MINISTRY OF JUSTICE OF THE REPUBLIC OF LITHUANIA
TRANSPORT ACCIDENT AND INCIDENT INVESTIGATION DIVISION

Less serious accident with bulk carrier CL Tomo (IMO No. 9908279), registered in Panama, bulk carrier Melinda (IMO No. 9623881), registered in the Marshall Islands and the chemical tanker PS Houston (IMO No. 9388209), registered in Malta, that occurred on 1 October 2021 in Klaipeda State Seaport, the Republic of Lithuania

SAFETY INVESTIGATION REPORT

No. (L-21/38) 1A-176
29 June 2022

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FOREWORD

The safety investigation is conducted in accordance with Casualty Investigation Code, adopted by International Maritime Organisation, Commission Regulation (EU) No. 1286/2011 of 9 December 2011 adopting a common methodology for investigating marine casualties and incidents developed pursuant to Article 5(4) of Directive 2009/18/EC of the European Parliament and of the Council, Article 48 of Maritime Safety Law of the Republic of Lithuania and 'Description of the procedure for drawing up and submission of reports and safety recommendations for safety investigations into maritime accidents and incidents', approved by the Order No. 1R-386 of the Minister of Justice of the Republic of Lithuania on 30 December 2015, 'Concerning approval of the Description of the procedure for drawing up and submission of reports and safety recommendations for safety investigations into maritime accidents and incidents'.

The purpose of the safety investigation is to prevent the occurrence of accidents and incidents in the future, rather than establish blame or liability. The safety investigation is conducted independently of any judicial or administrative proceedings, to apportion blame or liability, are not related to them, and have no impact thereupon.

Each safety investigation shall be concluded with a report in a form appropriate to the type and seriousness of the accident or incident. The report shall contain, where appropriate, safety recommendations, which shall in no case create a presumption of blame or liability for accident or incident.

The safety investigation report shall not be used as evidence in a judicial or administrative process seeking to apportion blame or liability, because this was not established in the course of the safety investigation and it is not compatible with the objective of the safety investigation.

The safety investigation report is based only on the data established during the safety investigation. The information is published to inform the maritime industry and the public of the general circumstances of the accident or incident. Extracts may be published without specific permission providing that the source is duly acknowledged, the material is reproduced accurately and it is not used in a derogatory manner or in a misleading context.

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SUMMARY

Basic data

Occurrence	Less serious accident		
Date and time of occurrence[1]	1 October 2021, 9:12		
Place of the accident	Klaipeda State Seaport		
Name of the ship	CL Tomo	Melinda	PS Houston
Flag of the ship	Panama	Marshall Islands	Malta
IMO No	9908279	9623881	9388209
Type of the ship	Bulk carrier	Bulk carrier	Oil/Chemical tanker
Owner of the ship	SKM Shipping SA‘	SPV 4 LLC	Finav One Ltd
Operator of the ship	Fairmont Shipping HK Ltd’	Technomar Shipping Inc.	Premuda Malta Holding Ltd
Voyage type	International	Berthed alongside	Berthed alongside
Persons on board	Crew – 19	Crew – 16	Crew – 21
	Passengers – none		
	Others – 1 (pilot)	Others – none	Others – none
Injuries	None		

Synopsis

At 9:12 on 1 October 2021, bulk carrier CL Tomo (IMO No. 9908279), registered in Panama, in the presence of dense fog, while proceeding in the shipping canal of Klaipeda State Seaport towards the port gates and passing with the inbound ro-ro passenger ship Patria Seaways (IMO Nr. 8917390), registered in the Register of Seagoing Ships‘ of the Republic of Lithuania, collided with bulk carrier Melinda (IMO No. 9623881), registered in the Marshall Islands, berthed at quay No 4, and oil/chemical tanker PS Houston (IMO No. 9388209), registered in

[1] Local time is used in the report.

Malta, berthed at quay No 3. There were pilots on board the CL Tomo and Patria Seaways at the time of the accident. The ship PS Houston was loaded with 36,600 tons of petrol and its products when the accident occurred. During the collision, damages not affecting the seaworthiness were made to the hulls and components of CL Tomo, Melinda and PS Houston. Also the mooring ropes of the PS Houston were broken during the collision, and the shore infrastructure was damaged. After the accident, the ship PS Houston was moored back to the quay with the assistance of two tugs. No damage to the environment, no injuries to people were reported.

Safety Investigation

At 10:37 on 1 October 2021, the representative of Environmental Protection Agency under the Ministry of Environment, notified Investigator-In-Charge of Maritime Accidents and Incidents, appointed by the Minister of Justice of the Republic of Lithuania (hereinafter – Investigator-In-Charge) about the accident.

Pursuant to paragraphs 9^1, 14^1, 22^1 and 27^1 of article 2 of the Maritime Safety Law of the Republic of Lithuania, this accident is classified as a less serious maritime accident. Considering that one of the vessels, involved in collision – PS Houston, was loaded with 36600 tonnes of petrol and its products at the time of the accident, what implies a real risk for very serious consequences, also that the vessel CL Tomo significantly changed sailing direction following the collision, and there was a real risk of other serious consequences, on 27 October 2021 the decision to conduct a safety investigation into this accident was made.

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FACTUAL INFORMATION

1.1. Narrative

The circumstances of the accident are described on the basis of the testimonies of the pilots who were on board CL Tomo and Patria Seaways, the Klaipeda State Seaport Vessel Traffic Service (hereinafter - VTS) operator, the VTS engineer-operator, the crew of CL Tomo and Patria Seaways, the data retrieved from Voyage Data Recorders (VDR's) installed on these ships, the audio recordings of the very high frequency radiocommunications (hereinafter – VHF) between the VTS operator and the pilots who were on board the vessels operating in Klaipeda State Seaport and adjacent sea area, factual information provided by JSC Krovinių Terminalas.

1.1.1. Course of the accident

At 5:25 agent informed CL Tomo master that due to intensive traffic and poor visibility pilot will board at around 8:00.

At 7:30 CL Tomo bridge team members mustered at bridge and discussed relevant departure from Klaipeda State Seaport formalities and checklist for navigation in restricted visibility.

At 7:42 the new VTS shift started working in the vessel traffic service. The VTS operator was planning the departure of two ships from Klaipeda State Seaport with pilots on board: CL Tomo - from berth no. 103 and San Remo (IMO No. 6507983) from berth no. 130. The VTS also planned the arrival of three other ships at Klaipeda State Seaport – Kerry (IMO No. 9243447), Medi Bangkok (IMO No. 9377688) and Patria Seaways (IMO No. 8917390), with pilots on board.

At 7:48 pilot boarded CL Tomo.

At 7:50 CL Tomo master and pilot exchanged navigational and ship information.

At 8:08 tugs made fast at forward and aft CL Tomo.

At 8:14 pilot of the inbound ship Kerry asked the VTS for permission to enter the port of Klaipeda. The VTS operator gave permission to Kerry to enter the port. Few seconds later the pilot of ship Kerry indicated, that the master of Kerry is unwilling to pass with outbound vessels in the port shipping canal and asked the VTS operator to delay the departure of CL Tomo until Kerry arrives at destination berth. VTS operator replied that CL Tomo is already being engaged in unmooring operation and her departure will not be delayed. Nobody of those who participated in this conversation asked to delay the entry of the ship Kerry.

At 8:18 CL Tomo unmoored from berth no. 103 (position 1, Fig. 1.) and with assistance of tugs was turned around.

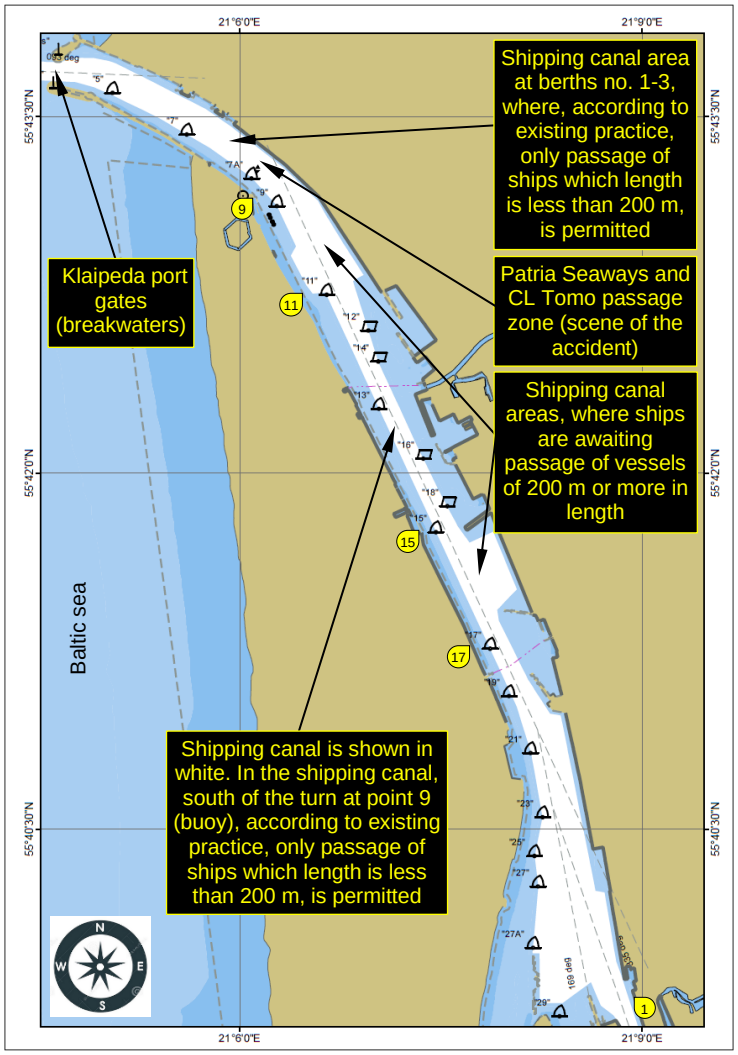

Fig. 1. Scheme of Klaipeda State Seaport

At 8:20 the VTS operator via VHF instructed that the inbound ship Medi Bangkok will enter the port canal first, and then - Patria Seaways.

At 8.24 the VTS operator gave permission to the vessel San Remo to unmoor from berth no. 130 and proceed after CL Tomo.

At 8:27 VTS operator gave permission to Medi Bangkok to enter the port.

At 8:28 after the ship Kerry entered Klaipeda port and was proceeding through the port shipping canal, the VTS operator via VHF addressed the pilot of Kerry, by asking if ship Kerry will continue to proceed slow at a speed of 4-5 knots until arrival at a destination berth. The pilot of Kerry replied that the captain is unwilling to increase the speed of the ship.

At 8:31 while at sea, the pilot boarded Patria Seaways.

At 8:35 VTS operator gave permission to Patria Seaways to enter the port.

At 8:40 tugs were cast off CL Tomo.

