MAIB
MARINE ACCIDENT INVESTIGATION BRANCH

ACCIDENT REPORT

VERY SERIOUS MARINE CASUALTY | REPORT NO 25/2015 | NOVEMBER 2015

Grounding of *Lysblink Seaways*

Kilchoan, West Scotland

18 February 2015

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

SUMMARY

At 0232 (UTC[1]+1) on 18 February 2015, while on passage from Belfast to Skogn, Norway the general cargo vessel *Lysblink Seaways* ran aground at full speed, near Kilchoan, Ardnamurchan peninsula, West Scotland **(Figure 1)**.

The vessel remained aground for almost 2 days and, due to adverse weather conditions, was pounded heavily onto the rocky foreshore. This caused material damage to its hull and breaching of the double bottom, including some fuel tanks, resulting in 25 tonnes of marine gas oil entering the water.

After its salvage *Lysblink Seaways* was towed to dry dock where it was surveyed, declared a constructive total loss and scrapped.

[1] Universal Co-ordinated Time

Image courtesy of the Press Association

Figure 1: Vessel aground

The MAIB investigation found that the officer of the watch - who was the sole watchkeeper - had become inattentive at about 0200 due to the effects of alcohol consumption.

The bridge navigational watch alarm system (BNWAS), which could have alerted the crew to the officer's incapacity, had not been switched on and an off-track alarm on the ECS[2] had been silenced. Although a radar watch alarm had sounded every 6 minutes, the somnolent officer was able to reset the alarm without leaving his chair.

The vessel's owner, DFDS A/S, has taken action to enhance compliance with the safety management system (SMS) on sister vessels, with particular emphasis on control of alcohol consumption and bridge resource management.

FACTUAL INFORMATION

Narrative

At 0200 on 17 February 2015 the 7409gt[3] general cargo vessel *Lysblink Seaways* arrived in Belfast to discharge its cargo of paper reels. While in port the second officer prepared the passage plan for the vessel's next voyage from Belfast to Skogn, Norway. The master decided, due to forecast adverse weather, that the vessel would take an inshore route along the west coast of Scotland via the Sounds of Islay and Mull **(Figure 2)**.

The navigational waypoints for the passage had been saved as an electronic file in the vessel's ECS database from previous similar voyages, and this file was uploaded into the ECS; course lines were also drawn onto paper charts for the passage.

The voyage

Lysblink Seaways departed from Belfast at 1520 on 17 February 2015 with a cargo of 50t of waste paper, its draught was 5.60m. The chief officer was the officer of the watch (OOW) until 1800 when he was relieved by the second officer. The BNWAS was not switched on for the passage, and no lookout was posted during the hours of darkness.

During the evening, while off duty in his cabin, the chief officer made a private telephone call which caused him anxiety, after which he consumed about 0.5 litre of rum.

At 2150 the master arrived on the bridge to assist the OOW and monitor the vessel's passage through the Sound of Islay. This was completed at about 2300 when the master left the bridge and went to bed; no night orders were written and no lookout was posted.

At about 2350, before going on watch, the chief officer informed the AB who was scheduled to keep the 0000-0600 watch that he should remain in the deck office for his watch, as the 1800-2400 duty AB had also done.

At midnight the chief officer took over as OOW from the second officer. The chief officer then sat in a chair, located to starboard of the central manoeuvring station **(Figure 3)**, from where he monitored the ECS and the starboard radar display. The vessel's steering was in autopilot mode, the control for which could be reached from the chair, which he had positioned fully forwards.

[2] Electronic Chart System

[3] Gross tonnage

Reproduced from Admiralty Chart BA 2635-0 by permission of the Controller of HMSO and the UK Hydrographic Office.

