

Extract from The United Kingdom Merchant Shipping (Accident Reporting and Investigation) Regulations 2005 – Regulation 5:

“The sole objective of the investigation of an accident under the Merchant Shipping (Accident Reporting and Investigation) Regulations 2005 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

This report is not written with litigation in mind and, pursuant to Regulation 13(9) of the Merchant Shipping (Accident Reporting and Investigation) Regulations 2005, shall be inadmissible in any judicial proceedings whose purpose, or one of whose purposes is to attribute or apportion liability or blame.

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SUMMARY

At about 0444 (UTC+1¹) on 7 September 2011, the UK-registered scallop dredger *Golden Promise* grounded on the Island of Stroma while on passage from Scrabster to her intended fishing grounds. Thurso and Longhope all-weather lifeboats (ALBs) and a rescue helicopter from RAF Lossiemouth deployed, and the crew were airlifted off the vessel. There were no injuries and there was no pollution. The vessel was subsequently declared a constructive total loss.

The MAIB investigation established that the skipper, who had been alone on watch in the wheelhouse, had fallen asleep and failed to make an intended course alteration. He was probably fatigued by his normal working pattern, exacerbated by the prolonged period

Grounding of FV *GOLDEN PROMISE* on the Island of Stroma 7 September 2011

he had been awake immediately prior to the accident. The skipper had remained on watch beyond his normal duty period to navigate *Golden Promise* through the Pentland Firth, the vessel having departed Scrabster in the early hours of the morning. A watch alarm was fitted in the wheelhouse, but this was ineffective and probably was not functioning at the time of the accident.

A recommendation has been made to the owner of *Golden Promise* to enhance the safety management of its vessels by applying the watchkeeping and navigational best practice guidance promoted in MGN 313 (F), and to ensure that crews employed on its vessels have all completed the mandatory safety training courses.

¹ All times in this report are UTC+1, unless otherwise stated.



Image courtesy of Kevin Munro

Figure 1: *Golden Promise*

FACTUAL INFORMATION

Vessel and crew

Golden Promise (Figure 1) was a 19m UK-registered scallop dredger, owned and operated by John MacAlister (Oban) Ltd. The owner operated a fleet of five scallop dredgers, with an associated company, The Star Trawler Co Ltd, operating a further two scallop dredgers. *Golden Promise* was built in 1997 and was used to dredge for scallops around the coastline of Scotland, landing her catch every 3 or 4 days.

Golden Promise was manned by a crew of five, comprising a skipper, mate and three deckhands. All were share fishermen² and United Kingdom nationals. At the time of the accident, the vessel's 'relief skipper' was acting as skipper. He was aged 51, with 31 years' fishing experience, the last 5 years of which had been spent as skipper on one or another of the owner's vessels. He had started the 'relief skipper' role 2 months before the accident. This entailed being the skipper of *Ròis Mhàiri*, for 4 days, followed by 10 days on *Golden Promise*, and then taking 2 weeks leave. He had obtained a Deck Officer Certificate of Competency (Fishing Vessel) Class 2 in 1995, but had not completed the mandatory Seafish³ safety awareness training course.

The other crew generally worked on board for 2 weeks, followed by 1 to 2 weeks leave. The mate, who was the skipper's son, did not hold a navigational qualification. He had 14 years' fishing experience and shared the navigational watches with the skipper. One of the deckhands also occasionally took watches. He had 9 years' fishing experience and had completed a Seafish 5-day bridge watchkeeping course. Of the other two deckhands, one had not attended the mandatory safety awareness course, and the other had not attended the basic first-aid course.

The skipper and mate each worked a daily routine of 16 hours on duty, followed by 8 hours rest. The skipper normally worked from 1000 to 0200; the mate normally worked from 0200 to 1800. The deckhands worked a daily routine of 19 hours followed by staggered 5-hour rest periods. The typical duration of a tow was between 1¼ and 1½

² Share fishermen – fishermen who are self-employed and whose wages are determined by the value of the vessel's catch.

³ Seafish – the Sea Fish Industry Authority 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.

hours; having recovered and deployed the fishing gear following a tow, the deckhands spent up to a further 20 minutes on deck dealing with the catch and were then able to rest before recovering the gear again.

