



**REPUBLIC OF CYPRUS
MARINE ACCIDENT AND INCIDENT
INVESTIGATION COMMITTEE**

Investigation Report No: 50A/2022

Very Serious Marine Casualty

Collision of the RO-RO/PAX “KATTEGAT” with Pilot Boat on the 01st of April 2022 at “Tanger Med” whilst underway from Tanger Med (Morocco) to Algeciras (Spain)



MAIC

Marine Accident and Incident Investigation Committee
Cyprus

Foreword

The sole objective of the safety investigation under the Marine Accidents and Incidents Investigation Law N. 94 (I)/2012, in investigating an accident, is to determine its causes and circumstances, with the aim of improving the safety of life at sea and the avoidance of accidents in the future.

It is not the purpose to apportion blame or liability.

Under Section 17-(2) of the Law N. 94 (I)/2012 a person is required to provide witness to investigators truthfully. If the contents of this statement were subsequently submitted as evidence in court proceedings, then this would contradict the principle that a person cannot be required to give evidence against themselves.

Therefore, the Marine Accidents and Incidents Investigation Committee, makes this report available to interested parties, on the strict understanding that, it will not be used in any court proceedings anywhere in the world.

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List of Acronyms and Abbreviations

AB	Able Seaman
C/E	Chief Engineer
C/O	Chief Officer
CoC	Certificate of Competency
GA	General Alarm
DPA	Designated Person Ashore
ISM Code	International Management Code for the Safe Operation of Ships
Knots	Speed in nautical miles per hour
Lat.	Latitude
Long.	Longitude
LT	Local Time
m	Meter
MC	Management Company
MRCC	Marine Rescue Coordination Centre
MT	Metric Ton
NM	Nautical Mile
PEC	Pilot Exemption Certificate
PSN	Position
RPM	Revolutions per Minute
SAR	Search And Rescue
2/O	Second Officer
SMC	ISM Safety Management Certificate
SMM	Safety Management Manual
SMS	Safety Management System
SOLAS	Safety of Life At Sea Convention
STCW95	International Convention on Standards of Training, Certification and Watch keeping for Seafarers 1978, as amended
S-VDR	Simplified -Voyage Data Recorder
VTS	Vessel Traffic Services
UTC	Universal Time Coordinated
VHF	Very High Frequency Radio
ZT	Zone Time

1. Summary

In conducting its investigation, the Marine Accidents Investigation Committee (MAIC), reviewed documents and crew statements and S-VDR data provided by ship's Management Company (MC) and performed analyses to determine the causal factors that contributed to the accident, including any management system deficiencies. The crew statements were taken on board the ship by the Management Company's Designated Person Ashore (DPA).

Accident Description

On 1st April 2022 at 04:42 Hrs LT (UTC+2), the RO-RO/PAX "KATTEGAT" departed from Tanger Med port (Morocco), bound to Algeciras port (Spain).

At 04:47 Hrs LT, as soon as the vessel passed the port's breakwater, the bridge team spotted on the RADAR one pilot boat on starboard side (which came to be the "SVITZER OUED MARTIL"), on course 230°, and passing forward of the "KATTEGAT's" bow. Shortly after, the pilot boat changed course to port, heading 220°. With this course alteration, the navigators on the "KATTEGAT" assumed that it was going to pass astern of the "KATTEGAT", but suddenly changed again course to starboard to 230° and then to 240° and directed towards the "KATTEGAT's" bow.

Although the "KATTEGAT's" Captain stopped and reversed the engines to full astern and used the horn to warn the pilot boat, at around 04:49 Hrs LT, the "KATTEGAT" collided with the pilot boat.

The "KATTEGAT's" Captain contacted Tanger Med Vessel Traffic System (VTS), on VHF Channel 14 and informed about the collision. He requested from the Tanger Med VTS to offer assistance.

The rescue boat was prepared for launching and the crew of the rescue boat was put on standby, but due to adverse weather conditions as well as due to assistance available (the tugboat "ALHUCEIMA" and the pilot boat "MOUSSA"), he decided not to lower the rescue boat in the sea.

The Tanger Med VTS instructed on VHF, the tugboat "ALHUCEIMA" and the pilot boat "MOUSSA" to proceed to the accident position to assist the damaged pilot boat. Both boats reached the area of the collision, after about 10 minutes. From the "KATTEGAT's" nav bridge, search light was used to assist the boats to locate the pilot boat.

The "KATTEGAT" remained in the area waiting for instructions from the Tanger Med VTS. Tanger Med VTS instructed the "KATTEGAT" to proceed to Tanger Med port, where berthed at Berth No. 1, at 06:56 Hrs LT.

The rescue operation was not successful and after 2 hours after the collision it was announced that the pilot boat sunk. The pilot boat had two crew members onboard (Moroccan citizens), the one was found dead and the other one was missing.

2. Factual Information

2.1. Ship's Name: KATTEGAT



2.1.1. Ship Particulars

Name of ship: KATTEGAT
IMO number: 9112765
Call sign: 5BKX3
MMSI number: 209405000
Flag State: Cyprus
Type of ship: Ro-Ro/Pax
Gross tonnage: 14,379
Length overall: 136.40
Breadth overall: 24.60
Classification society: BV
Registered shipowner: Paschamo Shipping Company Ltd. (IMO 5629745)
Ship's company: FRS Iberia (IMO 5245751)
Year of build: 1996
Deadweight: 3,067
Hull material: Steel
Hull construction: Single Hull
Propulsion type: Internal Combustion
Type of bunkers: MDO, GO
Number of crew on ship's certificate: 25

2.1.2. Voyage Particulars

Port of departure: Tanger Med, Morocco
Port of call: Algeciras, Spain
Type of voyage: International
Cargo information: 15 trucks
Manning: 29
Number of passengers: 15

2.1.3 Marine Casualty or Incident Information

Type of marine casualty/incident:	Very Serious Marine Casualty (Collision)
Date/Time:	01 April 2022@02:49:24 UTC
Location:	Tanger Med port area
Position (Latitude/Longitude):	35°53.40N - 005°31.20W
External and Internal Environment:	Sea State: Moderate/4, Wind: Westerly/6, Night, Sky: Clear, Visibility: Good
Ship operation and Voyage segment:	Departure
Human Factors:	No
Consequences:	Death:2 - Pilot Boat Sunk

2.1.4. Shore authority involvement and emergency response

Involved: Tanger Med Port, VTS Tangier Traffic, Tarifa Traffic - Spain (at late stage)

Means used: Local Pilot Boat, Local Tugboat and a Helicopter from Spain. The Tanger Med VTS requested on the VHF the tugboat “SVITZER ALHOCEIMA” and the pilot boat “Moussa” to proceed to the accident position to assist the damaged pilot boat.

