



Bundesstelle für Seeunfalluntersuchung
Federal Bureau of Maritime Casualty Investigation
Federal Higher Authority subordinated to the Ministry of Transport,
Building and Urban Affairs

Summary
Investigation Report 68/06

Very serious marine casualty

Person over board
from fishing vessel BELEN
on 23 January 2006 at approx. 20:00 h
at position 57°41'N and 014°07'W
north-west of Rockall

1 June 2007

The investigation was conducted in conformity with the law to improve safety of shipping by investigating marine casualties and other incidents (Maritime Safety Investigation Law - SUG) of 16 June 2002.

According to this the sole objective of the investigation is to prevent future accidents and malfunctions. The investigation does not serve to ascertain fault, liability or claims.

The present report should not be used in court proceedings or proceedings of the Maritime Board. Reference is made to art. 19 para. 4 SUG.

The German text shall prevail in the interpretation of the Investigation Report.

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1 Summary of the marine casualty

On 23 January 2006 at approx. 20:00 h¹ BELEN was at position 57°41'N and 014°07'W, north-west of Rockall, launching the fishing gear. The seaman who later suffered the accident was standing at the end of the channel for launching the net on the port side in order to supervise the running out of the net. The bulwark at this point is approx. 1.1 metres high so that the seaman, who was approx. 1.60 m tall, had a safe position there. A second seaman was on starboard in order to lower the appropriate buoys into the water.

The first buoy was laid into the water and the net started to run out.

Nobody saw how the seaman on the port side fell over board. The second seaman raised the alarm when he saw his colleague in the water, because he was calling for help. The first nautical officer who had been supervising the launching of the net from the bridge, informed the crew. "Hard starboard" helm was applied and the speed was increased to "full speed ahead", the net was cut and intervisibility maintained with the aid of a mobile searchlight on the bridge. Two crew members pulled the victim onto deck at the point that is lowered especially for hauling in the fishing gear. The freeboard reduces here to approx. 0.8 m. By making use of the rolling of the vessel it was possible to pull the man out of the water.

The seaman died in spite of the intensive resuscitation attempts. BELEN headed for the next harbour. On 25 January 2006 at around 10:00 h the vessel had moored at the pier at Ullapool. The local authorities took over the deceased and started primary investigations.

¹ All following times are local times = UTC.

2 Scene of the accident

Type of event: Very Serious Marine Casualty ,Person over board
Date/Time: 23 January 2006 at about 20:00 LT
Location: north-west of Rockall
Latitude/Longitude: ϕ 57°41,0' N λ 014°07,0' W