At 8:47 Patria Seaways was approaching the Klaipeda port gates at a speed of 5,8 knots[2]. The VTS operator informed the Patria Seaways pilot of the planned two parallel passages with outbound vessels (CL Tomo and San Remo) in the port shipping canal and ordered to increase the speed of the Patria Seaways to 8-9 knots.

[2] Here and hereafter, the speed of the vessel is indicated in relation of the ground.

At 8:57 CL Tomo passed with the inbound vessel Kerry in port shipping canal in the area between buoys no. 15 and no. 17 (points 15 and 17, Fig. 1).

At 8:59 Patria Seaways was approaching the port gate from the sea at a speed of 9,1 knots. The repetitive fog sound signal that had been operating on the Patria Seaways, was turned off.

At 9:01, while Patria Seaways was proceeding at a speed of 9.1 knots and being at about 0.45 nautical miles from the port gate, the VTS operator instructed the Patria Seaways to increase the speed to 11-12 knots before she enters the port gate, that Patria Seaways and CL Tomo could pass with each other in the shipping canal after the Patria Seaways passes buoy no. 9 and canals' sharp turn. The pilot of Patria Seaways confirmed that the speed of the vessel will be increased. The ship's engine power was slightly increased, resulting in the slight increase of the speed of the vessel – to 9,2-9,4 knots. According to the pilot of the ship Patria Seaways, the engine power of the ship was not further increased due to the approaching call to Klaipeda State Seaport and due to restricted visibility.

At 9:04 Patria Seaways entered Klaipeda State Seaport at the speed of 8,9 knots (position 1, Fig. 2).

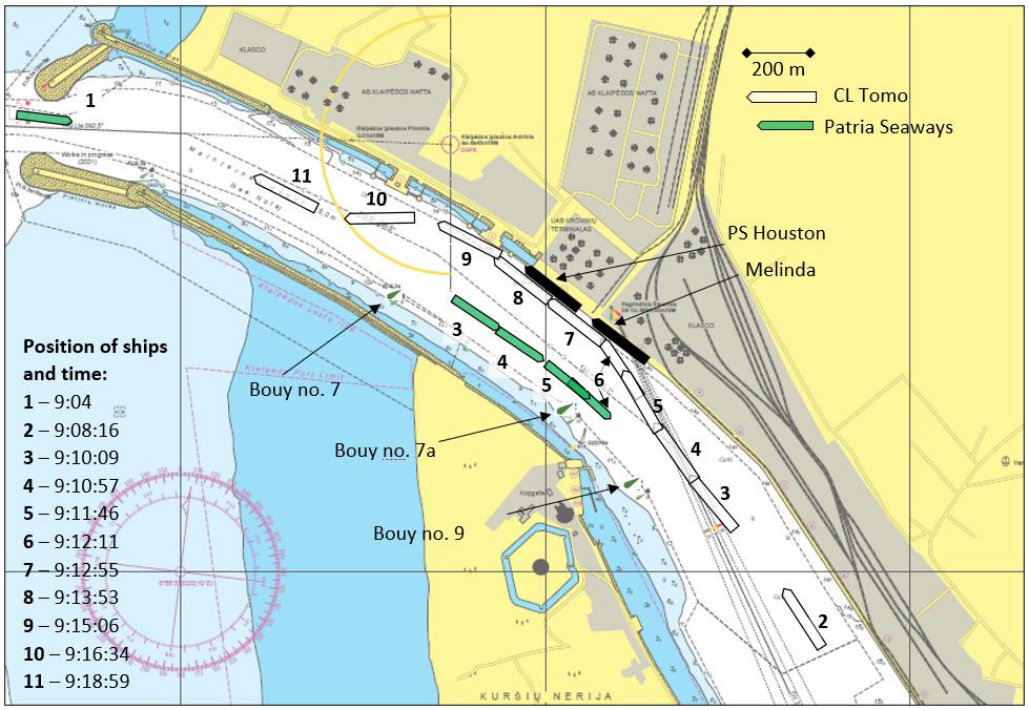

Fig. 2. Movement of CL Tomo before and after the accident

At 9:05, while parallel passage of outbound CL Tomo and inbound Medi Bangkok was approaching, the pilots of those ships discussed by VHF the details of the ships' safe passage, ongoing and planned navigation actions.

At 9:06 the speed of Patria Seaways was 8,9 knots. Patria Seaways pilot informed the VTS operator, that if CL Tomo and Patria Seaways will continue to proceed with current speeds, the parallel passage between ships would take place in the bent of the shipping canal – in the area adjacent to buoy No. 9. The VTS operator instructed Patria Seaways to reduce the speed to prevent vessels from parallel passage at this sharp turn. During this communication, the pilot of CL Tomo was giving ship's steering orders to the helmsman. To inform about the planned Patria Seaways and CL Tomo passing point, the VTS operator via VHF addressed the CL Tomo pilot in Lithuanian: 'CL Tomo radijo penki'. Neither the pilot nor the bridge team responded.

At 9:07 the speed of Patria Seaways was 8,1 knots and was gradually decreasing. The speed of CL Tomo was 8,5 knots, the heading was 341°. CL Tomo passed with the inbound vessel Medi Bangkok at buoy no. 11 area (position 11, Fig. 1). The CL Tomo pilot instructed the helmsman to set heading at 335° and noticed that the ship was slow to respond to the set heading. After a few seconds the pilot instructed to set heading at 330° and to reduce the engine speed from 'half ahead to 'slow ahead'. A few seconds later, the pilot instructed to set heading at 325°. The ship was slow to respond to the helm orders and approached the shore with her starboard side. To pass CL Tomo in a bigger distance from berths no. 3 and no. 4, where ships Melinda and PS Houston were moored alongside, the pilot, while not observing the approaching Patria Seaways, instructed the CL Tomo helmsman to head more to the left side of the canal, closer to the green buoys. At that time the VTS operator, in order to inform about the approaching parallel passage of the inbound Patria Seaways and outbound CL Tomo, via VHF repeatedly addressed CL Tomo pilot in Lithuanian: 'CL Tomo radijo penki'. Neither the pilot nor the bridge team responded.

At 9:08 the speed of the Patria Seaways was 7,1 knots. The VTS operator has instructed the Patria Seaways pilot to reduce the speed of the vessel to 5 knots so that the CL Tomo can make a turn at buoy no. 9 and that ships could pass each other in a straight section of the port shipping canal. At the same time, as instructed by the pilot, CL Tomo was turning left to the set 320° heading. The VTS operator, in order to inform about the approaching parallel passage of the inbound Patria Seaways and outbound CL Tomo, via VHF two times repeatedly addressed CL Tomo pilot in Lithuanian: 'CL Tomo radijo penki'. Neither the pilot nor the bridge team responded.

At 9:09:40 the speed of the Patria Seaways was 6 knots. The VTS operator called the CL Tomo pilot by mobile phone and warned him of an approaching parallel passage with inbound Patria Seaways. After this conversation, the CL Tomo pilot immediately instructed helmsman to set helm to the starboard by applying 20° rudder.

At 9:10:09 CL Tomo heading was 319° and she started turning to the right with gradually increasing rate of turn (position 3, Fig. 2). At the same time, the CL Tomo pilot by VHF informed the Patria Seaways that he is observing her, and that CL Tomo is being turned to the right.

At 9:10:22 CL Tomo heading was 320° and pilot ordered to set helm to starboard by applying full rudder, after 15 seconds – to apply 20° rudder and after few seconds - to set rudder to 0° (mid ships).

At 9:10:57 CL Tomo speed was 7,4 knots, heading 325° (position 4, Fig. 2). While CL Tomo was turning to starboard, to avoid collision with ship Melinda, berthed alongside quay no. 4, CL Tomo pilot ordered to set helm to port by applying 20° rudder and after 30 seconds – to apply full rudder and increase engine speed from the 'slow ahead' to 'half ahead'.

At 9:11:46 the speed of the Patria Seaways was 5,8 knots. CL Tomo speed was 7,3 knots, heading 330° (position 5, Fig. 2). CL Tomo stopped turning to the starboard and started turning to port with gradually increasing rate of turn, approaching ship Melinda with starboard.

At 9:12:11 CL Tomo speed was 7,2 knots, heading 326° (position 6, Fig. 2). While CL Tomo was turning to the left and passing with inbound Patria Seaways port to port, CL Tomo collided with her starboard side with ship Melinda, berthed alongside quay no. 4.

At 9:12:32 CL Tomo collided with ship PS Houston, berthed alongside quay no. 3. Due to the impact the ship's mooring ropes were cut and PS Houston

began to drift towards the middle of the canal. CL Tomo began to turn rapidly to the left, and the ship's bridge team, by applying helm, made efforts to achieve proper ship's heading and avoid contact with shore infrastructure (positions 8, 9, 10 and 11, Figure 2).

At 9:22 CL Tomo left Klaipeda seaport and sailed to sea.

1.1.2. Shore authority involvement and emergency response

At 9:18 VTS operator instructed outbound ship San Remo to reduce speed and beware of the drifting tanker PS Houston. The VTS operator also instructed two tugboats to proceed towards PS Houston and to moor the ship back to the quay.

At 9:21 tugboats TAK 6 and TAK 10 started to proceed towards the PS Houston. After pilot boarded PS Houston, ship was moored to the quay with assistance of tugs.

SE Klaipeda State Seaport Authority informed the responsible services about the accident. The responsible employees of the Klaipeda State Seaport Authority inspected damages sustained to ships.

1.2. Ships' particulars

1.2.1. CL Tomo particulars

Particulars of bulk carrier CL Tomo (Fig. 3) are provided in table 1.

Fig. 3. Bulk carrier CL Tomo (photo provided by the operator of the ship)

Table 1. CL Tomo particulars

Flag, registration	Flag of Panama. Registered in Panama.
Classification society	Nippon Kaiji Kyokai (NKK)
Identification	International Maritime Organisation (IMO) number: 9908279 Call sign: 3EUN8 Maritime Mobile Service Identity (MMSI) number: 374182000
Main characteristics	Gross tonnage: 36762 Length: 199,92 m Breadth: 32,26 m
Building yard of ship	Shin Kurushima Dockyard Co., Ltd.
Year of build	2021
Minimum safe manning	Number of crew, indicated in the minimum safe manning document – 14
Cargo allowed	Bulk cargo

The ship's CL Tomo propulsion system consisted of a single main engine with a output power of 7,390 kW, connected by shaft to fixed pitch propeller. The speed of the vessel is changed by changing the revolutions of the main engine. Rudder type – semi-balanced, maximum rudder angle – 35°. The vessel was loaded with 52,350 t of granular muriate of potash. The draft of the ship at the time of the accident was 12,18 m in the forward and 12,29 m in the aft. Ship's draft in ballast – 6 m.

The CL Tomo was equipped with two radars, manufactured by JRC. The first radar model JMR-9230-S, the second – JMR-9225-9X. The ship was also equipped with two electronic chart display and information systems (ECDIS) JAN-9201 from the JRC manufacturer. No data was received during the safety investigation about the malfunction of the navigation equipment.

1.2.2. Melinda particulars

Particulars of bulk carrier Melinda (Fig. 4) are provided in table 2.

