MAIB
MARINE ACCIDENT INVESTIGATION BRANCH

ACCIDENT REPORT

VERY SERIOUS MARINE CASUALTY | REPORT NO 1/2015 | JANUARY 2015

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Fatal manoverboard from the creel fishing vessel *Barnacle III* west of Tanera Beg 13 May 2014

SUMMARY

At about 1027 BST[1] on 13 May 2014, crew member Gary Forbes was dragged overboard and under water from the 11.35m creel fishing vessel *Barnacle III* as the vessel was shooting the second of two fleets of creels west of Tanera Beg, west coast of Scotland. Gary surfaced a short while later, face down, about 50 metres from the vessel. He was not wearing a PFD[2]. Despite being quickly recovered on board by the skipper, who then administered CPR[3], Gary did not survive.

The MAIB investigation concluded that Gary's right leg probably became caught in the buoy line as he was walking the fleet's end weight towards the vessel's stern, or shortly afterwards.

Although the skipper had carried out a risk assessment for the vessel's normal shooting operation, this had not been documented. Further, he had made insufficient changes to the system of work to adequately control the additional risks posed when working two fleets of creels on deck.

MSN 1813 (F)[4] sets out the *Code of Practice for the Safety of Small Fishing Vessels*, which requires risk assessments to be completed, and strongly recommends that they are written down. MGN 502 (F)[5] provides a voluntary code of practice, which recommends that PFDs and/or safety lines are worn on the open decks of fishing

[1] British Summer Time

[2] Personal Flotation Device

[3] Cardiopulmonary resuscitation

[4] Merchant Shipping Notice 1813 (F) *The Fishing Vessels Code of Practice for the Safety of Small Fishing Vessels*

[5] Marine Guidance Note 502 (F) *The Code of Practice for the Safety of Small Fishing Vessels – Standards* which can be used to prepare for your MCA Inspection

vessels at sea. Guidance has been published by Seafish[6] in its *Potting Safety Assessment*, and the MCA[7] in its 'Fishermen's Safety Guide', which specifically warns of the danger to crew members who are not separated from the running gear during shooting operations.

The MAIB has previously made recommendations to the MCA to introduce measures to make compulsory the wearing of PFDs on fishing vessels, and to ensure that *The Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997* apply irrespective of the contractual status of fishermen. These recommendations have been accepted in principle, but have yet to be completed.

The owner/skipper of *Barnacle III* has been recommended to: heed the contents of extant guidance on potting safety: re-assess the risks posed to crew members when working two fleets of creels on deck, and ensure appropriate control measures are implemented to minimise the risk to crew when shooting or recovering creels.

FACTUAL INFORMATION

Vessel

Barnacle III's **(Figure 1)** usual routine was to fish for prawns on Monday, Wednesday and Friday, and to fish for crabs on Tuesday and Thursday. Each working day, *Barnacle III* sailed early in the morning for the fishing grounds, returning during the afternoon to land the catch at Aultbea's pier. The vessel had followed this pattern and had utilised a self-shooting arrangement to deploy its creels for at least the last 15 years. Normally one fleet was worked on deck at a time. However, occasionally two fleets were worked when moving grounds.

Figure 1: *Barnacle III*

Narrative

Early on 13 May, *Barnacle III*'s skipper made the short passage from the vessel's mooring at the Isle of Ewe across to Aultbea's pier alone. At about 0555, his crew member Gary Forbes joined the vessel and, shortly afterwards, it sailed towards the fishing grounds via the skipper's pontoon in Loch Ewe. At the pontoon, Gary assisted with landing prawn creels, which had been loaded on board the vessel the previous evening, to the pontoon for drying. Once the creels were landed, the skipper navigated *Barnacle III* towards Priest Island **(Figure 2)** while Gary rested in the vessel's cabin.

At 0820, the vessel arrived off the east side of Priest Island. A fleet of 50 creels was then hauled, emptied, baited and re-shot. While working the creels, Gary wore a dark hoodie, jeans, blue bib and brace, yellow wellington boots and a back support. As usual, he opted not to wear a PFD.

