DMAIB

DANISH MARITIME ACCIDENT INVESTIGATION BOARD

VICTORIA

Marine accident report on the grounding of VICTORIA on 10 February 2017

MARINE ACCIDENT REPORT ON THE GROUNDING OF VICTORIA ON 10 FEBRUARY 2017
published by

DMAIB
Danish Maritime Accident
Investigation Board
Carl Jacobsens Vej 29
DK-2500 Valby
Denmark

The report is issued on 25 August 2017

Photo: VICTORIA aground in Kattegat, Denmark
Source: DMAIB

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The investigations are carried out separately from the criminal investigation, without having used legal evidence procedures and with no other basic aim than learning about accidents with the purpose of gaining and promoting an understanding of safety. Consequently, any use of this report for other purposes may lead to erroneous or misleading interpretations.

Content

Abstract

On 10 February 2017, the Portuguese-flagged container ship VICTORIA went aground at the entrance to the deepwater channel Lillegrund, Denmark, while the ship was about to turn into the channel at a speed of 15 knots. Though the bridge crew was aware of the shallow waters ahead, the watchkeeping officers were caught by surprise when the grounding occurred. The grounding resulted in serious damage to the ship's hull and several fuel oil tanks and ballast tanks were ruptured resulting in a minor pollution of the environment.

The grounding of VICTORIA was considered a serious accident of special concern because of the potential risk of harm to the marine environment due to oil leakage. Therefore, the Danish Maritime Accident Investigation Board (DMAIB) in agreement with the Portuguese authorities initiated an investigation of the accident to establish the circumstances leading to the grounding of VICTORIA. The purpose of the investigation was to explain why VICTORIA went aground on 10 February 2017 under circumstances which the bridge crew considered to be normal.

The investigation has found that the grounding of VICTORIA on 10 February 2017 occurred as a result of a combination of factors which led the bridge crew to focus on the timing of the turn into the deepwater channel and not on the shallow waters ahead. Therefore, when the grounding occurred, the crew was caught by surprise and did not understand what had happened. The planned approach to the deepwater channel at Lillegrund was instrumental in bringing the bridge crew in a situation where the priority was, first and foremost, to navigate visually by means of the buoys rather than the paper charts and the ECS. The position of an isolated danger mark did not warn the crew about the immediate danger of the shallow waters ahead because it was positioned in such a way that it did not direct the ship away from the shallow water area.

Narrative

A description of the events unfolding before and during the accident as they were perceived by the persons involved.

Statements of time are given in local time in Denmark (UTC+1) unless otherwise specified.

Background

VICTORIA was a Portuguese-flagged container ship operating mainly between Antwerp, Fredericia, Aarhus and Copenhagen. There were five nationalities on board from Poland, Rumania, the Philippines, Ukraine and India. The working language was English.

On 9 February 2017 shortly after midnight, VICTORIA departed from Antwerp heading for the Port of Fredericia with a planned arrival on 10 February with a draught of 9.30 metres.

In figure 1 below VICTORIA's AIS track is shown from the Skaw until moments before the grounding. The planned route took the ship via the North Sea, along the west coast of Jutland, passing the Skaw before entering Route T in Kattegat.

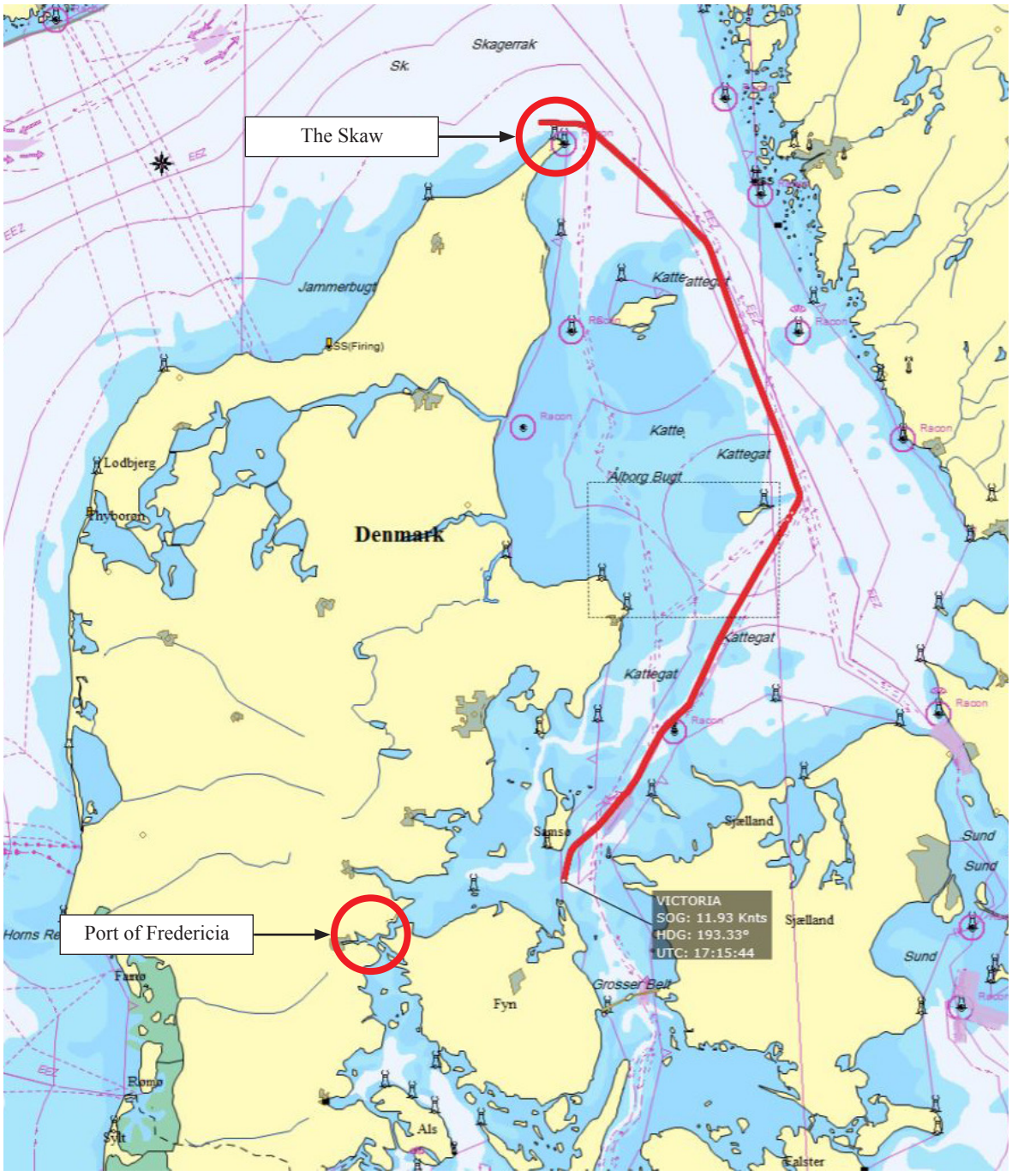

Figure 1: Route from the Skaw until immediately before the grounding.
Source: © Made Smart Group BV 2016, C-Map data © Jeppesen AS 2016

Sequence of events

When approaching the Skaw at approximately 0900 on 10 February, the master came to the bridge to assist the officer of the watch because the waters could be congested and because navigation was restricted in some areas in Route T due to shallow waters. During the morning and early afternoon, the passage southbound along Route T went as planned. There was little traffic and the visibility was good. On the bridge there was a relaxed atmosphere; the deck officers and the master small talked about personal and work related topics. During the morning and afternoon, several crewmembers came to the bridge to drink coffee and small talk. This was not unusual because the bridge was commonly used as a meeting place for the deck officers. At approximately 1530, the chief officer arrived on the bridge to relieve the 2nd officer at 1600. At 1647, VICTORIA entered the Great Belt VTS area and the VTS operator called VICTORIA. The chief officer informed the VTS operator that VICTORIA would not embark a pilot in the Great Belt and that the intention was to approach Fredericia via Hatter Barn and the deepwater channel at Lillegrund (figure 2).

The chief officer called an able seaman (AB) to the bridge at 1650 and instructed him to keep a lookout and act as helmsman, if needed, when the ship was to manoeuvre inside the traffic scheme at Hatter Barn and later in the narrow channel of Lillegrund. As VICTORIA proceeded, the chief officer updated the AB about the navigational situation, e.g. the position of the buoys and the traffic in the area. During the chief officer's watch, the master went to and from the bridge.

