



M2014-E1

Report on preliminary investigation

M/V Lady Hester (NL), ground touching and grounding in Ruotsinsalmi channel off Kotka on 5 December 2014

The dry bulk carrier M/V Lady Hester was on her way from the Port of Rauma to the Port of Halla in Kotka on 5.12.2014 when she touched ground at 06.40 and then ran aground in the Ruotsinsalmi channel off Kotka.

The Safety Investigation Authority of Finland initiated a preliminary investigation into the incident. In the preliminary investigation the sequence of events leading to the accident and its consequences were studied and the causes affecting the aforementioned were assessed. Safety investigation does not address factors related to responsibility or liability, but its objective is to improve general safety, to prevent dangerous situations and to prevent damages caused by accidents.

The report brings forth safety observations which are thought to improve general safety. The various parties involved have had an opportunity to comment upon the draft of the report.

All times used in the report are in local time (UTC +2).



Figure 1. M/V Lady Hester (The Safety Investigation Authority, Finland)

FACTUAL INFORMATION

Time and scene of events	5.12.2014 at 06.40, the 6.1 metre deep Ruotsinsalmi channel in Kotka (N 60° 27.0' E 026°59')
Incident	Ground touching and grounding
Name of the vessel, call sign and IMO number	M/V Lady Hester, PBXO, IMO 9467249
Nationality and home port of the vessel	The Netherlands, Delfzijl
Shipping company	Wijnne & Barends Cargadoors
Vessel type	Dry cargo vessel
Year of construction	2011
Classification society	Lloyd's Register
Main dimensions	LOA 98.2 m, breadth 13.4 m, max. draught 5.6 m, gross tonnage 2 992, net tonnage 1 531
Propulsion and propellers	Main engine Mak M25, controllable pitch propeller, bow thruster
Number of crew and passengers	8 crew members, no passengers
Cargo	645.5 tons of timber
Weather condition when the incident took place	Wind WSW 6-8 m/s, +4 °C, cloudy, foggy and drizzle
Sea conditions when the incident took place	Sea level -35 cm (tide gauge in Hamina), significant wave height < 1m, sea-water temperature +4.8 °C
Damages to the vessel	Damages in propeller blades, dents and scratches in the bottom of the vessel and on the starboard side of the bilge keel for the length of the entire vessel, bends in the frames of the double-bottom tanks.
Other damages	No damages to persons or the environment

INCIDENT

A pilot boarded the vessel at the Orregrund pilot boarding position at 04.50 on 5.12.2014. The weather conditions and visibility in Orregrund were good. The Master told the pilot that he wanted to use the 6.1 metre Ruotsinsalmi channel, because the vessel was not fully laden and her draught was 4 metres. Another possible route passed around the south side of Kirkonmaa Island, and its most shallow point was 7.3 metres. As to the travel time, the other route was approx. one hour longer. The Master used to use the longer route when the draught of the vessel was more than 5 metres. It was agreed that the choice of route would be assessed anew when the vessel passed the Port of Mussalo in Kotka. If the circumstances required, it was still possible to alter the route there and take the route south of Kirkonmaa. The master and the pilot discussed the voyage plan verbally but did not go through it on paper.

When the pilotage took place, only the Master and the pilot were on the bridge. The Master had sent the watchman to get some sleep because he wanted to prepare for the loading which was to take place the following day and to ensure that rest periods were maintained. The Master did also not consider that he would need the watchman on the bridge during the pilotage. The engine room was unmanned,

and the Chief Engineer responsible for engine watchkeeping was on standby in his cabin if needed. The manning of the vessel complied with the requirements set in the Minimum Safe Manning Document. According to the Master, the vessel was prepared for the pilotage in accordance with the vessel's checklist before it arrived to the pilot boarding position. The Master had made several trips to Kotka and was familiar with the routes to the Port of Halla. The pilot was familiar with the vessel because he had piloted her earlier.