[6] Seafish is a Non-Departmental Public Body (NDPB) set up to improve efficiency and raise standards across the seafood industry

[7] Maritime and Coastguard Agency

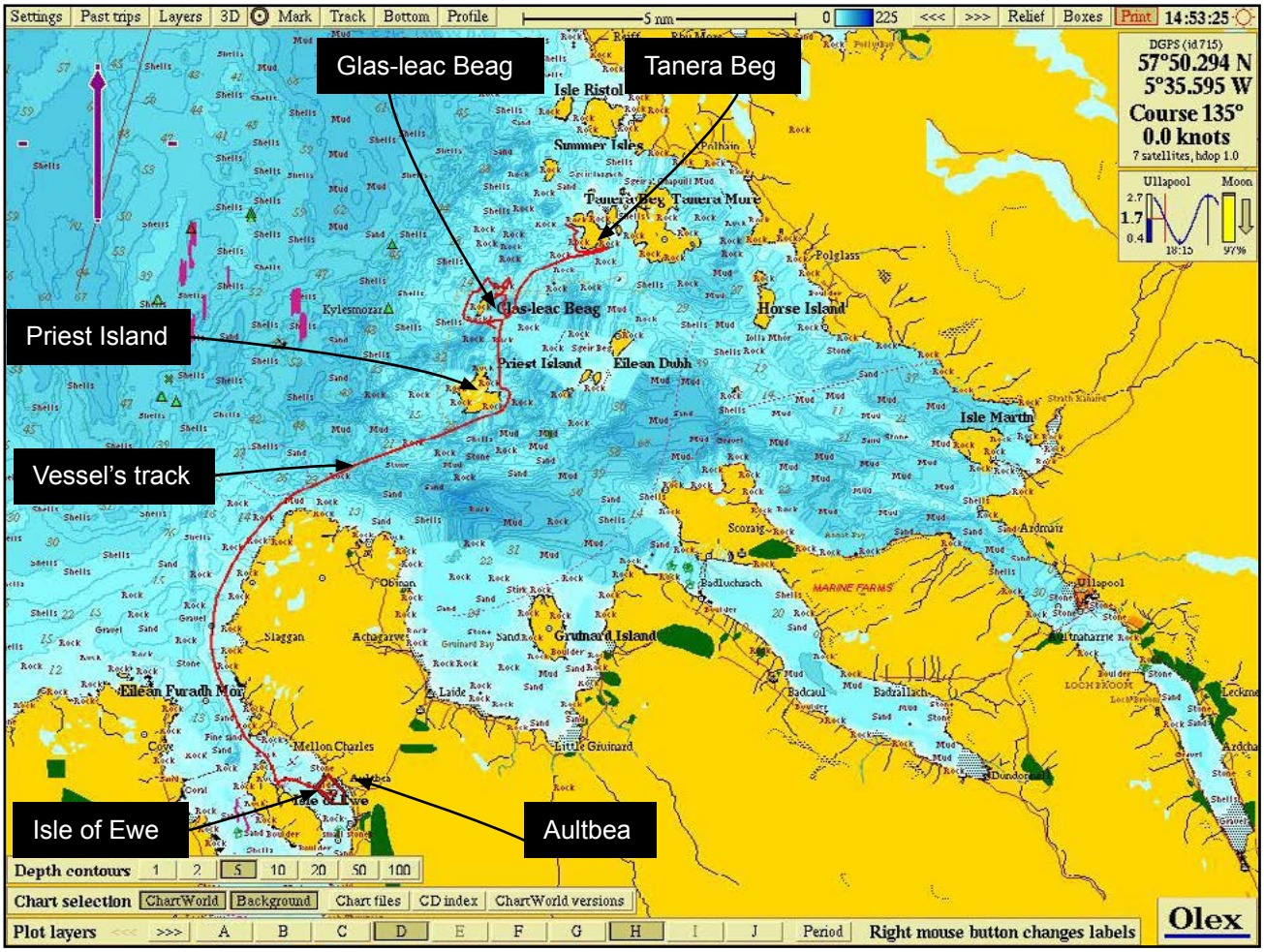

Figure 2: Olex navigation system screenshot showing an overview of *Barnacle III*'s movements on the day of the accident

Barnacle III then proceeded north to Glas-leac Beag where, at 0850, a second fleet of 50 creels was hauled, emptied, baited, and re-shot in the vicinity of the island. Two further fleets were then hauled aboard and stowed on deck in preparation for shooting in a new position near the island of Tanera Beg.

At 1016, the first of the two fleets was shot to the south of Tanera Beg **(Figure 3)**; this took about 4 to 5 minutes. The skipper then manoeuvred the vessel to the west side of the island to shoot the second fleet and, at 1023, instructed Gary to release the fleet's first weight.

As the creels deployed, Gary lifted down the upper two tiers of creels from the rows that were stacked four-high, requiring him to step across the back rope. While Gary worked the deck, the skipper remained in the wheelhouse to manoeuvre the vessel, while also glancing aft through the wheelhouse door to monitor Gary's progress.

At 1027, the vessel's VHF[8] radio DSC[9] unit received an undesignated distress alert from the fishing vessel *Astra III*. With knowledge that *Astra III* had in the past transmitted similar alerts when its wheelhouse was unmanned, the skipper took this to be a false alarm.