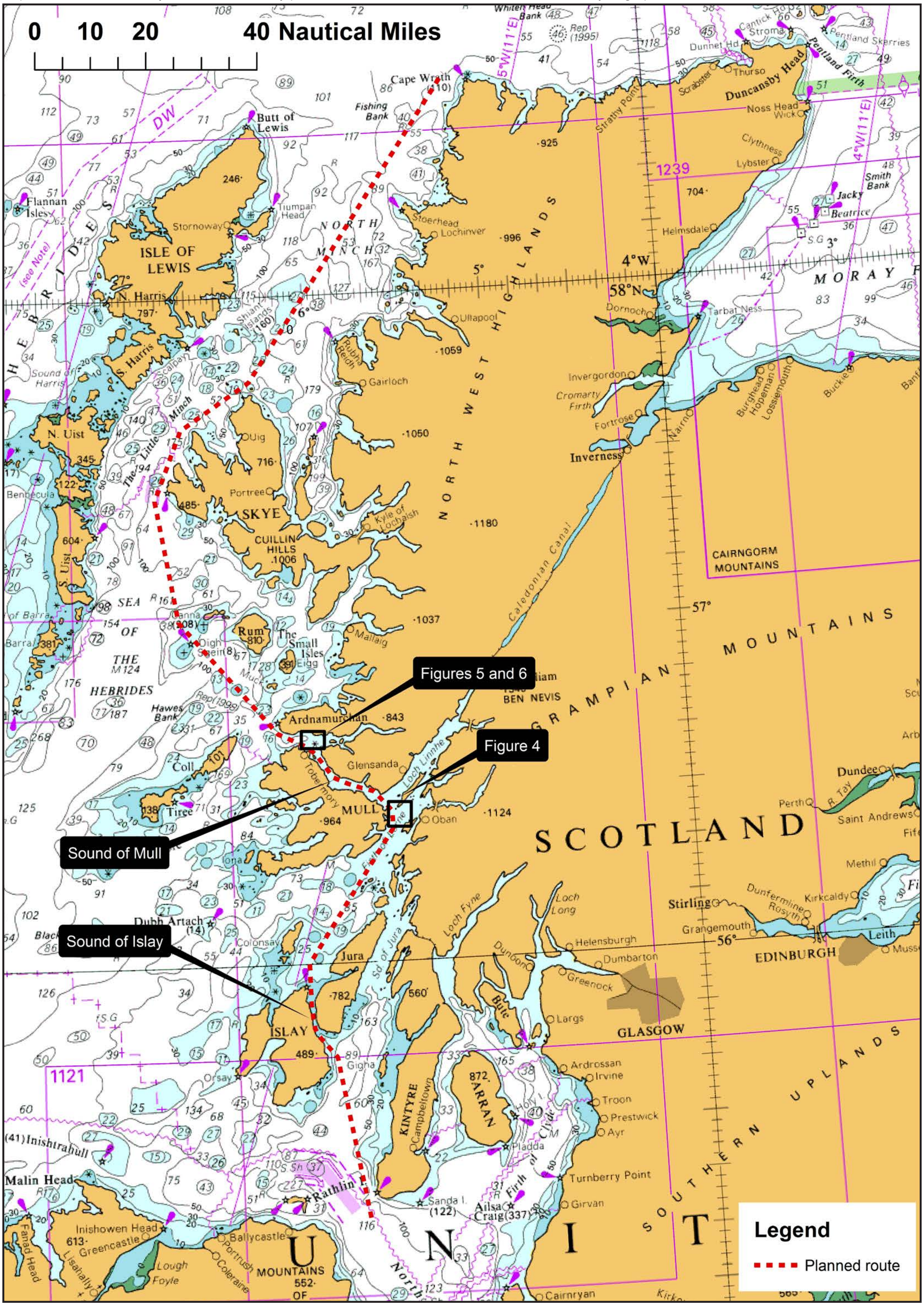

Figure 2: *Lysblink Seaways*' planned route

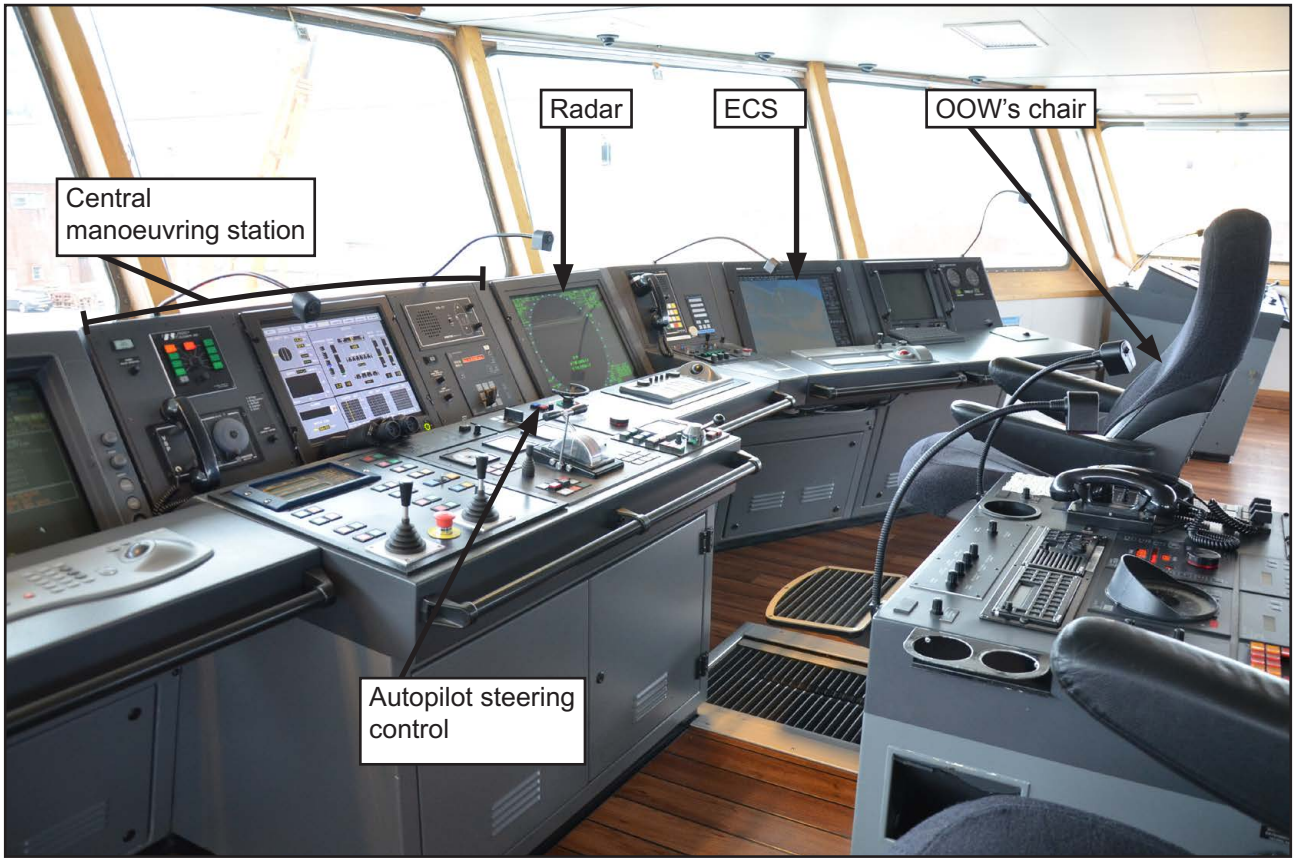

Figure 3: Wheelhouse

The control for the radar watch alarm, set to sound at low volume every 6 minutes, could also be reached from the bridge chair, and this was regularly reset throughout the watch. No positions were plotted onto the vessel's charts after midnight.