After 10 minutes the pilot boat and the tugboat, reached the position of the damaged pilot boat and started searching together.

The “KATTEGAT”, used searchlight and lookouts on the deck to keep the pilot boat on sight and visible to tugboat “SVITZER ALHOCEIMA” and pilot boat “MOUSSA”.

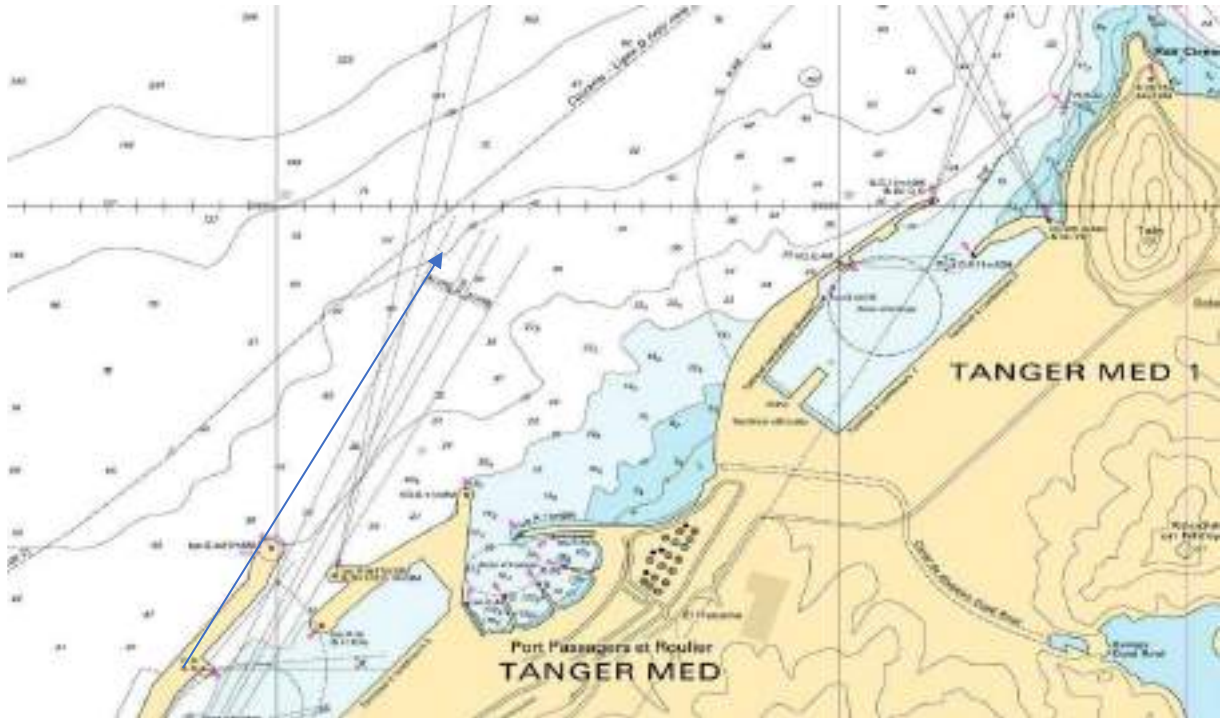
Results achieved: Non-Successful

3. Narrative

3.1. Sequence of Events

1. On 1st April 2022 at 04:34 hours local time (UTC+2) the Captain of the “KATTEGAT” called the Tanger Med Marine Traffic Surveillance Centre (STM). Informed that the “KATTEGAT” was ready to depart from Tanger Med Passenger Port-Quay No.2, (Morocco), for the port of Algeciras (Spain) and declared cargo manifest. The STM operator confirmed that the vessel was cleared. On board the “KATTEGAT”, were fifteen (15) lorries, fifteen (15) drivers and twenty-nine (29) crew members.
2. At 04:39 Hrs LT, the pilot boat “SVITZER OUED MARTIL”, disembarked a Pilot in Tanger Med 1 Port and immediately proceeded to its base “SVITZER Base” at Tanger Med 2 Port.
3. At 04:42 Hrs LT, the “KATTEGAT”, departed from Tanger Med Passenger Port-Quay No.2, bound to Algeciras Port. On the nav bridge, were the Captain, the Chief Officer and the Chief Engineer. The Captain was in command, controlling the vessel from the port bridge wing.
4. At 04:46 Hrs LT, the “KATTEGAT” entered the Passenger Port Channel at a speed of 07.2 knots. The pilot boat “SVITZER OUED MARTIL” was at distance 01.26NM and relative bearing 34.8° from the “KATTEGAT”, on course 233° and speed 14.8 knots.
5. At 04:46:25 Hrs LT, the Captain of the “KATTEGAT” shifted control from the port wing to the central helm. The Chief Officer confirmed control and the Captain moved to central helm.
6. **At 04:47:00 Hrs LT**, the “KATTEGAT” passed the port’s breakwater. The bridge team spotted on the radar the pilot boat “SVITZER OUED MARTIL” on own vessel’s starboard side. The Master also stated that he saw visually the lights of the pilot boat. **“SVITZER OUED MARTIL” was heading 230.2°, speed 11,6 knots, bearing 35°, and distance from the “KATTEGAT” 0.94NM.** Closest Point of Approach (CPA) 0.01 nautical Miles (NM) and Time to CPA (TCPA) 3minutes (m) and 05 Seconds (s) clearing the “KATTEGAT” from ahead / passing forward from its bow.
7. **Shortly after, at 04:47:37 Hrs LT, the pilot boat changed course to port, heading 220.5° and increased speed to 14 knots**, bearing 32.7°, dist. 0.65NM, CPA 0.00NM, TCPA 1m 48s.
8. **At 04:48:08 Hrs LT**, “KATTEGAT” passed the green light breakwater and started free passage - Heading 004° and speed 8 knots. The Second Officer arrived on the nav bridge and updated the manifest and the AIS. At the same time, the **“SVITZER OUED MARTIL” changed course to starboard heading 229°, at a speed of 12.7 knots at a distance from the “KATTEGAT” of 0.48 miles** and a bearing of 033.0°, CPA 0.03NM, TCPA 1m03s.
9. **At 04:48:36 Hrs LT**, the “SVITZER OUED MARTIL” **changed course to starboard heading 237.7°, at a speed of 13.1 knots at a distance from the “KATTEGAT” of 0.32NM**, bearing of 032.2°, CPA 0.05NM, TCPA 00m56s.
10. **At 04:49:08 Hrs LT**, the bridge team noticed the movement / course alteration of the pilot boat and the Chief Officer said “what they are doing?” **The “SVITZER OUED MARTIL” changed course to starboard heading 241.6°, at a speed of 13.9 knots at a distance from the “KATTEGAT” of 0.12NM** and a bearing of 029.7°, CPA 0.02NM, TCPA 00m18s.