Narrative

On 30 August 2011, *Golden Promise's* relief skipper joined the vessel, which the following day began dredging for scallops to the north-west of Loch Eriboll, off the north coast of Scotland.

On 2 September, *Golden Promise's* catch was landed at Scrabster, and the vessel then returned to the fishing grounds. Later that day, one of the derricks sustained minor damage and, on 5 September, a cooling water pipe burst on one of the auxiliary engines, but these defects were not sufficient to warrant a suspension of her fishing operations.

At 0200 on 6 September, the mate came on watch after his scheduled 8 hours rest and relieved the skipper. The skipper reported sleeping well during his rest period and he returned on duty at 1020.

At 1645, the skipper started to steam the vessel back into Scrabster to land her catch. The mate, assisted by the deckhands, carried out some maintenance and removed the damaged derrick. He then went to the engine room to undertake routine checks and continue to clean up following the burst pipe incident, before retiring to bed at 2000, 2 hours later than usual. During the passage to Scrabster, the qualified deckhand took over the navigational watch for a short period while the skipper showered; the other deckhands were off duty.

At 2045, the mate came back on duty as *Golden Promise* approached Scrabster, and at 2115 the vessel was manoeuvred alongside. There was a delay in landing the catch due to the unavailability of pallets and because the lorry collecting the catch had not arrived, so the crew began to fit a replacement derrick and undertake further maintenance. They then landed the catch, and embarked provisions.

The forecast was for westerly to north-westerly winds of up to force 7, which the skipper considered would preclude fishing at the previous grounds due to the swell. Having consulted with the skipper of *Ròis Mhàiri*, which had been fishing in the same area, he decided to head east through the Pentland Firth, then to the south of Wick,

where he hoped the fishing grounds would be more sheltered. To take advantage of the next predicted easterly tidal flow in the firth, the skipper decided to depart early that morning. *Ròis Mhàiri* remained in Scrabster; her skipper hoped the weather would not be as bad as had been forecast, and intended to return to the previous grounds when conditions allowed.

At around 0145 on 7 September, the skipper returned from his visit to *Ròis Mhàiri* and relayed the plan to the crew. Although the skipper was nearing the end of his normal work period, he perceived that the mate was tired; the mate had been up for 24 hours with only a brief rest. He therefore decided to navigate the vessel through the Pentland Firth himself to allow the mate some time to rest.

At 0200, the mate went to bed and, at 0230, *Golden Promise* departed Scrabster. At 0245, the deckhands went to bed, leaving the skipper alone on watch.

The skipper navigated the vessel into the firth using the autopilot (**Figure 2**) and, by 0342, had turned her onto an easterly heading. His initial intention was to transit the main channel. However, the conditions were better than expected, with westerly winds of force 3 to 4, a slight sea and good visibility. He therefore decided to take the

shorter route through the Inner Sound to the south of the Island of Stroma, and set a course on the autopilot towards the island with the intention of joining and following an historical track on the chart plotter.

The skipper was monitoring his vessel's progress using two radars (set on 6 and 3 miles range respectively) while seated on the port side wheelhouse chair, with his feet up on the console. The wheelhouse was warm, with no forced ventilation; the windows and door were closed.

Golden Promise was making around 9 knots when she ran aground on the Island of Stroma in position 58° 40.6'N 003° 07.9'W, at about 0444 (**Figure 2**). The grounding woke the skipper.

The skipper's initial instinct was to try to refloat *Golden Promise* by driving the vessel astern, but the main engine stalled. Although it was able to be restarted, it again stalled after further attempts to go astern. The crew began to muster and don lifejackets.

At 0448, the skipper broadcast a "Mayday" on VHF radio Channel 16; he did not issue a Digital Selective Calling (DSC) alert. Aberdeen Coastguard responded, deploying a rescue helicopter from RAF Lossiemouth, and Longhope and Thurso ALBs.

