

Report on the investigation of
the loss of a crewman from the fishing vessel

***St Amant* (BA 101)**

off the coast of north-west Wales

on 13 January 2012



Extract from
The United Kingdom Merchant Shipping
(Accident Reporting and Investigation)
Regulations 2012 – Regulation 5:

“The sole objective of the investigation of an accident under the Merchant Shipping (Accident Reporting and Investigation) Regulations 2012 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

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GLOSSARY OF ABBREVIATIONS AND ACRONYMS

ALB	-	All Weather Lifeboat
C	-	Celsius
CM	-	Consultative Maritime (an MCA filing reference)
DfT	-	Department for Transport
DoT	-	Department of Trade
DSC	-	Digital Selective Calling
FIFG	-	Financial Instrument for Fisheries Guidance
FISG	-	Fishing Industry Safety Group
FVSO	-	Fishing Vessel Safety Officer
ILO	-	International Labour Organization
kg	-	kilogram
LBP	-	Length Between Perpendiculars
LOA	-	Length Overall
m	-	metre
MCA	-	Maritime and Coastguard Agency
MGN	-	Marine Guidance Note
mm	-	millimetre
MRCC	-	Maritime Rescue Co-ordination Centre
MSF	-	Marine Survey Form
MSN	-	Merchant Shipping Notice
NAO	-	National Audit Office
nm	-	nautical miles
OAN	-	Operational Advice Note
PFD	-	Personal Flotation Device
PLB	-	Personal Locator Beacon
RAF	-	Royal Air Force

RNLI	-	Royal National Lifeboat Institution
SAR	-	Search and Rescue
SCOTNI	-	Scotland and Northern Ireland
Seafish	-	Sea Fish Industry Authority
SFF	-	Scottish Fishermen's Federation
SI	-	Statutory Instrument
SIAS	-	Ship Inspection And Survey
SOLAS 1974	-	International Convention for the Safety of Life at Sea 1974, as amended
SRC	-	Short Range Certificate
UK	-	United Kingdom
UKFVC	-	United Kingdom Fishing Vessel Certificate
UTC	-	Universal Co-ordinated Time
VHF	-	Very High Frequency

Times: All times in this report are UTC unless otherwise stated

SYNOPSIS



During the early hours of 13 January 2012, the 17.8m long scallop dredger *St Amant* was proceeding from Holyhead towards its intended fishing grounds in Cardigan Bay. Between about 0045 and 0145 (UTC), one of the vessel's deckhands, Steven Robertson, was lost overboard. The accident was not seen by any of the other crew members, and Steven was not discovered to be missing until around 0200. Despite an extensive air and sea search, involving a Royal Air Force rescue helicopter, five Royal National Lifeboat Institution lifeboats, various commercially-operated vessels and a police helicopter, Steven could not be found.

Limited witness and physical evidence prevented the MAIB from establishing the exact causes and circumstances of the accident. However, it was considered most likely that Steven fell over the vessel's aft bulwarks, probably while in the process of relieving himself overboard. It was also possible that he tripped or slipped on part of the fishing gear or equipment that was stowed on the deck. He was not wearing a personal flotation device or a personal locator beacon when he fell overboard.

The investigation established that the vessel had been given an exemption from complying with the minimum bulwark height requirements contained in the Fishing Vessel (Safety Provisions) Rules 1975. The arrangement of *St Amant* that led to the initial decision to grant the exemption had not been reviewed in accordance with the Maritime and Coastguard Agency's procedures, meaning that parts of the vessel's bulwarks were less than the minimum statutory height. The investigation also found that a large proportion of the deficiencies which had been identified during previous surveys and inspections of *St Amant*, had never been confirmed as rectified.

The condition and the standard of housekeeping on board *St Amant* at the time of the accident were found to be poor. The large number of deficiencies that were identified during various Maritime and Coastguard Agency surveys and inspections indicated that *St Amant*'s owner, skipper and crewmen had an extremely poor attitude to establishing and maintaining a safe working environment on board the vessel. The written risk assessments for the operation of the vessel were also found to be inadequate; precautions which might have prevented this accident were not put into practice.

The owner of *St Amant* has been recommended to take action to improve both the safety of the working practices on board and the hazard awareness of the vessel's crew. Recommendations have also been made to the Maritime and Coastguard Agency to review and clarify aspects of its survey and inspection policy for fishing vessels. These include procedures for the review and deletion of exemptions; the management of outstanding deficiencies; and the introduction of a policy and procedure for conducting detailed inspections of fishing vessels following serious accidents.

SECTION 1 - FACTUAL INFORMATION

1.1 PARTICULARS OF *ST AMANT* (BA 101) AND ACCIDENT SHIP PARTICULARS

Vessel's name	<i>St Amant</i>
Flag	United Kingdom (UK)
Classification society	Not applicable
Fishing numbers	BA 101
Type	Scallop dredger
Registered owner	Nightvalley Limited
Manager(s)	Managed by the skipper
Construction	Steel
Length overall	17.83m
Registered length	15.88m
Gross tonnage	57
Minimum safe manning	Not applicable
Authorised cargo	Not applicable

VOYAGE PARTICULARS

Port of departure	Holyhead
Port of arrival	Fishing grounds
Type of voyage	Coastal
Cargo information	None
Manning	4

MARINE CASUALTY INFORMATION

Date and time	13 January 2012 between about 0045 and 0145 (UTC)
Type of marine casualty or incident	Very Serious Marine Casualty
Location of incident	Off the coast of north-west Wales
Place on board	External deck
Injuries/fatalities	One fatality
Damage/environmental impact	Not applicable
Ship operation	In passage
Voyage segment	Transit
External & internal environment	Force 3 winds; calm seas with a slight swell; good visibility; sea temperature 8°C; air temperature between 4°C and 6.8°C.
Persons on board	4



St Amant

1.2 BACKGROUND

St Amant was a UK-registered scallop dredger with a length overall (LOA) of 17.8m as depicted at **Figure 1**. The vessel's general arrangement is shown at **Figure 2**. Although *St Amant*'s home port was Kirkcudbright in the south-west of Scotland, the crew of four generally worked on board the vessel for up to 10 days, operating from various ports around the UK coastline. In late 2011, the vessel had been operating off the west coast of Scotland and had returned to Kirkcudbright for the Christmas and New Year holiday period.

While at the fishing grounds, the vessel would undertake continuous dredging operations, with breaks to land the catch ashore every 3 to 4 days. Each tow normally took around 2½ hours; having recovered and re-deployed the fishing gear, the crew spent up to a further 15 minutes on deck dealing with the catch. The skipper and mate each worked a daily routine of 17 hours on duty, followed by 7 hours rest. The skipper normally remained on watch in the wheelhouse from 0700 until midnight, with the mate working from around 1400 to 0700. The mate either assisted the two deckhands dealing with the fishing gear and catch, or kept watch for the skipper in the wheelhouse. The deckhands worked throughout the time the vessel was at sea, resting only during the tows or while the vessel was on passage to or from the fishing grounds.

1.3 ENVIRONMENTAL CONDITIONS

At the time of the accident there were north-westerly 8-10 knot winds and relatively calm seas with a slight swell of between 0.5m to 1.0m. Visibility was good; it was dark, with a moonlit sky. Low water was predicted for 1824 (UTC) at Holyhead on 12 January 2012, with high water at 0034 the following morning. Sunrise was at 0828 on 13 January.

The sea water temperature was about 8°C. The air temperature around the likely time of the accident was between 4°C and 6.8°C.

1.4 NARRATIVE

1.4.1 Events prior to the accident

St Amant departed Kirkcudbright on 8 January 2012 and proceeded south towards the coast of Wales. Four crew members were on board, comprising the skipper, mate, an engineer/deckhand and the deckhand, Steven Robertson.

In the early hours of 9 January, with the vessel to the north-east of Anglesey, the crew commenced dredging for scallops. They continued to do so in winds of up to force 5-6 until the early hours of 12 January. With the weather conditions worsening, the skipper decided to proceed into a nearby bay for shelter. One side of the vessel's scallop dredging gear was deployed to anchor the vessel, and all four crew went to their beds to rest for around 6 hours.

Dredging was recommenced at 0820 on 12 January and, after a successful tow, *St Amant* started to proceed towards Holyhead at around 1100. The skipper navigated while the other three crew men rested in their bunks.



Figure 1: *St Amant* following this accident

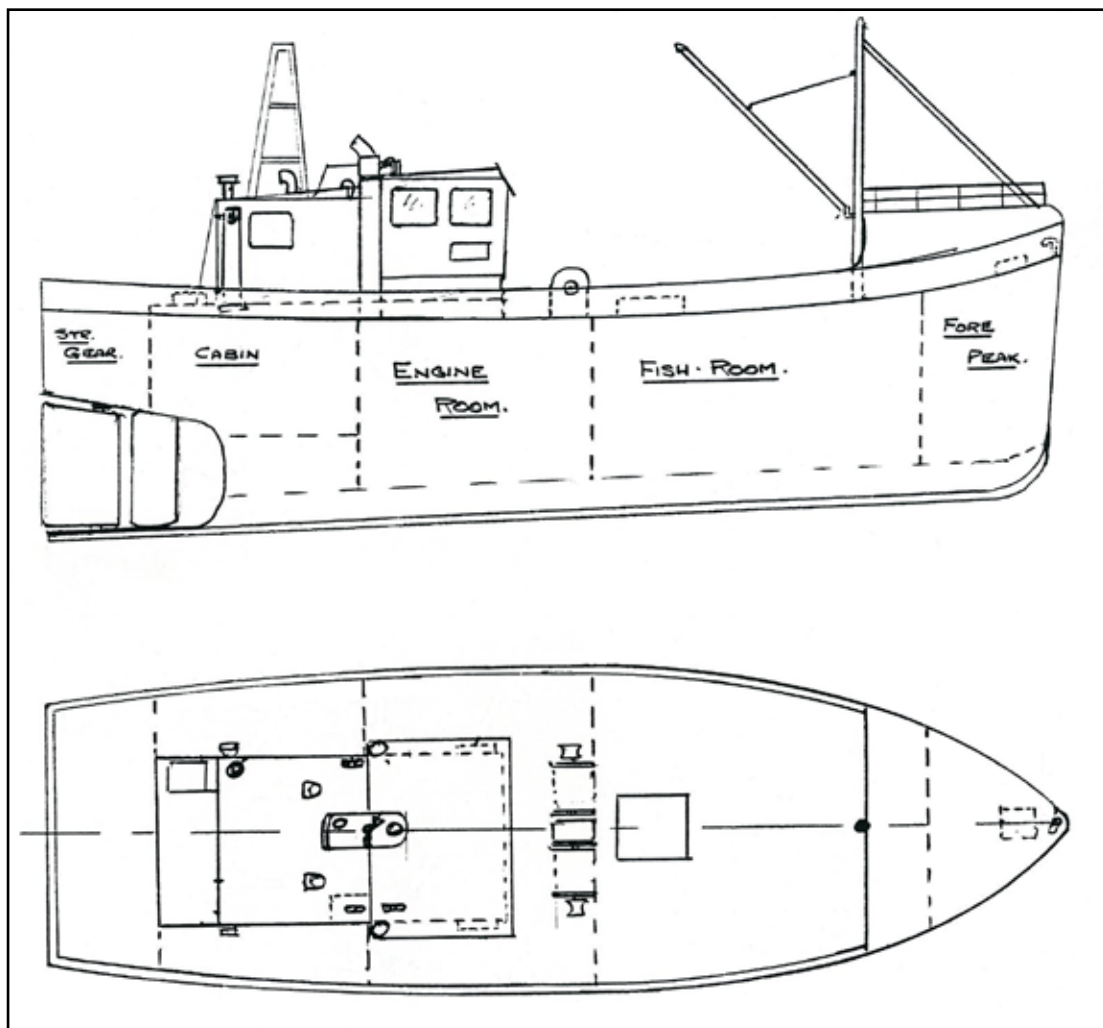


Figure 2: General arrangement of *St Amant* at time of accident

Just after 1400, *St Amant* arrived alongside at Holyhead, and the crew undertook some minor maintenance to the fishing gear while waiting for the arrival of a lorry to collect the catch. By about 1530 the crew had completed landing the bags of scallops into the lorry and they then took on fresh water. All four crew then departed the vessel shortly after 1600 to buy provisions at a nearby supermarket. Steven returned to the vessel by taxi with the provisions, while the other crew continued shopping before walking back to the vessel.

The skipper's intention was to sail to new grounds in Cardigan Bay, off the west coast of Wales. He decided to delay their departure until about 2330, around an hour before high water, in order to take advantage of the predicted southerly tidal flow off the coast.

Between about 1830 and 1900, the four crewmen walked to a nearby public house, where they each consumed an estimated 2-4 pints of lager over the course of the evening. Steven spoke to his girlfriend using another of the crew's mobile telephones (his own telephone had no credit registered to it). He was reported to have sounded happy during the conversation and talked about future events.

The skipper departed the public house first. The three other crewmen followed at around 2230. They each bought a kebab, which they ate on board *St Amant*. None of the crew was reported as being unduly affected by the alcohol they had consumed.

At 2325, the skipper navigated *St Amant* off the berth (**Figure 3**), and the three crew assisted in recovering the fenders and lowering the outriggers¹ into position (**Figures 4a and b**). The crew then returned to the galley/mess area (**Figures 5a and b**) and chatted while smoking and drinking non-alcoholic beverages.