11. At 04:49:10 Hrs LT, the “KATTEGAT”,’s” Captain, used the horn to warn the pilot boat and stopped & reversed the engines to full astern to avoid collision.
12. At 04:49:24 Hrs LT, the “KATTEGAT” collided with the pilot boat, at approx. 0.3NM north of the Tanger Med port’s breakwater. At the time of the collision the “KATTEGAT’ was on course 002° at a speed of 11 knots. The “SVITZER OUED MARTIL” was on a course 241.6° at a speed of 13.9 knots.
The position of the collision was: Latitude: 35-53.38 North Longitude: 005-31.09 West. The wind was from 309 at 15m/s, Sea -Swell North-West Direction, Waves 2m height.
13. “KATTEGAT” stopped.
14. The “KATTEGAT’s” bridge team did not feel the collision but checked the portside bridge wing and saw, small part of the pilot boat on the bow of the vessel. At the same time the Bosun confirmed from the car deck forward, that the pilot boat was on the bulbous bow of the vessel.
15. Shortly after the collision, the damaged pilot boat released from the bulbous bow and started moving alongside, portside, from the bow to the stern, pushed by the current and the wind.
16. The “KATTEGAT’s” Captain contacted Tanger Med VTS on VHF Channel 14 informed about the collision. He also ordered the crew to search around the vessel.
17. The Captain requested the Tanger Med VTS, to send the tugboat SVITZER ALHOCEIMA to assist the pilot boat.
18. “KATTEGAT’s” crew attempted to lower the vessel’s rescue boat in the sea. Due to adverse weather conditions the attempt was unsuccessful. Due to assistance available, the Captain decided not to lower the rescue boat in the sea.
19. The Tanger Med VTS requested on VHF, the tugboat “ALHOCEIMA” and the pilot boat “MOUSSA” to proceed to the accident position to assist the damaged pilot boat “SVITZER OUED MARTIL”.
20. After about 10 minutes, the tugboat “SVITZER ALHOCEIMA” and the pilot boat “MOUSSA”, reached the area of the collision position and started searching together for the damaged pilot boat “SVITZER OUED MARTIL”. From the “KATTEGAT’s” nav bridge, the search light was used to help the assisting vessels to locate the pilot boat.
21. The “KATTEGAT” remained in the area until 05:30 Hrs LT, waiting for instructions from the Tanger Med VTS. At 05:30 Hrs LT, the “KATTEGAT” received instructions from Tanger Med VTS to proceed to the nearby anchorage area.
22. At 06:36 Hrs LT, the “KATTEGAT” received instruction from Tanger Med VTS to proceed to Tanger Med port.
23. At 06:56 Hrs LT, the “KATTEGAT” berthed in Tanger Med Port at berth No.1.
24. Alcohol tests, were not carried out.
25. The rescue operation was not successful and two hours after the collision, it was announced that the pilot boat, sunk.
26. The pilot boat had two crew members onboard, Moroccan citizens, the one was found dead shortly after the accident and the other one was missing.



Position of the collision – 0,3NM from Green Light Breakwater



From Marine Traffic Website: Appr. 10 min after the collision (assistance on the scene)

4. Analysis

(The purpose of the analysis is to determine the contributory causes and circumstances of the accident as a basis for making recommendations to prevent similar accidents occurring in the future).

The following analysis is based on crew statements and documents provided by the vessel’s Management Company.

4.1 The Crew

4.1.1 Organization on board the “KATTEGAT”

Shipboard Working Arrangements

The “KATTEGAT” is on regular service between Algeciras and Tanger Med, doing 3 to 4 voyages per day depending on the demand. The vessel occasionally makes a trip to Gibraltar. The ship operates with two crew shifts of equal duration. 12 Hours-On /12 Hours-Off / rota.

The day of the incident the nav bridge was manned with the Master, Chief Officer (C/O) and Chief Engineer (C/E). The Second Officer (2/O) was on his way to relief the C/O.

The Master (age 49) was working with the FRS company for 16 years, 9 of which i.e. since 2013, as Master on the “KATTEGAT”. He is sailing on the route since 2013. He is holder of Pilot Exemption Certificate (PEC) for Tanger Med and Algeciras.

The C/O (age 44) was working for the FRS company since 2016 as 2/O and since 2021 as C/O.

Daily schedule from Algeciras below: departures from Algeciras: 03:00, 09:00, 15:00 & 21:00

ALGECIRAS-TANGERMED									
ALGECIRAS - MED LINE	KAT	TEX	KAT	TEX	KAT	TEX	KAT	TEX	
	3:00	6:00	9:00	12:15	15:00	18:00	21:00	23:59	
	3:00	6:00	9:00	12:15	15:00	18:00	21:00	23:59	
	3:00	6:00	9:00	12:15	15:00	18:00	21:00	23:59	
	3:00	6:00	9:00	12:15	15:00	18:00	21:00	23:59	
	3:00	6:00	9:00	12:15	15:00	18:00	21:00	23:59	
	3:00	6:00	9:00	12:15	15:00	18:00	21:00	23:59	
	3:00	6:00	9:00	12:15	15:00	18:00	21:00	23:59	

Daily schedule from Tanger Med below: departures from TangerMed: 05:00, 11:00, 17:00 & 23:00

TANGERMED-ALGECIRAS								
ALGECIRAS - MED LINE	TEX	KAT	TEX	KAT	TEX	KAT	TEX	KAT
	2:00	5:00	8:15	11:00	14:00	17:00	20:00	23:00
	2:00	5:00	8:15	11:00	14:00	17:00	20:00	23:00
	2:00	5:00	8:15	11:00	14:00	17:00	20:00	23:00
	2:00	5:00	8:15	11:00	14:00	17:00	20:00	23:00
	2:00	5:00	8:15	11:00	14:00	17:00	20:00	23:00
	2:00	5:00	8:15	11:00	14:00	17:00	20:00	23:00
	2:00	5:00	8:15	11:00	14:00	17:00	20:00	23:00

There was no evidence to suggest that the organizational conditions on board were a contributory factor to the accident.

4.1.2 Training and Certification

The Master, the Deck Officers and Engineering Officers, were holders of certificates of competency, as required by the International Convention on Standards of Training Certification and Watch keeping (STCW) Convention as amended.

The officers in charge of navigational watch were duly qualified in accordance with the provisions of STCW Chapter II, appropriate to the duties related to navigational watchkeeping.

The crew duties corresponded to their qualifications and experience.

Crew training and certification was not a factor to the accident.

4.1.3 Manning level

At the time of the accident, the vessel was manned well in excess of the Minimum Safe Manning Document (MSMD). She had a crew of 29, whilst the MSMD requires 25.

Manning level was not a factor to the accident.