The beginning of the voyage went as usual, and the pilot was manoeuvring the vessel by using automatic steering with the speed of approx. 13 knots. The Chief Engineer made the bow thruster ready to be used before passing Kaunissaari Island. When passing Kaunissaari Island, the pilot noticed for the first time that the visibility had somewhat deteriorated on the mainland-side of the vessel. At the Port of Mussalo the visibility deteriorated further to approx. 1-1,5 nautical miles, but the Master and the pilot still considered it to be adequate, and the vessel proceeded towards the Ruotsinsalmi channel. Somewhat before turning into the Ruotsinsalmi channel the Master called the deck crew to prepare the lines for mooring.

When the vessel turned into the Ruotsinsalmi channel, the visibility deteriorated quickly to 100-200 metres. The speed of the vessel was reduced in phases to approx. seven knots and manual steering was taken into use. The Master kept the rudder on the port side of the bridge by using the follow up control lever in accordance with the pilot's orders.

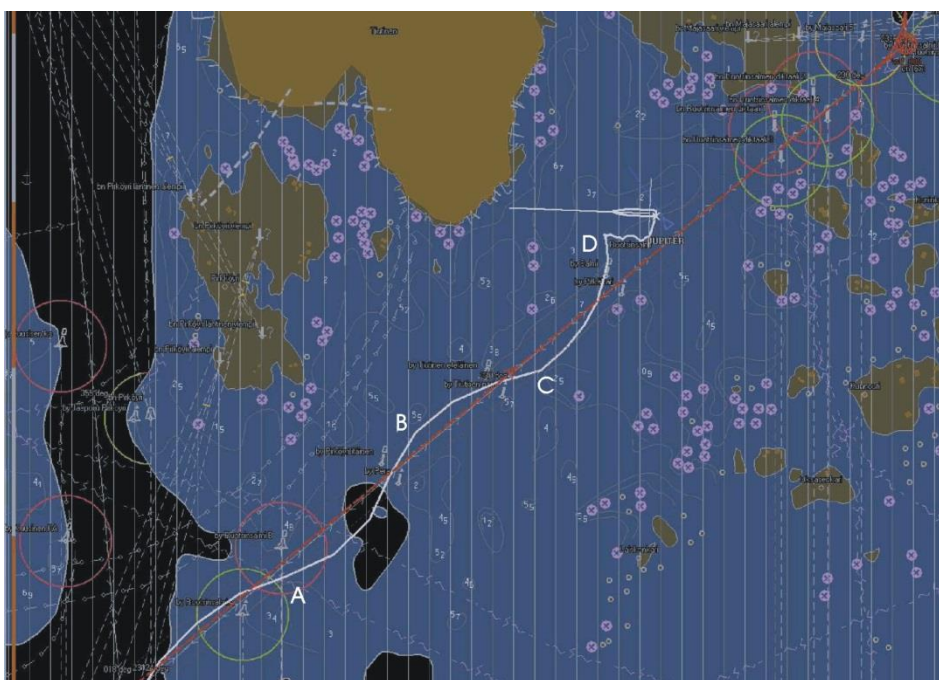


Figure 2. Screenshot of M/V Lady Hester's route from vessel's Ecdis. The stages of the incident have been marked on the picture with letters.

It was difficult for the Master to understand the pilot's manoeuvring order on how to steer between the first two buoys, which made the vessel drift south of the channel after she had passed the first green buoy (Figure 2: A). Because of these difficulties, the Master asked the pilot to give the manoeuvring orders as compass courses. By using the given course the vessel was able to pass the following red buoy and steer between the first pair of spar buoys. The correcting manoeuvre had, however, been so large with regard to the channel alignment and breadth that after the first pair of spar buoys the vessel drifted to the north side of the channel (Figure 2: B).

The visibility was so poor at the first pair of spar buoys that the unlit green spar buoy only became visible at midships when the vessel was passing it. The buoys and spar buoys further off could be seen on the radar, but the closest ones disappeared in the adjacent shadow zone and sea clutter, which meant that navigation was mainly based on the vessel's Ecdis display and the pilot's portable electronic chart device. The vessel was still able to navigate through the next buoy and spar buoy pair after which she suffered from ground touching on the south side of the channel at 06.40 (Figure 2: C). The speed of the vessel was approx. seven knots when she touched the ground.

