

## Fatal injuries to a crewman during mooring operations on **FORTH GUARDSMAN**

**South of Jura  
13 March 2011**

**Extract from The United Kingdom Merchant Shipping (Accident Reporting and Investigation) Regulations 2005 – Regulation 5:**

“The sole objective of the investigation of an accident under the Merchant Shipping (Accident Reporting and Investigation) Regulations 2005 shall be the prevention of future accidents through the ascertainment of its causes and circumstances. It shall not be the purpose of an investigation to determine liability nor, except so far as is necessary to achieve its objective, to apportion blame.”

**NOTE**

This report is not written with litigation in mind and, pursuant to Regulation 13(9) of the Merchant Shipping (Accident Reporting and Investigation) Regulations 2005, shall be inadmissible in any judicial proceedings whose purpose, or one of whose purposes is to attribute or apportion liability or blame.

© Crown copyright, 2011

You may re-use this document/publication (not including departmental or agency logos) free of charge in any format or medium. You must re-use it accurately and not in a misleading context. The material must be acknowledged as Crown copyright and you must give the title of the source publication. Where we have identified any third party copyright material you will need to obtain permission from the copyright holders concerned.

All reports can be found on our website:

[www.maib.gov.uk](http://www.maib.gov.uk)

For all enquiries:

Email: [maib@dft.gsi.gov.uk](mailto:maib@dft.gsi.gov.uk)

Tel: 023 8039 5500

Fax: 023 8023 2459

### SUMMARY

At 1912 UTC on 13 March 2011, an able seaman (AB) working on board the Briggs Marine Contractors Limited (BMC) landing craft *Forth Guardsman*, became trapped between a mooring wire and the ship's rail during a mooring operation. The weight on the wire could not be released quickly enough, and the AB was pulled over the guardrail and into the sea: he was recovered, but died from his injuries.

The investigation found that insufficient manpower had been assigned for the

mooring operation, some risks had not been identified properly, seamanship practices on board were poor, the AB had stood in an open bight which closed around him, and emergency communication procedures were inadequate.

BMC conducted its own safety investigation and as a result is undertaking a number of actions to prevent a reoccurrence. In light of these actions the MAIB has not made any recommendations.



*Forth Guardsman*

# FACTUAL INFORMATION

## Background

BMC had been contracted to lay a power cable between the islands of Jura and Islay. BMC had configured its landing craft, *Forth Guardsman*, to lay the cables and assigned other company vessels, *Forth Constructor* and *Forth Sentinel* and a sub-contracted vessel *Headcorn*, to assist. Strong tidal streams in the area meant that BMC had a limited number of opportunities each month when the tides were weakest, in which to lay the cables. To maximise the use of those opportunities, a series of trials and surveys was planned prior to the periods scheduled for cable laying.

During stages of the cable laying operation, *Forth Guardsman* was to be secured in position by a 4-point mooring system. The mooring wires were retained on winches, one for'd and one aft, on both the port and starboard sides of the vessel. Once *Forth Guardsman* was in position, the wires were veered so that other boats could take them to and shackle them on to mooring lines that were attached either to buoys or ashore. The slack in the wires was then taken up to hold the vessel in position.

