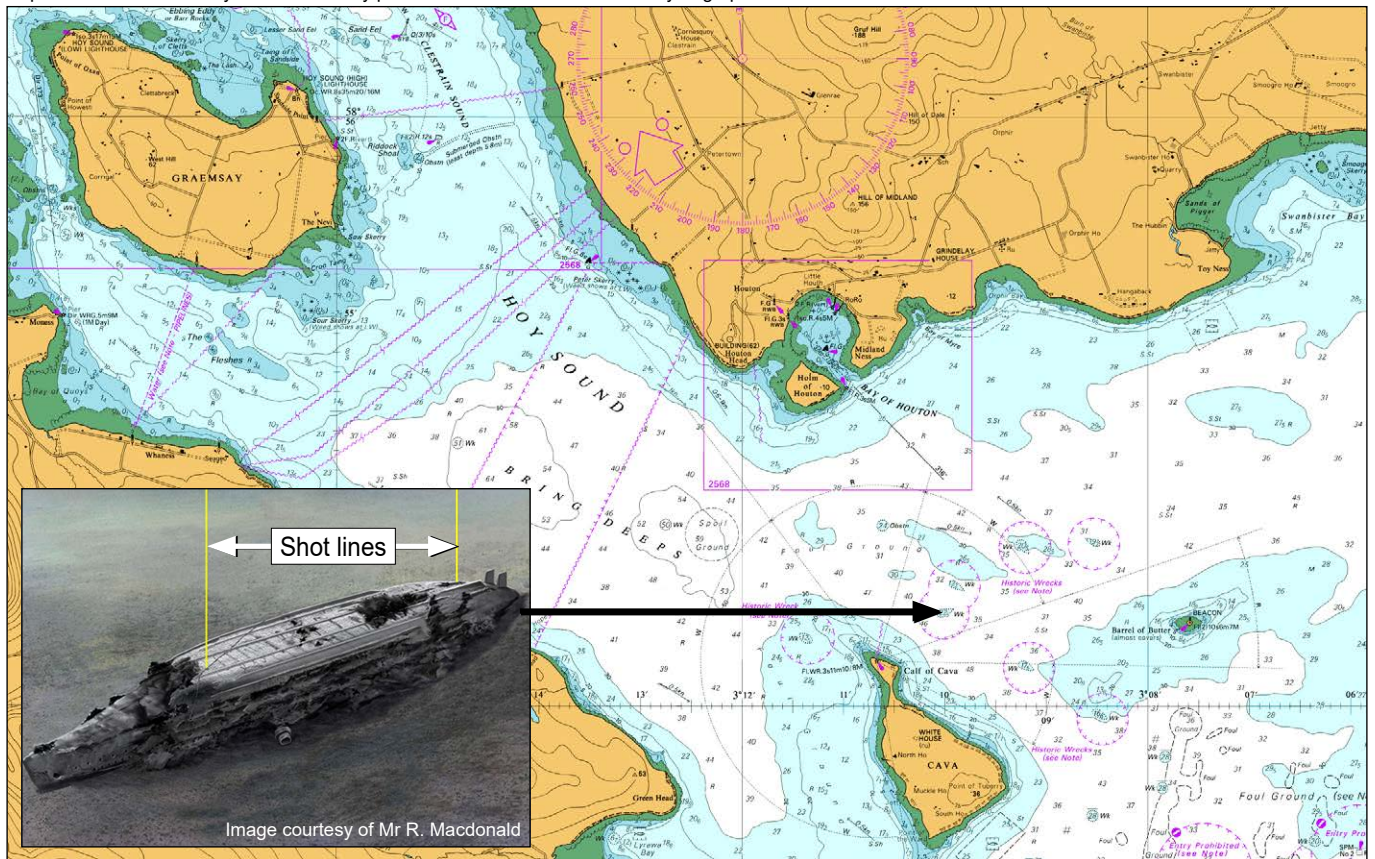


Figure 1: SMS *Markgraf*

The diver and their dive buddy had ascended to their final scheduled decompression stop 3m below the surface. The divers were conducting a drift decompression away from the available shot line¹ but their presence was indicated by their delayed surface marker buoy (DSMB)², the line of which was clipped to the casualty's dive vest (**Figure 2**). The DSMB was visible to the second dive boat waiting on the other side of the wreck site, but it was not sighted by *Karin*'s crew before *Karin* motored over it.