At 0100 *Lysblink Seaways* passed between the Isle of Mull and Lady Rock's lighthouse; a course alteration due at that position was not made until 0105 **(Figure 4)** just after the radar watch alarm had sounded. At this time the vessel was 0.4nm from its planned route and outside the 0.2nm cross track limit set on the ECS, the alarm for which had been silenced. No vessel traffic was visible on its radar at that time.

Lysblink Seaways entered the Sound of Mull at 0115. At 0120 and 0145 alterations of course were made to follow the passage plan.

At 0155 the radar watch alarm sounded and *Lysblink Seaways'* course was altered from 300° to 324°. The wind was south-south-westerly, gusting to 35 knots[4] and the vessel made good a course of 326° as it approached the northern end of the Sound of Mull.

At 0211 *Lysblink Seaways'* track again passed outside of the 0.2nm cross track limit set on the ECS **(Figure 5)**. At 0212 the radar watch alarm sounded and was reset, but an alteration of course onto a new heading of 315°, which should have been made at that time, was not executed.

The grounding

At 0222 *Lysblink Seaways,* still heading 324°, passed the wrong side of the New Rocks starboard lateral buoy, narrowly missing the rocks **(Figure 5 inset)**.

[4] Knots is speed in nautical miles per hour. 1 nautical mile = 1852 metres

Reproduced from Admiralty Chart BA 2392-0 by permission of the Controller of HMSO and the UK Hydrographic Office.