The ground touching altered the vessel's course to port back to the channel area. After the vessel returned to the channel area, attempts were made to stop her and return her in the direction of the channel. After the ground touching, frequency variations were detected in the vessel's shaft generator. These variations were probably caused by damages to the propeller. As a result of the frequency variations, the bow thruster connected to the shaft generator switched off and it could not be used to assist in manoeuvring of the vessel. It was not possible to stabilize the vessel's course so that she would have followed the direction of channel, and thus the vessel proceeded outside the channel, to the north side of it, at the following pair of spar buoys (Figure 2: D). The Master and the pilot did not see the red spar buoy, which the vessel passed when proceeding to the north side of the channel. They both did, however, presume that the vessel had not hit the spar buoy.

The vessel finally drifted softly onto a shoal north of the channel at 06.46. The bow of the vessel pointed towards the Tiutinen Island and the aft was on the border of the channel area. Later the position of the vessel changed due to external factors. There were no attempts to carry out emergency anchorage during the incident.

MEASURES TAKEN AFTER THE INCIDENT

After the ground touching the Master raised general alarm on the vessel. When the vessel moved outside the channel area, the VTS (Vessel Traffic Service) centre started communication with the vessel on its VHF channel. After the vessel had stopped, the pilot informed the VTS centre about the accident by using his mobile phone. The VTS centre conveyed the received information to the Maritime Rescue Sub-Centre (MRSC Helsinki), which raised alarm to the Kotka Coast Guard Station and through Emergency Response Centre to the Kymenlaakso Rescue Department. MRSC Helsinki passed on the information also to the Finnish Transport Safety Agency (Trafi), the Finnish Environment Institute and the Safety Investigation Authority of Finland. There was a vessel from the Finnish Defence Forces in the area, and the MRSC Helsinki asked her to be stand-by. Through the Rescue Department information about the incident was also forwarded to the Centre for Economic Development, Transport and the Environment, an oil combatting vessel of the Navy and to the police.

At the scene of the accident, the crew stopped the main engine in order to prevent further damages and started the sounding of the vessel's tanks in order to find out the scope of damages. A tug boat was ordered to the scene. Two patrols from the Coast Guard and one Rescue Department unit travelled to the scene of the accident on a Kotka Coast Guard Station patrol boat. There were not any leakages detected on the vessel or oil spills in its vicinity in the inspections performed by the vessel's crew and rescue authorities. The breathalyser results both from the pilot and the Master were clean.

Permission to refloat the vessel was received from a Finnish Transport Safety Agency inspector at 08.24. The measures to refloat the vessel were started at 08.50 after possible threats to environment had been controlled. The vessel refloat from the ground with the assistance of the tug boat Jupiter at 08.55. After the tug boat had pulled the vessel back into the channel, the main engine was started and the vessel was turned in the direction of the channel by using the bow thruster. The vessel proceeded

to the Port of Halla in Kotka by using her own engines and assisted by the tug boat, and moored at the port at 09.40.

In the port, representatives from the Finnish Transport Safety Agency, classification society and rescue department investigated the damages to the vessel. The vessel had damages in the propeller blades and dents and scratches in her bottom and on the starboard side of the bilge keel for the length of the entire vessel. The vessel was ordered to be docked, and after the cargo was unloaded, the Finnish Transport Safety Agency inspector gave the vessel permission to transfer to the dock in Riga, Latvia.

SAFETY OBSERVATIONS

Weather conditions contributed to the accident, as they were significantly worse than had been assumed and thus reduced the optical visibility to an inadequate level for navigating in a narrow channel. Both the Master and the pilot presumed that the conditions in the Ruotsinsalmi channel and conditions during the first part of the pilotage would be similar. They both told that they would not have chosen the route had they been aware of the prevailing circumstances along the route.

The information about the expected weather conditions was based on the marine weather forecast for the Eastern Gulf of Finland and on the Master's and pilot's own observations. If there are several pilotages performed in the same area, the pilots usually exchange information about local conditions. When the incident took place, there were no other pilotage operations taking place in the area, so information from other pilots was not available. The pilot and the VTS centre did not discuss weather conditions.

