VERY SERIOUS MARINE CASUALTY FINAL REPORT

NAME OF THE VESSEL	: EPHESOS / POLATBEY 1
IMO No	:9607423 / -
FLAG OF THE VESSEL	: GREECE / TURKEY
LOCATION OF ACCIDENT	: Off the Port of Karataş - MEDITERRANEAN
DATE OF ACCIDENT	: 11/11/2020 / 05.46 LT
FATALITY/INJURY	:5 /-
DAMAGE CONDITION:	: POLATBEY-1 Sunken/ EPHESOS No Damage
ENVIRONMENT POLLUTION	: Not reported

Board Decision No: 05(D-01/2022 *Date: 21/ 03 / 2022*

The sole objective of this investigation is to make recommendations for the prevention of similar accidents and incidents within the framework of the Transport Safety Investigation Center regulation. This report neither has the value of judiciary and administrative investigation nor bears the purpose to apportion blame or liability.

LEGAL BASIS

This marine casualty has been investigated by the provisions of the “Regulation to Investigate Maritime Accidents and Incidents ” published and enacted in the Official Gazette dated 11/27/2019 and numbered 30961.

International Standards for Safety Investigations into marine casualties or Incidents (MSC 255(84) and Resolution A.1075 (28) and International Maritime Organization Decisions on Recommended Practices (Accident Investigation Code) and Directive 2009/18/EC of the European Union have also been taken into account for the procedures and principles of the investigation.

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DEFINITIONS and ABBREVIATIONS

GMT : Greenwich Mean Time

LT : Local Time

VTMS : Vessel Traffic Management System

VTSC : Vessel Traffic Service Center

VDR : Voyage Data Recorder

AIS : Automatic Identification System

ARPA : Automatic Radar Plotting Aid

VHF : Very High Frequency

STCW Code : Standards of Training, Certification & Watchkeeping for Seafarers

ILO : International Labour Organization

IMO : International Maritime Organization

COLREGS : International Regulations for Preventing Collisions at Sea

ECDIS : Electronic Chart Display and Information System

MT : Metric Tons

OOW : Officer on Watch

AIS : Automatic Identification System

EOS : Electro-Optical System

RDF : Radio Direction Finder

MHF : Medium/High Frequency

VTS : Vessel Traffic Service

TSS : Traffic Separation Schemes

TMS : Traffic Monitoring Station

nm : Nautical Mile

VRM : Variable Range Marker

BCR : Bow Crossing Range

CPA : Closest Point of Approach

TCPA : Time to Closest Point of Approach

COG : Course Over Ground

VIS : Visibility Sensor

SUMMARY

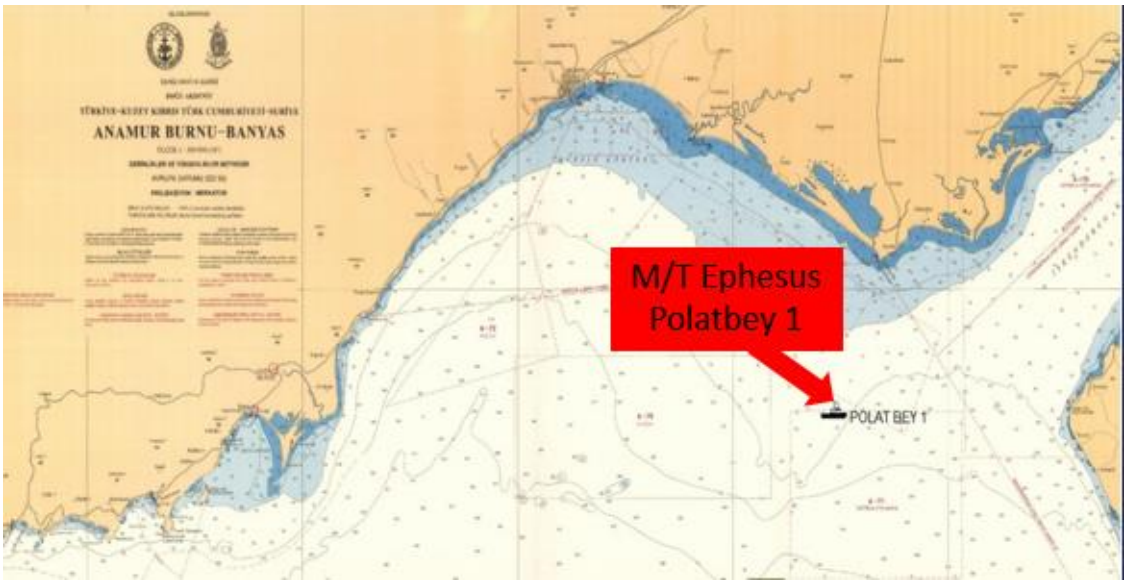

Image 1: Accident Location

Note: All times used in the report are local time (GMT +3)

The Greek flag tanker, EPHESOS, departed on November 11, 2020 at 01:18 AM to transport the crude oil of 139164.4 MT to the port of Dung Quat/Vietnam, which had been loaded from the port of BOTAS. At 5:46 AM, M/T EPHESOS collided with the Turkish-flagged fishing vessel POLATBEY 1, at a distance off 15 nautical miles from the port of Karataş.

As a result of the accident, the fishing vessel POLATBEY 1 capsized and five (5) people on board died. The tanker, EPHESOS did not sustain any damage due to the collision.

The investigation of the accident indicated that no proper avoiding manoeuvres were performed to prevent a collision by both vessels according to the International Regulations for Preventing Collisions at Sea (COLREG) rules. Furthermore, the Master's standing orders were not followed by the Officer on Watch of the tanker, EPHESOS before the collision.

Based on the conclusions of the accident investigation, recommendations were made to the operator of the tanker, EPHESOS, the General Directorate of Maritime Affairs, the General Directorate of Coastal Safety and the Chambers of Shipping.

SECTION 1 - FACTUAL INFORMATION

1.1 Information on the Vessel

	EPHESOS	**POLATBEY-1**
Flag	Greek	Turkish Flag
Class Society	Det Norske Veritas (DNV)	-
IMO Number	9607423	-
Type	Petroleum Tanker	Fishing Vessel
Shipowner	ELIA NAVIGATION Ltd.	ÖMER POLAT
Operator	ANDRIAKI Shipping Co. Ltd.	-
Place and Year of Building	Korea -2012	Karataş /Adana - 2016
Gross Tonnage	84850	95
Length Over All	274,18 meters	21,5 meters
Main Engine and Its Power	HYUNDAI – 18660 kW	CATERPILLAR – 480 BHP

Image 2: The Tanker EPHESOS

Image 3: The fishing vessel POLATBEY 1

1.2 Information on Vessel Navigation

	EPHESOS	**POLATBEY-1**
Port of Departure	Botaş-Ceyhan /Turkey	Mersin/TURKEY
Port of Arrival	Dung Quat/Vietnam	Mersin/TURKEY
Cargo Information	141645 MT Crude Oil	-
Crew Onboard	27 (Seamen)	5 (3 fishermen)
Minimum Number of Seaman	12	2
Type of Navigation	Oceangoing	Near Coastal Voyage

1.3 Information on Accident

Date/Time of Accident	11/11/2020/ 5:46 AM Local time
Accident Type (IMO)	Very Serious Marine Casualty

Type of Accident	Collision
Location of Accident	Off the Port of Karataş/Adana - MEDITERRANEAN
Dead/Injured/Loss	-/5/-
Damage	The fishing vessel POLATBEY 1 became unusable.
Pollution	Not reported

1.4 Information on Environment Conditions

Wind	NE Moderate breeze, 4 Beaufort
Sea Condition	Slightly wavy, wave height approx. 1 m
Visibility	Good
Weather Condition	Overcast

1.5 The infrastructure of Mersin Vessel Traffic Services

Mersin Vessel Traffic Services, which covers Mersin and Iskenderun Bays, was established under the Vessel Traffic Management System Project undertaken by the Maritime Administration.

Information on surface vessel traffic is collected in the vessel traffic services areas by combining various equipment and sensors. Mersin Vessel Traffic Services (VTS) consists of one (1) centre and eight (8) Traffic Monitoring Stations (TMS). The following table shows the locations and capabilities of the Traffic Monitoring Centers.

VTSC/ TSS	Province	District	Radar	VHF	OTS	RYB	EOPolaS	Meteorological devices	VIS	MHF
Mersin (VTSC)	Mersin	Mersin	X	X	X	X	DL+LL	-	X	-
Tuzla	Adana	Karataş	X	-	-	-	-	-	-	X
Yumurtalık	Adana	Yumurtalık	X	X	X	-	DL+IR	X	X	-
Arsuz	Hatay	İskenderun	X	X	X	X	-	-	-	-
İskenderun	Hatay	İskenderun	X	-	-	-	DL+IR	-	-	-
Erdemli	Mersin	Erdemli	X	X	-	-	-	-	-	-
Taşucu	Mersin	Taşucu	X	X	X	X	DL+IR	X	X	-
Karataş	Adana	Karataş	X	X	-	X	-	X	-	-

Image 4: Mersin VTS Center

The primary goal of the VTS, which was established as part of the VTMS, is to improve navigational safety, as well as the safety of people, property, and the environment, by

providing information, traffic organization, and navigational assistance services with regard to actively participating ship traffic, within the context of national and international regulations.

Mersin VTS region is established for this purpose and serves three (3) sectors, including Sector Mersin, Sector İskenderun and Sector Mediterranean, and a dedicated VHF channel has been allocated for each sector. (Image 5)

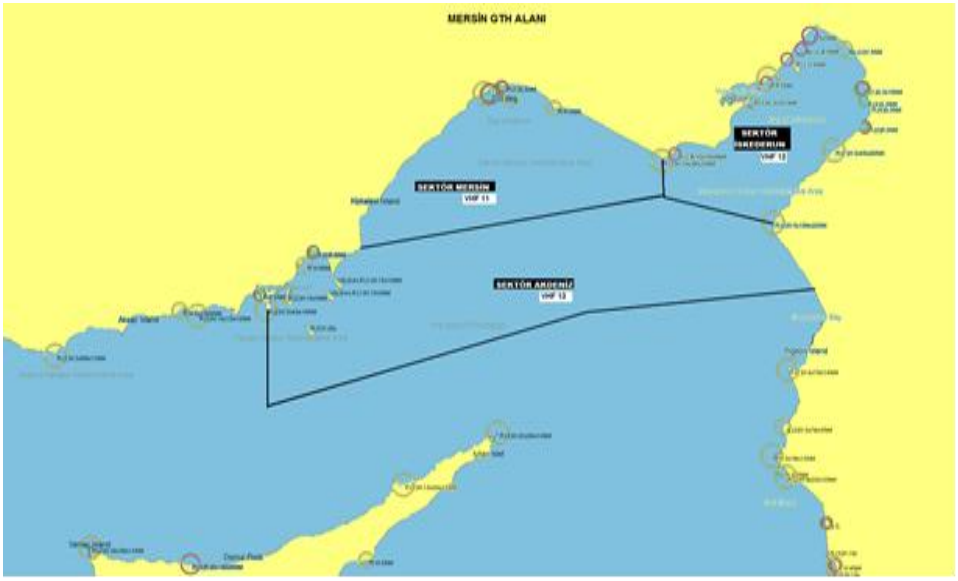

Image 5: Mersin VTS Service Region

SECTION 2 – NARRATIVE

2.1 Sequence of Events

The sequence of the accident due to the capsized fishing vessel of POLATBEY 1 and the death of five crew was narrated based on the statements of the Officer on Watch who were on the bridge of the Tanker and Master, EPHESOS at the time of the accident, and the records from Mersin VTS services, as well as VDR and ECDIS factual data extracted from the tanker.

Based on the statements of the Officer on Watch of the tanker, both ARPA radars (X-band and S-band) of the tanker, EPHESOS were set to 6 miles and were operational. The VDR device of the tanker, EPHESOS operates only with the S-Band ARPA radar and lacks an interface to the X-band ARPA. S-band ARPA is configured to operate in the North up mode, with her Variable Range Marker (VRM) set at 1.168 miles

Throughout his shift, the Officer on Watch employed X-band radar and acquired data on the targets on X-band. The course and speed data of the fishing vessel, POLATBEY-1 from approximately 5:20 AM to 5:46:16 AM at the time of the collision were acquired from the data that was stored in the ECDIS and VDR of M/T EPHESOS and recordings of VTSC

Following the completion of loading operations at the port of Botaş Ceyhan, the tanker EPHESOS departed the BOTAŞ Ceyhan terminal at 1:18 AM LT on November 11, 2020. The Master stayed on the bridge until 4:00 AM. Given the good visibility conditions as well as weather, sea and traffic conditions, the Master handed over the ship’s command to the Officer on Watch and went to his cabin at 4:00 AM for rest.

According to the screenshot extracted from the VDR of the tanker, the course and speed of EPHESOS (Image 6) was consistent with Voyage plan at 5:15 AM.