Section of chart INT 2588, BSH

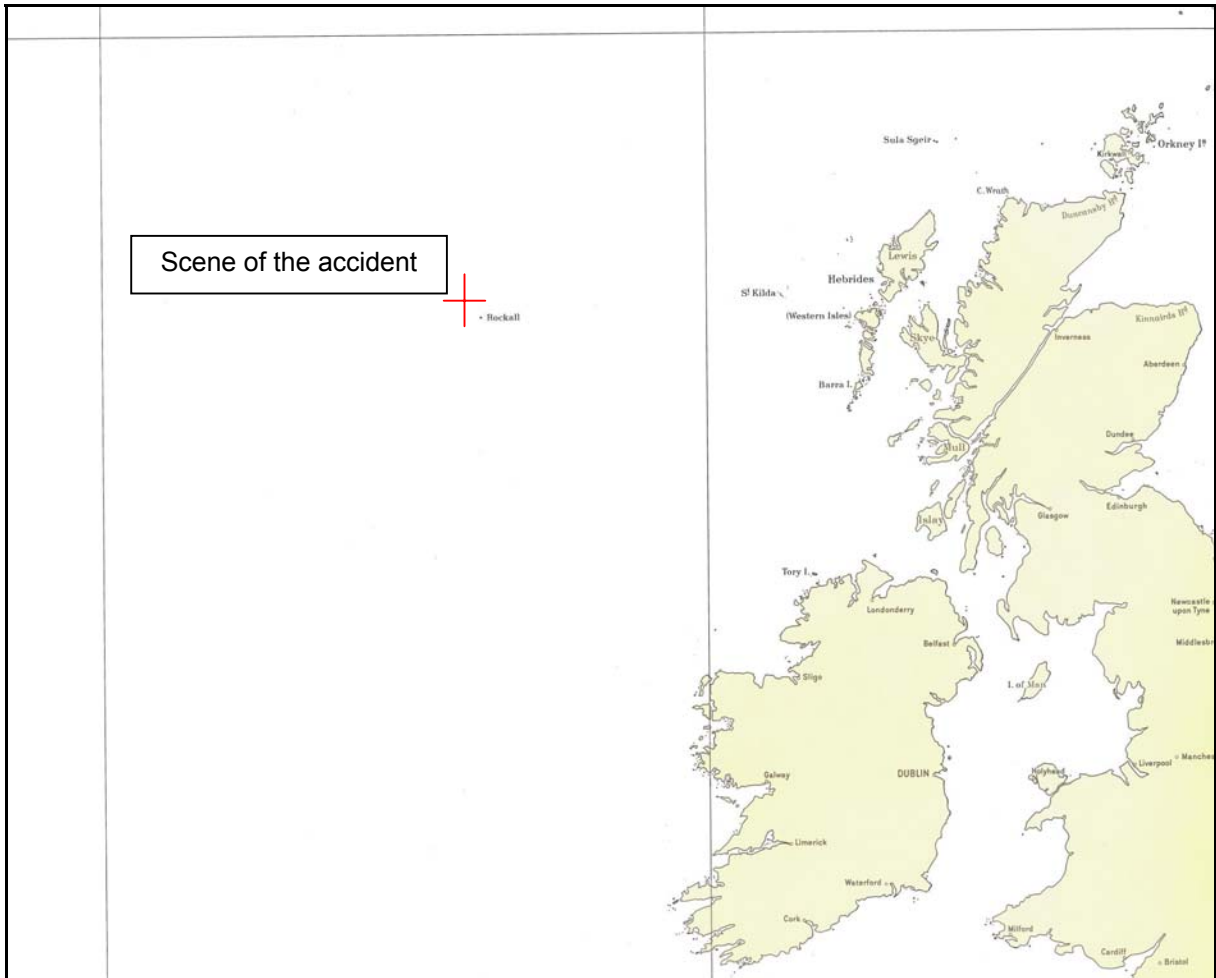


Figure 1: Sea chart with scene of the accident

3 Vessel Particulars

3.1 Photo

Source: Shipping company



Figures 2: FV BELEN

3.2 Particulars

Name of the vessel:	BELEN
Type of vessel:	Fishing vessel
Nationality/flag:	Federal Republic of Germany
Port of registry:	Cuxhaven
IMO number:	8836041
Call sign:	DFPH
Vessel operator:	CIES Fischerei GmbH
Year built:	1970
Shipyard/yard number:	Julius Diedrich Schiffswerft / 110
Classification society:	Germanischer Lloyd AG
Length overall:	29.36 m
Breadth overall:	6.40 m
Gross tonnage:	179
Deadweight:	101 t
Engine rating:	422 kW
Main engine:	DEUTZ SBA 12 M 816 U
(Service) Speed:	9.5 kn
Hull material:	Steel
Hull construction:	Fully covered motor vessel
Number of crew:	15

4 Course of the Accident

The following account of the course of the accident is based on the report of the ship command, which was submitted in Spanish.

On the day of the accident the ship was fishing at the following position: 057°41'N and 014°07'W. The sea was calm at wind force 3 to 4 Beaufort. The accident had occurred at around 20:00 h.

At this point in time the crew was engaged in launching the fishing gear into the sea. This consisted of two parallel guided ropes that were connected by fishing net made from monofiles. The ropes were guided into the sea via a stainless steel channel that is to be found on the bulwark on the port side (see fig. 3).

