MAIB
MARINE ACCIDENT INVESTIGATION BRANCH

ACCIDENT REPORT

VERY SERIOUS MARINE CASUALTY | REPORT NO 22/2016 | NOVEMBER 2016

Man overboard and subsequent loss of *Harvester* (M999) off the Pembrokeshire Coast 28 April 2016

For all enquiries:

Email: maib@dft.gsi.gov.uk
Tel: 023 8039 5500
Fax: 023 8023 2459

SUMMARY

At 1424 (BST[1]) on 28 April 2016, the 11.6 metre potter *Harvester* **(Figure 1)** grounded on rocks in Abereiddy Bay, North Pembrokeshire, and foundered a short time later. There was no indication of any crew on board at the time of the grounding. A large-scale search and rescue operation commenced and the body of Gareth Willington was recovered from the water 3 miles from where *Harvester* had foundered. He was not wearing a lifejacket or other buoyancy aid. The second crew member, Daniel Willington, has not been found despite an extensive search.

The MAIB investigation concluded that both crew members probably went overboard while shooting gear in the vicinity of Ramsey Island during the morning of 28 April.

A recommendation has previously been made to the Maritime and Coastguard Agency to make arrangements to rapidly introduce the compulsory wearing of personal flotation devices on the upper decks of all fishing vessels while at sea. No additional recommendations have been made in this report.

Figure 1: *Harvester* (M999)

[1] British Summer Time

FACTUAL INFORMATION

Background

Harvester had recently begun to fish the grounds around Ramsey Island for lobster and crab, having previously fished grounds to the south of Milford Haven. The vessel sailed early in the morning of each working day, returning during the afternoon or early evening. The catch was then transferred into keep pots, which were emptied weekly.

Harvester had 12 fleets of pots set in the waters surrounding Ramsey Island. Each fleet was approximately 1 mile long and contained between 50 and 60 pots. Owing to the very strong tidal streams in the area, the majority of the fleets could only be hauled during the slack tide periods.

On the day of the accident the wind was west-south-west Force 6-7, sea conditions were moderate to rough, and the sea water temperature was recorded as 12°C.

Narrative

At 0314 on 28 April, having loaded bait, Gareth and Daniel Willington departed from Milford Haven marina on board *Harvester* **(Figure 2)** and headed to the fishing grounds around Ramsey Island.

It was 20 miles from the marina to the fishing grounds; the journey took about 3 hours depending on tidal and weather conditions.

The crew of another fishing vessel saw *Harvester* in the vicinity of Black Rocks, to the south of Ramsey Island, at around 0930, and to the north of Ramsey Island later in the morning.

The skipper of a passenger tour vessel saw *Harvester* to the north of Ramsey Island at around 1030 **(Figure 3)**.

A fishing vessel skipper and the crew of another passenger tour boat later sighted *Harvester* off St David's Head.