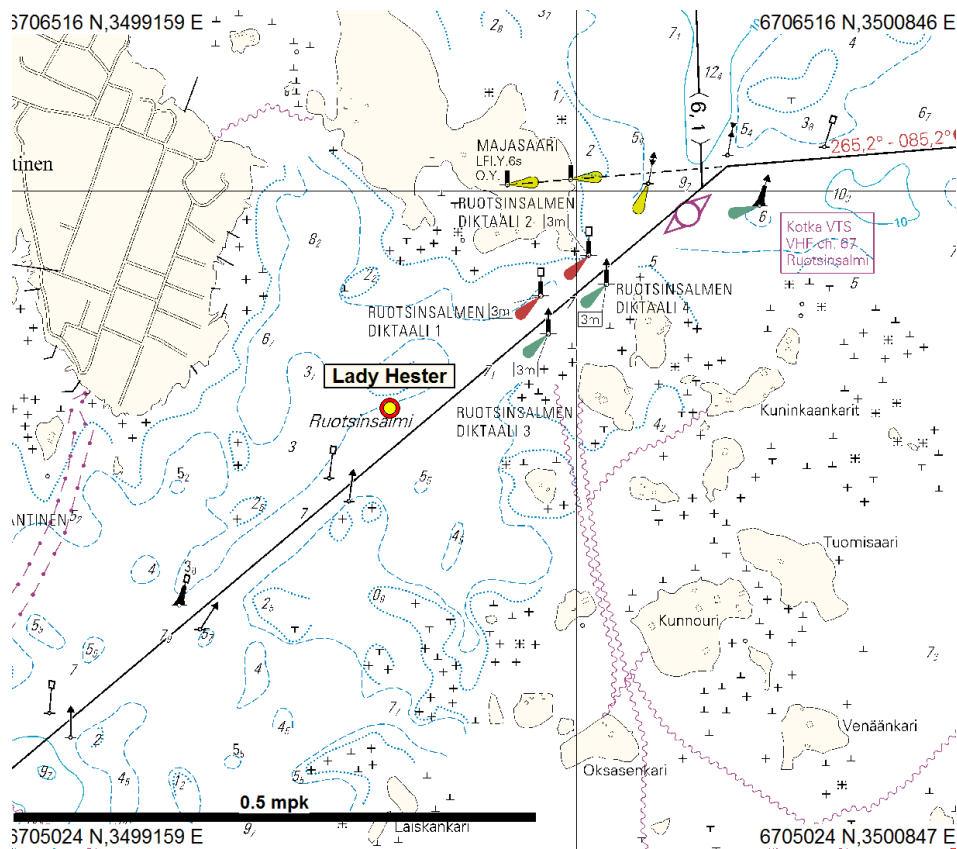


Figure 3. The Ruotsinsalmi 6.1 metre channel (The Finnish Border Guard)

The Ruotsinsalmi channel is a merchant shipping channel of class 2, and only some of the navigational aids are lit in the channel. The breadth of the narrowest parts of the channel is approx. 50 metres, and the distance between the spar buoys is a few hundred metres. According to the pilot's opinion, safe navigation in the channel requires a visibility of at least one nautical mile, optical observation and precise rudder work with only minor course alterations. The pilot was of the opinion that the maximum vessel length suitable for the channel would be 120 metres.

Bridge manning was also a background factor contributing to the accident. When there was no separate lookout or helmsman, the Master had too much to do. In the prevailing circumstances rudder work was a difficult task and would have required undivided attention.

Factors related to general situational awareness and observations on communication also came up in the preliminary investigation. The conversations between the pilot and the VTS centre as well as the discussions between representatives from rescue authorities which took place on the bridge after the accident were all carried out in Finnish. The Master of the vessel did not understand Finnish and was therefore not fully aware of the overall situation.

Studying the communication after the grounding turned out to be difficult as the vessel was not required to have VDR (Vessel Data Recorder) equipment because of its size. From the VTS recording it was not possible to hear communication carried out on mobile phone between the pilot and the VTS centre.

The Safety Investigation Authority of Finland has concluded that the particular characteristics of this incident do not require initiating an actual investigation and that the report on the preliminary investigation is adequate with reference to the safety benefits.

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