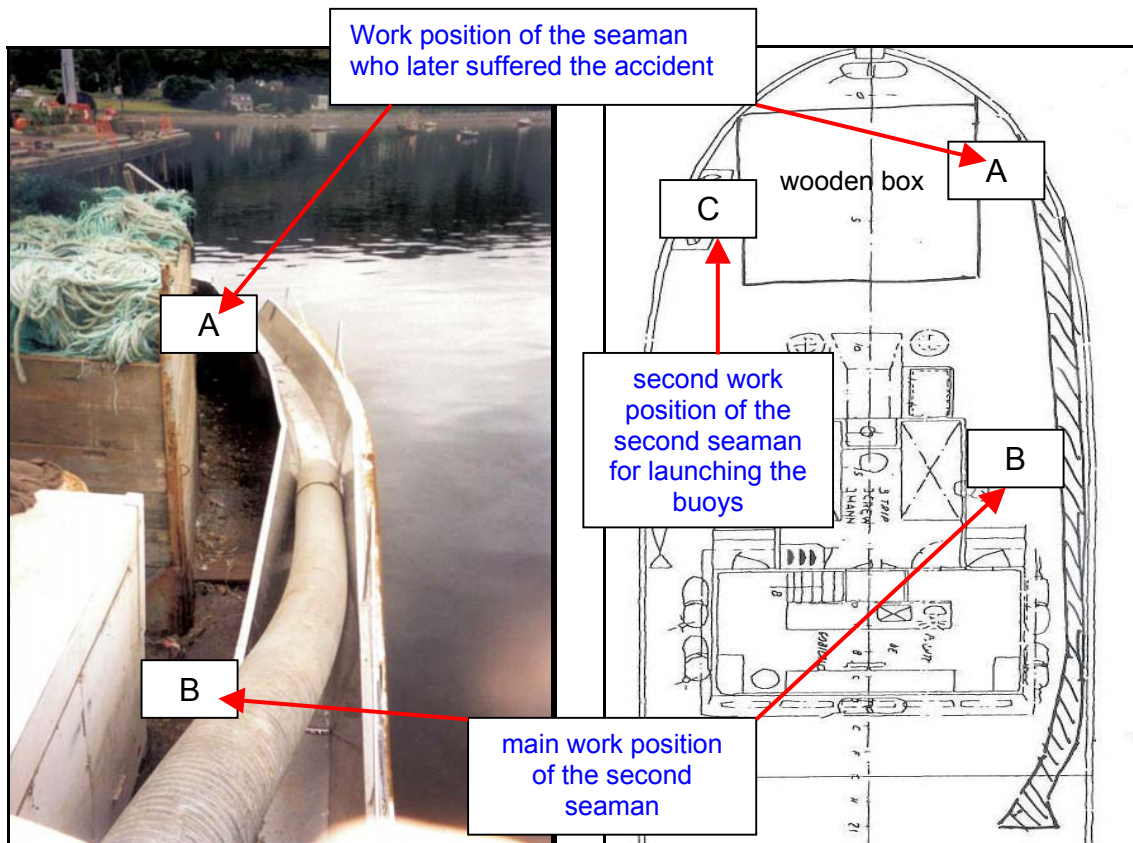


Figure 3: Channel for launching the net

Figure 4: Work positions of the seamen

Two seamen would normally be positioned at this channel (see fig. 3 and 4: position A and B). The speed is generally between three and four knots and it is attempted to take the wind from ahead when launching the net. The seaman had to ensure that the fishing gear runs out smoothly and can be launched into the water without interference.

The seaman who later suffered the accident had started his duty half an hour before the accident after resting continuously for 7 hours prior to this. Everything was as normal until the seaman fell over board. At that time he was on the port side and his colleague was on starboard, where he laid the first buoy (see fig. 4: position C).

Due to a company directive there are no alcoholic drinks on board. The seaman who suffered the accident was an experienced fisher who had already served several years on the ship and carried out work during his working hours which he was accustomed to..

The alarm was raised as soon as he fell into the water and immediately order was given to cut the fishing gear and put the helm to "hard starboard". The vessel sailed at full speed ahead, turned and managed to return to the scene of the accident. Meanwhile the person over board had been kept in view. The crew was ordered to the stem of the vessel in order to keep a better watch on the person over board and to immediately prepare for rescue measures by means of the life buoys. The ship reached the man in the water in less than 3 minutes. The engine had been stopped and a first life buoy with a signal light thrown into the water. Up to this time the seaman had still been conscious and had also spoken to his colleagues. However, he had not shown any reaction when the life buoy hit the water at a distance of about 2 metres from him. They had however managed to get the ship to drift alongside the seaman who had suffered the accident so that he could be pulled on board via the opening for the fishing gear on the starboard side, this having a considerably smaller freeboard (see fig. 8 and 9). Visibility and the condition of the sea had been favourable at the time of the accident considering the hour of the day and the month of January. This promoted the recovery of the person.

