



FINAL MARINE SAFETY INVESTIGATION REPORT ON  
VERY SERIOUS MARINE CASUALTY

<b>VESSELS' NAMES</b>	GLARD 2	DURSUN ALI COSKUN
<b>FLAGS OF THE VESSELS</b>	RUSSIAN	TURKISH
<b>IMO NOs OF THE VESSELS</b>	9687980	8687294
<b>LOCATION OF ACCIDENT</b>	5.87 Nautical Miles North West of Rumeli Feneri/Istanbul BLACK SEA	
<b>DATE OF ACCIDENT</b>	10 January 2020 / 06.06 (LT)	
<b>DEAD/INJURED/MISSING</b>	2/-/1	
<b>DAMAGE DEGREE:</b>	- / Fishing Vessel Sank	
<b>ENVIRONMENTAL POLLUTION</b>	-	

Board Decision No: 3 / D- 02 / 2023

Date: 27 / 02 / 2023

The sole objective of this investigation is to make recommendations for the avoidance of similar accidents and incidents within the framework of the Transport Safety Investigation Center regulation. This report is neither the product of a judicial or administrative investigation nor intended to attribute blame or liability.

## LEGAL BASIS

This marine accident was investigated in pursuance of the provisions of the “DIRECTIVE ON INVESTIGATION OF MARINE CASUALTIES AND INCIDENTS,” which was published and adopted in the Official Gazette on 27 November 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	International Convention on Standards of Training, Certification & Watchkeeping for Seafarers
IMO	International Maritime Organization
COLREG	International Regulations for Preventing Collisions at Sea
ECDIS	Electronic Chart Display and Information System
VTS	Ship Traffic Service
UTC	Coordinated Universal Time
DWT	Deadweight (dwt)Tonnage
COG	Course Over Ground

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## SUMMARY



Image 1 Location of the Accident

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

GLARD 2, a Russian-flagged tanker loaded with 5951 tonnes of sunflower oil, departed from Rostov port of Russia on 06 January 2020 to Izmir/Turkiye port. DURSUN ALI COSKUN, a Turkish-flagged fishing vessel departed from Rumeli Feneri Fishermen's Shelter at 05:15 on 10 January 2020 for fishing.

While sailing in a traffic separation scheme on the northern approach of the Istanbul Strait, a marine casualty occurred at 06:06 on 10 January 2020, at 5.87 nautical miles northwest of Rumeli Feneri, when the tanker GLARD 2 and the fishing vessel DURSUN ALI COSKUN collided. As a consequence of the accident, the fishing vessel DURSUN ALI COSKUN firstly capsized and then sank. Although 3 out of 6 crew members on board survived, 2 crew lost their lives and 1 crew is missing. The vessel GLARD 2 sustained no damage due to the collision.

The marine casualty investigation indicated that the vessel manoeuvred in breach of the rules of the COLREG<sup>1</sup> and the vessel personnel/team in charge of both navigation watches involved in the collision did not keep an adequate lookout. Based on the conclusions of the accident investigation, recommendations were directed to the fishing vessel owners and to the operator of GLARD 2.

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<sup>1</sup> International Regulations for Preventing Collisions at Sea

## 1. SECTION - FACTUAL INFORMATION

### 1.1. Information on the Vessel

	<b>GLARD 2</b>	<b>DURSUN ALI COSKUN</b>
Flag	Russian	Turkish Flag
Classification Society	Russian Maritime Register of Shipping (RMRS)	-
IMO Number	9687980	8687294
Type	Tanker	Fishing Vessel
Place and Year of Building	China -2013	Karadeniz Ereğli- 1995
Gross Tonnage	4794	138
Length Over All	139,9 meters	31,9 meters
Main Engine and Its Power	Wartsila– 6L20, 2400 kW	VOLVO PENTA 470 BHP YANMAR 650 BHP



Image 2 The Tanker, M/T GLARD 2



Image 3 The Fishing Vessel, DURSUN ALI COSKUN

## 1.2. Information on Vessel Navigation

	<b>GLARD 2</b>	<b>DURSUN ALI COSKUN</b>
Port of Departure	Rostov/Russia	Istanbul
Port of Arrival	Izmir	Off the coast of Türkeli
Cargo Details	5951 MT Sunflower Oil	-
Number of Personnel	14	6
Minimum Safe Manning	13	2
Type of Navigation	Oceangoing	Near Coastal Voyage

## 1.3. Information on Marine Casualty

Date/Time of Accident	10 January 2020/ 06:07 (GMT +3)	
Accident Type (IMO)	Very Serious Marine Casualty	
Type of Accident	Collision	
Location of Accident	41°19' 36" North - 29°03'42" East	
Injured/Dead/Missing	0 / 0 / 0	- / 2 / 1
Damage	-	The fishing vessel sank.
Pollution	-	Not reported.

## 1.4. Information on Environmental Conditions

Wind	South-Southwest breeze
Sea Condition	-
Wave Height	0.5 m to 1.5 m



Visibility	Good
Weather Condition	Partly cloudy

## 1.5. Information on the Vessel and Manning

### 1.5.1. Tanker GLARD 2

The tanker GLARD 2 is a 6407 GT IMO Type 2<sup>2</sup> chemical tanker. The vessel was built in 2013 at Yangzhou Hai Chuan shipyard in China and registered with RMRS Russian Class. The vessel has a length overall of 139.9 m, a breadth moulded of 16.7m and a depth of 6.40m. The summer loading line draft of the vessel, equivalent to 6407 DWT, is 4,096 m.

The vessel had valid legal and class certificates at the time of the accident and their survey times were not expired.

ISM (Safety Management System) Certificate of Document of Compliance of the ship management was issued on 16 April 2019 and is valid until 16 April 2024.

### 1.5.2. Crew of GLARD 2

The tanker GLARD 2 has a total of 14 crew including the master, officers and crew, all of whom are Russian nationals. The number and qualification of the crew conform to the Minimum Safe Manning Certificate issued by the Flag State Administration, which required a crew complement of 13. Crew certificates were checked and found valid and in order.

Watchkeeping hours at M/T GLARD 2 are scheduled based on 4 hours on and 8 hours off.

- 1st Officer is on watch at 0400-0800 and 1600-2000 hours, 2nd Officer at 0000-0400 and 1200-1600 hours, and the master at 0800-1200 and 2000-2400 hours.

The experience and familiarization of the involved crew member and the Master responsible from the watch at the time of the accident are as follows;

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<sup>2</sup> IBC 2004 Amend / Annex (Chapters) / 2.1.2.2

- The master, a Russian national, began his seafaring career about 20 years ago and has been working as a master for the last five years for the operator of GLARD 2. At the time of the accident, he was on the bridge.
- The first officer, a Russian national, was 52 years old at the date of the accident and had 3 years of work experience as a first officer. He has been working at the operator of GLARD 2 for one year. At the time of the accident, he was on the bridge.
- The lookout on watch, a Russian national, was 27 years old at the date of the accident and had 4 years of sea experience. He has been working for the operator of GLARD 2 for two years. At the time of the accident, he was in his cabin to get ready for the anchoring manoeuvre.

### 1.5.3. Fishing Vessel DURSUN ALI COSKUN

The fishing vessel was built in 1995 at Karadeniz Ereğli Shipyard. The length overall is 31,9 m, the breadth moulded is 8,12 m and the depth is 2,62 m.

The vessel had valid legal certificates at the time of the accident and their survey times were not expired.

## 2. SECTION – NARRATIVE

### 2.1. Sequence of Events

Tanker GLARD 2, after completion of loading operations at Rostov-On-Don port of Russia, departed from the port on 06 January 2020. On 10 January 2020 at 03:20, the master of the vessel communicated with the Istanbul Vessel Traffic Services (VTS), Sector Turkeli and reported the Navigation Plan 2 (SP 2) before the northern entrance of the Istanbul Strait<sup>3</sup>. The tanker kept on course 241° to proceed to the anchorage site as instructed by the VTS.

On 10 January 2020 at 05:11, the fishing vessel DURSUN ALI COSKUN departed from Rumeli Feneri Fishing Port off the coast of Karaburun and Akpınar for fishing (Image 4). While the fishing vessel was getting close to the tanker GLARD 2, she was sailing on course 340° off the coast of Kilyos.

