Report

into the sinking of

fv *Constancy* BCK 371

on 30 July 1998

with the loss of one life

Extract from

The Merchant Shipping

(Accident Reporting and Investigation)

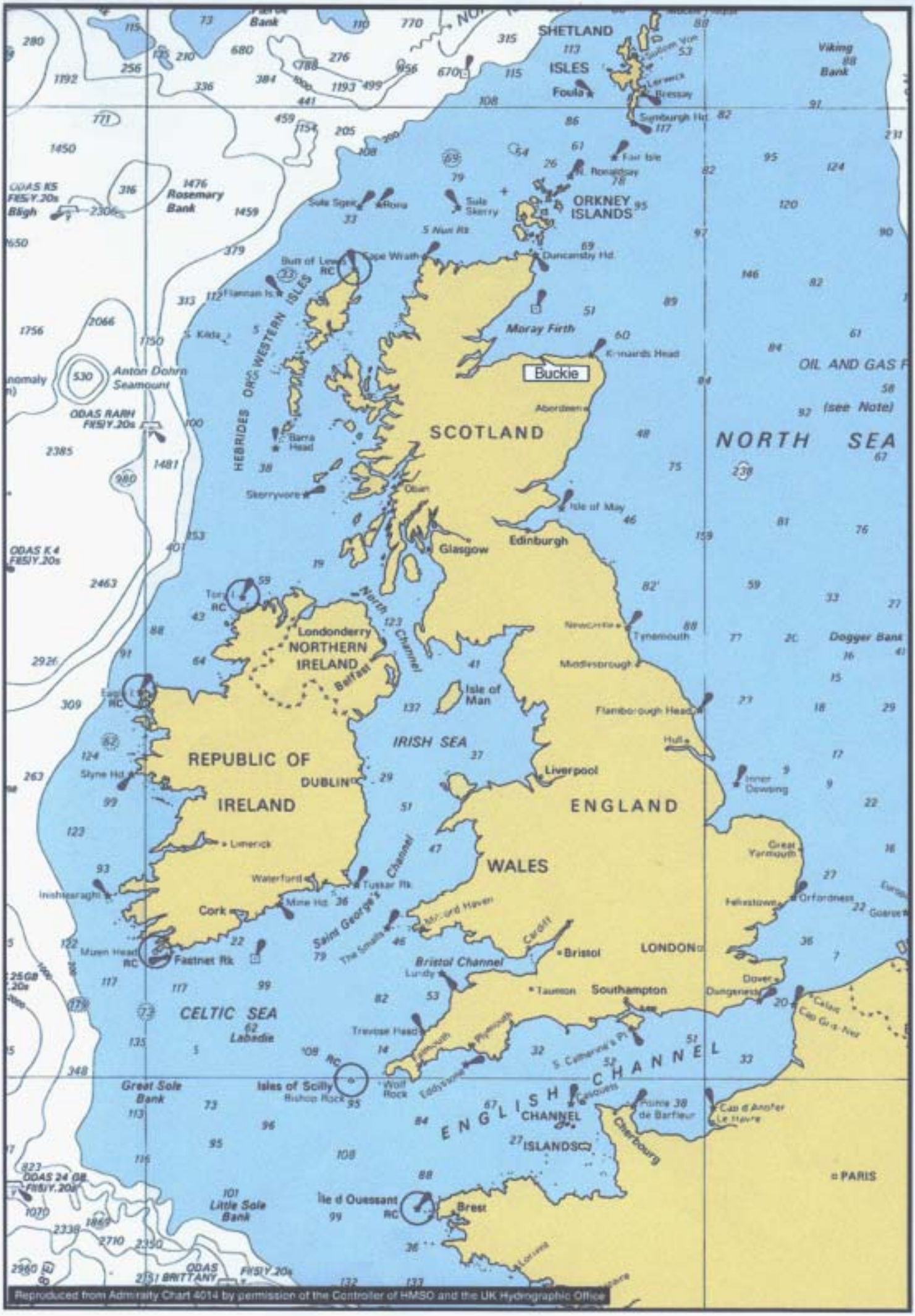
Regulations 1994

The fundamental purpose of investigating an accident under these Regulations is to determine its circumstances and the causes with the aim of improving the safety of life at sea and the avoidance of accidents in the future. It is not the purpose to apportion liability, nor, except so far as is necessary to achieve the fundamental purpose, to apportion blame.