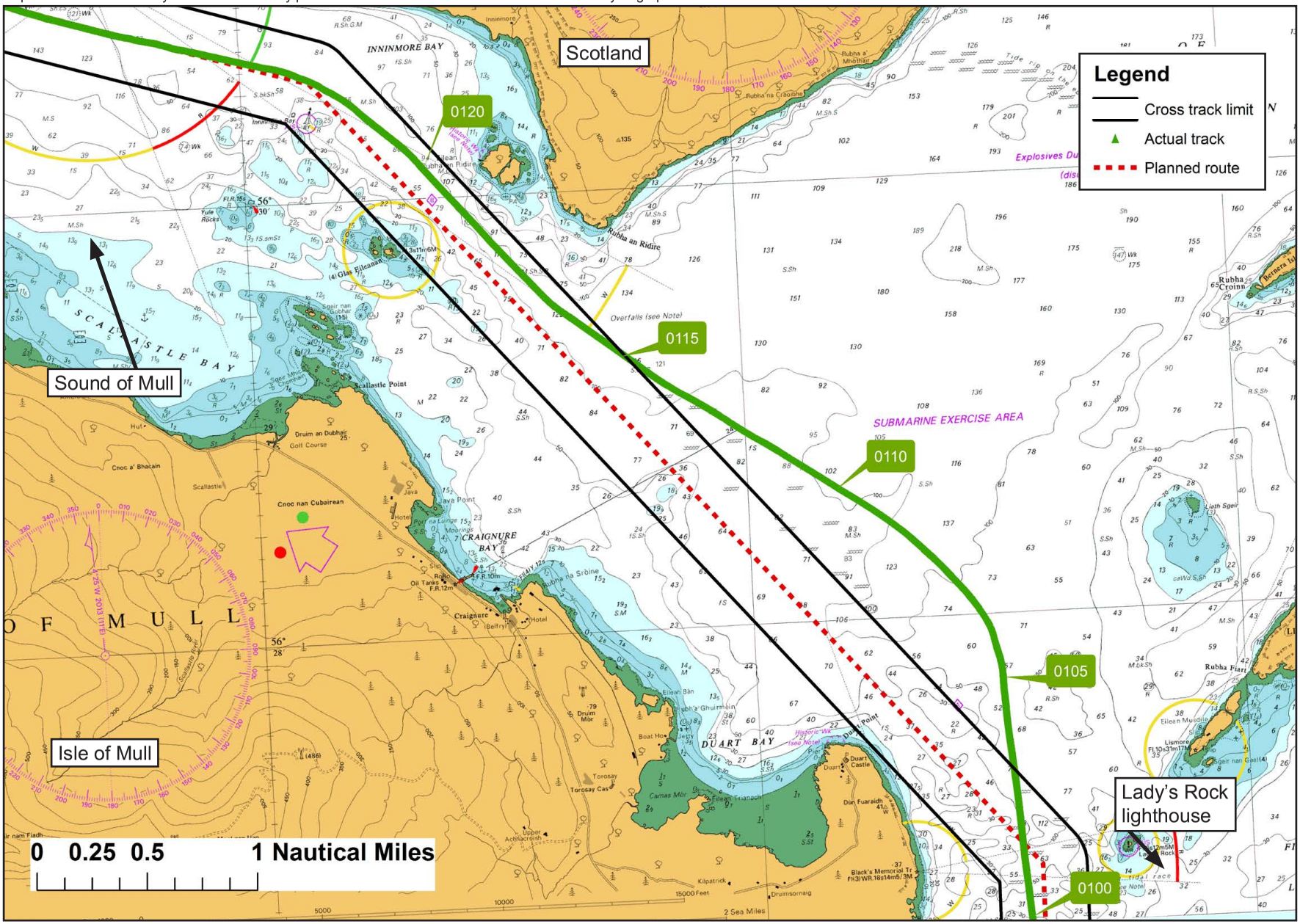

Figure 4: Overshooting 0100 wheelover position

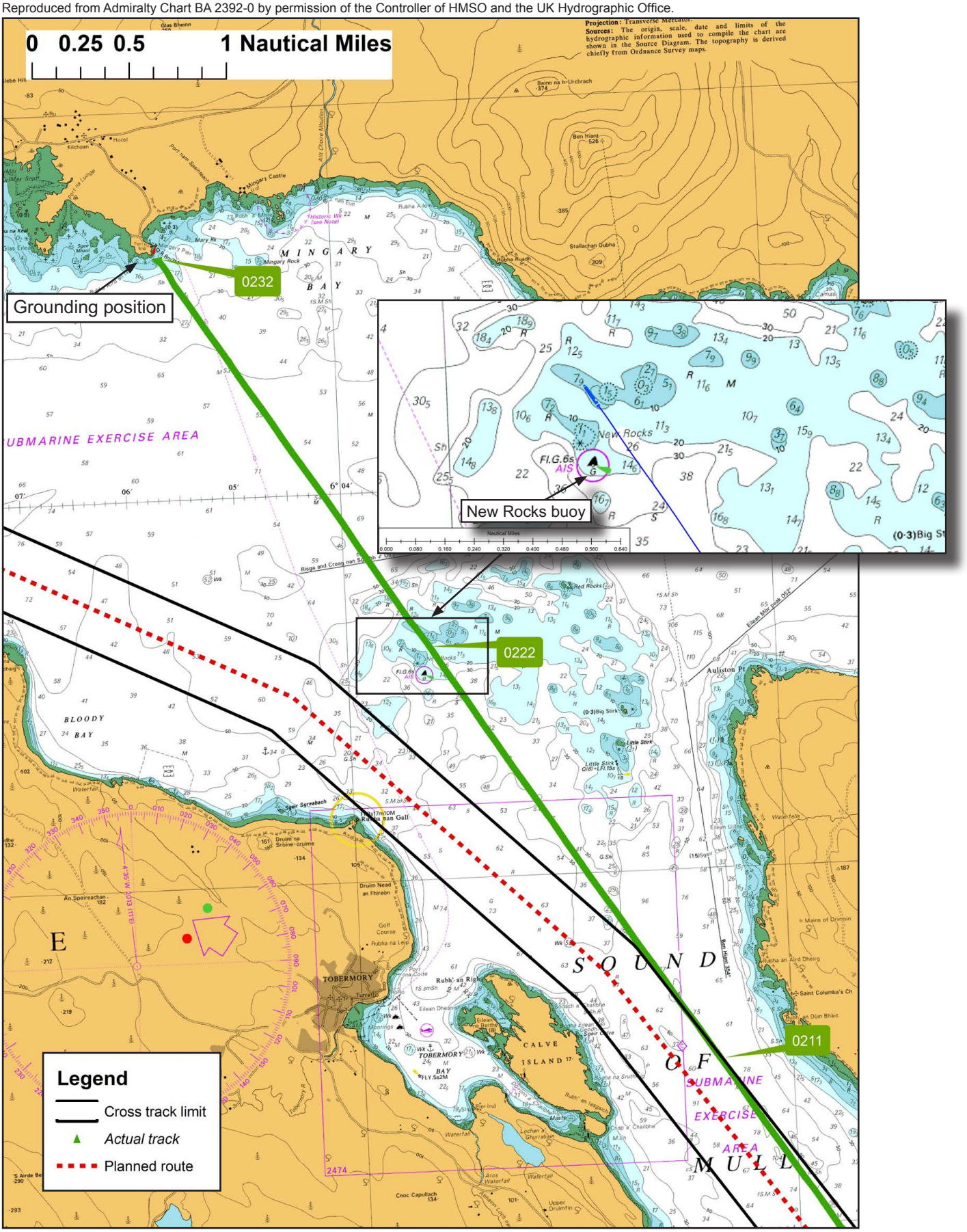

Figure 5: Deviation from planned route until grounding (**inset:** Vessel passes wrong side of New Rocks buoy)

At 0231:22, shortly after the radar watch alarm had been reset, the steering mode was changed from autopilot to manual and the helm was placed hard-a-port. The vessel was 0.1nm from the shoreline and making a speed of 13.3 knots.

At 0232 *Lysblink Seaways* grounded on the rocky shoreline near Mingary pier, Kilchoan while swinging to port **(Figure 6)**.