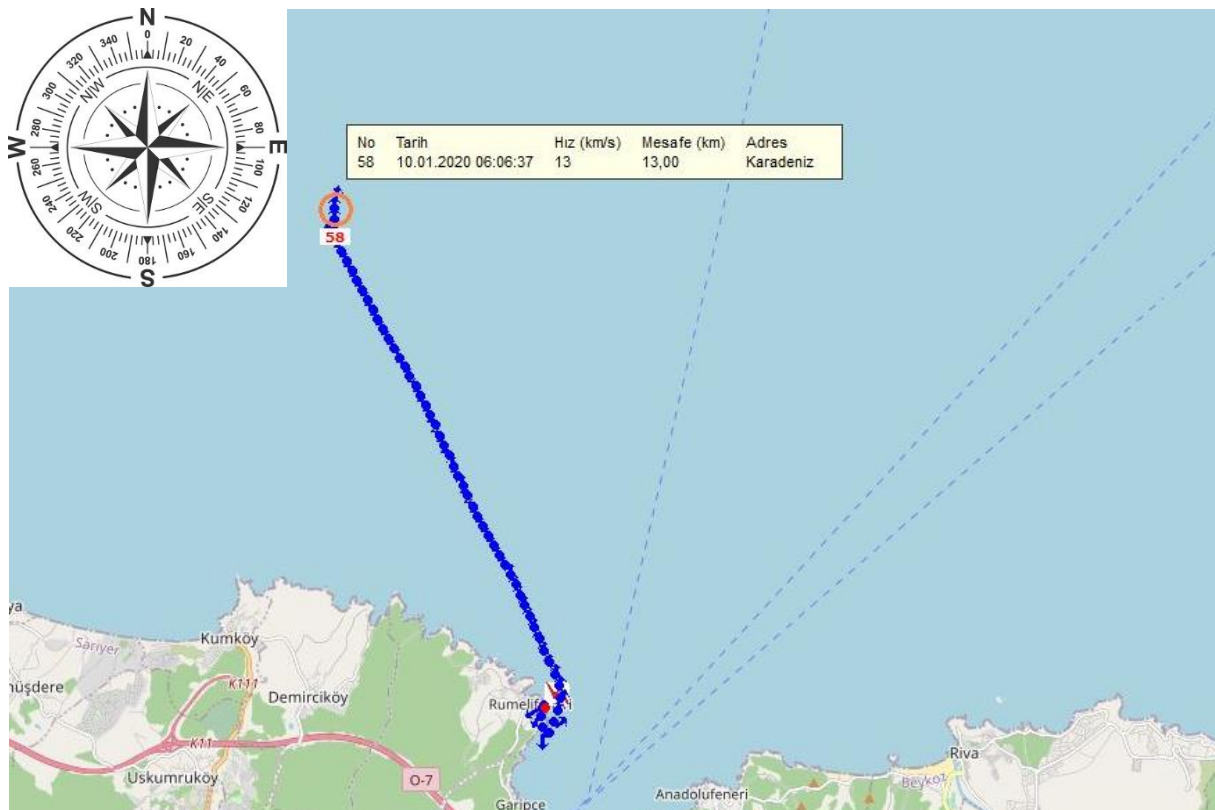


Image 4 The Course of the Fishing Vessel DURSUN ALİ ÇOŞKUN

The bridge crew of the tanker GLARD 2 noticed the cluster of fishing vessels heading towards them at a distance of approximately 3 nautical miles on the radar after 05:00. When they set the range of the radar to 1.5 nautical miles, they noticed the fishing vessel DURSUN ALI COSKUN

<sup>3</sup> 2 hours before or 20 miles before - 20 nautical miles (whichever comes first)

sailing towards them for the first time. When they saw the fishing vessel with their eyes, the distance between their vessel and the fishing vessel was around 300-500 metres. When the tanker was seen by the fishing vessel DURSUN ALI COSKUN, the distance between the two vessels was 10 metres.

While the tanker GLARD 2 maintained her course and speed without any alteration, the fishing vessel DURSUN ALI COSKUN first commanded a full ahead with her engine and then manoeuvred towards her starboard at the very last minute by switching the rudder from autopilot to manual mode. However, since the manoeuvres of both vessels to avoid collision failed to be executed in time, the collision took place at 06:06.

The collision resulted in the stuck of the fishing vessel in front of the bulb of the tanker and start drifting. Although the master of the fishing vessel manoeuvred full speed back and forth with the engines to avoid drifting, he could not avoid getting adrift. Thereafter, the fishing vessel began to take water from the bridge by heavily listing to her starboard under the effect of the drift. Meanwhile, since the master of the fishing vessel couldn't get out of the bridge door, he got out of the windscreen and tried to warn the tanker by shouting out.

After the fishing vessel drifted for nearly 0,5 nautical miles for around 3 minutes stuck to the bulb of the tanker, at 06:09:12, the tanker stopped and manoeuvred full astern propulsion and disengaged from the fishing vessel. Immediately after the tanker disengaged from the fishing vessel, the fishing vessel capsized and sank approximately 5 minutes later.

## 2.2. Aftermath of the Accident and Search and Rescue Operations

At the time of the collision, the master of the fishing vessel was on the bridge, one ordinary seaman was on the starboard deck of the vessel and 4 other crew members were resting in their accommodation.

After the collision, 6 casualties on board the fishing vessel were overboard. The other fishing vessels in the region at the time proceeded to the accident scene and initiated search and rescue operations to save the casualties who were overboard. The fishing vessel MAHMUT SEFA rescued a total of 3 casualties, the master of the fishing vessel on the bridge, the ordinary seaman on deck and a crew member in the accommodation, from sea. The three crew members who stayed in their accommodation trapped aboard the capsized vessel at first. Then, the fishing vessel MAHMUT SEFA began to search for the missing three casualties.

Meanwhile, the bridge crew of the tanker raised an alarm immediately after the collision and informed the crew. They lowered the rescue boat to sea level to help the fishing vessel. However, since other fishing vessels in the region attended the scene for search and rescue operations, the VTS instructed GLARD 2 to anchor, so she took the rescue boat into its place instead of launching it. The tanker anchored at D anchorage area, north entrance of Istanbul Strait at 07:30.

While one of the crew members who was overboard and lost at sea was found dead the next day, the body of the other crew member was found 4 days after the accident. One crew member is still missing.

### 2.3. Damage Details

During the accident investigation on the tanker GLARD 2, which was at anchor in the anchorage site after the accident, the traces observed in the area between the starboard and port hawsepipes after the accident caught attention (Image 5).

During the damage inspection at the anchorage site, the impact point was determined to be between two hawsepipes.



Image 5 Front view of the tanker GLARD 2

The fishing vessel DURSUN ALİ ÇOŞKUN sank after heavy damages that she sustained after the collision. The depth measured in the shipwreck images is 71,3 metres (Figure 6).



*Image 6 Shipwreck Image of the Fishing Vessel DURSUN ALİ ÇOŞKUN*

## 2.4. Traffic Separation Schemes of Istanbul Strait

The Regulation on Maritime Traffic Order in the Turkish Straits has been published to regulate maritime traffic for ensuring the safety of navigation in the Turkish Straits and the safety of life, property, sea and environment, and applies to all vessels sailing in the Turkish Straits.

Article 4 of the said Regulation sets the boundaries of the Traffic Separation Scheme. The subject Traffic Separation Scheme was approved by the International Maritime Organisation (IMO) in 1995 and is also plotted on the navigation charts.

The following are the boundaries of the traffic separation scheme to be applied for the north of the İstanbul Strait (Figure 1).

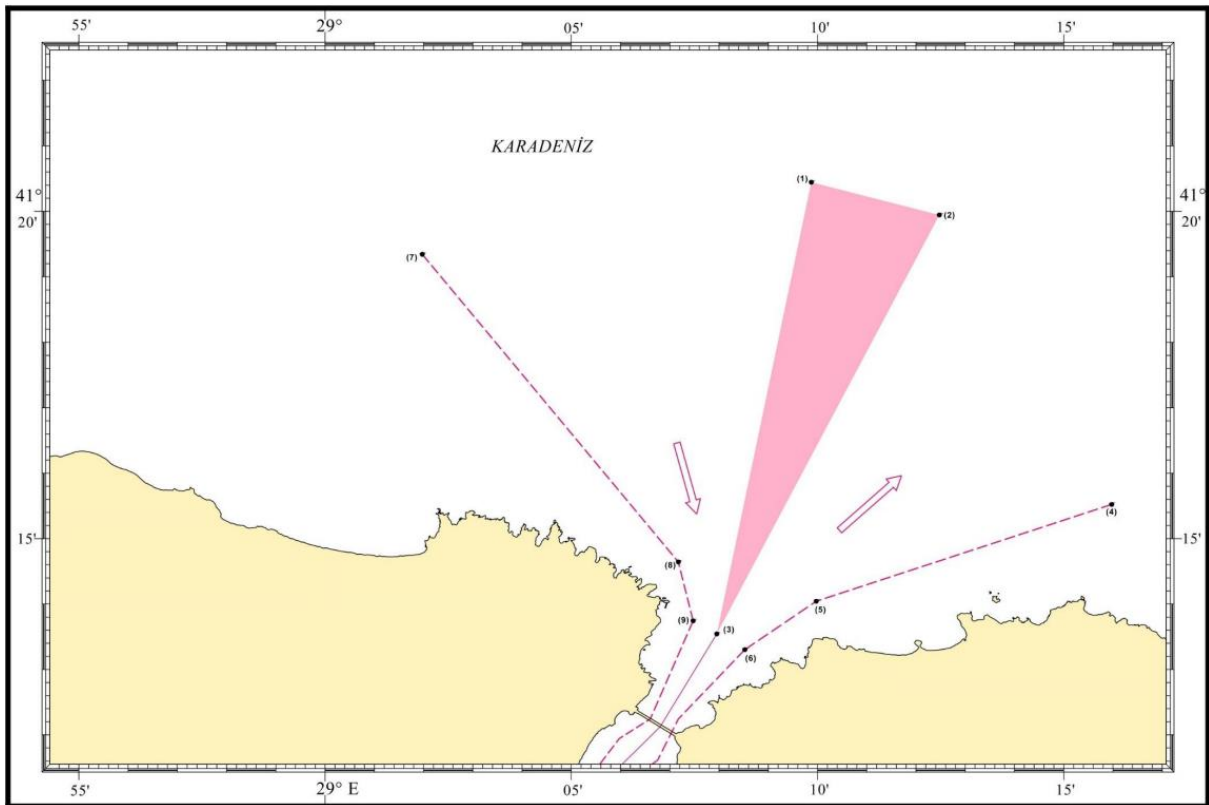


Figure 1 Traffic Separation Schemes of Istanbul Strait - Northern Entrance

#### 2.4.1. Anchorage Areas at the Northern Entrance of the Istanbul Strait

Figure 2 shows the anchorage areas at the northern entrance of the Istanbul Strait.