Image courtesy of Milford Haven Port Authority

Figure 2: *Harvester* about to leave Milford Docks at 0314 on 28 April

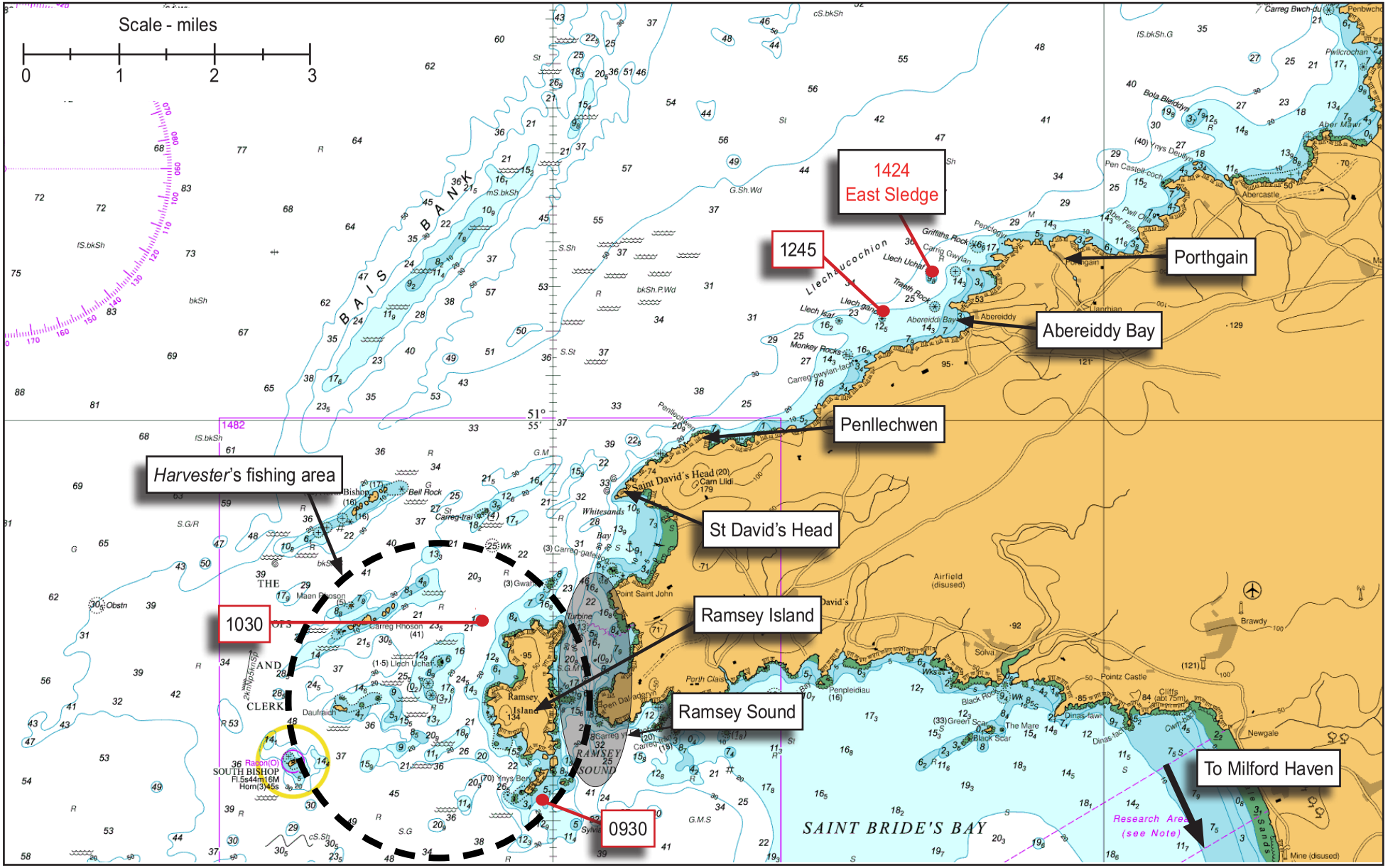

Figure 3: *Harvester* fishing grounds and witness sightings
(note: all positions approximate)

Harvester was seen from the shore to the west of Abereiddy Bay at 1245. The vessel approached and then slowly entered the bay. There were no sightings of any persons on board.

At 1345, a local resident, whose house overlooked the bay, noticed *Harvester* in the bay. He was surprised to see a vessel that he did not recognise in the area. Using binoculars he monitored the vessel and, after around 30 minutes, he became concerned. He telephoned a friend, a local fisherman, who then came to the house to observe. As he arrived, *Harvester* grounded on the East Sledge rock.

The local fisherman left immediately and, with the boat's owner and his son, proceeded on board *Onward* from Porthgain harbour towards East Sledge.

From 1424, several witnesses made telephone calls reporting the incident to the coastguard and to the police and, at 1429, St David's lifeboat was tasked. Initially one of the station's all-weather lifeboats (ALB) and its inshore lifeboat (ILB) were launched. The station's second ALB was launched later. Coastguard helicopter R187 was tasked from St Athan.