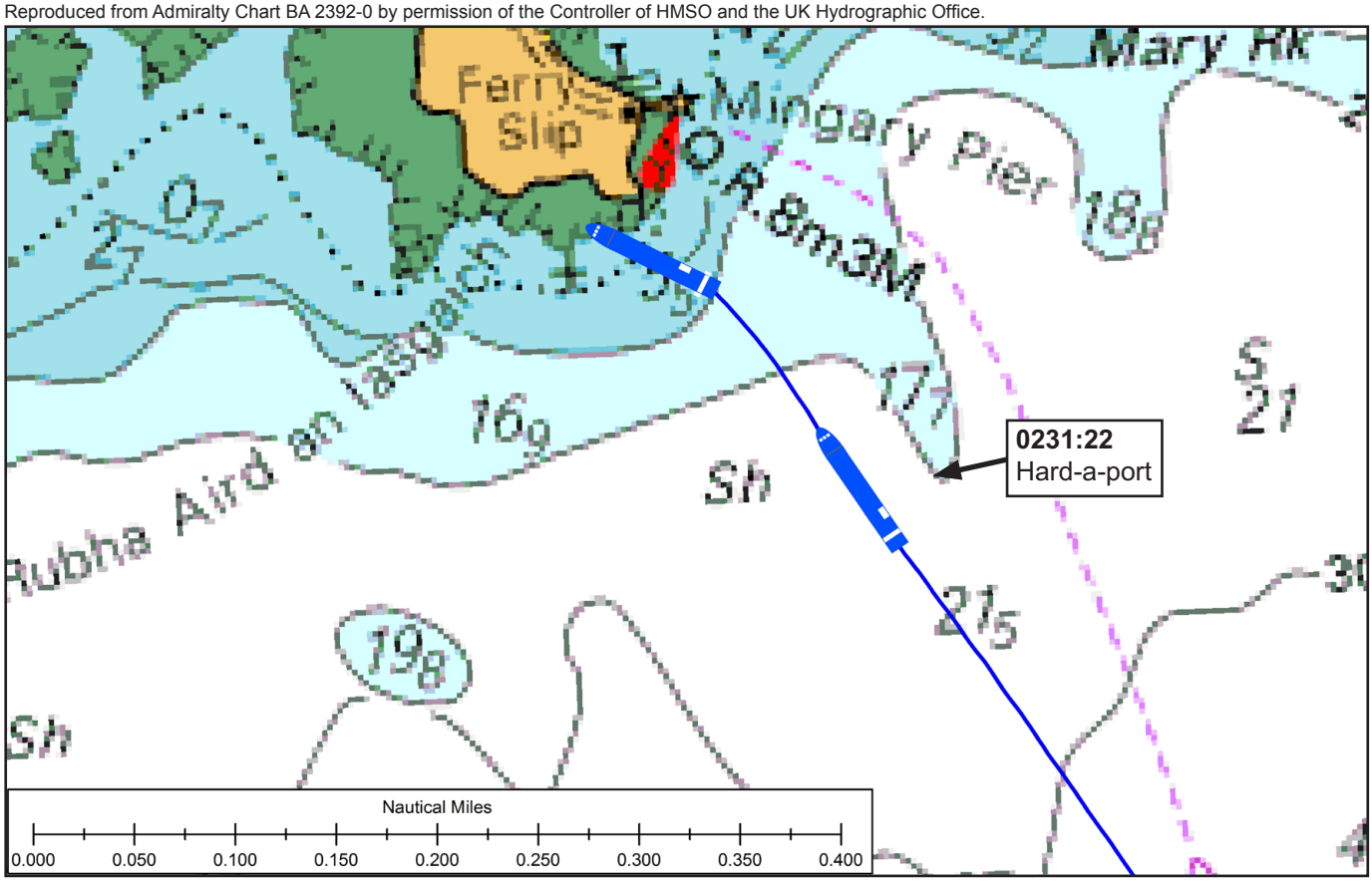

Figure 6: 0232 - vessel grounded at 13.3 knots

Events following the grounding

At 0234 the master arrived on the bridge and put the propeller pitch to zero. He asked the chief officer if he had been asleep or drinking, and if the AB had been on watch. He also suggested that someone should go to the hold to "*check for leakage*". The emergency checklist for grounding was not consulted.

At 0237 the master instructed the chief engineer to stop the main engine and start the auxiliary engine, and he asked the chief officer to check the local tide times.

At 0239 the duty AB arrived on the bridge. The master asked him where he had been and told him he should have been on the bridge. The AB replied that he had been keeping his watch in the deck office.

At 0240 the chief engineer reported that a double bottom sludge tank in the engine room had been breached and was filling with water.

At 0241 the master attempted to call the owner's designated person ashore (DPA) by telephone, with no response.

At 0253 the master informed the coastguard at the Maritime Rescue Co-ordination Centre (MRCC) Stornoway via VHF radio that the vessel was aground, and gave its position.

At 0259 MRCC Stornoway contacted the vessel to obtain the number of persons and quantity of fuel on board, and asked if the vessel had been damaged. The master advised that the vessel was not damaged and that there was no pollution or injuries.

At 0400 MRCC Stornoway requested the Tobermory lifeboat to launch and standby *Lysblink Seaways*. The lifeboat arrived on scene 45 minutes later when the master informed the lifeboat's crew that the vessel's hull had been breached and that its steering gear was damaged. The lifeboat crew relayed this information to MRCC Stornoway.

At 0512 an owner's representative contacted MRCC Stornoway and advised that two of the vessel's fuel oil tanks had been breached and that the vessel had 273t of marine gas oil fuel on board at the time of the accident.

At 0520 the vessel's deck officers undertook breath alcohol tests in accordance with the owner's alcohol and drugs policy. The chief officer's breath alcohol reading was 2.71mg/l, the master and second officer both recorded a zero reading.