This distraction occupied the skipper's attention for a short while, after which he looked aft and could no longer see Gary on deck. He immediately left the wheelhouse to check the area aft of the wheelhouse, to no avail. He noticed that load was coming onto the buoy line, and that otherwise the deck was clear.

[8] Very High Frequency

[9] Digital Selective Calling

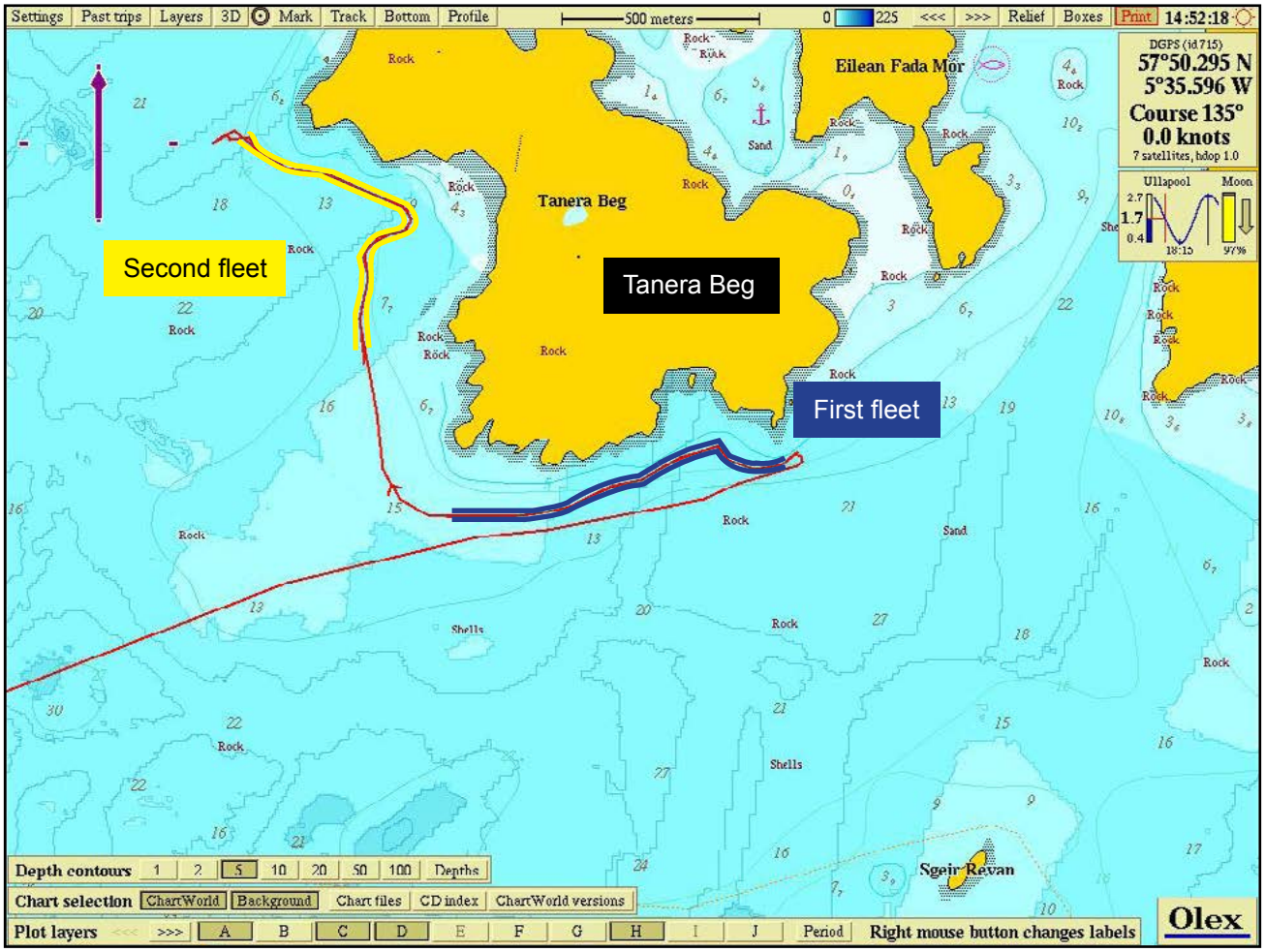

Figure 3: Olex navigation system screenshot showing positions of the two fleets shot by *Barnacle III* off Tanera Beg

The skipper then put the buoy line onto the hauler in preparation to haul the fleet, and started to turn the vessel around. Shortly afterwards, a wellington boot surfaced, and then Gary surfaced face down, about 50 metres from the vessel. The skipper quickly manoeuvred the vessel alongside Gary and recovered him on board through the shooting door. He found that Gary was not breathing and observed that his right wellington boot was missing.