At 1451, *Onward* arrived on scene to find *Harvester* aground on East Sledge with its engine still running. *Harvester* began to break up soon afterwards. Initially the bow section detached and fell forward with the stern section of the hull remaining on the rock **(Figure 4)**. Buoys and debris from the wreckage began to disperse into the water surrounding the vessel. *Onward*'s crew did not see any crew members on *Harvester*. The stern section began to break up on the rock soon after the St David's ILB arrived on scene.

At 1456, Fishguard's ALB was tasked to assist. Coastguard coast rescue teams were deployed to begin searching along the shoreline in the vicinity as debris began to wash ashore.

At 1800, R187 located Gareth Willington in the water close to Penllechwen **(Figure 3)**. Gareth was winched on board and transferred to hospital, where he was pronounced deceased. The postmortem examination indicated that Gareth had died as a result of asphyxiation due to drowning.

Angle ALB was launched, and five RNLI lifeboats and the helicopter continued to search the area. There was no sign of Daniel.

Wreckage from *Harvester* spread extensively; a GRP[2] section of the vessel's bow was recovered on the shore on 29 April, in Ramsey Sound **(Figure 3)**, 8.5 miles from the grounding position.

Image courtesy of St David's RNLI

Figure 4: *Harvester* aground on East Sledge

[2] Glass Reinforced Plastic

Manning

Harvester was crewed by father and son Gareth and Daniel Willington. Daniel was a part-owner of the vessel in partnership with a friend and together they formed the D+N Fishing Company. Prior to the accident, Daniel's friend had ceased his involvement in the business and he no longer helped crew the vessel.

Gareth Willington was 59 years old and a career fisherman. He held an unrestricted under 16.5m skipper's certificate and had completed all of the mandatory UK fishing vessel safety training courses.

Daniel Willington was 32 years old and a career fisherman. He had previously worked on fishing boats in Scottish waters but in recent years had fished locally. He held a restricted under 16.5m skipper's certificate and had completed all of the mandatory UK fishing vessel safety training courses. Daniel and his fishing partner had purchased *Harvester* in 2014.

Recovery of gear

Four local fishing vessels spent the 3 days following the accident continuing the search for Daniel, and locating and recovering some of *Harvester*'s fishing gear.

The exact number and the location of the fleets of pots was known only to Gareth and Daniel. *Harvester* was fitted with AIS[3] but it had been turned off on the day of the accident in accordance with what had become normal practice while fishing. The local inshore fishing fleet scoured the area that *Harvester* was known to be fishing at the time and recovered and landed ashore 12 fleets of pots.

One fleet of pots located to the south of Black Rocks was fouled in rough ground and the back rope had parted. On another fleet of pots, located to the west of Ramsey Island, the back rope was also found parted and it appeared that at least one of the rope's three strands had been cut **(Figure 5)**.