Refloating and salvage

In accordance with the UK National Contingency Plan for marine pollution from shipping, the Secretary of State's representative (SOSREP) assumed overall control of the vessel's salvage and pollution containment.

Salvors were appointed and salvage tugs were sent to the scene within 24 hours of the accident. The salvors were undertaking a damage assessment of the vessel when it unexpectedly refloated at 2200 on 19 February 2015.

The vessel was anchored and the salvors carried out work to prevent further pollution, and to prepare the vessel to be towed to dry dock in Greenock as directed by the Maritime and Coastguard Agency (MCA). It was estimated that 25t of marine gas oil had been spilt as a result of the accident.

The vessel arrived in Greenock on 5 March. Following a hull survey, *Lysblink Seaways* was declared a constructive total loss and was subsequently scrapped.

Environment

Wind: south-south-west, force 6, moderate sea.

Visibility: Good.

Tides: (Kilchoan) 18 February 2015

low water: 0007 0.9m; high water: 0611 4.7m

The wheelhouse was enclosed and its external door was closed at the time of the accident.

Vessel

Lysblink Seaways, a UK registered, 7,409gt general cargo vessel, was built in 2000 for Lys Line and lengthened in 2004 to 129m to transport specialised forestry products such as reels of paper, from Norway to NW European ports.

Lysblink Seaways was managed by DFDS Logistics Rederi AS of Norway. The Document of Compliance (DoC) for the International Safety Management (ISM) Code was held by the vessel's owner, DFDS A/S of Copenhagen, Denmark, which had taken over Lys Line in 2005.

Manning

Lysblink Seaways had a complement of nine in accordance with its Minimum Safe Manning Document.

The master, a 59 year old Norwegian, had worked for Lys Line and subsequently DFDS for more than 30 years. He held a Norwegian STCW[5] II/2 as master unlimited, Certificate of Competency (CoC) and had been a master for 16 years, 5 of which had been on *Lysblink Seaways.* He was very experienced in navigating Norwegian coastal waters and held pilotage exemption certificates (PEC) for several Norwegian ports.

The chief officer was a 36 year old Russian. He held a Russian STCW II/2 CoC as chief mate, had served as chief officer on *Lysblink Seaways* for 3 years and he held a PEC for Stavanger, Norway.

The second officer was a 45 year old Estonian. He held an Estonian STCW II/2 CoC as chief mate and had served as second officer on *Lysblink Seaways* for 3 years.

The master and deck officers worked 1 month on, 1 month off tours of duty on *Lysblink Seaways*. They held valid Certificates of Equivalent Competency issued for the UK ship register by the MCA.

The chief officer and second officer worked 6 hours on / 6 hours off watchkeeping duties at sea and in port. The chief officer worked the 0000-0600 and 1200-1800 watches.

Two able seamen (ABs) also worked 6 hours on / 6 hours off watchkeeping duties at sea and in port.

Alcohol

Owner's Alcohol and Drugs Policy

The owner's SMS stated that:

> *During their entire service on board the Company's ships, employees are not allowed to consume or possess alcohol. All employees and contractors have an obligation to present themselves for work in an appropriate physical condition without the presence of alcohol in their body. This means the company have a Zero Tolerance alcohol policy in place.*

Alcohol tests

In relation to testing for alcohol the SMS stated that:

> *To the extent necessary to ensure compliance of the policy all employees on board are required to undergo random, unannounced, without cause and post incident/accident testing for alcohol, narcotics and other habit forming drugs at the request of the authorities, the Master or the Company. It must be expected that all ships once or twice a year will be subject to unannounced tests.*

No evidence was found that any random alcohol tests had been carried out on the crew of *Lysblink Seaways* prior to the accident.

Legislation

In the United Kingdom, the Railways and Transport Safety Act 2003, sections 78, 79 & 81 introduced limits of alcohol for professional seafarers, of 0.35mg/l of alcohol in the breath.

[5] International Convention on Standards of Training, Certification and Watchkeeping for seafarers 1978, as amended.

Internationally the STCW Convention required administrations to establish limits of not greater than 0.25 mg/l alcohol in the breath for masters, officers and other seafarers while performing designated safety, security and marine environmental duties.

Alcohol consumption

Lysblink Seaways carried a bonded store, which included a stock of spirits, beer and wine. Records showed that the bonded store was regularly replenished, and empty beer, wine and spirit bottles and cartons found on board after the accident indicated significant levels of alcohol consumption by the crew.

Safety management system

The owner's DoC, which confirmed that its SMS had been audited and complied with the ISM Code, was issued by the MCA on 12 December 2012.

The DoC was valid until 16 January 2016 and an annual verification audit was undertaken by the MCA on 10 December 2014. The audit raised a non-conformity regarding officers' bridge resource management training, which had not been undertaken at 5-yearly intervals as required by the SMS.

The vessel's Safety Management Certificate (SMC) was issued by the MCA on 17 April 2013 and was valid until 31 July 2015. An internal audit was carried out on 24 September 2014, which raised three non conformities relating to documentation (incorrect general company contact list), storage of paint thinners and fire-fighting breathing apparatus. None of these were relevant to this accident.

Lookout and BNWAS

As stated in Marine Guidance Note (MGN) 315(M) Keeping a Safe Navigational Watch on Merchant Vessels, *the MCA considers it dangerous and irresponsible for the OOW to act as sole look-out during periods of darkness.*

The owner's SMS included a requirement that a lookout should be on the bridge when a vessel was navigating *in close waterways with reduced visibility under two nautical miles.* There was no definition of a *close waterway*.