At 1036, the skipper transmitted a “Mayday” message on VHF radio channel 16, which was acknowledged by Stornoway Coastguard. He then began CPR on Gary. After a short while, a number of local fishing vessels arrived alongside *Barnacle III* and their crews began assisting with CPR. At 1101, a SAR[10] helicopter arrived on scene. Gary was winched on board and taken to hospital in Stornoway, where he was pronounced deceased.

Stowage and shooting of creels

One fleet on deck **(Figure 4)**

When working one fleet of creels on deck, the creels were stacked in rows two-high, positioned so that sufficient space remained between the stack and wheelhouse to separate the crew member from the running gear when shooting.

To shoot the gear, the crew member threw the first marker buoy overboard and then released the first weight using a remote release wire operated from a position aft of the wheelhouse. As *Barnacle III* steamed slowly ahead, the tension on the back rope pulled successive creels through the shooting door

[10] Search and Rescue

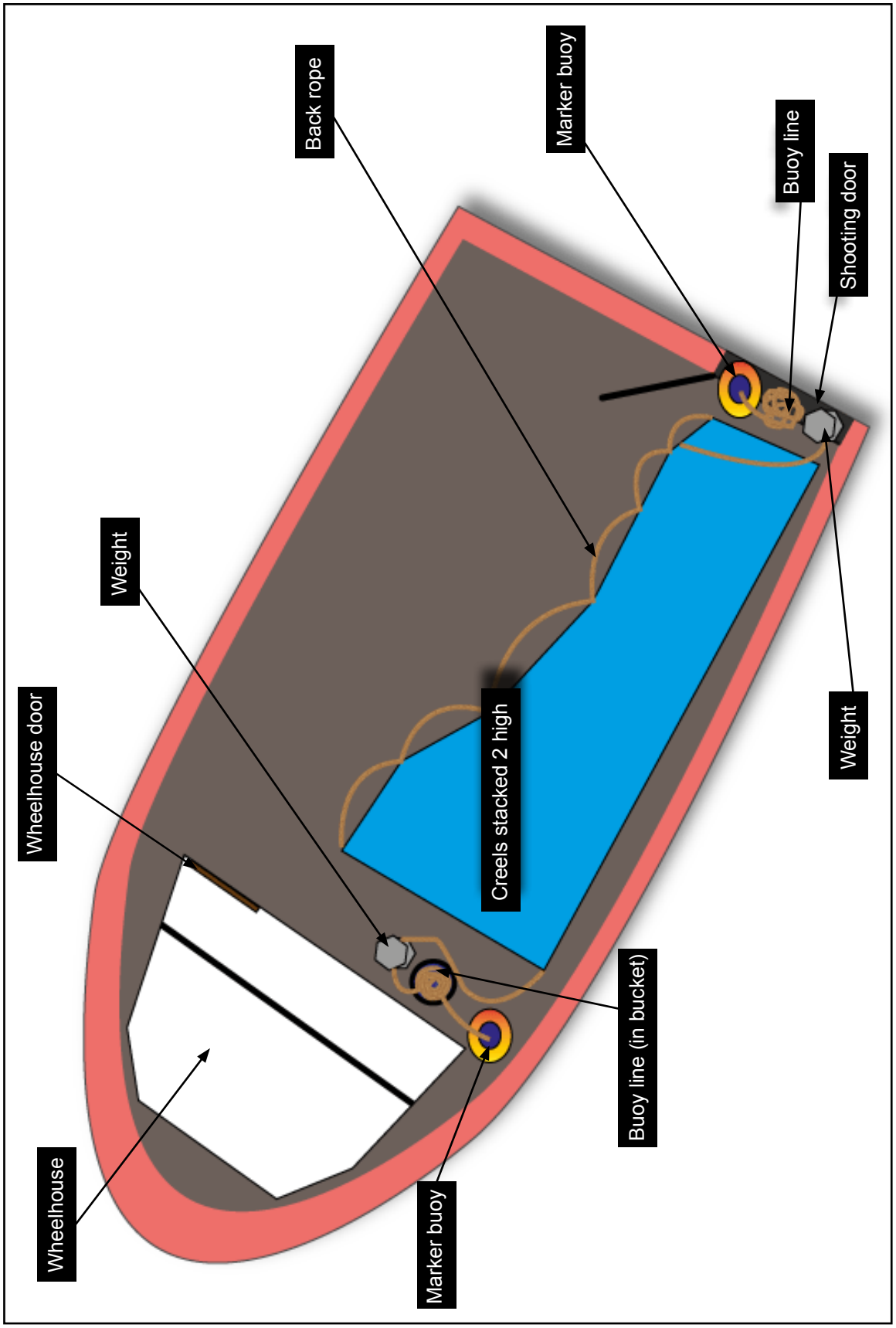

Figure 4: Illustration showing the storage of a single fleet of creels on deck of *Barnacle III*

while the crew member remained forward of the stack. Once all the creels had been shot, the crew member walked the second weight to the vessel's stern so as to prevent damage to the bulwark frames. The crew member then released the second marker buoy, which was stowed on the port side, aft of the wheelhouse. The buoy was connected to the weight by means of a line of about 80 metres in length that payed out from a bucket stowed forward on deck.