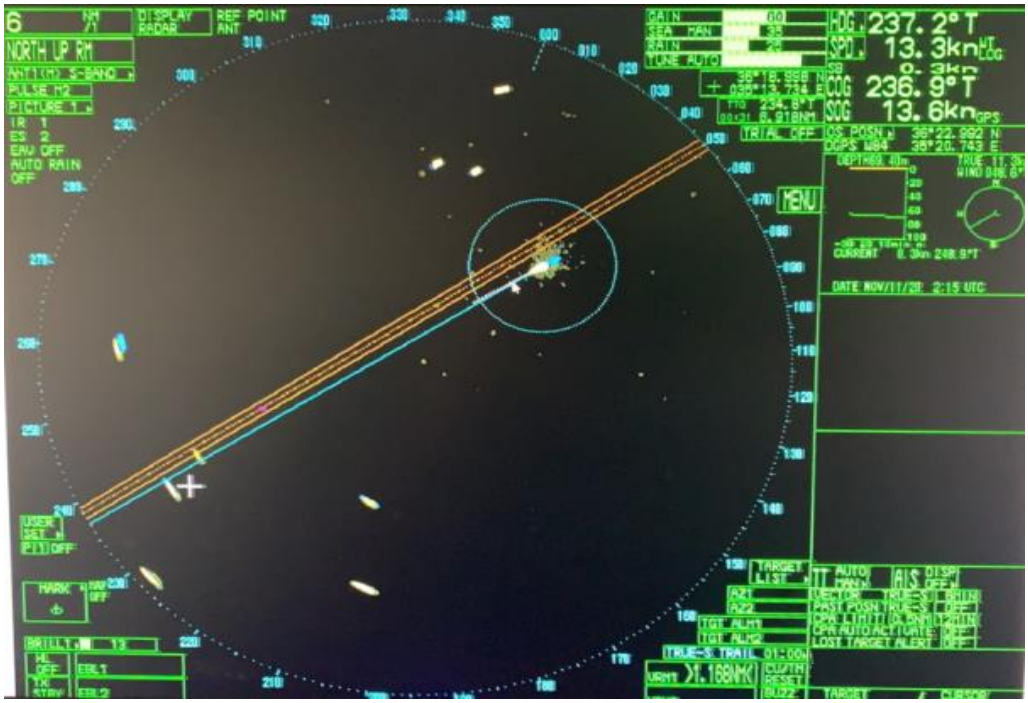

Image 6: Information on the Course/Speed of Tanker and the Targets

During the interviews with the tanker crew under the accident investigation, the Officer on Watch stated that at around 5:20 AM, he noticed five to six fishing vessels on the ARPA from a distance of approximately six to seven miles and decided to alter the course of the vessel to safely clear off the fishing vessels, and began progressively altering the course to starboard with autopilot course adjusting control.

Image 7 displays a screenshot of the courses and speeds of the targets at 5:25:30 AM based on VTS data of Sector Mediterranean.

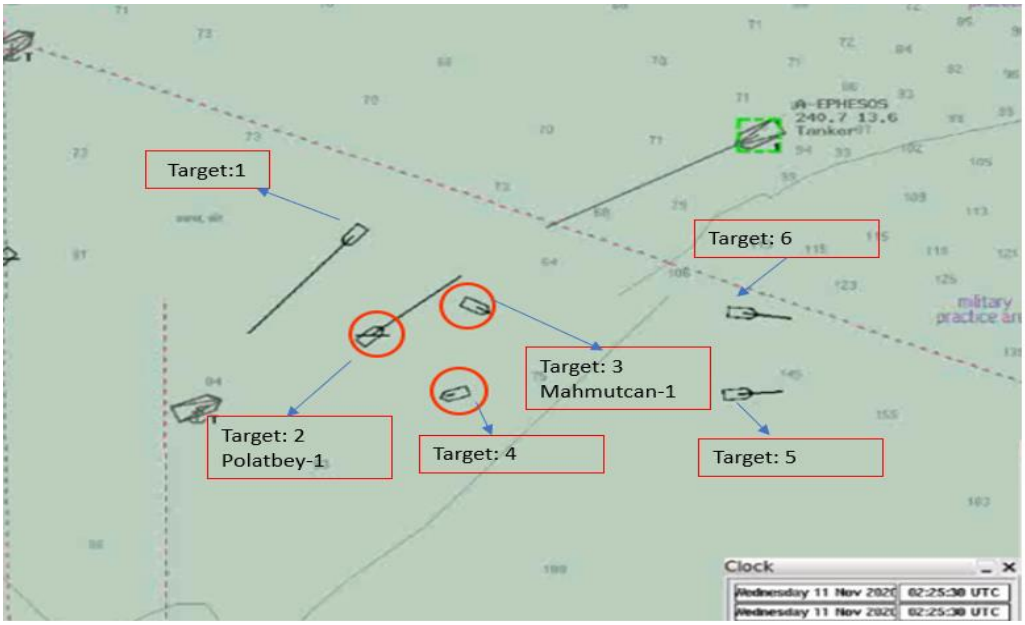

Image 7: Positions of The Tanker and Fishing Vessels Relative To Each Other

According to the screenshot captured from the VTS, the following are the bearings, speeds and positions of the targets relative to the tanker:

Target No. 1: She was approximately at 20 degrees on the starboard bow of the tanker, and at an estimated distance of 5 miles, she was sailing on a parallel course with the tanker, and at a speed of approximately 10 nautical miles according to the vector length.

Target No. 2 (POLATBEY-1): She was approximately at 5 degrees on the port bow of the tanker, and at an estimated distance of 6 miles. She was sailing towards the tanker at a speed of approximately 6-6.5 nautical miles, on the course 060 degrees opposite the tanker.

Target No. 3 (Mahmutcan-1): She was approximately at 1-2 degrees on the port bow of the tanker, and at an estimated distance of 5 miles, and was sailing on her course 100. According to the skipper of the fishing vessel, she was busy collecting her nets.

Target No. 4: She was approximately at 10 degrees on the port bow of the tanker, with a distance of 6 miles between them. According to the image taken from the VTS screen, it appears that the target without a vector sign was drifting/fishing.

Target No. 5 & 6: Targets 5 and 6, which are positioned roughly 40-50 degrees on the port side of the tanker and at a distance of 3 and 4 miles, respectively, are considered to be engaged in fishing due to their fixed course and low speed.

According to the screenshot captured from the Mediterranean VTS at 5:29:04 AM (Image 08), the tanker, EPHESOS was sailing at a speed of 13.7 nautical miles on the course 243.3, while MAHMUTCAN-1 was sailing at a speed of 6.2 nautical miles on the course 030.1. Targets 5 and 6, which are positioned roughly at a distance of 2.5 miles on the port side of the tanker, EPHESOS, appear to be sailing at a speed of 3 nautical miles.

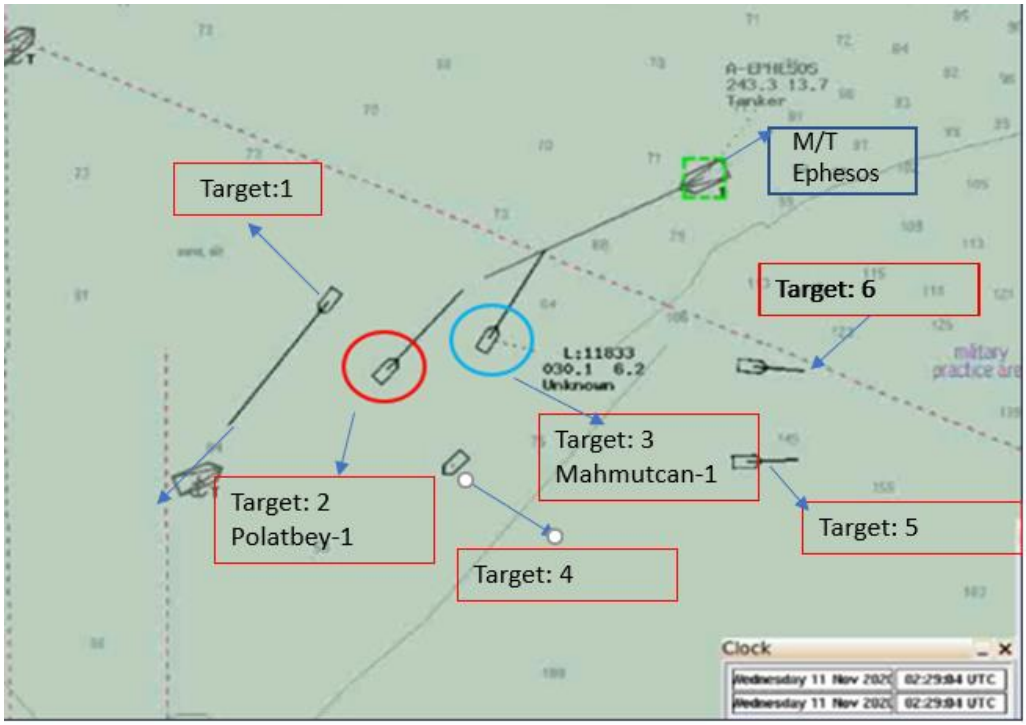

Image 8: Positions of The Tanker and Fishing Vessels Relative To Each Other

According to the screenshot (Image 9) captured from the ECDIS of the tanker EPHESOS at 5:32 AM, while the tanker was sailing at a speed of 13.4 nautical miles on the course 245.9, the fishing vessel, MAHMUTCAN-1 was sailing on the port bow of the tanker on approximately the course 020 and at an estimated speed of 6 nautical miles. No image of the course and speed of the fishing vessel, POLATBEY-1 is available during this time period.

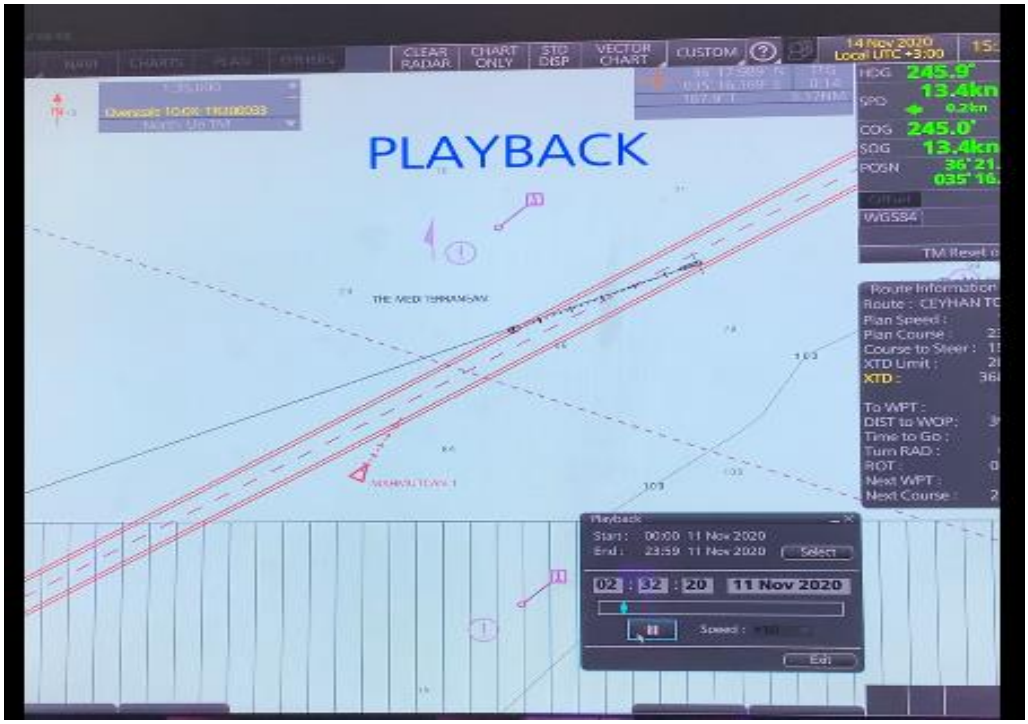

Image 9: The Estimated Course 020 Degree and Speed of 6 Nautical Miles of MAHMUTCAN-1

At 5:33:20 AM (Image 10), while M/T EPHESOS was sailing on her course 247 and at a speed of 13.3 nautical miles, MAHMUTCAN-1 set her course at 15 degrees towards the port side and began to sail on her course 005 and at a speed of 6 nautical miles per hour. Meanwhile, the distance between the tanker and the MAHMUTCAN-1, which was positioned approximately 10 degrees on the port bow of the tanker, decreased to approximately 2 miles.