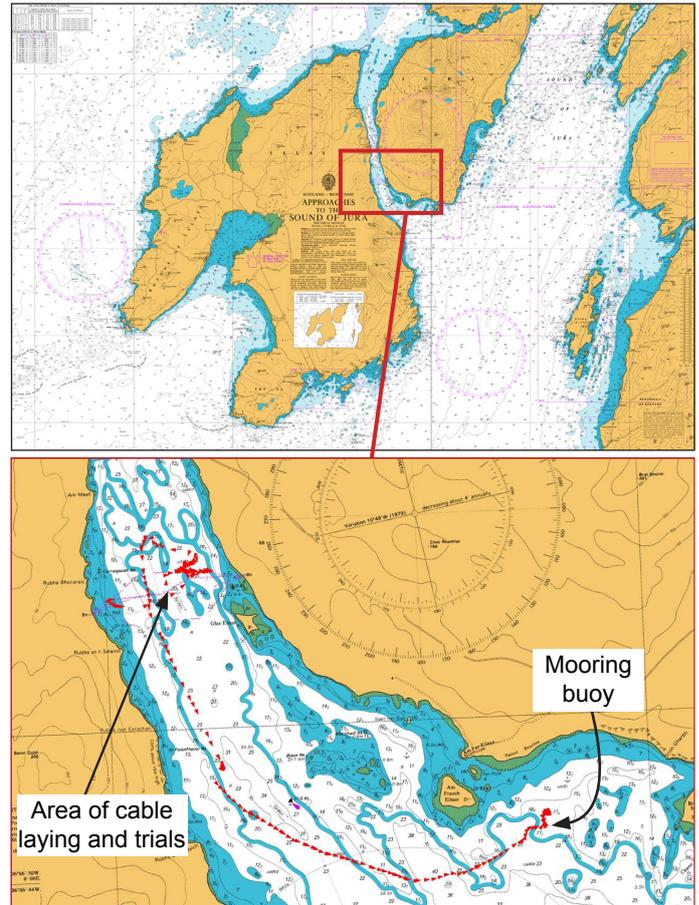
As jetty space in the locality was limited, BMC had positioned a mooring buoy south of Jura where its vessels could lay-over when not in operation. One end of a 25m length of 60mm polypropylene mooring line had been fixed to the mooring buoy, and a messenger line with a flyer buoy attached was secured to the other end (**Figure 1**).

## Narrative

*Forth Guardsman* spent the night of 12 March 2011 alongside the ferry berth in Port Askaig, Islay. The master came on to the bridge at 0600 the following morning, and early in the watch he received the forecast that the winds were to increase in strength from the north towards the end of the day. As the ferry berth would not be available that night, he began to make plans for *Forth Guardsman* to secure to the Jura mooring buoy on completion of that day's trials.

*Forth Guardsman* had secured to a buoy further north in the Sound of Islay, on previous occasions by shackling the eye of the mooring line to a

Reproduced from Admiralty Chart BA 2481 by permission of the Controller of HMSO and the UK Hydrographic Office **Figure 1**



securing point at the for'd part of the vessel. With the cable laying equipment on board, this securing point was no longer accessible.

The alternative methods of securing the mooring line were: to secure the eye of the line to the bits on the raised forward mooring deck; or to connect it to the hard eye of one of the mooring wires used for the 4-point mooring system. In the latter case, the crew would have to pick up the mooring line from the water and connect it to a mooring wire, instead of a boat taking the vessel's wire out to the buoy.

The master, superintendent (a former *Forth Guardsman* master) who was on board for the trials, and the mate discussed the options for securing to the mooring buoy. They decided that handling and connecting the mooring line on the raised forward mooring deck could be difficult, and there was a risk of the line snagging on the adjacent cable laying equipment or tyre fendering. Consequently, they concluded they would pick up the mooring line from the main deck, which was nearer the water line, and shackle it to the wire from one of the 4-point mooring winches (**Figure 2**).