The masters' standing orders for handing over the bridge watch, signed by both masters, required that *relieving officer and lookout must meet on the bridge minimum 10 minutes before their scheduled watch.*

The SMS also contained a checklist for bridge procedures that included a requirement for the BNWAS to be switched on at all times while the vessel was at sea.

Passage planning

The instructions and guidance contained within the SMS relating to passage planning were limited to the bridge procedures checklist. This required that the appropriate nautical publications were available but provided no guidance on their use for passage planning. Similarly, there was no guidance on how the ECS should be used.

The SMS also contained the second officer's job description, which stated that he was responsible for *the preparation of the voyage planning, subject to the master's approval, establishing:*

- The optimal route, distance, currents and weather conditions considered
- Distances, estimated speed and sailing times
- Preparation and checking of all charts and sailing information for the voyage intended

Electronic Chart System

The primary means of navigation on *Lysblink Seaways* was by paper chart, but the vessel was also equipped with a Raytheon NCS ECDIS[6] that was being used as an ECS. The navigational waypoints, with associated courses and distances, for the regular routes on which the vessel traded were stored in the ECS as electronic files.

The cross track deviation limit for all courses on the passage from Belfast to Skogn was set at 0.2nm, although the vessel's track passed closer than 0.2nm to the shoreline and shallow areas on certain legs of the passage. The audible alarm for cross track deviation had been silenced.

The anti-grounding look ahead feature had not been set up although the vector charts for the system were up to date. The safety contour was set at 20m and the safety depth at 30m.

Similar accidents

In August 2011, *Karin Schepers*[7], a feeder container vessel, grounded when its sole watchkeeper, the vessel's master, fell asleep after consuming alcohol. The MAIB report into the accident found that no lookout had been posted and the BNWAS was turned off.

Since 2004 the MAIB has been informed of a further 11 groundings of merchant vessels, of 100gt or more, in which the abuse of alcohol was a contributory factor.

In May 2001 the general cargo vessel *Lysfoss*[8], owned by Lys Lines, grounded in the Sound of Mull. The MAIB investigation found that there was no passage plan, and the master's experience of Norwegian coastal waters had induced an element of complacency towards navigating in confined waters. The owner was recommended, inter alia, to critically review its SMS and implement methods of conducting safety rounds without prejudicing the maintenance of a proper lookout.

ANALYSIS

Summary

The vessel grounded when the OOW lost situational awareness due to his consumption of alcohol. While the chief officer's performance can largely be accounted for by his alcohol consumption, the investigation also uncovered poor navigational practices and that defences/control measures for the OOW becoming incapacitated were being ignored. Many of these, had they been in place, could have prevented the accident.

Alcohol

The chief officer had consumed a very large amount of alcohol before going on watch. However, the investigation found that the owner's zero alcohol policy on board was often flouted by crew members.

The inventory of the vessel's bonded store records that it was regularly replenished with spirits, wine and beer, and evidence of significant alcohol consumption by the crew should have alerted the owner to the likelihood that its alcohol policy was not being observed.

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[6] Electronic Chart Display and Information System

[7] https://assets.digital.cabinet-office.gov.uk/media/547c6f83e5274a4290000033/KarinSchepers.pdf

[8] https://assets.digital.cabinet-office.gov.uk/media/547c70f3e5274a428d0000d1/lysfoss.pdf

Had the company's zero alcohol policy been effectively administered and monitored, it might have prevented the development of a culture in which the chief officer considered it acceptable to consume alcohol before his bridge watch.

Lookout

Contrary to the advice contained within MGN 315(M), the OOW was alone on the bridge and no lookout had been posted at any time during the voyage, even though the master had been on the bridge for part of the passage and ABs were on duty and available in the deck office.

The owner's SMS required a lookout to be posted *in close waterways with reduced visibility under two nautical miles*, but 'close waterways' was not defined and in this case the visibility was excellent. As a result, the master was under the impression that the SMS did not require a lookout to be posted during the hours of darkness.

The presence of a lookout, particularly during the hours of darkness, helps to ensure that a safe navigational watch is maintained at all times. In this case, had a lookout been on the bridge, he would have been well placed to prevent the accident by alerting the master to the chief officer's condition and to the fact that navigational waypoints had been missed.

BNWAS

The BNWAS was not switched on for the voyage despite the instruction in the owner's SMS that it should be switched on at all times when the vessel was at sea.

The investigation revealed that it was normal practice on board *Lysblink Seaways* for the radar watch alarm to be used instead of the BNWAS, as the reset button for this alarm could be reached from the wheelhouse chair. However, the radar watch alarm had no staged, remote alarm function and was unsuitable for use as a replacement for the BNWAS. Its effect was similar to that of a 'snooze' button on a bedside alarm clock.

Had the BNWAS been switched on, it is probable that by having to leave his chair to reset the alarm the OOW would have realised that a navigation waypoint had been missed at an earlier stage.

ECS

Although the vessel's primary means of navigation was paper charts, no positions were plotted on the chart by the OOW who used the ECS as his principal means of navigation.

Neither the master nor the chief officer had received training in the use of the ECS and available safety features that might have alerted the OOW to the vessel's predicament, such as the anti-grounding sector, had not been set up. The only alarm that had been enabled was for cross track error, but this had been inappropriately set up and the audio alarm had been silenced.