Fig. 4. Bulk carrier Melinda (photo provided by the operator of the ship)

Table 2. Melinda particulars

Flag, registration	Flag of the Marshall Islands. Registered in the Marshall Islands.
Classification society	Bureau Veritas (BV)
Identification	International Maritime Organisation (IMO) number: 9623881 Call sign: V7GM2 Maritime Mobile Service Identity (MMSI) number: 538005726
Main characteristics	Gross tonnage: 32839 Length: 189,99 m Breadth: 32,26 m
Building yard of ship	Zhejiang Shipbuilding Co., Ltd.
Year of build	2012
Minimum safe manning	Number of crew, indicated in the minimum safe manning document – 16
Cargo allowed	Non-hazardous bulk cargo; IMDG cargoes in bulk and packaged form: Class 4.1, Class 4.2, Class 5.1, and Class 9.

1.2.3. PS Houston particulars

Particulars of oil/chemical tanker PS Houston (Fig. 5) are provided in table 3.

Fig. 5. Oil/chemical tanker PS Houston (www.shipspotting.com)

Table 3. PS Houston particulars

Flag, registration	Flag of Malta. Registered in Malta.
Classification society	Registro Italiano Navale (RINA)
Identification	International Maritime Organisation (IMO) number: 9388209 Call sign: 9HA2959 Maritime Mobile Service Identity (MMSI) number: 538005726
Main characteristics	Gross tonnage: 30119 Length: 183,0 m Breadth: 32,2 m
Building yard of ship	STX Shipbuilding Co. Ltd., Jinhae, Gyeongnam, Korea
Year of build	2008
Minimum safe manning	Number of crew, indicated in the minimum safe manning document – 15
Cargo allowed	Oil products, liquid chemical substances

1.2.4. Patria Seaways particulars

Particulars of ro-ro passenger ship Patria Seaways (Fig. 6) are provided in table 4.

Fig. 6. Ro-ro passenger ship Patria Seaways (www.flickr.com)

Table 4. Patria Seaways particulars

Flag, registration	Flag of Lithuania. Registered in the Register of Seagoing Ships of the Republic of Lithuania.
Classification society	Lloyds Register (LR)
Identification	International Maritime Organisation (IMO) number: 8917390 Call sign: LYRC Maritime Mobile Service Identity (MMSI) number: 277291000
Main characteristics	Gross tonnage: 18332 Length: 154 m Breadth: 24 m
Building yard of ship	Fosen Mek. Verksteder A/S
Year of build	1992
Minimum safe manning	Number of crew, indicated in the minimum safe manning document – 18
Cargo allowed	Ro-Ro cargo (trailers, lories, cars and similar).

1.3. Hydrometeorological information

According to the data provided by the Lithuanian Hydrometeorological Service under the Ministry of Environment of the Republic of Lithuania, at Klaipeda Meteorological Station, located on land and situated about 1 km away from the accident site, on 1 October 2021, from 2:40 until 11:00 fog was observed. The recorded meteorological visibility distance: at 6:00 – 0.3 km, 7:00 – 0.3 km, 8:00 – 0.4 km, 9:00 – 0.5 km, 10:00 – 0.6 km.

VTS receives hydrometeorological data directly from the meteorological stations belonging to the Klaipeda State Seaport Authority, located on the northern and southern breakwaters of Klaipeda State Seaport.

At 7:42 when the VTS operator started the shift, 5-8 m/s east-southeast wind prevailed, the water current speed in the port was 0.7 knots towards the sea, the wave height in the sea was about 1 m, and the visibility in the port was 200-300 m. Later, visibility decreased: at 8:14 the VTS operator reported to vessels about the visibility of not more than 200 meters at 8:24 – 100 meters and at 8:35 – 50 meters. These visibility data were determined visually by the VTS operator by observing the port water area and the landmarks in it. The workplace of the VTS operator situated about 4.5 km from the accident site. The entry in the VTS weather log provides, that at 9:00 visibility was 266 m.

1.4. Data about involved persons

1.4.1. Data about CL Tomo crew

The crew started its services on board CL Tomo in May 2021, before the newly built vessel was put into service. The working language on board was English. There were 19 seafarers on board at the time of the accident, all crewmembers were citizens of the Philippines. The ship's bridge team at the time of the accident consisted of a captain, the third mate and the helmsman. Master – 48 years old, qualified in accordance with the requirements of Chapter II/2 of the STCW Convention[3]. The third mate – 39 years old, qualified in accordance with the requirements of Chapter II/1 of the STCW Convention. A helmsman – 36 years old, qualified in accordance with the requirements of Chapter II/5 of the

[3] 1978 International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, as amended.

STCW Convention.

1.4.2. Data about CL Tomo pilot

The pilot – citizen of the Republic of Lithuania, 66 years old. Pursuant to the provisions of the STCW Convention, in 2001 Lithuanian Maritime Safety Administration issued him the certificate of competency of chief mate on ships of 3000 gross tonnage (hereinafter – GT) or more. He has been working as a pilot of Klaipeda State Seaport since 2003, was able to communicate in English and Lithuanian.

At the time of the accident, the pilot had a first-class pilot qualification. In accordance with the provisions of Annex 1 to the description of the procedure on pilots' training, examination and qualification requirements, to be complied by persons who are entitled to provide pilotage for certain sizes of vessels[4], the pilot was entitled to assist the master of a ship of any size, to steer and moor the ship.

In 2012 the pilot completed 5-day simulation training for pilots 'Ship Handling with LNG Carrier'. In 2013 the pilot completed 5-day training courses for Vessel Traffic Services' Pilots and Operators on simulator for piloting of LNG tankers in the port of Klaipeda under various meteorological conditions in accordance with provisions of subsection A-II/2 'Manoeuvring and handling a ship in all conditions' of part A of STCW Code[5]. In 2018 the pilot completed a 5-day refresher course on 'Radar, Automatic Radar Plotting Aid, Bridge Teamwork and Search and Rescue'.

1.4.3. Data about VTS operator

The VTS operator – a citizen of the Republic of Lithuania, 37 years old. Pursuant to the provisions of the STCW Convention, in 2012 Lithuanian Maritime Safety Administration issued him the certificate of competency of chief mate on ships of 3000 GT or more. He had 11 years of experience on seagoing ships as officer in charge of a navigational watch and 2 years as a chief mate. From September 2020 he started to serve as the VTS operator of Klaipeda State Seaport. From the beginning of his work, he did not receive any special training as a VTS operator and did not participate in any training. He had the opportunity to acquire the skills and knowledge required for his job by working together with other VTS operators or senior VTS operators.

1.5. Communications language

Paragraph 6 of Annex 2 to the Recommendations on Training and Certification and on Operational Procedures for Maritime Pilots other than Deep-Sea Pilots, adopted by International Maritime Organisation's Assembly on 5 of December 2003 by Resolution A.960(23), (hereinafter – IMO Recommendations on Training and Operational Procedures for Pilots), provides following provisions concerning communication language:

'6.2 Communications on board between the pilot and bridge watchkeeping personnel should be conducted in the English language or in a language other than English that is common to all those involved in the operation.

6.3 When a pilot is communicating to parties external to the ship, such as vessel traffic services, tugs or linesmen and the pilot is unable to communicate in the English language or a language that can be understood on the bridge, the pilot

[4] Approved on 6 August 2019 by the order No 2BE-233 of director of Lithuanian Transport Safety Administration 'Concerning the approval of the description of the procedure on pilots' training, examination and qualification requirements, to be complied by persons who are entitled to provide pilotage for certain sizes of vessels'.

[5] Seafarers' Training, Certification and Watchkeeping Code. Annex. Part A. Mandatory standards regarding provisions of the annex to the 1978 International Convention on Standards of Training, Certification and Watchkeeping.

should, as soon as practicable, explain what was said to enable the bridge personnel to monitor any subsequent actions taken by those external parties.'

National legislation does not specify the language in which pilots must communicate with the ship's bridge team, VTS operators and shore services. Communication is usually done in Lithuanian, English or Russian.

The VTS operator communicated in Lithuanian with the pilots on board CL Tomo, San Remo, Kerry, Medi Bangkok and Patria Seaways by VHF. The pilot of Patria Seaways with the pilot of CL Tomo also spoke in Lithuanian.

The content of communications between all pilots and the VTS, the content of communications between pilots, was heard on all ships via VHF, regardless of the ship for which it was intended. This communication was not understandable to the CL Tomo bridge team. The pilot of CL Tomo did not explain the content of this communication to the bridge team, and the bridge team did not make an effort to understand what the pilot was talking with the VTS operator and the pilots of other ships.

1.6. Master-pilot communications and information exchange

1.6.1. Recommendations of the International Maritime Organisation

Part 2 of Annex 2 of IMO Recommendations on Training and Operational Procedures for Pilots, contains provisions relating to the duties of master, bridge officers and pilot:

'2.1 Despite the duties and obligations of a pilot, the pilot's presence on board does not relieve the master or officer in charge of the navigational watch from their duties and obligations for the safety of the ship. It is important that, upon the pilot boarding the ship and before the pilotage commences, the pilot, the master and the bridge personnel are aware of their respective roles in the safe passage of the ship.

2.2 The master, bridge officers and pilot share a responsibility for good communications and understanding of each other's role for the safe conduct of the vessel in pilotage waters.

2.3 Masters and bridge officers have a duty to support the pilot and to ensure that his/her actions are monitored at all times.'

1.6.2. Shipping industry guidance

The International Chamber of Shipping (ICS), International Association of Independent Tanker Owners (Intertanko) and Oil Companies International Marine Forum (OCIMF) issued publication 'International Best Practices for Maritime Pilotage' which includes the following extract:

'Efficient pilotage is chiefly dependent on the effectiveness of the communications and information exchanges between the pilot, the master and other bridge personnel and upon the mutual understanding each has for the functions and duties of the others. Ship's personnel, shore based ship management and the relevant port and pilotage authorities should utilise the proven concept of 'Bridge Team Management'. Establishment and effective co-ordination between the systems and the equipment available to the pilot is a prerequisite for the safe conduct of the ship through pilotage waters.'

The Marine Accident Investigators' International Forum (MAIIF) and the International Maritime Pilots' Association (IMPA) have jointly published a poster (Annex 1). The poster is designed to highlight the importance of sharing information between the ship's bridge team and the pilot, respecting each other's role, communicating throughout the pilotage, working together and staying alert.

1.6.3. CL Tomo operator's policy

The 'Bridge Management and Procedures Manual' of the safety management system, valid on board CL Tomo, contains the navigation with pilot procedure. This procedure includes the following extract:

> *'5) Navigation with pilot embarked*
>
> *Despite the duties and obligations of a pilot, his presence on board does not relieve the Master or Officer in command of the watch from their duties and obligations for the safety of the ship.*
>
> *The Master and pilot shall exchange information regarding navigation procedures, local conditions and the ship's characteristics.'*

In accordance with this procedure, when pilot embarks on board, he is provided with the 'Pilot Information' form, specified in the Bridge Management and Procedures Manual. The first part of this form is for the pilot, indicating the ships' particulars, actual draft, the manoeuvring characteristics and other information relevant to the pilotage. The second part of this form is for the master. It lists 13 topics about local navigation features and actual navigation conditions. This information must be obtained by the master from the pilot and is intended to assist the ship's bridge team for port navigation and berthing operations.