At this time the seaman was entirely unconscious and had no pulse. Therefore a cardiac massage and mouth-to-mouth resuscitation were carried out, however without a positive reaction. Since he had supper half an hour prior to the incident a gastric occlusion or heart failure had been supposed. Telephone contact with the medical radio centre in Madrid had been established. The medical radio centre had issued the instruction to carry on with the resuscitation attempts and to head for the next port as quickly as possible.

At the time of the accident the Master, the 1 Nautical Officer and the fishing officer were on the bridge. As regards the cause of the fall it is assumed that the seaman might have climbed on the channel for laying the net in order to do something with the ropes. He could have slipped and fallen into the sea. Luckily he did not become entangled in the fishing gear, as he would then have been dragged under water.

This was the first accident on board. Rescue drills, first aid measures and exercises to avoid working risks had been carried out with the crew before commencing the journey.

5 Investigation

5.1 Environmental conditions – visibility conditions

The sea was calm and a wind force between 3 and 4 Bft prevailed. The general visual range at the time of the accident was about 1 nautical mile. Due to the darkness the actual range of visibility to the person over board might have been between 300 and 400 m.

5.2 Medical expertise

An autopsy was carried out on the seaman who suffered the accident on 27 January 2006. From the extensive examination it was concluded that he did not drown, but died of an infarct of the heart. The examination revealed a blood alcohol value of approx. 0.8 per mill.

5.3 On-site inspection

An on-site inspection of BELEN took place in the harbour of A Coruña² on 28 February 2007. The BSU team found the managing director of the fishing vessel to be a co-operative dialogue partner. He was on board on the day of the accident and thus in a position to describe the accident and its circumstances in detail.

As BELEN sails under the German flag, the ship had been granted a fishing licence for German fishing crafts according to directive (EC) no. 3690/93 by the Bundesanstalt für Landwirtschaft und Ernährung (BLE = Federal Agency for Agriculture and Food). BELEN has a sailing permit as well as an International Safety Certificate for Fishing Crafts issued by the Seeberufsgenossenschaft (See-BG = Marine Insurance and Safety Association). If the Master, as in this case, does not have German citizenship, he may command the ship if he holds a “recognition of certificates of competence from EU member states and EEA Agreement contracting states” issued by the Federal Waterways and Shipping Administration. This recognition could not be presented for the master, who, according to the crew list, had been on board on the day of the accident.

² Officially and in the Gallic language “A Coruña” - unofficially Spanish and formerly official “La Coruña”

5.3.1 Technology of fishing on board of BELEN

According to its fishing licence BELEN is a trawler that is predominantly used for catching fresh fish. Bottom trawls and/or floating trawls are used for this. At the time of the accident drift net fishing was being carried out.

5.3.1.1 Launching the net

A buoy is laid starboard astern by a seaman (see fig. 4 and 5: position C). He then proceeds to his actual work position (see fig. 3, 4 and 5: position B), in order to ensure together with the other seaman that the net is let go smoothly (see fig. 3, 4 and 5: positions A and B). The buoy is weighted with chain links to ensure that it can only drift to a minimum. A rope's end, attached to the buoy connects this with the net. This rope's end runs from the buoy in the water to the portside astern up to the channel that serves to cast the net. The net is launched through this U-shaped channel whilst the vessel continues its way at approx. 3 to 4 knots. In this way the net can unfold in the water. This is supported by the various longitudinal lines of the net. Whilst the lower longitudinal line is so heavy due to a lead interior that it pulls the net downward, the upper longitudinal line of the net is lighter and floats so that it pulls the net upward.