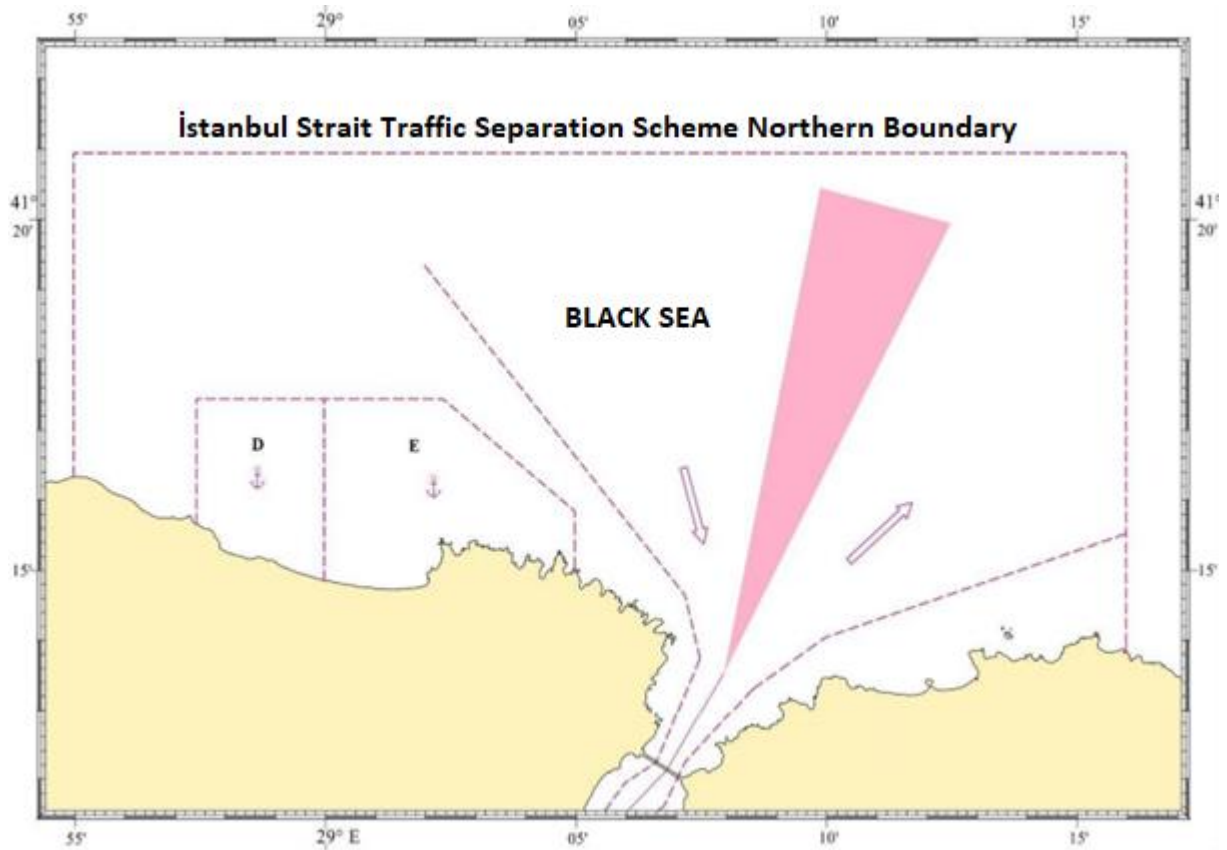


Figure 2 Anchorage Areas at the Northern Entrance of the Istanbul Strait

“D” region anchorage area at the northern entrance of the Istanbul Strait, is assigned for vessels that carry dangerous goods, nuclear-powered military vessels and vessels dealing with gas-free process.



### 3. SECTION– ANALYSIS

*While analysing 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. Look-out

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

Rule 5 of COLREG - Look-out states that: *“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 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 International Convention of Training, Certification & Watchkeeping Standards 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 lookout and helmsperson are separate...”*

##### 3.1.1. Tanker GLARD 2

At the time of the collision, the master and the first officer were on the bridge of the tanker. On the other hand, the deck boatswain, who was assigned to lookout duty on the bridge between 04:00-08:00, went to his cabin at 05:30 to get prepared for the anchoring manoeuvre.

The tanker GLARD 2 was equipped with two radars as well as AIS and ECDIS devices on the bridge. The bridge crew observed too many fishing vessels at a distance of nearly 3 nautical miles from the port side of the vessel. They stated that when they set the range of the radar to 1.5 nautical miles, they noticed the fishing vessel DURSUN ALİ COŞKUN sailing towards

them for the first time. Besides, the crew in charge of the watch on the tanker stated that since the AIS device of the fishing vessel was inoperative, the fishing vessel was identified on the radar only as a small spot. Also, they stated that when they saw the fishing vessel with their eyes, the distance between the two vessels was around 300-500 metres and they noticed that the fishing vessel DURSUN ALİ ÇOŞKUN was sailing straight towards them without altering her course and speed, while all the other fishing vessels, including the fishing vessel involved, were giving way to them.

However, despite the statement of the master of the GLARD 2 tanker that he warned the fishing vessel DURSUN ALİ COŞKUN with searchlight/Aldis and ship's horn when he noticed that the fishing vessel DURSUN ALİ COŞKUN was getting dangerously close to the tanker from the port side while she was on her course, there were no audio recordings as to whether the Aldis was activated or the ship's horn was sounded during the VDR analysis of the tanker.

On the other hand, it is necessary to consider all the prevailing conditions and hazards when construing the rules for avoiding collision at sea and to do what is necessary to prevent a collision. Based on the statements of the bridge crew of the tanker, although it appeared that the fishing vessel was noticed at a sufficient distance, the evidence revealed that the tanker did not alter her course and speed to avoid the collision. The failure of the tanker to take action in time to avoid collision raises the possibility that the tanker might not have noticed the fishing vessel until the very last second before the collision. This suggests that the tanker did not notice the fishing vessel in sufficient time, therefore, did not keep an effective lookout with radar and sight for safe navigation according to the COLREG.

On the other hand, there are no cranes and similar structures that could potentially create blind spots in the perspective of the tanker from the bridge to the bow, which may adversely affect the lookout (Image 7).



*Image 7 View from the bridge towards the bow*

### 3.1.2. The Fishing Vessel

The master of the fishing vessel was on the bridge. The master was alone on the bridge and the rudder was on autopilot. VHF 77 and 16 channels were being listened for an audio lookout. There were two radars on board and one of them was ARPA (Automatic Radar Plotting Aid) radar. ARPA radar was operating at a range of 6 nautical miles and the other radar was switched off. When the master of the fishing vessel saw the tanker, there was a distance of about 10 metres between them.

While the fishing vessel was following Course Over Ground (COG) at 333°, she started to alter her course to starboard at 06:03:37 and her course over ground became 005° at 06:06:06 when the collision took place. This course alteration was not sufficient to avoid the collision and the collision took place. This suggests that the fishing vessel did not notice the tanker in sufficient time, therefore, did not keep an effective lookout with radar and sight for safe navigation according to the COLREG.

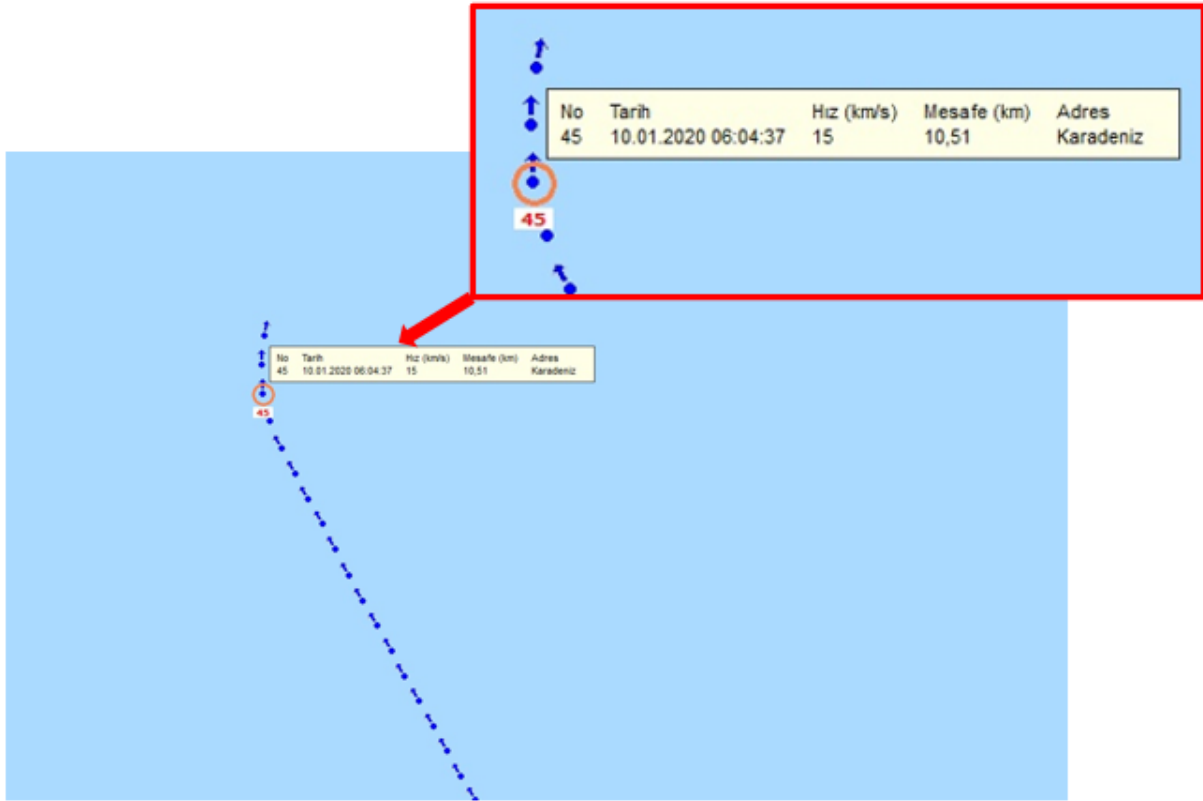


Image 8 Image from Boat Tracking Module Approximately 2.5 Minutes Before the Collision