The skipper navigated the vessel around the northern coast of Anglesey. He steadied the vessel (on an autopilot-controlled heading) onto a course over the ground of about 190°, making directly for the intended fishing grounds (**Figure 3**). At about 0010 on 13 January the skipper handed the watch over to the mate and went down to the cabin (**Figures 6a and b**) to rest.

The mate continued to navigate the vessel on an autopilot-controlled heading while seated on the port side of the wheelhouse; the windows were open and the mate watched a film on the wheelhouse DVD player. At about 0030, the mate went aft to speak to the engineer/deckhand, who was still in the galley/mess with Steven. The mate informed them that he would be handing over the navigational watch to the engineer/deckhand in around 2 hours time and that Steven was then to take the following watch, a further 2½ hours after that. Shortly afterwards, Steven went out on deck. He returned to the galley/mess area soon after.

At about 0045, the engineer/deckhand decided to go down below to his bunk to read a book and rest. Steven was in the process of rolling a cigarette, and indicated that he would be down "shortly"; he was wearing a t-shirt, denim jeans and casual boots.

The vessel continued to proceed on a straight course at about 8 knots; with minimal vessel movement and no list reported. The deck lights were on, apart from the lower deck light on the starboard side above the outrigger. This light had been inoperative since before the vessel's departure from Kirkcudbright.

¹ A boom pivoting at the base of the superstructure on either side of the vessel which, when lowered, extends out over the sides of the vessel to form a towing point for scallop dredging gear.

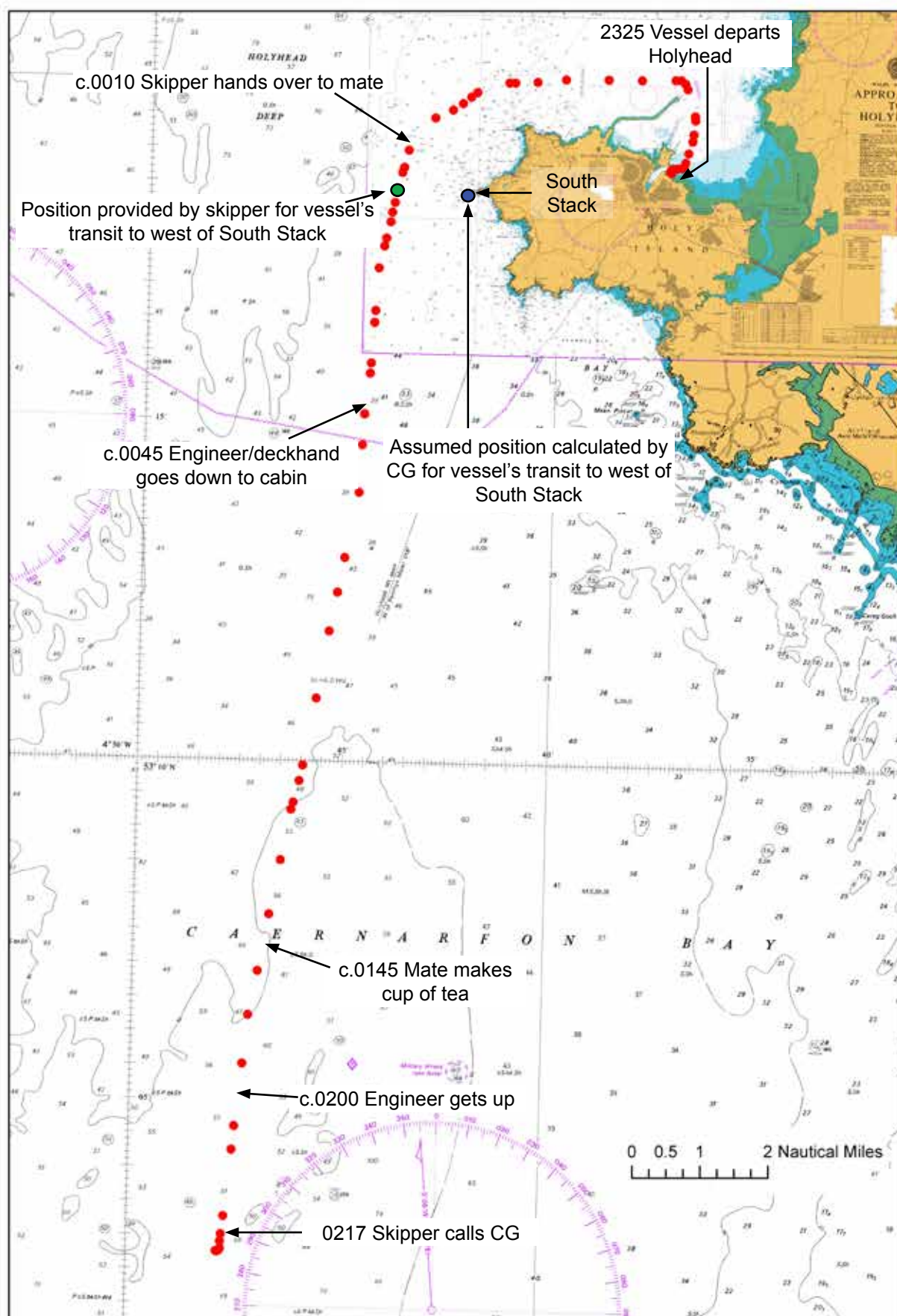


Figure 3: Chart showing track of *St Amant* (all times UTC)



Gas hoses in stowed position

Figure 4a: Starboard outrigger in the deployed position looking aft, soon after the accident



Deck wash hose on deck

Figure 4b: Port outrigger in the deployed position looking aft, soon after the accident



Figure 5a: Galley/mess area on *St Amant* looking aft



Figures 5b: Galley/mess area on *St Amant* looking forward



Figure 6a: Cabin on *St Amant* looking aft



Figure 6b: Cabin on *St Amant* looking aft to starboard

At about 0145, the mate left the wheelhouse to make a cup of tea. There was no one in the galley/mess, and the aft door leading out onto the quarter deck (**Figure 5a**) was closed; he assumed that all the crew were resting down below.

1.4.2 Accident response

At around 0200, the engineer/deckhand got out of bed and went up into the galley/mess with the intention of going out on deck to relieve himself. He realised that Steven had not come down to his bunk and was not in the galley/mess either. He immediately informed the mate that Steven might be missing. They both quickly searched the vessel and confirmed that Steven was not on board.

Steven's mobile phone was also missing (the last recorded activity on the phone was the previous evening). No other items were missing from the vessel, including either of the vessel's two personal flotation devices (PFDs). A hooded top and jacket that Steven had been wearing earlier were still on board.

The mate and engineer/deckhand woke the skipper and informed him of the situation. At 0217 the skipper contacted the Coastguard Maritime Rescue Coordination Centre (MRCC) at Holyhead by Very High Frequency (VHF) radio on Channel 16. He did not issue a Digital Selective Calling (DSC) alert or broadcast a "Mayday" transmission. The coastguard watch manager transferred him to VHF channel 84, and at 0218 the skipper incorrectly reported that the vessel's current position was 52° 02.967'N 004° 47.696'W (the correct position should have been 53° 02.967'N 004° 47.696'W). He then reported that Steven was missing.

The coastguard watch manager requested various details including confirmation of the vessel's previous course and speed. The skipper indicated that they had departed Holyhead and proceeded on an approximate south-south-westerly straight line course. When asked for more details, the skipper reported a course of 204° to 205° at a speed of around 8 knots. At 0226, the coastguard watch manager requested an updated current position for the vessel, which the skipper correctly provided as 53° 02.760'N 004° 47.798'W.

The MRCC quickly established that the provided course information did not correspond with the actual track that the vessel must have taken to clear the western most point of land, South Stack. The MRCC therefore calculated an assumed position for the vessel's transit to the west of South Stack as 53° 18.3'N 004° 42.3'W (**Figure 3**). This was included in the "Mayday" Relay² broadcast made by the MRCC at 0227, along with the current position for the vessel at 0218.

Around the same time, the MRCC tasked Holyhead and Porth Dinllaen Royal National Lifeboat Institution (RNLI) all weather lifeboats (ALBs) and rescue helicopter R122 from RAF Valley on Anglesey to begin to search for Steven.

St Amant's skipper reversed course and he and the remaining crew also started to search. The nearby fishing vessels *Avon Valley*, *Cloudy* and *Seaforth*, responded to the "Mayday" relay broadcast and joined in with the search.

² An emergency code word used internationally as a distress signal in voice radio communications and transmitted on behalf of a vessel in distress.

Two ferries, *Stena Adventurer* and *Isle of Innishmore*, and a bunker barge, *Henty Provider*, all outbound from Holyhead, also responded to the “Mayday” Relay and each posted additional lookouts while on passage in the area.

At 0253, the skipper confirmed that *St Amant* had earlier passed South Stack at position 53° 18.47'N 004° 43.995'W (**Figure 3**), about 1nm to the west-north-west of the position previously assumed by the MRCC. During the subsequent conversation, the MRCC also queried the course details that had been provided with the skipper, who suggested that the 205° course would have been approximate, due to a possible discrepancy with the autopilot.

Three further RNLI vessels were also tasked by MRCC Holyhead and each participated in the search. Additional shoreline searches were later conducted in daylight by two coastguard rescue teams and a police helicopter.

The Search and Rescue (SAR) operations were extensive and were conducted in what were considered to be favourable conditions for searching. The search areas were calculated using the coastguard’s computer-generated drift model. This was run to take into account the recognised inaccuracy in the information reported by the skipper.

During the course of the SAR operations, the skipper of *St Amant* was unable to confirm Steven’s surname, age or next of kin contact details; this subsequently led to a delay in the police being able to identify and contact Steven’s next of kin.

Steven could not be found, and the official search was terminated by the coastguard at 1509. *St Amant* arrived alongside in Holyhead at 1650.

1.4.3 Survival times in water

A copy of the guidance used by the coastguard to estimate life expectancy times for persons immersed in sea water is at **Annex A**. This indicates that there would be a 50% expectancy of death after about 35 minutes, and a 99% expectancy of death after about just under 3 hours for a person immersed in sea water at a temperature of 8°C who was not wearing an immersion suit.

1.5 CREW DETAILS AND VESSEL OWNERSHIP

1.5.1 Overview

All four of the crew were UK nationals and share fishermen³. They had all completed the four mandatory Sea Fish Industry Authority (Seafish⁴) safety courses, including a course on ‘Safety Awareness and Risk Assessment’.

1.5.2 The deceased

Steven Robertson was aged 25 and had previous experience working as a fisherman. He had spent periods working on a number of different scallop dredgers since 2005; this was mixed with time spent in various other shore-based jobs. He

³ Instead of receiving a fixed salary, remuneration for share fishermen is calculated on the basis of the profit or loss from each catch. They are not considered to be ‘employees’ for tax purposes.

⁴ Seafish is a Non Departmental Public Body which works across all sectors of the UK seafood industry to promote good quality and sustainable seafood, and to improve the safety and standards of training for fishermen.

completed two short trips, on a trial basis, on *St Amant* in late 2011 and had proved himself to be a good worker who had fitted in well on board. He had therefore re-joined the vessel in January 2012 as a permanent crew member.

Steven was prescribed anti-depressant tablets in December 2011, having previously been taking recreational drugs and suffering from depression following a family bereavement in late 2010. He had also experienced difficulties in sleeping. By the time of the accident he was well established on a prescribed course of medication but had not yet finished the full course of tablets. One of the crew had seen him taking one of the tablets in the days preceding the accident. The skipper was not aware that Steven was taking prescribed medication.

One of the reported potential side effects of the anti-depressant medication was the marked enhancement of the effects of alcohol. Other possible side-effects included drowsiness, dizziness and sleep disturbances. These were reported to be less likely once a person was established on the course of medication. There were no reports of Steven having been affected by any such side-effects and he was reported to be responding well to the prescription.

Steven's bunk in the cabin was athwartships and he had reported some difficulties sleeping during the first couple of days of the trip. By the time of the accident he was considered by the crew to be sleeping well.

Steven could swim and was of slight build, weighing about 72kg and approximately 1.80m tall. He was reported to be behaving normally prior to the accident; there was no evidence to suggest that he had any intention of committing suicide.

1.5.3 Skipper

The skipper was aged 51 and had 25 years of fishing experience, including acting as skipper on various scallop dredgers. He did not hold a certificate of competency, and there was no requirement for such a qualification on a vessel of *St Amant's* size. He obtained a Maritime Radio Operator Certificate of Competence Short Range Certificate (SRC) for VHF radio in 2001.

1.5.4 Ownership arrangement

The skipper first joined *St Amant* in 2002, and soon became the vessel's permanent skipper. In November 2007, he entered into a partnership agreement with the vessel's registered owner, Nightvalley Limited, to operate the vessel on behalf of the partnership. As part of the agreement, the skipper was paying a hire charge to operate the vessel, with his share of the operational proceeds accruing towards his purchase of a 50% share of the vessel after 5 years. Nightvalley Limited was established by the vessel's previous owner in 2007, who was an experienced operator of scallop dredgers. None of the owner, skipper or vessel were affiliated to a fishermen's association or federation.