Reproduced from Admiralty Chart 2162 by permission of the Controller of HMSO and the UK Hydrographic Office

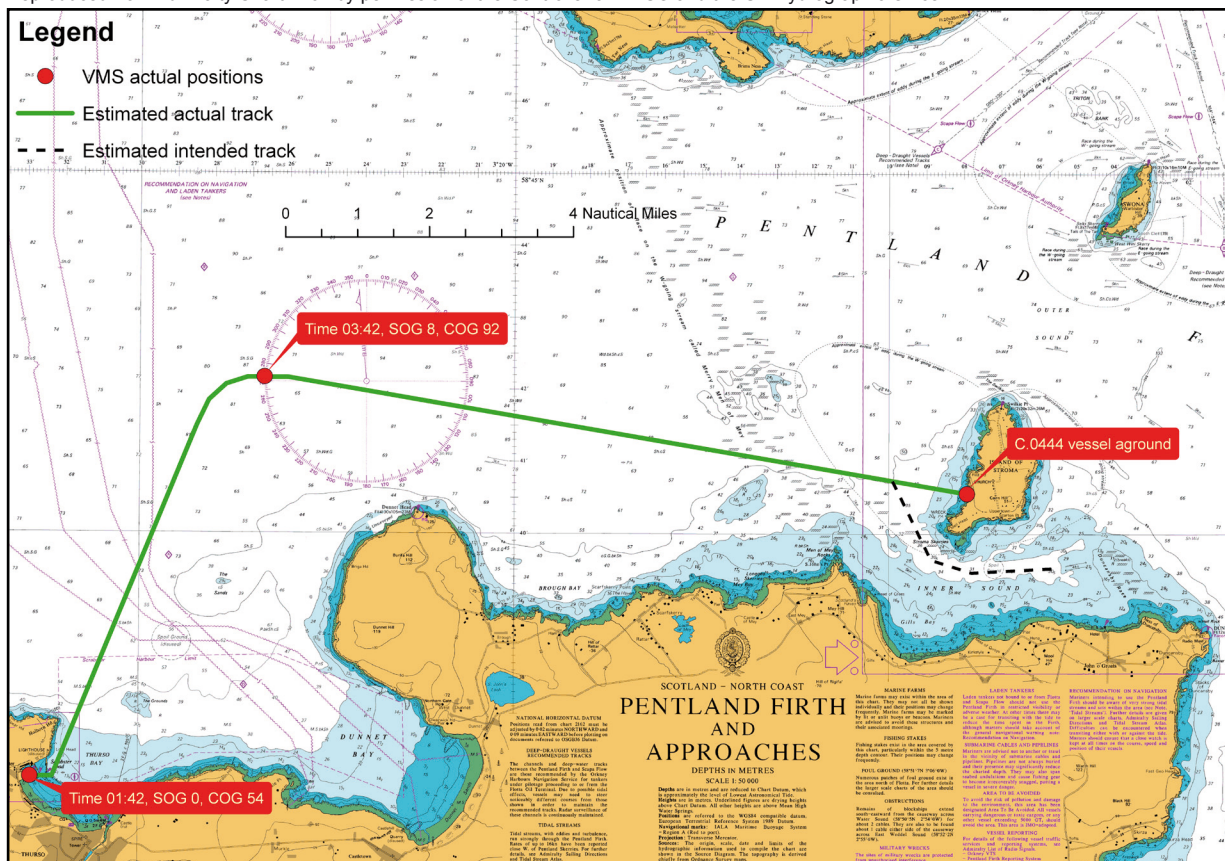


Figure 2: Chart showing broad estimated track of vessel

The crew deployed the liferaft as a precaution. They pulled the painter from the valise and tied the end to a hand-rail. The heavy rolling motion of the vessel then caused the painter to tension and the liferaft to inflate. However, the inflated liferaft was subsequently blown ashore. Distress flares and a hand-held VHF radio were collected by the crew, while the skipper checked and confirmed that the hull was undamaged.

The ALBs arrived on scene at 0535 and 0536 respectively followed, at 0602, by the RAF rescue helicopter (**Figure 3**). The crew were airlifted ashore, uninjured. No alcohol or drug testing was conducted following their arrival in Lossiemouth at 0642. There was no pollution, but the vessel subsequently sustained damage and was declared a constructive total loss (**Figures 4a,4b and 4c**).

Watch alarm

Golden Promise's wheelhouse was equipped with a watch alarm that operated when the autopilot was engaged. It was reported to sound every 3-4 minutes, increasing in volume after 1 minute if not re-set. The button to re-set the alarm was located



Figure 3: RAF rescue helicopter on scene

on the centre console, and could be reached from the wheelhouse chair. The alarm only sounded in the wheelhouse, but reportedly could be heard in the mess/galley area one deck below. It could not be heard in the cabin on the next deck below where the crew slept. None of the crew could recall hearing the watch alarm sounding around the time of or after the grounding.