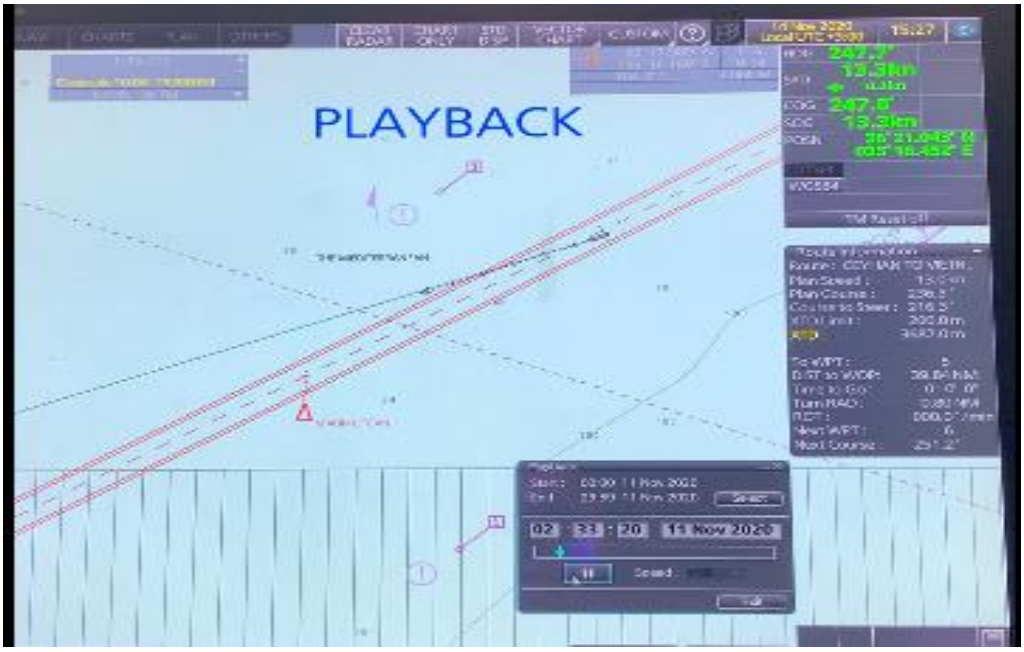

Image 10: ECDIS Image from the Fishing Vessel, MAHMUTCAN-1

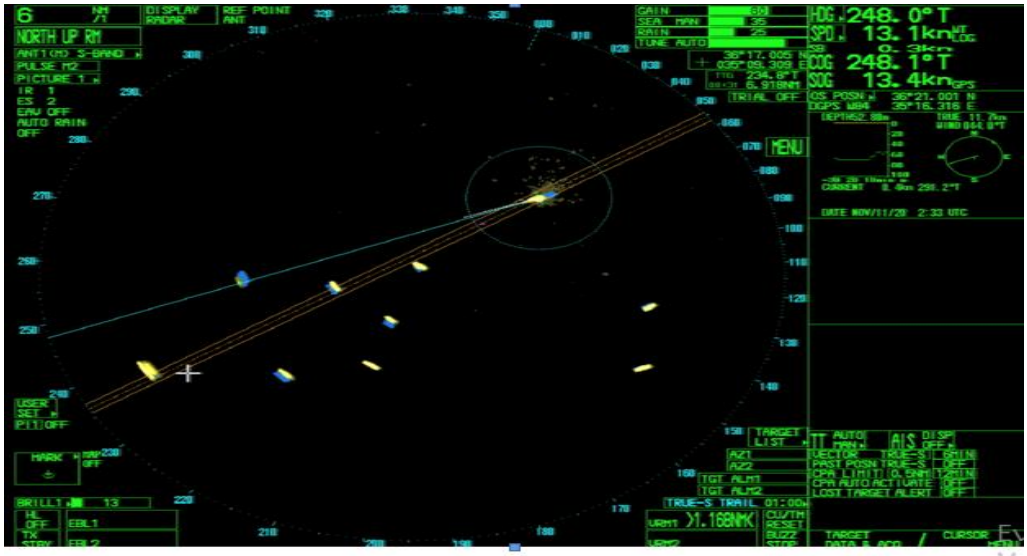

Image 11: ARPA Image from EPHESOS, the Distance Between the Tanker and MAHMUTCAN-1

Since MAHMUTCAN-1 would not follow a fixed course and crossed towards the course of the tanker so as to involve risk of collision, the Officer on Watch of the tanker called MAHMUTCAN-1 by VHF at 5:33 AM to communicate, predicting that she would pose a risk of collision. However, MAHMUTCAN-1 did not respond to the call.

The Officer on Watch of the tanker again called MAHMUTCAN-1 three times by VHF at 5:34:37 AM, approximately one minute later, but still did not receive a response from her.

Based on the screenshot of the tanker captured from ECDIS (Image 12) and the screenshot of the tanker captured from ARPA (Image 13), it was found that while M/T EPHESOS was sailing at a speed of 13.4 nautical miles on her course 247.9 with an autopilot, according to the vector length, F/V MAHMUTCAN-1 slowed down to 3 nautical miles and altered her course to the starboard side at 5:34 AM. This was also recorded in the image captured from the Mediterranean VTS (Image 14).

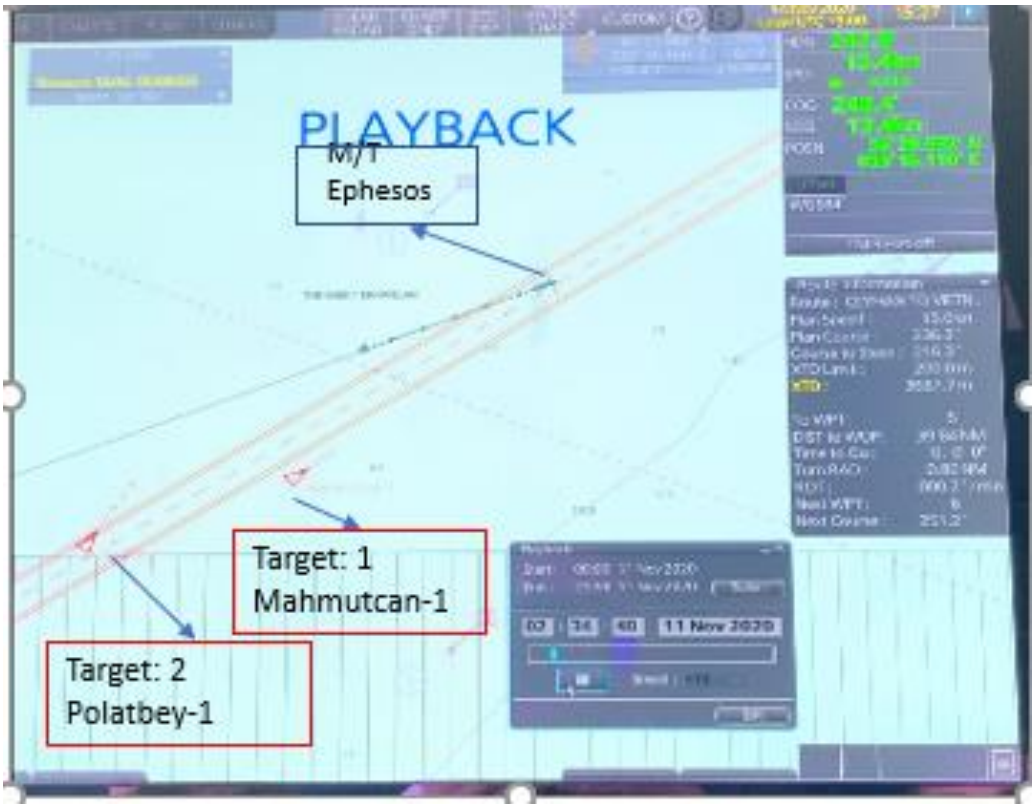

Image 12: Screenshot Captured from ECDIS of EPHESOS

According to the ARPA screenshot from EPHESOS below (Image 13), it was set at 1.168 nautical miles, and according to the VRM, the distance between the F/V Mahmutcan and the Tanker decreased below 2 nautical miles.

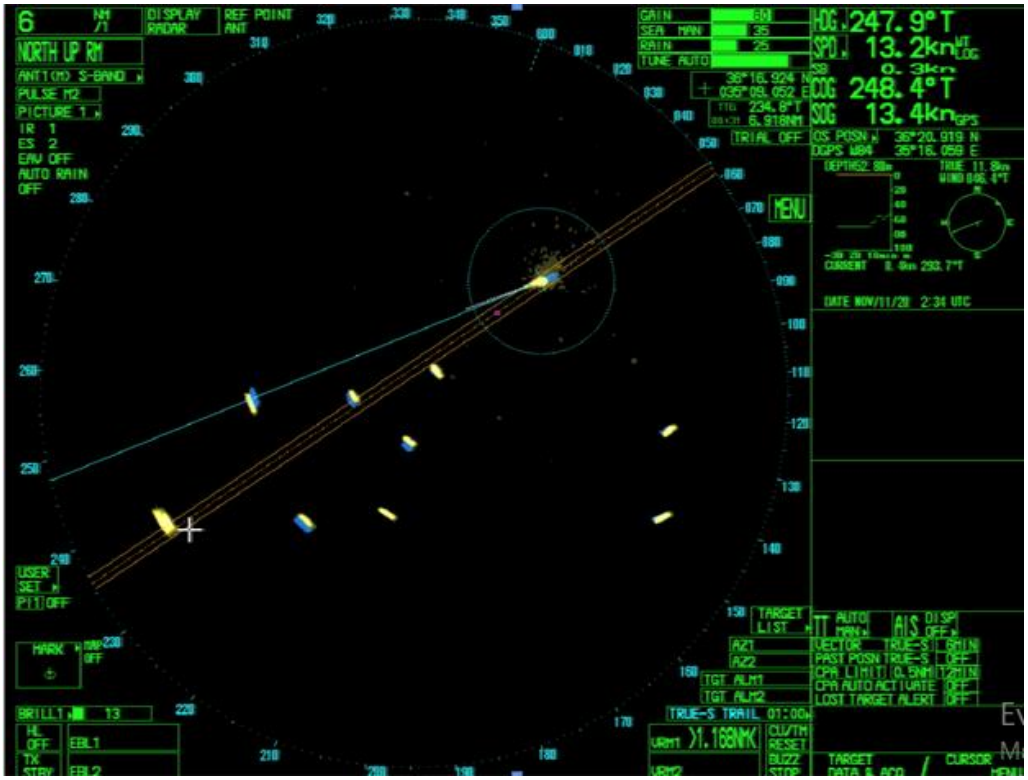

Image 13: ARPA Screenshot from EPHESOS

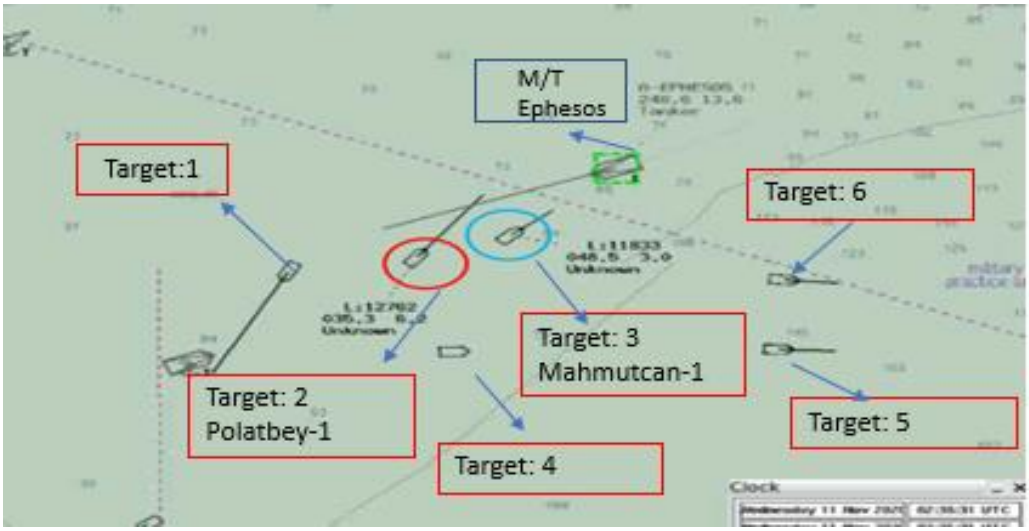

Image 14: VTS Screenshot from EPHESOS

At 5:35 AM, MAHMUTCAN-1 substantially altered her course to the starboard side, POLATBEY-1 maintained her course towards EPHESOS at a speed of 6.2 nautical miles on her course 035.2. Meanwhile, the distance between the tanker and POLATBEY-1 was 3.23 nautical miles, and the distance between MAHMUTCAN-1 and POLATBEY-1 was approximately 1 nautical mile.

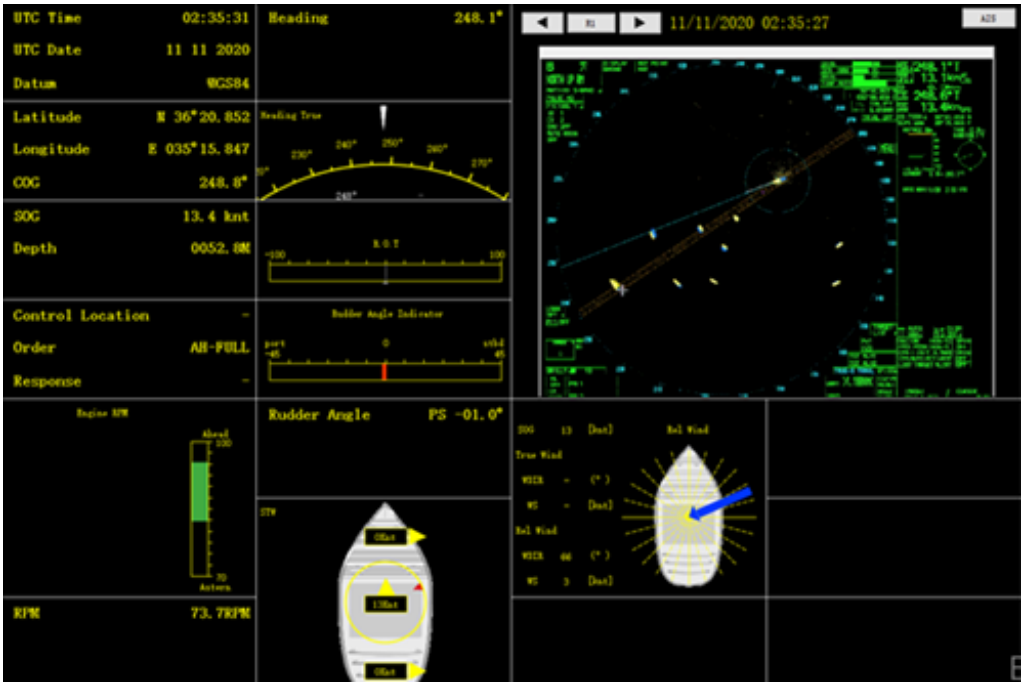

Image 15: VDR Screenshot from EPHESOS

According to a screenshot captured from Mediterranean VTS at 5:35:31 AM (Image 16), POLATBEY-1 was sailing at a speed of 06.2 nautical miles on the course of 35.3 degrees. While M/T EPHESOS was proceeding at a speed of 13.4 nautical miles per hour on her course 248-degree, the tanker's Officer of the Watch wanted to communicate with POLATBEY-1 by VHF to assess the situation and ascertain her intentions but received no answer.