## 3.2. State of Navigation and Action to Avoid Collision

### 3.2.1. Tanker GLARD 2

Based on the data from VTS, Table 1 analyses the process of the tanker GLARD 2 from approximately 5 minutes before the collision (Image 9) to the moment of collision (Image 10) and the stop of the tanker GLARD 2. It is understood from the data received from VTS that a group of fishing vessels were approaching to the tanker GLARD 2 5 minutes before the collision, and there was a danger of collision between the tanker and the fishing vessel DURSUN ALİ COŞKUN (Image 16). It is understood from Table 1 that the tanker GLARD 2 did not alter her speed to stop at the distance required by the circumstances and conditions to take appropriate and effective action for the avoidance of collision. Additionally, it is an indication that the tanker did not realize the moment of collision, as there was no change for a time in the course and speed of it after the collision.

M/T GLARD 2		
Time	Followed course	Speed
6:01:05 AM	241.7	08.9
6:01:50 AM	241.7	08.8
6:02:42 AM	241.5	08.9

6:04:13 AM	241.6	08.9
6:05:19 AM	241.4	08.9
6:05:25 AM	241.4	08.9
6:05:35 AM	241.4	08.9
6:06:01 AM	241.1	08.9
6:06:09 AM	241.2	08.9 Time of the Accident
6:06:13 AM	241.2	08.9
6:06:22 AM	241.1	08.9
6:06:33 AM	241.1	08.9
6:06:50 AM	241.0	08.9
6:07:04 AM	245	08.0 Speed Drop
6:07:15 AM	244.8	07.2
6:07:20 AM	244.7	06.2
6:07:40 AM	243.9	05.4
6:08:00 AM	244.5	04.1
6:08:15 AM	246.1	03.3
6:08:40 AM	250	1.3
6:09:12 AM	029	0.0 Stopping Time
6:12:06 AM	064.8	01.1
6:14:14 AM		0.0

Table 1 Time 06:01:05 - 06:14:14 Course and Speed of the Tanker GLARD 2<sup>4</sup>

### 3.2.2. Fishing Vessel DURSUN ALİ COŞKUN

Based on the data from the Boat Tracking Module, Table 2 displays the speed of the fishing vessel and her course over the ground from about 4 minutes before the collision until the time of the collision.

DURSUN ALİ COŞKUN		
Time	Followed course	Speed Km/Nautical Mile
6:02:37 AM	333	13/7.02
06:02:37-06:03:37	333	13/7.02
06:03:37-06:04:37	355	15/8.01
06:04:37-06:05:37	347	14/7.56
06:05:37-06:06:37	005	13/7.02

Table 2 Time 06:02:37 - 06:06:37 Course and Speed of the Fishing Vessel DURSUN ALİ COŞKUN<sup>5</sup>

According to the data from the Boat Tracking Module image, it was observed that the fishing vessel was sailing at a speed of 7,6 nautical miles/hour (14 km/h) between the time before the

<sup>4</sup> The course and speed data were obtained from İstanbul Vessel Traffic Services Center.

<sup>5</sup> The course and speed data were obtained from Boat Tracking Module.

collision and the time of the collision. Given the speed data 3 minutes before the collision, it was determined that the fishing vessel was sailing at an average speed of 7,6 nautical miles/hour and the last navigation speed recorded before the collision was 7,02 nautical miles/hour. The data revealed that the speed of the fishing vessel was approximately 7,02 nautical miles/hour at 06:06:09 when the collision had taken place, and therefore, there was no significant speed alteration before the collision.

### 3.3. Action to Avoid Collision

The following articles of the 1972 International Regulations for Preventing Collisions at Sea (COLREG), under Rule 8/Action to Avoid Collisions, are the ones related to the accident:

*(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.*

...

*(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.*

...

*(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.*

#### 3.3.1. Tanker GLARD 2

Table 3 analyses the manoeuvres for the significant alterations on the course and speed of the tanker before and after the collision. Table 3 shows that while the tanker was sailing at 241.2° with a speed of 8.9 nautical miles before the collision, her course was 245° and her speed was lowered to 8.0 nautical miles at 06:07:04 after the collision. When this speed drop is reviewed in Table 2, it is observed that the gradual speed drop continued until 06:08:40, and finally, dropped to zero at 06:09:12.

TIME	VESSEL MANOEUVRES	M/T GLARD 2	
		COURSE	SPEED
06:06:09	There is no alteration in the course and speed of the tanker at the time of the collision. The fishing vessel tries to avoid collision by setting her course to starboard. Meanwhile, the main engine is in full ahead mode.	241.2	08.9
06:06:50	There is no alteration in the course and speed of the tanker even at 41 seconds after the collision.	241	8.9

	The fishing vessel manoeuvres full ahead and full astern propulsion by commanding her main engine to get separated from the tanker.		
06:07:04	There is no alteration in the course of the tanker 55 seconds after the collision and the speed drops to 8 nautical miles. The speed drop of 0.9 nautical miles during this first phase was attributed to the drifting of the fishing vessel which got stuck between the two hawsepipes of the tanker after the collision. The fishing vessel continues to drift in front of the bulb of the tanker.	245	08.0
06:07:20	The course of the tanker does not alter and her speed drops to 6.2 nautical miles about 1 minute and 11 seconds after the collision.	244.7	06.2
06:07:40	There is no alteration in the course of the tanker 1 minute and 31 seconds after the collision and the speed drops to 5.4 nautical miles. The significant speed drop of 3.5 nautical miles during this second phase was attributed to the realisation of the master that he had collided with the fishing vessel and slowed down the speed by the main engine.	243.9	05.4
06:08:00	While the tanker was sailing at a speed of 8.9 nautical miles before the collision, she slowed down to 4.1 nautical miles 1 minute 51 seconds after the collision resulting in a total speed reduction of 4.8 nautical miles.	244.5	04.1
06:08:40	The sudden drop in the speed of the tanker in 40 seconds after 06:08:00 indicates that the vessel's ability to manoeuvre was very strong and the stop distance was too short.	250	1.3
06:09:12	The tanker stopped about 3 minutes after the collision, slowing down her speed to zero.	029	0