Safety management

Golden Promise's owner had not issued any specific instructions to the skipper or crew about how navigation was to be conducted or watches kept, nor on whether and when lookouts were to be used. Additional lookouts were never employed in

the vessel's wheelhouse, nor were formal passage plans prepared for the vessel. The practice was instead to follow historical tracks on the chart plotters, without the use of waypoints or cross track error (XTE) alarms.

A risk assessment had been produced for *Golden Promise*. This was based on the template contained in the Seafish Fishing Vessel Safety Folder. However, it was not possible to confirm its contents as the only copy was on board the vessel. It was reported that emergency drills were conducted on board the vessel.

Regulations and formal guidance

The Maritime and Coastguard Agency (MCA) Merchant Shipping Notice (MSN) 1786 (F), provides guidance on the application of The Fishing Vessels (Working Time: Sea-fishermen) Regulations 2004. These regulations stipulate requirements for working time and rest periods on fishing vessels, but do not apply to self-employed fishermen.

Annex 1 to MSN 1786 (F) contains the Fishing Industry Code of Practice on Working Time Standards, which is recognised by the main UK fishermen's federations. The Code proposes working time standards, subject to exceptions and compensatory arrangements, and states that self-employed fishermen should regard its working hours' limits as useful benchmarks. These include a minimum daily rest requirement of 10 hours in any 24-hour period that may be divided into no more than two rest periods, one of which shall be at least 6 hours in length. The Code states that for beam trawlers "compensatory rest is available in periods steaming to and from the grounds, between hauls and between trips".

In 2007, International Labour Organization (ILO) Convention No. 188 (ILO 188) was adopted, applying to all "fishers" regardless of contractual status, and stipulating minimum hours of work and rest for fishing vessels remaining at sea for more than 3 days. The UK is working towards ratifying ILO 188 in consultation with the fishing industry through the Fishing Industry Safety Group.

Detailed guidance on navigational best practice for UK fishing vessels is provided in the MCA Marine Guidance Note (MGN) 313 (F) Keeping a Safe Navigational Watch on Fishing Vessels. This includes guidance on the use of lookouts and navigational equipment, as well as watchkeeper fitness for duty.

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Figure 4a: Vessel aground, 7 September 2011

Image courtesy of Graham Campbell/RNLI



Figure 4b: Vessel aground, 7 September 2011

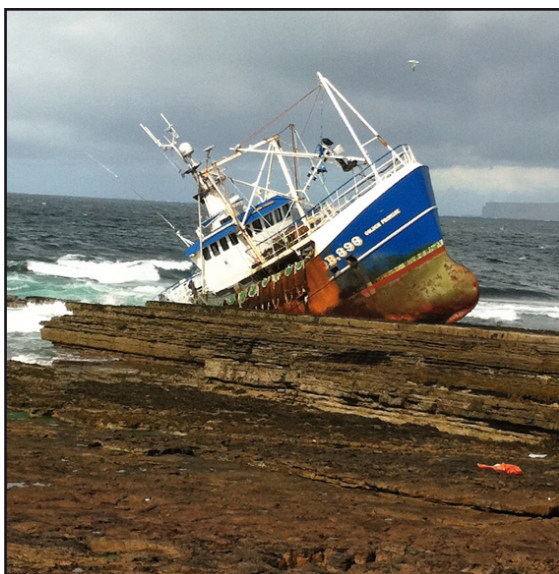


Figure 4c: Vessel aground, 8 September 2011

Previous accidents

In 2006, the 16.9m scallop dredger *Our Heritage*, operated by The Star Trawler Co Ltd, grounded having departed Oban in the early hours of the morning. A deckhand had fallen asleep while keeping watch alone in the wheelhouse; no watch alarm was fitted. The three crew abandoned to a liferaft and transferred ashore: the vessel was subsequently refloated and proceeded under her own power back to port.

Also in 2006, the privately owned 20m prawn trawler *Greenhill* grounded on the east coast of Northern Ireland as she returned to port. The wheelhouse had been left unattended while the three crew worked on the shelter deck. After the grounding, the vessel was manoeuvred into open water and rapidly flooded, then sank. Although the skipper was subsequently rescued from a liferaft, the two deckhands were lost.