Image 16: VTS Image

According to VTS data, two minutes later at 5:37:30 AM, POLATBEY-1 had a course of 035.3 and her speed was 6 nautical miles.

Meanwhile, the tanker had been continuing to sail on autopilot. Having noticed through radar that the fishing vessel POLATBEY 1 intercepted the tanker's course, the Officer on Watch called to the fishing vessel POLATBEY 1 by VHF at 5:35:50 AM but did not receive any response. When the Officer on Watch plotted the fishing vessel on the ARPA radar, he discovered that the fishing vessel could cross ahead of the tanker and that there would be no collision according to ARPA radar data.

According to VTS recordings, POLATBEY-1 began taking her course towards the port at 5:40 AM, while en route 036.7 at 5:40 AM. The latest data from VTS of POLATBEY-1 was taken at 5:42:31 AM and her course was recorded at 024.9, with a speed of 6.3 nautical miles.

Table 1 shows the course that M/T EPHESOS and POLATBEY 1 followed, their speed and distance to each other from 5:25:30 AM until 5:42:31 AM.

TIME	M/T EPHESOS		POLATBEY 1		DISTANCE BETWEEN POLATBEY-1 AND THE TANKER
	COURSE	SPEED	COURSE	SPEED	
5:25:30 AM	240.7	13.6	-	-	
5:26:02 AM	240.8	13.5	-	-	
5:26:14 AM	241.3	13.6	-	-	
5:26:30 AM	242.1	13.6	-	-	
5:27:00 AM	241.8	13.6	-	-	
5:27:30 AM	242.2	13.6	-	-	
5:28:00 AM	242	13.5	-	-	
5:28:30 AM	242.6	13.6	-	-	
5:29:00 AM	243.3	13.5	-	-	
5:29:11 AM	243.5	13.5	041.5	6.5	5,26 NM
5:29:30 AM	243.7	13.7	042.3	6.6	5,15 NM
5:30:00 AM	244.1	13.5	042.3	6.6	5,00 NM
5:30:30 AM	244.7	13.7	042.3	6.6	4,92 NM
5:31:00 AM	245.3	13.3	042.3	6.6	4,70 NM
5:31:30 AM	245.3	13.4	-	-	-
5:31:32 AM	245.3	13.4	039.3	6.2	4,52 NM
5:32:00 AM	245.4	13.3	040.3	6.2	4,38 NM
5:32:30 AM	245.1	13.2	036.6	6.2	4,21 NM
5:33:00 AM	245.5	13.3	40.7	6.3	4,07 NM
5:33:30 AM	246.6	13.4	039.8	6.2	3,90 NM
5:34:00 AM	247.4	13.7	041.6	6.2	3,73 NM
5:34:30 AM	248	13.5	048.2	6.7	3,55 NM
5:35:00 AM	248.1	13.4	033.2	6.2	3,35 NM
5:35:31 AM	248.6	13.6	035.3	6.2	3,23 NM
5:36:00 AM	248.7	13.5	044.7	6.7	3,11 NM
5:36:30 AM	248.8	13.4	044.7	6.2	2,95 NM
5:37:00 AM	248.9	13.4	043.4	6.1	2,77 NM
5:37:30 AM	249.3	13.5	035.3	6.0	2,62 NM
5:38:00 AM	250.1	13.5	033.7	6.1	2,47 NM
5:38:30 AM	250.1	13.5	037.6	6.3	2,30 NM
5:39:00 AM	250.4	13.5	038.4	6.3	2,14 NM
5:39:30 AM	250.8	13.6	036	6.2	2,00 NM
5:40:00 AM	251.2	13.7	036.7	6.1	1,85 NM
5:40:30 AM	251.3	13.7	033.9	6.1	1,68 NM
5:41:00 AM	251.0	13.6	033.9	6.2	1,50 NM
5:41:30 AM	251.1	13.7	027.1	6.3	1,39 NM
5:42:00 AM	251.2	13.7	024.9	6.3	1,26 NM
5:42:05 AM	251.2	13.7	024.9	6.3	1,26 NM

5:42:18 AM	251.4	13.7	024.9	6.3	1,23 NM
5:42:31 AM	251.2	13.6	024.9	6.3	1,23 NM
5:42:45 AM	250.8	13.6	-	-	
5:43:00 AM	251.1	13.6	-	-	
5:43:15 AM	250.6	13.4	-	-	
5:43:25 AM	251.1	13.6	-	-	
5:43:26 AM	251.1	13.6	-	-	
5:46:06 AM	The Collision Moment between the Tanker and the fishing vessel				

Table 1: 1The Courses Followed by Polatbey-1 And the Tanker, Ephesos, As Well As Their Speeds and Distances Between Them, As Received From VTS.

Upon noticing four minutes before the collision that the fishing vessel, POLATBEY 1 had altered her course to the port, the Officer on Watch ordered the look-out to take the helm. At 5:42 AM, when the Officer on Watch executed the port 5 order, the distance between the tanker and POLATBEY-1 was 1.1 miles.

Image 17: ARPA Image 12: At 5:42 AM

[1]They were extracted from the VDR and ECDIS recordings of the tanker, M/T EPHESOS from 5:42:31 AM until 5:46:06 AM when the accident occurred.

At 5:43:46 AM, when the Officer on Watch executed the port 10 order (Image 18), the distance between the tanker and POLATBEY-1 was 0.7 miles.

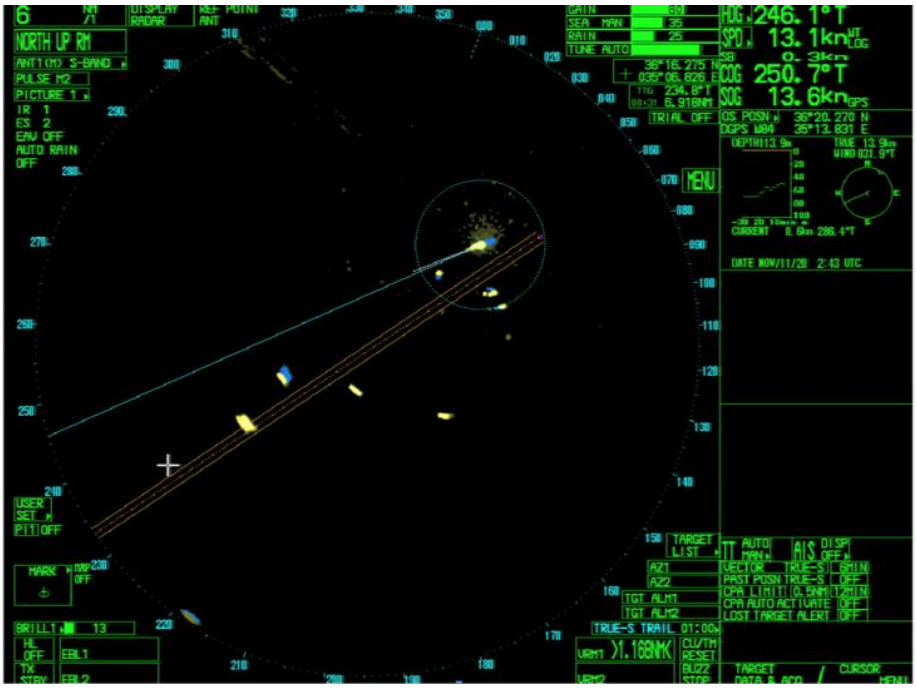

Image 18: Navigational Positions When the Tanker Executed Port 10

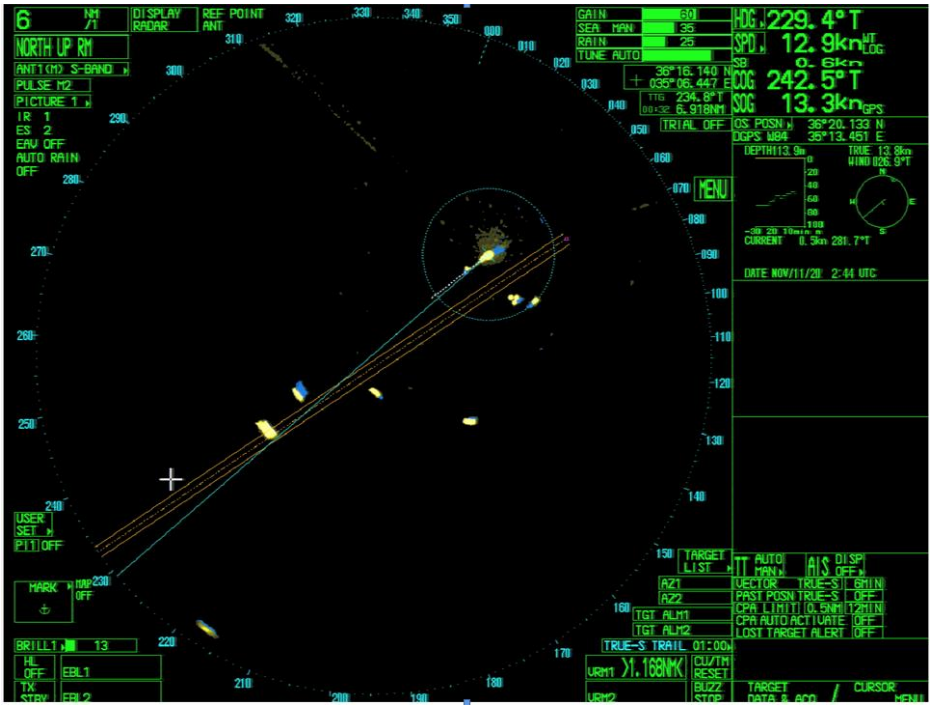

Image 19: ARPA Image; Crossing Of POLATBEY-1 Ahead of The Tanker

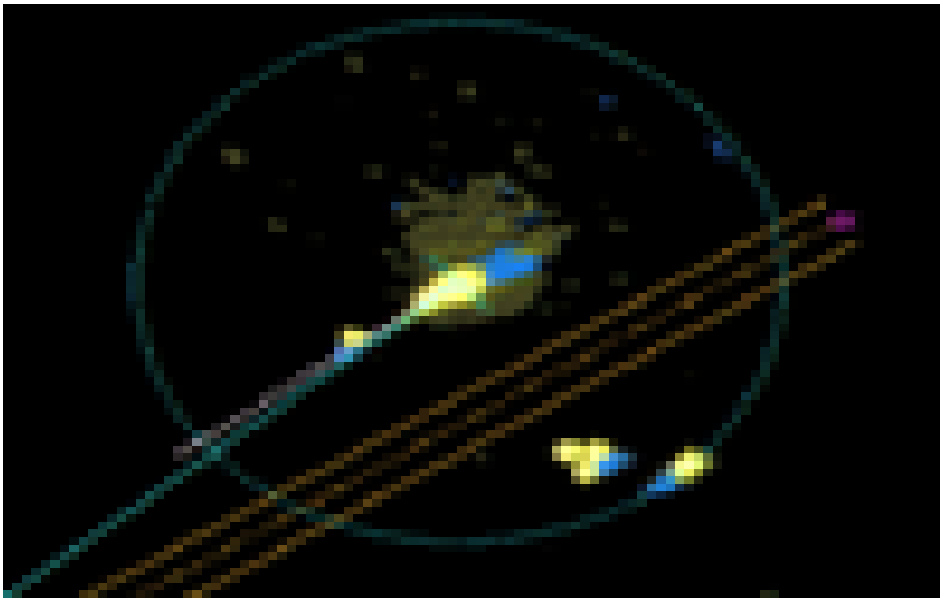

Image 20: Detailed Image for The Crossing Of POLATBEY-1 Ahead of The Tanker

At 5:44:36 AM, 1.5 minutes before the collision, the tanker was executing port 20 degrees and POLATBEY-1 crossed ahead of the tanker to starboard (Image 21). Meanwhile, as the tanker headed towards the port, her course was 234.5 and her speed was 13.2 nautical miles. At that time, the course of POLATBEY-1 was 16.2, and her speed was 5.9 nautical miles, with a distance of 0.5 miles between both ships.

Image 21: Detailed Image Extracted from the ECDIS of the Tanker for The Crossing Of POLATBEY-1 Ahead of The Tanker

20 seconds later at 5:44:56 AM (Image 22), approximately 1 minute before the collision, while the tanker was continuing to execute the port 20 degrees order, POLATBEY-1 suddenly manoeuvred by altering her course to starboard by 66 degrees course change. Meanwhile, as the tanker headed towards the port with her inertial force, her course was 227.8 and her speed was 12.9 nautical miles. The distance between the two vessels was 0.396 nautical miles.