1.6.4. Information exchange when pilot boarded CL Tomo

Although the records confirm that the master received all the information from the pilot according to the list of 13 topics in the 'Pilot Information' form, in fact the master did not ask the pilot for explanations according to this list and did not discuss the ship's route from the berth to the reception buoy, environmental conditions, planned passages with inbound vessels, possible locations of these passages, sharp turns of the shipping canal, ship's bridge team and pilot's actions in case of emergency.

1.6.5. Information exchange and communication during voyage

When the CL Tomo started the voyage until the accident occurred, the bridge team did not give any instructions to the helmsman, did not communicate and did not exchange any information with the pilot. The bridge team, when heard the calls made by the VTS operator by VHF 'CL Tomo radijo penki' in Lithuanian, which they do not understand, did not respond to them.

1.7. Look-out during navigation

1.7.1. Mandatory International requirements

Requirements, set out in the COLREG[6], stipulates the following:

> *'Rule 5. Look-out*
>
> *Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.'*

Requirements, set out in Part A of the STCW Code, stipulates the following:

> *'Chapter VIII. Section A-VIII/2. Part 4-1:*
>
> *14. A proper lookout shall be maintained at all times in compliance with rule 5 of the International Regulations for Preventing Collisions at Sea, 1972, as amended and shall serve the purpose of:*

[6] Convention on the International Regulations for Preventing Collisions at Sea, COLREG, 1972.

.1 maintaining a continuous state of vigilance by sight and hearing, as well as by all other available means, with regard to any significant change in the operating environment;

.2 fully appraising the situation and the risk of collision, stranding and other dangers to navigation; <…>

15. The lookout must be able to give full attention to the keeping of a proper lookout; <…>.'

1.7.2. Look-out during navigation by CL Tomo bridge team

The master and third mate, present on the navigational bridge, maintained look-out during navigation using the ship's navigational aids as well as visually through the windows, installed on the bridge, but neither of them gave any instructions to the pilot or helmsman to avoid a collision. Only when the ships collided, the master began to actively instruct the helmsman to head the ship in the required direction.

1.7.3. Look-out during navigation by CL Tomo pilot

Ship's position, movement, distances between CL Tomo and other vessels, pilot assessed by visually observing the view, displayed on the vessel's radar monitor, ECDIS and the pilot's tablet computer. All these navigational aids were scaled to allow the most accurate estimate of the distances from the CL Tomo to the nearest obstacles and did not show ships located in greater distance from the CL Tomo. The navigational environment pilot also observed through the windows installed on the bridge. The location where the pilot and helmsman stood and navigation equipment on the ship's bridge is shown in Figure 7.

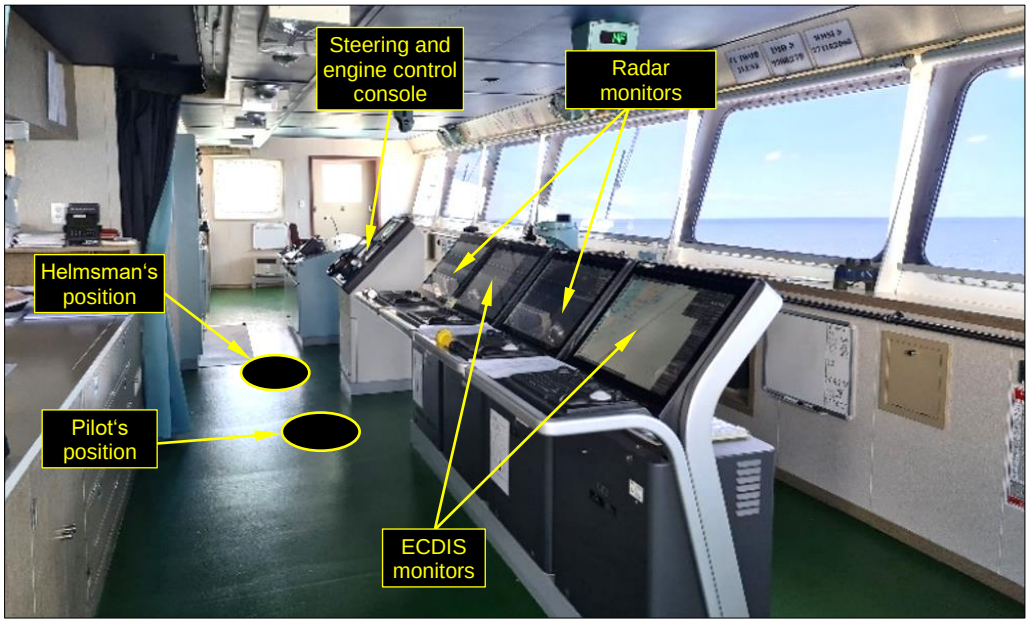

Fig. 7. CL Tomo navigational bridge (photo provided by the operator of the ship)

Pilots of Klaipeda State Seaport use portable navigation equipment they bring to the ship. This equipment consists of a tablet computer, the software Wartsila Pilot Pro and a wireless Pilot Plug data repeater connected to the onboard ship's AIS[7] equipment with integrated GyroPilot v3. Using this equipment, the tablet computer monitor provides information about the speed of the ship, the rate-of-turn, and the predicted position of the ship being steered. Fig. 8 shows the view, displayed on the CL Tomo's pilot's tablet at 9:07:54.

[7] Automatic Identification System

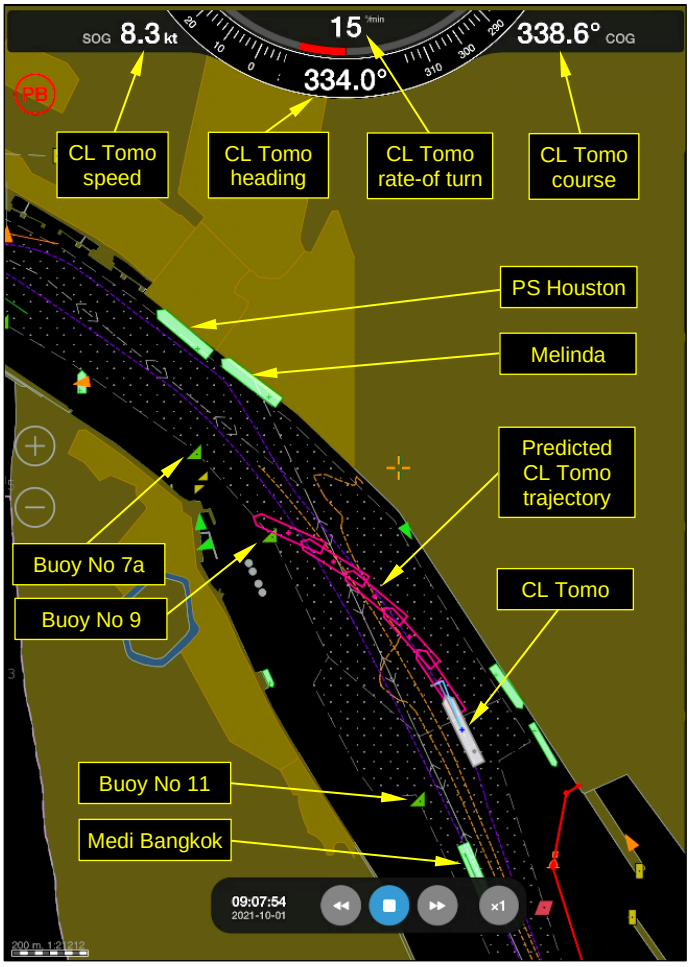

Fig. 8. View, displayed on the CL Tomo's pilot's tablet at 9:07:54 (composed using video record, provided by the SE Klaipeda State Seaport Authority)

1.8. Sound signal in restricted visibility

1.8.1. Requirements

COLREG stipulates the following:

> *'Rule 3. General definitions*
>
> *<…>*
>
> *(l) The term 'restricted visibility' means any condition in which visibility is restricted by fog, mist, falling snow, heavy rainstorms, sandstorms or any other similar causes. <…>*
>
> *Rule 35. Sound signals in restricted visibility*
>
> *In or near an area of restricted visibility, whether by day or night, the signals prescribed in this Rule shall be used as follows:*
>
> *a) A power-driven vessel making way through the water shall sound at intervals of not more than 2 minutes one prolonged blast. <…>'*

The Regulations of Navigation of Klaipeda State Seaport[8] (hereinafter – Regulations of Navigation) stipulates the following:

[8] Approved by the Order No. 3-327 of the Minister of Transport and Communications of the Republic of Lithuania of 10 September 2008 'On Approval of the Regulations of Navigation of Klaipeda State Seaport.' Paragraph 2 of Article 8 of the Law on Klaipeda State Seaport of the Republic of Lithuania stipulates, that the Regulations of Navigation of Klaipeda State Seaport shall be approved by the Minister of Transport and Communications, upon the proposal of the Port Authority.

'136. It is forbidden in the Seaport's water area:

<…> 136.16. to use audio signals in the Seaport without the necessity; <…>'

1.8.2. Use of sound signal on board Patria Seaways and CL Tomo

When Patria Seaways was heading towards the gate of Klaipeda port, a repeating audible sound signal was used. From 9:01 Patria Seaways stopped signalling. Patria Seaways use no sound signal when entering the port of Klaipeda and while heading through the shipping canal of Klaipeda port.

CL Tomo did not sound an audible signal when started the voyage and when the vessel was navigating the port canal.

1.9. Restrictions of ships' passage and safe speed

The Regulations of Navigation stipulates the following:

'53. A two-way vessel traffic is permitted in the shipping canal of the Seaport, except the turning points of the shipping canal and entrance to Malku Bay.'

There are no other restrictions under national law, stipulating the passage of ships in the port canal. The restrictions on the passage of ships of 200 m in length and upwards, shown in Fig. 1 are an existing practice, which is not enshrined in law or regulation.

The places of passage of inbound and outbound ships VTS operator plans on the basis of his professional judgement, taking into account ships' passage restrictions, set in the Regulations of Navigation, and existing ships' passage practice, described in Fig. 1.

The Regulations of Navigation stipulates a speed limit for ships:

'50. The maximum speed of 8 knots of the vessels is established throughout water area of the Seaport. When sailing through the places where the vessel-generated waves may pose danger, it is mandatory to sail at the minimum speed allowing control of the vessel. The maximum permissible speed of the vessel may be changed by instruction of the on-duty operator of VTS to ensure the requirements of safe navigation.'

Provisions, set out in the COLREG, stipulates the following:

'Rule 6. Safe speed

Every vessel shall at all times proceed at a safe speed so that she can take proper and effective action to avoid collision and be stopped within a distance appropriate to the prevailing circumstances and conditions.