ANALYSIS

The cause of the grounding

Golden Promise ran aground when the skipper, who had been alone in the wheelhouse, fell asleep and failed to make the required course alteration to navigate to the south of the Island of Stroma. No data was available to confirm the vessel's track prior to the accident, other than the Vessel Monitoring System (VMS) position transmitted by the vessel at 0342 (**Figure 2**). By this time, the vessel was already on an easterly heading, and her actual track until she grounded would have been influenced by the tidal stream. At some point after altering course onto this easterly heading, the skipper fell asleep.

Fatigue/sleepiness

Analysis of the skipper's working pattern prior to the accident indicated a moderate risk of fatigue. The working routines on board *Golden Promise* did not allow the crew to achieve the minimum rest recommended in Annex 1 to MSN 1786 (F). For the crew, their maximum rest period was 5 hours instead of 6, and the balance of their daily 10 hours of rest had to be taken in short periods between hauls. However, if not required to stand watches, they were able to achieve some

compensatory rest while the vessel was steaming to and from her fishing grounds. The skipper and mate who kept watches were not achieving such compensatory rest, and their daily rest when the vessel was at sea was confined to a single period whose maximum duration was 8 hours.

The mate's normal rest period was between 1800 and 0200, and he therefore should have been returning on duty to take the first navigational watch of the passage when *Golden Promise* departed Scrabster. His routine had however been disrupted by the preparations for arrival at Scrabster, then by assisting with the catch discharge and preparing for departure. The skipper perceived the mate to be tired and in need of rest, and therefore opted to remain on watch beyond his normal duty period. Although admirable in prioritising the mate's welfare, his decision was ill-considered. The skipper had been on watch or conducting other duties for over 16 hours when he took *Golden Promise* out of Scrabster. Thereafter, he was on watch when his body was expecting a period of sleep. By 0400, his natural circadian rhythm would have been at its lowest, he was seated in a comfortable chair, in a warm, darkened environment with little ventilation, with little to occupy his attention. Given the limited rest that the skipper had achieved since joining the vessel, there was a high likelihood that he would fall asleep in such circumstances.

With the UK's anticipated ratification of ILO 188, the MCA has an opportunity to review and improve the regulations and codes applicable to fishing vessels, to address the problem of fatigue within the fishing industry.

Decision to sail

A combination of the weather forecast and tidal constraints influenced the skipper's decision to sail from Scrabster at 0230 even though both he and the mate were tired. Fatigue not only leads to an increased risk of falling asleep, but also a greater propensity for slowed reactions and mistakes in decision-making; the skipper's decision to sail was ill-considered and was probably affected by his already fatigued state.

There appears to have been no company commercial pressure to sail, given that *Ròis Mhàiri* remained in port. However, it is possible that the skipper perceived a self-imposed pressure to maximise operational efficiency, without fully considering the safety implications. The skipper had not completed the mandatory safety

awareness training course. Had he done so, his awareness of the vessel's risk assessment and his appreciation of the risk in sailing might have been greater.

Watch alarm

Given that there were no reports of the watch alarm being heard at any point after the grounding, and that the skipper was able to fall asleep while on watch for a period likely to be well in excess of the watch alarm's reported frequency, it is probable that the alarm was not functioning at the time of the accident. In any case, it was ineffective as it could be readily cancelled from the wheelhouse chair, and sounded only in the wheelhouse. Although the alarm could reportedly be heard in the mess/galley area one deck below, it might still not have been heard by the skipper, had he had reason to visit this area while on watch. Importantly, the alarm could not be heard in the cabin one deck below that, where the crew were asleep. This was contrary to the best practice guidance in MGN 313 (F), which recommends that the alarm should alert not only the watchkeeper but also other crew members.

Navigational practices – watchkeeping

No formal plan was prepared for *Golden Promise's* passage via the Pentland Firth; the standard practice was to follow previous tracks on the chart plotter, where available. A complacent attitude towards voyage planning and monitoring had developed with time and familiarity. By not making best use of the available watchkeeping and navigational aids, the skipper removed a number of stimuli that could have helped him remain alert. These included waypoint and XTE alarms on the chart plotters.