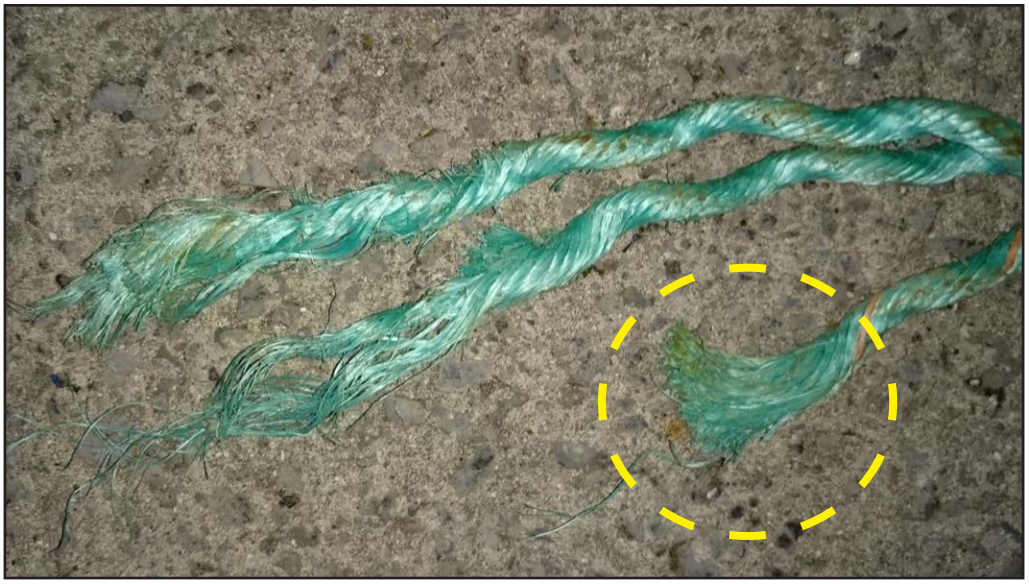

Figure 5: Broken back rope, indication that at least one strand had been cut

Vessel details

Harvester was built in 1993 of GRP construction. The vessel had a forward wheelhouse, accessed via an aft doorway from a flush working deck. A large opening was situated in the starboard side of the transom bulwark through which pots were deployed during shooting operations **(Figure 6)**. A hydraulic hauler used for recovering the pots was situated on the starboard side aft of the wheelhouse. There was a sorting table aft of the hauler. Plywood boards had been fitted to the bulwark guardrails to provide the crew working on deck with some protection from the elements.

[3] Automatic Identification System

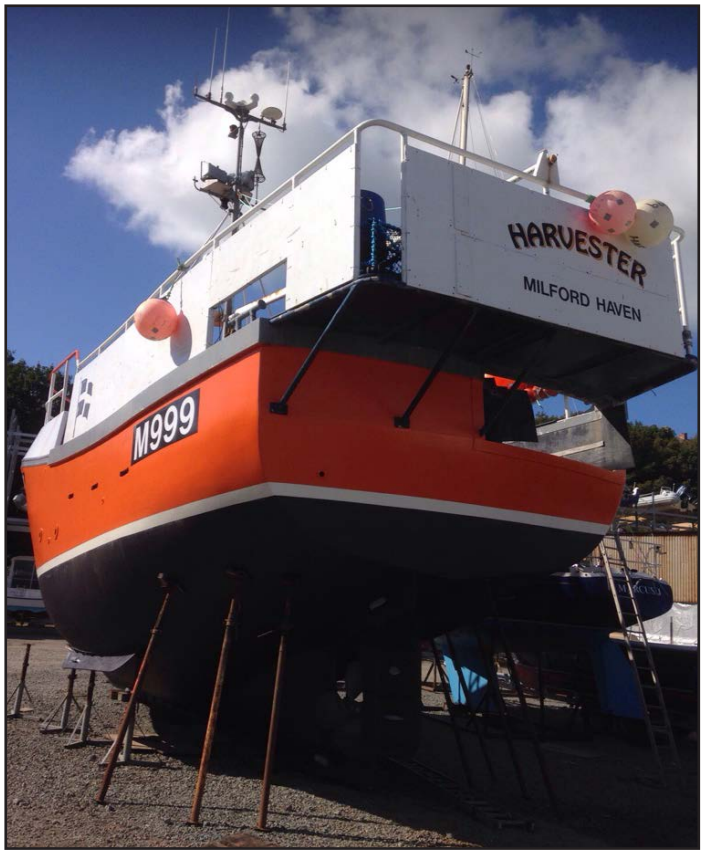

Figure 6: Opening in transom

Below deck there was a cabin and galley forward that were accessed from the wheelhouse. The engine room was accessed from the cabin. There was a generator in an aft machinery space that could be accessed through a hatch in the working deck.

Between the engine room and the aft machinery space was a 5t vivier[4] tank, which is believed not to have been in use at the time of the accident.

Presumed system of work

The precise system of work on board *Harvester* on the day of the accident is not known. However, the following assumed system of work is based on the vessel's layout and reported past practices.

While hauling pots, it was normal for Gareth to manoeuvre the vessel and operate the hauler from controls on the starboard aft bulkhead of the wheelhouse. Daniel was stationed by the sorting table. As each pot in the fleet was hauled, its catch was removed and stored in containers on the working deck. The pot would then be rebaited and stacked on the port side of the deck. There was sufficient space on the port side of *Harvester* to stack 60 pots in two rows, each three pots high, ready for shooting.