CONTENTS

GLOSSARY OF ABBREVIATIONS

BST	-	British Summber Time
LSA	-	Life Saving Appliances
MCA	-	Maritime and Coastguard Agency (of the Department of the Environment, Transport and Regions). MCA previously known as MSA (Marine Safety Agency).
MRCC	-	Maritime Rescue and Co-ordination Centre#
rpm	-	revolutions per minute
SOLAS	-	Safety of Life at Sea (Convention)
UK	-	United Kingdom
UTC	-	Universal Co-ordinated Time



SYNOPSIS

In telexes to MAIB timed at 1231 UTC and 1537 UTC on 30 July 1998, Aberdeen Maritime Rescue Co-ordination Centre (MRCC) reported that fv *Constancy, BCK* 371, had foundered with the loss of a crewman. An investigation began the same day.

Constancy, BCK 371, was a prawn trawler of wooden construction and 9.8m registered length, operated out of Buckie by a skipper and crewman.

At 0600 on 30 July 1998, the vessel was fishing 10 miles north of Buckie, in the Moray Firth, when it capsized while turning. Skipper and crewman escaped from the vessel.

The vessel's liferaft floated free and was inflated by the skipper who then boarded it. However, the liferaft drifted from the crewman and he was unable to board. Efforts by the skipper to alert other vessels in the area, using flares, were unsuccessful.

By 1100 *Constancy* was overdue in Buckie and MRCC Aberdeen were alerted at 1118. Buckie lifeboat was launched and safely recovered *Constancy*'s skipper from the liferaft. The body of the crewman was recovered later by another fishing vessel, *Alec Watt*.

No inspection of the vessel's wreck has been made. Thus, no certain cause for her loss has been established. However, the most probable cause of the capsize is considered to be snagging of the fishing gear during the vessel's turn.

Constancy was not required to carry a liferaft and any liferaft carried was not required to be equipped to MCA standards. That on board *Constancy* was not equipped to MCA standards and its level of equipment was not apparent until inflated and boarded by the skipper. Finding less equipment than expected the skipper became anxious and elements of distress and confusion crept into his actions.

One recommendation is made and is directed at MCA. It concerns the provision of liferaft equipment lists to purchasers and hirers of liferafts, equipped to non-MCA standards, and which are intended to be carried on fishing vessels.