Had the skipper elected to use a lookout, the likelihood of his falling asleep on watch would have been reduced. However, given the vessel's manning level and the desire to maximise fishing operations, lookouts were never employed. No company instructions or guidance were available on watchkeeping practices, such as the use of lookouts and navigational equipment. Responsibility for the vessel's safe operation had been fully entrusted to the skipper, but specific company instructions and guidance regarding watchkeeping and navigation would have provided a more effective framework to maintain the vessel's safety. The lesson learned from the grounding of

another of the owner's vessels, *Our Heritage*, in 2006 regarding the need to fit and maintain an effective watch alarm, was not fully acted upon.

Copies of MGNs, which should have included MGN 313 (F), were reportedly carried on board the vessel. Had the skipper been operating *Golden Promise* in accordance with the best practice guidance included in this MGN, the grounding could have been prevented.

Post-grounding actions

The skipper's initial reaction to immediately attempt to refloat his vessel following the grounding was ill-considered. This could have endangered the vessel and crew, as evidenced in 2006 when the fishing vessel *Greenhill* was refloated after grounding and rapidly sank, with the loss of two lives. Had the skipper completed the mandatory safety awareness training course, his appreciation of the risk associated with attempting to go astern might have been greater.

Although the lack of a DSC alert did not result in any delay in SAR action, best practice dictates that such an alert should have been sent.

The mustering of crew, donning of lifejackets and precautionary deployment of the liferaft were appropriate actions.

CONCLUSIONS

- The skipper was probably fatigued as a result of his normal working pattern. His decision to depart port and to remain on watch beyond his normal duty period was ill-considered and was probably affected by his already fatigued state.
- The warm, darkened wheelhouse, with little ventilation, and the skipper's seated posture increased the likelihood of his falling asleep.
- The watch alarm was ineffective and was probably not functioning at the time of the accident.
- By not making make best use of the available watchkeeping and navigational aids, the skipper removed a number of stimuli that could have helped him remain alert. These included XTE and waypoint alarms.

- Specific company instructions and guidance regarding watchkeeping and navigation would have provided a more effective framework to maintain the vessel's safety.
- Had the skipper been operating *Golden Promise* in accordance with the best practice guidance included in MGN 313 (F), the grounding could have been prevented.
- Had the skipper completed the mandatory safety awareness training course, his awareness of the vessel's risk assessment and hazards associated with lone watchkeeping, fatigue and attempting to refloat his vessel immediately after running aground might have been greater.
- If the onboard working routines had allowed the crew to achieve the minimum rest periods set out in Annex 1 to MSN 1786 (F), the likelihood of fatigue leading to the loss of the vessel would have been significantly reduced.

RECOMMENDATIONS

John MacAlister (Oban) Ltd is recommended to:

- 2012/103** Enhance the safety management of its vessels by:
- Referring to and applying the best practice guidance for keeping a safe navigational watch on fishing vessels promoted in MGN 313 (F), including arrangements for ensuring the fitness for duty of watchkeepers and provision of an effective watch alarm.
 - Ensuring all crew members have completed all mandatory safety training courses.

SHIP PARTICULARS

Vessel's name	<i>Golden Promise</i>
Flag	United Kingdom
Classification society	Not applicable
IMO number/Fishing number	OB 898
Type	Fishing vessel – scallop dredger
Registered Owner	John MacAlister (Oban) Ltd
Manager(s)	John MacAlister (Oban) Ltd
Construction	Steel
Length overall	18.99 metres
Registered length	16.49 metres
Gross Tonnage	127
Minimum safe manning	Not applicable
Authorised cargo	Not applicable

VOYAGE PARTICULARS

Port of departure	Scrabster, Scotland
Inteded area of arrival	Fishing grounds, south of Wick
Type of voyage	Coastal
Cargo information	None
Manning	5

MARINE CASUALTY INFORMATION

Date and time	7 September 2011 at about 0444 (UTC+1)
Type of marine casualty or incident	Very Serious Marine Casualty
Location of incident	Island of Stroma – 58° 40.6'N 003° 07.9'W
Place on board	Not applicable
Injuries/fatalities	None
Damage/environmental impact	Constructive total loss / no pollution
Ship operation	In passage
Voyage segment	Mid water
External & internal environment	Wind westerly force 3-4. Sea state slight. Visibility good. High water at Island of Stroma at 0703. Nautical twilight at 0449. Civil twilight at 0541.
Persons on board	5