At 1745, the Great Belt VTS called VICTORIA to confirm that VICTORIA intended to enter the deepwater channel at Lillegrund as reported earlier. The chief officer confirmed the intention and that the plan was to alter course towards Lillegrund within 10 minutes. The VTS operator stated that VICTORIA had chosen an "untraditional" approach and warned the chief officer about shallow waters in the area. The operator communicated to the chief officer that ships normally approached Lillegrund via buoys 21 and 22 south of Hatter Barn (see green dotted line in figure 3, next page).

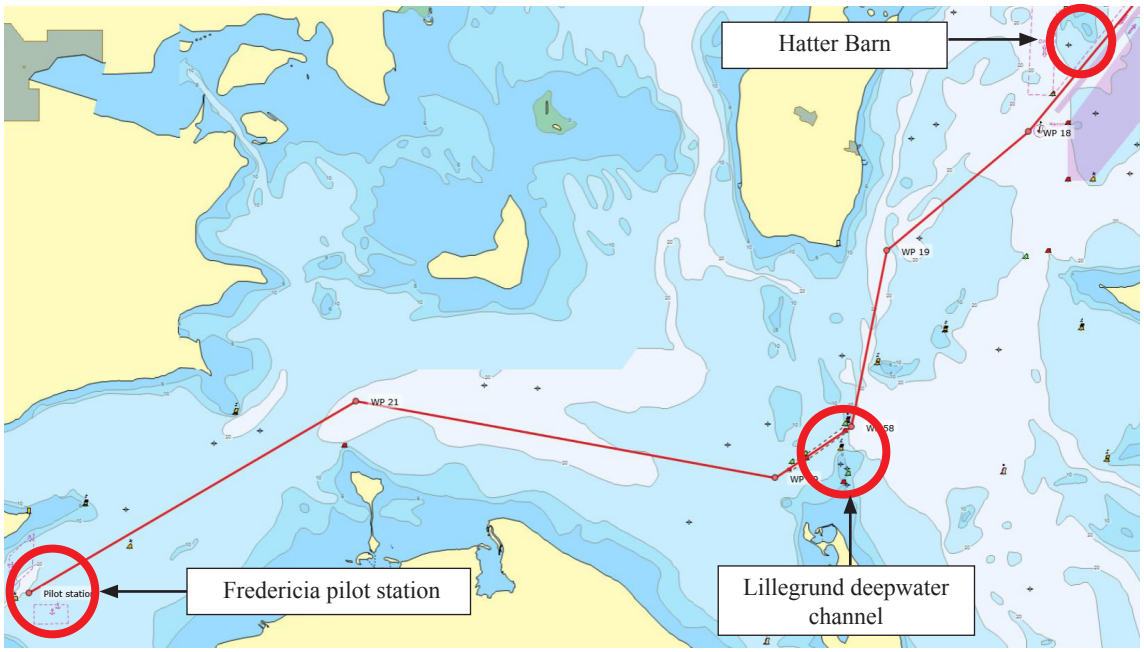

Figure 2: Route from Hatter Barn to Fredericia pilot station.
Source: © Made Smart Group BV 2016, C-Map data © Jeppesen AS 2016

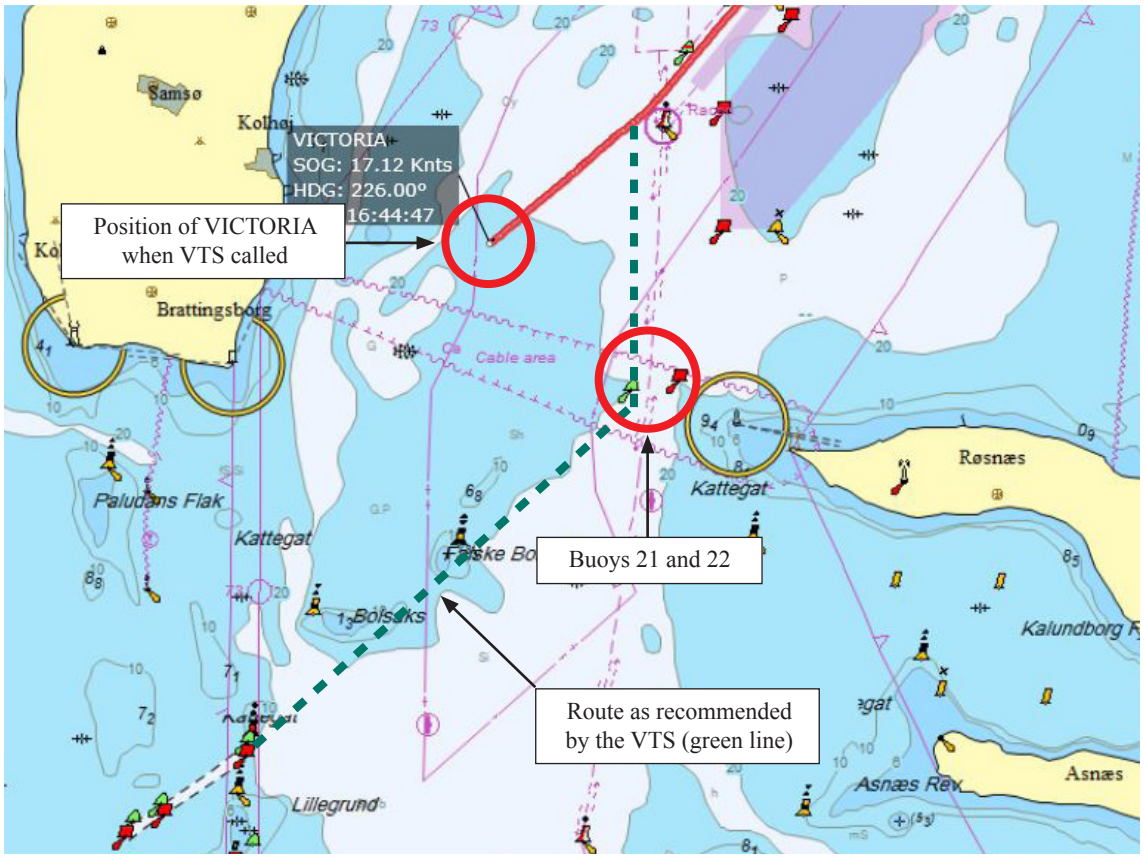

Figure 3: Traditional route towards Lillegrund as proposed by the VTS.
Source: © Made Smart Group BV 2016, C-Map data © Jeppessen AS 2016

The VTS operator concluded that VICTORIA had proceeded too far for altering the course towards buoys 21 and 22 and told the chief officer that he would keep an eye on the position of VICTORIA. The chief officer replied that he would inform the master about the changing of the route.

A few minutes later, the course was altered southwards, heading towards the deepwater channel at Lillegrund. By now, the traffic in the area had increased and the chief officer therefore called the master to inform him that he had decided to reduce the speed slightly from 17 to 16 knots. The master came to the bridge at 1800 and they had a short conversation about the call from the VTS just as the 2nd officer would be informed so that he could alter the voyage plan as proposed by the VTS operator.

The sun was about to set (sundown was at approximately 1815) and the ship approached the deepwater channel at Lillegrund (figure 4). The master took the command assisted by the AB at the helm. The bridge crew visually identified the green buoy which they used to position the ship so that they could make a soft turn into the deepwater channel. From the chart the shallow water north of the entrance was noted, but the isolated danger mark close to the channel entrance was not visually detected.

During the approach, the chief officer voiced concerns about the ship's angle to the buoys at the entrance to the deepwater channel because they needed space for turning the ship. Therefore, he voiced the opinion that they should bring the ship further to port and bring the ship eastward before entering the channel. The master then changed the course further to port before initiating a smooth turn into the channel.