Constancy BCK371

SECTION 1 - FACTUAL INFORMATION

1.1 PARTICULARS OF VESSEL AND INCIDENT

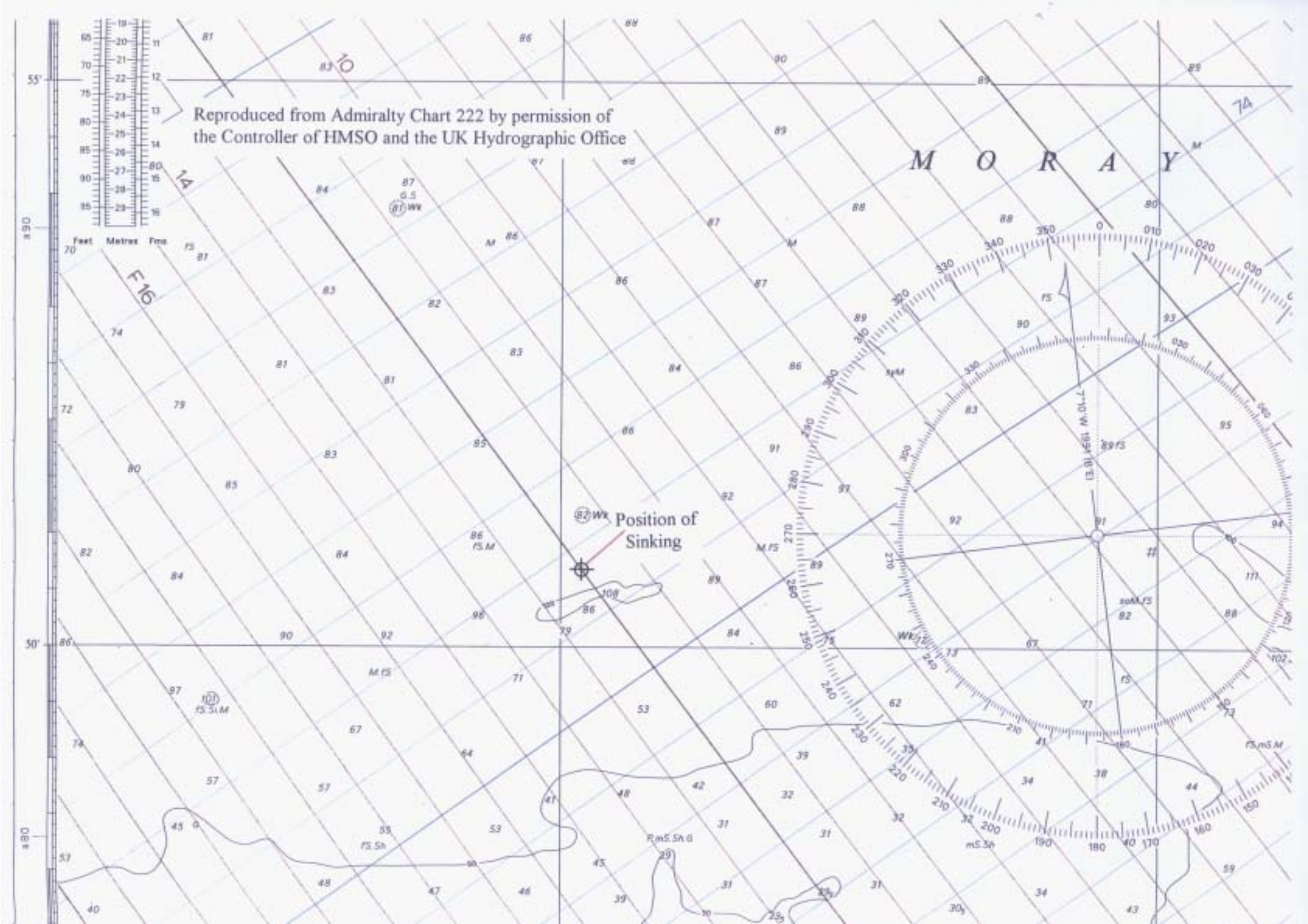
Name	:	*Constancy*
Port of Registry	:	Buckie
Type	:	Prawn trawler
Crew	:	two
Fishing Number	:	BCK 371
Official Number	:	A17033
Registered Length	:	9.8m
Place & Year Built	:	Douarnez, France. 1974
Construction	:	Wood (oak on oak).
Registered Owner	:	J W Wood 6 Edinburgh Road Musselburgh East Lothian EH21 6ED
Position of accident	:	57° 50.7'N 002° 59.6'W
Date and time	:	30 July 1998, 0600.
Casualties	:	One life lost

All time quoted are BST (UTC + 1 hour)

1.2 HISTORY OF VOYAGE

The skipper and his crewman travelled to Buckie on Tuesday 28 July, 1998, arriving at 1745. On arrival they found that a net repair had not been completed, preventing them from going to go to sea until the following day.

Constancy left Buckie at 1800 on 29 July with her partner vessel the *Defiant*, a vessel of similar size. They headed for fishing grounds about 10 miles to the north of Buckie, in The Moray Firth, and shot their gear at about 2000 (**Figure 1**).


Reproduced from Admiralty Chart 222 by permission of
the Controller of HMSO and the UK Hydrographic Office
M O R A Y
Position of
Sinking
Feet
Metres
Fms
55'
50'