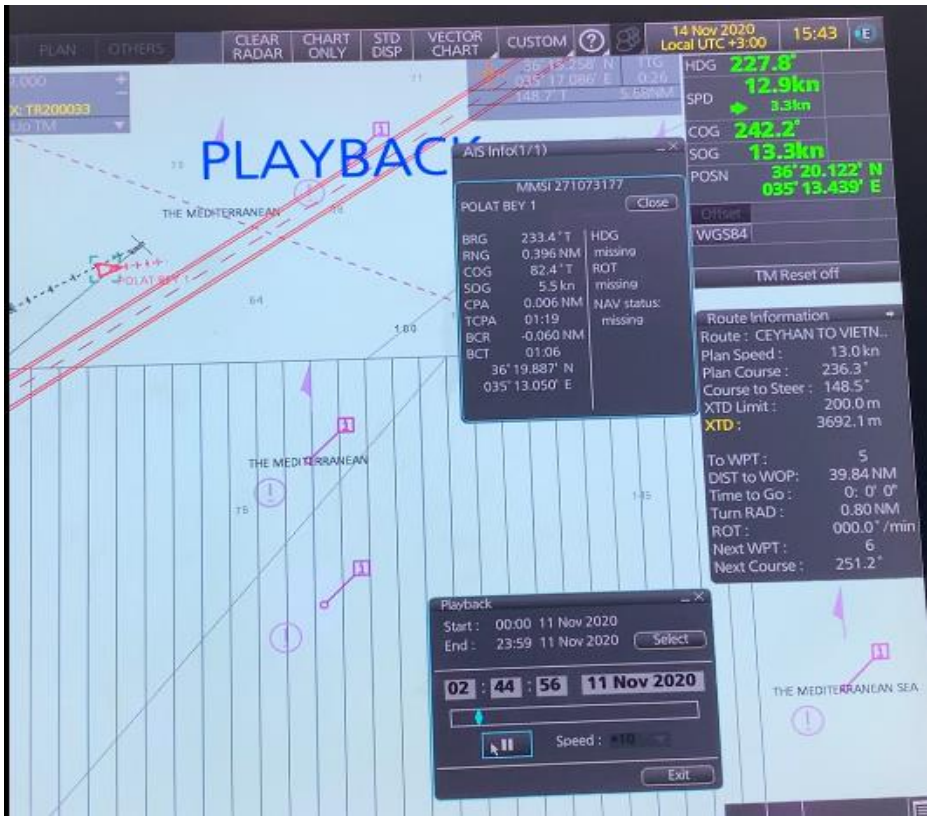

Image 22: ECDIS Image When POLATBEY-1 made 66 Degrees turn to Starboard.

Meanwhile, the fishing vessel had never responded to the VHF calls. Then, the Officer on Watch ordered the helmsman midships. The Officer on the Watch of the tanker noticed the red light of the fishing vessel POLATBEY-1 and at around 5:46 AM, all the lights of the fishing vessel were dimmed and he saw nothing. Hence, according to the data retrieved from the ECDIS and VDR recordings of the tanker, the tanker and the fishing vessel collided at 5:46:06 AM.

Subsequently, the Officer on Watch called the Master on the bridge and reported that they had most likely collided with the fishing vessel. The Master took command of the ship, called VTS and asked if there was any problem reported in the surrounding. VTS stated that nothing

was reported to them. The Master assigned more look-out onboard for further investigation. The engine room of the tanker was notified and the entire crew was alerted by the announcement. In the meanwhile, the weather was still dark, and a capsized fishing vessel was able to be seen around 07:00.

2.2 Manning and Certification

2.2.1 M/T EPHESOS

At the time of the collision, "EPHESOS" had a crew complement of 27, comprising of the Master, officers, and ratings, all of Greek and Filipino nationality. The crew complement was in accordance with the Minimum Safe Manning Certificate issued by the flag State Administration which required a crew complement of 12. The working language on board was English.

Crew certificates and endorsements were checked and found valid and in order.

The standard "4 hours on", "8 hours off" navigational watch schedule was kept on board M/T EPHESOS, as follows;

- First Officer: 0000 – 0400 and 1200 – 1600
- Second Officer: 0400 – 0800 and 1600 – 2000
- Third Officer: 0800 – 1200 and 2000 – 2400

In accordance with the posted working schedule on the bridge, two Able Seamen and one Ordinary Seaman were designated as Look-Outs, for each of the navigational watches during day and night.

The experience and familiarization of the involved crew member responsible for the Watch, and the Master at the time of the accident are as follows;

- The Greek national, the Master started his marine career with the Company of EPHESOS, as Cadet, almost 30 years ago, and he became a Master, within rank service of approximately 10 years, and at the time of the incident, he was not on the Bridge.

- The Greek national, the Second Officer on duty was 33 years old and has 20 months of experience as a Second Officer. He had joined “EPHESOS” on July 26, 2020, and it was his first contract with Ephesos Company.
- Filipino national, a look-out on duty was 31 years old and has 4 years of marine experience. He had been serving in the Company for 2.4 years with 1.6 years in the current rank at the end of that period. He joined “EPHESOS” on August 21, 2020.

2.2.2 POLATBEY-1

At the time of the collision, “POLATBEY-1” manned with two seamen, comprising the Skipper and Able Seaman. The crew complement was compliant with national legislation issued by the flag state administration. Crew certificates and endorsements were checked and found valid and in order.

Furthermore, no alcohol or narcotics were found in the autopsy report, neither in the Master nor in the crew on the watch.

2.3 Event Aftermath of the Accident and Search and Rescue Operations

At 5:57 AM on 11/11/2020, the tanker named EPHESOS reported to the VTS Sector Mediterranean that they crossed close to a fishing vessel at 15 nautical miles south of the port of Karataş, and they had hesitations for a collision and could not contact the fishing vessel. Accordingly, announcements were issued by VTS to nearby commercial and fishing vessels. At 6:46 AM, the fishing vessel, Kumrular 3, one of the nearby fishing vessels, reported that everything was OK and there were no unfavourable circumstances and that POLATBEY-1 had not responded to the calls for a while.

As a result of the search, the fishing vessel, MAHMUTCAN 1 reported that she had seen a capsized boat at 6:58 AM on 11/11/2020. At 7:00 AM M/T EPHESOS reported that she saw a capsized fishing vessel in position LAT: 36° 19.5 N - LONG: 035° 12.4 E.

At 7:17 AM, the M/T EPHESOS rescue boat moved towards the accident scene and reported that there were no casualties on the water surface. At 8:06 AM, when the Coast Guard and other fishing vessels arrived at the accident scene, the corpses of five persons were discovered aboard the POLATBEY-1 vessel, which had capsized,

2.4 Information on Damage

During the accident investigation on the tanker, EPHESOS, which was anchored, a paint scratch was noticed below the hawse pipe of the port anchor. However, as the tanker anchored by the port anchor instead of starboard, the location of the impact was not been clearly identified in the examination of damage at the anchor site.

The damage on the standard compass deck of the fishing vessel, POLATBEY-1 and the ECDIS images later indicated that the tanker collided with the fishing vessel with her port anchor. As a result of the collision with the port hawse pipe of the tanker, the fishing vessel, POLATBEY-1 was severely damaged and capsized and became unusable. (Image 23-31)

Image 23: Front View of The Tanker, Ephesos

Image 24: The Paint and Hull Scratches on The Port Bow of The Tanker, EPHESOS

Image 25: The Fishing Vessel, POLATBEY-1, Which Had Capsized, After the Accident

Image 28: Floating Operation of the Fishing Vessel, POLATBEY-1

Image 26: Damages on the Compass Deck, Bridge and Superstructure of the Fishing Vessel, POLATBEY-1, which Had Become Afloat After the Accident

Image 27: Damages on the Compass Deck, Bridge and Superstructure of the Fishing Vessel, POLATBEY-1, which Had Become Afloat After the Accident

Two days after the accident (11/13/2020) the fishing vessel, POLATBEY-1 was recovered where she was sunken and brought to the port of Karataş.

Details of damage are as follows.

It was detected that the port side, starting from the standard compass deck up to the midship of the main deck, was deformed and ruptured; the bridge windows exploded; the net davit on the port side was broken; the crane net on the port side was detached; there was still water in the engine room and the engine and navigation devices were inoperable. (Images 29, 30, and 31)

Image 29: Damages Sustained by the Fishing Vessel, POLATBEY-1

Image 30: The Damage to The Fishing Net Equipment of The Fishing Vessel, POLATBEY-1

Image 31: The Damage to The Fishing Net Equipment of The Fishing Vessel, POLATBEY-1

SECTION 3 – ANALYSIS

While assessing the marine casualty under investigation, it is aimed to identify and determine the factors that caused the accident by considering the sequence of events and data obtained during the investigation as well as to draw useful conclusions that lead to the safety recommendations on root causes.

3.1 The Risk of Collision and Action to Avoid Collision

1972 International Regulations for Preventing Collisions at Sea, Rule 8 of COLREGS - Action to avoid collision states:

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

Rule 17 of COLREGS - Action by stand-on vessel states:

"(a). (i). Where one of two vessels is to keep out of the way the other shall keep her course and speed.

(ii) The latter vessel may however take action to avoid collision by her manoeuvre alone, as soon as it becomes

apparent to her that the vessel required to keep out of the way is not taking appropriate action in compliance with these Rules.

…

(c) A power-driven vessel that takes action in a crossing situation in accordance with subparagraph (a)(ii) of this Rule to avoid collision with another power-driven vessel shall, if the circumstances of the case admit, not alter course to port for a vessel on her own port side....”

The screenshot captured from the VDR of EPHESOS (Image 32) indicates the marine traffic as well as the positions of other vessels around the tanker, EPHESOS at 5:19 AM.

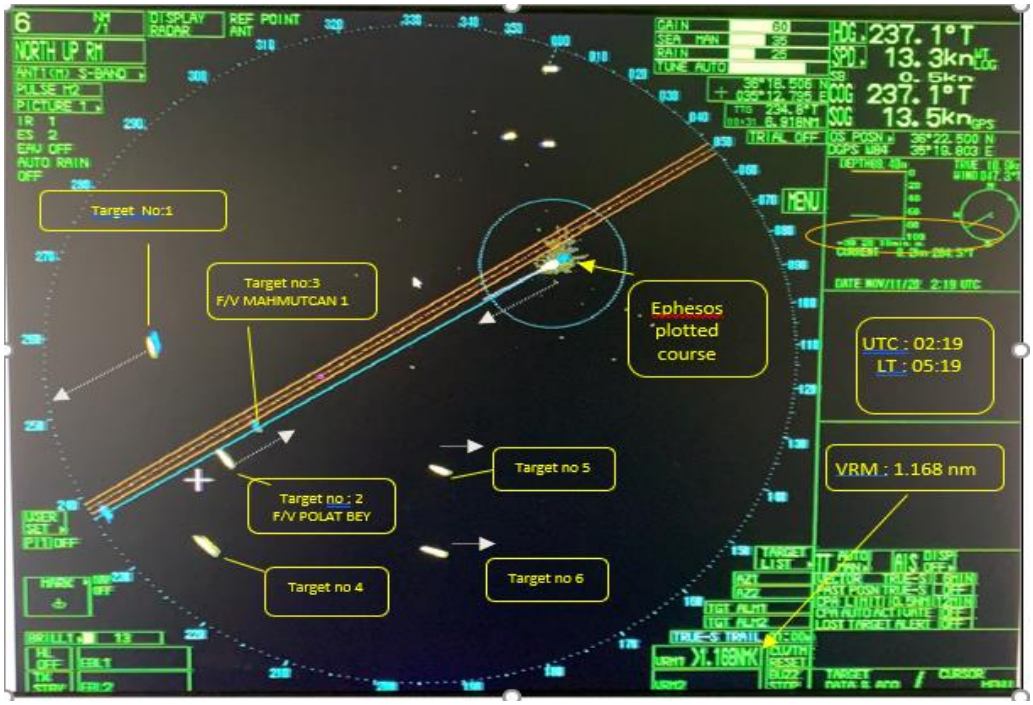

Image 32: The Tanker and the Marine Traffic Around Her

As shown in the screenshot (Image 33) captured from the VDR of EPHESOS, at around 5:20 AM, the Officer on the Watch evaluated the marine traffic that was growing on the port side as well as the six targets displayed in ARPA in more detail, and began progressively altering her course 1 degree to starboard with the autopilot course adjusting function in order to clear off those targets; and at 5:20 AM, her course was 237.5 and her speed was 13.5 nautical miles.

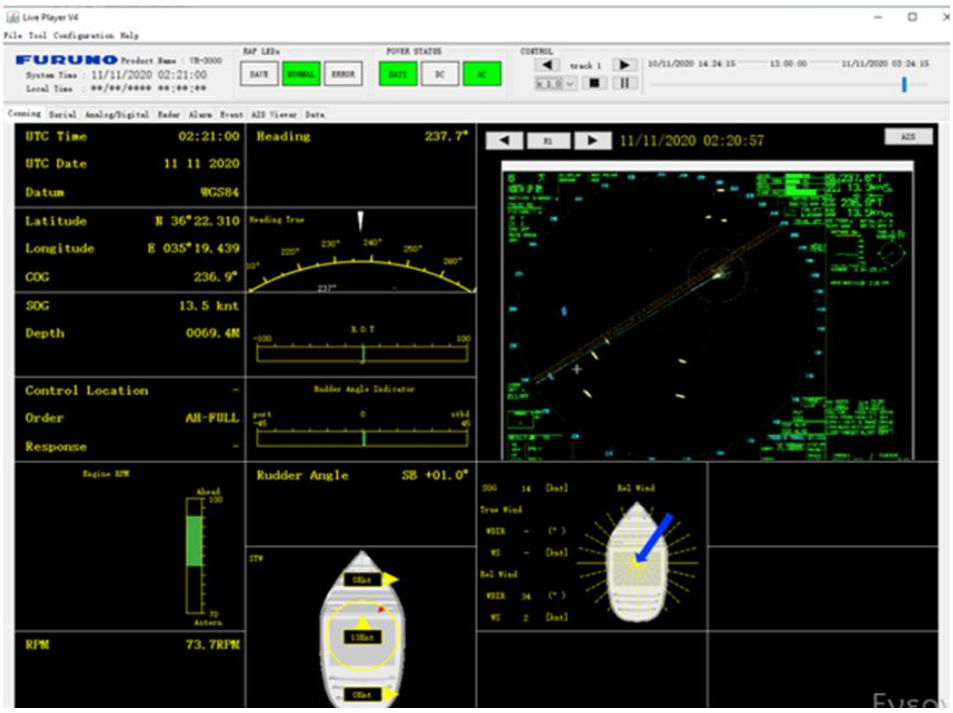

Image 33: The Officer on The Watch Began Altering Her Course to Starboard At 5:20 AM

At 5:41:06 AM (Image 34), the fishing vessel was sailing on course 028 at a speed of 06.1 nautical miles.