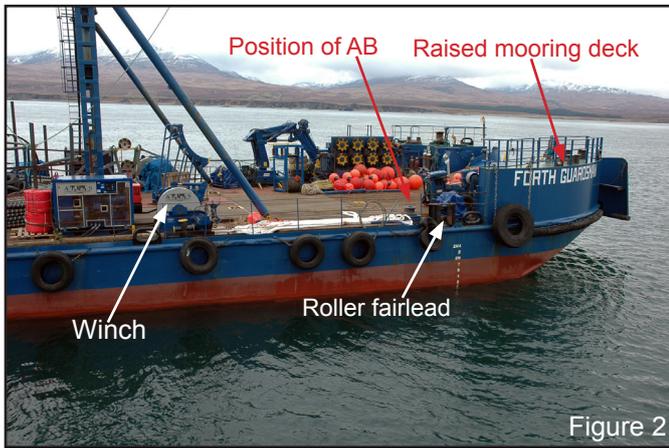


Figure 2

The mate produced a method statement and risk assessment for the operation, and a toolbox talk attended by all six crew was held during the morning. The plan was that the mate and the AB, Boguzlaw Kopec, would go forward to make fast. The master would be on the bridge for the final approaches to the buoy, with the mate directing him via very high frequency (VHF) radio. AB Kopec would use a boathook to pick up the messenger line's flyer buoy, and the mate would then pull in the messenger line to bring the mooring line's eye inboard over the guardrail. In preparation for the connection, the wire from the winch would be fed outboard through a roller fairlead and brought back inboard over the guardrail. The eyes of the mooring line and the wire would be connected on deck using a shackle (Figure 3).

At 1135 *Forth Guardsman* left the ferry berth to commence trials, and these continued until 1750. At 1800 the master took the watch, and 20 minutes later the riggers, surveyors and superintendent were transferred ashore by another vessel. Once they had disembarked, *Forth Guardsman* began passage to the mooring buoy south of Jura, with both the master and the mate on the bridge. Sunset occurred at 1822.

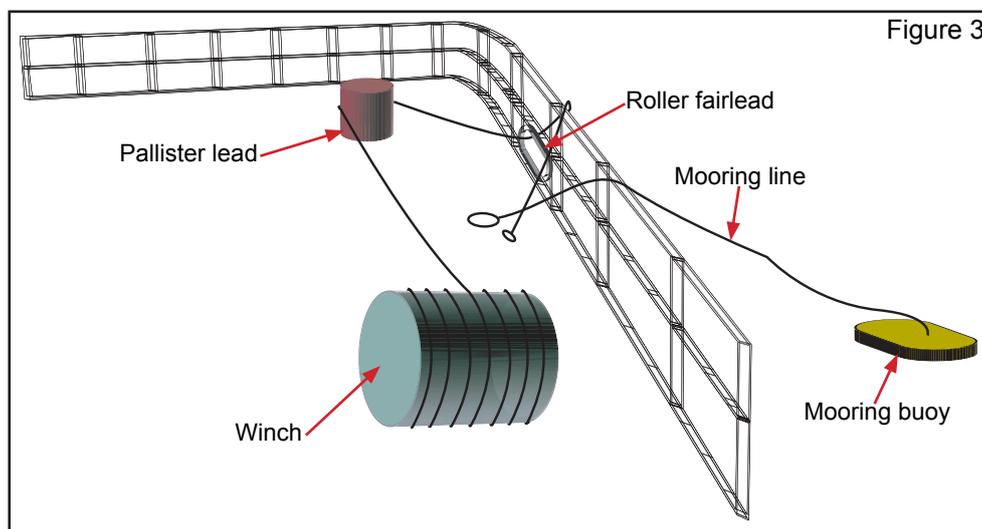


Figure 3

At 1900 the mate went forward to assist AB Kopec, who was making preparations on deck for the mooring. Both men were dressed in flotation suits, hard hats and safety shoes, but neither wore a lifejacket.

The master positioned *Forth Guardsman* to approach the buoy into wind, and called the chief engineer to the bridge to assist him by shining a searchlight in the area. As *Forth Guardsman* approached the marked position of the buoy, the mooring buoy was seen, and the mate gave the master directions by VHF to guide the final approach.

AB Kopec hooked the messenger line at the second attempt and he and the mate pulled the mooring line inboard by hand. He then passed the eye to the mate so he could shackle it to the hard eye of the wire. Unwittingly, the AB then stood in a position that would place him in an open bight as soon as the two lines were connected. The mate knelt on the deck, looking down while he secured the shackle, and was unaware that *Forth Guardsman* was beginning to move away from the buoy (Figure 4).