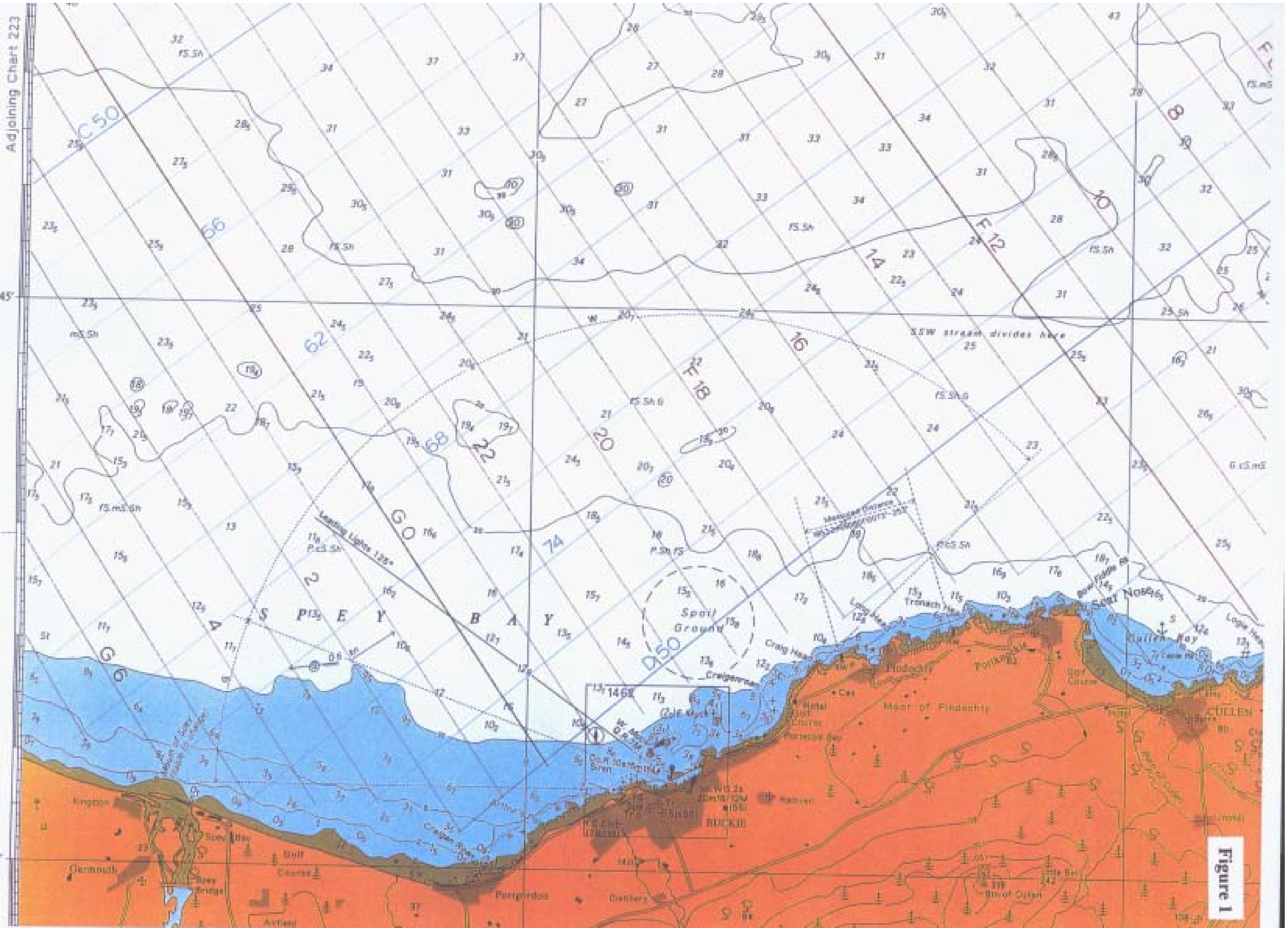

Adjoining Chart 223
S P E Y   B A Y
Spoil Ground
S.S.W stream divides here
Leading Lights 125°
Craig Head
Craigenroan
Tronach Head
Scar Nose
Cullen Bay
Findochty
Portknockie
Moor of Findochty
BUCKIE
CULLEN
Kingston
Garmouth
Spey Bay
Spey Bridge
Portgordon
Golf Course
Distillery
Airfield

Figure 1

Constancy's tow finished at 2400 and her gear was shot again at 0230, 30 July. This first haul filled five boxes with prawns which were stowed on deck.

The skipper went to the cabin at 0300 and slept for 2½ hours until called by the crewman at 0530.

On entering the wheelhouse the skipper found the vessel was towing to the east. The wind was north force 3; there was no swell. The *Defiant* was about half a mile to the north and towing to the west.