In determining a safe speed the following factors shall be among those taken into account:

(a) By all vessels:

(i) the state of visibility;

(ii) the traffic density including concentrations of fishing vessels or any other vessels;

(iii) the manoeuvrability of the vessel with special reference to stopping distance and turning ability in the prevailing conditions;

(iv) at night the presence of background light such as from shore lights or from back scatter of her own lights;

(v) the state of wind, sea and current, and the proximity of navigational hazards;

(vi) the draught in relation to the available depth of water.

(b). Additionally, by vessels with operational radar:

(i) the characteristics, efficiency and limitations of the radar equipment;

(ii) any constraints imposed by the radar range scale in use;

(iii) the effect on radar detection of the sea state, weather and other sources of interference;

(iv) the possibility that small vessels, ice and other floating objects may not be detected by radar at an adequate range;

(v) the number, location and movement of vessels detected by radar;

(vi) the more exact assessment of the visibility that may be possible when radar is used to determine the range of vessels or other objects in the vicinity.'

1.10. Vessel traffic management

1.10.1. Vessel traffic services

Regulation 12 of Chapter V of the 1974 International Convention for the Safety of Life at Sea[9] (hereinafter - the SOLAS Convention), provides:

'1. Vessel traffic services (VTS) contribute to safety of life at sea, safety and efficiency of navigation and protection of the marine environment, adjacent shore areas, work sites and offshore installations from possible adverse effects of maritime traffic.

2. Contracting Governments undertake to arrange for the establishment of VTS where, in their opinion, the volume of traffic or the degree of risk justifies such services.

3. Contracting Governments planning and implementing VTS shall, wherever possible, follow the guidelines[10] developed by the Organization[11] .'

IALA[12] guidelines[13] provides that if Contracting Government is of the opinion that the navigational complexity, volume of traffic or the degree of risk does not justify the establishment a VTS under provisions of SOLAS, in order to ensure required level of safety there may be other measures implemented, which includes provision of local port services for communication of important information to ships. Such service is often described in terms such as 'Local Port Service', 'Port Control' or 'Harbour Control'.

IALA guidelines clearly identifies distinction between a VTS, established in accordance with Regulation 12 of Chapter V of the SOLAS Convention and a local port service:

'3.3. DISTINCTION BETWEEN A VTS AND A LOCAL PORT SERVICE

<…> There is no requirement for a local port service to have the capability to:

• Generate a comprehensive overview of traffic in its service area combined with all traffic influencing factors.

• Compile a traffic image to enable staff to evaluate situations and make decisions accordingly.

• Respond to traffic situations developing in the area and to decide upon appropriate actions.

• Employ suitably qualified and trained staff to international standards.'

[9] Republic of Lithuania is a party to this Convention from 4 March 1992.
[10] Resolution A.857(20), see chapter 1.10.2 of the Report.
[11] International Maritime Organization.
[12] International Association of Marine Aids to Navigation and Lighthouse Authorities.
[13] IALA Guideline G1142 ,The Provision of a Local Port Service other than VTS'.

1.10.2. Recommendations of the International Maritime Organisation

In 1997 the Assembly of the IMO by Resolution A.857(20) adopted Guidelines for Vessel Traffic Services and Guidelines on Recruitment, Qualifications and Training of VTS Operators. In December of 2021 these guidelines were revoked by Resolution A.1158(32) and new version of Guidelines for Vessel Traffic Services were adopted (hereinafter referred to as the IMO Guidelines for Vessel Traffic Services). These guidelines provide recommendations on the organization, responsibilities, operating principles of Vessel traffic services, qualifications and training of VTS personnel. The IMO Guidelines for Vessel Traffic Services also provide guidance to the competent authority for VTS[14] and the vessel traffic service provider on the establishment of a regulatory framework for VTS services and the organization of VTS activities:

'5.2 The competent authority for VTS should:

.1 establish a regulatory framework for establishing and operating VTS in accordance with relevant international conventions and IMO instruments, IALA standards and national law; <…>

5.3. The VTS provider should:

<…>

.2 set operational objectives for VTS that are consistent with improving the safety and efficiency of ship traffic and the protection of the environment. The objectives set should be routinely evaluated to demonstrate that they are being achieved; <…>

.4 ensure that VTS are adequately staffed and that VTS personnel are appropriately trained and qualified;'

1.10.3. Klaipeda State Seaport VTS

The main international shipping lines to the ports of Western Europe, South-East Asia and the continent of America pass through Klaipeda port. Intensive ship traffic prevails in Klaipeda port – about 7,000 ships from about 50 countries come to Klaipeda port every year.

The purpose of Klaipeda State Seaport Vessel Traffic Services is to organize vessel traffic and pilotage activities. Klaipeda State Seaport Vessel Traffic Service is a structural unit of SE Klaipeda State Seaport Authority, subordinated to the Klaipeda State Seaport Harbour Master. The Vessel Traffic Service is headed by the Head of the VTS – the chief pilot. The work of the VTS is organized in shifts that change every 12 hours, according to a pre-approved schedule. The VTS shift consists of senior, first-class and second-class pilots (6 persons in total), VTS senior operator, VTS operator, VTS operator-engineer. The VTS shift is managed by the chief or senior pilot (shift supervisor).

Part 4 of Article 1 of the Law on Maritime Safety of the Republic of Lithuania stipulates the following:

'<…> vessels <…>, when sailing in public waterways, shall be governed by the provisions of the Convention on the International Regulations for Preventing Collisions at Sea, 1972 and, when sailing through the port areas, the ship-masters must abide by the port shipping regulations and follow the instructions on maritime safety given by the officers of vessel traffic services who are on duty.'

The activities of VTS are regulated by Regulations of Navigation, which stipulates:

[14] Paragraph 2.2 of the IMO Guidelines for Vessel Traffic Services defines the Competent authority as the entity made responsible by the Government for vessel traffic services.

'38. The vessel traffic in the entire water area of the Seaport shall be controlled by VTS. <…>. VTS is working 24 hours per day, its call sign is 'Klaipeda radio-5', VHF channel 9. VTS functions are the following:

38.1. radiolocation control of the vessels' sailing; <…>

38.3. transmission of the information related to navigation, hydrometeorology or other sailing issues to the vessels, users of Seaport's quays and services;

38.4. steering the vessels with the help of radar.

39. In order to guarantee safety of the vessel and the Seaport, regardless whether the pilot is present in the vessel, VTS shall steer the vessels with the help of radar in the following cases:

39.1. if visibility is smaller than 0,5 nautical mile; <…>

39.4. in case of difficult navigation situation.

40. It is mandatory to carry out the following VTS instructions immediately:

40.1. regarding sequence of sailing;

40.2. regarding sailing route and speed; <…>

40.4. in order to avoid danger. <…>

42. The services of vessel traffic control provided by VTS shall not release the vessel's captain from the responsibility for maritime safety and security.'

Paragraph 21 of the Regulations of the Harbour Master of Klaipeda State Seaport[15] stipulates, that the Harbour Master of Klaipeda State Seaport shall organize the traffic of ships and pilotage activities through the services subordinate to him. The legal acts of the Republic of Lithuania do not specify that the Klaipeda State Seaport VTS is established in accordance with Regulation 12 of Chapter V of the SOLAS Convention.

1.10.3.1. Organization of the work of VTS operators

The VTS senior operator, who normally works in a VTS shift, manages the VTS operator and the VTS operator-engineer. The VTS senior operator and the VTS operator are responsible for vessel traffic management and radar control of vessel traffic in Klaipeda State Seaport. The VTS operator-engineer is responsible for technical issues, maintenance of equipment operation and is not involved in vessel traffic management. The job description of the VTS operator states that on the instructions of the harbour master, the VTS operator may replace the VTS senior operator.

In the VTS shift during the accident, VTS operator alone was responsible for vessel traffic management and radar control of vessel traffic. As instructed by the Harbour Master, he replaced the VTS senior operator who was on holiday.

During the accident all VHF calls from the vessel traffic service were normal, the VTS operator spoke calmly and was not disturbed. However, in addition to the instructions given by the VTS operator to the pilots of CL Tomo, Patria Seaways, Medi Bangkok, Kerry and San Remo, the VTS operator has given a number of instructions and permits for the movement of other vessels in the port area, permit for diving works. From 8:14 until the accident at 9:12, 61 conversations took place between the VTS operator and the vessels. This number includes instructions given to ships by the VTS operator and unanswered invitations from the VTS operator.

[15] Approved by the Order No. V-95 of Director General of SE Klaipeda State Seaport Authority on 8 April 2013 (as amended on 20 January 2021, by the Order No. V-13 of the Director General of SE Klaipeda State Seaport Authority).

1.10.3.2. Competence requirements and competence maintenance

IMO Guidelines for Vessel Traffic Services provide guidance on the competence and training of VTS personnel:

> *'8.1 A major factor in the operation of VTS is the competence of their personnel.*
>
> *8.2 VTS personnel should only be considered competent when appropriately trained and qualified for their VTS duties. This includes:*
>
> *.1 satisfactorily completing generic VTS training approved by a competent authority;*
>
> *.2 satisfactorily completing on-the-job training at the VTS where the personnel are employed;*
>
> *.3 undergoing periodic assessments and revalidation training to ensure competence is maintained; <…>'*

The job description[16] of the VTS senior operator of the of Klaipeda State Seaport stipulates that the VTS senior operator shall hold a degree of an officer in charge of a navigational watch on ships of 500 GT or more and at least 3 years of experience as a VTS operator.

The job description of the VTS operator stipulates that he shall hold a degree of an officer in charge of a navigational watch on ships of 500 GT or more.

The job descriptions of the VTS senior operator and the VTS operator stipulates, that these personnel must:

> *'<…> develop qualification in special courses every five years according to the training programs, recommended by the IMO and IALA and approved by the Lithuanian Maritime Safety Administration. Must have valid certificates of completion of these courses.'*

In December 2016, Klaipeda State Seaport VTS operators and VTS senior operators participated in special courses for Vessel Traffic Service operators, organized by the Lithuanian Maritime Academy, the program of which was based on the IALA model course V-103/1 'Vessel Traffic Services Operator Training'. This model course syllabus specifies:

> *'On successful completion of the course and assessments, the participants should have been provided with sufficient training and to proceed to the next stage of On-the-Job Training (OJT) at a VTS centre.'*

After 2016, no courses were organized for both employed and newly employed VTS operators and senior VTS operators.

1.11. Information about human factor

The safety investigation did not identify factors such as fatigue, health problems, inadequate psychological condition, alcohol, or drug abuse, that could have influenced the actions of the VTS operator, pilot or ships' crew during the accident.

1.12. Bridge resource management

Bridge resource management is the effective management and use of all available resources, both human and electronic, by the bridge team to ensure the safe navigation of a ship. The essence of bridge resource management is a safety culture and management approach that facilitates communication, co-operation, and co-ordination among the individuals involved in a ship's

[16] The job descriptions of the VTS personnel are approved by the order of the Director General of the Klaipeda State Seaport Authority.

navigation. Bridge resource management incorporates concepts such as workload management, problem-solving, decision-making, communication and teamwork.