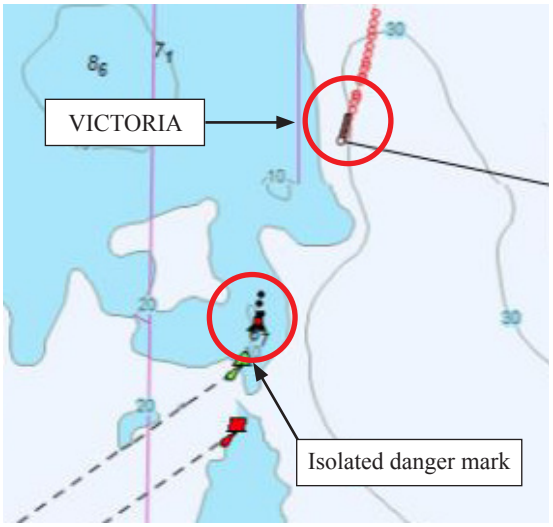

Figure 4: VICTORIA approaching the deepwater channel at Lillegrund at 1813 LT (not to scale).
Source: © Made Smart Group BV 2016, C-Map data © Jeppesen AS 2016

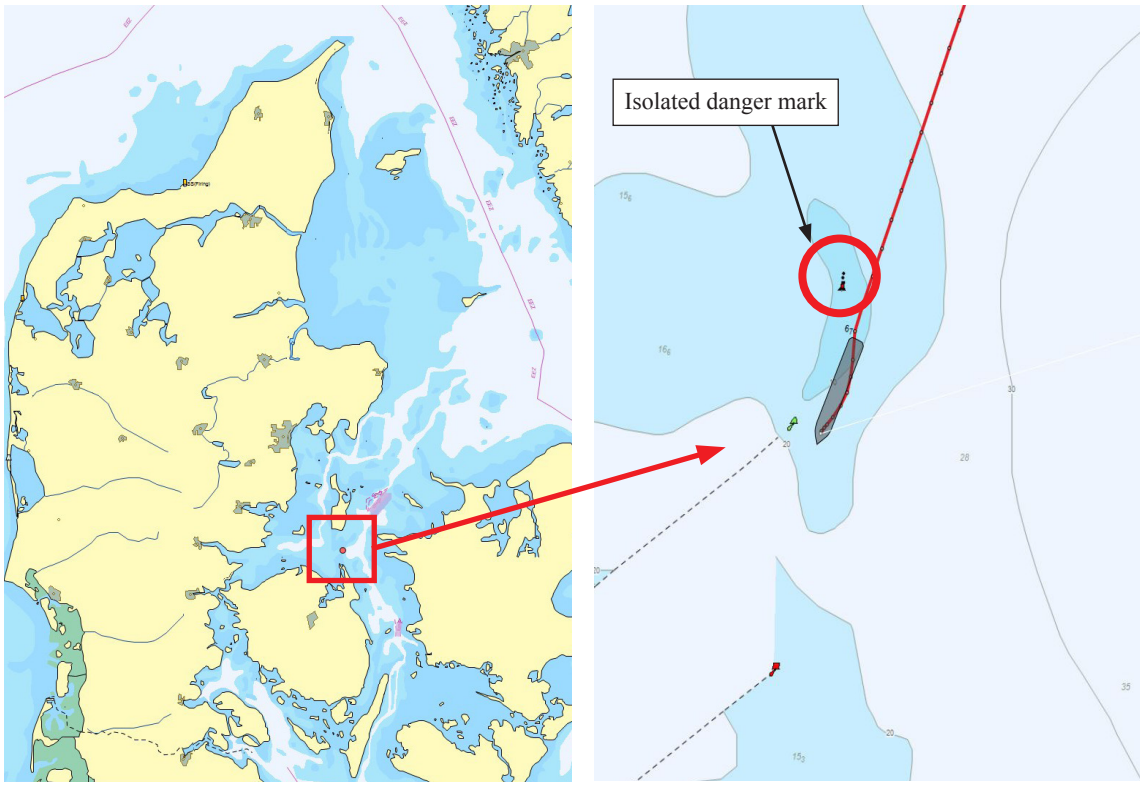

Figure 5: VICTORIA aground 1815 (not to scale)
Source: © Made Smart Group BV 2016, C-Map data © Jeppesen AS 2016

Suddenly, the ship started to vibrate violently, the speed dropped from 16 knots to 7 knots and the ship's heading changed from 195° to 204°. The master was bewildered and asked the crew what was going on. Within a minute, the vibrations stopped and the ship's speed increased. The crew quickly realized that the ship had touched the seabed. The chief officer reduced the speed to slow ahead and the crew began to realize what was going on.

On the bridge alarms started to sound, the phone rang and the officers discussed what had happened. The engineer rang from the engine room and reported that the fuel tank level indicators showed that the bottom tanks were full, which indicated that the hull had been breached and the water pressure pushed the fuel oil level up in the tank. The master asked the chief officer to call the VTS to report the grounding and to tell one of the junior officers to go aft to see if oil could be observed. Meanwhile, the 2nd officer arrived on the bridge and went to the chart table to identify the position of the grounding. The chief officer and the 2nd officer discussed where the grounding had occurred and quickly identified the shallow water marked with the isolated danger mark (figure 5). They thereby knew where the ship went aground.

At 1827, approximately 10 minutes after the grounding, the chief officer called the VTS and reported that VICTORIA had touched the seabed. The VTS operator acknowledged the information and asked the ship to call the Danish Maritime Assistance Service by telephone.

The master's priority was to get the ship anchored outside the deepwater channel to allow the crew to assess the situation and the extent of the damage. When the ship had passed the deepwater channel, the course was altered to starboard and the anchor was dropped approximately 2 nautical miles northeast of the channel.

Approximately 40 minutes passed from the time the grounding occurred until VICTORIA was at anchor. Once VICTORIA was at anchor, the crew started to determine the extent of the damage and communicate to various parties about the accident.

Investigation

The purpose of the investigation was to establish how the grounding of VICTORIA could occur as a surprise to the bridge crew under what was considered normal navigational circumstances. Therefore, the starting point of the investigation was to understand how the bridge crew normally navigated the ship. Thereafter, the navigational circumstances resulting in the grounding were investigated.

Navigation on VICTORIA

On VICTORIA the bridge was designed and equipped to establish the position of the ship by using terrestrial data (radar and visual observations) and satellite data (GPS), which were plotted in the paper charts. Additionally, the GPS route was loaded into the radar from where the ship's position in relation to the course line could be established. During the watch, the officer therefore regularly had to move between the chart table and the conning station to fix the position of the ship and to observe the movements of other ships in the area. In the photo below, the conning station and the chart table are seen from the port side (figure 6).