1.5.5 Other crew

The mate was the skipper's son and was aged 26. He had about 11 years of experience working on various fishing vessels, including around 3 years in total on *St Amant*. He obtained a Class 2 skipper's certificate in 2006.

The engineer/deckhand was aged 31 and had around 6 years experience as a shore-based diesel mechanic, as well as about 6 years working on various fishing vessels. Both he and the mate had re-joined *St Amant* in late 2011.

1.6 GENERAL DESCRIPTION OF *ST AMANT*

1.6.1 Overview

The vessel's keel was laid in March 1974, and she entered service in 1975 as a side trawler or "sidewinder" (**Figures 7, 8a and b**) on the east coast of England. She was later renamed *St Amant* following a change of ownership. In 1984, a major fire on board the vessel caused severe damage to the accommodation and wheelhouse. Extensive repairs were undertaken, including replacement of the upper steelwork and bulwarks⁵, and in 1985 the vessel re-entered service as a scallop dredger.



Figure 7: Vessel operating as a side trawler in the 1970s

1.6.2 General layout

The layout of *St Amant* at the time of the accident is at **Figure 2**. The vessel was of steel construction, with predominantly wooden planked decks; these were reported as not being slippery at the time of the accident.

Access to the superstructure was via an aft facing door from the quarter deck into the galley/mess area (**Figures 5a and b**). Forward of this was the wheelhouse, containing a typical arrangement of navigational equipment for a fishing vessel, including an OLEX chart plotter.

⁵ Bulwarks are fixed vertical barriers located around the perimeters of upper exposed decks and the tops of deckhouses to provide protection to persons or equipment on deck.

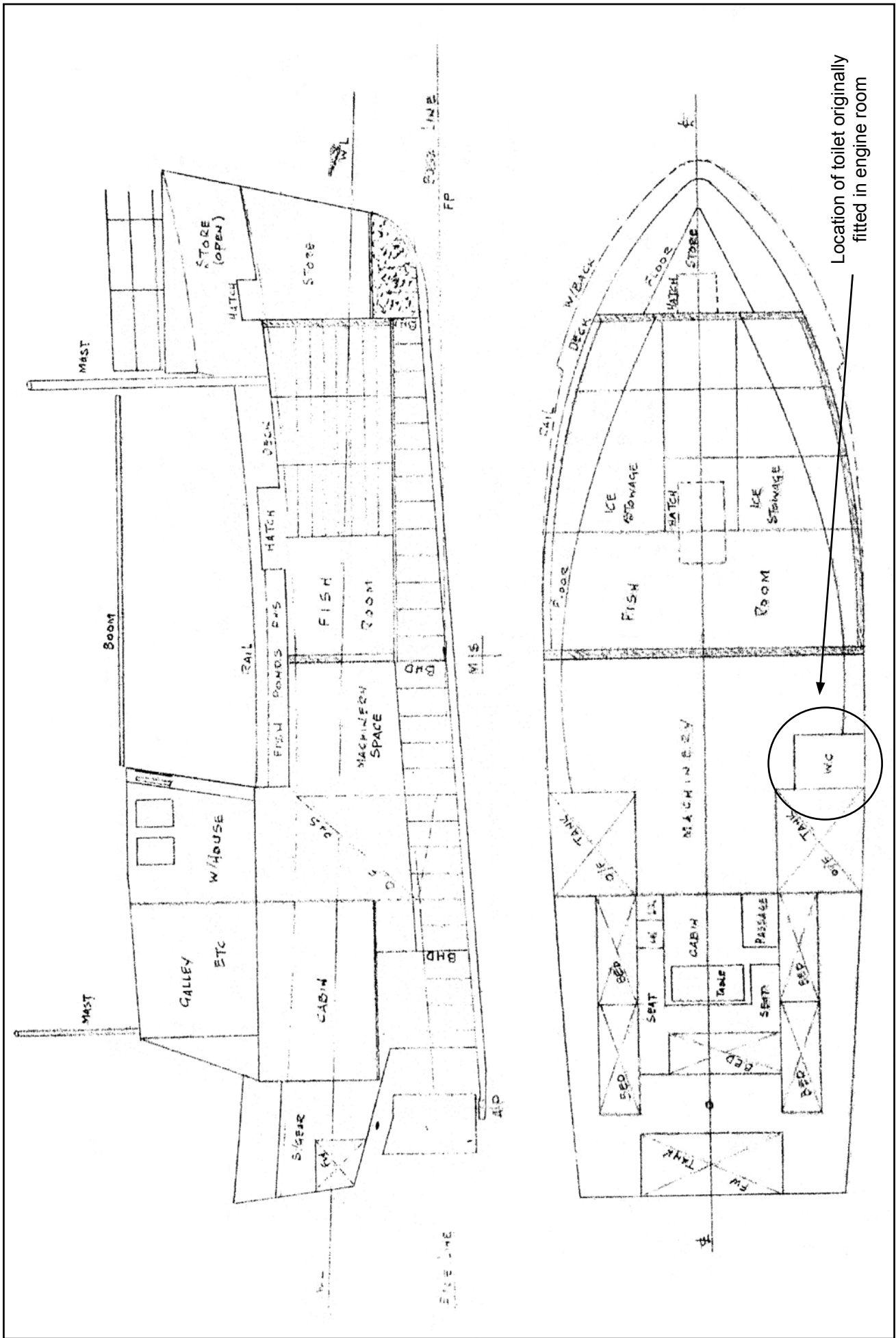


Figure 8a: General arrangement of vessel as built

1.6.3 Working deck and fishing gear

St Amant dredged for scallops using seven ruggedly-constructed dredges on each side of the vessel. Each set of seven dredges was suspended from a single steel spreader beam attached to a wire warp passing through a block suspended from the outriggers.

The two outriggers rested in support brackets on top of the bulwark (**Figures 4a and b**) when in the lowered position. The height of the deployed outrigger above the mid-point of the side deck passageway was measured as 680mm.

1.7 STATUTORY REQUIREMENTS

1.7.1 Original applicable regulations

In May 1975, the Fishing Vessels (Safety Provisions) Rules 1975 (hereafter referred to as the 1975 Rules) were introduced for UK fishing vessels over 12 metres in length. The 1975 Rules introduced a system of regular statutory surveys for fishing vessels resulting in the issue of safety certificates, known as United Kingdom Fishing Vessel Certificates (UKFVCs).

For vessels whose keels were laid prior to May 1975, the 1975 Rules incorporated a timetable for their phased introduction based on vessel length and date of keel laid. A copy of the relevant extract from the 1975 Rules is at **Annex B**. This confirms that the Construction Rules should have applied to *St Amant* from 1 October 1980.

1.7.2 Regulations in force at the time of the accident

In 2002, the 1975 Rules were superseded for vessels between 15m length overall (LOA) to less than 24m registered length by The Fishing Vessels (Safety of 15-24 Metre Vessels) Regulations 2002. The regulations were issued as a Code of Safe Working Practice (hereafter referred to as the 15-24m Code), summarised in Merchant Shipping Notice (MSN) 1770 (F), extracts of which are at **Annex C**. The 15-24m Code was applicable to *St Amant* at the time of the accident.

1.8 MANAGEMENT OF HEALTH AND SAFETY ON BOARD *ST AMANT*

1.8.1 Responsibility

Responsibility for the vessel's operation and safety management had been divested to the skipper by the registered owner, Nightvalley Limited, in accordance with the partnership agreement; the owner of Nightvalley Limited visited the vessel only occasionally.

1.8.2 Safety procedures

Information on safety procedures was provided in a document displayed in the galley/mess area on board *St Amant*. Although several pages of the document were missing, those that remained provided lengthy, generic guidance on various health and safety matters. These included accident reporting, conducting risk assessments and specific safety issues, such as manual handling and fire safety. For housekeeping, it was noted:

To avoid slips, trips and falls keep floors, platforms and stairways as clean and dry as possible and free from hazards e.g. tools, trailing cables and debris.

All equipment, work and storage areas, gangways/corridors and staff facilities should be maintained in a clean and tidy condition.

Certain aspects of the procedures were not applicable to *St Amant*, such as:

Facilities are provided for the welfare of crew e.g. ...suitable and maintained washing facilities and sanitary conveniences...

Standard procedures for issuing a DSC alert and broadcasting a “Mayday” transmission were also posted in the wheelhouse, adjacent to the wheelhouse chair and VHF radio (**Annex D**).

1.8.3 Housekeeping on deck

Although the 15-24m Code (**Annex C**) stated that:

Working areas should be kept clear and, so far as is reasonably practicable, be protected from the sea and provide adequate protection for the crew against falling on the vessel or falling overboard.

this applied only to vessels which were constructed on or after 23 November 1995 or vessels constructed before that date with a length between perpendiculars (LBP) of 18m or over. Consequently, *St Amant* was excluded from complying with this requirement.

As *St Amant* was on passage at the time of the accident, the dredging gear was stowed on deck (**Figure 9**). Various items of equipment were also on deck, including a spare dredge and the deck wash hose on the port side deck area, that created trip hazards in the passageway outboard of the superstructure (**Figure 10**). It was also evident during the investigation that gas hoses for the vessel’s welding and burning equipment would trail across the deck if not stowed carefully (**Figure 4a**). Several ropes were kept in the aft stowage area, any one of which could have fallen onto the deck causing a trip hazard (**Figure 4b** and **Figure 10**).



Figure 9: Fishing gear stowed on deck

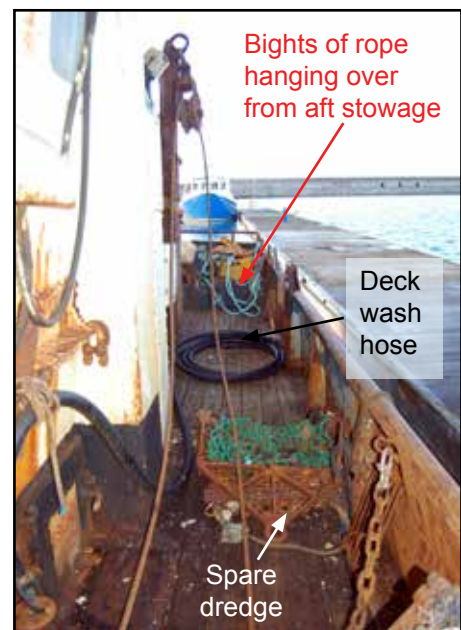


Figure 10: Spare gear on port side deck

1.8.4 Domestic facilities

There was no requirement for sanitary facilities or a toilet on a fishing vessel of the size and age of *St Amant*. The 15-24m Code only required a toilet and wash basin to be installed on vessels with crew accommodation constructed after 23 November 1995, or before that date if the LBP was greater than 18m. For vessels such as *St Amant*, built before that date and with an LBP of less than 18m and operating at sea for more than 24 hours, the 15-24m Code recommended the provision of an *'adequate standard of accommodation that contributes to the health and welfare of those on board'* (**Annex C**).

Although the vessel had originally been built with a toilet in the engine room (**Figure 8a**), this had been removed at some stage after 1985. There was no toilet fitted on board at the time of the accident.

A basic chemical toilet, incorporating a bucket with an attached toilet seat, was reported to have been previously kept in the fish hold. However, at the time of the accident, the crew either relieved themselves overboard or into an ordinary bucket which was kept on top of the storage area at the stern (**Figure 11**). If the bucket was required, the accepted procedure on board was to use it on the open deck at the stern. However, if the weather was poor, crewmen would take the bucket down into the fish hold, where the catch of scallops and fresh provisions were stored, to provide more shelter. Steven was reported to have preferred to use the bucket. Others opted to sit over the side, partially supporting themselves on the outrigger (**Figures 12a and b**). The bucket was in its normal position when Steven was discovered missing.