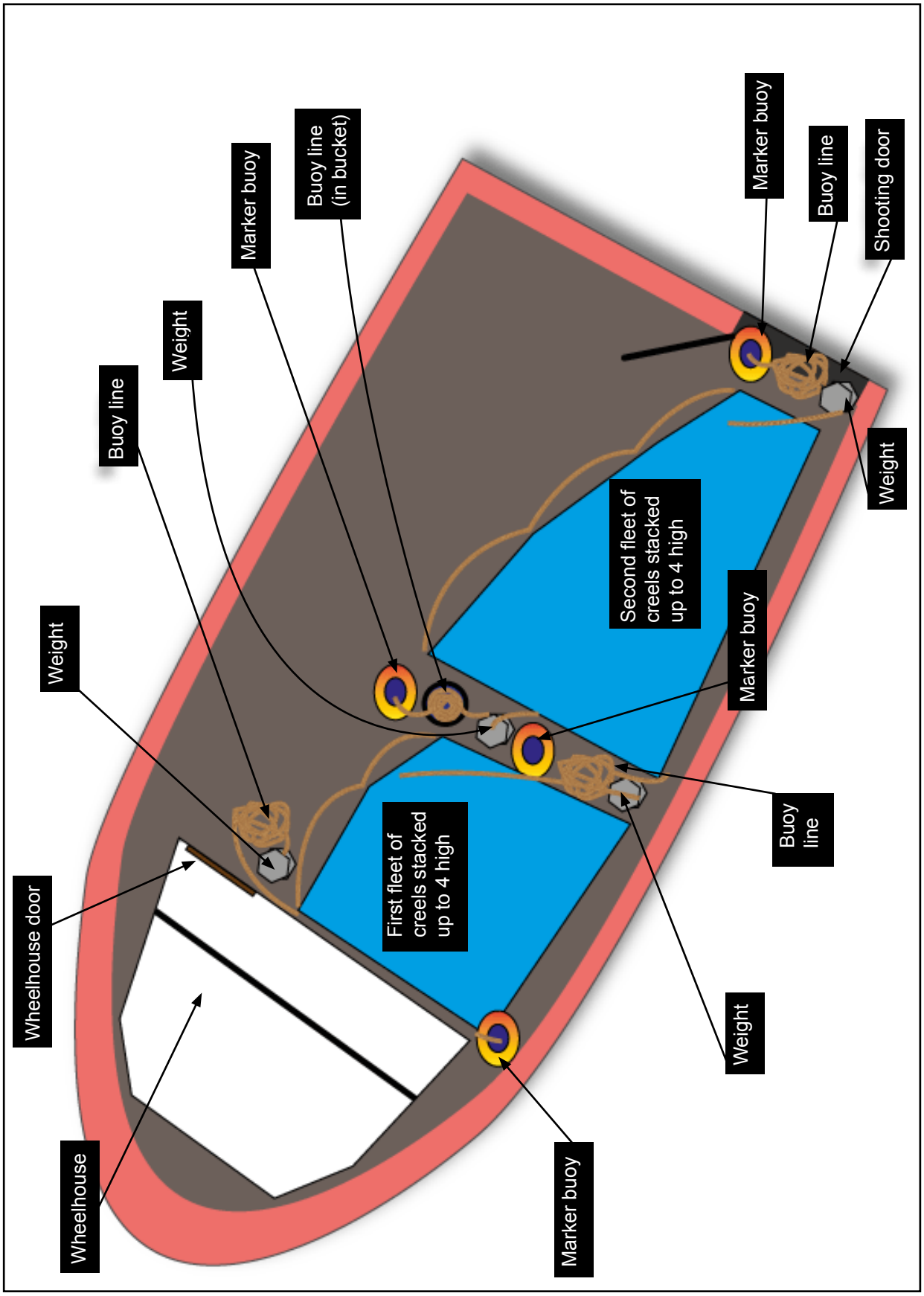

Figure 5: Illustration showing the storage of two fleets of creels on deck of *Barnacle III* (as on the day of the accident)

Two fleets on deck **(Figure 5)**

When working two fleets of creels on deck, the first fleet was stacked in three rows, two of which were four-high, immediately aft of the wheelhouse. The second fleet was then stacked in rows of up to four-high aft of the first fleet, with the stack tapered towards the shooting door.