Had the passage plan been appropriately entered into the ECS, the available safety features would have been available and the alarms could have alerted the OOW to potential dangers at an early stage.

Passage planning

Passage planning is more than simply drawing lines on a chart or uploading an electronic file onto an electronic chart system. The safe execution of a passage relies on the robust appraisal of all information relevant to the proposed voyage, the ascertainment of the risks and an assessment of any critical areas identified.

Once *Lysblink Seaways'* master had decided to take the inshore route, careful consideration should have been given to the vessel's passage through the areas of confined waters and suitable control measures should have been identified and put in place.

However, passage planning for this voyage was limited to the re-use of a previously calculated passage plan with updated tidal information. The passage through the Scottish sounds was not adequately assessed. In certain areas the course line passed less than 0.2nm from land or shallow waters, but the cross track deviation limit on the ECS was set up for 0.2nm regardless of location.

When appraising, planning and executing the vessel's passage plan, the bridge team had a very limited appreciation of the potential risks when navigating in confined waters. This apparent complacency towards the close proximity of navigational hazards may, in part, have been a consequence of the vessel's trading pattern within Scottish and Norwegian waters where voyages within confined waters were common. Had an appropriate and detailed passage plan been prepared and implemented in a professional and precautionary manner, it is unlikely that the voyage would have ended with the vessel hard aground.

Safety culture

To be effective, a SMS must be continually reviewed to ensure that shipboard operations are conducted safely and efficiently. The SMS should be driven by a commitment from managers to provide a safe working environment and supported by crews who ensure the vessel is operated in a safe and professional manner.

In this case, the abuse of alcohol was a symptom of systemic non-compliance with the SMS on *Lysblink Seaways*, which had gone unchallenged despite regular audits.

The owners required a zero alcohol policy on board their vessels yet they did not question the frequent replenishment of the bonded store. The poor standard of passage planning; non-use of lookouts, BNWAS, night orders or emergency checklists; and the delay in contacting the coastal state following the grounding all demonstrate that the SMS was not being complied with. Furthermore, some of these deficiencies should have been detected by audit.

Similar deficiencies had been identified by the investigation into the grounding of *Lysfoss* in 2001. The findings of this investigation indicate that the shortcomings identified with the Lys Line safety culture in 2001 were still prevalent on *Lysblink Seaways* at the time of the accident, despite the change of ownership.

CONCLUSIONS

- The vessel grounded when the OOW lost situational awareness as a result of being under the influence of alcohol.

- The effective administration of the owner's zero alcohol policy might have prevented the development of a culture in which the chief officer considered it acceptable to consume alcohol before his watch.

- Had a lookout been on the bridge, he would have been well placed to prevent the accident by alerting the master to the chief officer's condition and that navigational waypoints had been missed.

- Had the BNWAS been switched on it is probable that the OOW would have realised at an earlier stage that a navigation waypoint had been missed.

- Had the passage plan been appropriately entered into the ECS, the available safety features would have been available and the alarms could have alerted the OOW to potential dangers at an early stage.

- Had an appropriate and detailed passage plan been prepared and implemented in a professional and precautionary manner, it is unlikely that the voyage would have ended with the vessel hard aground.

- In this case, the abuse of alcohol was a symptom of systemic non-compliance with the SMS on *Lysblink Seaways*, which had gone unchallenged despite regular audits.

- Shortcomings, identified in an earlier MAIB report, regarding the Lys Line safety culture were still prevalent on *Lysblink Seaways*, despite a change of ownership.

ACTION TAKEN

DFDS A/S

DFDS A/S has:

- Undertaken a concentrated Inspection and Audit of *Lysblink Seaways*' sister vessels, resulting in the:

    - Removal of the bonded stores from those vessels.

    - Verification of the owner's random alcohol testing regime.

    - Issuing of instructions regarding the posting of lookouts.

    - Verification of ECDIS training for officers on those vessels.

    - Revision of the management structure of the sister vessels.

- Undertaken a review of Bridge Resource Management in narrow navigational waters for its vessels.

- Developed an in-house, accredited Maritime Resource Management training course to improve the standards of Bridge Resource Management in its fleet.

RECOMMENDATIONS

In view of the actions already taken, no recommendations have been made.

SHIP PARTICULARS	
Vessel's name	*Lysblink Seaways*
Flag	United Kingdom
Classification society	DNV
IMO number	9197313
Type	General Cargo
Registered owner	DFDS A/S
Manager(s)	DFDS Logistics Rederi A/S
Year of build	2000, India
Construction	Steel
Length overall	129.0m
Registered length	122.64m
Gross tonnage	7409
Minimum safe manning	9
Authorised cargo	Forestry products
VOYAGE PARTICULARS	
Port of departure	Belfast, Northern Ireland
Port of arrival	Skogn, Norway
Type of voyage	International
Cargo information	Part loaded, 50t of waste paper
Manning	9
MARINE CASUALTY INFORMATION	
Date and time	18 February 2015, 0232 (UTC + 1)
Type of marine casualty or incident	Very Serious Marine Casualty
Location of incident	Kilchoan, Ardnamurchan peninsula, Scotland
Injuries/fatalities	None
Damage/environmental impact	Extensive double bottom damage, vessel declared a constructive total loss. 25t of marine gas spilled.
Ship operation	On passage
Voyage segment	On passage
External & internal environment	Dark, wind south-south-west force 6, moderate swell. Visibility: good Air temperature: 9ºC Enclosed wheelhouse with external door closed.
Persons on board	9