1.12.1. Competence requirements for navigation officers in bridge resource management

Part A of the STCW Code requires all officers in charge of a navigational watch on ships of 500 GT or more to be competent in bridge resource management. The competence is to be demonstrated through examination and assessment. This requirement became mandatory in 2012.

1.12.2. Bridge resource management training for pilots

Paragraph 5 of Annex 1 of IMO Recommendations on Training and Operational Procedures for Pilots contains provisions concerning recommendations for training of pilots in bridge resource management:

> *'5.3 Every pilot should be trained in bridge resource management with an emphasis on the exchange of information that is essential to a safe transit. This training should include a requirement for the pilot to assess particular situations and to conduct an exchange of information with the master and/or officer in charge of navigational watch. Maintaining an effective working relationship between the pilot and the bridge team in both routine and emergency conditions should be covered in training. Emergency conditions should include loss of steering, loss of propulsion, and failures of radar, vital systems and automation, in a narrow channel or fairway. <…>*
>
> *5.5 Competent pilotage authorities should be encouraged to provide updating and refresher training conducted for certified or licensed pilots to ensure the continuation of their proficiency and updating of their knowledge, and could include the following: <…>*
>
> *.4 refresher or renewal courses in bridge resource management for pilots to facilitate communication and information exchange between the pilot and the master and to increase efficiency on the bridge.'*

There are no national requirements for pilots to complete training in bridge resource management. No such training is required for the first class pilot qualification. CL Tomo pilot had not completed any training in the bridge resource management.

1.13. Data about the damages

1.13.1. CL Tomo damages

At the time of the collision CL Tomo sustained the following damages: a dent of 7.6 m in length, 0.2 m in width and 0.1 m in depth on the starboard side of the hull above the waterline between the 209 and 219 frames; dented starboard side frames from 209 to 219; damage to the internal components of the starboard ballast water tank; damage to the hull frame plates in the engine room; hull scratches in the starboard side (above the waterline), damaged starboard pilot ladder.

1.13.2. Melinda damages

At the time of the collision, the vessel Melinda sustained various damages in the port side: paint scratches on side shell and damage to main deck structural elements (frames 175-195) and forecastle structural elements (frames 197-210); damage to main deck handrail (frames 175-195) and forecastle handrail (frames 195-205); damage to air head with pipe of ballast tank (frames 175-185); damage to main deck plating and deck girder in ballast tank (frames 175-185).

1.13.3. PS Houston damages

At the time of the collision PS Houston mooring ropes were broken; components of manifold on starboard side were bended; internal components of port side ballast tank were damaged; handrail of main deck, starboard side, was bended; port side shell paint, above the waterline, was scratched; starboard ladder was damaged.

1.13.4. Damages to shore infrastructure

At the time of the collision PS Houston was moored at berth no. 3, located in the territory of JSC Krovinių Terminalas. Loading operations were not being carried out at that time, but shore cargo handling equipment was connected to the ship. The loading hoses, the loading hose support saddles, the safety emergency shut-off valve, the traverse, the gantry crane Kirovec and the mooring column barrier were damaged due to the impact.

1.14. Actions taken

1.14.1. Actions taken by CL Tomo operator

Following the accident, CL Tomo operator carried out an internal investigation and on 10th of October 2021 issued an investigation report in which identified factors which contributed to the accident and proposed a list of instructions and actions to be taken in order to prevent similar accidents in the future. The safety investigation did not receive any further information whether these instructions and proposed actions were implemented by ships, managed by the operator.

1.14.2. Actions taken by of Klaipeda State Seaport harbour master

On 22 December 2021, the Klaipeda State Seaport harbour master, taking into account the need to ensure maritime safety in Klaipeda State Seaport and in order to form a proper pilotage practice, has issued a mandatory instruction on pilotage procedures, in which he provided instructions to VTS operators and pilots:

'I instruct the Vessel Traffic Service operators:

1.1. When authorizing a vessel to move within the port water area, also provide:

1.1.1. information on hydrometeorological conditions;

1.1.2. information on navigational conditions at the port gate;

1.1.3. information on planned passages with other ships and locations and obtain the vessel's consent for these passages; <...>

1.2. When a ship is sailing in the port water area, to provide on a regular basis:

1.2.1. information on changed hydrometeorological conditions;

1.2.2. information on changes related to passages with other vessels;

1.2.3. information on the speed of the ship to ensure a safe passage.

<…>

2. I instruct the Vessel Traffic Service pilots:

2.1. Upon boarding at the ship to familiarise with the ship's manoeuvring and technical characteristics.

2.2. Discuss with the captain the navigation, mooring and use of tugs.

2.3. Inform the master of the hydrometeorological conditions.

2.4. Coordinate with the master of the vessel the planned passages with other vessels, the locations of the passages and notify the Vessel Traffic Service thereof. <...>

2.6. Keep the master informed of hydrometeorological and navigational changes in the port area through which the ship will proceed.

2.7. In the event of adverse hydrometeorological conditions, require the master to constantly monitor the environment.

2.8. Whenever possible provide the master of the vessel with relevant information on the use of tugs, the work of linesmen and other information, relevant to the vessel being piloted.'

1.15. Other accidents

1.15.1. Accident of the Tor Corona and the tankers Anichkov Bridge and Valle Di Nervion

On 6 March 2006, the 187 m long ro-ro cargo vessel Tor Corona (IMO No. 9357597) while proceeding in the Klaipeda port shipping canal to the sea, after turn to left in the area of buoy No 9 (Fig. 1 and 2), due to 15 m/s west wind and water current, lost control and began to drift towards the northern side of the port canal. While moving forward at a speed of approximately 6.5 knots, she slide with her starboard side first to the port side of the 183 m long Anichkov Bridge (IMO No. 9256901), berthed at quay No 2 and then collided to the 183 m long tanker Valle Di Nervion (IMO No. 9288942), berthed at quay No 1. After the collision, Tor Corona moved backwards, once again obstructing the ships, and turned over the starboard side. The stern of Valle Di Nervion sustained penetration damage, the equipment sustained damages, mooring ropes were broken, and the port side shell of hull of the tanker Anichkov Bridge was damaged. The Tor Corona itself sustained penetration damage in the bulbous bow, sustained damages to the side shell on the starboard side. The Lithuanian Maritime Safety Administration[17], which conducted an investigation into the accident, found that the accident occurred when the captain of the vessel Tor Corona lost control of the movement of the vessel due to drift due to the 15 m/s westerly wind and water current towards the sea. Another cause of the accident is indicated in the investigation report of the Lithuanian Maritime Safety Administration – the decision of the pilot, who was on board the Tor Corona, to disembark just before the turn[18] of the shipping canal, under unfavourable hydrometeorological conditions, leaving captain of the vessel Tor Corona, who lacked practical experience in navigation in Klaipeda port, alone, to pass one of the most dangerous sections of Klaipeda port water area and proceed to the sea. The investigation report also stated that a slightly delayed VTS warning for the Tor Corona to adjust course and turn ship more to the left, contributed to the accident.

1.15.2. CMA CMG Centaurus accident

On 4 May 2017, the United Kingdom registered 364 m long container ship CMA CGM Centaurus made heavy contact with the quay and two shore cranes while executing a turn under pilotage during its arrival at Jebel Ali, United Arab Emirates. The accident resulted in the collapse of a shore crane and 10 injuries to shore personnel. The United Kingdom Marine Accident Investigation Branch (hereinafter – MAIB) conducted investigation[19] and established, that CMA CGM Centaurus was going too fast for the intended manoeuvre. It was also established by investigation, that the pilot was operating in isolation without the support of the bridge team. Thus the pilot's

[17] Lithuanian Maritime Safety Administration. Conclusions of the investigation of the collision of the ro-ro cargo ship Tor Corona with the tankers Anichkov Bridge and Valle Di Nervion in Klaipeda port (in Lithuanian).
[18] Area in vicinity of buoy No 9 (Fig. 1 and 2).
[19] Report on the investigation of heavy contact with the quay and two shore cranes by the UK registered container ship CMA CGM Centaurus at Jebel Ali, United Arab Emirates 4 May 2017.

decision-making become a single system point of failure. The investigation report provides:

> *'Despite extensive industry guidance and the numerous recommendations following previous MAIB investigations, and those of other established accident investigation bodies, many masters still find it difficult to actively engage in the act of pilotage. Moreover, many pilots appear content to keep the interaction between themselves and the bridge team to a minimum. Masters and pilots are mostly intelligent, conscientious individuals, so why this cultural divide continues to persist at all is particularly exasperating given the obvious potential consequences of an accident involving such vessels as CMA CGM Centaurus in the environs of a commercial port and the clear recognition on both sides of the divide that a problem exists. More effort clearly needs to be made to break down the cultural divide to ensure that mutual cooperation and respect between the bridge team and pilot becomes the norm. A requirement for port operators to insist that pilots attend the BRM-P[20] course and actively apply its principles during all acts of pilotage, would help in this respect.'*

The MAIB safety investigation report provides a recommendation to the International Chamber of Shipping, the International Maritime Pilots' Association and the International Harbour Masters' Association to promote the benefits of adhering to effective bridge resource management procedures during acts of pilotage and endorse the BRM-P course as an effective means of providing pilots with the necessary skills to best utilise the resources available during acts of pilotage.

[20] Bridge Resource Management training for pilots.

2

ANALYSIS

2.1. The CL Tomo pilot's actions

2.1.1. Pilotage of the ship and look-out

At the time of the accident ships were proceeding in the conditions of restricted visibility, the water current in the port canal was 0.7 knots towards the sea. The CL Tomo was fully loaded and was slow in responding to the helm orders. These circumstances, while ship was navigating in the narrow area of the port shipping canal and passing bended areas, required pilot to focus all attention on monitoring of the navigational environment in the close vicinity of the vessel. Therefore, pilot set all navigational equipment to a scale, that allowed him to most accurately monitor only the navigational environment that was in close vicinity of the CL Tomo (Fig. 7). The combination of these factors has made it very difficult for the pilot to maintain a continuous state of vigilance by sight and by hearing and to carry out a proper look-out, especially in respect of the navigational environment that was further away form the vessel.