Table 3 Manoeuvres of the Tanker GLARD 2 to Avoid Collision

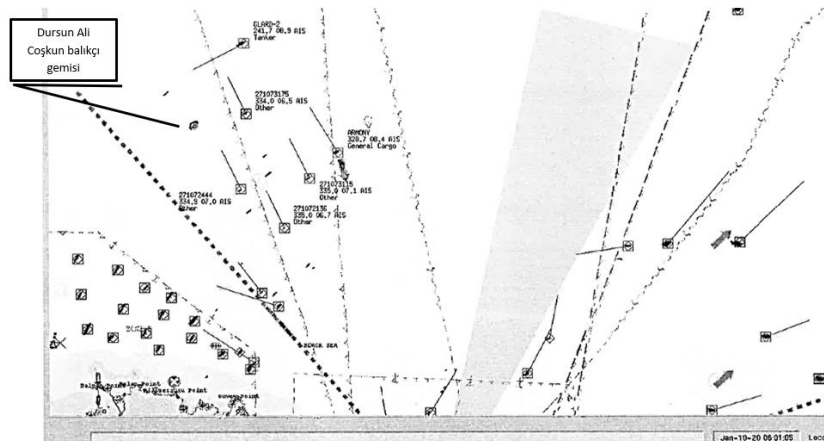


Image 9 Image from the VTS at 06:01:05

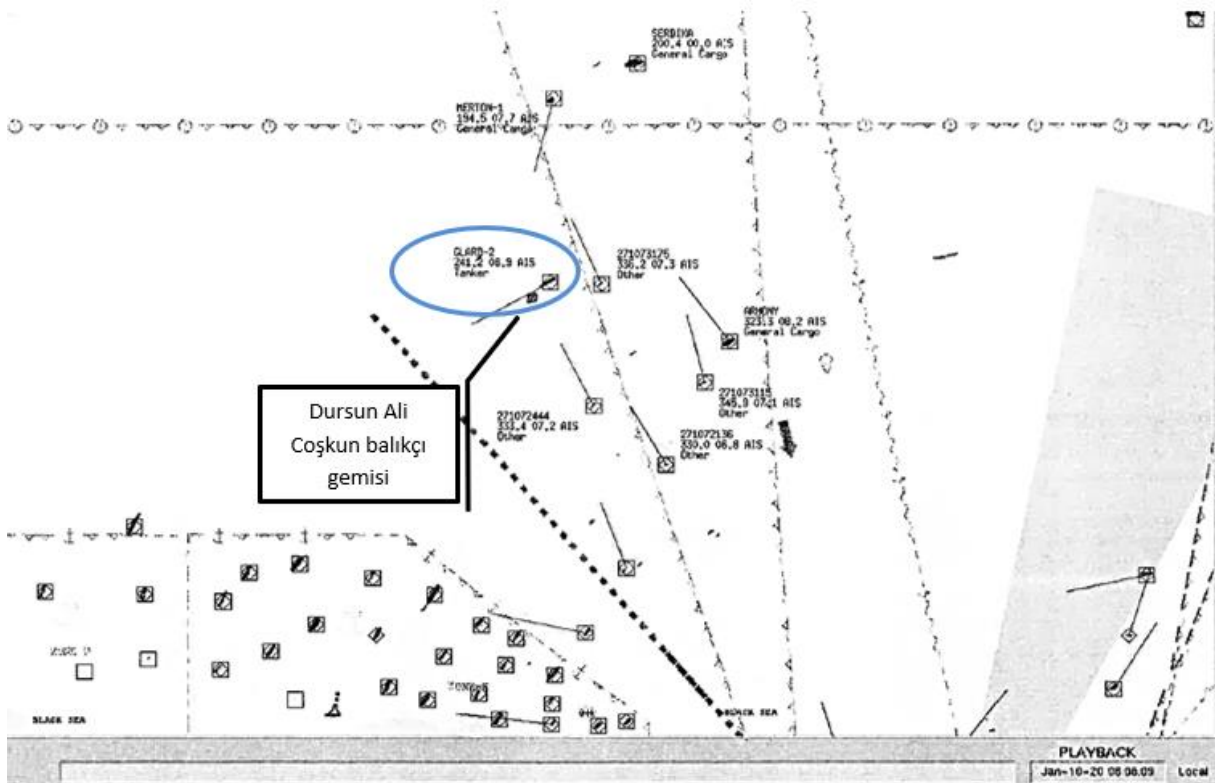


Image 10 Image from the VTS at 06:06:09

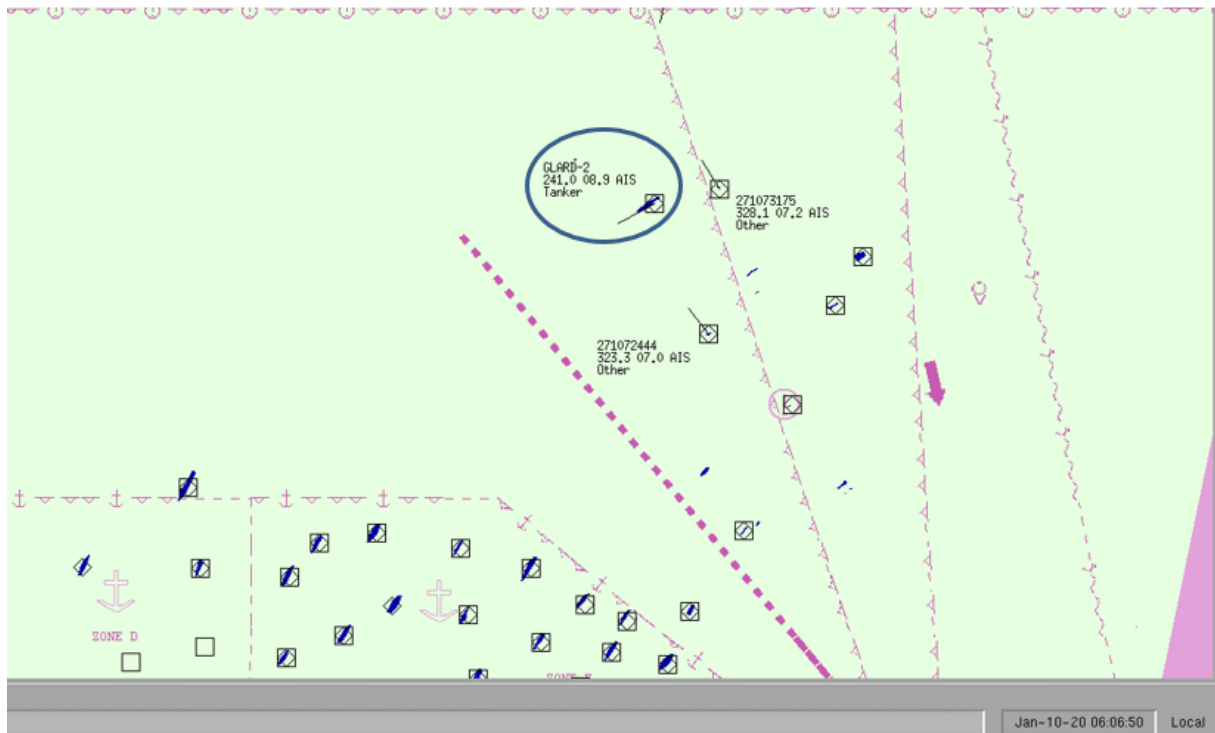
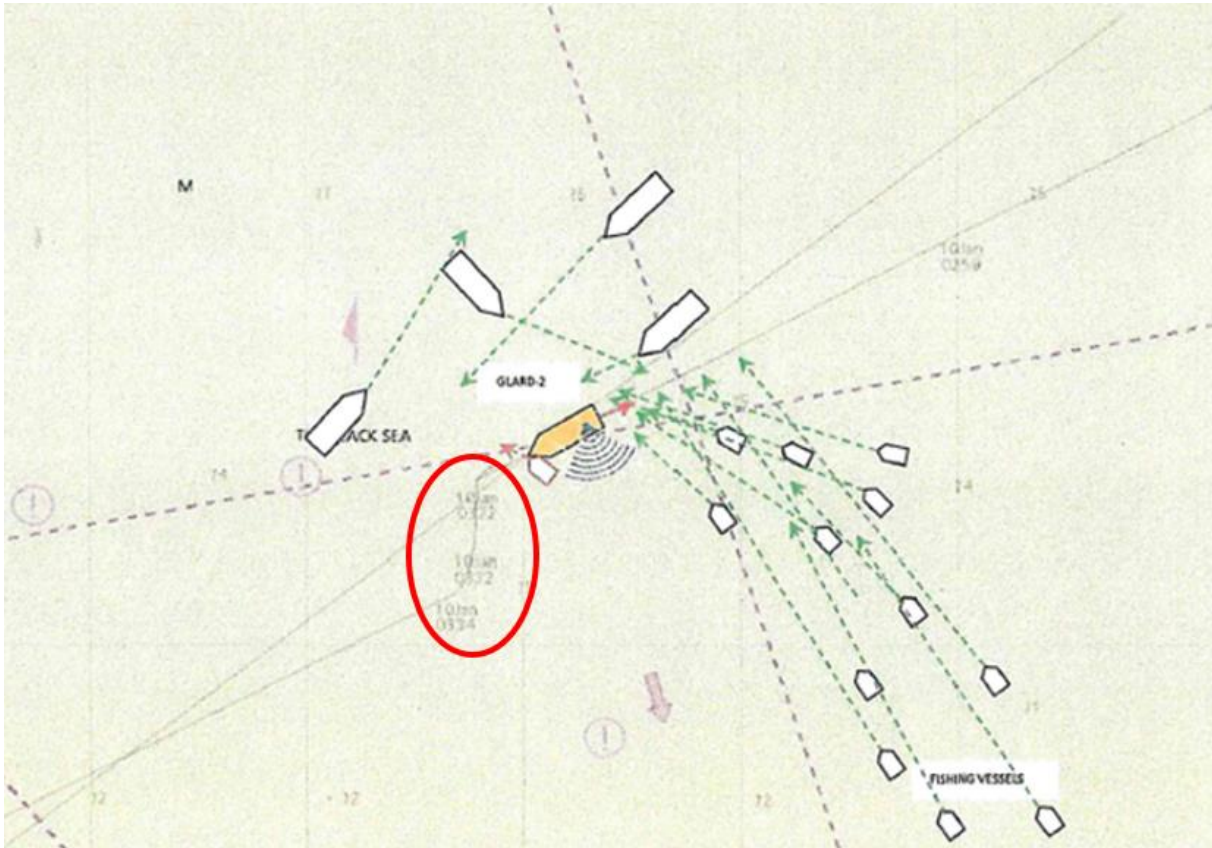


Image 11 The Collision Time and the Course Followed by the Tanker after the Collision from the ECDIS Device



On the other hand, when the course followed by the tanker during and after the collision was analysed from the ECDIS device (Figure 11), it appears that the tanker maintained her course after the collision and then negligibly altered her course due to the effect of the collision.



*Image 12 Speed and Course of the Tanker after the Collision*

The tanker bridge crew, contrary to their statements on the occurrence of the accident, did not manoeuvre appropriately to avoid collision and did not slow down their speed since they neither saw the fishing vessel with their eyes nor identified it on the radar. Hence, based on the data obtained, the speed of the tanker started to slow down after the collision. It is considered that the tanker slowed down after the collision due to the fact that the fishing vessel stuck in front of the bulb of the tanker after the collision first, prevented the tanker from sailing ahead; and then, the bridge crew of the tanker noticed the collision and commanded the main engine to full astern propulsion.