The crewman had begun to boil a kettle of water and, to clear the steam, a window on the starboard side of the wheelhouse was opened.

The skipper decided to make a gentle 180° turn in order to tow to the west. The vessel was making about 2 knots with the engine running at 1300rpm.

Shortly after altering the setting of the autopilot to port to begin the turn, but with no alteration of the engine's settings, the vessel rapidly heeled to port and capsized. Both men were able to climb from the wheelhouse through the open window on the starboard side and into the sea. The time was 0600.

The two men used a lifebuoy and other buoyant items to remain afloat. The crewman was very unsettled at this stage, and it required some effort from the skipper to calm him. *Constancy* remained inverted, afloat and with its engine running for some time. Before sinking she took on a bows-up attitude, at which stage the liferaft container floated free.

The skipper swam towards the liferaft's container. After activating the inflation system, by pulling the painter, he climbed on board the inflated liferaft. He then used the liferaft's knife to cut all lines which he considered could still be attached to *Constancy*, which had sunk beneath the surface. The crewman also swam towards the liferaft, but, before he was able to climb on board, it began to drift away from him. The skipper's attempt to throw the quoit to the crewman failed because its line became entangled with other pieces of the liferaft's equipment.

Seeing two other vessels in the area, the skipper attempted to use the three smoke flares he found in the liferaft's equipment pack. He noted a date on each flare of 7/97. All three flares were activated, but none was seen by either of the two vessels.

The crewman, who was still in the water, and the liferaft continued to drift apart.

At 1118 a call was received by MRCC Aberdeen, from *Defiant*, to report that *Constancy* was overdue. Buckie lifeboat was launched and recovered *Constancy's* skipper from the liferaft. The body of the crewman was recovered from the water by the fishing vessel *Alec Watt* and then transferred to the lifeboat.

An oil slick sighted in position 57° 50.7'N 002° 59.6'W was reported to MRCC Aberdeen and was taken as the position of the wreck of *Constancy*. Chart depth of water was 85m.

MRCC Aberdeen declared the incident closed at 1509.

1.3 GENERAL ARRANGEMENT OF *CONSTANCY*

The vessel's hull was divided into three main compartments. From forward these were; three-berth cabin, engine room and fish hold.

Above deck and forward was the wheelhouse, with internal access to both the engine room and cabin. Aft of the wheelhouse was the main working deck with a winch forward and a net drum and gantry aft. To the starboard one third of the working deck was an open sided shelter (**Figure 2**).

Figure 2 - Working deck of *Constancy*

1.4 FISHING GEAR

Constancy was equipped as a prawn trawler. A two drum fishing winch was fitted aft of the wheelhouse. Winch drive was by belts from the forward end of the main engine, with a lever controlled jockey pulley for engaging the drive.

The two towing wires were each of 200 fathoms and had been renewed a few weeks before the vessel's loss.

When towing, the wires passed from the winch, aft along the deck to two sheaves, outboard to two more sheaves and then up to blocks on the shoulders of the gantry. Towing loads were transmitted to a central towing point on the gantry, about 1.8m above the deck, by 3 fathoms of combination wire stopper. A sheave at the towing point, through which the stopper passed, allowed the stopper wire to run through the towing point in the event of uneven wire loads. The wires between gantry and winch were maintained slack and the winch's brakes only lightly applied when towing.

From the stopper, each towing wire passed to a 1.7m door, with 30 fathoms of bridle between each door and the net.

1.5 STABILITY

There is no statutory requirement for a fishing vessel of less than 12m length to have approved stability information prepared. *Constancy* had none.

1.6 LIFE SAVING APPLIANCES (LSA)

LSA requirements for small fishing vessels are limited to the carriage of lifebuoys, a buoyant heaving line attached to one of the lifebuoys, lifejackets and six distress signals.

There is no requirement to carry a liferaft on a fishing vessel less than 12m registered length, or for any liferaft which is carried to be equipped to MCA standards. However, MCA strongly recommend that liferafts are carried on all fishing vessels and that they are provided with float free arrangements.