2.1.2. Passage with inbound Patria Seaways

The pilot did not notice in time the Patria Seaways, which was approaching from the front. So, when the CL Tomo and Patria Seaways parallel passage port-to-port was approaching, the heading of the CL Tomo was set to the left side of the canal. The VTS operator's efforts to warn the pilot in advance by VHF of an imminent passage with Patria Seaways were unsuccessful, as the pilot was focused on steering to navigate ship in the set direction. After the VTS operator called the pilot by mobile phone and informed him of the imminent parallel passage port-to-port with Patria Seaways, the pilot instructed the helmsman to set heading to starboard by applying full rudder and after a little over a minute – to port by applying full rudder and increase the speed of the ship. This manoeuvre was performed by the pilot to allow enough space to pass the Patria Seaways and at the same time to avoid collisions with the berthed Melinda and PS Houston. This manoeuvre was performed by the pilot without enough time to estimate how much rudder to apply and when, so the manoeuvre was not accurate: the ship did not reach the required rate of turn to the left and collided with the moored Melinda and PS Houston. It is very likely that the direction of movement of the ship CL Tomo during this maneuver was significantly influenced by the hydrodynamic interaction of this ship with the ships Patria Seaways and Melinda as well as by the bank effect[21] and the prevailing water current in the port canal. The safety investigation did not assess whether when

[21] The bank effect is the tendency of the stern of a ship to swing towards the near bank when operating in a constricted waterway.

the pilot decided to start the manoeuvre he had a real possibility to perform it in such a way that the ships would pass safely without colliding with the moored Melinda and PS Houston. However, if that were possible, the manoeuvre would have had to be carried out very carefully and accurately. Taking this into account:

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It is recommended that SE Klaipeda State Seaport Authority assess the need for pilots to organize periodic theoretical training on ship manoeuvrability and make decision on the organization of such training.

2.2. Actions of the CL Tomo crew

During the voyage the master and third mate maintained look-out but did not participate in the steering of the vessel until the accident occurred. The pilot communicated with the VTS operator in Lithuanian by VHF, while the CL Tomo bridge team did not understand the content of these communications. When CL Tomo and Patria Seaways port-to-port passage was approaching, the pilot was still instructing the helmsman to turn left. To warn the pilot about this approaching passage, the VTS operator several times addressed by VHF – '*CL Tomo radijo penki*'. While pilot did not respond, CL Tomo bridge team did not respond either, as the call contained Lithuanian words, not understandable to them.

When CL Tomo and Patria Seaways port-to-port passage was approaching, neither the CL Tomo master nor the third mate did anything to reduce the risk of a collision – neither warned the pilot, nor addressed VTS or Patria Seaways, or gave instructions to the helmsman.

2.3. Information exchange between CL Tomo master and pilot

The importance of communication between the master and the pilot is emphasized in the IMO Recommendations on Training and Operational Procedures for Pilots, in the shipping industry guidelines, as well as in the CL Tomo operator's Safety Management System documentation. The master, bridge officers and pilot share a responsibility for good communications and understanding of each other's role for the safe conduct of the vessel in pilotage waters.

The exchange of information between the master and the pilot prior to the voyage was limited to the formal completion and signature of the '*Pilot Information'* form of the Bridge Management and Procedure Manual. The master and the pilot in a structured way did not discuss with each other important navigational information – the traffic intensity, the expected passages with inbound ships and possible locations of these passages, the ship's manoeuvrability, navigational features of the port, and how to effectively manage the bridge resources in an emergency. When the voyage commenced, the master and the pilot did not exchange information or communicate with each other. As a result, the ship's bridge team was unable to anticipate the difficulties, encountered when CL Tomo was passing with Patria Seaways in a narrow area of the port shipping canal. As the ship's bridge team did not discuss the ship's manoeuvrability with the pilot in advance, the pilot realised that the ship was slow in responding to helm orders only when tugs were released, and ship was proceeding through the port shipping canal.

Both the master and the pilot had the opportunity to ensure that an appropriate exchange of information took place in a structured manner prior to the voyage, but neither did. It can therefore be concluded that both the master and the pilot placed little value on the support that could be provided to the pilot by the bridge team during the ship's voyage.

By not actively engaging with the bridge team, the pilot effectively signalled he did not need their assistance. Therefore it is unsurprising that CL Tomo bridge team did not take the initiative to assist the pilot at the critical time.

2.4. Patria Seaways bridge team's and pilot's actions

Neither the Patria Seaways bridge team nor the pilot, being aware of the approaching passage with the outbound CL Tomo in the port shipping canal, did not assess the risk that the ships may have to pass each other in the narrow area of the port shipping canal under conditions of poor visibility, and did not consider in advance to revoke the request to enter the canal the Klaipeda State Seaport.

Decision to switch off the Patria Seaways' repeating fog signal, eliminated possibility for the CL Tomo pilot to be warned in time about the approaching passage.

At 9:01, when the VTS operator instructed the Patria Seaways pilot to increase the speed to 11-12 knots, the pilot confirmed that the speed would be increased, but the speed was increased slightly – from the former 9.1 to 9.2-9.4 knots. The decision of the Patria Seaways pilot not to increase the engine power to level that would speed-up the vessel to 11-12 knots was influenced by the limited visibility and the remaining short distance (0,45 nautical miles) to the port gate. The insufficient increase in the speed of the ship may also have been influenced by the water current from the port.

The Regulations of Navigation state, that it is mandatory to immediately follow the VTS instructions on sailing speed. However, the Regulations of Navigation also stipulate, that the services of vessel traffic control, provided by VTS, shall not release the vessel's master from the responsibility for maritime safety. Therefore, the decision of the Patria Seaways pilot not to increase the speed to 11-12 knots is understandable. However, the information that the speed of the vessel would not be increased to the required value was important for the VTS operator in managing the vessel traffic, therefore the VTS operator had to be informed immediately. Nevertheless, notifying the VTS operator of the planned non-speeding of the Patria Seaways to 11-12 knots, would not have prevented the Patria Seaways and CL Tomo from parallel passage in a narrow area of the port shipping canal, as the call into the port could no longer be delayed, because Patria Seaways was in close proximity to the port gate.

2.5. Communications language

IMO Recommendations on Training and Operational Procedures for Pilots provides, that a pilot with parties external to the ship, such as VTS, should communicate in English or in a language other than English that is common to all those involved in the operation. If such communication is not possible, the pilot should, as soon as practicable, explain what was said to enable the bridge personnel to monitor any subsequent actions taken by those external parties.

CL Tomo master and the pilot did not agree on how the pilot should communicate, so that the content of the pilot's communications with the VTS and with other ships would be understandable by the bridge team. From the beginning of the voyage the CL Tomo pilot communicated in Lithuanian language with VTS operator and with pilots of other ships, without explaining the content of this communication to the CL Tomo bridge team, and the CL Tomo bridge team did not ask the pilot to explain what was said. As a result, the CL Tomo bridge team was unaware of the intentions of either the VTS operator or the pilot or the inbound ships' bridge personnel and had only limited information on what is going on in the navigational environment.

As the presence of a pilot on board does not relieve the master or officer in charge of navigational watch of the duties and responsibilities related to the safety of the ship, the bridge team must make every effort to understand what is going on in the navigational environment. While the ship is under pilotage, it is important for the bridge team not only carry out a proper look out and monitor the navigation equipment as well as the actions of the pilot, but also to understand the intentions of the pilot and third parties – VTS, bridge personnel of ships' in vicinity. However, it is not possible to do so if the bridge team does not understand what the pilot is talking with the VTS and with bridge teams of vessels in proximity, what instructions the VTS is giving to the vessels.

2.6. Qualification of pilots in bridge team management

Efficient pilotage is very dependent on the effectiveness of the communications between pilot and bridge team. IMO Recommendations on Training and Operational Procedures for Pilots states, that every pilot should be trained in bridge resource management with an emphasis on the exchange of information that is essential to a safe transit. This training should include a requirement for the pilot to assess particular situations and to conduct an exchange of information with the master and/or officer in charge of navigational watch, as well as provisions concerning an effective working relationship between the pilot and the bridge team in both routine and emergency conditions. The *CMA CGM Centaurus* accident also highlighted the importance of cooperation between the ship's bridge team and the pilot.

By not requiring Klaipeda State Seaport pilots to complete bridge resource management training for pilots, the importance of close cooperation between pilot and ship's bridge team was not emphasized and at the same time the pilots were not familiarised with the principles of bridge resource management. Therefore, the decision to undertake training for pilots in bridge resource management principles would improve the effective integration of pilots and bridge team and would significantly contribute to the safe navigation in the Klaipeda State Seaport.

Taking this into account:

SR-2022-L-02

It is recommended to SE Klaipeda State Seaport Authority to prepare and document a Pilot training and qualification maintenance plan, according to which pilots would be trained in the principles of bridge resource management and periodic maintenance of this qualification would be ensured.

2.7. Role of the VTS

2.7.1. The VTS operator's actions

The VTS operator, being aware of the expected passage of the inbound Patria Seaways and outbound CL Tomo in the port shipping canal, did not assess in time the danger of this passage in the narrow area of the port shipping canal under conditions of poor visibility, and gave permission to the Patria Seaways to enter Klaipeda State Seaport, without waiting the CL Tomo to leaves the port.

The VTS operator anticipated, that the vessels Patria Seaways and CL Tomo would pass each other in a wide and straight area of the port shipping canal, between buoys no. 9 and no. 11, if Patria Seaways would increase the speed. Therefore, the VTS operator instructed the Patria Seaways pilot to increase the speed to 11-12 knots.

As Patria Seaways did not increase the speed and was proceeding slower than was anticipated by VTS operator, Patria Seaways and CL Tomo passed each

other in narrow part of the port shipping canal, north of buoy no. 9, where the ships Melinda and PS Houston were moored at the quays. However, in the current circumstances, the ships have not been able to pass safely. This shows, that the existing restrictions in the Regulations of Navigation, which prohibit two-way vessel traffic only at the turning points of the shipping canal and at the entrance to Malku Bay, could in some circumstances be insufficient, and in this case could have led to a risky decision for the VTS operator not to restrict two-way vessels' traffic in port shipping canal under conditions of limited visibility.

The accident of the ships Tor Corona, Anichkov Bridge and Valle Di Nervion took place in the same location of the shipping canal of Klaipeda port. This shows that all possible risks need to be thoroughly assessed at this and adjacent locations and decisions have to be made on further restrictions on the two-way traffic.

Almost an hour prior the CL Tomo accident, the master of the inbound ship Kerry indicated his unwillingness to pass with outbound vessels in the port shipping canal, and while Kerry was proceeding in the port shipping canal – refused to increase the speed. Such instructions from the master of the ship Kerry signalled, that the navigation situation in the port was complicated due to poor visibility. However, the VTS operator did not restrict the two-way traffic in the port, although he was entitled to do so.

To prevent unsafe navigation in the port of Klaipeda, the Regulations of Navigation, approved by the Minister of Transport and Communications, set mandatory restrictions, such as a two-way traffic ban in the turning points of the canal, without leaving the discretion to disregard such restrictions. Such regulation eliminates the possibility of human error, prevents decisions of the VTS operator to be influenced and is acceptable from a safety point of view. However, there is a number of other typical no less dangerous scenarios, such as two-way traffic of large ships in narrow port shipping canal areas under restricted visibility or similar, which are not regulated in the Regulations of Navigation, leaving the discretion for the VTS operator to decide. This regulation gap should be qualified as a safety deficiency, as it sends a message to VTS operators that a two-way traffic is possible under any environmental conditions. In addition, the mentioned regulatory gaps may open up the possibility, for commercial reasons to influence VTS operators to decide not to reduce the traffic flow in the port, when unfavourable hydrometeorological conditions are present.