Consequently, it was found out based on the data from the VTS of the tanker that there was neither any alteration in the speed nor any alteration in the course of the tanker until the time of the collision. This suggests that the bridge crew of the tanker had no situational awareness of the approaching collision hazard. Also, it is considered that the failure of the tanker to alter course and speed in time to avoid collision led the fishing vessel to drift for about 3 minutes

after the collision, consequently, escalated the severity of the collision and intensified the extent of the damage to the fishing vessel.

### 3.3.2. Fishing Vessel DURSUN ALİ COŞKUN

The Vessel Tracking Module receives data on the coordinates and speed from the fishing vessel at 1-minute intervals. The screenshot from the Vessel Tracking Module shows that the fishing vessel was sailing towards the fishing grounds with an average speed of 7.2 nautical miles on a 333° course (over the ground) after the northern exit of the Istanbul Strait.



*Image 13 Fishing Vessel Leaving the Fishermen's Shelter*

The screenshot from the Vessel Tracking Module shows the speed and course of the fishing vessel from the time she left the fishermen's shelter until the collision with the tanker GLARD 2. (Image 14)



Image 14 The Speed and Course of The Fishing Vessel from The Time She Left the Fishermen's Shelter Until the Collision with The Tanker GLARD 2.

Given the previous speed data of the fishing vessel, it appears that the speed of the fishing vessel was approximately 7,02 nautical miles at 06:06:09 when the collision took place, and therefore there was no alteration in the speed of the vessel before the collision.

Besides, the data from the Vessel Tracking Module on the course followed by the fishing vessel shows that the fishing vessel was sailing on a 333° course (over the ground) until 06:03:37 after the northern exit of the Istanbul Strait. The alterations in the course of the fishing vessel afterwards are noteworthy. (Image 15)

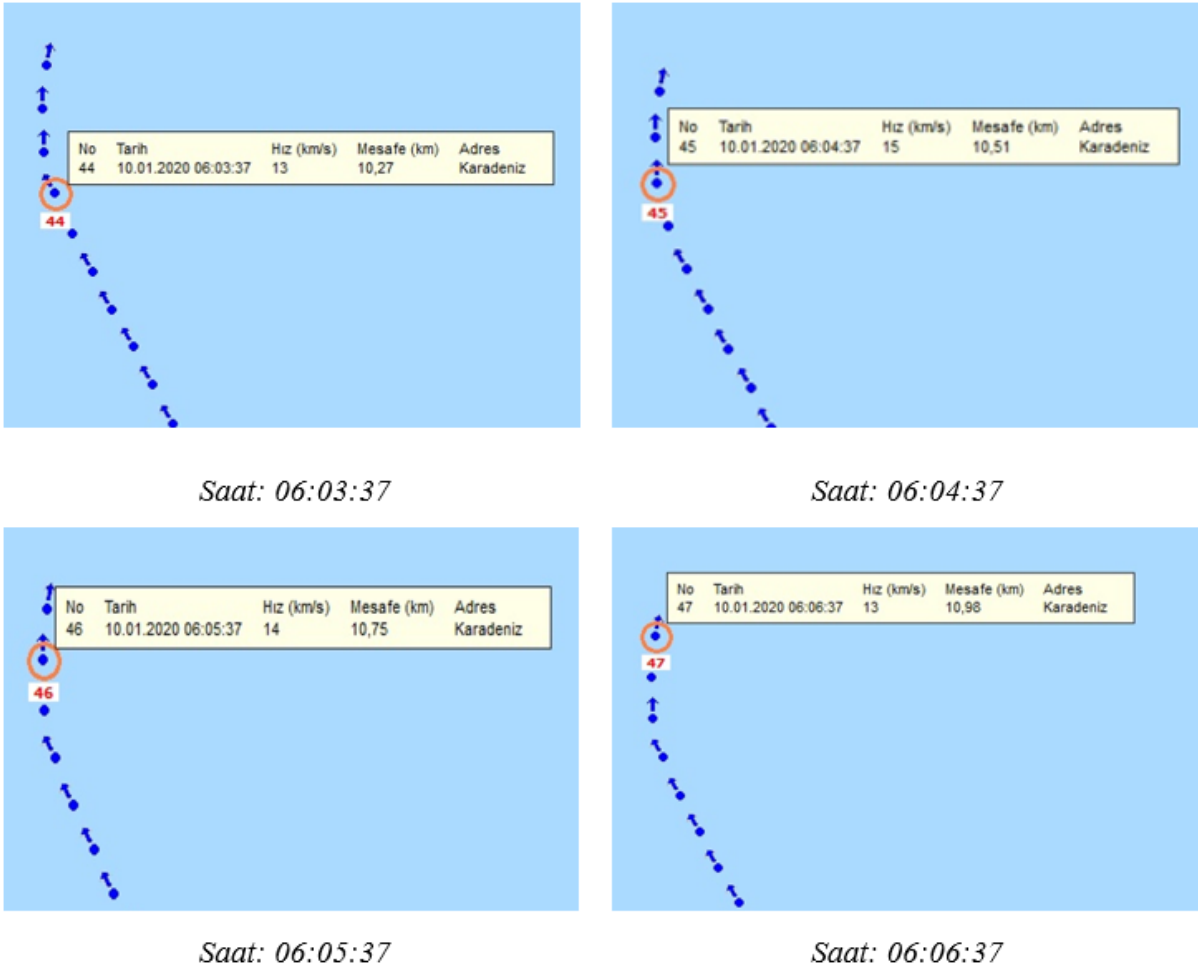


Image 15 Alterations to the Course of the Fishing Vessel

Figure 3 displays the course of the fishing vessel at 06:03:37 and the changes in the course of the fishing vessel for the last 3 minutes when the location data recorded by the Vessel Tracking Module are plotted on the map at each one-minute interval after 06:03:37.

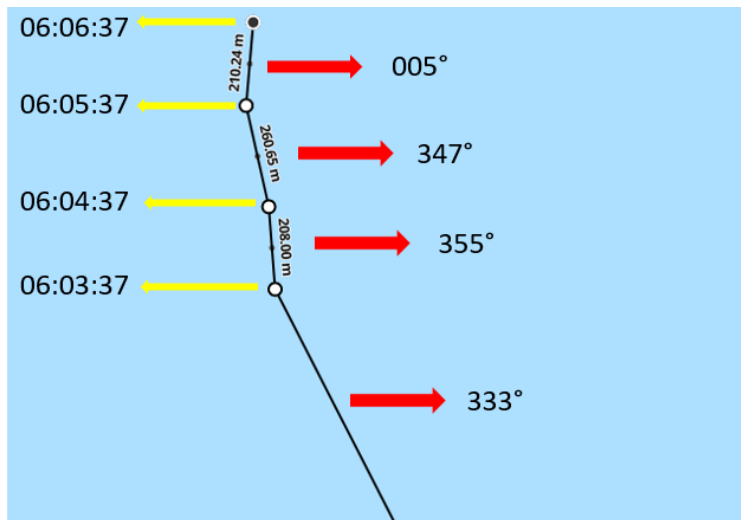


Figure 3 Course the Fishing Vessel Followed Before the Collision

As Figure-3 shows, the fishing vessel altered her course by 22 degrees between 06:03:37 and 06:04:37 and proceeded 208 metres in one minute. Then, the fishing vessel followed a course of 347° and sailed 260,65 metres. According to her last location data obtained from the fishing vessel, she sailed about 210 metres on course 005°. This indicates that the fishing vessel altered her course 32 degrees to her starboard in the last three minutes to avoid a collision, but since she did not alter her course in time, this course alteration was not sufficient to avoid the collision.

### 3.4. Traffic Separation Schemes

To minimise the risk of collision between vessels that sail very close to each other in marine waters with heavy marine traffic, the traffic separation schemes regulate marine traffic. Besides, the COLREG sets rules to be followed by the vessels that will sail within the traffic separation schemes.

The following considerations under Section 1 - Conduct of Vessels in Any Condition of Visibility, Rule 10 Traffic Separation Schemes of the COLREG are the ones related to the accident:

***“(a). This Rule applies to traffic separation schemes adopted by the Organization and does not relieve any vessel of her obligation under any other rule.***

*(b). A vessel using a traffic separation scheme shall:*

*(i). proceed in the appropriate traffic lane in the general direction of traffic flow for that lane;*

...

*(iii). normally join or leave a traffic lane at the termination of the lane, but when joining or leaving from either side shall do so at as small an angle to the general direction of traffic flow as practicable.*

*(c). A vessel shall, so far as practicable, avoid crossing traffic lanes but if obliged to do so shall cross on a heading as nearly as practicable at right angles to the general direction of traffic flow.*

...

*(f). A vessel navigating in areas near the terminations of traffic separation schemes shall do so with particular caution.*

...

*(h). A vessel not using a traffic separation scheme shall avoid it by as wide a margin as is practicable.”*

### 3.4.1. Tanker GLARD 2

As the image from the VTS (Figure 4) shows, the tanker GLARD 2 and the fishing vessel DURSUN ALİ COŞKUN collided within the boundaries of the traffic separation scheme as well as at the end of the traffic separation scheme in the Northern Istanbul Strait.