4.1.4 Working and Living Conditions

At the time of the accident, the ship had valid Maritime Labour Compliance Certificate (MLC) issued by BV. There was no evidence to suggest, that the working and living conditions were a contributory factor to the incident.

The working and living conditions were not considered as a contributory factor to the accident.

4.1.6 Physiological, Psychological, Psychosocial Condition

All crew members were holders of medical certificate for service at sea issued in compliance with the STCW (1978) and MLC, 2006 Conventions as amended. They were certificated as fit for sea duty without restrictions and not suffering from any medical condition likely to be aggravated by service at sea or to render the seafarer unfit for such service or to endanger the health of other persons on board.

There was no evidence to suggest that the physical, physiological, psychological, or psychosocial conditions of the Master and the crew, were contributory factors to the accident.

4.1.5 Fatigue

At the time of the accident on the Nav Bridge were the Master, the C/O and the C/E. The ship operates with two crew shifts: night and day shifts. The crew performs 12 hours shifts.

Hours of Rest

The STCW Code stipulates that watchkeepers, including the Master, are required to take mandatory minimum rest periods in order to be fit for duty. In summary the requirements are:

- Minimum of 77 hours rest in any 7-day period
- Minimum of 10 hours rest in any 24-hour period.

The 10-hour rest period should not be split into more than 2 periods, one of which should be at least 6 consecutive hours, with the interval between periods being not more than 14 hours.

At the time of the accident, the recorded hours of rest of the Master, C/O and C/E in the last 24 - hour period and in the last 7 - day period, were in accordance with the requirements of the STCW, 1978 as amended and the MLC, 2006.

Fatigue was not considered as a factor to the accident.

MASTER

0.0	M/F "KATTEGAT"		Position/ Rank : Master													Flag : Cyprus										
Seafarer :															yes		no									
Month and year :		17. March 2022													<input checked="" type="checkbox"/>		<input type="checkbox"/>									
		16. April 2022																								
Hours	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Hours of work in 24-hour period	Hours of rest in 24-hour period
Date																										
17									\	X	X	X	X	X	X	X	X	X	X	X	X	X	X		13.5	10.5
18										X	X	X	X	X	X	X	X	X	X	X	X	X	\		12.5	11.5
19									\	X	X	X	X	X	X	X	X	X	X	X	X	X	\		13.0	11.0
20										X	X	X	X	X	X	X	X	X	X	X	X	X	X		13.0	11.0
21										X	X	X	X	X	X	X	X	X	X	X	X	X	X		13.0	11.0
22									\	X	X	X	X	X	X	X	X	X	X	X	X	X	\		13.0	11.0
23										X	X	X	X	X	X	X	X	X	X	X	X	X	X	\	13.5	10.5
24										\	X	X	X	X	X	X	X	X	X	X	X	X	X		12.5	11.5
25										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14.0	10.0
26										\	X	X	X	X	X	X	X	X	X	X	X	X	\		12.0	12.0
27										\	X	X	X	X	X	X	X	X	X	X	X	X	X	\	13.0	11.0
28										\	X	X	X	X	X	X	X	X	X	X	X	X	X	\	13.0	11.0
29										\	X	X	X	X	X	X	X	X	X	X	X	X	X		12.5	11.5
30										\	X	X	X	X	X	X	X	X	X	X	X	X	X		12.5	11.5
31																							X	X	2.0	22.0
01	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	24.0	0.0
02	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	16.0	8.0
03	X	X	X								\	X	X	X	X	X									8.5	15.5
04																									0.0	24.0
05																									0.0	24.0
06																									0.0	24.0
07																									0.0	24.0
08																									0.0	24.0
09																									0.0	24.0
10																									0.0	24.0
11																									0.0	24.0
12																									0.0	24.0
13																									0.0	24.0
14																									0.0	24.0
15																									0.0	24.0
16																									0.0	24.0
																								231.5		

Master's 12-Hours shift. The ship operates with two 12-Hour night and day shifts.

23-09: Rest Hours

**1 hour = X , half hour = **

CHIEF ENGINEER

Name of ship : **M/F "KATTEGAT"**

Position/ Rank **Ch. Engineer**

Flag : **Cyprus**

Seafarer : _____ yes no

Month and year : **17. March 2022** Watchkeeper: _____ **x**

16. April 2022

Hours	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Hours of work in 24-hour period	Hours of rest in 24-hour period	
Date																											
17	x	x	x	x	x	x	x	x	x																9.0	15.0	
18																									0.0	24.0	
19																									0.0	24.0	
20																									0.0	24.0	
21																									0.0	24.0	
22																									0.0	24.0	
23																									0.0	24.0	
24																									0.0	24.0	
25																									0.0	24.0	
26																									0.0	24.0	
27																									0.0	24.0	
28																									0.0	24.0	
29																									0.0	24.0	
30																									0.0	24.0	
31																					x	x	x	x	4.0	20.0	
01	x	x	x	x	x	x	x	x	x												\	x	x	x	12.5	11.5	
02	x	x	x	x	x	x	x	x	x													\	x	x	x	12.5	11.5
03	x	x	x	x	x	x	x	x	x													\	x	x	x	12.5	11.5
04	x	x	x	x	x	x	x	x	x													\	x	x	x	12.5	11.5
05	x	x	x	x	x	x	x	x	x													\	x	x	x	12.5	11.5
06	x	x	x	x	x	x	x	x	x													\	x	x	x	12.5	11.5
07	x	x	x	x	x	x	x	x	x													\	x	x	x	12.5	11.5
08	x	x	x	x	x	x	x	x	x													\	x	x	x	12.5	11.5
09	x	x	x	x	x	x	x	x	x													\	x	x	x	12.5	11.5
10	x	x	x	x	x	x	x	x	x													\	x	x	x	12.5	11.5
11	x	x	x	x	x	x	x	x	x													\	x	x	x	12.5	11.5
12	x	x	x	x	x	x	x	x	x													\	x	x	x	12.5	11.5
13	x	x	x	x	x	x	x	x	x													\	x	x	x	12.5	11.5
14	x	x	x	x	x	x	x	x	x													\	x	x	x	12.5	11.5
15	x	x	x	x	x	x	x	x	x													\	x	x	x	12.5	11.5
16	x	x	x	x	x	x	x	x	x													\	x	x	x	12.5	11.5
																										213.0	

Chief Engineer's 12-Hours shift. The ship operates with two 12-Hour night and day shifts. 09-20:Rest Hours

**1 hour = X , half hour = **



CHIEF OFFICER

Name of ship : **MF "Kattegat"** Position/ Rank : **Chief Officer** Flag : **Cyprus**