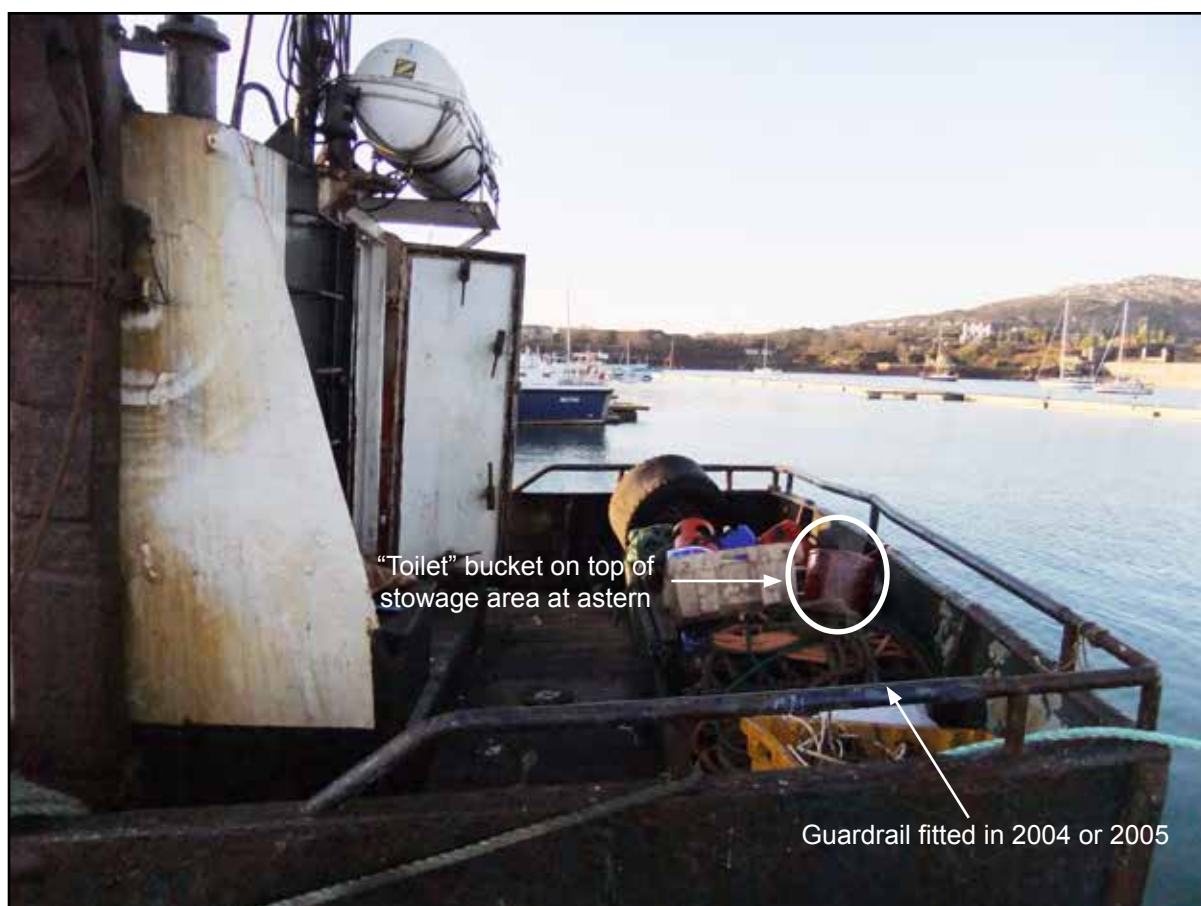


Figure 11: "Toilet" bucket at storage area at the stern



Figures 12a and 12b: Photos of demonstration of crewman relieving himself or defecating over the bulwarks aft of the starboard outrigger

A toilet roll and a packet of wet wipes were normally stowed on the shelf by the galley/mess door. These were in their normal position when Steven was discovered missing (**Figure 5a**).

The vessel had no refrigeration facilities for provisions. These were either stowed in the aft open storage area or in the fish hold (**Figure 13**). The sink in the galley/mess offered the only food preparation and washing facilities for the crew (**Figure 5a**).

1.8.5 PFDs and personal locator beacons (PLBs)

The 15-24m Code required an approved type of lifejacket to be carried for every person on board; such lifejackets were to comply with the requirements of SOLAS 1974 as amended⁶ or as approved by the MCA. There was no statutory requirement for PFDs or Personal Locator Beacons (PLBs) to be carried or worn on board.

Two PFDs for wear during work were on board *St Amant* at the time of the accident. These were both in a poor condition and had not been serviced since their manufacture in 2001. PFDs had reportedly been worn in the past by crew members while they were working on deck. However, following an incident several years before this accident, when a PFD inadvertently inflated while a crewman was

⁶ "SOLAS 1974 as amended" refers to the International Convention for the Safety of Life at Sea, 1974, as amended at 23 November 2002.



Figure 13: Photo looking down into the fish hold

working on deck, they were no longer worn. No PLBs were carried on board *St Amant*.

1.8.6 Lifeline and safety harness requirements

Section 63 of the 1975 Rules (**Annex B**) required an adequate number of lifelines and safety belts to be carried. The 15-24m Code (**Annex C**) required at least two safety harnesses, with additional harnesses as necessary for all persons who may be required to work on deck, to be provided on board. It also required the provision of a permanent means of securing the lifelines of safety harnesses on exposed decks. The particular type of harness that was to be carried was not specified.

Two fall-arrest type safety harnesses were carried on board *St Amant*. There was no provision on the vessel for lifelines to which crew

could attach their harnesses to prevent them from being carried overboard in heavy weather.

1.8.7 Drills

The 15-24m Code required emergency drills to be carried out at intervals of not more than 1 month to ensure that crew were trained and exercised in the use of all life-saving, fire-fighting and survival equipment on board (**Annex C**). There was no specific requirement in the 15-24m Code for drills focusing on the response to the loss of a crewman overboard. In addition, Marine Guidance Note (MGN) 430 (F) *FISHING VESSELS: Checks on Crew Certification and Drills* provided guidance on the conduct of man overboard drills, including the actions to be taken by crew members on discovering a crew member is missing.

Both MGN 430 (F) and the MCA's *Instructions to Surveyors for Fishing Vessels* stated that emergency drills should be undertaken, and witnessed by an MCA surveyor, as part of UKFVC surveys and intermediate inspections. It was reported that drills were only conducted on *St Amant* during such surveys and inspections; there was no record of any other drills having ever been conducted on the vessel.

1.8.8 Risk assessment

The Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulation 1997 (SI 2962/1997) and MGN 20 (M+F) required that risk assessments of work activities on fishing vessels were carried out and regularly reviewed.

Three separate risk assessments had been prepared for work activities on *St Amant*, each using the Seafish Safety Folder as a template. The crew had not been able to find the existing risk assessment documents during previous MCA surveys/inspections and, each time, the skipper had started a new document.

One of the risk assessments did not include any control measures; another assessment included only a few. The earliest risk assessment, completed by a previous skipper, contained extensive control measures. However, the residual risk factor describing the risk after these control measures were applied was, in many cases, still calculated as being unacceptably high. According to the risk assessment template, the relevant work activity should not have been continued until further control measures were added.

For the hazard of falling overboard while working on deck, one of the risk assessments had identified no control measures; one had identified “*Crew have personal life jackets*”; and the third had identified, “*Increase height of vessel rails if possible have crew rigged out with effective buoyancy*” [sic] (**Annex E**).

The vessel’s three risk assessments contained various entries concerning trips, slips and falls, and falling overboard while undertaking a variety of onboard activities. Control measures that were identified to reduce the risk from these hazards included: “*Deck kept clear of obstructions*” and “*Keep deck area tidy and clear of obstructions*” (**Annex E**). None of the vessel’s risk assessments had identified any control measures associated with the hazards from the vessel’s lack of sanitary facilities.

Although the skipper and two other crew members had signed one of the risk assessments, Steven had not signed any of the risk assessment documents.

1.8.9 Crew list

The Merchant Shipping (Crew Agreements, Lists of Crew and Discharge of Seamen) (Fishing Vessels) Regulations 1972, as amended in 1979 and 1983, (hereafter referred to as the 1972 Regulations) required that a crew list should be prepared for a vessel of the size of *St Amant*. This list was required to contain various personal details for all the crew members on board the vessel, including the name, relationship and address of each crew member’s next of kin. The 1972 Regulations also required that a copy of the crew list be maintained by the vessel’s owner at an address in the UK.

Although an incomplete crew list was available on board *St Amant*, providing basic information for three of the crew members at the time of the accident, this list did not include all of the information required by the 1972 Regulations, nor did it record any details for Steven.

1.9 BULWARK HEIGHTS

1.9.1 Bulwark height requirements

Section 63 of the 1975 Rules specified requirements for the protection of the crew (**Annex B**). In accordance with these rules, *St Amant* should have been fitted with fixed bulwarks with a height of 760mm above the deck. This should have been increased to not less than 915mm by fitting portable stanchions and guard wires on top of the bulwarks. The 1975 Rules noted that the fixed bulwark height could be reduced if it was considered that the normal bulwark height would result in unreasonable interference with the vessel's operation. If the bulwark height was reduced, the rules required that "*adequate protection*" was provided.

The 15-24m Code required the overall bulwark/guardrail height to be at least 915mm for vessels constructed before 23 November 1995 (**Annex C**), matching the requirements in the 1975 Rules. For new vessels, the minimum fixed bulwark height must be at least 600mm, with the overall height increased to not less than 1000mm by a combination of adequate stanchions or guard wires.

1.9.2 Bulwark heights on *St Amant*

The original construction drawings for *St Amant* indicated that the vessel was built with 730mm high fixed bulwarks, with a guard wire above (**Figure 8b**). This guard wire was reported to have been used only once, during the vessel's delivery voyage on completion of build.

The repair work specification following the fire in 1984 included the renewal of approximately 12m of bulwarks on either side to provide 736mm high bulwarks; no reference to guard wires was included in this specification. At the time of this accident, there was no provision for guard wires on board *St Amant*. At their lowest point, aft of the outrigger support brackets, the bulwarks were 700mm high (**Figure 14**). Forward of the outriggers, the bulwarks were 770mm high, increasing to 840mm in the forward part of the working deck, just aft of the whaleback.

At some time in either 2004 or 2005, a guardrail was fitted to the bulwarks next to the aft storage area, increasing the height to 905mm (**Figure 11**); this was intended to provide further protection to items stowed in this area. The guardrail was not extended forward to the outrigger support brackets as it was considered that it would impede the crew working with the gear in way of the outriggers.

1.9.3 Exemption system

When the 1975 Rules were introduced, the then Department of Trade (DoT)⁷ envisaged that the rules would only be applied to existing vessels as far as was reasonable and practicable, despite the statutory timetable for their phased introduction. A system for granting exemptions from the rules was developed which required a record of any exemptions that were granted to be recorded on a vessel's UKFVC.

⁷ The Department of Trade was the government organisation at this time having responsibility for maritime regulatory affairs, now undertaken by the MCA, an executive agency of the Department for Transport.



Figure 14: Lowest point of bulwarks, aft of outrigger

In 1977, guidance was prepared for surveyors and fishing vessel owners on 'standard exemptions' that could be granted from the 1975 Rules. These were described in the Handbook of Exemptions, which contained details of any conditions that should be applied in order to grant an exemption.

1.9.4 Bulwark height exemptions

An extract from the 1977 Handbook of Exemptions, detailing the conditions of the standard exemption from the 1975 Rules for bulwark height requirements, is at **Annex F**. This required that, if the bulwarks were too low, lifelines and safety belts should be provided to allow crew to have safe access on deck in heavy weather.

1.9.5 Exemptions from the 1975 Rules granted to *St Amant*

St Amant was first surveyed in accordance with the 1975 Rules in July 1981; there was no record of the exemptions that were granted at this time.

In June 1985 (on completion of the repairs after the fire in 1984) the DoT wrote to the vessel's then owner regarding the issue of a new UKFVC. The letter confirmed that *St Amant* was still considered to be an 'existing vessel' for the purposes of the 1975 Rules, and consideration could be given to granting exemptions from the rules. Copies of an application form and exemptions questionnaire (**Annex G**), partially completed by the DoT surveyor proposing the exemptions likely to be granted, were provided. These included an exemption from Section 63 of the 1975 Rules regarding bulwark heights.

The questionnaire was completed by the owner, confirming that either raising the bulwarks, or fitting guardrails and stanchions to provide an overall height of 915mm would be considered to interfere with the vessel's operation and method of fishing. This and other exemptions were subsequently granted, and a UKFVC was issued (**Annex H**).

1.9.6 MCA policy for existing exemptions

The 15-24m Code, introduced in 2002, stated that exemptions previously granted from the 1975 Rules would continue to apply for vessels with a keel laid before 23 November 2002 (**Annex C**). The 15-24m Code also noted that any conditions associated with the exemptions would still need to be met.

Until 2007, the only published guidance available to MCA fishing vessel surveyors was provided by the 1975 document *Survey of fishing vessels – Instructions for the guidance of surveyors*. This reiterated that exemptions from the 1975 Rules could be granted to existing vessels where it would not be reasonably practicable to meet the requirements of the 1975 Rules.

In 2007, the 1975 guidance was superseded by the MCA's *Instructions to Surveyors for Fishing Vessels*, MSIS 27. This introduced a new policy, which required that:

At each renewal survey, any list of existing exemptions should be reviewed with the aim of deleting them where possible.

1.9.7 Exemptions from the 1975 Rules extant at time of accident

Following the issue of *St Amant*'s UKFVC in 1985, some exemptions were deleted from subsequent UKFVCs. By the time of the UKFVC issued in 2004 and 2009 (**Annex I**), only nine exemptions from the 1975 Rules remained, including the bulwark height exemption. There were no records prior to this accident of the MCA having either reviewed this exemption or having confirmed that the necessary conditions (the provision of lifelines and harnesses) were being met.

1.10 MCA SURVEY AND INSPECTION OF FISHING VESSELS

1.10.1 Background

UK-registered fishing vessels between 15m LOA and 24m registered length are surveyed every 5 years by MCA surveyors in accordance with the 15-24m Code. A UKFVC is issued on satisfactory completion of the survey. An intermediate inspection is also required between the second and third anniversaries of the UKFVC issue date.

Further surveys are required if major repairs or modifications are made, and other targeted inspections can be conducted if necessary (for example, after an accident). A vessel's owner or delegated representative is also required to undertake an annual self-certification check to verify the vessel's continuing safe operation. The owner is required to sign a declaration confirming that these annual checks have been completed. The declarations had not been signed for either of the annual checks that should have been completed on *St Amant* in 2010 and 2011.