In addition to the minimum LSA, *Constancy* carried a four person Seasava 4 inflatable liferaft, stowed in a flat plastic container on the wheelhouse top. It was not lashed in place but was retained by a shallow open topped box. This liferaft had been serviced in September 1997 and was equipped to non-MCA standards.

This liferaft floated free from the sinking vessel and was used by the skipper. It was later recovered during SAR operations and inspected. It showed no defect and was complete with all manufacturer's listed equipment, except for flares (**Figures 3 & 4**).

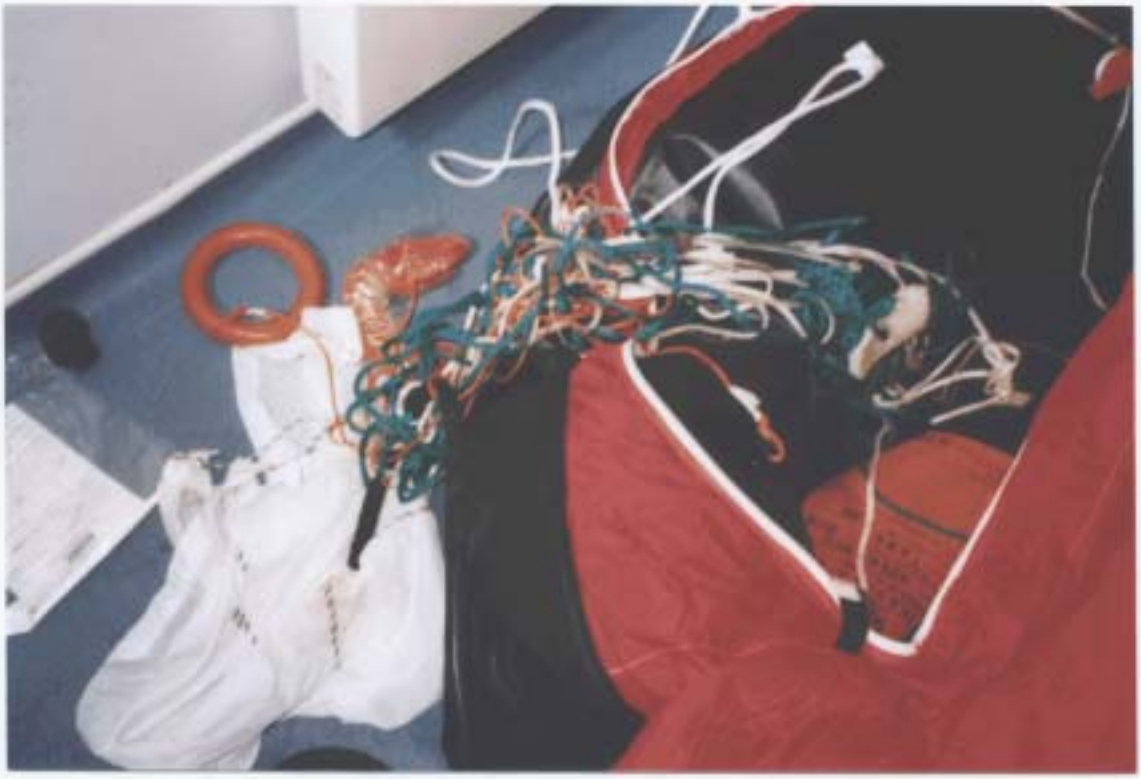


Figure 3 - Liferaft's quoit and line entangled with other equipment

Figure 4 - Remainder of liferaft's equipment

1.7 BILGE SYSTEMS

Two engine driven pumps were able to pump bilges. One, the deck wash pump, was operated continuously supplying sea water to a deck hose which, when not immediately required, discharged over the port bulwark rail. The second pump, a type having a rubber element, was also kept running continuously drawing from the fish hold bilges. A small bleed from the deck wash system into this pump served its lubrication and cooling requirements.

The engine room and fish hold were each equipped with a float-operated high level bilge alarm which activated a common buzzer in the wheelhouse. Regular testing of these alarms was a policy of the owner and skipper.

1.8 CREW

Neither skipper nor crew is required to be in possession of a certificate of competency on any UK fishing vessel less than 16.5m registered length.