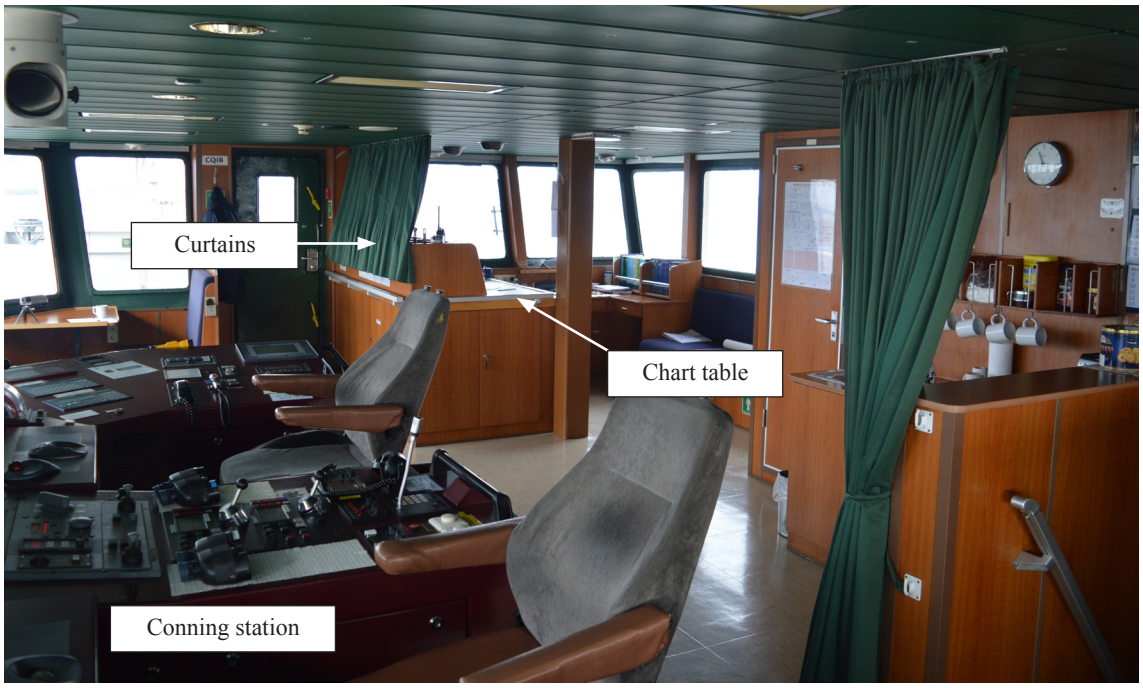

Figure 6: Conning station and chart table seen from port side.
Source: DMAIB

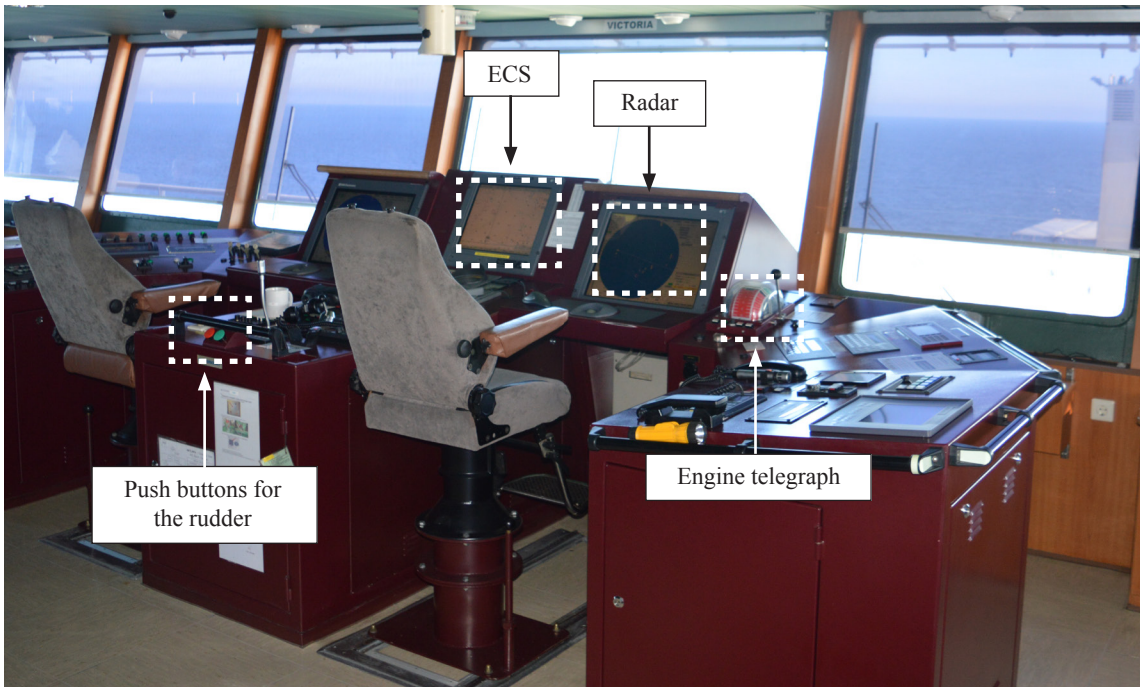

Figure 7: Conning station on VICTORIA.
Source: DMAIB

The chart table was aft of the conning station and was equipped with a GPS from where the position of the ship could be plotted into the charts. Usually the deck logbook was kept at the chart table so that the watchkeeping officer could make entries about the progress of the voyage while standing at a table with adequate light. Curtains could be drawn in front of the chart table to enable the dark adaptation of the other crewmembers on the bridge. However, after the chart table lights had been fitted with dimmers, the crew usually did not use the curtains.

In figure 7 on the previous page, the conning station is shown from the aft starboard side. During the voyage the officer of the watch typically sat in the right-hand chair. From there he/she had access to the engine controls, the radar and an ECS into which the route was loaded. The helmsman stood at the centre using the push buttons to operate the rudder. When the master was in command, he/she would sit in the chair on the right and the navigational officer would sit in the left chair.

During the investigation, it was not possible to establish the intended purpose of the ECS. According to the bridge crew, it was not common to use the ECS when navigating because it was not approved and there was a sticker on the monitor highlighting that it was "ARCS CHARTS FOR TRAINING ONLY" (figure 8). It was unclear what the purpose of that training was.

The sticker informed the bridge crew that the equipment could not be used for navigation because the chart system used ARCS . During the investigation, it was not possible to establish why the chart was to be used only for training and not during the everyday navigation of the ship. VICTORIA met the mandatory requirement to carry nautical charts and nautical publications in order to plan and display the ship's route for the intended voyage and to plot and monitor positions throughout the voyage. However, from a SOLAS regulatory standpoint, that requirement did not prevent supplementary use of an ECS with ARCS to navigate the ship. Apart from the formal intended use of the ECS, there is the question of the ECS' actual use in the everyday navigation of the ship.

During the investigation, the bridge crew continuously referred to the sticker when asked about the use of the ECS. However, there were some indications that the ECS was to some extent used in daily navigation: It was normally turned on and the ship's route was loaded into the system, and the ECS was positioned in front of the officer of the watch providing a continuous overview of the ship's position. An investigation of the paper charts showed that the fixed positions were only sporadically marked in the paper chart, which indicated that the navigational officers primarily used other means of determining the position of the ship, including the ECS.

Figure 8: ECS by the conning station.
Source: DMAIB

Navigation on the day of the accident

During the morning of 10 February and until the grounding, the passage through Danish waters went according to the passage plan. For two reasons pilots were not used when navigating Danish waters: It was not mandatory for VICTORY to carry a pilot and navigation in Danish waters was considered by the master and chief officer to be routine navigation and not particularly difficult.

As VICTORIA proceeded along Route T, there was no deviation from the passage plan because the traffic did not necessitate any significant unplanned course alternations. However, once VICTORIA reached the VTS area of the Great Belt, the passage plan was brought into question by the VTS operator at 1744 (approximately 20 minutes before the grounding). The VTS operator had previously been informed by the watchkeeping officer on VICTORIA that the intention was to approach Fredericia via the deepwater channel by Lillegrund, but the position of VICTORIA indicated that the ship was not approaching the deepwater channel via buoys 21 and 22, which the VTS operator perceived to be the traditional route (figure 9). To understand the intentions of VICTORIA the operator called the ship a second time.

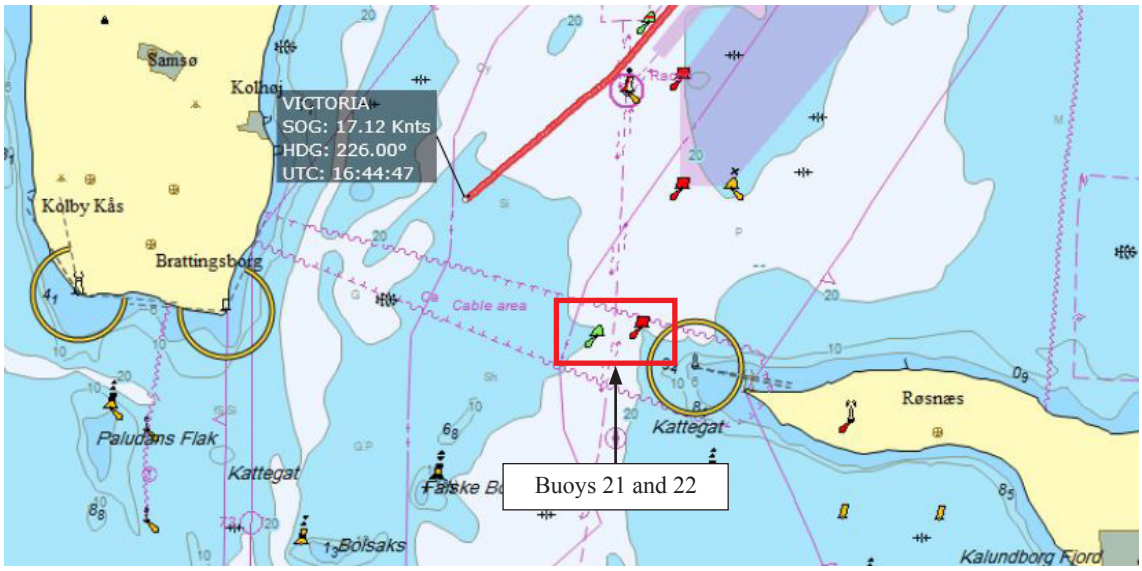

Figure 9: VICTORIA's position when the VTS called the second time.
Source: © Made Smart Group BV 2016, C-Map data © Jeppessen AS 2016/DMAIB