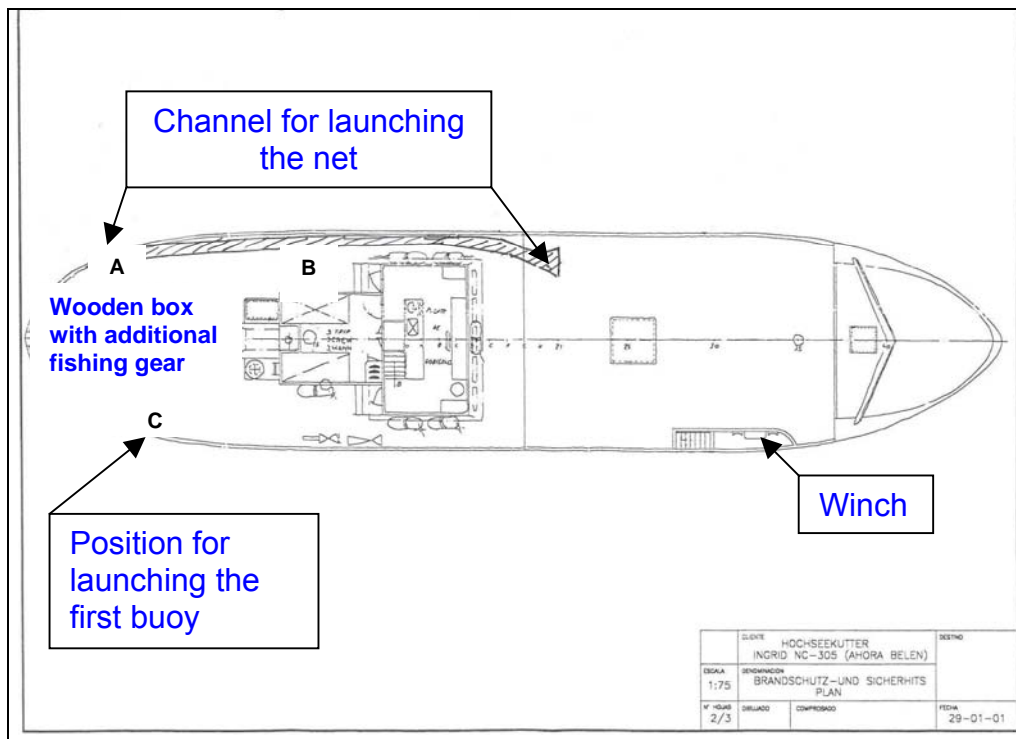


Figure 5: FV BELEN – General plan

When the net has been completely launched, a second buoy is laid to mark the end of the net. For this the seaman proceeds once more to his second work position (see fig. 4 and 5: position C). Afterwards, the ship no longer has a connection to the net.

5.3.1.2 Hauling in the net

There is a recess in the bulwark on the fishing deck in the front third of the starboard side in order to pull the fishing gear back on board by means of a winch. If the net is to be hauled in, the vessel moves towards one of the buoys and drifts alongside with its starboard side. The buoy is pulled onto deck followed by the entire net. The catch is removed from the net into the processing room behind the winch and stored in the cold storage rooms. Whilst there is only just room for two fishers around the winch, there are up to 6 people in the processing room to handle the fish. Finally, the second buoy is also hauled out of the water.