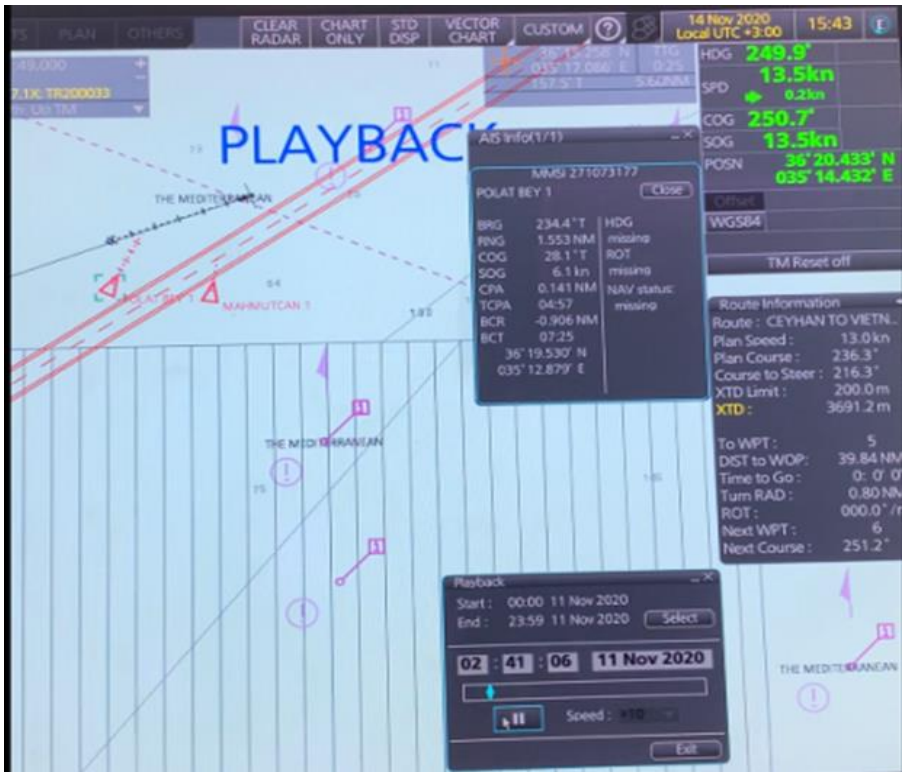

Image 34: Screenshot from ECDIS

Upon noticing four minutes before the collision that the fishing vessel, POLATBEY 1 had altered her course to the port, the Tanker's Officer on Watch ordered the look-out to take the helm.

At 5:42 AM, when the Tanker's Officer on Watch executed the port 5 order (Image 35), the distance between the tanker and POLATBEY-1 was 1.1 miles. Meanwhile, POLATBEY-1 was sailing on her course 16.2 and at a speed of 6.2 nautical miles, while the tanker had a course of 249.8 and a speed of 13.1 nautical miles.

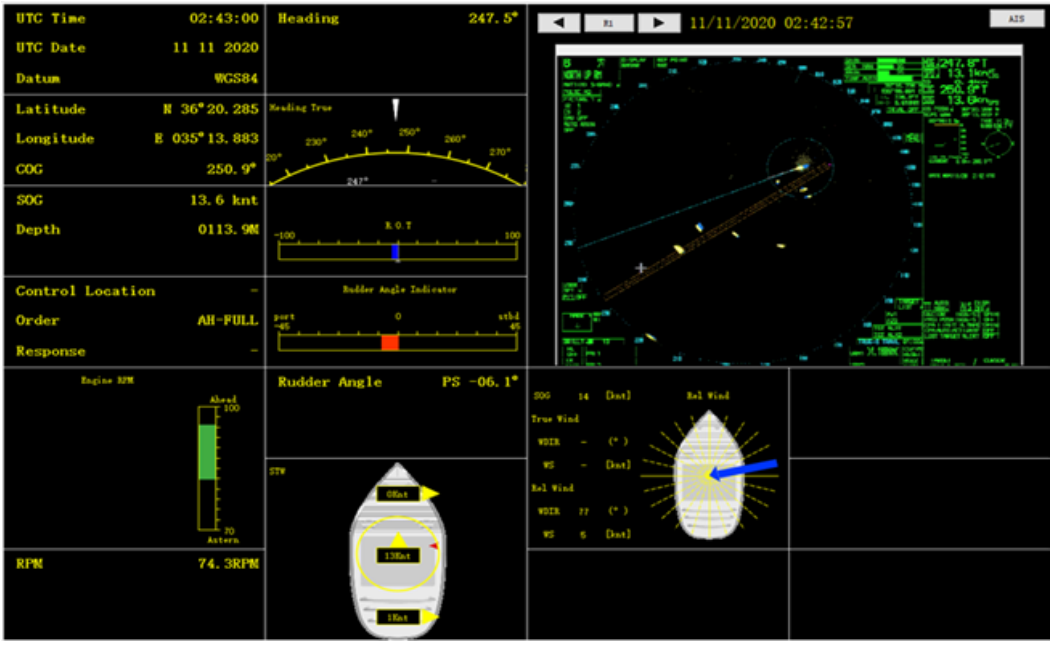

Image 35: Screenshot from VDR When Port 5 Order Was Executed

The screenshot captured from ECDIS (Image 36) displays that POLATBEY-1 was sailing on her course of 16.2 and at a speed of 6.2 nautical miles, while the tanker had a course of 249.5 and a speed of 13.1 nautical miles at 5:42:36 AM

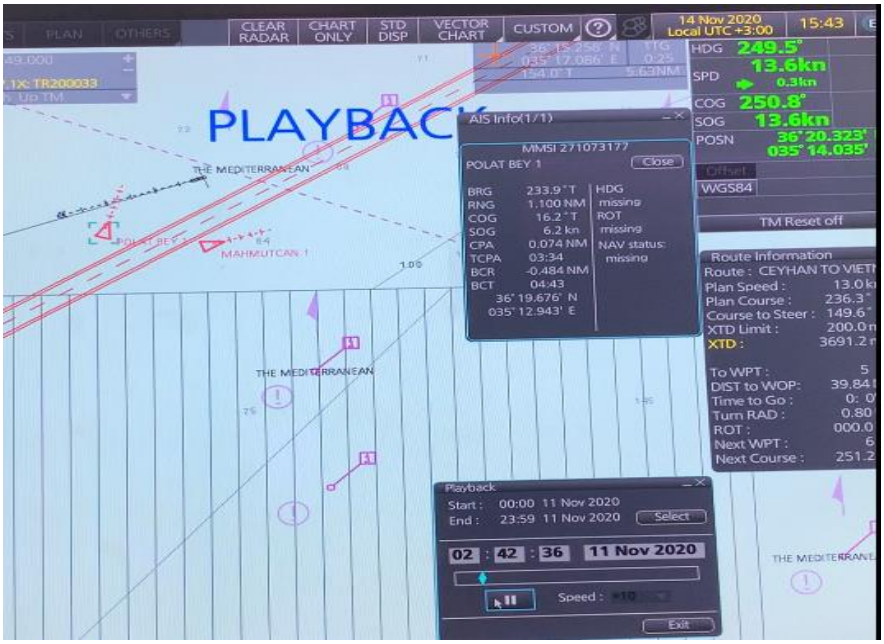

Image 36: Screenshot from ECDIS

The screenshot captured from ECDIS (Image 37) displays that when the Tanker's Officer on Watch executed port 10 at 5:43:46 AM, the distance between the tanker and POLATBEY-1 was 0.70 miles. Meanwhile, POLATBEY-1 was sailing on her course 21.7 and at a speed of 6.0 nautical miles, while the tanker had a course of 242.3 and a speed of 13.5 nautical miles.

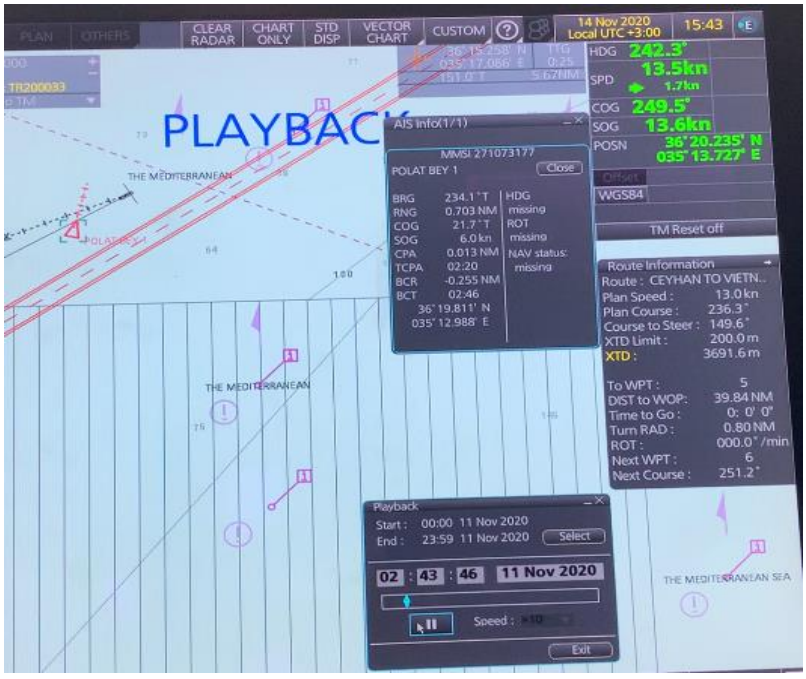

Image 37: **Screenshot from ECDIS**

The screenshot captured from ECDIS (Image 38) displays that when the Tanker's Officer on Watch executed port 15 at 5:44:16 AM, the distance between the tanker and POLATBEY-1 was 0.549 miles, and POLATBEY-1 was crossing ahead of the tanker to starboard. Meanwhile, POLATBEY-1 was sailing on her course 16.2 and at a speed of 5.9 nautical miles, while the tanker had a course of 237.1 and a speed of 13.3 nautical miles.

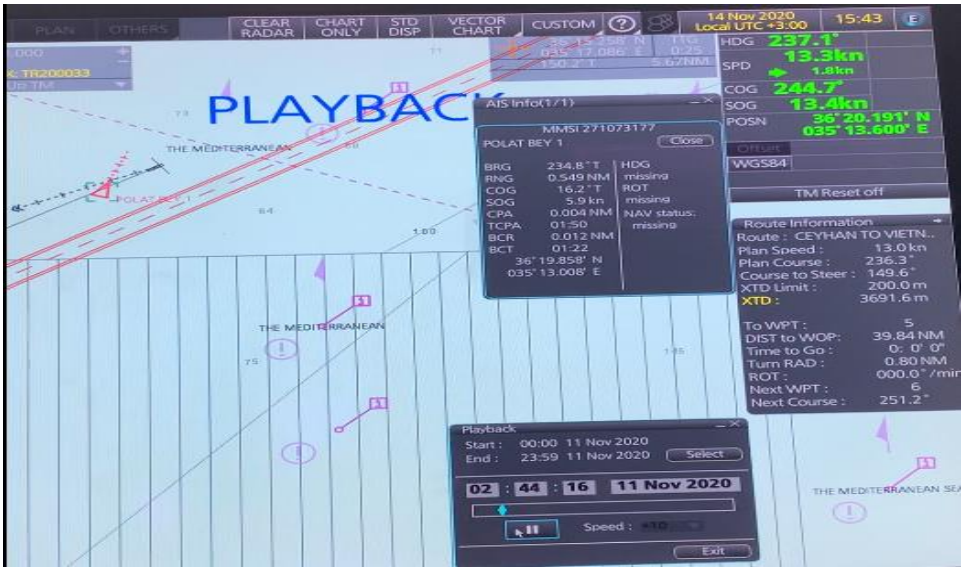

Image 38: Screenshot from ECDIS

The screenshot captured from ECDIS (Image 39) displays that when the Tanker's Officer on Watch executed port 20 at 5:44:36 AM 1.5 minutes before the collision, POLATBEY-1 crossed ahead of the tanker. Meanwhile, the tanker was heading towards the port, with her course 234.5 and her speed 13.2 nautical miles. POLATBEY-1 had her course 16.2 degrees and a speed of 5.9 nautical miles. The distance between them was 0.50 miles.