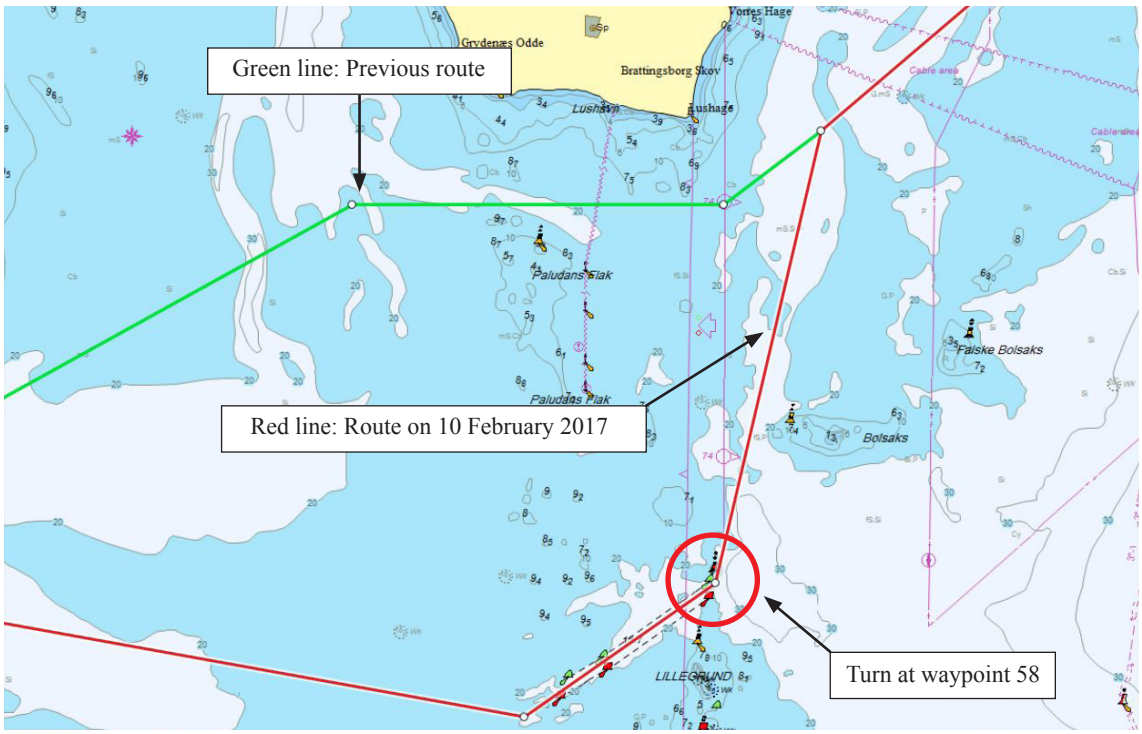

Figure 10: VICTORIA's two planned routes to Fredericia.
Source: © Made Smart Group BV 2016, C-Map data © Jeppesen AS 2016/DMAIB

The message from the VTS operator stated that VICTORIA's chosen route towards the deepwater channel was "untraditional" and that there was "shallow waters on the way". On VICTORIA this information was not perceived to be a warning about a specific risk of grounding, but just general information that the officer of the watch was already aware of by looking at the ECS and the paper charts. Therefore, the officer of the watch did not take particular notice of the message from the VTS operator. However, the planned approach to the deepwater channel became instrumental to the difficulties that the crew experienced immediately before the grounding.

Different passage plans between the Danish ports had been made because the schedule frequently changed. Two different routes were used to Fredericia depending on the draught of the ship. The layout of the two routes can be seen in figure 10 on the previous page.

The route on 10 February was chosen because the draught would exceed the accepted under keel clearance in the previous route. Therefore, the navigational officer made a new passage plan based on the way points from the previous passage plan. The charts did not indicate that there was a recommended route to the deepwater route and therefore the shortest route was made from the latest waypoint. The new route meant that, in order to enter the deepwater channel, the ship had to change its course from 192° to 237° at waypoint 58 (figure 11). It proved to be difficult to make that course change at a speed of 16 knots, in the dark and at a westerly current of approximately 1.0-1.4 knots.

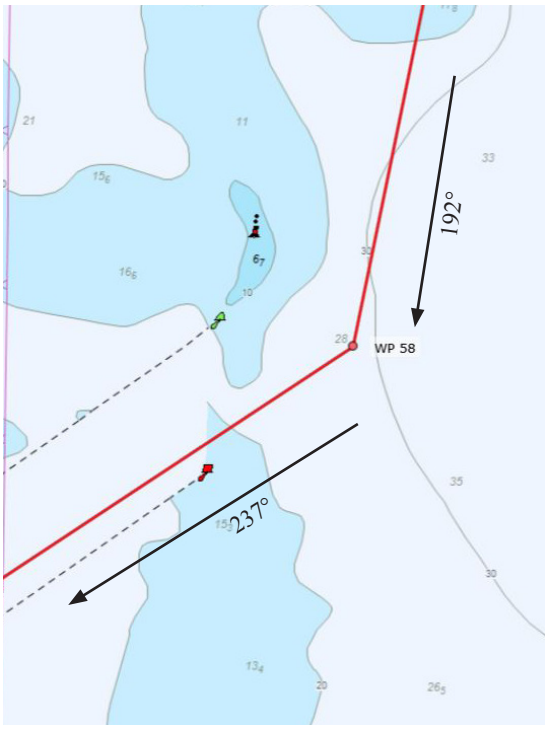

Figure 11: Planned route in the deepwater channel
Source: © Made Smart Group BV 2016, C-Map data © Jeppesen AS 2016/DMAIB

As the ship approached the deepwater channel, the master and the chief officer were sitting at the conning station and the helmsman was standing at the helm. The chief officer was in command and was therefore sitting in the chair to the right. During the approach, a ship was leaving the deepwater channel which is seen in the extract below from the starboard side radar (figure 12).

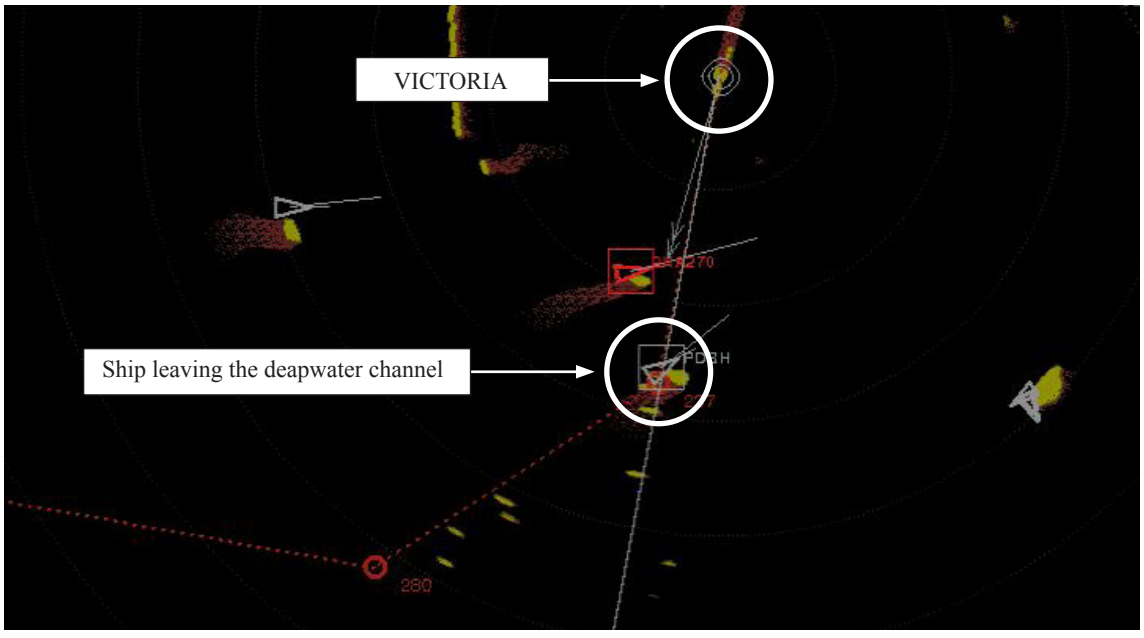

Figure 12: Ship leaving deepwater channel. Extract from VICTORIA's VDR. Time: 1805.
Source: VICTORIA/DMAIB