On 10 January 2020, while the tanker GLARD 2 was proceeding at a speed of 8,2 nautical miles on course  $241^\circ$  the master of the vessel communicated with the Istanbul Vessel Traffic Services (VTS), Sector Türkeli at 05:20 and reported the Navigation Plan 2 (SP 2) before the northern entrance of the Istanbul Strait. Upon the anchoring instruction of VTS, the vessel proceeded her course  $241^\circ$  to anchor at Türkeli/Istanbul sector anchorage site (D) for vessels carrying dangerous goods (Figure 4). GLARD 2, proceeding to anchorage at course  $241^\circ$  requested to exit from the traffic separation scheme with right or close to right angle to the traffic flow.

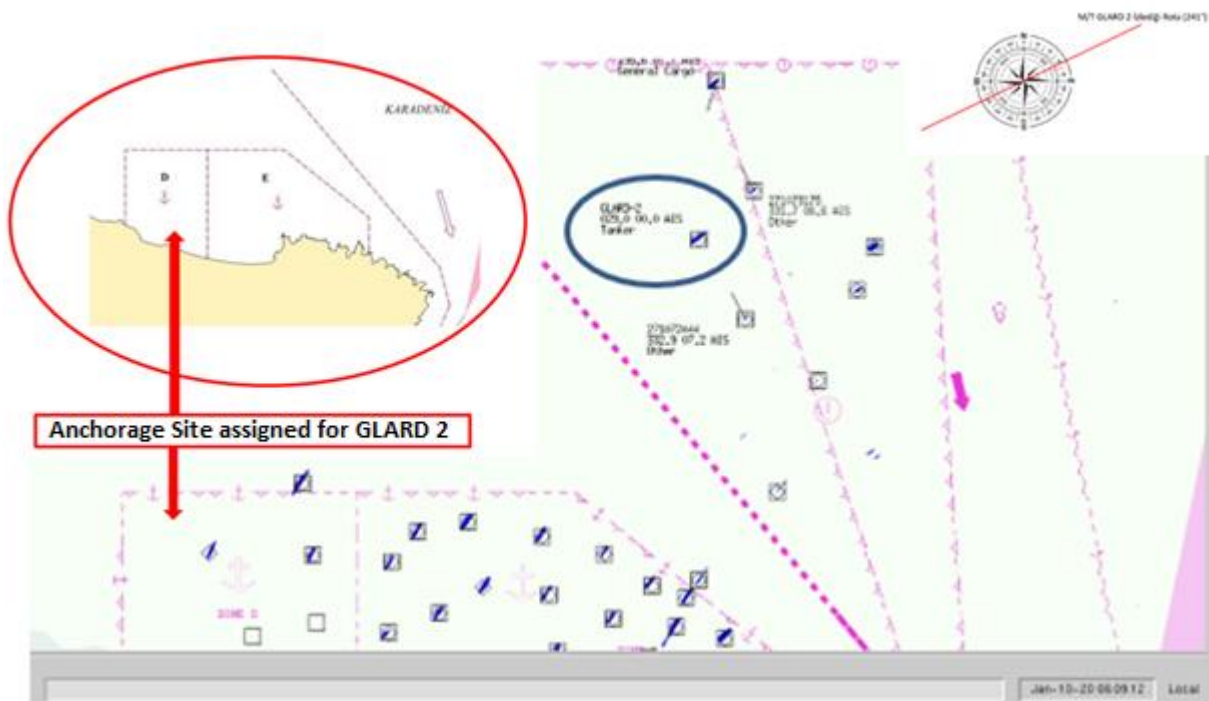


Table 4 Anchorage Site Assigned for the Tanker GLARD 2

On the other hand, it is known that the vessel traffic gets heavier when joining and leaving traffic separation schemes due to the need for significant course alterations to join or leave the traffic separation scheme while making navigation planning, as well as the passage of vessels from expansive marine waters where they can easily manoeuvre to limited marine waters where maritime traffic is regulated. Therefore, Rule 10 of the COLREG stipulates that vessel sailing close to the ends of traffic separation schemes should pay special attention. Hence, the image

of the tanker from the ECDIS screen at the time of the accident (Figure 16) draws attention to the heavy traffic of vessels sailing to join or leave the traffic separation lane. This suggests the possibility that the bridge crew of GLARD 2 was concentrating on the manoeuvres of the vessels nearby before the accident and was not aware of the fishing vessel sailing dangerously towards them.

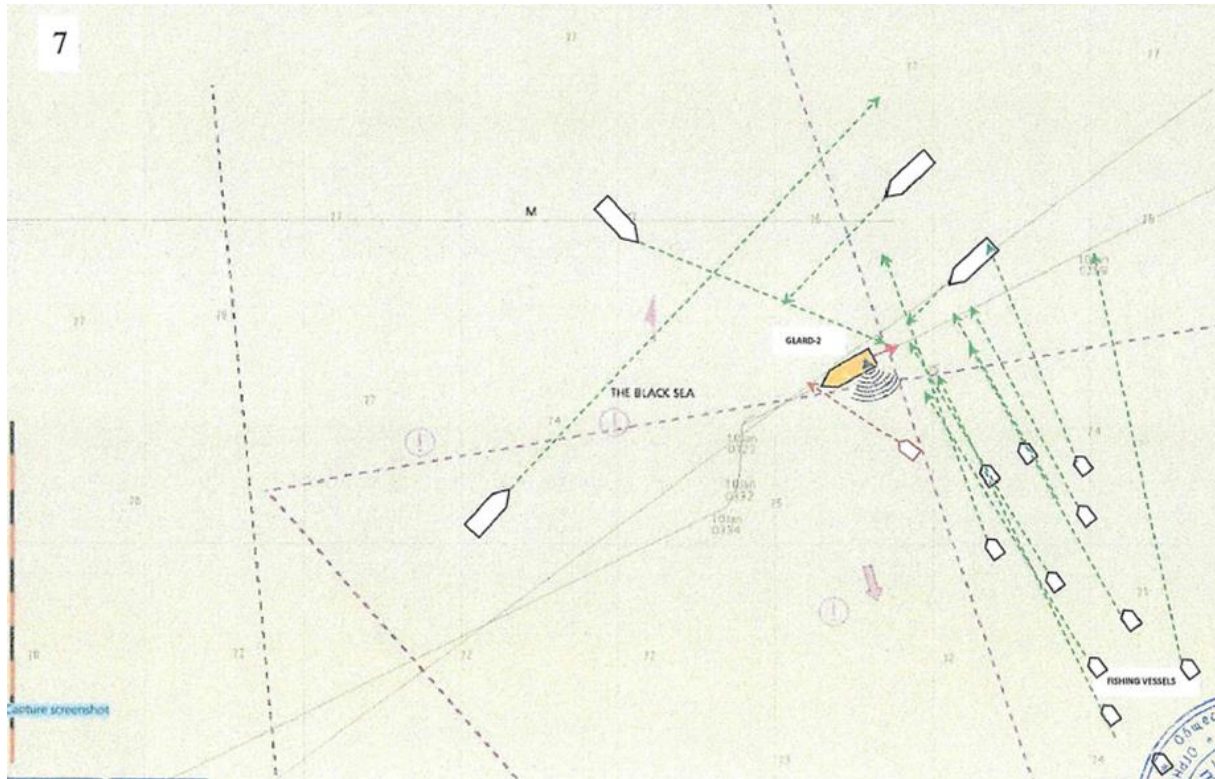


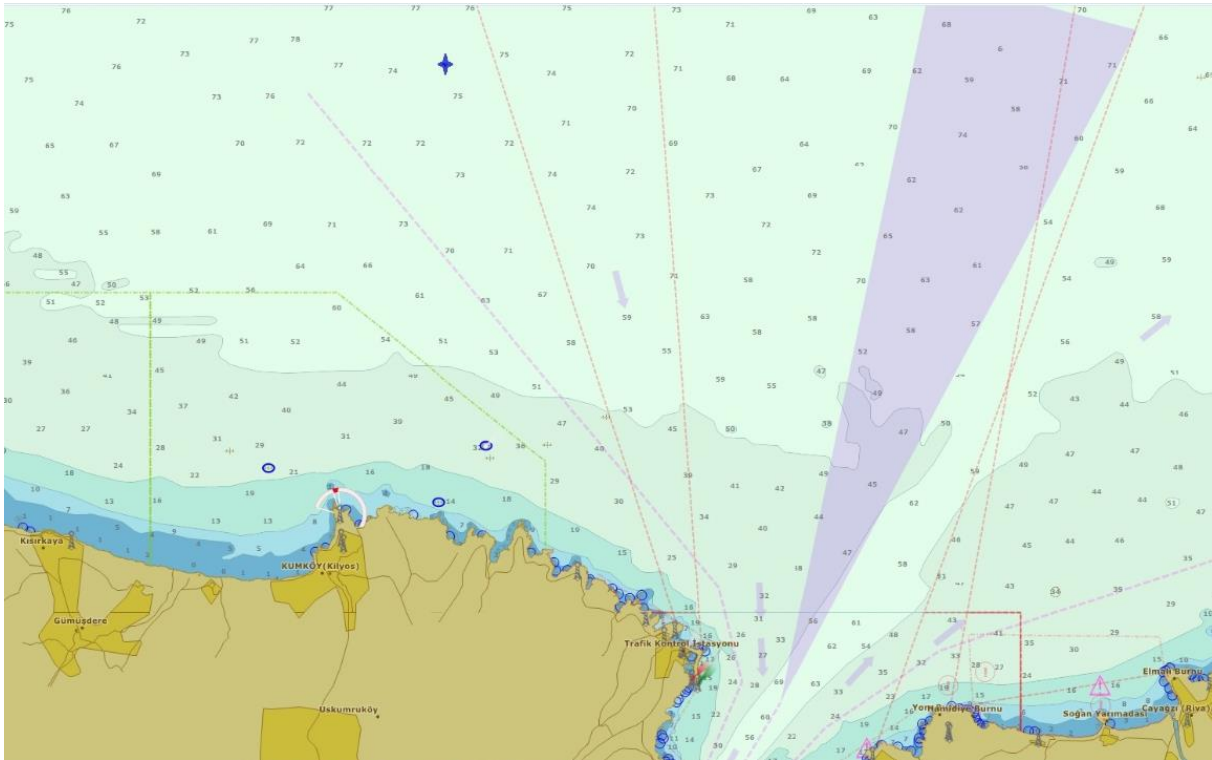
Image 16 ECDIS Image of the Vessel at the Time of the Accident