While shooting pots, Gareth was in the wheelhouse. The back rope was coiled on the working deck aft of the wheelhouse access door. Daniel was stationed on deck, ensuring the pots ran freely **(Figure 7)**.

To shoot the gear, Daniel threw overboard a marker buoy and then a weight, which was made from heavy gauge chain links. As *Harvester* steamed slowly ahead, tension on the back rope pulled successive pots through the transom opening. Daniel manhandled the highest tier of pots down onto the working deck as they were being shot to prevent damage to the deck. Once the fleet of pots had been shot, he deployed a second weight and then a second marker buoy.

Potting hazards

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 pots. 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 *Potting Safety Assessment* published by Seafish concludes with three suggested methods to reduce or eliminate the hazards of pot fishing.

- Rope pounds or divisions to physically separate the crew member from the back rope.
- Detachable pots using a loop and toggle system, allowing the crew to work the gear in a controlled fashion while still being separated by a barrier from the gear.
- Self-shooting systems, which do not require manual intervention.

[4] A vivier tank is a tank that is filled with sea water that is kept flowing through the tank, allowing shellfish kept in the tank to remain alive.

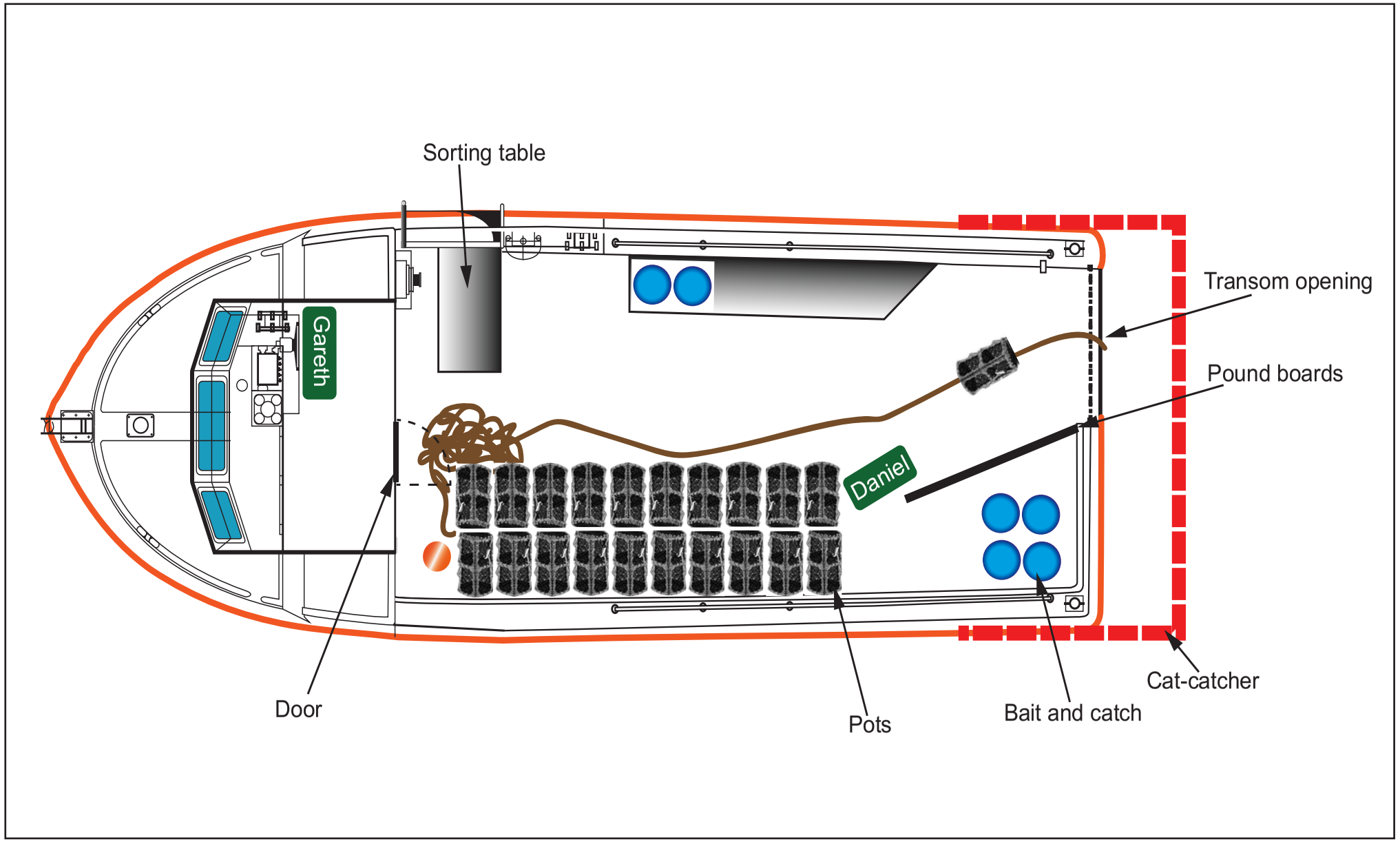

Figure 7: *Harvester* assumed shooting arrangement

The Maritime and Coastguard Agency (MCA) publication *Fishermen's Safety Guide* includes a section on potting 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.

Personal Flotation Devices

Closed Circuit Television recording indicates that when *Harvester* sailed from Milford Haven neither Gareth nor Daniel was wearing a personal flotation device (PFD). When Gareth was recovered from the water following the accident he was not wearing a PFD. Evidence suggests that it was not the practice for Gareth and Daniel to wear a PFD when fishing, and there is no evidence that either of them had taken the opportunity to receive a free 'Mullion Compact 150 Newton' PFD during a recent initiative supported by the European Fisheries Fund.

MGN 502 (F)[5] provides a voluntary code of practice for the safety of small fishing vessels, which recommends that PFDs and/or safety lines are worn by crew on the open decks of fishing vessels at sea.

Cold water immersion

There are typically three distinct effects of immersion in very cold water:

- Cold shock, or the sudden lowering of the skin temperature immediately upon entering cold water (less than 15°C) sets in within 30 seconds and lasts 2 to 3 minutes. Cold shock can cause a gasp reflex followed by rapid, uncontrolled breathing and often results in the casualty drowning quickly due to inhalation of water.
- Functional incapacitation caused by cooling of the muscles and nerve ends that onsets within 2 to 15 minutes, resulting in the casualty being unable to perform acts of self-preservation.
- Hypothermia, that occurs when the body temperature drops 2°C below the normal temperature of 37°C, which can occur after as little as 15 to 30 minutes.

Alerting

There was no alarm raised from *Harvester* during this accident. The vessel was fitted with a VHF[6] radio that had a DSC[7] function. Both Gareth and Daniel had a mobile phone on board. However, neither of them carried a personal locator beacon (PLB).

The MCA is currently developing The Code of Practice for the Safety of Fishing Vessels of Less Than 15 Metres Length Overall. In 2015, it issued to the fishing industry for consultation a draft of the code, which incorporated the voluntary requirements currently detailed in MGN 502 (F). The draft code, the final version of which is expected to be published in October 2016, recommends the carriage of PLBs.

Automatic Identification System

Although *Harvester* was fitted with AIS, it was turned off on the day of the accident, as is quite common practice on small fishing vessels whose skippers do not wish to broadcast where they are fishing.

The Merchant Shipping (Vessel Traffic Monitoring and Reporting Requirements) Regulations 2004, as amended, require fishing vessels of more than 15m length overall that operate in UK waters, land at a UK port or are registered in the UK to carry and operate AIS at all times except in the interests of safety or security. There is no such requirement for fishing vessels of up to 15m length overall.

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

[6] Very High Frequency

[7] Digital Selective Calling

Previous accidents

The MAIB has investigated numerous accidents where fishermen have fallen or been carried overboard while shooting pots. Examples include:

Annie T: At approximately 1325 (BST) on 4 October 2015, a crewman from the 9.15m potter *Annie T* was carried overboard by the fishing gear when his foot became caught in the bight of a rope. He was not wearing a PFD at the time of the accident and by the time the skipper had recovered him on board he was unconscious and showed no signs of life.