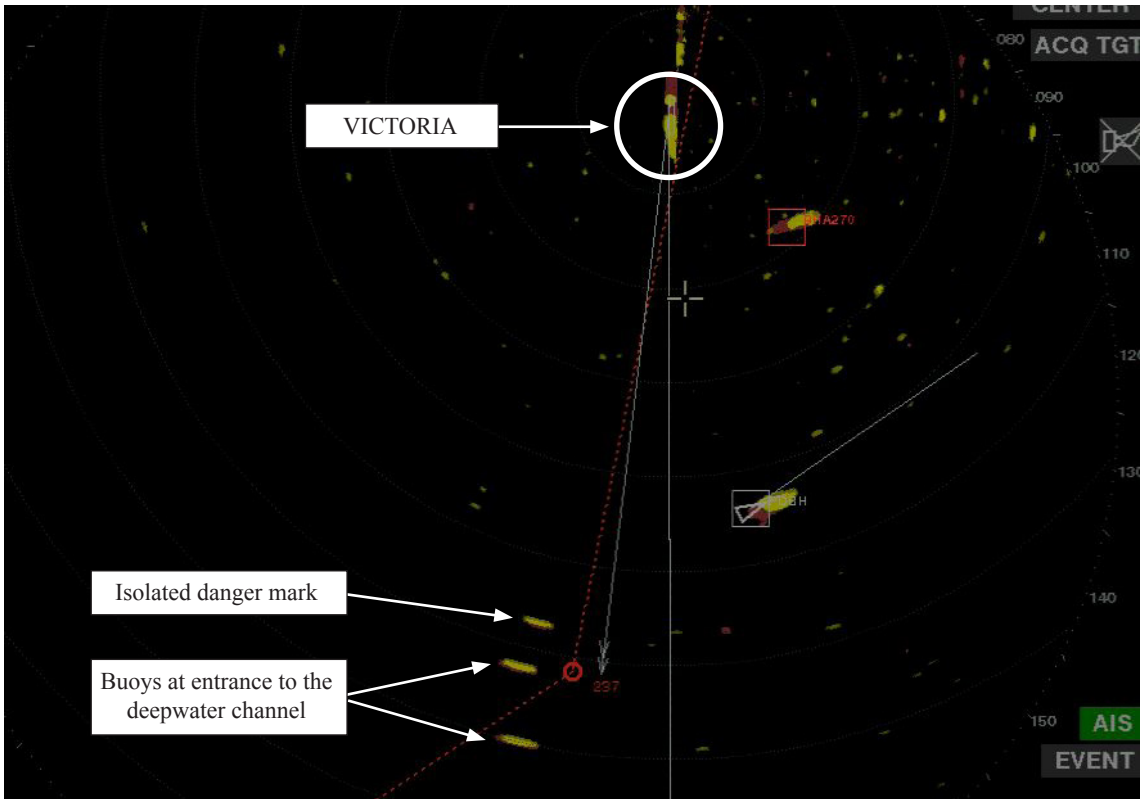

Figure 13: Extract from VICTORIA's VDR. Time: 1810. Source: VICTORIA/DMAIB

At this time, the chief officer and the master had a short discussion about the angle to the buoys at the entrance to the deepwater route. The chief officer was worried that the angle of approach would make it difficult to execute a turn into the channel, which was only approximately 0.2 nm wide with the presence of a shallow water area north of the buoys. They agreed to follow the stern of the ship leaving the channel, thereby turning to port to allow a larger turning circle. Meanwhile, the current and wind started to affect the ship in such a way that the difference between the steered course and the course over ground was 4-7 degrees. At a distance of approximately 1.5 nm to the green buoy, VICTORIA was turned to port, but at this point the ship was already west of the course line and the alteration of the course did not significantly bring the ship eastward, but kept it on the previous course over the ground (figure 13).

By now the master and the chief officer were mainly positioning the ship according to their visual bearing to the buoys. The chief officer realized that the passage plan had put the ship in a situation where a difficult turn had to be made. He therefore informed the master that he would tell the 2nd officer to change the passage plan for the next voyage. At a distance of approximately 0.3 nm, the chief officer again questioned the angle of the approach, but neither the master nor the chief officer voiced any concern about the shallow waters ahead. As seen in the below extract from the ship's VDR showing the starboard radar image, the ship is heading toward the isolated danger mark and its course over ground would bring the ship aground within one minute (figure 14).

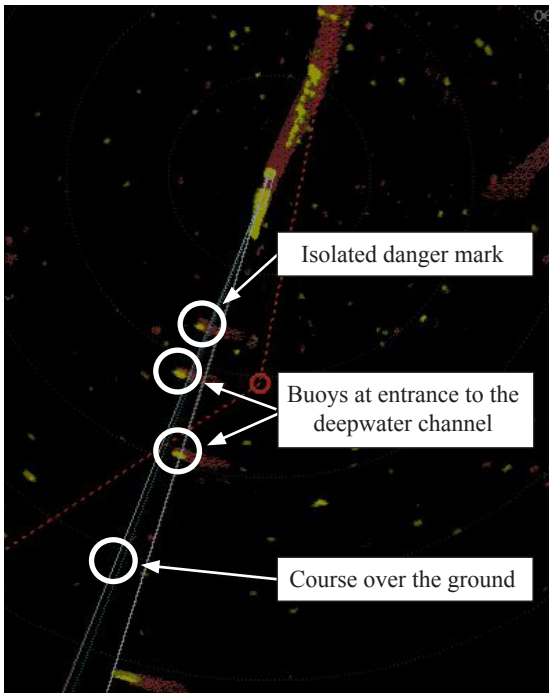

Figure 14: Extract from VICTORIA's VDR. Time: 1814. Source: VICTORIA/DMAIB

At this stage the priority was to manoeuvre the ship safely into the deepwater channel by using the red and green buoys to keep the bearing to the channel. The isolated danger mark indicating the shallow waters was not visible and was positioned in such a way that it did not direct the ship eastward of the shallow waters. When the ship was approximately 0.25 nm from the buoys, the chief officer said that it was time to turn the ship into the channel. Shortly after, at 1815, the ship started to vibrate and the master said: "What is this?". The ship was aground and within seconds the speed was reduced from 15 knots to 7 knots (figure 15).

Figure 15 does not represent the ECS chart which was available to the bridge crew at the time of the accident. Figure 16 below shows a photo from the ECS screen on VICTORIA, which shows how the chart would have presented itself to the bridge crew. The scale of the chart shown is what was available to the master and chief officer shortly before the grounding when they were in the process of positioning the ship for the turn into the deepwater channel. From that photo it becomes clear how the bridge crew was led to assume that the isolated danger mark would direct them clear of the shallow water area. In a situation where focus was on turning the ship, the ECS did not offer them sufficient warning that they were heading for shallow waters.

Prior to the grounding, there was no shallow water warning from the echo sounder because the alarm was not activated. It would, however, not have made any difference because the speed of the ship meant that the alarm would not have given the crew ample warning to react to avoid the grounding.

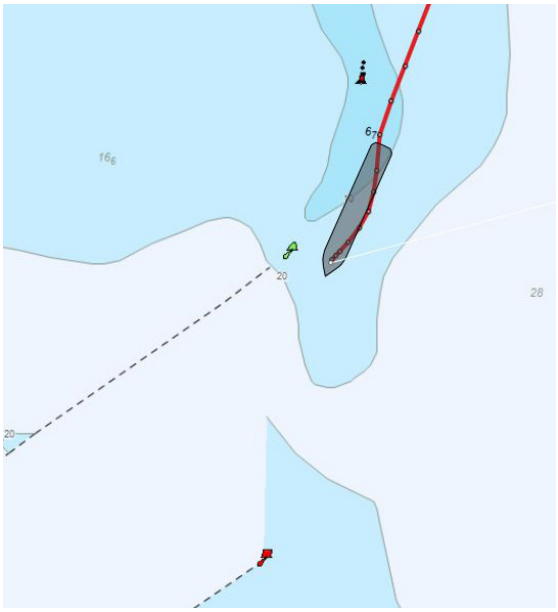

Figure 15: VICTORIA aground at 1816 (not to scale). Source: © Made Smart Group BV 2016, C-Map data © Jeppesen AS 2016