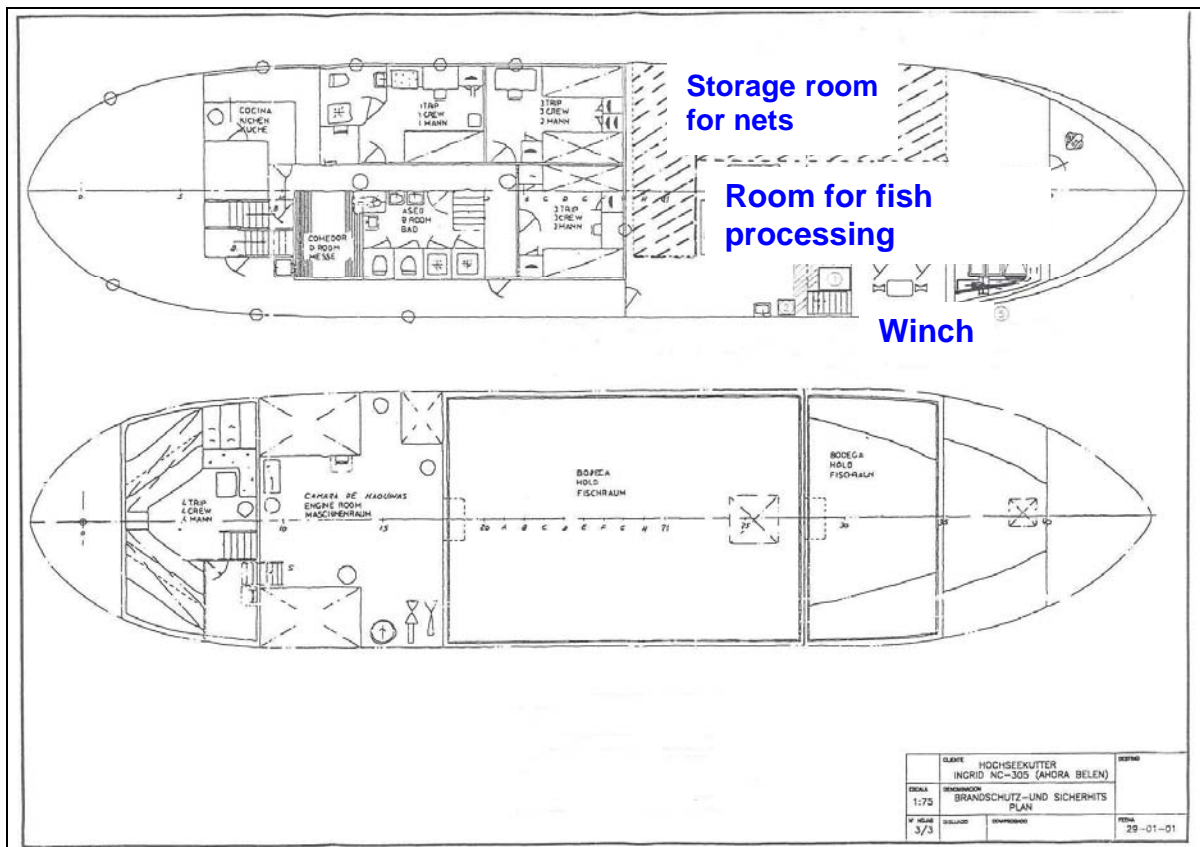


Figure 6: FV BELEN – Detailed plan

5.3.2 Reconstruction of the accident

On 23 January 2006 at about 20:00 h the fishing vessel (FV) BELEN was at the position of 57°41'N and 014°07'W, north-west of Rockall, and engaged in launching the fishing gear. The seaman who later suffered the accident had just finished his supper a short time before this. Although there is officially no alcohol on board, it is nevertheless tolerated that members of the crew have spirits with them at the port of departure. This explains the blood alcohol level of 0.8 determined later in the case of the seaman who suffered the accident.

As described in 5.3.1.1, in order to launch the net the seaman who later suffered the accident took up position at the end of the channel on portside in order to supervise the launching of the net. The second seaman proceeded to starboard in order to lay the first buoy into the water. At the accident position the bulwark is approx. 1.1 metres high, so that the seaman, approx. 1.60 metres tall, was in a safe position. It was a dark, clear evening. The searchlights of the vessel, however, illuminated the working deck and the immediate vicinity adequately. The first buoy was streamed and the net began to run out.



Figure 7: FV BELEN – Channel for launching the net

Nobody saw how the man fell overboard. The second seaman raised the alarm when he saw his colleague in the water, because he was calling for help. The crew on the bridge heard this immediately as the bridge doors were open, as is usual practice when launching the fishing gear. The first nautical officer, who supervised the launching of the net from the bridge, informed the crew. “Hard Starboard” and “full speed ahead” was ordered. The net was cut and visual contact maintained with the aid of a mobile spotlight on the bridge. After the ship, by conducting a return manoeuvre, had been positioned near to the seaman who had suffered the accident, a life buoy with a signal light was thrown to him. In spite of initial reactions by the seaman who had suffered the accident, he no longer, however, took hold of the life buoy. A few minutes later the vessel’s engine was stopped, so that its starboard side could drift toward the seaman. Using a boat hook it was possible to pull him over by his clothes. Two crew members pulled the seaman who had suffered the accident onto the deck where there is the recess for hauling in the fishing gear. The freeboard reduces here to approx. 0.8 metres. Making use of the rolling of the vessel, it was possible to pull the man out of the water.