Barnacle III: At about 1027 (BST) on 13 May 2014, a crewman was dragged overboard and underwater 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. The crewman surfaced a short while later, face-down, about 50 metres from the vessel. He was not wearing a PFD. Despite being quickly recovered on board by the skipper, who then administered CPR[8], the crewman did not survive.

Blue Angel: At 1248 (UTC[9]) on 6 January 2011, a fisherman on board the 8.24m potter *Blue Angel* was dragged overboard when his leg became caught in the back rope of a fleet of pots that was being shot over the stern. He was submerged for several minutes at a depth of up to 40 metres before the two remaining crew members managed to get him back on board and administer first-aid.

Noronya: At 0310 (UTC) on 9 October 2010, a crewman on an 18m crabber leg became caught in a bight of the back rope as the vessel was shooting pots and he was dragged over the side. He was not wearing a PFD and he was never found.

Purbeck II: At 0843 (UTC) on 7 June 1999, a crew member on the 11m potting vessel was dragged overboard when a bight of back rope caught around his neck. Fortunately, he made a full recovery after being retrieved from the water.

ANALYSIS

Likely sequence of events

While the events that led to *Harvester* grounding on rocks in Abereiddy Bay cannot be accurately determined, available evidence suggests that the vessel was unmanned at the time of the grounding and subsequent foundering.

Harvester normally fished grounds to the west of Ramsey Island and around the island itself, and the vessel was seen fishing in this area by other vessels on 28 April.

Following the accident, no fishing gear belonging to *Harvester* was found between the normal grounds and Abereiddy Bay. It is therefore concluded that *Harvester* was not involved in fishing operations when it was sighted off St David's Head. The weather conditions at the time rule out other possible activities such as prospecting or mapping new fishing grounds.

Given the findings of previous accidents involving potters that have been investigated by the MAIB, it is probable that an accident occurred while shooting a fleet of pots. It is also likely that, whatever occurred, Gareth and Daniel went overboard in quick succession as *Harvester* remained in gear and no alarm was raised from the vessel.

[8] Cardiopulmonary Resuscitation

[9] Universal Co-ordinated Time

With no PFDs worn, a sea water temperature of only 12°C, moderate to rough sea conditions, and no alarm having been raised, Gareth and Daniel's chances of survival were low.

A likely scenario is that Daniel, who would probably have been on deck, became entangled in the back rope as a fleet was being shot. Gareth could then have left the wheelhouse to assist Daniel, resulting in both men going overboard through the large opening in the transom.

One of *Harvester*'s fleets of pots, recovered to the west of Ramsey Island, had a parted back rope. While it is unknown if Daniel or Gareth had access to a sharp knife, there is evidence to suggest that an attempt had been made to cut the rope to free one or both of them.

Potting safe system of work

While shooting pots, it is not unusual for the gear to become tangled and move in unexpected ways across the deck. Therefore, crew remaining on deck but not physically separated from the gear as it is being shot is inherently dangerous and, in accordance with published advice, should be avoided. The presumed system of work for shooting pots on *Harvester* did not sufficiently separate Daniel from the running gear to prevent the accident.

The principle of separating personnel from moving gear is fundamental to crew safety on potting vessels and is emphasised in safety publications from Seafish, the MCA and the MAIB. *Harvester*, with its stern shooting port, was designed for self-shooting. However, the practice of man-handling the weight and pots during shooting prevented the crew from adhering to this safer method of working which would have separated them from the running gear.

Owners and skippers of potting vessels must take responsibility and ensure that a safe system of work is put in place, with vessels modified as required, to ensure adequate separation from running gear during shooting operations.

PFDs

The MAIB has investigated several fatal accidents where the casualty had been in the water for a very short time, but did not survive due to the effect of cold water shock. A PFD keeps the casualty afloat and can prevent the inhalation of water both during the initial gasp reflex and subsequently. Furthermore, the buoyancy afforded by a PFD allows the casualty to remain still, conserving energy and significantly reducing the cardiac workload that will be experienced before a casualty is recovered from the water.