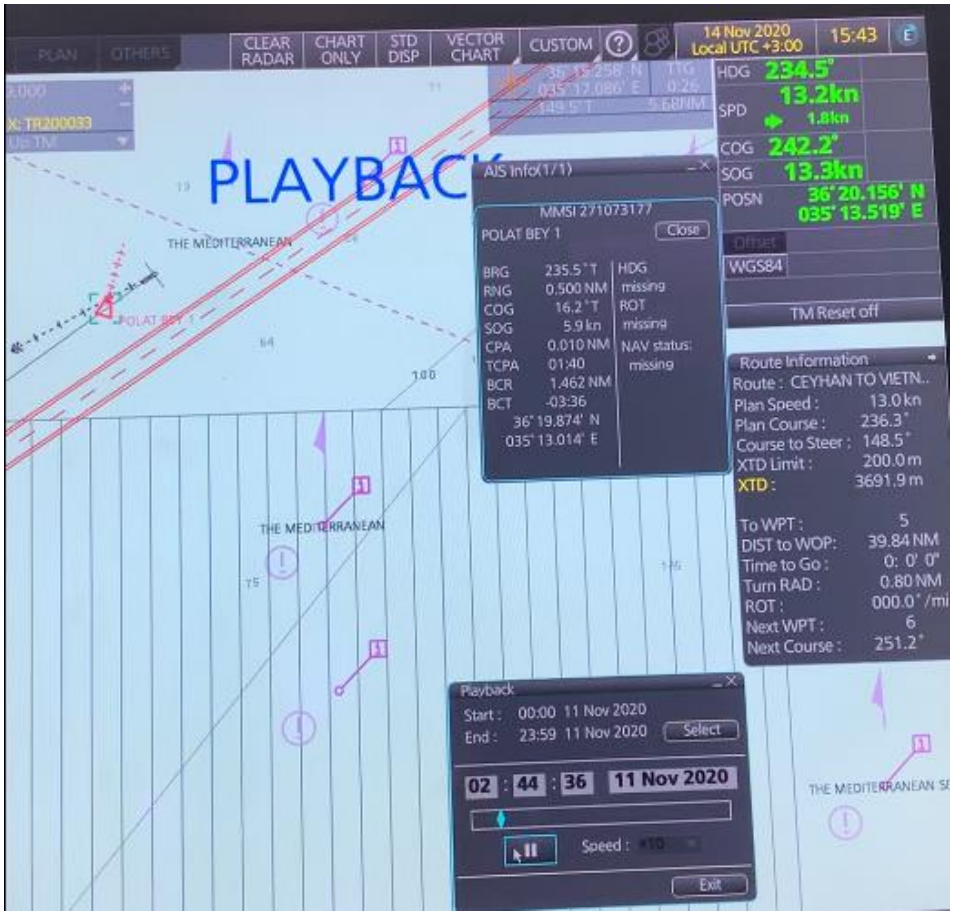

Image 39: Screenshot from ECDIS

The screenshot captured from ECDIS (Image 40) displays that 20 seconds later at 5:44:56 AM, approximately 1 minute before the collision, while the tanker was executing port 20 degrees order, POLATBEY-1 suddenly manoeuvred by altering her course to starboard 66 degrees. Meanwhile, while the tanker was heading towards the port, her course was 227.8 and her speed was 12.9 nautical miles. The distance between both vessels was 0.396 miles.

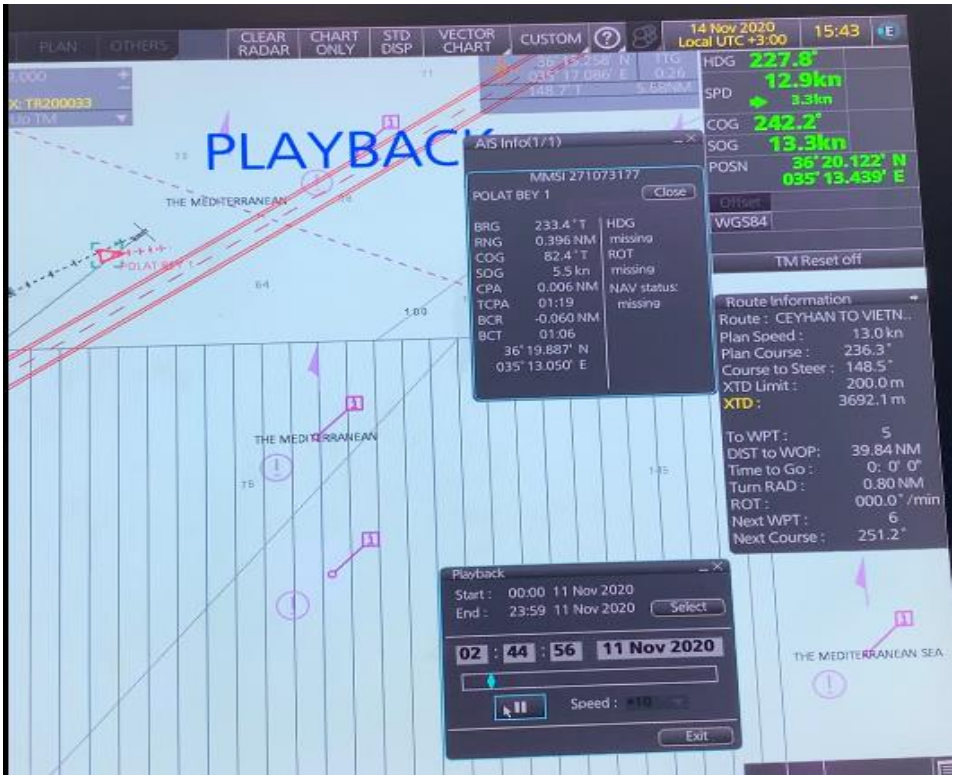

Image 40: Screenshot from ECDIS When POLATBEY-1 Headed to Starboard 66 Degrees.

At 5:46:06 AM (Image 41), POLATBEY-1 altered her course from 36 degrees to starboard relative to her previous course, while she was sailing at a speed of 5.5 nautical miles on her course of 116.6 degrees. Meanwhile, the tanker manoeuvred to the port and the collision took place. At the time of the collision, the tanker was on the course 187.3 and at a speed of 10.3 nautical miles.

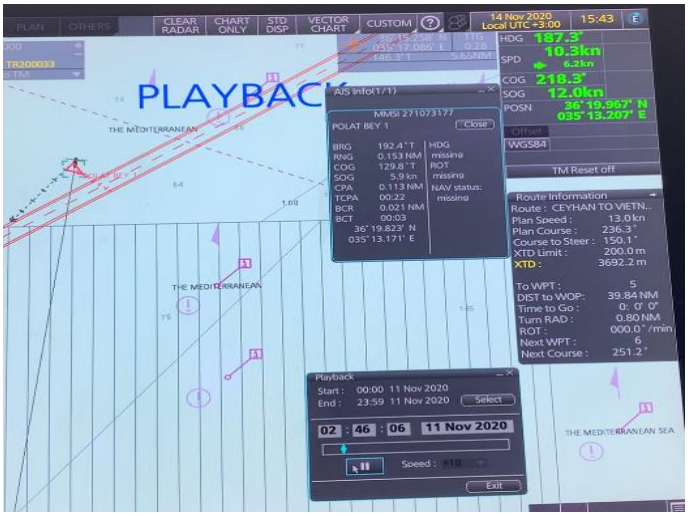

Image 41: The Collision Time of The Vessels According to Screenshot From ECDIS

As evidenced by the manoeuvres of the vessels, the Officer on the Watch of the tanker, EPHESOS altered her course by 12.3 degrees during the 22-minute period from 5:20 AM when he noticed the fishing vessels and began manoeuvring to clear off them, until 5:42:36 AM when he initiated the first manoeuvre to avoid a serious collision. This is consistent with the data acquired from VTS and presented in Table I.

Table 2 depicts the manoeuvres of the tanker, EPHESOS and the fishing vessel, POLATBEY-1 from 5:42:36 AM to 5:46:06 AM when the Officer of the Watch initiated the first manoeuvre to avoid a serious collision.

TİME	DISTANCE BETWEEN THEM	THE BEARING OF POLATBEY-1 RELATIVE TO THE TANKER	VESSEL MANEUVERS	M/T EPHESOS		POLATBEY 1	
				THE COURSE	THE SPEED	THE COURSE	SPEED
5:42:36 AM	1,1 NM	233.9	POLATBEY-1 alters her course 14 degrees to the port. The bearing altered to port by 2.7 degrees. The tanker executes the port 5 degrees order.	249.5	13.6	16.2	6.2
5:44:16 AM	0,54 NM	234.8	The tanker executes the port 15 degrees order. While the tanker altered her course 5 degrees to the port, the course of POLATBEY-1 remained unchanged.	237.1	13.3	16.2	5.9
5:44:36 AM	0,5 NM	235.5	The tanker executes port 20 degrees order. POLATBEY-1 crossed ahead of the tanker.	234.5	13.2	16.2	5.9

TİME	DISTANCE BETWEEN THEM	THE BEARING OF POLATBEY-1 RELATIVE TO THE TANKER	VESSEL MANEUVERS	M/T EPHESOS		POLATBEY 1	
				THE COURSE	THE SPEED	THE COURSE	SPEED
5:44:56 AM	0,39 NM	233.4	While POLATBEY-1 altered her course 66 degrees to starboard, the tanker altered her course 6 degrees to port.	227.8	13.3	82.4	5.5
5:46:06 AM	Collision	-	POLATBEY-1 set her course 36 degrees to starboard before the collision.	187.3	10.3	129.8	5.9

Table 2: Maneuvers by The Tanker, EPHESOS And the Fishing Vessel, POLATBEY-1 Between 5:42:36 AM and 5:46:06 AM

As can be seen from Table 2, the Officer on the Watch of the tanker began manoeuvring by setting the rudder angle to the port 5 degrees to avoid a collision, then increased the rudder angle to 20 degrees at 5:44:36 AM, in the meantime, the course of the vessel altered 15 degrees (249.5-234.5) towards the port. Meanwhile, POLATBEY-1 crossed ahead of the tanker. After 20 seconds, the alteration in course of the tanker had reached 21.7 degrees as she continued turning with the inertial force. Meanwhile, POLATBEY-1 suddenly altered her course towards starboard by 66 degrees, while the tanker altered her course for another 6 degrees to port. Eventually, the vessels collided at 5:46:06 AM.

When the manoeuvres of the vessels were examined, both vessels had significant course alterations in the last 3 minutes and 30 seconds before the collision, however despite having enough time to execute a manoeuvre to avoid a collision, the collision was unavoidable they did not maneuver in time.

It is considered that the Officer on the Watch of the tanker started the manoeuvre too late to avoid collision, as he did not alter the course substantially rather than minor course alterations up to 1.1 miles away on the assumption that the fishing vessel was a give-away

vessel as the fisherman saw himself on the port, and therefore, the fishing vessel must have manoeuvred to avoid collision.

According to the VDR and ECDIS and recordings of the VTS, the tanker and the fishing vessel attempted to avoid collision by altering their course, but neither vessel's speed changed.

On the other hand, it is considered that the action of the Tanker's Officer on Watch, based on the assumption that he could avoid the collision only by the alteration of course, and the lack of a decrease in speed resulted in severe collision and fatality.

When the manoeuvres of the fishing vessel are examined based on the data in Table I and Table II, until 5:42 AM, when the Officer on the Watch of the tanker realized that the fishing vessel had altered her course to the port, it appears that the speed of the vessel remained constant, and made variable course alterations to starboard and port. This suggests that the fishing vessel was not paid attention to safe navigation but engaged in fishing activities.

At 5:42 AM, the fishing vessel should have altered her course to starboard in order to avoid collision according to the COLREGS, rather altered her course to her port and tried to cross ahead of the tanker. However, the situational awareness of the fishing vessel was weakened as a consequence of becoming dangerously close quarters to the tanker after crossing ahead of her, and she suddenly altered her course to starboard 66-degree, demonstrating that she did not conform with the applicable COLREGS provisions.

3.2 Look-out

One of the most important tasks that must be regularly undertaken during the bridge navigation watch is to maintain a proper look-out by sight and hearing. While undertaking this task, the officer on watch must pay close attention to nautical indications, such as watercraft, lighthouses, and buoys that might jeopardize the ship's navigational safety, as well as whistles.

Rule 5 of COLREGS - Look-out states: *"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"*

Furthermore, the rules for Look-out under the heading of Principles to be Observed in Keeping a Navigational Watch in Part 4-1 of Section VIII/2 of the Standards of Training, Certification and Watchkeeping for Seafarers (STCW) are as follows.

> ***14*** *A proper look-out shall be maintained at all times in compliance with rule 5 of the International Regulations for Preventing Collisions at Sea, 1972...*
>
> ***15*** *The look-out must be able to 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.*
>
> ***16*** *The duties of the look-out and helmsman are separate…"*

3.2.1 The Tanker, EPHESOS

There was one look-out as well as an Officer on Watch on the bridge of the tanker. The Officer on Watch noticed the fishing vessels at sufficient distance and had enough time to manoeuvre. The tanker and the fishing vessel came dangerously close to each other and collided due to small alterations of course to avoid a collision.

Failure to make timely and effective manoeuvres puts forth the loss of time advantage when the tanker gained by the look-out to avoid a collision.

3.2.2 Fishing Vessel

It is impossible to identify who was on the bridge during the navigational watch as all the crew on the fishing vessel were dead. Therefore, according to the manning certificate of the fishing vessel, there was no tangible proof that the Master and the able seamen on board were on the lookout.