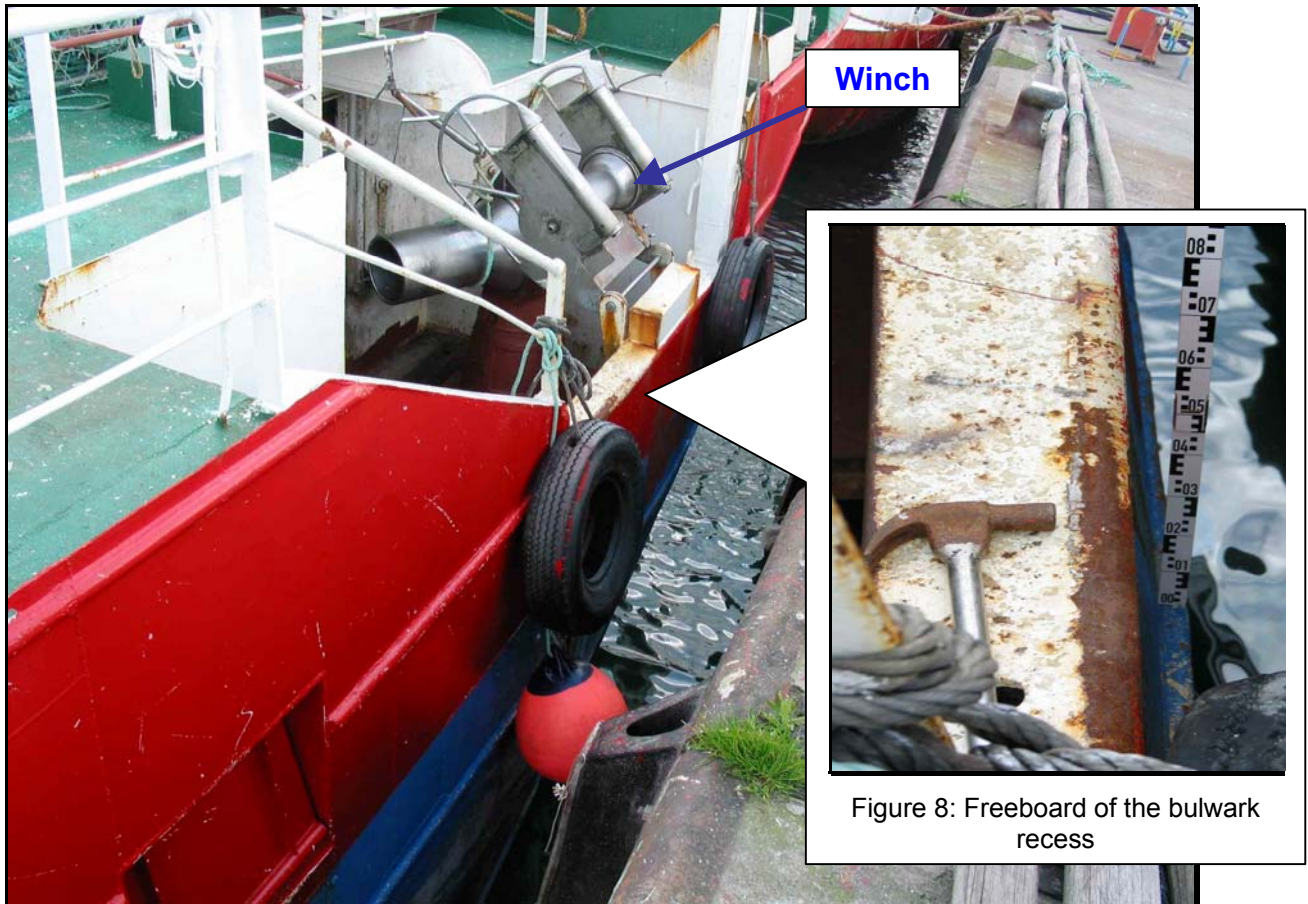


Figure 9: Bulwark recess for hauling in the fishing gear

The seaman who had suffered the accident was laid on deck and resuscitation measures initiated, as neither a pulse nor respiration could be determined. First of all the restricting rainwear was loosened around the neck. One person then gave artificial respiration and a second person carried out a cardiac massage. This was carried out alternately for nearly 30 minutes. Meanwhile radio contact with the

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Medical Centre in Madrid had been established. They confirmed that the treatment applied up until then was correct and should be continued. Information was then received later that the measures could be discontinued as the man had died.