The second fleet was shot first. The crew member threw the first marker buoy overboard and then released the first weight using the remote release. To prevent the creels becoming tangled together and deploying in a clump, the crew member had to lift down the creels stacked more than two-high, requiring him to step across the back rope. Once the creels had been shot, the crew member then walked the second weight to the vessel's stern and threw the second marker buoy overboard.

The first fleet on deck was shot in much the same way as the second, except that the second buoy line and weight were respectively coiled and stowed close to the wheelhouse door, with the second marker buoy released from its stowage position on the port side, aft of the wheelhouse.

Skipper and crew member

The skipper was 54 years old, held an unrestricted under 16.5m skipper's certificate issued by Seafish, and had completed all four mandatory safety training courses. He had been fishing since aged 16 years and had owned *Barnacle III* for 22 years.

The crew member, Gary Forbes, was 36 years old and had also completed all four mandatory safety training courses. He had been the crew member of *Barnacle III* for 15 years and was employed on a share basis[11].

Existing regulations and guidance

Regulation 5 of *The Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997* places a general duty on an employer[12] to:

> *...ensure the health and safety of workers*[13] *and other persons so far as is reasonably practicable.*

MSN 1813 (F) sets out the Code of Practice for the Safety of Small Fishing Vessels, which includes the following:

> *4.2 The Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997 require employers to make a suitable and sufficient assessment of the risks to the health and safety of workers arising in the normal course of their activities or duties. Guidance on these regulations and on the principles of risk assessment is contained in a Marine Guidance Note (currently MGN 20 M+F).*
>
> *4.5 It is not a requirement that risk assessments be written, nevertheless, the MCA strongly recommends that such assessments be written…*
>
> *4.6 The health and safety risk assessment must also be checked to ensure that it remains appropriate to the vessel's fishing method and operation. If there has been a change of fishing method or of operational practice, the assessment must be revised accordingly.*

MGN 502 (F) provides a voluntary code of practice based on MSN 1813 (F), the contents of which have been revised taking into account the findings of MAIB investigations. The following is an extract from the voluntary code:

> *4.2 The Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997 require employers to make suitable and sufficient assessment of the risks to the health and safety*

[11] Share Fisherman – A person not under a contract of service who is ordinarily employed in the fishing industry as a master or crew member of a British fishing boat manned by more than one person and is paid in whole, or part, by a share of the profit or gross earnings of the boat

[12] Employer means a person by whom a worker is employed under a contract of employment

[13] Worker means any person employed by an employer under a contract of employment, including trainees or apprentices

of workers arising in the normal course of their activities or duties. Guidance on these regulations and on the principles of risk assessment is contained in a Marine Guidance Note (currently MGN 20 (M+F)). Although share fishermen are not considered workers, it is strongly recommended that a risk assessment is done, regardless of the number of crew and their employment status.

The voluntary code of practice also recommends that PFDs and/or safety lines are worn by crew while on the open decks of fishing vessels at sea.

Potting Safety Assessment, published by Seafish, and the MCA's *Fishermen's Safety Guide* specifically warn of the danger to crew members who are not separated from the running gear when shooting creels.

ANALYSIS

On the day of the accident, two fleets of creels had been stowed on deck because they were being shifted to new grounds. The resulting system of work required Gary to step across the back rope while the creels were being shot. His right leg probably became caught in a buoy line at a time when the skipper was distracted by a DSC alert. Gary, who was not wearing a PFD, was then dragged overboard and under water, surfacing a short time later.

System of work

The main safety benefit of a self-shooting arrangement is that it keeps the crew clear of the back rope and therefore reduces the risk of them becoming caught in the running gear and being dragged overboard. With only one fleet of creels stowed on deck, the creels deployed without the need for manual intervention so it was possible for Gary to stand in a position where he did not have to step across the back rope, or buoy line, at any stage of the shooting operation. Despite this system not strictly following the recommended practice of providing a physical barrier between a crew member and the back rope, it nevertheless enabled Gary to remain separated from the running gear.

However, to prevent damage to the bulwark frames, Gary walked the end weight towards the vessel's stern after the creels had been shot. This placed him in a potentially hazardous area due to the close proximity of the buoy line. When working with one fleet, this hazard was partially mitigated by stowing the buoy line in a bucket, which reduced the risk of Gary inadvertently standing in a bight of loose line or having to cross over it.