1.10.2 MCA paper survey records

Details of an MCA survey or inspection are recorded by surveyors on a paper form entitled "*Report of Inspection* And/Or Survey**" comprising two parts, Marine Survey Form (MSF) 1602 and MSF 1603. These are used to record details of the survey or inspection, including any deficiencies from the 15-24m Code that have been identified.

An action code, determined by the surveyor, is recorded for each deficiency. This specifies the action to be taken to rectify each deficiency and the time limit, reflecting the severity of the deficiency, in which it should be corrected. Later versions of form MSF 1603 include columns to record details of the notification and date of rectification of the deficiencies.

If deficiencies are identified, copies of the completed forms MSF 1602 and 1603 are provided to the vessel's owner or skipper at the end of the survey or inspection. A further copy of the form(s) is retained by the MCA and attached to the vessel's Consultative Maritime (CM)⁸ file.

1.10.3 MCA SIAS database

In 1993, the MCA introduced a computerised database, known as Ship Inspection And Survey (SIAS), used to record details of vessel surveys and inspections.

Following a survey or inspection, data from forms MSF 1602 and 1603, including any deficiencies and action codes, were entered onto SIAS. Surveyors could access SIAS via the MCA's computer network in their Marine Offices.

1.10.4 Survey and inspection of *St Amant*

An extract from SIAS at **Figure 15** confirmed that a large number of MCA inspections were carried out on *St Amant* in recent years. A copy of the SIAS records for the surveys and inspections from 2005 until this accident are at **Annex J**; many of these identified a large number of deficiencies.

The most recent renewal survey for *St Amant*'s UKFVC prior to this accident occurred on 22 October 2009. Thirty deficiencies were identified (**Annex J**). Although many of these were recorded as having been rectified on the MSF 1603 form, several were not corrected and the vessel departed port without a valid UKFVC. The vessel was subsequently detained and was released from detention on 3 February 2010 after an MCA surveyor confirmed that the deficiencies had been

⁸ CM files are the series of registered MCA files, sub-divided into various "themes", and used to record vessels' operational details; this includes copies of construction information, stability records, safety certification and correspondence between the MCA and the owner relating to various matters.

Enter search criteria

IMO Number: or Ship name: or Official Number:

[Search For Record(s)]

[Return to main menu]

PSC inspections

No inspections/surveys Found

UKDT inspections/surveys

Ship ID	Group ID	Ship Name	Official Number	Inspection Date	Inspection Type
2778	2778	ST AMANT	A10298	30/11/1993	in conjunction with a survey
2778	2778	ST AMANT	A10298	29/07/2008	Targeted
166445	2778	ST AMANT	A10298	13/12/1996	in conjunction with a survey
166445	2778	ST AMANT	A10298	17/01/1997	None
34135	2778	ST AMANT	A10298	23/12/1996	Radio Only
40020	2778	ST AMANT	A10298	29/02/2000	Targeted
42548	2778	ST AMANT	A10298	07/09/2000	Targeted
42548	2778	ST AMANT	A10298	12/09/2000	in conjunction with a survey
42548	2778	ST AMANT	A10298	08/11/2001	Targeted
50969	2778	ST AMANT	A10298	23/09/2002	Targeted
53907	2778	ST AMANT	A10298	06/09/2003	Targeted
53907	2778	ST AMANT	A10298	10/08/2004	None
59908	2778	ST AMANT	A10298	16/03/2006	Targeted
59908	2778	ST AMANT	A10298	18/05/2006	Targeted
59908	2778	ST AMANT	A10298	30/11/2007	Targeted
72137	2778	ST AMANT	A10298	05/12/2007	None
72137	2778	ST AMANT	A10298	22/10/2009	None
72137	2778	ST AMANT	A10298	01/06/2010	Targeted
72137	2778	ST AMANT	A10298	26/09/2010	Targeted
86156	2778	ST AMANT	A10298	13/01/2012	Targeted
86156	2778	ST AMANT	A10298	26/01/2012	Targeted
86156	2778	ST AMANT	A10298	14/02/2012	Targeted
86759	2778	ST AMANT	A10298	23/04/2012	Targeted
86759	2778	ST AMANT	A10298	08/05/2012	in conjunction with a survey
86759	2778	ST AMANT	A10298	30/05/2012	Targeted

FFVS and Non-PSC inspection/surveys

No inspections/surveys Found

Figure 15: Screen capture from SIAS showing surveys and inspections on St Amant

rectified. SIAS was updated to confirm that all the deficiencies had been rectified and action code 10 was recorded to indicate that they had been corrected (**Annex J**). A new UKFVC, valid until 1 November 2014, was issued (**Annex I**).

On 1 June 2010, the MCA conducted a targeted inspection of *St Amant*, which identified a further 18 deficiencies. Two of these were “*Wheelhouse and Decks to clear*” and “*Garbage to be disposed of ashore*.” Both were allotted action code 17 (requiring rectification before departure). The corresponding MSF 1603 form contained no confirmation that any of the deficiencies had been rectified.

1.10.5 Recent modifications to *St Amant*

In early September 2010, the MCA became aware of modifications being made to *St Amant*'s lifting equipment: a new ‘goalpost’ type arrangement for the dredging gear was being fitted (**Figure 16b**) to replace the previous single lifting pole (**Figure 16a**). The MCA wrote to the skipper requesting that details of the modification be forwarded for approval.

During an MCA inspection on 29 September 2010, an action code 16 deficiency (requiring rectification within 14 days) was raised for details of these modifications to be forwarded to the Marine Office. There was no record on the CM files or SIAS (**Annex J**) of this deficiency being followed up.



Figure 16a: Lifting arrangement on *St Amant* before modification in 2010



Figure 16b: Lifting arrangement on *St Amant* after modification in 2010

1.10.6 Regulatory actions following the accident

On 13 January 2012, immediately following this accident, MCA surveyors conducted a targeted inspection of *St Amant*. This identified 13 deficiencies, the majority of which were allotted action code 17 (rectification before departure). The inspection did not identify any concerns regarding the vessel's bulwark heights or areas of the risk assessments that related to the circumstances of the accident.

Following a further inspection by the MCA on 26 January 2012, *St Amant* was detained. On 14 February 2012, an Improvement Notice was issued to the skipper and owner of *St Amant* requiring the vessel to be taken out of the water within 3 months to correct significant structural defects.

St Amant subsequently re-entered service and was later inspected by an Isle of Man surveyor in Peel during March 2012. The vessel was reported to be in a "poorly managed condition" with conditions on board described as "worse than sub-standard". Sixteen deficiencies were identified, including the structural integrity of the fish hold deck head, and the vessel was directed to return to mainland UK.

The vessel was re-inspected in the UK on 23 April and 13 deficiencies were identified. One of these was allocated Action Code 17 to:

'Raise aft rail to 915mm port/starboard up to outrigger from aft rail.'

On 30 May, *St Amant* was inspected yet again, and another 24 deficiencies were identified. Many of these concerned the structural integrity of the fish hold, including the lack of support under the deck for the goalpost lifting arrangement which was causing the deck to sag. On 29 June, the MCA wrote to the owner of *St Amant* proposing that the mast be relocated to rectify the structural issues, and the bulwarks be raised to the required height.

1.10.7 Outstanding deficiencies

A summary report detailing the record of outstanding deficiencies held on SIAS for *St Amant* from 2005 onwards is provided at **Annex K**. The 30 deficiencies that were identified on 22 October 2009, which were subsequently entered onto SIAS with action code 10 (rectified), do not appear on this list. Of the 76 deficiencies raised for *St Amant* from 2005 (when the requirement to record the rectification of deficiencies was introduced) until the time of the accident, 36 were never confirmed as being rectified.

Similarly, there were no records on the vessel's CM files of any of these deficiencies having been rectified, other than the MSF 1603 form for the inspection conducted on 22 October 2009.

1.10.8 Rectification of deficiencies identified during a survey/inspection

The MCA's policy was that deficiencies should be closed once confirmation has been received that the required rectification work has been completed.

The MCA's 2007 *Instructions to Surveyors for Fishing Vessels*, MSIS 27, stated that deficiencies must be closed off 'eventually'. Inspections Operations Procedure MCA 810 stated that surveyors should follow up outstanding deficiencies within the time indicated by the action code and sign form MSF 1602 once the deficiency has been confirmed as having been rectified.

The *Instructions to Surveyors for Fishing Vessels* also stated that:

'1.12.5 Where a vessel is surveyed and a surveyor leaves a large list of defects he must return to that vessel to clear them off. Where the vessel is overseas and a small list of minor defects has been found, the surveyor may, at his discretion, entrust the superintendent or appoint a class surveyor to advise on rectification, but whatever course is taken, the surveyor must be reasonably sure that defects will be dealt with and reported as such so they can be deleted from the SIAS report.'

Further guidance to MCA surveyors on the closure of recorded deficiencies was provided in the document *Inspection Policy – Instruction for Guidance of Surveyors*, MSIS 8. This confirmed that a surveyor's professional judgment should be used to decide the acceptable means of confirmation; this may be by telephone, fax, email or a further vessel inspection. Once a deficiency was confirmed as having been rectified, both the MSF 1603 form and SIAS should be updated.

MSIS 8 also noted that if the rectification deadline has expired without receiving confirmation that the deficiency has been corrected, then a deficiency must be followed up. It was stated that the lead surveyor was responsible for ensuring

that outstanding deficiencies were closed on SIAS, even if the vessel left the geographical area covered by the MCA Marine Office that conducted the survey or inspection.

The MCA document *Survey and Certification Policy - Instructions for the Guidance of Surveyors* provided limited information regarding the recording and closure of deficiencies or the use of SIAS.

1.10.9 Management of outstanding deficiencies

In 2001, the National Audit Office (NAO) published the findings of an external audit of the MCA's Ship Survey & Inspections branches⁹. This identified that the MCA was not collating or analysing information on the rectification of deficiencies, and that in many cases there was no evidence of deficiencies having been rectified. The NAO recommended that the MCA consider sampling its records each year to assess how many deficiencies had not been rectified.

In 2003, an external audit of the MCA's quality assurance systems resulted in a Continuous Improvement Note being raised which proposed that deficiency rectification should be recorded in SIAS. In December 2004, an MCA Operational Advice Note (OAN) was issued to confirm that SIAS had been modified to provide this capability.

A subsequent internal audit led to a further Continuous Improvement Note being raised citing several examples where the required timescale for deficiency rectification had expired and not been followed up. Another OAN was issued in July 2005 stating that SIAS had further been modified to allow summary reports identifying outstanding deficiencies to be produced.

The MCA document *Inspection Policy – Instruction for Guidance of Surveyors*, MSIS 8 confirmed that such summary reports could be produced in SIAS, stating that:

'These reports can be run at regular intervals to identify and follow-up ships with outstanding deficiencies.'

Although the records on SIAS for a particular vessel can be interrogated, the system did not incorporate an easy means of highlighting whether a vessel had any deficiencies which had not been rectified in the allocated timescale.

1.10.10 Future policy on deficiency rectification

On 20 January 2012, an email was sent to relevant MCA staff attempting to '*clear up any confusion surrounding the policy on deficiency rectification*'. In order to tackle the large list of outstanding deficiencies in SIAS, a simpler but documented way to ensure that open deficiencies in SIAS had been verified and closed-out by MCA surveyors was to be adopted. The MCA document MSIS 8 was to be re-issued to require an attending surveyor to confirm that all previously open deficiencies in SIAS were checked and either closed or re-issued.

At the time of the accident, the MCA was in the process of developing a new Single Vessel Database intended to replace SIAS.

⁹ *Ships Surveys and Inspections*, National Audit Office (NAO), Report by the Comptroller and Auditor General, HC 338 Session 2000-2001: 23 March 2001; available on the NAO website: <http://www.nao.org.uk/default.aspx>

1.10.11 Photographic survey record of fishing vessels

The MCA's 2007 *Instructions to Surveyors for Fishing Vessels*, MSIS 27, stipulated that a photograph should be taken at each survey or inspection as a record to assist subsequent surveyors detect any unauthorised modifications. *St Amant's* CM files did not include any recent photographs of the vessel which could have been used to identify unauthorised modifications.

1.10.12 Review of risk assessments

Although MCA surveyors were required to confirm that a risk assessment had been completed for a vessel, there was no requirement for them to check the extent of the assessment, any residual risk factors that exceeded acceptable thresholds, or, that the control measures that had been identified in the assessment were being used.

1.10.13 Survey and inspection aide-memoires

Form MSF 5500, *15 to 24 metre Fishing Vessels Survey/Inspection Aide-Memoir (Annex L)* was available to MCA surveyors providing a checklist of items which should be reviewed during surveys and inspections. The aide-memoire included prompts to "*Discuss use of lifelines/harnesses/belts*" and to confirm that a risk assessment had been completed. There were no similar prompts to check the following:

- adequacy of bulwark heights;
- ongoing validity of any existing exemptions;
- adequacy of onboard domestic accommodation and sanitary facilities;
- adequacy of risk assessments and the implementation of control measures;
- all previously open deficiencies in SIAS were either closed or re-issued;
- taking of photographs of the vessel's principal features (to assist in identifying any future unauthorised modifications);
- availability of a crew list, in accordance with the Merchant Shipping (Crew Agreements, List of Crew and Discharge of Seamen) (Fishing Vessels) Regulations 1972, as amended.