The deceased was laid in the fish hold. After having consulted the fishing agency and the Medical Centre in Madrid it was decided to immediately head for Ullapool in Great Britain. The vessel moored at the pier at Ullapool on 25 January 2006 at around 10:00 h. The local authorities took over the deceased and started first investigations.



Source: BSU

Figure 10: FV BELEN – Side view

5.4 Result

The investigations indicated that the seaman falling overboard was a misfortune. The exact cause cannot be established. The measurement on board showed that the accident position astern is adequately secured by the height of the closed bulwark. The seaman could not have fallen over board as long as he stood on deck. It is most likely that, for unknown reasons, he climbed onto the channel for launching the net and then lost his balance. However, as nobody actually observed the circumstances of the accident, only presumptions remain as to why the seaman fell into the water.

The effect of alcohol can have contributed to the accident.

When working on deck, the crew members wear weatherproof clothing, so-called oilskins, that do not provide any significant buoyancy, but do offer the best possible detection effect due to their orange signal colour. Wearing the usual foam life jackets, as available on board, would comprehensibly appear not to be practicable, as they not only restrict the arm movements of the wearer, they rather more restrict the mobility within the narrow corridor next to the channel for launching the net. It would be worth considering wearing modern automatic life jackets and/or securing the working alleyways with a rope stretched in longitudinal direction that the seaman could hook onto with a safety belt.

The fact that the FV BELEN, flying the German flag, was under the command of a Spanish master who did not hold a "Recognition of certificates of competence" from EU member states and EEA Agreement contracting states from the Waterways and Shipping Administration, is not considered to have contributed to the accident. Upon enquiry by the BSU (Federal Bureau of Maritime Casualty Investigation) the shipping company did in fact provide a document of this kind, but this referred to a person that according to the crew list was not on board.

In conclusion it is to be mentioned that it was declared to the BSU that the seaman who had suffered the accident had just had supper, completing his off-duty period. Contrary to this, it was explained to the British authorities that the seaman who suffered the accident had already been at work from 11.30 h and had only had a break for supper shortly before the accident. If he actually had worked the hours before the accident, a certain degree of exhaustion and fatigue could, under certain circumstances, be added as contributing to the accident.

This contradiction in the statements cannot, however, be resolved.

The Federal Bureau of Maritime Casualty Investigation additionally refers to safety recommendation No. 01/07, already published, which is addressed to owners and operators of merchant ships:

"If it is inevitable to send persons on deck, this persons should be aware of the risk of falling over board. In addition to wearing the personal protective equipment (working shoes, gloves and helmet), additional safety elements adequate to the weather conditions, e.g. life jacket, survival suit and safety ropes must be ordered depending

on the situation as protection against falling overboard or to increase the probability of survival in the case of falling overboard, respectively.

Moreover, necessary activities on deck are to be supported by safety personnel protected in the same way. Furthermore, measures of good seamanship are to be applied in heavy seas. (Reduction of speed, bringing about of the ship, communication between all concerned, and similar.)⁴

In spite of its tragedy, this marine casualty did not produce any investigation results of special significance for safety at sea, therefore its investigation by the Federal Bureau of Maritime Casualty Investigation is concluded with a summary investigation report.⁵

⁴ Safety recommendation 01/07 of the BSU published on 15 February 2007.

⁵ In accordance with Article 15 para. 1 SUG (Safety at Sea Investigation Act) in connection with Article 18 para. 4 FIUUG (Law Relating to the Investigation into Accidents and Incidents Associated with the Operation of Civil Aircraft).

6 Sources

- Investigations by the Public Prosecutor's Office of Dingwall, Scotland (GB)
- Written declarations/statements:
 - Ship command
 - Shipping company
 - Classification society
- Statements by witnesses at Medical Radio Centre Madrid
- Autopsy report by the Pathological Department at Raigmore Hospital, Inverness
- Examination report on the blood and urine alcohol content by the department for clinical biochemistry at the Aberdeen Royal Infirmary
- Section from sea chart 2588 and ship's data from the Bundesamt für Seeschifffahrt und Hydrographie (BSH = Federal Maritime and Hydrographic Agency)
- Documents from the See-Berufsgenossenschaft (See-BG = Marine Insurance and Safety Association)
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- Figures 2, 3, 4, 5, 6, 7 with the friendly approval of the shipping company
- Figures 8, 9, 10: BSU