To enable stowage and working of two fleets on deck, creels had to be stacked higher and immediately aft of the wheelhouse. This reduced the amount of free deck space and removed the separation between Gary and the running gear. Importantly, it also required him to repeatedly step across the back rope to lift down the upper tiers of creels to prevent the stack collapsing and becoming entangled, and to step across the buoy line to release the second marker buoy.

Given the length of the buoy line, the distance at which Gary surfaced from *Barnacle III* and the absence of Gary's right wellington boot, it is concluded that Gary's right leg probably became caught in the buoy line either while he was walking the weight to the vessel's stern, or shortly afterwards.

While changes had been made to the system of work to enable the stowage of a second fleet of creels on deck, insufficient changes had been made to the shooting operation to adequately control the consequent additional risks of a crew member becoming entangled in the running gear.

MAIB investigations[14] into three recent similar accidents, two of which resulted in a fatality, specifically highlighted the danger of crew members being insufficiently separated from the back rope during shooting operations.

[14] MAIB Report 22/2011 on the investigations into the loss of the skippers from the fishing vessels *Discovery* and *Breadwinner*, and MAIB Report 12/2011 on the investigation into a man overboard from the fishing vessel *Blue Angel*

Risk assessment

The skipper had completed a risk assessment. However, contrary to the advice provided in MSN 1813 (F), it had neither been written down, nor had it identified adequate control measures to address the additional risks posed when working two fleets of creels. Had a more formal process of risk assessment and review been carried out, the additional risks to the crew might have been given greater priority and a safer system of work developed. *Barnacle III* worked two fleets of creels infrequently but the chosen method of shooting had always operated without incident. This reassured the skipper that the method was safe and appropriate.

Concern that *The Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997* are not enforced on board vessels where crew are engaged on a share basis has been cited in previous MAIB investigation reports. Following its investigation into the loss of the fishing vessel *Purbeck Isle*[15], the MAIB recommended the MCA to ensure these Regulations apply in respect of all fishermen on board fishing vessels, irrespective of their contractual status. While in this case the skipper had carried out a form of risk assessment, had these Regulations in their entirety been applicable and complied with, a safer system of work would probably have resulted.

Potting Hazards

Potting Safety Assessment published by Seafish concludes with three suggested methods to reduce or eliminate the hazards of pot (creel) fishing. One method is to use rope pounds or divisions to physically separate the crew member from the back rope.

The MAIB published a *Potting Safety Message* in February 2014 that highlighted two types of accidents on potters, one of which was man overboard or injury due to the cluttered nature of the working deck when attempting to shoot additional creels. It warned that crew should ensure that they are standing in a safe area during shooting to avoid the chance of being taken overboard by running gear.

The MCA publication *Fishermen's Safety Guide* includes a section on potting and creeling that discusses the layout of working decks and advises that crew members should have a sharp knife to hand. Furthermore, it warns that familiar and repeated tasks can cause lapses in concentration, which can result in serious accidents.

The system of work when shooting two fleets of creels on board *Barnacle III* did not sufficiently separate the crew member from the running gear, in contrast to the above published advice. An option existed to remove the upper tiers of creels prior to shooting each fleet so as to remove the need for a crew member to step across the running gear. Additionally, a running board, or similar, could have been fitted inboard of the bulwark to prevent damage to the frames when the second weight was pulled across the deck.

It is uncertain whether or not Gary carried a knife. Had one been immediately available, he would have had an opportunity of cutting himself free from the running gear.

PFDs

Both the skipper and Gary had received PFDs through the Scottish Fishermen's Federation[16]. However, contrary to the recommended practice provided in MGN 502 (F), Gary did not wear his PFD because it reportedly caused irritation to his skin, and the skipper only wore his PFD when working the vessel single-handedly. When working on board together, neither the skipper nor Gary considered the risk of falling overboard while on deck at sea to be sufficiently high to warrant their wearing a PFD.

[15] MAIB Report 7/2013

[16] The Scottish Fishermen's Federation manages a PFD project funded by the European Fisheries Fund, Marine Scotland, the Scottish Fishermen's Trust, and the UK Fisheries Offshore Oil and Gas Legacy Trust Fund

While a PFD would not have prevented Gary from falling overboard, it might well have reduced the time that he was under water, and turned him into an upright position with his airway clear of the water once he had surfaced.

DSC

While acknowledging the skipper's immediate actions and quick recovery of Gary from the water, there was nevertheless a delay in Stornoway Coastguard being notified of the emergency. The potential need for immediate assistance was particularly important in this case owing to the inherent difficulty of single-handedly recovering a man overboard from the sea.

At the risk of delaying the skipper's immediate rescue effort by a few seconds, it would have been possible for him to transmit a DSC distress alert while manoeuvring *Barnacle III* towards Gary. This would have notified Stornoway Coastguard to the emergency and *Barnacle III*'s position, enabling SAR assets to be mobilised immediately. In different circumstances, such action could be critical to saving life.