Fishermen born after 1 March 1954 are required to have completed safety training courses in sea survival techniques, fire fighting and basic first aid. The skipper had attended the required courses but there was no similar requirement for the deckhand, having been born before March 1954. However, he had undertaken an approved sea survival course.

1.9 SEA AND WEATHER CONDITIONS

During the morning of 30 July 1998 sea conditions were good with a wind of force 2 to 3. Visibility at the time of *Constancy*'s sinking was moderate but improved later in the morning during the SAR operations. Sea water temperature was 14° centigrade.

SECTION 2 - ANALYSIS

2.1 CREW

The skipper and crewman were familiar with their vessel and the type of fishing gear used. Both men satisfied mandatory requirements for certification and training.

2.2 SEA AND WEATHER CONDITIONS

Neither the report by the skipper of *Constancy*, nor that from any other vessel in the area, suggested there were any conditions of wind or sea which could have caused a vessel of this size any difficulty. This is demonstrated by *Defiant*, a vessel of similar type and size, operating with no difficulty at the time of the loss of *Constancy*.

2.3 CAUSE OF CAPSIZE

No inspection has been made of the wreck of *Constancy*. Therefore, no certain cause for the vessel's capsize can be offered.

However, due to the technique of fishing employed, and from the description of the surviving skipper, a likely cause of the capsize is considered to be snagging of the gear on a seabed obstruction, or body of mud. Although snagging may cause a vessel difficulty under many circumstances, the capsizing effect of the snagging load on the vessel would have been amplified by *Constancy* turning.

The behaviour of vessels of similar size and construction when snagging fishing gear while turning is known from previous investigations undertaken by MAIB. There is no indication that *Constancy* was affected differently.

2.4 FLOODING

A contributory factor in a capsize of this type is sometimes the reduction in a vessel's stability caused by progressive flooding of a space, commonly the engine room. However, both the engine room and the fish hold of *Constancy* were equipped with high level bilge alarms and it is reported that these were tested frequently. As neither alarm had sounded prior to the capsize, flooding is considered to have been unlikely.

2.5 STABILITY

Although having experienced snagging of *Constancy*'s gear when equipped with heavier gear and operating over different grounds, the number of

snaggings experienced in The Moray Firth, where lighter gear was used, were limited. The skipper had formed a favourable opinion of the vessel's ability during these events, but in common with most fishing vessels of less than 12m length, *Constancy* had no stability data and her resistance to snagging forces are not known.

2.6 ACTIONS OF CREW

Until the time of the vessel's capsize all crew activity was routine and unremarkable. However, once the two men were in the water some features of the events are worthy of comment.

The skipper had attended a training course in survival techniques and this experience showed its value immediately after the capsize. The crewman had some difficulty in remaining calm. The skipper's efforts in assisting the crewman in this difficult situation showed that fundamental lessons of the training had been well learned.

However, once the liferaft had floated free, and been inflated by the skipper, the situation deteriorated.

Once the skipper had boarded the liferaft, he found it drifting away from the crewman. He recognised that he should throw the quoit and buoyant line to the crewman in order to pull the two together. However, the buoyant line close to the quoit had become tangled with other items, such as the boarding ladder, drogue and painter. This prevented easy deployment of the quoit.

However, the liferaft was equipped with a knife, which the skipper had already used to cut the painter and other lines, and this was available to cut the tangled line from the quoit allowing it to be re-tied. A substantial proportion of untangled buoyant line was still available in the stowage pouch. This course of action was not followed.

Instead, the skipper placed reliance on attracting the attention of other fishing vessels by using the liferaft's flares. On opening the liferaft's pack, he found three smoke flares. This was much fewer than he had expected and caused him concern.

The skipper became more anxious when the three smoke flares appeared not to work correctly; or, at least, they failed to attract the attention of the fishing vessels previously sighted. Adding to this distress was his observation of a date of 7/97 marked on the flares, more probably 9/97, which suggested to him that they were out of date. Doubtless this anxiety was compounded by the sight of his crewman, still in the water, drifting further away.

2.7 LIFE SAVING APPLIANCES

Several points concerning the liferaft are worthy of comment.

1. Fishing vessels of less than 12m registered length are not required to carry liferafts.

2. The liferaft carried by *Constancy* was equipped to a standard intended for use in the leisure market, not to MCA or SOLAS (International Safety of Life at Sea Convention) standards (**Figures 3 & 4**).