Although the working deck was well lit, the cable laying apparatus obscured the master's full view from the bridge of both the AB and mate, and, as *Forth Guardsman* closed in on its position, also the buoy. With no visual references available to him and no VHF information from the mate, the master monitored the differential global positioning system (DGPS) receivers to check whether the vessel was moving.

At approximately 1912, the mooring line became taut, pulling the now closed but not secured shackle out of the mate's hands and tightening the wire across AB Kopec's chest (Figure 5). The mate was unable to take the weight off the wire by hand, and called the master by VHF to bring *Forth Guardsman* ahead. However, before the master had done so, one of the stanchions buckled and AB Kopec was pulled over the guardrail and into the sea.

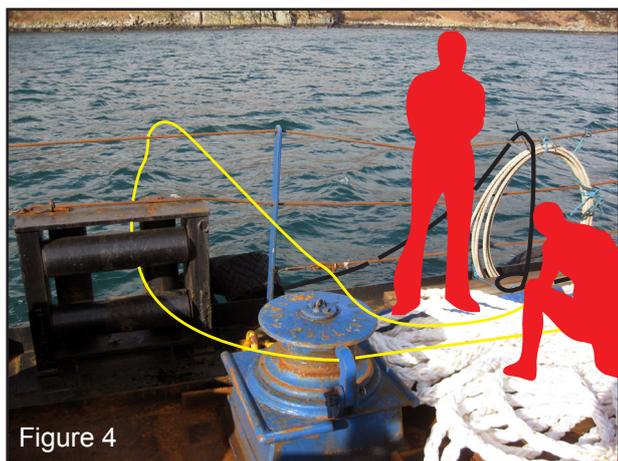


Figure 4

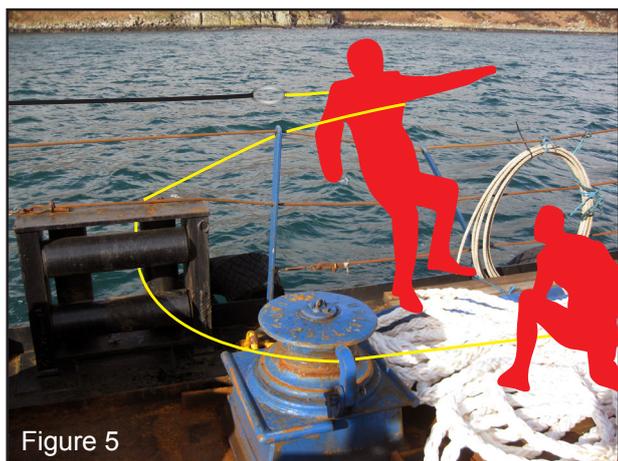


Figure 5

The mate reported the man overboard to the master on his VHF radio and threw a lifebuoy over the side, noting as he did so that AB Kopec was floating face-down, close to the ship's side. The master raised the alarm by shouting 'man overboard' from the bridge, and the chief engineer, who was leaving the bridge, relayed the shout to the AB-cook and the second engineer who were in the accommodation.

The AB-cook and second engineer ran to the aft mooring deck where they saw AB Kopec, face-down, drifting aft towards them. Using a nearby boathook, they pulled AB Kopec towards the ship's side and held him alongside, but were unable to turn him over.

At 1914 the master attempted to call *Headcorn* and *Forth Constructor* on VHF channel 16, but he did not call the coastguard, make a "Mayday" broadcast, activate the digital selective calling (DSC) distress button, or use the phrase 'man overboard' when trying to raise the other vessels. At the same time, the mate and the second engineer began to rig the pilot ladder near to where AB Kopec was being held alongside. Once rigged, the AB-cook climbed down the ladder and, by

partly entering the water and holding on to a tyre fender, he was able to lift AB Kopec's head clear of the water.