Seafarer : _____
 Month and year : **17. March 2022** Watchkeeper: yes no

16. April 2022

Hours	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Hours of work in 24-hour period	Hours of rest in 24-hour period
Date																										
17									\	X	X	X	X	X	X	X	X	X	X	X	X	X	X		13.5	10.5
18										X	X	X	X	X	X	X	X	X	X	X	X	X	\		12.5	11.5
19									\	X	X	X	X	X	X	X	X	X	X	X	X	X	\		13.0	11.0
20										X	X	X	X	X	X	X	X	X	X	X	X	X	X		13.0	11.0
21										X	X	X	X	X	X	X	X	X	X	X	X	X	X		13.0	11.0
22									\	X	X	X	X	X	X	X	X	X	X	X	X	X	\		13.0	11.0
23										X	X	X	X	X	X	X	X	X	X	X	X	X	X	\	13.5	10.5
24									\	X	X	X	X	X	X	X	X	X	X	X	X	X	X		12.5	11.5
25										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14.0	10.0
26									\	X	X	X	X	X	X	X	X	X	X	X	X	X	\		12.0	12.0
27									\	X	X	X	X	X	X	X	X	X	X	X	X	X	X	\	13.0	11.0
28									\	X	X	X	X	X	X	X	X	X	X	X	X	X	X	\	13.0	11.0
29									\	X	X	X	X	X	X	X	X	X	X	X	X	X	X		12.5	11.5
30									\	X	X	X	X	X	X	X	X	X	X	X	X	X	X		12.5	11.5
31																							X	X	2.0	22.0
01	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X		19.0	5.0
02									X	X	X	X	X	X	X	X					X	X	X	X	12.0	12.0
03	X	X	X	X						X	X	X	X	X	X										10.0	14.0
04																									0.0	24.0
05																									0.0	24.0
06																									0.0	24.0
07																									0.0	24.0
08																									0.0	24.0
09																									0.0	24.0
10																									0.0	24.0
11																									0.0	24.0
12																									0.0	24.0
13																									0.0	24.0
14																									0.0	24.0
15																									0.0	24.0
16																									0.0	24.0
																								224.0		

Chief Officer's 12-Hours shift. The ship operates with two 12-Hour night and day shifts. 23-09: Rest Hours
**1 hour = X , half hour = **



4.2 The Ship

4.2.1 M/V “KATTEGAT”

The Motor Vessel (M/V) “KATTEGAT” is a RO-RO / Passenger/Ship (vehicles) built in 1996, by ORSKOV YARD - FREDERIKSHAVN, DENMARK. Currently sailing under the flag of Cyprus. It is certified to carry, 974 passengers and 230 vehicles. The vessel was in routine RO - RO / Pax service between Spain and Morocco.

Ownership and Management

Ship Manager / Commercial manager: FORDE REEDEREI SEETOURISTIK Norderhofenden 19-20, Altstadt, 24937 Flensburg, Germany. IMO 5030312

ISM Manager: FRS IBERIA SL Poligono Industrial la Vega, Calle de La Linea de la Concepcion 3, 11380 Tarifa (Cadiz), Spain. IMO 5245751

Registered owner: PASCHAMO SHIPPING CO LTD Care of Forde Reederei Seetouristik GmbH & Co KG, Norderhofenden 19-20, Altstadt, 24937 Flensburg, Germany. IMO 5629745

P&I Club: The Ship owners' Mutual P&I Association (Luxembourg)

Certification and Classification

At the time of the accident the “KATTEGAT” was classed by BV (IACS Member). She had valid statutory certificates issued by BV. (BV Register No.: 39N480). She had no any class or statutory conditions. Recognized Organization (RO) issuing DOC & ISMC certificates: DNV.

Minimum number of persons with required qualifications to operate the radio installations: Three (3). The vessel operates with two ECDIS. Back-up arrangements for ECDIS, are provided by 2nd ECDIS which is accepted as complying with the up-to-date charts required by regulation V/20 of the 1974 SOLAS Convention.

Port State Control (PSC)

The last Port State Control (PSC) Inspection carried out by the Paris MoU, was on 05/10/2021 at Algeciras (Spain). Type of inspection: Expanded inspection. Number of deficiencies 0.

The last Port State Control (PSC) Inspection carried out by the Mediterranean MoU, 26/05/2021 at Tanger Med (Morocco). Type of inspection: More detailed inspection. Number of deficiencies 0.

After the accident, an Expanded Port State Control (PSC) inspection was carried out by Paris MoU, on 04/04/2022 at Algeciras (Spain) with zero (0) deficiencies.

4.2.2 VDR

The S-VDR (Type: S-VDR DANELEC DM200/DM300), was stopped and saved after the incident.

4.2.3 Ship's Radio & Navigational Equipment

Passenger Ship Safety Certificate No.: CDX0/JPL/20220416093740 - Issued by BV at ALGECIRAS, on the 16 April 2022 and valid until 19 April 2023. At the time of the incident, the vessel's navigation systems and equipment were as required and properly functioning. There was no evidence of any defect or malfunction of the Navigation systems and equipment that could have contributed to the accident.

There was no evidence of any defect or malfunction of the Navigation systems and equipment that could have contributed to the accident.

According to the Record of Equipment for Compliance with the International Convention for the Safety Of Life At Sea, (SOLAS) 1974, as amended, (Form P) the “KATTEGAT” was equipped with the following Nav & Radio equipment:

Extracted from “Form P” attached to the Passenger Ship Safety Certificate

Navigational equipment

- 1 Standard magnetic compass* FITTED
- 1.3 Gyro compass* FITTED
- 1.4 Gyro compass heading repeater* FITTED
- 1.5 Gyro compass bearing repeater* FITTED
- 1.7 Pelorus or compass bearing device* FITTED
- 1.8 Means of correcting heading and bearings -
- 1.9 Transmitting heading device (THD)* FITTED
- 2.1 Electronic charts display and information system (ECDIS) FITTED
- 2.2 Back up arrangements for ECDIS ECDIS
- 2.3 Nautical publications FITTED
- 3.1 Receiver for a global navigation satellite system* FITTED
- 3.2 9 Ghz radar* FITTED
- 3.3 Second radar ((3 GHz))* FITTED
- 3.4 Automatic radar plotting aid (ARPA)* FITTED
- 3.5 Automatic tracking aid* FITTED
- 4.1 Automatic identification system (AIS) FITTED
- 4.2 Long-range identification and tracking system FITTED
- 5 Voyage data recorder (VDR) FITTED
- 6.1 Speed and distance measuring device (through the water)* FITTED
- 6.2 Speed and distance measuring device * FITTED
- 7 Echo sounding device* FITTED
- 8.1 Rudder, propeller, thrust, pitch and operational mode indicator* FITTED
- 8.2 Rate of turn indicator* FITTED
- 9 Sound reception system* FITTED
- 10 Telephone to emergency steering position* FITTED
- 11 Daylight signalling lamp* FITTED
- 13 International Code of Signals FITTED
- 14 IAMSAR Manual, Volume III FITTED
- 15 Bridge navigational watch alarm system (BNWAS) FITTED