1.11 INTERNATIONAL REGULATORY REQUIREMENTS

In June 2007, a new International Labour Organization (ILO) Convention No. 188 (ILO 188), *Work in Fishing*, was adopted. ILO 188 established minimum international standards for the fishing sector, covering issues such as risk assessment, manning and hours of rest. ILO 188 also introduced requirements for member states to introduce accommodation standards appropriate to a fishing vessel's operation and trip length. This should include the provision of sanitary facilities, including toilets and washing facilities.

In May 2008 it was decided that EU Member States should endeavour to ratify ILO 188 as soon as possible and preferably before 31 December 2012. The MCA reported that the UK currently intends to work with industry towards implementing ILO 188 by the time it comes into force in Europe or internationally. There is no immediate prospect of ILO 188 meeting the criteria for international ratification which would trigger it coming into force.

1.12 SAFETY GUIDANCE AVAILABLE TO FISHING INDUSTRY

1.12.1 General safety guidance

Guidance on good practice regarding housekeeping on deck, emergency drills, and the wearing of lifejackets on fishing vessels was available in various documents, including: the MCA's *Fishermen's Safety Guide* (2008) and the *European Handbook for the Prevention of Accidents at Sea and the Safety of Fishermen* (2007). Relevant sections are included at **Annexes M** and **N** respectively.

In 2009, the RNLI published the leaflet *Trawling Which lifejacket for you?* This summarised the results of practical trials conducted by fishermen on trawlers and scallop dredgers, and rated the suitability of various PFDs (**Annex O**).

1.12.2 Practical assistance with risk assessments

Between 2005 and 2007 the MCA's Scotland and Northern Ireland (SCOTNI) region employed a Fishing Vessel Safety Officer (FVSO) to provide practical assistance to crews in conducting vessel-specific risk assessments. Although reportedly a success, the initiative was withdrawn due to financial constraints.

A similar scheme was offered by Seafish from 2006 to 2008, funded by the European Union's Financial Instrument for Fisheries Guidance (FIFG). Practical support was provided on board 244 vessels in how to conduct effective risk assessments. This service was also discontinued when FIFG was terminated.

In May 2012, the Scottish Fishermen's Federation (SFF) introduced a scheme for its members offering practical assistance in conducting risk assessments.

There was no record of the crew of *St Amant* ever having been provided with any practical assistance with the preparation of the vessel's risk assessments beyond the examples covered in the Seafish Safety Awareness and Risk Assessment course.

1.12.3 Effects of alcohol on survival at sea

MGN 193 (M+F), titled *The Effects of Alcohol or Drugs on Survival at Sea*, confirmed that even moderate alcohol consumption normally leads to a reduction in blood sugar (hypoglycaemia). This can impair the body's response to cold, meaning that an individual loses body heat faster than usual and is at increased risk of hypothermia.

1.13 PREVIOUS/SIMILAR ACCIDENTS

1.13.1 Previous man overboard accident on *St Amant*

It was reported that at some time in 2009, a deckhand working on board *St Amant* briefly fell overboard from the area adjacent to the outrigger while recovering the dredging gear. The deckhand was not injured and was able to climb back on board without assistance; he was not wearing a PFD. The accident was not reported to the MAIB, contrary to the requirements of the Merchant Shipping (Accident Reporting and Investigation) Regulations 2005 (SI No. 881/2005).

1.13.2 Previous fatal man overboard accidents

An analysis of accident data held by the MAIB shows that of the 298 crew fatalities on UK-registered fishing vessels between 1992 and 2011, over one third (110 fatalities) were due to crew members falling overboard¹⁰. Although many of these accidents occurred while the crew were working on deck, 12 fatalities occurred while the vessel was on passage or entering/leaving port.

Previous fatal accidents with similar circumstances to this one include:

- *Sharona* (1996) – A crew member was lost overboard from a 19m trawler.

As part of the MAIB's examination of this accident, a recommendation was made to the MCA to:

Remind Fishing Vessel Surveyors that during a statutory survey or inspection of fishing vessels, care should be taken to:

a) Ensure that conditions for any exemptions from the Fishing Vessels (Safety Provisions) Rules continue to be valid. In particular... establish the need or otherwise for the height of bulwarks to be Rule requirement, with or without guard rails and stanchions. [sic]

The MCA subsequently confirmed that a reminder had been circulated to senior surveyors instructing them to inform all fishing vessel surveyors.

- *Shemaron* (2002) – There were no witnesses to the man overboard from this 16m scallop dredger; the crew member had probably been working close to the low bulwarks.

The MAIB subsequently recommended that the MCA:

Include the problems associated with low bulwark height in its ongoing review of survey procedures and risk assessment for fishing vessels.

In response, the MCA confirmed that this had been discussed at a Fishing Industry Safety Group (FISG) – Technical Sub Group meeting, which had concluded that no further action was to be taken, as regulations were already considered to be in place covering the issues.

¹⁰ Excludes crew overboard as a result of other events, e.g. capsizing.

- *Onward Star* (2004) – This 16.5m trawler experienced the loss of a crew member while underway in harbour.

Two recommendations were made to the MCA to:

Review with urgency, the controlled validity of all exemptions issued to fishing vessels which waive the requirement to comply with minimum bulwark heights...

Issue instructions and advice to surveyors accordingly.

Both recommendations were recorded as fully accepted; the MCA reported that all exemptions were being reviewed during surveys and those no longer considered relevant, withdrawn.

- *About Time* (2011) – This 11.9m potting vessel was on passage in good weather when a deckhand was lost overboard. The accident was most likely due to a fall over the low bulwarks as a result of a slip or trip on gear on deck.

The MAIB made recommendations to the vessel's owner to improve the safety of the onboard working practices and the crew's hazard awareness.

SECTION 2 - ANALYSIS

2.1 AIM

The purpose of the analysis is to determine the contributory causes and circumstances of the accident as a basis for making recommendations to prevent similar accidents occurring in the future.

2.2 THE ACCIDENT

2.2.1 Overview

It was not possible to determine with certainty the exact circumstances and cause of Steven's disappearance given the limited physical and witness evidence that was available during the investigation. However, from the evidence gathered, it was concluded that Steven was lost overboard while the vessel was on passage from Holyhead to the fishing grounds.

It was most likely that Steven fell overboard at some time between about 0045, when he was last seen on board, and 0145, when the mate observed that there was no-one in the galley/mess. Steven's absence was not noticed until around 0200 when the engineer/deckhand, who had last seen Steven, realised he was neither in the cabin nor the galley/mess. Steven was off duty at the time, the weather conditions were relatively benign, and the crew members had no reason to suspect that he was missing until around 0200.

2.2.2 Circumstances considered

The reasons why Steven went out on deck, either before 0045, as witnessed by the engineer/deckhand, or later at the time of the accident, were not known. Given the air temperature and the fact that he was not wearing warm clothing, it was likely that Steven only intended to be outside for a short time. Although he was last seen rolling a cigarette, there was no reason for him to have gone outside to smoke; smoking was both permitted and common practice in the galley/mess area. There were no other reasons for Steven to be out on deck working or getting provisions.

Although Steven's mobile phone could not be found after the accident, the last recorded communication activity on the phone was during the previous evening. The phone account was not in credit, but it was possible that Steven could have taken his phone out onto the open deck on the off-chance that it might receive a message from family or friends at home.

Despite one of the starboard deck lights not being operational, the overall illumination of the deck areas was considered to be adequate and unlikely to have contributed to the accident. It was also a clear, moonlit night and the decks were reported not to be slippery.

Sea conditions were relatively calm during the period when Steven went missing, and the vessel had no reported list. Vessel movement alone was therefore unlikely to have contributed to Steven falling overboard. Track data from the vessel's chart plotter (**Figure 3**) confirmed that there were no sudden course alterations around the time he went missing. Steven was also an experienced fisherman and had worked on board in more severe weather conditions; he therefore would have been acclimatised to the vessel's motion.

As is often the case with scallop dredgers, the fishing gear stowed on deck while the vessel was on passage created significant slip and trip hazards, particularly forward of the deckhouse. Some spare gear and equipment was also on the area of deck forming the passageway to the port side of the deckhouse. However, there was no evidence of Steven transiting this area to go forward on deck, or any known reason for him to have done so. A person walking forward would have needed to step over one of the deployed outriggers. These created a barrier either side of the deckhouse, leading to the possibility of a fall while climbing over the outrigger. However, when deployed, the outriggers sloped down towards the base of the deckhouse and would tend to push anyone who stumbled over them inboard and away from the bulwark. Bights of rope and gas hoses were found trailing across the deck during the investigation; it was not possible to determine if the situation at the time of the accident was better, or worse.

2.2.3 Most likely circumstance

As there were no toilet facilities on board, the area on the quarter deck immediately aft of the outriggers had become the preferred area for the crew to use in order to relieve themselves over the side. It is conceivable that Steven might have been sitting, leaning out over the bulwark, as demonstrated at **Figure 12b**, to defecate. However, there was no evidence to support this (both a toilet roll and wet wipes were in their normal place) and he reportedly preferred to use a bucket for such purposes. It is more plausible that he was standing, in the process of relieving himself over the bulwarks aft of the outriggers, when he fell overboard. At the time of the accident, *St Amant* was proceeding downwind, which might discourage some from standing at the stern while relieving themselves. However, the speed and direction of both the vessel and wind were similar and there would have been little relative wind to discourage Steven from using the normal area. Sadly, the area used for toilet purposes was also the easiest and most likely location from which to fall overboard as the bulwarks were at their lowest height.

2.2.4 Effect of prescribed medication

Although Steven had been taking prescribed anti-depressant medication for the month prior to the accident, there were no reports of him suffering from any side effects. The potential for suffering from side effects was also reported to be less likely once the course of medication had been established. Steven was observed to be responding well to the medication and was described as being happy and behaving normally prior to the accident. There was no evidence to suggest that his falling overboard was anything other than an accident.

One potential side effect from his medication was a significant enhancement of the effects of alcohol. Steven and the rest of the crew had spent the evening prior to sailing in a public house. However, the amount of alcohol consumed by Steven was reported to be quite moderate, especially given that this was over a period of several hours. Although it is possible that the estimates of how much alcohol he had consumed were conservative, none of the available evidence supports Steven or any of the crew being overly affected by alcohol during their return to *St Amant* or after their departure from Holyhead.

The skipper was not aware that Steven was taking prescribed medication. It is understandable that there could be personal reasons why a crew member might not want to declare that he is taking medication or undergoing medical treatment.

However, best practice and common sense suggest that skippers should be made aware of any personal information that could have an effect on safety or a crewman's response to an emergency.

2.2.5 Fatigue

The general working pattern on *St Amant* allowed the deckhands to rest for only short periods while the gear was being towed. However, in the 24 hours prior to the accident Steven had been well-rested. He had been able to rest for two extended periods during the day before the accident: while dredging had been suspended early in the morning due to poor weather, and also while the vessel was proceeding into port. Although Steven's bunk was athwartships and he had experienced some difficulties sleeping early in the trip, other crew members thought he was sleeping well by the time of the accident. Fatigue is therefore not considered to be a contributing factor to this accident.

2.2.6 Summary

In the absence of any other evidence, the most probable cause of Steven's loss is considered to be him slipping or tripping while in the vicinity of the low bulwarks aft of the outriggers, probably while in the process of relieving himself over the side.

2.3 ATTITUDE TO SAFETY MANAGEMENT

2.3.1 Overview

Responsibility for the operation of *St Amant*, including the health and safety of the crew, had been formally delegated by the registered owner to the skipper in accordance with the partnership agreement. Although the registered owner had little involvement in the activities on board, the agreement meant that the skipper was working towards obtaining a share of the ownership and had a vested interest in the vessel's safe operation.

Evidence from *St Amant*'s survey and inspection history indicated its operators had a sustained and consistent disregard for the safe operation of the vessel and provision of adequate facilities for its crew. Most disappointingly, some 2 months after this accident, the vessel's condition was still described as being "*worse than sub-standard*".

2.3.2 Safety procedures

Although generic safety procedures were available on board, including relevant guidance on housekeeping, the procedures were both lengthy and incomplete. It was considered extremely unlikely that the crew would have read or taken note of guidance in this format. The fact that certain aspects of the procedures did not relate to the operation of *St Amant* would have further diminished the credibility of this guidance to the crew.

A consistently poor standard of housekeeping on deck was found, not only during previous surveys and inspections, but also during this investigation, and even after the accident. The unnecessary presence of items of spare gear and equipment on deck further reduced the effective height of the low bulwarks, and increased the likelihood of a crewman slipping or tripping and falling overboard. This demonstrated

the crew's attitude to one of the most basic practices of keeping a safe workplace. If the decks had been kept clear and trip hazards removed, it is possible that one of the most likely causes for Steven falling overboard might have been prevented.

2.3.3 Emergency response

After Steven was confirmed as missing, the skipper made a routine radio call to the coastguard rather than issue a "Mayday" or activate a DSC distress call. Inevitably this caused some delay to the emergency response while he was transferred to another radio channel and passed a message. Similarly, other vessels in the area were not aware of the emergency until the coastguard made a "Mayday relay" broadcast. The procedures for making a "Mayday" call were posted in the wheelhouse, and it would have been straightforward to activate the DSC alert, yet the skipper did neither.