At 1916 *Forth Constructor's* master responded to the master of *Forth Guardsman's* VHF call on channel 16, and the two changed to channel 06 to discuss the situation. At 1919 *Forth Guardsman's* master made contact with *Headcorn's* dive team, and again discussed the emergency on channel 06 without any significant information being passed on channel 16. During this period the chief engineer, second engineer and mate were preparing *Forth Guardsman's* rescue boat for use. They swung it out and lowered it into the water, but kept it hooked on to the lifting wire as it was already close to where AB Kopec was being supported by the cook. *Headcorn's* skipper launched his vessel's rescue boat, and he and one of the divers who was working on board went to assist *Forth Guardsman's* crew.

At 1921 the BMC superintendent received a telephone call in his hotel from *Forth Constructor's* master advising him of the situation. Following that call the superintendent decided to contact the coastguard by telephone to make sure that they were aware of the accident. This call was the first notification of the accident received by the coastguard.

At 1923 the coastguard made a general broadcast on channel 16 requesting any vessel south of Jura to respond. Both *Forth Constructor* and *Forth Guardsman* answered, the latter informing the coastguard that they had the man alongside but had not been able to recover him.

*Headcorn's* rescue boat quickly arrived on scene and one of its divers entered the water. He and the cook managed to get the AB into the boat and began cardio-pulmonary resuscitation (CPR). At 1932 *Forth Guardsman's* skipper called the coastguard and requested that a helicopter be sent. The coastguard confirmed that this had already been done and that a helicopter was en route. Subsequent radio communications with the coastguard were difficult, with both parties intermittently unable to hear the other station calling.

At 2001 the crew of the rescue helicopter requested that AB Kopec be transferred to the Islay lifeboat, which by then was in attendance, to ease

winch operations. At 2024, AB Kopec was airlifted to Crosshouse Hospital, Kilmarnock where he was pronounced dead at 2112.

### Method statement and risk assessment

The mooring method statement contained details about the laying of the buoy and the mooring rope's specifications, but did not specify operational details such as who was to shackle the eyes together, or how the lines would be prevented from falling back over the ship's side while the connection was being made. These factors were not discussed during the toolbox talk and no reference was made to the guidance on mooring operations in Chapter 25 of the Maritime and Coastguard Agency's (MCA) Code of Safe Working Practices for Merchant Seamen (COSWP).

The risk assessment identified seven hazards associated with the task, including the possibility of being crushed by a heavy mooring line, but did not identify some of the more obvious hazards such as the danger of a line parting. The hazard of being crushed by a heavy mooring line was assessed as a level 8 risk. BMC's procedures allowed a task that carried such a risk level to proceed '*only under strict supervision and monitoring*'.

### Manning

*Forth Guardsman* was manned in compliance with its safe manning certificate, the crew comprising the master, chief mate, chief engineer, second engineer, AB and an AB-cook. All of the crew were Polish and worked a rotation of 10 weeks on board followed by 5 weeks on leave.

The master was 57 years old and held an unlimited master's certificate of equivalent competency issued by the MCA. He had spent the 3 years prior to the accident working with tugs and offshore supply vessels, and was confident operating *Forth Guardsman's* azimuth stern drive propulsion system. This was his second time working with BMC, having rejoined the company the previous November. He was the 6-12 watchkeeper.

The mate was 38 years old and held an unlimited mate's certificate of equivalent competency issued by the MCA. He had worked on various types of vessels during his career and had been mate on *Forth Guardsman* for 2 years. He kept the 12-6 watch. During his career he had not received any formal training in conducting risk assessments,

but when required to do so on *Forth Guardsman*, had followed the guidance in BMC's safety management system.

### The deceased

Boguzlaw Kopec was 47 years old and had worked as an AB on board *Forth Guardsman* for 18 months. Other crew considered that he was a fit and strong swimmer, and he had spent time working as a dive instructor during his leave periods.

The post mortem examination did not identify any prior health conditions that would have contributed to AB Kopec's death, and the report concluded that he had died from '*a blunt force chest injury*'.