** Alternative means of meeting this requirement are permitted under regulation V/19. In case of other means they shall be specified*

Radio equipment

1 Primary systems

- 1.1 VHF radio installation:
 - 1.1.1 DSC encoder FITTED
 - 1.1.2 DSC watch receiver FITTED

1.2 MF radio installation:

- 1.2.1 DSC encoder FITTED
- 1.2.2 DSC watch receiver FITTED
- 1.2.3 Radiotelephony FITTED

1.3 MF/HF radio installation:

- 2 Secondary means of alerting FITTED

3 Facilities for reception of maritime safety information

- 3.1 NAVTEX receiver FITTED

4 Satellite EPIRB

- 4.1 COSPAS-SARSAT FITTED

6 Ship’s search and rescue locating device

- 6.1 Radar search and rescue transponder (SART) FITTED

Methods used to ensure availability of radio facilities (SOLAS regulations IV/15.6 and 15.7)

Duplication of equipment: YES, Shore-based maintenance: YES, At-sea maintenance capability: NO



4.2.2 Pilot Boat SVITZER OUED MARTIL



Specifications

Type of vessel:	Pilot boat Crew:1 Passengers:11
Port of registry:	Port of Tanger Med, Morocco
Flag:	Morocco
Owner:	Svitzer Tanger Med, Morocco
Operator:	Svitzer Tanger Med, Morocco
Builder:	Safehaven Marine, Ireland
Length overall:	14.9 metres
Beam:	4.4 metres
Draught:	1.3 metres
Displacement:	20.5 tonnes
Main engines:	2 x Volvo D13, each 372 kW
Gearboxes:	2 x ZF 500
Propulsion:	4 x fixed-pitch propellers
Maximum speed:	25 knots
Radar:	Raymarine ECDS
Radios:	2 x Raymarine VHF DSC
GPS:	Raymarine dual beam graphic display GPS
AIS:	Comar
Other electronics:	Raymarine displays
Fendering:	Safehaven Marine
Other equipment installed:	Pilot transfer platform with adjustable boarding ladder; air-conditioning system with 27,000 btu output and 5kW inverter
Seating:	7 x KAB suspension seats in pilothouse
Safety equipment:	Safehaven Marine man overboard recovery system
Type of fuel:	Diesel
Fuel capacity:	1,850 litres
Freshwater capacity:	110 litres



Navigation Bridge - Pilot Boat SVITZER OUED MARTIL



Interior - Pilot Boat SVITZER OUED MARTIL

“Svitzer MC” performs operations at the Port of Tanger Med on the Strait of Gibraltar east of Tangier, Morocco. The “SVITZER OUED MARTIL” was being used by Svitzer’s Moroccan subsidiary, Svitzer Tanger Med, in Tangier. It possesses both all-weather and self-righting capability, being made possible due to four separate watertight compartments installed in the hull. It is powered by a pair of Volvo D13 372kW engines with ZF gearboxes and a conventional shaft drive, with an operational speed of 25 knots. The pilothouse has KAB suspension seating for up to seven people including the operator, while seating for an additional five people is available in the forward cabin, which also contains a navigation display and VHF radio. The boat facilitates pilot transfers via a sliding platform with an adjustable reach boarding ladder. The platform can be elevated approximately 1.2 metres above deck, making the boat capable of transfers to and from the ships of varying heights and sizes that call at Tanger Med. The platform is designed to be accessed from the opposing side for boarding, with the pilot able to transverse quickly and safely across the foredeck. The distance from the ship’s side to the boarding platform itself is adjustable in three stages, and can be set to suit the sea state and according likely roll of the vessel. As such it can be extended out for calm seas, set at an intermediary position, or fully retracted in rough conditions to reduce the risk of the platform edge impacting the ship’s side. The position of the platform can be set prior to departing or just in advance of the manoeuvre, once the boarding conditions have been assessed. A full suite of “Raymarine” electronics is installed at the central helm position, which provides excellent all round visibility and control of the craft when undertaking alongside ship pilot transfers. All navigational screens and instrumentation are easily viewable and accessible from the central helm position, ensuring that operators can remain seated and at the controls while underway and during transfers. Fitted with “Safehaven’s” sacrificial shoulder fender system, protecting the main boarding area and cushioning the inevitable hard impact that can occur in poor conditions, the larger fender also facilitates a gap for the ship’s boarding ladder to lie when alongside without getting trapped. It is also equipped with “Safehaven’s” proprietary man overboard recovery system on the transom, making it suitable for ad hoc rescue duties in port.



Pilot Boat SVITZER OUED MARTIL

4.3 The Environment

External environment:

General port information

Port Tanger Med is located in the North of the Kingdom of Morocco, on the southern shore of the Strait of Gibraltar and consists of:

1. Port-Tangier Med I is sheltered by two protective dykes and has a basin with a circle of avoidance in the format of a 600 m radius circle.
2. Port Tanger Med 2 is sheltered by two protective dykes and has a basin with a circle of avoidance in format an ellipse with the smallest radius of 600 m.
3. Port Tanger Med Passengers is sheltered by two breakwaters protection, longitudinal and transverse and has a basin with a swinging circle in the format of an ellipse of radius smaller than 300 m.

The Tanger Med port is exposed to the wind and swell of dominant sector East and West.

Weather Conditions

The weather conditions during departure of the RO – RO / PAX “KATTEGAT” from the port of Tangiers on 01/04/2022 at around 04:00 Hrs LT, were: Westerly wind 6 Beaufort (25-30 knots) and Moderate Sea 1.5 – 2.0 meters waves. Easterly-North-Easterly current of approx. 3 knots. It was clear night and the visibility was good.

Due to the wind, waves and the current, the vessel was drifting at an angle of around 15° which caused it to be heading to a northerly course, nevertheless, making north easterly course over the ground.

As the pilot boat was navigating with 13-14 knots, due to waves sea spray was thereby created, which may have obstructed its visibility, nevertheless, there is no relevant evidence.

Adverse weather conditions which caused reduced visibility may have been a contributing factor to the accident.

4.4 Safety Management

General

The Management Company of the “KATTEGAT” implements a comprehensive and well documented Safety Management System (SMS), including navigation procedures and instructions. The Voyage Plan was in order and complete, including charts, manoeuvring data, pilot and port information, tide tables etc. as required by SOLAS Ch.V Reg.34 and IMO Res. A893 (21) - Guidelines for voyage planning. The plan covered the entire passage from berth to berth.