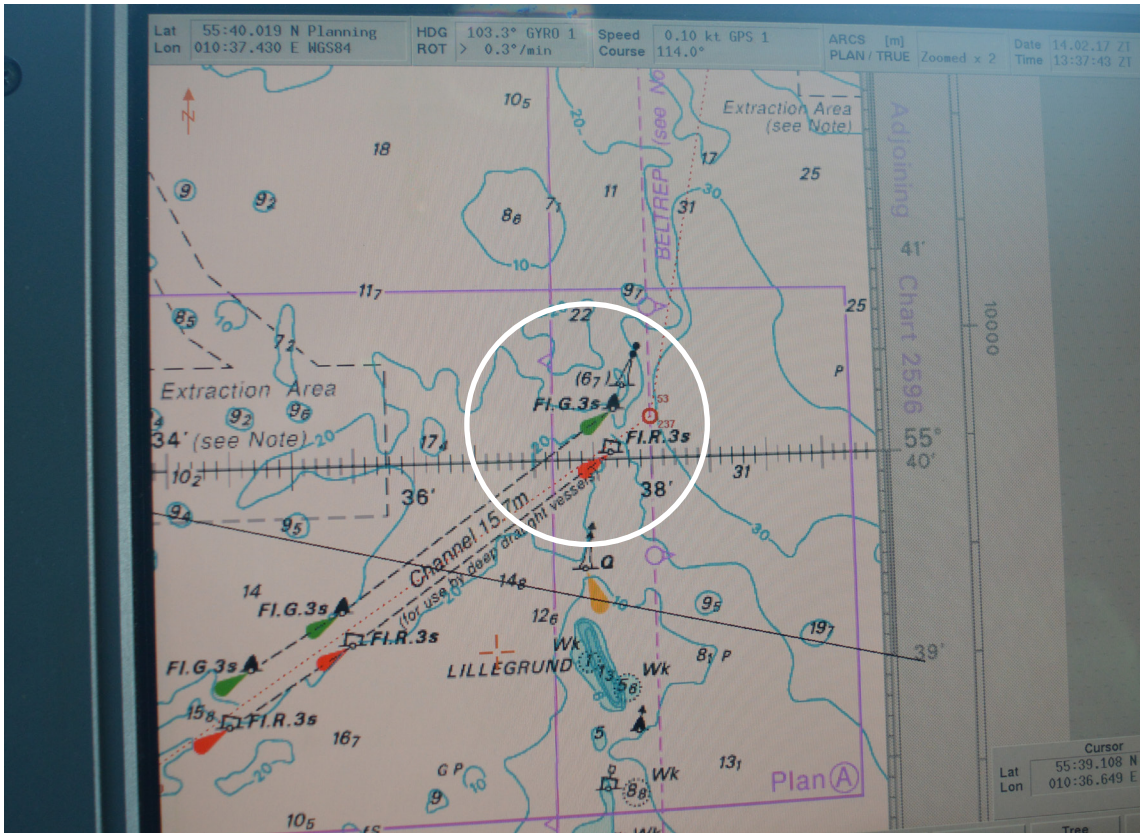

Figure 16: Photo of ECS screen showing the deepwater channel at Lillegrund. Source: VICTORIA/DMAIB

The damage to VICTORIA and pollution of the environment

The damage to VICTORIA

Shortly after the grounding, the crew was concerned about the possibility of heavy fuel oil (HFO) leaking from the ship's bottom tanks because the gauges showed an increased pressure in the tanks which indicated that the hull had been breached. VICTORIA carried approximately 720 t of fuel oil in five bottom tanks (figure 17), which could potentially leak into the sea. The day after the grounding ,an underwater inspection of VICTORIA's hull was made. The divers found that the ship's bottom plating had deformation of the plating and indentations. Furthermore, the bottom of the hull had been breached in several places along the starboard side damaging several fuel oil tanks. Stones and gravel from the seabed were found in the cracks in the bottom plating (figure 18). The fuel oil in the tanks had solidified when it came into contact with the cold sea water and the water pressure kept the oil within the tanks (figure 18 and 19).

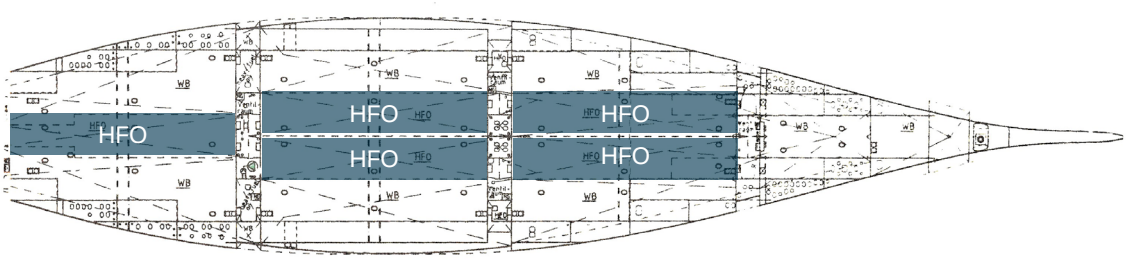

Figure 17: Location of bottom fuel tanks.
Source: DMAIB

Figure 18: Damage to the starboard side hull.
Source: Peter Doehle Schiffahrts-KG/DMAIB

Figure 19: Solidified fuel oil in a fuel oil tank.
Source: Peter Doehle Schiffahrts-KG/DMAIB

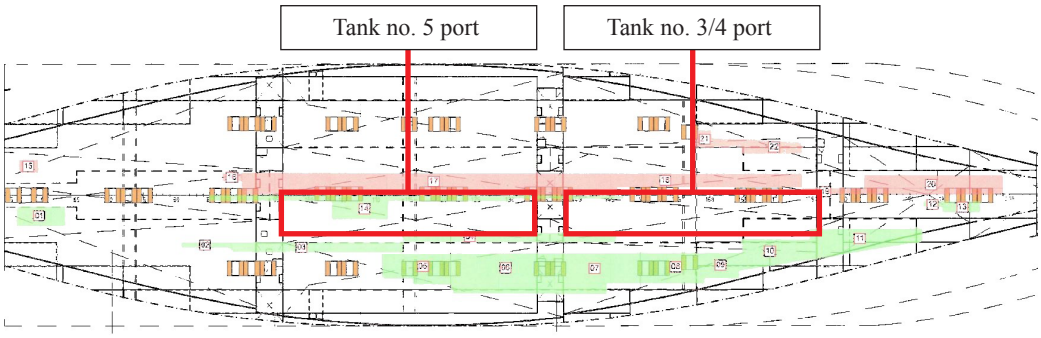

Figure 20: Extent of damage to VICTORIA's bottom plating.
Source: Peter Doehle Schiffahrts-KG/DMAIB

Later, when VICTORIA was in dry dock, the extent of the damage became clear. Above in figure 20 the extent of the damage is illustrated in red and green colour.

The bottom plating on the starboard side was found partly cracked/torn off, severely buckled and deformed to a varying extent. Indentations of the plating between the frames showed deflections of up to about 400 mm in some areas. The most severe damage was noticed in way of the fuel oil double bottom tanks no. 3/4 and no. 5 port, where the bottom plating was torn off and stones/gravel were found in-between the demolished plating as well as inside the tanks. About 40 t of oil-contaminated rocks/gravel was removed from the tanks and disposed. The longitudinal bulkhead between fuel oil double bottom tanks no. 3/4 port and starboard, as well as between no. 5 port and starboard, were found damaged. Five propeller blades were bent to various extents as a result of colliding with rocks/stones.

The damage to the environment

After the crew on VICTORIA had notified the Great Belt VTS about the possibility of pollution, the Danish Admiral Fleet coordinated the efforts to detect fuel oil on the sea surface and in coastal areas. During the evening and the following morning, a patrol vessel, two environmental protection vessels and aircraft searched the area and did not observe any oil on the sea surface or in the coastal areas. After having determined the prevailing current, the relevant municipalities were notified about the risk of oil drifting ashore, and the emergency services in various municipalities started a search for oil pollution along the coastlines east of the position of the grounding. At noon on the day after the grounding, oil was observed by people walking the beach on Endelave (an island east of the position of the grounding, figure 21) where several birds were found to be covered in fuel oil.

Data collected from the municipalities in the area east of the position of the grounding suggest that mainly the island of Endelave was affected by the oil spill. Approximately 13 km of the island's coastline (figure 24) was affected as oil washed ashore on multiple occasions during a period of 14 days. During the clean-up, approximately 60 t of eelgrass and 11 t of rocks were removed from the coast. In other municipalities, only minor quantities of oil were observed and cleaned up. It has not been possible for the DMAIB to establish how large a quantity of oil was spilled.

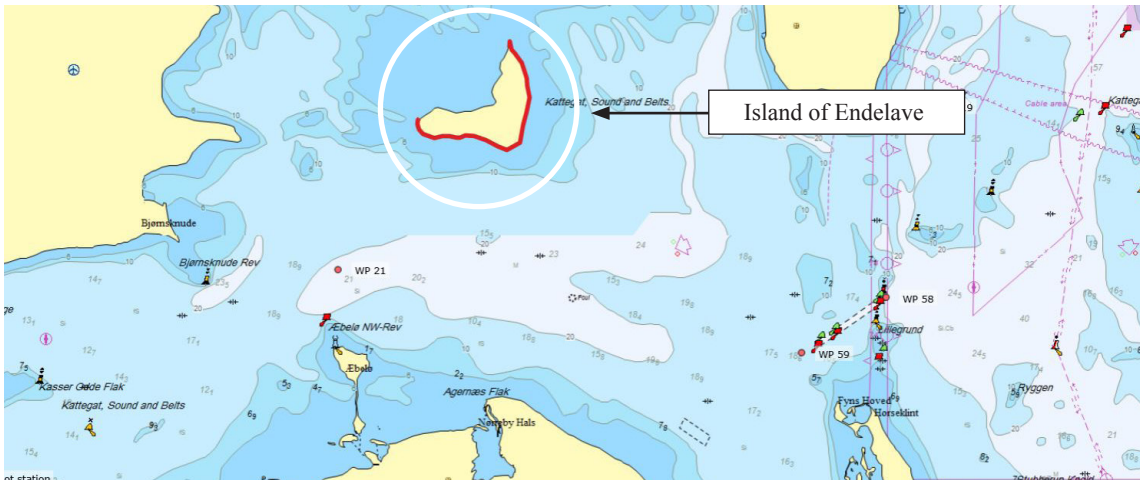

Figure 21: The island of Endelave. The extent of the pollution is marked with red.
Source: © Made Smart Group BV 2016, C-Map data © Jeppesen AS 2016

Analysis

The purpose of the investigation was to establish how the grounding of VICTORIA could occur as a surprise to the bridge crew under what was considered normal navigational circumstances. Therefore, the starting point of the investigation was to understand how the bridge crew normally navigated the ship. Thereafter, the navigational circumstances resulting in the grounding were investigated.