### 3.4.2. Fishing Vessel DURSUN ALİ COŞKUN

The traffic separation scheme laid out at the northern exit of the Istanbul Strait is designed as two lanes for the vessels to join and leave the Istanbul Strait, inbound and outbound. The definition of a vessel that occupies the traffic separation scheme refers to a vessel sailing within the boundaries of that traffic separation scheme. It excludes vessels crossing the traffic separation scheme in such a way as to block the traffic separation scheme or vessels carrying out fish catching operations within the boundaries of the traffic separation scheme. Since the vessel DURSUN ALİ COŞKUN had no purpose of fishing inside the traffic separation scheme, it falls under the definition of a vessel that occupies the traffic separation scheme.

According to the COLREG, a vessel that occupies the traffic separation scheme is obliged to navigate towards the traffic flow on the lane reserved for her. The vessels, normally, join or

leave a traffic separation lane at the termination of the lane, but when joining or leaving from either side do so at as small an angle to the general direction of traffic flow as practicable.



*Image 17 ECDIS Image of the Vessel at the Time of the Accident*

On the day of the accident, since signal from the automatic identification device (AIS) of the fishing vessel DURSUN ALİ COŞKUN was not received before the accident, the course of the vessel could not be identified from the images from Istanbul VTS (Figure 18). However, when the data on the course followed by the fishing vessel from the Vessel Tracking Module is analysed, it appears that the fishing vessel was sailing opposite to the general traffic flow reserved for vessels that would enter the Istanbul Strait from the northern side after the exiting the Istanbul Strait from the north. This indicates that the fishing vessel violated the provision of Rule 10 of the COLREG for the vessels to proceed towards the general traffic flow.

Additionally, it is remarkable that there are other fishing vessels that violated similar rules in the said traffic lane in the screenshot captured from the VTS before the accident (Figure 18). This indicates that the fishing vessels that engaged in fishing in the area not only routinely violate the rules to reach the fishing grounds by the shortest route, but also ignore the warnings of the VTSC from time to time.



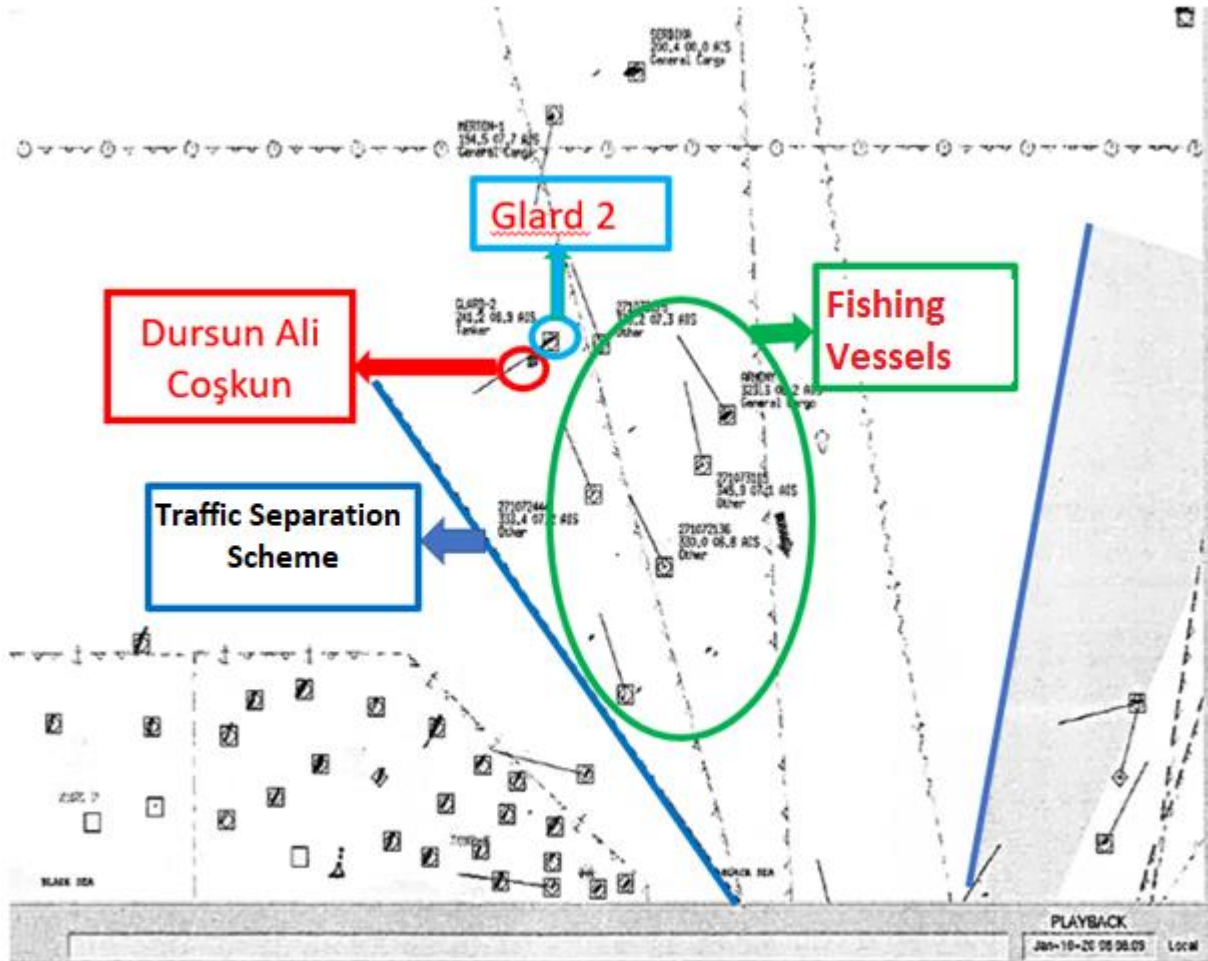


Image 18 Screenshot Captured from The VTS Before the Accident

### 3.5. 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.

### 3.6. Similar Accidents

On 11 November 2020, Greek flagged tanker EPHESES and the Turkish-flagged fishing vessel POLATBEY 1 collided in 15 nautical miles off the Karataş port. As a result of the accident, the fishing vessel POLATBEY 1 capsized and five people on board died. The tanker EPHESES did not sustain any damage due to the collision.

The investigation of the accident indicated that no proper avoiding manoeuvres were executed to avoid collision by both vessels according to the International Regulations for Preventing Collisions at Sea (COLREG) rules.

## 4. SECTION – CONCLUSIONS

1. The collision took place within the separation of the northern entrance of the Istanbul Strait VTS
2. It was revealed that all the fishing vessels, including the wrecked fishing vessel, were sailing in a convoy in the opposite direction of the separation in violation of the COLREG rules.
3. It was found that the AIS device of the fishing vessel could not send any data before the accident, which indicates that the AIS was out of operation.
4. It is found that both vessels did not communicate either with each other or the VTS via VHF communication in order to avoid marine casualty before the accident.
5. Both vessels did not use visual and audible warning signs such as Aldis and ship's horn in order to avoid collision and warn each other.
6. Both vessels did not use AIS, RADAR and other navigational aid equipment effectively in order to avoid collision.
7. Officer of the Watch of GLARD 2 did not notice the fishing vessel until the moment of collision. It showed that no change on the speed and course of GLARD 2 for 1 minute after the collision is an indication that Officer of the Watch did not realize the collision either.
8. The fishing vessel DURSUN ALİ ÇOŞKUN identified the tanker just before the collision and started to alter her course to her starboard side, but the last-minute manoeuvre was not effective to avoid the collision.
9. GLARD 2 tanker did not carry out collision avoidance manoeuvre.
10. No effective audible watch and lookout were conducted on both vessels in accordance with the requirements of the Regulations for Preventing Collisions at Sea.
11. Slowing down the speed of the tanker late, which could not notice the fishing vessel before and after the collision, resulted in a violent collision which ultimately ended in a fatality.
12. It was found that the weather and sea conditions prevalent in the region at the time of the accident had no effect on the marine accident under investigation.

## 5. SECTION – RECOMMENDATIONS

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

**The Tanker Operator is recommended to;**

03/02-23      Take necessary measures for the implementation of the COLREG rules to the masters and deck officers serving in the fleet,

**The Operator of the Fishing vessel is recommended to;**

04/02-23      Ensure that the master of the fishing vessel be provided with refresher training on the implementation of the COLREG rules,

**The Chambers of Shipping are recommended to;**

05/02-23      Circulate the report to their members to minimise or prevent similar accidents.