However, when the course of the fishing vessel from 5:20 AM to 5:42 AM is analyzed according to table 1, it is considered that she altered her course to seek fish rather than avoid a collision. In the meantime, not behaving that it has received visual warnings by ALDIS made by the tanker suggests that she maintained no proper look-out by sight and hearing for safe navigation in accordance with COLREG.

3.3 Crossing Situation

Rule 15 of COLREGS - Crossing situation states *"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."

VTS and VDR data extracted from the tanker, EPHESOS indicates that the fishing vessel was noticed by the tanker on the port side and fishing vessel was expected to move out of the tanker's way. However, since there was a group of fishing vessels with limited manoeuvre capacities around the fishing vessel up until 4 minutes before the collision (Image 27), it is considered that fishing vessel might have started to manoeuvre late to avoid a collision as she expected for the manoeuvre from the tanker.

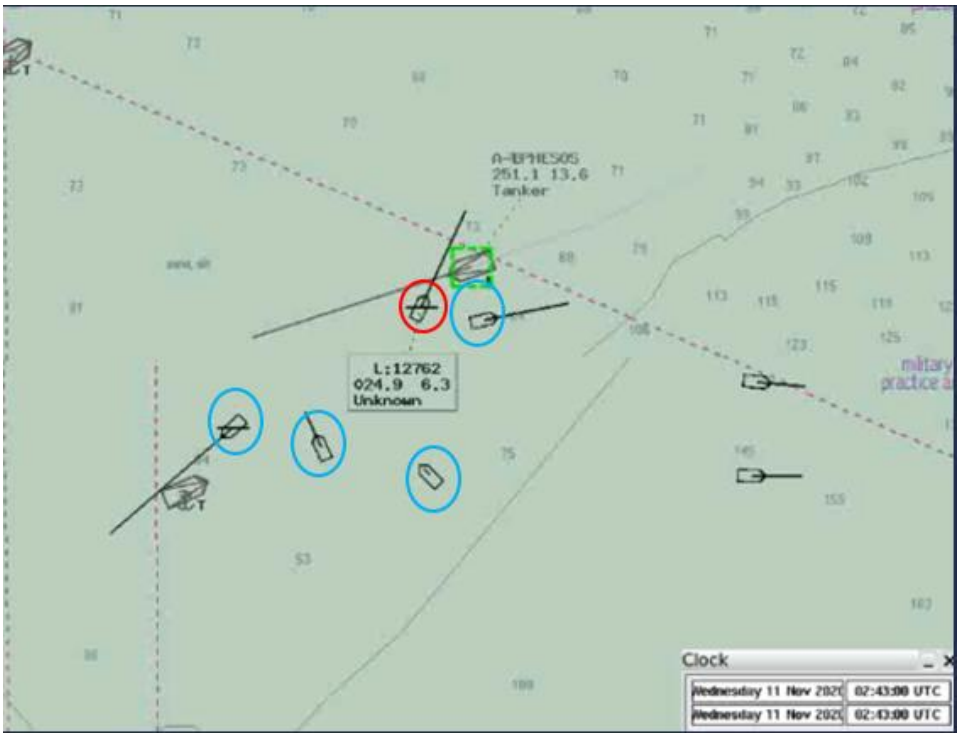

Image 42: Fishing Vessel and Other Fishing Vessels Around at 5:43 AM

3.4 Use of Warning Signals and VHF

Rule 34 of COLREGS - Maneuvering and warning signals states: … *"(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 a 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."*

Rule 36 of COLREGS - Signals to attract attention states: *"If necessary to attract the attention of another vessel any vessel may make light or sound signals that cannot be mistaken for any signal authorized elsewhere in these Rules or may direct the beam of her searchlight in the direction of the danger, in such a way as not to embarrass any vessel. Any light to attract the attention of another vessel shall be such that it cannot be mistaken for any aid to navigation. For the purpose of this Rule the use of high intensity, intermittent or revolving lights, such as strobe lights, shall be avoided.* ''

The Officer on Watch altered the course of the tanker slightly towards the starboard side to clear off the fishing vessels and thereafter called the fishing vessel named MAHMUTCAN 1, which was sailing towards the course of the tanker, and then the fishing vessel POLATBEY 1, with which she was collided, by VHF. However, the fishing vessel MAHMUTCAN 1, which he first called by VHF, did not respond to the calls of the tanker but moved out of the tanker's course. The fishing vessel, POLATBEY-1 did not respond to VHF calls of the tanker's Officer on Watch.

The Tanker's Officer on Watch issued a visual warning through the ALDIS lamp of the vessel at 5:40:06 AM for the first time and at one-minute intervals thereafter to draw the attention of the fishing vessel but was unsuccessful.

However, it is apparent that the fishing vessel, POLATBEY-1 would be able to assess the presence of a collision danger and subsequently, make the proper manoeuvre to avoid a collision if the tanker utilized the vessel's whistle, indicated by COLREGS under the heading of Maneuvering and Warning Signs.

The vessels are outfitted with contemporary technology such as Radar, ARPA, AIS, and Electronic Charts, which aid in decision-making, particularly in avoiding collision and navigating the waters safely. In addition to these devices, VHF radiotelephony, which allows for vessel-to-vessel and vessel-to-shore communication, is also utilized on occasion to communicate with other vessels in order to avoid collision.

While there are legal procedures to follow when seeking assistance or undertaking search and rescue operations, there are no rules or statutory regulations governing the use of VHF in collisions. The COLREGS Convention, which lays out the rules that vessels must follow to avoid a collision at sea, makes no reference to the use of VHF as an auxiliary tool in

preventing collison . To be more precise, there is no guidance on when and how to use a wireless phone to avoid collision.

Today, officers on the watch communicate with vessels at risk of collision by VHF, employing radar or other navigational aids, and manoeuvre by understanding their intentions or planning cooperative manoeuvres to avoid a collision. However, the advantage of being able to communicate with other vessels through VHF and execute the most precise manoeuvre in the sea can occasionally become a drawback. The fact that the officers of the watch on the bridges of both vessels are generally of different nationalities can lead to misunderstanding manoeuvre plans, as well as delaying the proper manoeuvre to avoid collisions, resulting in collisions. The fact that the crews of fishing vessels are busy navigating, especially in small sea vehicles they encounter in local waters, do not speak any language other than their own, and VHF communication can be established from vessel to vessel, is the most significant communication roadblock in the way of being warned about potentially dangerous situations.

In such instances, the VTS may contact the fishing vessels and advise them on how to manoeuvre or cross with other vessels. However, the officer in charge of the watch believes that the VTS operator is only providing advice and that the ultimate decision should be taken by him, taking into consideration all information received from navigational aids (Radar, ARPA, AIS, Electronic Charts, etc.) and VTS.

Prior to the accident, the Tanker’s Officer on Watch, EPHESOS attempted to communicate with the fishermen through VHF to identify the danger, but his attempts were futile. The accident took place in the waters served by Mersin VTS. Therefore, although the Tanker’s Officer on Watch was unable to communicate directly with the fishermen, he couldn’t contact and utilize VTS to warn the fishermen or plan manoeuvres. The failure of the Officer on Watch of the oil tanker to contact through VTS until the time of the accident although he used audio communication and visual warning equipment to reach the fishing vessel by sensing the danger of collision, is considered to be one of the safety factors that contributed the accident.

3.5 Bridge Resource Management

Bridge Resource Management is the effective management and integration of human and technological resources that are supplied to the bridge crew in order to deliver safe and efficient ship navigation. The principles of Bridge Resource Management serve as an important guide for Masters and Officers on the navigational watch. Optimized Bridge Resource Management assures navigational safety by making full use of all the technical benefits of bridge navigation equipments and providing the proper communication and information exchange at all levels of the bridge crew, as well as maintaining the situational awareness of the officers on watch.

More specifically, it is presented in Chapter VIII Part 3 of the STCW Code, "Principles Applying to Watchkeeping Generally" as well as listed in Chapter VIII Part 4.1 of the STCW Code, "*Principles to be Observed in Keeping a Navigational Watch*".

The said provisions ensure that the Masters take appropriate precautions to organize and manage their bridge watches, while officers on the watch accomplish their duties effectively. Furthermore, the bridge crew is supported in making decisions, probable errors are averted, and measures are taken to eliminate or mitigate the causes of possible marine casualties.

It is stated that the Master issues Master's Standing Orders, in which the prevailing traffic conditions in the region were evaluated, to ensure the smooth operation of the watch and to raise situational awareness, and such orders require the Master to be notified when the closest approach point of a vessel with a potential collision was below 2 NM. In this case, failure to notify the Master, despite there being a risk of collision with the fishing vessel, was considered to be one of the safety factors.

On the other hand, when the Tanker's Officer on Watch called the fishing vessel and received no response, he did not ask for assistance from VTS, nor did he seek navigational aid with regard to the risk of collision, and he did not to make use of VTS properly.

It is understood that the Master of the fishing vessel similarly did not attempt to seek any navigational aid from VTS either on the timely assessment of the risk of the collision or the warning to the Tanker. Both vessels did not benefit from VTS properly. This indicates that

the crew on the navigational watch on both vessels had no sufficient training and knowledge on how to make use of the working principles, facilities and capabilities of VTS.

3.6 Weather and Sea Conditions

According to the data and information, the prevailing weather and sea conditions during the accident were not considered to be a factor that contributed to the investigated marine casualty.

SECTION 4 – CONCLUSIONS

1. The Tanker's Officer on Watch, EPHESOS began altering her course with the autopilot at 5:20 AM in order to avoid casualties in a close-quarters situation with the vessels that are sailing in groups/fishing in the area.
2. The Officer on Watch attempted to call the fishing vessels, POLATBEY-1 and MAHMUTCAN, which were particularly close-quarters, to understand their intentions/warn them.
3. The VHF calls by the Tanker's Officer on Watch through VTS to understand the intentions/warn the fishing vessel, POLATBEY-1 had failed due to language challenges.
4. ALDIS was utilized by the Tanker's Officer on Watch to visually warn the fishing vessel POLATBEY-1.
5. The Tanker's Officer on Watch did not utilize the vessel's whistle to warn the fishing vessel POLATBEY-1.
6. The Tanker's Officer on Watch attempted to warn the fishing vessel by contacting her through ALDIS and VHF devices, however, the fishing vessel remained stationary to avoid a collision, suggesting that she was not maintaining a proper look-out.
7. The Tanker's Officer on Watch altered her course by 12.5 degrees towards her starboard during the 22-minute period from 5:20 AM to 5:42 AM, when the tanker tried to clear off the vessels that were seeking fish and engaged in fishing activities in groups in the area where she was sailing, however, those minor course alterations were insufficient to prevent the fishing vessel from close-quarters at 5:42 AM.

8. The variable course alterations by the fishing vessel, POLATBEY-1 to starboard and port until 5:42 AM while seeking fish and fishing prompted her to become dangerously close-quarters to the tanker.
9. The fishing vessel should have altered her course to starboard in order to avoid collision according to the COLREGS, rather altered her course to her port and crossed ahead of the tanker at 5:42 AM.
10. The speeds of both vessels were not lowered until the time of the collision.
11. The sudden unplanned manoeuvres of the tanker to avoid the collision, four minutes before the collision (5:42 AM), were insufficient to avoid the collision.
12. At 5:44:56 AM, the fishing vessel suddenly altered her course 66 degrees to the starboard, initiating the sequence that resulted in a collision between the two vessels.
13. The tanker's inability to slow down from the moment the crew took the helm at 5:42 AM and initiated a manoeuvre to avoid a collision with course alterations until the collision occurred resulted in a serious collision.
14. Failure to make timely and effective manoeuvres to move away from fishing vessels that were fishing in groups resulted in the loss of time advantage when the tanker gained by the look-out to avoid a collision.
15. The course of action of the Officer of the Watch, who could not observe that the bearing between the two ships, revealing the existence of the danger of collision, did not change, is not in accordance with good maritime practices and relevant COC rules.
16. It is discovered that the Orders by the Tanker's Master to call the Master on the Bridge at the closest approach distance (2 Nautical Mile), indicated in the night orders given by the Master, and sufficient time before the collision were not followed.
17. The tanker that couldn't contact the fishing vessel did not ask for assistance from VTS after calling and receiving no response from the fishing vessel.
18. The crew on the navigational watch of both vessels did not attempt to seek any navigational aid from VTS on the risk of collision.
19. The prevalent weather and sea conditions during the accident were not considered to be a factor that contributed to the investigated marine casualty.

SECTION 5 – RECOMMENDATIONS

The following recommendations are directed by considering the analysis and conclusions obtained from the accident investigation.

The Ship Operator Andriakı Ship Co Ltd is recommended to;

01/01-22 Carry out additional training and internal audits must be held for the bridge crew on the navigational watch to always comply with the COLREGS rules and the Master's Standing Orders.

02/01-22 Establish the procedure to ask for navigational aid from VTS in cases where there is no contact with vessels that pose a risk of collision.

The Directorate General of Maritime Affairs is recommended to;

03/01-22 Deliver on-site training on VTS to fishing vessel masters who are sailing in local traffic in the zones within the VTS region.

The Directorate General of Coastal Safety is recommended to;

04/01-22 Monitor the areas, especially, where there is a risk of collision between vessels operating in local traffic and those sailing internationally more carefully, and warn the vessels that do not comply with the COLREGS rules.

05/01-22 Develop procedures for notifying the vessels that violate COLREG rules to the Maritime Administration for the purpose of reporting to the flag state of the relevant vessel,

The Chambers of Shipping are recommended to;

06/01-22 Circulate the safety investigation report and the VTS Implementation Instruction to your members in the fishing industry to minimize or prevent similar accidents.