The MAIB has previously highlighted the importance of early notification of an emergency to HM Coastguard in its flyer to the fishing industry, published following the loss of the fishing vessel *Achieve*[17]. Although HM Coastguard continues to monitor VHF radio channel 16, its primary means of receiving distress messages is the DSC alert system. Furthermore, a DSC alert provides responders with an accurate position that cannot be misheard or misunderstood.

CONCLUSIONS

- While changes to the method of shooting creels had been made to enable the stowage of a second fleet of creels on deck, these changes did not adequately control the consequent additional risks of a crew member becoming entangled in the running gear.

- Had a more formal process of risk assessment and review been carried out, as recommended in the *Code of Practice for the Safety of Small Fishing Vessels*, a safer system of work might have been developed.

- Had *The Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997* been applicable and complied with, a safer system of work would probably have resulted.

- Seafish's *Potting Safety Assessment*, the MAIB's *Potting Safety Message* and the MCA's *Fishermen's Safety Guide* all specifically warn of the danger to crew members who are not separated from the running gear during shooting operations.

- Had a knife been immediately available, Gary would have had an opportunity of cutting himself free from the running gear.

- Neither the skipper nor Gary considered the risk of falling overboard while on deck at sea to be sufficiently high to warrant their wearing a PFD, despite the advice contained in MGN 502 (F) and having received PFDs through the Scottish Fishermen's Federation. A PFD might well have reduced the time that Gary was under water, and it should have turned him into an upright position with his airway clear of the water once he had surfaced.

- In any emergency, it is important to notify HM Coastguard as soon as practicable. A DSC alert will transmit an accurate position and enable SAR assets to be mobilised immediately.

[17] www.maib.gov.uk/cms_resources.cfm?file=/Achieve_Flyer.pdf

ACTION TAKEN

MAIB actions

The **Marine Accident Investigation Branch** has:

Previously made recommendations to the **Maritime and Coastguard Agency**, to:

2013/108 Specify the improvement in safety culture/behavioural change that it is seeking with respect to the voluntary wearing of personal flotation devices by individuals working on the decks of fishing vessels, and the timescale within which it is to be achieved;

and

Make arrangements to rapidly introduce the compulsory wearing of personal flotation devices on the working decks of fishing vessels if the sought after changes are not delivered.

2013/203 Take action to implement Recommendation 2008/173, issued in the MAIB's 1992-2006 Fishing Vessel Safety Study, specifically by (inter alia):

- Ensuring that *The Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997* apply in respect of all fishermen on board fishing vessels, irrespective of their contractual status.

Actions taken by other organisations

The **owner/skipper of *Barnacle III*** has:

- Acquired an extra bucket to stow the additional buoy line when a second fleet of creels is worked on deck.

- Introduced a policy requiring all *Barnacle III*'s crew to wear PFDs while working on deck.

RECOMMENDATIONS

In view of the recommendations previously issued by the **Marine Accident Investigation Branch** to the **Maritime and Coastguard Agency**, which have yet to be completed, no additional recommendations have been made to the MCA in this report.

2015/101 The **owner/skipper of *Barnacle III*** is recommended to take action as follows:

1. Be guided by the contents of the advice on potting safety contained in the extant publications e.g. *Potting Safety Assessment* by Seafish and the MCA's *Fishermen's Safety Guide*.

2. Carry out a thorough written risk assessment of all systems of work employed on *Barnacle III*, including a re-assessment of risks posed to crew members when working two fleets of creels on deck.

3. Routinely review the risk assessment and ensure appropriate control measures are implemented.

SHIP PARTICULARS	
Vessel's name	*Barnacle III*
Flag	United Kingdom
Classification society	Not applicable
IMO number/fishing numbers	CY 97
Type	Creel fishing vessel
Registered owner	Privately owned
Manager(s)	Privately managed
Year of build	1985
Construction	GRP
Length overall	11.35m
Registered length	11.00m
Gross tonnage	10.66
Minimum safe manning	Not applicable
Authorised cargo	Not applicable
VOYAGE PARTICULARS	
Port of departure	Aultbea
Port of arrival	Aultbea
Type of voyage	Other
Cargo information	Fish
Manning	2
MARINE CASUALTY INFORMATION	
Date and time	13 May 2014, ~1027 BST
Type of marine casualty or incident	Very Serious Marine Casualty
Location of incident	West of Tanera Beg
Place on board	Aft deck
Injuries/fatalities	One fatality
Damage/environmental impact	None
Ship operation	Shooting creels
Voyage segment	Mid-water
External & internal environment	Fine and clear, light airs, calm sea, good visibility
Persons on board	2