3. The liferaft carried by *Constancy* had been equipped with smoke flares marked with an expiry date of 9/00 (September 2000). The skipper had probably seen only the date of manufacture, 9/97, and interpreted this as the expiry date, not recognising 00 as representing the year 2000.

4. No certain reason can be given for the apparent failure of the flares. However, the liferaft's packing station reports that stowage of these items in flat packs, which are necessarily exposed to the elements when on board a vessel, has in some cases allowed water to be trapped within the packs and affect the flares. This could not be confirmed.

5. The liferafts on which the skipper had undertaken his survival training had been equipped to MSA/SOLAS standards.

6. Inspection of the recovered liferaft identified no defect. With the exception of the three smoke flares, which had been thrown away by the skipper after use, the equipment carried was in accordance with the records supplied by the packing station. In particular the knife was in its pocket and there was a substantial proportion of the quoit's line untangled and neatly stowed in its pouch.

7. The liferaft's stowage arrangements did not include the fitting of a hydrostatic release unit. However, because the canister was not lashed in place it floated free once the vessel moved from the bows up state during the sinking sequence.

All liferafts carried by over 12m UK fishing vessels are required to be equipped to minimum standards. Fishermen's safety training courses are, naturally, geared to this level of equipment. Having trained using an approved liferaft, a fisherman might well then work on a vessel less than 12m long which has a liferaft not equipped to the same standard. In an emergency, he might well not become aware of the level of equipment in the liferaft until it has inflated and he has boarded.

Knowledge of the equipment carried in a liferaft should assist users to employ the equipment to the best advantage. Unknown levels of equipment may lead to uncertainty and a loss of confidence at a time of distress when a user's mental state might be critical to the survival of himself and others.

Present advice of the MCA is that all fishing vessels should carry an inflatable liferaft. Developments and discussions within the fishing industry might result in this becoming a requirement on some, if not all, less than 12m fishing vessels. However, there remains the possibility that liferafts carried by these vessels might not all be, or need to be, equipped to the standards required of those on larger vessels.

Variations in liferaft equipment levels are likely to remain common on fishing vessels and a clear indication of pack contents, on outer canisters or supplied at the time of service, would be sensible. Such a provision is likely to increase a user's knowledge and confidence in his liferaft and its equipment, with the potential result that these important items will be used to their best advantage in an emergency.

SECTION 3 - CONCLUSIONS

3.1 FINDINGS

Constancy was operated out of Buckie, as a prawn trawler, by a skipper and one crewman. [1.2, 1.4]

Neither the skipper nor the crewman was required to be certificated. [1.8]

Only the skipper was required to have undertaken safety training, this he had done. [1.8, 2.1]

While towing its gear at 0600 on 30 July 1998, *Constancy* capsized to port while making a turn to port. [1.2]

Constancy sank in position 57° 50.7'N 002° 59.6'W in a depth of 85m. [1.2]

The most probable cause of the capsize is considered to have been snagging of the fishing gear. [2.3]

A liferaft was carried and floated free as the vessel sank. [1.2, 1.6]

Only the skipper managed to board the liferaft. [1.2]

Use of the liferaft's flares did not attract the attention of a second vessel in the area. [1.2]

The liferaft was not equipped, and was not required to be equipped, to MCA standards. [1.6, 2.7]

Without reference to the manufacturer's or packing station, no indication of the liferaft's contents was readily accessible to the skipper and crew. [2.7]

3.2 CAUSAL FACTORS

Constancy probably capsized because her fishing gear snagged and induced a heeling moment on the vessel which she was unable to resist.

A contributory factor was the amplifying effect of the vessel turning at the time of snagging.

SECTION 4 - RECOMMENDATION

The Maritime and Coastguard Agency is recommended to:

1. Advise liferaft manufacturers and packing stations that, for liferafts not equipped to MCA standards and which are to be carried on fishing vessels, a list of a liferaft's equipment should be supplied to the purchaser or hirer at the time of purchase or hire and at each service. The list should not be stowed within the liferaft's container. This advice should also be made known to the fishing industry so that owners, skippers and crews become aware of the provision.