## ANALYSIS

### Securing method

The master and mate decided to secure *Forth Guardsman* to the buoy by shackling a wire to the buoy's mooring line, which used one quarter of the 4-point mooring system that the crew had been using while cable laying.

However, when cable laying, the winch wires were taken out to the mooring lines by boat, and the boat's crew – not *Forth Guardsman's* – shackled the two lines together. This difference was significant, and if it had been properly described in the method statement, or fully discussed during the toolbox talks, it is likely that *Forth Guardsman's* crew would have realised that the lines needed to be secured by a stopper during the shackling process. Further, a fuller assessment would have identified the need for another crew member to assist the AB so that the mate could retain an overview of the operation – particularly since strong winds were forecast. As it was, both the mate and AB Kopec were concentrating on shackling the lines together, and neither was aware that AB Kopec was standing in a bight, or that *Forth Guardsman's* bow was drifting away from the buoy and the mooring line was coming under tension.

### Monitoring the ship's position

The master's decision to monitor *Forth Guardsman's* position by watching for any change in ground speed on the DGPS displays was flawed. The DGPS antennae were fixed above the bridge

towards the vessel's stern, and this method of position monitoring was unlikely to have identified any yaw of the bow away from the buoy. Equally, *Forth Guardsman* needed to move laterally before the DGPS would register a ground speed, and so would already have been moving by the time the master became aware of the drift. Consequently, he would have had very little time to compensate before the weight came on to the mooring line.

## External communications

*Forth Constructor's* master did not ask the superintendent to call the coastguard, however without his call it is unclear when, or if, any of the vessels involved in recovering AB Kopec would have called the coastguard for help.

By not transmitting a "Mayday" call, activating the DSC 'distress' function, or using channel 16 to discuss the man overboard situation, *Forth Guardsman's* master significantly reduced the possibility of early assistance from the coastguard or other shipping in the area. Although these communications shortcomings did not affect the outcome of this accident, in other circumstances the delay in raising the alarm externally could have been critical.

## Manoverboard recovery

MAIB investigations into marine accidents involving man overboard situations often highlight the difficulty faced by seafarers when trying to attend to and eventually recover a man from the water. Although it did not affect the outcome in this case, it is another reminder to companies and crews to consider such challenges when carrying out manoverboard exercises.

## Method statements, toolbox talks and risk assessments

The mate's method statement for the mooring evolution included some unnecessary detail, but it omitted important stages of the task. The shortcomings were not identified during the discussions held earlier that day by the superintendent, master and mate, or in the later toolbox talk attended by the crew.

The risk assessment identified the hazard of being crushed by a line and was assessed as having a risk level of 8. Under BMC's procedures,

this required that the task proceed '*only under strict supervision and monitoring*'. Had the risk assessment, method statement and toolbox talk been completed correctly, it would have been identified that once the mate and AB Kopec were involved in joining the two lines, nobody was fulfilling this supervisory role required by BMC, and a third person or a change of method was necessary.

BMC provided written guidance as to how to complete a risk assessment and this was available to the mate. However, the mate did not follow this guidance as he did not fully understand it and had not received any training regarding risk assessment. When method statements and risk assessments are produced, they have no value if not completed properly. The mate's lack of training and the way the associated paperwork was completed undermined any benefit that might have been gained from producing a method statement.

The nature of the work conducted by BMC meant that its personnel were routinely exposed to potentially hazardous activities, and risk assessment procedures needed to be second nature. However, this accident has highlighted that *Forth Guardsman's* crew could benefit from further training in risk assessment procedures and the company has taken steps to put that in place.

## Seamanship

A number of elements of this accident combine to indicate that there were aspects of this operation which should have been planned differently and in accordance with Chapter 25 of COSWP on board *Forth Guardsman*. These include: not using a stopper to hold the mooring line; not having more of the available manpower on deck to assist; an AB standing in an open bight; no-one supervising the operation on deck at the time of the accident; and poor station keeping on the buoy during the connecting up process.