Analysis of the investigation data

As VICTORIA approached the deepwater channel, the bridge crew established the position of the ship by visually observing the buoys at the entrance to the deepwater channel. Thereby there was less focus on using the paper chart and the ECS. The investigation has identified several coinciding factors which were instrumental in changing the bridge crew's priorities from focusing on the water depth ahead to the immediate concern of manoeuvring the ship safely into the deepwater channel. These factors were:

- *The change of the passage plan*

The new passage plan made it necessary to make a 45° course change within a short distance in close proximity to a shallow water area.

- *The timing of turning the ship*

The course change was planned to be made at a speed of 15 knots which required the turn to be made with precise timing and positioning of the ship.

- *How the ship's position was determined*

The timing of the turn was achieved by visually observing the buoys at the entrance to the deepwater channel and not by using the paper charts or the ECS. It would not have been expedient for the bridge crew to use the paper charts because the chart table was too far from the conning station and the chart table lights would have hindered effective dark adaptation. The ECS did not clearly bring the bridge crew's attention to the shallow water area.

- *The position of the isolated danger mark*

The isolated danger mark did not indicate that shallow waters were ahead because it was positioned in the middle of the shallow water area and thereby did not direct the ship further east to avoid the area.

- *The drift of the ship*

The drift of the ship made it seem to the bridge crew that the ship was further east than it was.

All of these factors influenced how the bridge crew found themselves in a situation where the ship ran aground without the crew being aware of what was about to happen. The discussions between the chief officer and the master during the approach were not related to the risk of going aground, but to the timing of the turn. These discussions indicate that the passage plan had brought about a situation where all the factors described above had to be negotiated within minutes. In those minutes the chief officer and the master achieved a common understanding of the importance of being focused on executing a safe course alteration. In that process the ship's approach towards the shallow water area went unnoticed.

The investigation of the grounding also included the ship's interaction with the Great Belt VTS and the use of a pilot in Danish coastal waters. DMAIB has not deemed this matter to be relevant for explaining why the grounding occurred.

The call from the VTS operator, approximately twenty minutes prior to the grounding, could in hindsight be perceived to be a warning about the danger of grounding. However, it was not a warning about a specific danger. The VTS operator stated that the approach to the deepwater channel was "untraditional" which implied that there was a common way of navigating in the area which VICTORIA deviated from. However, the traditional way of navigating was not stated in the charts and was therefore not knowledge that the officer preparing the passage plan or the chief officer had. The outcome of the conversation between the VTS operator and the chief officer was that the passage could continue towards the deepwater channel. That the VTS operator informed the chief officer about the "shallow waters on the way" was seen to be obvious and superfluous information and was not related to the specific shallow waters in the vicinity of the deepwater channel.

The master on VICTORIA did not request pilotage for Route T and the approach to the port of Fredericia. When navigational accidents occur in Danish waters, the use of pilots becomes a subject matter for various stakeholders and the general public because pilots are perceived to be able to provide safe navigation. It is, however, problematic to use the absence of a pilot on board VICTORIA as a factor to explain the grounding. Mainly because such an analysis will be hypothetical and would not provide an explanation for what actually happened. It never became relevant to use a pilot for two reasons: Firstly, VICTORIA traded regularly between Danish ports which made the crew familiar with Danish waters and, secondly, it was not compulsory for the ship to use a pilot.

Conclusions

Conclusions on the circumstances leading to VICTORIA's grounding

The grounding of VICTORIA on 10 February 2017 occurred as a result of a combination of factors which led the bridge crew to navigate by the buoys and not the sea charts and the ECS. Thereby the bridge crew did not recognise the presence of the shallow waters ahead. The planned approach to the deepwater channel at Lillegrund was instrumental in bringing the bridge crew in a situation where the priority was, first and foremost, to navigate visually by means of the buoys rather than the paper charts and the ECS.

The position of the isolated danger mark did not warn the crew about the immediate danger of the shallow waters ahead because it was positioned on the shallow water area and thereby did not direct the ship east to avoid the area. Therefore, when the grounding occurred, the crew were caught by surprise and initially did not comprehend what had happened.

This accident illustrates that navigating a ship is a complex interaction between different tasks, e.g. using a passage plan that someone else has made, collision avoidance, fixing the position of the ship, manoeuvring, interacting with other crewmembers, talking to the VTS and getting the ship to its destination on time, etc. As the bridge crew cannot be equally focused on each task simultaneously, a prioritization of tasks will take place. That prioritization is necessary for the bridge crew to make effective task-specific decisions, but can also lead to other information not being recognized.

Appendices

Figure 31: VICTORIA
Source: DMAIB

SHIP PARTICULARS	
Name:	VICTORIA
Type of vessel:	Container ship (fully cellular)
Nationality/flag:	Portugese
Port of registry:	Funchal, Madeira
IMO number:	9290165
Call sign:	CQIB
DOC company:	Peter Doehle Schiffahrts-KG
IMO company no.	0030163
Year built:	2004
Shipyard/yard number:	Daewoo-Mangalia/RUM007
Classification society:	Germanischer Lloyd
Length overall:	178.57 m
Breadth overall:	27.60 m
Gross tonnage:	17,188
Deadweight:	22,506 t
Draught max.:	14.58 m
Engine rating:	16,918 kW
Service speed:	21 knots
Hull material:	Steel
Hull design:	Single hull

VOYAGE PARTICULARS	
Port of departure:	Antwerp, Belgium
Port of call:	Fredericia, Denmark
Type of voyage:	International
Cargo information:	General cargo in containers
Manning:	19
Pilot on board:	No
Number of passengers:	0

WEATHER DATA	
Wind direction and speed:	Easterly 8-10 m/s
Wave height:	1.0 m
Visibility;	Good
Light/dark:	Light
Current:	North-easterly 0.80-1.0 knots

MARINE CASUALTY INFORMATION	
Type of marine casualty:	Grounding
IMO classification:	Serious
Date, time:	10 February 2017, 1815 local time (UTC+1)
Location:	Kattegat, Denmark
Position:	55.672° N – 10.630° E
Ship's operation:	Underway
Voyage segment:	Midwater
Place on board:	Bottom fuel oil and ballast tanks
Human factor data:	Yes
Consequences:	VICTORIA sustained a 50-metre indentation on the ship's bottom. Approximately 100 m3 fuel oil was spilled. Minor environmental damage to wildlife and coastline.

SHORE AUTHORITY INVOLVEMENT AND EMERGENCY RESPONSE	
Involved parties:	The Royal Danish Navy Joint Operations Centre, Denmark
Resources used:	DIANA P520, Diana class patrol vessel MARIE MILJØ, environmental protection vessel GUNNAR THORSON, environmental protection vessel Fixed-wing aircraft, Danish Home Guard
Speed of response:	17 minutes
Actions taken:	Aircraft scrambled to observe oil pollution.
Results achieved:	No oil pollution observed on the sea surface.

RELEVANT SHIP CREW	
Master:	Held certificate of competency STCW II/2 – master. 66 years old and from Poland. He had been employed with the shipping company for 16-17 years and had served on VICTORIA for approximately 5 months.
Chief officer:	Held certificate of competency STCW II/2 – chief mate. 39 years old and from Romania. He had been employed with the shipping company for 11 years and had served on VICTORIA for approximately 7 months.
Able seaman:	Held certificate of competency STCW II/5 – able seaman. 38 years old and from the Philippines. He had been employed with the shipping company for 11 years and had served on VICTORIA for approximately 8 months.