The course of the pilot boat as shown on the S-VDR recording was not steady but was continuously changing. At 04:47 Hrs LT, its course was 230°, clearing the “KATTEGAT” from ahead. Shortly after, at 04:47:37 Hrs LT, the pilot boat changed her course to port, to 220°. However, suddenly the pilot boat changed again her course to starboard and headed towards ahead of the “KATTEGAT”.

We will examine the case, with reference to the Convention on the International Regulations for Preventing Collisions at Sea, 1972 (Consolidated edition, 2018). Particular reference will be made to Colregs Rule 1 regarding rules made by an appropriate authority (Tanger Med Local Regulations) and to other Colregs Rules (No. 5,6,7,8,15,18,34,36) applicable to the subject case. The rules will be analysed in order to find out the contributing causes of the accident.

It is noted that no comments will be made for the actions of the pilot boat, due to the fact that there is no evidence of what was going on, on that, or if something unexpected occurred and such easily manoeuvrable boat collided with a large vessel.

COLREGS PART A – GENERAL, Rule 1- Application:

- (a) These Rules shall apply to all vessels upon the high seas and in all waters connected therewith navigable by seagoing vessels.
- (b) **Nothing in these Rules shall interfere with the operation of special rules made by an appropriate authority** for roadsteads, harbours, rivers, lakes or inland waterways connected with the high seas and navigable by seagoing vessels. Such special rules shall conform as closely as possible to these Rules.

Colregs Rule 1(b) above, gives priority to Tanger Med Port Operating Rules (special rules made by an appropriate authority). According to Tanger Med Port Operating Rules, Section 95, 102, 103: Tanger Med Port Operating Rules (in free translation)

Tanger Med Port Operating Rules Section 95 provides that vessels with an overall length of less than 50 meters must not obstruct the passage of any other vessels of a length greater than or equal to 50 meters.

According to Section 102, traffic priority is given to deep - draft vessels and Section 103 provides that the priority vessel must cross first and the non-priority vessel will have to adjust its speed to avoid crossing or overtaking.

Tanger Med Port Operating Rules adopted good seamanship practice. The spirit of these rules, is that small vessels with high manoeuvrability, must not obstruct the passage of large vessels. Accordingly, the pilot boat whose overall length was 14.9 metres should not have obstructed the passage of the “KATTEGAT” whose overall length was 136.40 metres.

The situation would not have resulted in close-quarters, if the pilot boat had not made the final starboard turn, but instead kept on a steady course. The unexpected sudden course alteration to starboard, which at that very moment obstructed the passage of the “KATTEGAT”, was the immediate cause of the collision.

Therefore, contravention of Tanger Med Port Operating Rules, Section 95, 102, 103 by the pilot boat, (providing that vessels with an overall length of less than 50 meters must not obstruct the passage of any other vessels of a length greater than or equal to 50 meters, that traffic priority is given to large draft vessels and that the priority vessel must cross first and the non-priority vessel will have to adjust its speed to avoid crossing or overtaking), was a contributing factor of the accident.

Contravention by the pilot boat of Tanger Med Port Operating Rules, Section 95, 102, 103 was a contributing factor of the accident.

Colregs Section I 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.

Also, STCW 95 requires that at night, a look-out man should be posted on the navigation bridge. STCW 95/VIII PART 3-1-13: A proper look-out shall be maintained at all times in compliance with Colregs Rule 5, who amongst others, should be fully appraising the situation and the risk of collision. STCW 95/VIII PART 3-1-14: The look-out must give full attention to the keeping of a proper look-out and no other duties shall be undertaken or assigned which could interfere with that task. STCW 95/VIII PART 3-1-16: In determining that the composition of the navigational watch is adequate to ensure that a proper look-out can continuously be maintained, the master shall take into account all relevant factors, including the following factors:

- 1 visibility, state of weather and sea
- 2 traffic density, and other activities occurring in the area in which the vessel is navigating
- 3 the attention necessary when navigating in or near traffic separation schemes or other routing measures

Proper look-out by sight and hearing: On the “KATTEGAT’s” navigation bridge during departure at night-time, were two navigation officers, the Captain and the Chief Officer. The Chief Engineer was also on the navigation bridge, but his presence does not contribute to navigation. No dedicated look-out man was posted. The Captain or the Chief Officer cannot be considered as look out men, because no other duties shall be undertaken by the look-out man and during departure from port, nav officers are occupied with navigation, i.e., course keeping, position fixing, communications with VTS and other vessels for collision avoidance and electronic navigation instruments operation and use.

It should be noted, that during departure from port, traffic density including movements of small service vessels, requires increased vigilance. Also, there was no Quartermaster, but even if there was, he is not considered to be the look-out while steering, except on small vessels where an unobstructed all-round view is provided at the steering position and there is no impairment of night vision or other impediment to the keeping of a proper look-out.

All available means to make a full appraisal of the situation and of the risk of collision: It was fulfilled by having all navigational equipment (RADAR, ARPA, AIS, VHF) in operation and in use by the Captain and the Chief Officer. Nav Officers (according to their statements) as soon as the “KATTEGAT” passed the port’s breakwater, spotted the pilot boat in the RADAR on the vessel’s starboard side, and followed up its movement. The Master also stated that he saw the pilot boat visually and in the Radar in distance about 1NM.

Improper look-out by the “KATTEGAT”.

(Safety Issue)



Colregs Rule 36 - Signals to attract Attention

If necessary, to attract the attention of another vessel any vessel may make light or sound signals, or may direct the beam of her searchlight (Altis lamp) in the direction of the danger.

At 02:49:11 UTC, the “KATTEGAT”s” Captain, used the horn to warn the pilot boat and stopped & reversed the engines to full astern to avoid collision. The pilot boat did not react. Therefore, no reaction by the pilot boat to the sound signals, was a contributing factor to the collision.

No reaction by the pilot boat to the sound signals made by the “KATTEGAT” was a contributing factor to the accident.

Colregs Section I 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.

The movements of the pilot boats were not communicated by the VTS and the VTS stated to the Captain of the “KATTEGAT” that the port is clear for departure. Onboard the “KATTEGAT” was a routine departure. The “KATTEGAT” cleared the port’s breakwater at 8 knots and started increasing to reach cruising speed. When the collision occurred the speed of the “KATTEGAT” was 11 Knots. Being a liner and doing the same route every day many times, it is understandable that the Captains are used to this practice. Also, navigators on large vessels, expect that small and easily manoeuvrable boats are taking care of them. Therefore, the speed of the “KATTEGAT” cannot be considered unsafe.

Colregs Section I Rule 7 - Risk of collision

(a) Every vessel shall use all available means appropriate to the prevailing circumstances and conditions to determine if risk of collision exists. If there is any doubt such risk shall be deemed to exist.

(b) Proper use shall be made of radar equipment if fitted and operational, including long-range scanning to obtain early warning of risk of collision and radar plotting or equivalent systematic observation of detected objects.