## CONCLUSIONS

- The open bight was created when the mooring line was shackled to the wire. The method that AB Kopec chose to make the connection left him standing in a dangerous place when the line came under tension.

- Because he was concentrating on securing the shackle, *Forth Guardsman*'s mate did not notice the developing hazard of increasing tension in the mooring line as the vessel drifted away from the buoy.
- The master's method of using DGPS to monitor *Forth Guardsman*'s position did not help him to identify that the ship was setting away from the buoy in sufficient time for him to take corrective action.
- Poor use of emergency communications delayed the provision of assistance from the coastguard and other non-company vessels. While this did not affect the tragic outcome of the accident, it could have been critical in different circumstances.
- The risk assessment, method statement and toolbox talk carried out on board *Forth Guardsman* prior to the evolution were not as effective as they could have been due to the lack of crew training and the way the associated paperwork was compiled.
- Several examples of poor seamanship on *Forth Guardsman* led to the accident.
- Commenced a comprehensive review of vessel procedures.
- Implemented a review of its risk assessment procedure and is introducing a company-wide training programme for operational personnel on conducting effective risk assessments, method statements and toolbox talks.
- Adapted its monthly directors' visits to company vessels to include an audit of the toolbox talks on board.
- Adapted its manoverboard drills to include touch drills which test the bridge response as well as the launching of rescue boats and recovering of casualties. It has further instructed that manoverboard drills should be carried out each time a vessel is deployed to a new location and should include recovering a manikin.
- Provided *Forth Guardsman* with:
  - a satellite telephone for use in areas where other communications are poor,
  - an additional VHF set, with DSC distress button, close to the conning position.

Although it did not affect the outcome of this accident, the crew found it difficult to attend to and recover AB Kopec while he was being held alongside *Forth Guardsman*. This is a common issue in manoverboard accidents reported to the MAIB and is another reminder to all operators to consider how best to recover a person from the water.

- Instructed that all of its crews must wear a lifejacket when on the open deck, and refreshed its crews' understanding of the use of lifejackets and flotation suits.
- Scheduled a review of its crisis management plan at its next ISM marine management meeting to encompass lessons learned from this accident.

## ACTION TAKEN

### Actions taken by other organisations

Briggs Marine has:

- Developed procedures for single point mooring operations.
- Instructed that all single point mooring operations on *Forth Guardsman* are to be conducted by three people.
- Reminded its crews to adhere to the guidelines on mooring operations contained within the MCA's Code of Safe Working Practices.

## RECOMMENDATIONS

In light of the actions taken by Briggs Marine, MAIB has not made any recommendations in this case.

## SHIP PARTICULARS

Vessel's name	<i>Forth Guardsman</i>
Flag	British
Classification society	Not applicable
IMO number/Fishing number	8301345
Type	Landing craft
Registered owner	Briggs Marine Contractors Ltd
Manager(s)	Briggs Marine Contractors Ltd
Construction	Steel
Length overall	48.46m
Registered length	47.99m
Gross tonnage	654
Minimum safe manning	6
Authorised cargo	Not applicable

## VOYAGE PARTICULARS

Port of departure	Port Askaig
Port of arrival	Moored to a buoy south of Jura
Type of voyage	Coastal
Cargo information	Cable laying
Manning	6

## MARINE CASUALTY INFORMATION

Date and time	13 March 2011, 1912 UTC
Type of marine casualty or incident	Very Serious Marine Casualty
Location of incident	55°47.4'N 006°01.3W
Place on board	Working deck
Injuries/fatalities	Fatal injuries caused by a blunt chest trauma
Damage/environmental impact	Nil
Ship operation	Mooring
Voyage segment	Arrival
External & internal environment	NNE'ly winds, force 6 Slight to moderate seas Sea temperature (estimated) 8°C
Persons on board	6