It was fortunate that the delay was minimal and the coastguard officers were able to deal with the routine radio call immediately. In other circumstances, the effect on the emergency response could have been far more significant. It is essential that crew practise emergency drills as described in MGN 430 (F). It can be difficult to react to an emergency effectively when you have just been woken and, perhaps, are in shock. Practising emergency drills is the most effective method of ensuring that crew know the best way to respond if the worst happens.

The initial report of *St Amant*'s current position and course was inaccurate and this led to some confusion over the estimated position of the vessel at the time when Steven was last seen on board. This had the potential to misdirect the SAR plan. However, coastguard officers were commendably quick to identify these inaccuracies and took account of them in planning the search areas. The search was extensive, and involved a relatively large number of units. Consequently, it was considered that the accuracy of the initial report was unlikely to have hampered the overall effectiveness of the SAR operations.

Although the search was discontinued later on the same day of the accident, its duration was well in excess of the maximum life expectancy of a person not wearing an immersion suit, in sea water of that temperature. The guidance provided in MGN 193 (M+F) showed that the alcohol in Steven's bloodstream further reduced his chances of survival by increasing the risk of hypothermia.

2.3.4 Crew details

None of the crew on *St Amant* was able to confirm Steven's surname or the contact details for his next of kin. A full crew list, as required by The Merchant Shipping (Crew Agreements, Lists of Crew and Discharge of Seamen) (Fishing Vessels) Regulations 1972, was also not available either on board the vessel or ashore, nor were any details recorded for Steven. Had such a list been available, it would have included various personal details for all of the crew members on board the vessel, including the name, relationship and address of each crew member's next of kin.

Although the accident would not have been prevented had any of this information been known, the lack of personal details resulted in an unnecessary and unfortunate delay in Steven's family being informed that he was missing. This accident

demonstrates the importance of skippers and owners maintaining a crew list in accordance with the 1972 Regulations so as to be aware of a crew member's full name and contact details in case of emergency.

2.4 RISK ASSESSMENT

2.4.1 Assessment of risk on *St Amant*

Risk assessments need not be complicated. The format provided in the Seafish folder was intended to be a practical and structured method of helping fishermen to recognise and control the hazards involved in their work. Done properly, the assessment should help crew to change the way they work in order to reduce the risk of an accident happening.

Three separate written risk assessments had been prepared on *St Amant* when only one was required, yet each was found to be inadequate. Many control measures had either not been identified or were subsequently dismissed. Some of the hazards that had been identified were assessed as having an unacceptably high risk factor. However, the work activities continued regardless, with the crew ignoring the significance of their conclusions.

None of the vessel's risk assessments had recognised the hazards associated with the lack of proper toilet facilities; specifically, the risk of a crew member falling overboard while relieving themselves. None of the control measures that had been identified to mitigate the hazard of a crew member falling overboard while working on deck, had been implemented. Neither the need to keep deck areas clear, nor the instructions for crew to wear PFDs were being complied with. Similarly, the comment to "*Increase height of vessel rails if possible*" had only partly been completed, with the addition of a rail around the stern storage area. Even this did not meet the statutory height requirement, and its purpose had been that of protecting equipment rather than the crew. Furthermore, in 2009, when a crewman briefly fell overboard while working adjacent to the outriggers, no action was taken by the skipper to reduce the likelihood of this re-occurring. Had the rail fitted round the aft storage area been extended both forward to the outrigger support brackets, and up to the statutory height, it is possible that this accident could have been prevented.

Each of these control measures had the potential to significantly reduce the risk from falling overboard. The poor standard of safety management on *St Amant* was allowed to persist because the owner, skipper and, to a lesser extent, the crew did not have enough interest in their own safety. Despite considerable attention from the MCA's surveyors, the owner's and crews' attitudes to safety were unaffected. They saw no incentive to change while *St Amant* was permitted to continue trading.

This accident was a sad reminder that risk assessments are meaningless unless the results are acted on properly.

2.4.2 Assistance with risk assessments

All the crew on *St Amant* at the time of this accident had completed the Seafish safety awareness training course. This course described how to conduct risk assessments correctly. However, it was evident from both the risk assessments on *St Amant* and the vessel's overall poor condition, that the skipper did not fully understand the risk assessment process, and it had not been embraced by any of

the crew. Although the skipper and two other crew members had signed one of the risk assessments, Steven had not done so, and consequently it was unlikely that he had read any of them. Had he done so, and had he recognised the risks associated with being out on deck on his own at night, it is possible that Steven's actions leading up to the accident might have been different.

The MCA and Seafish have both run successful schemes that provided practical assistance to fishing vessel skippers and crew with conducting risk assessments. Unfortunately, the schemes were suspended due to financial constraints. More recently, the SFF has started a similar initiative for its members. However, neither *St Amant* nor its owner or skipper were members of an association or federation, and therefore would not have been eligible for any such assistance.

Had the skipper of *St Amant* been provided with assistance in conducting a risk assessment, it is possible that the vessel's risk assessments would have been more robust, and the onboard working environment safer.

2.4.3 MCA onboard review of risk assessments

During surveys and inspections of fishing vessels, MCA surveyors are required to check that a risk assessment has been conducted. There is, however, no requirement for the surveyor to review the content or adequacy of the assessments, even after a serious accident has occurred. Risk assessments are a fundamental part of managing a fishing vessel safely and are a demonstration of how the owner/skipper exercises his duty of care to provide a safe working environment for the crew. After a serious accident, MCA surveyors should scrutinise the sections of a risk assessment that were relevant to its circumstances, to check whether appropriate measures had been taken to control the related risks.

2.5 DOMESTIC FACILITIES

The domestic facilities on *St Amant* at the time of the accident were worse than when the vessel was built, over 36 years previously. The original toilet had been removed at some point and was never replaced. The crew's only washing facility was the galley sink, and there was no equipment on board to store refrigerated food hygienically. This was despite *St Amant* going to sea for up to 4 days between harbour visits to land catch and the crew living on board for about 10 days at a time.

Although the vessel's layout, in particular the relatively small size of the deckhouse, posed challenges in fitting such facilities on board, it would not have been impossible to do so. In reality, there were two reasons why they had not been fitted: the financial cost, and the lack of any obligation to do so. The 15-24m Code contained only a recommendation for sanitary and toilet facilities to be provided on a vessel of the size and age of *St Amant*.

Irrespective of these reasons, it is considered unacceptable for commercial fishermen in the 21st Century to have to live and work in the conditions found on board *St Amant*. There were obvious health implications from the crew members having to use a bucket for a toilet, especially in poor weather, when they were obliged to sit next to their own fresh food provisions and the catch of scallops in the hold. More significantly for this accident, the alternative practice of crew members relieving themselves, sitting or leaning, over the vessel's side in way of low bulwarks, exposed them to an unnecessarily high risk of falling overboard. Despite the lack of

regulations for domestic facilities on a vessel of this size and age, fishermen should have a fundamental right to be provided with hygienic working and living conditions, including safe toilet facilities.

The difficulties of introducing new statutory requirements for fishing vessels are recognised. Although the UK's intended ratification of ILO 188 will provide the MCA with an opportunity to review the requirements for domestic facilities on fishing vessels, it is acknowledged this may be difficult to realise without concerted support from everyone involved in the fishing industry.

However, there may be scope, under other existing legislation, for the MCA to be more proactive in encouraging owners and skippers of fishing vessels to improve accommodation and sanitation standards in line with the recommendations in the 15-24m Code. Guidance could also be provided to encourage owners and skippers to consider the effect of accommodation, hygiene and sanitation facilities when conducting their vessel's risk assessments.

2.6 USE OF PFDS AND PLBS

Although *St Amant*'s risk assessments stated that PFDs should be worn as a control measure against a crewman drowning if he fell overboard, the two PFDs carried on board *St Amant* for wear during routine work had fallen into disuse and were in poor condition. This was because the crew had reportedly stopped wearing them some years before this accident after a PFD had inadvertently inflated while being worn on deck.

Concerns from fishermen about the practicalities of wearing PFDs while working on deck have previously been encountered by the MAIB. However, recent trials conducted by fishermen, as summarised in the RNLI leaflet at **Annex O**, have confirmed that there are now new designs of PFDs available that are more suited to fishing operations.

Although Steven was reported to be able to swim, wearing a PFD significantly increases the likelihood both of a person being seen in the water, and of their chance of survival. Although they are not required to be carried on board fishing vessels, PLBs can not only help locate a person in the water, but also raise the alarm immediately if they fall from the vessel.

Although there are no requirements for the carriage of PFDs and PLBs on board fishing vessels, the MCA is currently working with industry bodies to realise a significant shift in the safety culture of fishermen, which will result in the routine wearing of PFDs when working on the open decks of fishing vessels. The circumstances of this accident provide further evidence in support of this initiative.

2.7 THE MCA'S EXEMPTION PROCESS

2.7.1 Bulwark height exemption on *St Amant*

The bulwark heights on *St Amant* were low and did not comply with the statutory requirements, particularly in the area aft of the outriggers. In accordance with the 1975 Rules, the fixed bulwark height on *St Amant* should have been 760mm, with an overall bulwark height, including guardrails or wires, of 915mm. However, the lowest bulwark height measured on *St Amant*'s working decks was only 700mm.

The introduction of the 1975 Rules not only saw the development of new construction requirements, but also the first statutory system for inspecting and surveying fishing vessels. Given this considerable change, the rules included a timetable to phase in their application to pre-1975 fishing vessels, based on each vessel's size and age. As the building of *St Amant* had commenced in 1974, before the 1975 Rules came into effect, the new requirements, including the minimum bulwark height, should have become applicable to *St Amant* on 1 October 1980.

However, during the late 1970s and early 1980s it became commonplace for the then DoT to grant exemptions from the 1975 Rules to pre-1975 vessels, a process often referred to as “grandfather rights¹¹”. In 1985, DoT surveyors even assisted *St Amant*'s then owner to apply for a number of exemptions.

The acceptance of the low bulwark heights on *St Amant* was due to an exemption whereby the vessel was granted a standard dispensation from the need to fit guardrails or wires to provide an overall bulwark height of 915mm, on the basis that these would interfere with the vessel's operation. This meant that *St Amant* was required to only have fixed bulwarks of 760mm. However, as the lowest bulwark height measured on *St Amant* after this accident was only 700mm, it would appear that over time the height of the bulwarks fitted on *St Amant* had become further reduced.

The implication that raising the bulwark height would impact on the vessel's operation was similarly, never challenged. Scallop dredges are recovered from the sea by overhead gantries. Provided that there is no negative effect on the vessel's stability from lifting the dredges too high and the crew can attach the dredge tipping arrangement, there is little justification for having such low bulwarks. Indeed, other scallop dredgers have incorporated conveyors or sorting tables into their bulwarks at the crews' waist to chest height to improve working efficiency.

When built, *St Amant* had in fact complied with the 1975 Rules' overall bulwark height requirement. Guard wires had been provided above the bulwarks, but these were never used operationally, and were subsequently removed in line with the exemption. The granting of the exemption therefore, perversely, resulted in existing safety features being removed, rather than a dispensation from having to comply with additional requirements.

Following the serious fire in 1984, the vessel was extensively re-built and the fishing mode changed from side trawling to scallop dredging. Given the extent of repairs, it is arguable whether the vessel should have still been treated as a pre-1975 vessel for the purposes of the 1975 Rules. However, even though the repair work included the replacement of a large proportion of the bulwarks, the DoT again granted an exemption from the 1975 Rules' bulwark height requirements. An obvious opportunity was missed to ensure compliance with the bulwark height requirements.

2.7.2 MCA exemption cancellation process

In 2002, the 15-24m Code replaced the 1975 Rules for vessels of *St Amant*'s size. Although the 15-24m Code required vessels constructed before 23 November 1995 to have an overall bulwark height of at least 915mm, it also stated that existing exemptions from the 1975 Rules could remain in force.

¹¹ Grandfather rights refer to a situation whereby an exemption is granted to allow a previous rule (or no rule at all) to continue to apply to an existing situation, while the new rule applies to all future situations.

However, in 2007 the MCA's *Instructions to Surveyors for Fishing Vessels* introduced a new MCA policy for existing exemptions, contradicting the previous exemption policy in the 15-24m Code. Exemptions were now to be reviewed at renewal surveys, with the aim of deleting them where possible. However, there was no record of any of *St Amant*'s exemptions having been reviewed during the UKFVC renewal survey in October 2009 and none were removed. Had the exemption for the reduced bulwark heights on *St Amant* been reviewed and withdrawn in accordance with the *Instructions to Surveyors*, the overall height of the vessel's bulwarks would have been raised to the statutory height; the risk of Steven falling overboard would therefore have been reduced. The contradiction between the 15-24m Code and the MCA's instructions might have led to confusion among the MCA's surveyors regarding the need to review and remove exemptions.

2.7.3 Previous MAIB recommendations

The MAIB has previously made recommendations to the MCA regarding the removal of bulwark height exemptions following three fatal accidents involving the loss of crew members from fishing vessels in 1996, 2002 and 2004.

Each of these recommendations was "accepted" by the MCA, and it was subsequently reported that all exemptions were being reviewed, in line with the MCA's *Instructions to Surveyors for Fishing Vessels* issued in 2007. However, it would appear that this policy is still not being implemented effectively and requires further reinforcement.