Analysis of almost 25 years of data shows that 88% of commercial fishermen who drowned were not wearing a lifejacket or PFD when they fell into the water. Further, MAIB statistics show no downward trend in the number of drowning deaths of commercial fishermen despite, since 2013, a major initiative promoting the benefits of wearing a PFD.

The benefits of wearing PFDs on the exposed decks of fishing vessels are incontrovertible. Further, since initiatives to effect a voluntary change – safety culture have proved ineffective, the wearing of PFDs should be made mandatory.

Other safety issues

The benefit of a PLB is that it is small enough to be carried on a person and be immediately available at all times. It is therefore a very useful additional means of raising the alarm in an emergency, particularly if no one is left on board and the only other means of raising the alarm remains on the vessel.

An historical AIS track of the vessel's movements would have been particularly valuable to those involved in the initial search and rescue operation. It would also have been valuable to investigators in trying to ascertain *Harvester*'s movements throughout the day, and might well have enabled the exact accident location to be identified.

CONCLUSIONS

- It has not been possible to determine the exact sequence of events that led to *Harvester* grounding on East Sledge rock in Abereiddy Bay. However, it is probable that an accident occurred earlier in the day while shooting a fleet of pots in the vicinity of Ramsey Island.

- No alarm was raised from *Harvester* following the accident and the vessel was unmanned when it eventually ran aground.

- A likely scenario is that Daniel became entangled in the back rope and Gareth came to his assistance, resulting in both men going overboard. It is apparent that an attempt might have been made to cut the back rope to free one or both of them.

- The presumed system of work for shooting pots on *Harvester* did not sufficiently separate Daniel from the running gear to prevent the accident.

- A PLB is a very useful additional means of raising the alarm, particularly if no one is left on board and the only other means of raising the alarm remains on the vessel.

- Neither crew member was wearing a PFD at the time of the accident. The benefits of wearing PFDs on the exposed decks of fishing vessels are incontrovertible.

- *Harvester*'s AIS was switched off at the time of the accident. An historical track of the vessel's movements would have been particularly valuable to those involved in the initial search and rescue operation.

ACTION TAKEN

The **Marine Accident Investigation Branch** has:

- Following its investigation of the fatal man overboard accident involving *Annie T* on 4 October 2015[10], made a recommendation to the **Maritime and Coastguard Agency** to:

  2016/146 Prioritise the introduction of legislation that will require the compulsory wearing of personal flotation devices on the working decks of all fishing vessels while at sea.

  2016/147 Issue guidelines regarding manoverboard recovery equipment for fishing vessels under 15m in length.

- Published a safety flyer to disseminate the main lessons to be learned from this accident to the fishing industry.

RECOMMENDATIONS

In view of the action already taken, no recommendations have been made in this report.

[10] Report No. 21/2016

SHIP PARTICULARS	
Vessel's name	*Harvester*
Flag	United Kingdom
Classification society	Not applicable
IMO number/fishing numbers	M999
Type	Fishing Vessel
Registered owner	D+N Fishing Company
Manager(s)	Not Applicable
Year of build	1993
Construction	Glass Reinforced Plastic
Length overall	11.60m
Registered length	11.60m
Gross tonnage	27
Minimum safe manning	Not applicable
Authorised cargo	Not applicable
VOYAGE PARTICULARS	
Port of departure	Milford Haven
Port of arrival	Milford Haven (Intended)
Type of voyage	Coastal fishing
Cargo information	Not applicable
Manning	Two
MARINE CASUALTY INFORMATION	
Date and time	28 April 2016, 1424
Type of marine casualty or incident	Very Serious Marine Casualty
Location of incident	Off Abereiddy Bay, Pembrokeshire
Place on board	Unknown
Injuries/fatalities	One fatality, one missing
Damage/environmental impact	Vessel lost
Ship operation	Fishing
Voyage segment	Mid-water
External & internal environment	Wind: west south-west, Force 6-7 Seas moderate to rough Visibility good
Persons on board	Two