(c) Assumptions shall not be made on the basis of scanty information, especially scanty radar information.

(d) In determining if risk of collision exists the following considerations shall be taken into account:

(i) such risk shall be deemed to exist if the compass bearing of an approaching vessel does not appreciably change;

(ii) such risk may sometimes exist even when an appreciable bearing change is evident, particularly when approaching a very large vessel or a tow or when approaching a vessel at close range.

The impression was formed to the navigators on the “KATTEGAT”, that the pilot boat was going to pass from forward (in safe distance), then from aft and then again, the pilot boat changed course to pass from forward. These conditions have caused confusion to the navigators, so as not being able to determine if risk of collision exists in order to react and take timely action to avoid the collision. Therefore, confusion caused by successive course alterations by the pilot boat was contributing factor to the collision.

Confusion caused by successive course alterations by the pilot boat was a contributing factor to the accident.

Colregs Section I Rule 8 - Action to avoid collision

(a) Any action to avoid collision shall be taken in accordance with the Rules of this Part and shall, if the circumstances of the case admit, be positive, made in ample time and with due regard to the observance of good seamanship.

(b) Any alteration of course and/or speed to avoid collision, shall, if the circumstances of the case admit, be large enough to be readily apparent to another vessel observing visually or by radar; a succession of small alterations of course and/or speed should be avoided.

(c) If there is sufficient sea room, alteration of course alone may be the most effective action to avoid a close-quarters situation provided that it is made in good time, is substantial and does not result in another close-quarters situation.

(d) Action taken to avoid collision with another vessel shall be such as to result in passing at a safe distance. The effectiveness of the action shall be carefully checked until the other vessel is finally past and clear.

(e) If necessary to avoid collision or allow more to assess the situation, a vessel shall slacken her speed or take all way off by stopping or reversing her means of propulsion.

(i) A vessel which, by any of these Rules, is required not to impede the passage or safe passage of another vessel shall, when required by the circumstances of the case, take early action to allow sufficient sea room for the safe passage of the other vessel.

(ii) A vessel required not to impede the passage or safe passage of another vessel is not relieved of this obligation if approaching the other vessel so as to involve risk of collision and shall, when taking action, have full regard to the action which may be required by the Rules of this part.

(iii) A vessel the passage of which is not to be impeded remains fully obliged to comply with the rules of this part when the two vessels are approaching one another so as to involve risk of collision.

Action taken to avoid collision can be either alteration of course, or speed or both. Must be positive, made in ample time and large enough. If there is sufficient sea-room, alteration of course alone may be the most effective action to avoid a close-quarters situation. The final alteration of course to starboard by the pilot boat, did not give sufficient time to the “KATTEGAT”, to make in good time a substantial alteration of course, or speed or both and there was no sufficient sea room to avoid the collision.

The situation would not have resulted in close-quarters, if the pilot boat was not turning to starboard but instead, keeping on steady course. Therefore, it is considered that the unexpected sudden course alteration to starboard by the pilot boat, was the immediate cause of the collision.

The unexpected sudden course alteration to starboard by the pilot boat, was the immediate cause of the incident.

Colregs Section I Rule 15

Crossing Situation

When two power-driven vessels are crossing so as to involve risk of collision, the vessel which has the other on her own starboard side shall keep out of the way and shall, if the circumstances of the case admit, avoid crossing ahead of the other vessel.

This rule applies when two ships are approaching each other on a steady bearing, over a period of time. The pilot boat was not on steady course, therefore the rule does not apply to the case.

Colregs Section I Rule 34(d)

(d) When vessels in sight of one another are approaching each other and from any cause either vessel fails to understand the intentions or actions of the other, or is in doubt whether sufficient action is being taken by the other to avoid collision, the vessel in doubt shall immediately indicate such doubt by giving at least five short and rapid blasts on the whistle. Such signal may be supplemented by a light signal of at least five short and rapid flashes.

One prolonged blast was given by the “KATTEGAT” instead of five short blasts, nevertheless it is not considered that in the circumstances had any lesser effect.

Rule 18

Responsibilities between Vessels

d) (i) Any vessel other than a vessel not under command or a vessel restricted in her ability to manoeuvre shall, if the circumstances of the case admit, avoid impeding the safe passage of a vessel constrained by her draught, exhibiting the signals in Rule 28.

This rule in essence takes effect by implication through the Tanger Med Port Rules, though is not applicable in the subject case, in which there are two power driven vessels indifferent of their size and the “KATTEGAT” is not constrained by her draft but is a large vessel.

Nevertheless, the spirit of the rule that is: the vessel with substantially higher manoeuvrability like a small service boat vis a vis large vessel to perform collision avoidance manoeuvring, consists traditionally good seamanship practice. This kind of situation is largely encountered in port approaches like the subject case.

Therefore, inadequate good seamanship practice by the pilot boat, has been a contributing factor to the incident.

Inadequate good seamanship practice by the pilot boat, was contributing factor to the accident.

5. CONCLUSIONS

Direct Cause:

The unexpected sudden course alteration to starboard by the pilot boat, was the immediate cause of the incident.

Contributing Cause(s):

Confusion caused by successive course alterations by the pilot boat was a contributing factor to the accident.

Inadequate good seamanship practice by the pilot boat, was contributing factor to the accident.

Contravention by the pilot boat of Tanger Med Port Operating Rules, was a contributing factor of the accident.

No reaction by the pilot boat to the sound signals made by the “KATTEGAT” was a contributing factor to the accident.

Adverse weather conditions which caused reduced visibility may have been a contributing factor to the accident.

Safety Issues

Improper look-out by the “KATTEGAT”. (Safety Issue)

6. Recommendations

To Management Company

1. Review the casualty within the scope of the Safety Management System (SMS), and bridge crew conduct during port approach and departure, to be addressed.
2. Maritime Resources Management (MRM) Training will improve situational awareness and communication skills of navigation officers. To be considered.
3. Bridge Simulator Training for navigation officers to be considered.

(Within 3 months)

7. ACTIONS TAKEN

7.1 Actions taken by Management Company, by 19 July/2023 (Within one month)

1. Review the casualty within the scope of the Safety Management System (SMS), and bridge crew conduct during port approach and departure, to be addressed. - **COMPLETED (new guidelines created, issued and implemented onboard) - attached.**
2. Maritime Resources Management (MRM) Training will improve situational awareness and communication skills of navigation officers. To be considered. **COMPLETED, all deck and engine officers have been participating in FRS BRM course which was developed on the lessons learnt. - see attached outline and lesson plan**
3. Bridge (Simulator) Training for navigation officers to be considered. **COMPLETED - practical trainings are part of the FRS BRM course followed up with onboard navigational assessments - attached an example, last assessment done onboard the Kattegat.**