Taking this into account:

SR-2022-L-03

It is recommended that the Ministry of Transport and Communications, in co-operation with SE Klaipeda State Seaport Authority, assess the risks of two-way traffic in different locations of the port shipping canal under different navigation conditions and establish requirements for additional two-way traffic restrictions in the shipping canal of the Klaipeda State Seaport.

2.7.2. Organization of VTS operators shift

At the time of the accident, there was only one VTS operator in the shift, responsible for regulating vessel traffic, although normally VTS shift is composed of two VTS operators who regulates vessel traffic. No additional employee was assigned to replace the VTS senior operator who was on holiday, but the VTS operator working in the VTS shift, in addition to his current duties, was assigned to carry out duties of absent VTS senior operator. The VTS operator did not meet the qualification requirement applicable for VTS senior operator to have three years' service experience as a VTS operator and had not completed special courses for Vessel traffic service operators.

Insufficient assessment of the impact of hydrometeorological conditions on safe navigation by not restricting two-way traffic in the port shipping canal, instructing the Patria Seaways to proceed at a speed of 11-12 knots under conditions of restricted visibility, shows the lack of experience and skills of the VTS operator to lead the VTS shift. Therefore, it is very important to ensure that the VTS shift is in fact led only by persons, who meet the requirements for VTS senior operators.

Taking this into account:

SR-2022-L-04

It is recommended that SE Klaipeda State Seaport Authority establish requirements, according to which only a person who has completed special courses for Vessel traffic service operators and has at least three years of work experience as a VTS operator, could lead the shift of VTS operators.

During 58 minutes before the accident, the VTS operator, who regulated vessel traffic alone, took part in 61 VHF conversations with the vessels, including instructions given and was also involved in planning the passages of vessels, observing the changing meteorological conditions, monitoring the vessels' movements and general situation in the port water area. During this period of time, the VTS operator had to make decisions regarding the permission for ships to enter and leave Klaipeda State Seaport, shift from one port location to another, also give instructions to ships regarding the speed and direction of movement, decide concerning permissions to start diving works. For the VTS operator this meant too much workload and too little time for continuous assessment of the changing situation and for making important decisions. As the Kerry and Patria Seaways were proceeding slower than VTS operator anticipated, his workload increased further, as the VTS operator had to reconsider the planned ships' passing points in the Klaipeda State Seaport shipping canal and give additional instructions to the vessels. In order to prevent the recurrence of similar situations, the VTS shift should always be composed of at least two VTS operators in charge of vessel traffic management in the port. Taking this into account:

SR-2022-L-05

It is recommended that SE Klaipeda State Seaport Authority establish requirements for the mandatory minimum number of VTS operators, responsible for vessel traffic management in the shift, taking into account the navigational situation in the port.

2.8. Regulation of the activities of the vessel traffic service

Although the legal acts of the Republic of Lithuania regulating the operation of VTS do not refer to the requirements of Regulation 12 of Chapter V of the SOLAS Convention, according to which VTS shall be established, Klaipeda State Seaport VTS performs functions that are not typical for the local port service: Klaipeda State Seaport VTS has measures in place to show the real-time picture of vessel traffic so that VTS operators can assess shipping situations and make appropriate decisions; VTS operators must react to vessel traffic situations and decide on the actions to be taken by the crews of vessels in the service area. In addition, qualification requirements for VTS operators in accordance with international standards are set by the Klaipeda State Seaport Administration. This shows that the activities performed by Klaipeda State Seaport VTS are not typical for the 'local port services' but must be organized in accordance with the requirements of the SOLAS Convention.

The safe navigation in the port to a large extent depends on the organization of VTS activities, whether the number of employees in the VTS shift is sufficient,

how the improvement of the qualification of VTS operators and pilots is planned and ensured. The successful implementation of these important organizational provisions depends to a large extent on whether they are properly regulated and whether the regulation complies with the provisions of the IALA and IMO recommendations, quality management standards.

It was established during safety investigation, that these important organizational provisions are neither regulated in the Regulations of Navigation, approved by the Minister of Transport and Communications, nor in the internal documents of SE Klaipeda State Seaport Authority, or in other legal acts of the Republic of Lithuania.

How VTS activities should be regulated is set out in the IMO Guidelines for Vessel Traffic Services, IALA recommendations. Taking this into account:

SR-2022-L-06

It is recommended that the Ministry of Transport and Communications take measures to regulate the activities of the Klaipeda State Seaport Vessel Traffic Service in accordance with the recommendations of the International Maritime Organization and International Association of Marine Aids to Navigation and Lighthouse Authorities.

To eliminate the above-mentioned regulatory shortcomings, it is worthwhile for SE Klaipeda State Seaport Authority to thoroughly assess all risks of navigation in Klaipeda State Seaport area under complicated conditions and to consider the need to prepare procedures for pilotage in Klaipeda State Seaport water area under complicated conditions.

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CONCLUSIONS

Safety issues

1. At the time of the accident ships were proceeding in the conditions of restricted visibility, the water current in the port canal was 0.7 knots towards the sea. The CL Tomo was fully loaded and was slow in responding to the helm orders. The combination of these factors made it very difficult for the pilot, without proper assistance of the bridge team, to accurately steer the ship in the narrow and bended areas of the port shipping canal while maintaining a continuous state of vigilance by sight and by hearing and to carry out a proper look-out, especially in respect of the navigational environment that was further away from the vessel. [2.1.1] [2.2]

2. Decision to switch off the Patria Seaways' repeating fog signal, eliminated possibility for the CL Tomo pilot to be warned in time about the approaching passage. [2.4]

3. Being unaware of the approaching CL Tomo and Patria Seaways port-to-port passage, the CL Tomo pilot did not follow the right but set the heading to the left side of the shipping canal. [2.1.2]

4. The CL Tomo passage manoeuvre with inbound Patria Seaways was started late and was inaccurate. [2.1.2]

5. The master and the pilot in a structured way did not discuss with each other important navigational information. When the voyage commenced, the master and the pilot did not exchange information or communicate with each other. As a result, the ship's bridge team was unable to anticipate the possible difficulties during pilotage. [2.3]

6. Both the master and the pilot had the opportunity to ensure that an appropriate exchange of information took place in a structured manner prior to the voyage, but neither did. It can therefore be concluded that both the master and the pilot placed little value on the support that could be provided to the pilot by the bridge team during the ship's voyage. [2.3]

7. By not actively engaging with the bridge team, the pilot effectively signalled he did not need their assistance. Therefore it is unsurprising that CL Tomo bridge team did not take the initiative to assist the pilot at the critical time. [2.3]

8. When CL Tomo and Patria Seaways port-to-port passage was approaching, neither the CL Tomo master nor the third mate did anything to reduce the risk of a collision – neither warned the pilot, nor addressed VTS or Patria Seaways, or gave instructions to the helmsman. [2.2]

9. The VTS operator, being aware of the expected passage of the inbound Patria Seaways and outbound CL Tomo in the port shipping canal, did not assess in time the danger of this passage in the narrow area of the port shipping canal under conditions of poor visibility, and gave permission to the Patria Seaways to enter Klaipeda State Seaport, without waiting the CL Tomo to leaves the port. [2.7.2]

10. At the time of the accident, the VTS shift was insufficiently manned. No additional employee was assigned to replace the VTS senior operator who was on holiday, but the VTS operator working in the VTS shift, in addition to his current duties, was assigned to carry out duties of absent VTS senior operator. The VTS operator did not meet the qualification requirement applicable for VTS senior operator to have three years' service experience as a VTS operator and had not completed special courses for Vessel traffic service operators. [2.7.3]

11. The VTS operator regulated the vessel traffic in Klaipeda State Seaport alone and due to the heavy workload did not have enough time to consider important decisions carefully. [2.7.3]

12. Neither the Patria Seaways bridge team nor the pilot, being aware of the approaching passage with the outbound CL Tomo in the port shipping canal, did not assess the risk that the ships may have to pass each other in the narrow area of the port shipping canal under conditions of poor visibility, and did not consider in advance to revoke the request to enter the Klaipeda State Sea port. [2.4]

13. CL Tomo pilot communicated in Lithuanian language with VTS operator and with pilots of other ships, without explaining the content of this communication to the CL Tomo bridge team, and the CL Tomo bridge team did not ask the pilot to explain what was said. As a result, the CL Tomo bridge team was unaware of the intentions of either the VTS operator or the pilot or the inbound ships' bridge personnel and had only limited information on what was going on in the navigational environment. [2.5]

14. By not requiring Klaipeda State Seaport pilots to complete bridge resource management training for pilots, the importance of close cooperation between pilot and ship's bridge team was not emphasized and at the same time the pilots were not familiarised with the principles of bridge resource management. [2.6]

4

SAFETY RECOMMENDATIONS

Safety recommendation: with a view to avoiding accidents and incidents in the future, the safety investigation authority drew up a proposal based on the information collected on the basis of the safety investigation, and other sources, for instance, other safety studies. Safety recommendations shall in no case create a presumption of blame or liability for an accident or incident.

The following Safety Recommendations are made in this report:

SR-2022-L-01

It is recommended that SE Klaipeda State Seaport Authority assess the need for pilots to organize periodic theoretical training on ship manoeuvrability and make decision on the organization of such training.

SR-2022-L-02

It is recommended to SE Klaipeda State Seaport Authority to prepare and document a Pilot training and qualification maintenance plan, according to which pilots would be trained in the principles of bridge resource management and periodic maintenance of this qualification would be ensured.

SR-2022-L-03

It is recommended that the Ministry of Transport and Communications, in co-operation with SE Klaipeda State Seaport Authority, assess the risks of two-way traffic in different locations of the port shipping canal under different navigation conditions and establish requirements for additional two-way traffic restrictions in the shipping canal of the Klaipeda State Seaport.

SR-2022-L-04

It is recommended that SE Klaipeda State Seaport Authority establish requirements, according to which only a person who has completed special courses for Vessel traffic service operators and has at least three years of work experience as a VTS operator, could lead the shift of VTS operators.

SR-2022-L-05

It is recommended that SE Klaipeda State Seaport Authority establish requirements for the mandatory minimum number of VTS operators, responsible for vessel traffic management in the shift, taking into account the navigational situation in the port.

SR-2022-L-06

It is recommended that the Ministry of Transport and Communications take measures to regulate the activities of the Klaipeda State Seaport Vessel Traffic Service in accordance with the recommendations of the International Maritime Organization and International Association of Marine Aids to Navigation and Lighthouse Authorities.

ANNEXES

Annex 1. Poster, published by The Marine Accident Investigators' International Forum (MAIIF) and the International Maritime Pilots' Association (IMPA)

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Commit to Safe Navigation

SAFE NAVIGATION IN PILOTAGE WATERS IS A SHARED TASK OF THE BRIDGE TEAM AND THE PILOT

- **SHARE** NAVIGATION INFORMATION
- **RESPECT** EACH OTHER
- **COMMUNICATE** THROUGHOUT THE VOYAGE
- **WORK** TOGETHER
- **STAY** ALERT