2.7.4 Lifelines and safety harnesses

A condition of the bulwark height exemption granted to *St Amant* was for the provision of lifelines and safety belts to allow safe access on deck in heavy weather. However, there was no provision for any lifelines on board *St Amant*, as these were not considered necessary by the vessel's skipper. This deficiency had not been identified during any of the MCA's surveys or inspections.

The two safety harnesses that were carried on board *St Amant* were fall arrest-type harnesses, more suited to working at height than for use with a lifeline. Although the 15-24m Code required at least two safety harnesses to be carried on board, it did not stipulate the type of harness to be carried, nor whether these should be appropriate for use with lifelines. The 15-24m Code would benefit from further clarification at the next review regarding the type of harnesses that should be carried.

It is unlikely that Steven would have been using a safety harness and lifeline to go out on deck while off duty in relatively benign conditions, and it is therefore doubtful whether the availability of a lifeline would have prevented this accident. However the use of harnesses and lifelines can be a valid means of preventing crew members from being lost overboard, particularly in severe weather. The absence of lifelines on *St Amant* underlines that there was a poor attitude to safety management on board.

2.8 SURVEY AND INSPECTION ISSUES

2.8.1 MCA deficiency rectification policy

A fundamental element of the MCA's survey and inspection regime is to ensure that fishing vessels comply with the relevant statutory requirements and are being operated safely. Great stock is placed on the identification and recording of any deficiencies from the requirements, and it is the MCA's policy that all such deficiencies should be rectified and closed.

Various MCA documents provide guidance to surveyors on the policy for ensuring that deficiencies are rectified, including:

- *Instructions to Surveyors for Fishing Vessels*, MSIS 27
- *Inspection Policy – Instruction for Guidance of Surveyors*, MSIS 8
- *Survey and Certification Policy - Instructions for the Guidance of Surveyors*
- MCA Procedures
- Various OANs.

Some aspects of the deficiency rectification policy provided in these documents were found to be duplicated. In other areas the policies were contradictory; in particular regarding the need to ensure the rectification of deficiencies within the allotted timescale. These various policy documents would benefit from being rationalised to ensure that consistent and succinct guidance is provided to surveyors.

It is considered possible that such confusion has contributed to the problems that the MCA has historically experienced regarding the management of outstanding deficiencies. Various audits of the MCA have repeatedly raised concerns regarding the large numbers of deficiencies that have not been closed within the required timescales. Despite several initiatives to try to resolve these issues, it would appear that none have been wholly successful; between 2005 and the time of this accident, 36 out of 76 deficiencies identified on *St Amant* had not been confirmed as rectified.

A number of the 36 outstanding deficiencies for *St Amant* related to general housekeeping. Had these deficiencies been confirmed as rectified, it is possible that the vessel's crew would have ensured that the decks were clear of the type of slip and trip hazards that possibly contributed to this accident.

Another of the outstanding deficiencies on *St Amant* related to a major modification to the lifting arrangement in 2010. This had serious implications for the vessel's structural integrity and stability. The MCA was initially proactive in identifying that this modification was being carried out, and raised a deficiency requiring further details to be provided to the MCA for consideration. However, there was no record of the MCA following up this deficiency, and the vessel was allowed to continue operating in a potentially unsafe condition for over a year. In such situations, the owner is responsible for notifying the MCA of any modifications. However, if this

deficiency and the modification had been followed up, it would have provided an opportunity (given the link between bulwark heights and the arrangement for lifting the fishing gear) to reconsider the justification for the bulwark height exemption.

2.8.2 MCA survey and inspection records

Details of surveys and inspections were recorded on the MCA's SIAS computer system including, from December 2004, the status of deficiencies. Although it was possible to interrogate SIAS to obtain information on outstanding deficiencies, there was no simple means of quickly identifying the latest status of deficiencies for a given vessel. Had such a feature been available to the surveyors attending *St Amant*, it would have assisted them in ensuring that previous deficiencies were confirmed as having been rectified. At the time of the investigation the MCA was in the process of replacing SIAS with a Single Vessel Database. The MCA must ensure that the new system provides a robust method to help surveyors manage outstanding deficiencies more effectively.

Likewise, a simple means of helping the MCA's surveyors to identify any unauthorised modifications to a vessel would also be useful. Maintaining the photographic record of a vessel's principal features, as required in the MCA's instructions to surveyors (MSIS 27), should help achieve this aim.

2.8.3 MCA survey aide-memoires

The MCA's Aide-Memoire form (MSF 5500) provided surveyors with a useful checklist of items to be reviewed during surveys and inspections. However, this form could be further enhanced by including entries to prompt surveyors to consider the issues raised by this investigation. These should include:

- Measurement of bulwark heights;
- The validity of any exemptions;
- The adequacy of domestic accommodation and sanitary facilities;
- The adequacy of risk assessments and the implementation of control measures;
- All previously open deficiencies in SIAS are either closed or re-issued;
- That photographs have been taken of the vessel's principal features (to assist in identifying future unauthorised modifications);
- A crew list is available, in accordance with the Merchant Shipping (Crew Agreements, List of Crew and Discharge of Seamen) (Fishing Vessels) Regulations 1972, as amended.

2.8.4 Post-accident inspections by the MCA

MCA surveyors typically conduct general inspections of fishing vessels that have been involved in a serious accident. These inspections do not specifically focus on the aspects of the vessel's design or operation that were relevant to the accident. Despite the MCA's inspections of *St Amant* following this accident, the

vessel was able to re-enter service with neither any discernible improvement in the general condition, nor with any change to either the low bulwarks or deficient risk assessments. Post-accident inspections should be more focused and ensure that, at the very least, any risk assessments, working practices and safety features relevant to the circumstances of the accident comply with the appropriate standard.

SECTION 3 - CONCLUSIONS

3.1 SAFETY ISSUES DIRECTLY CONTRIBUTING TO THE ACCIDENT WHICH HAVE RESULTED IN RECOMMENDATIONS

1. Evidence from *St Amant*'s survey and inspection history indicated its operators had a sustained and consistent disregard for the safe operation of the vessel and provision of adequate facilities for its crew. [2.3.1]
2. The consistently poor standard of housekeeping reported on *St Amant* increased the likelihood of a crewman slipping or tripping and falling overboard. [2.3.2]
3. Each of the three risk assessment documents on *St Amant* was flawed in some way, and none of the practical measures that had been identified to reduce the risk of a crew member falling overboard had been put in place. This accident was a sad reminder that risk assessments are meaningless unless the results are acted on properly. [2.4.1]
4. If *St Amant*'s skipper had received practical assistance in conducting risk assessments, it is possible that the vessel's risk assessments would have been more robust, and the onboard working environment safer [2.4.2]
5. The domestic facilities on *St Amant* were worse at the time of the accident than when the vessel was built, over 36 years previously. Owners and skippers should consider the effect of accommodation, hygiene and sanitation facilities on the risks to crew from living on board. [2.5]
6. The exemption given for low bulwark heights on *St Amant* was never challenged, despite the timetable for the introduction of the 1975 Rules and the substantial modifications to the vessel throughout its working life. [2.7.1]
7. The exemption given for low bulwark heights was not reviewed in accordance with the MCA's policy. It was possible that this was due to confusion caused by contradictory statements in the 15-24m Code and the MCA's *Instructions to Surveyors for Fishing Vessels*. [2.7.2]
8. Despite the MCA accepting three recommendations from the MAIB regarding the removal of bulwark height exemptions, it would appear that the policy has not been implemented effectively and requires further reinforcement. [2.7.3]

3.2 OTHER SAFETY ISSUES IDENTIFIED DURING THE INVESTIGATION ALSO LEADING TO RECOMMENDATIONS

1. Despite a previous man overboard incident in way of the aft low bulwarks, no actions had been taken by the skipper to reduce the likelihood of such accidents. [2.4.1]
2. Risk assessments are a fundamental part of managing a fishing vessel safely and are a demonstration of how the owner/skipper exercises his duty of care to provide a safe working environment for the crew. [2.4.3]

3. There was no provision for lifelines on *St Amant* despite this being a condition of the exemption for low bulwark heights. The harnesses that were carried were unsuited to being used with lifelines. Although the 15-24m Code required at least two safety harnesses to be carried on board, it did not stipulate the type of harness to be carried, nor whether these should be appropriate for use with lifelines. [2.7.4]
4. Out of the 76 deficiencies identified on *St Amant* between 2005 and the time of the accident, 36 had not been confirmed as being rectified on the MCA's SIAS database. [2.8.1]
5. There was no simple means of quickly identifying the latest status of deficiencies for a given vessel in SIAS. The development of the MCA's new Single Vessel Database must provide a robust system for managing vessel deficiencies. [2.8.2]
6. Maintaining the photographic record of a vessel's principal features, as required in the MCA's instructions to surveyors (MSIS 27), should help with the identification of unauthorised vessel modifications. [2.8.2]
7. The MCA's Aide-Memoire form (MSF 5500) could be further enhanced by prompting surveyors to consider the issues raised by this investigation, such as: adequacy of bulwark heights; continuing validity of exemptions; adequacy of domestic facilities; adequacy of risk assessments; previously open deficiencies in SIAS; maintaining a photographic record of a vessel's principal features; and availability of a crew list. [2.8.3]
8. Post-accident inspections conducted by the MCA should consider any risk assessments, working practices and safety features that are relevant to the circumstances of the accident. [2.8.4]

3.3 SAFETY ISSUES IDENTIFIED DURING THE INVESTIGATION WHICH HAVE BEEN ADDRESSED OR HAVE NOT RESULTED IN RECOMMENDATIONS

1. None of the crew knew Steven's surname or had any contact details for his family or next of kin. A full crew list was also not available either on board the vessel or ashore, as required by The Merchant Shipping (Crew Agreements, Lists of Crew and Discharge of Seamen) (Fishing Vessels) Regulations 1972. Skippers and owners should maintain a crew list in accordance with the 1972 Regulations and make sure that they know the relevant personal information for their crew so they can react appropriately in an emergency. [2.3.4]
2. Wearing PFDs and PLBs significantly increases a person's chances of survival if they fall overboard. [2.6]
3. The bulwark heights on *St Amant* were low and did not comply with the statutory requirements. Had they been the required height, incorporating guardrails or wires, it is much less likely that Steven would have been able to fall overboard. [2.7.1, 2.7.2]

SECTION 4 - ACTION TAKEN

4.1 ACTIONS TAKEN BY OTHER ORGANISATIONS

The **Maritime and Coastguard Agency** has:

- Written to the owner of *St Amant* on 29 June 2012 requiring the height of the vessel's bulwarks to be increased to ensure compliance with the requirements of the 15-24m Code.

The owner of *St Amant*, **Nightvalley Limited** has:

- Cancelled the partnership agreement with the skipper of the vessel at the time of the accident.
- Installed a rail above the existing solid bulwark to increase the overall height of the bulwarks between the vessel's stern and whaleback to the required minimum statutory height.
- Installed a chemical toilet within a temporary wooden structure on the starboard side of the whaleback.

SECTION 5 - RECOMMENDATIONS

The owner of *St Amant*, **Nightvalley Limited** and the **skipper at the time of the accident** are recommended to:

- 2013/101 Improve safety on board this, and any other vessels they may own or operate, by reviewing the risk assessments and safety procedures, including:
- Consideration of the use of personal flotation devices (PFDs) and personal locator beacons (PLBs) for crew while they are on deck.
 - The adoption of robust housekeeping procedures to minimise the risk of trip hazards and clutter on deck.
 - Conduct regular emergency drills on board in accordance with the requirements of the 15-24m Code and the guidance in MGN 430 (F).

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

- 2013/102 Ensure that its current policy of reviewing and deleting exemptions granted to fishing vessels that predate current regulatory requirements is applied robustly. As part of this process, the ambiguity between its Instructions to Surveyors and the 15-24m Code regarding the ongoing acceptance of standard exemptions should be resolved.
- 2013/103 Provide guidance to the owners and skippers of fishing vessels which operate at sea for more than 24 hours on appropriate accommodation standards. The guidance should also recommend consideration of hygiene and sanitation facilities in a vessel's risk assessments, and the application of appropriate control measures.
- 2013/104 Introduce a policy and procedure for conducting inspections of fishing vessels following accidents that have resulted in a fatality, serious injury¹² or serious damage. The procedure should require examination of the factors that are relevant to the circumstances of the accident, including:
- Any relevant exemptions which were granted that predate current regulatory requirements.
 - That the working practices relevant to the circumstances of the accident were adequate and were consistent with existing rules and obligations.
 - The risk assessments relevant to the circumstances of the accident. In particular, the quantification of the hazard and risk, and the effective implementation of the specified control measures, including the use of personal protective equipment.
 - The effectiveness of the crews' response to the accident or emergency, including effective preparation and use of equipment.

¹² To be defined, but should include cases where a crewman has to be evacuated from sea for medical reasons, is admitted to hospital for more than 24 hours, or is unable to work for a significant period due to their injuries.

- 2013/105 Improve the management of fishing vessel surveys and inspections by ensuring that:
- Existing survey and inspection procedures and guidance are reviewed to improve the clarity of the guidance and ensure that it is consistent throughout.
 - There is an effective and readily accessible system to record and provide information to surveyors on the status of all identified deficiencies.
 - Existing instructions requiring a photographic record of a vessel's principal features are followed.

**Marine Accident Investigation Branch
January 2013**

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