The crew of the second dive boat saw the DSMB disappear under *Karin*. Subsequently, one of the two divers failed to resurface. The coastguard was notified and an extensive 2-day air and sea search of the area was conducted, but without success.

The missing diver's body was found 3 weeks later following a seabed search conducted by a local survey vessel using side-scan sonar. A specialist team recovered the diver's body from the seabed.

1 A type of downline or descending line comprising a line and a buoy and used as a surface and underwater datum point to mark the position of entry and exit while diving and during decompression stops. The line is weighted or attached to the seabed or dive site wreck and held at the surface by the buoy.

2 The launch of a DSMB by a submerged diver just before ascent marks their position to surface craft. A DSMB could also be used by divers while completing a safety stop, particularly in a current or where other visual references were absent.



Figure 2: DSMB line attached to harness

Karin was a 24m converted fishing boat with a draught of 2.8m, certified by Mecal Ltd under the Maritime and Coastguard Agency's (MCA) Small Commercial Vessel and Pilot Boat Code of Practice (SCV2), annexed to Marine Guidance Note (MGN) 280 (M). The two crew of *Karin* comprised a skipper, who was suitably qualified and had extensive experience both as a diver and dive boat skipper engaged in this type of operation, and a crew member whose principal role was that of cook.

INITIAL FINDINGS

The accident occurred during daylight in favourable environmental conditions with good visibility, calm seas, no rain, and a tidal stream of less than 1 knot (kt). *Karin* was manoeuvring at a speed of 4kts slightly to the east of the shot line marking the stern of the wreck. The tidal streams in the area were not strong, although it was not uncommon for divers to carry out drift decompression stops before surfacing. The DSMB marking the casualty and their buddy had been on the surface for 11 minutes before the accident, but had not been seen by *Karin's* skipper who was operating the boat from the wheelhouse during this time.

SAFETY LESSONS

- The requirement to maintain an effective lookout at all times when a vessel is underway is clearly articulated in the COLREGs³ and it is vital when operating in close proximity to people in the water, such as with dive boats. A dedicated lookout posted in a suitable location is essential to make sure the helm/skipper is given sufficient warning of a surfacing diver to take effective avoiding action.
- Manoeuvring a boat in areas where divers are known to be below the surface introduces unnecessary risk to a diver surfacing close by. Unless drifting or anchored, the support boat should keep a safe standoff distance from submerged divers and only move over the dive site when recovering divers from the water.
- Where multiple boats intend to operate in the same area, detailed and frequent communication between the operators is essential to ensure deconfliction and prevent accidents. Boat operators should coordinate and plan their movements before arrival at dive sites to minimise the event of multiple boats operating in the same area at once.
- Divers using a DSMB should hold the line in their hand, as recommended by the British Sub-Aqua Club, rather than attach it to their person. In the event that the DSMB becomes snagged by a passing craft, the diver can then release the line to avoid entanglement and potentially being drawn to the surface or into contact with the craft.
- The nature of static shot lines in well-known positions supports their use during decompression stops. Although the strength of the current might prevent their use, divers decompressing or surfacing away from shot lines have increased vulnerability to hazards such as boat traffic, entanglement in marine debris or becoming caught in underwater structures.

RECOMMENDATIONS

The **British Diving Safety Group** is recommended to:

- S2024/114 Disseminate this safety bulletin to all organisations and agencies within its membership drawing attention to the safety issues raised, in particular:
- that owners, operators and skippers of diving support boats should ensure compliance with COLREGs Rule 5 concerning provision of a lookout, especially when operating in proximity to divers in the water.
 - to raise awareness among its members of the hazards to divers of attaching a DSMB to their person while submerged, and that the recognised good practice is for the reel to be held in their hand.

Safety recommendations shall in no case create a presumption of blame or liability

Issued June 2024

³ The Convention on the International Regulations for Preventing Collisions at Sea, 1972 as amended.