**REPUBLIC OF TURKEY**
**MINISTRY OF TRANSPORT, MARITIME AFFAIRS AND COMMUNICATIONS**
**Accident Investigation Board**

# Report on the Investigation of The Collision Between **M/F ANKARA** and **M/V REINA 1**

Adriatic Sea/Off Port Durres
20th October 2011

Report No: 05/2012

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*This Safety Investigation Report has been drafted with the assistance and full cooperation of the Marine Safety Investigation Unit of Malta*

Transport Malta


**Published by** : Accident Investigation Board

**Address** : Ulaştırma, Denizcilik ve Haberleşme Bakanlığı
Hakkı Turayliç Cd. No:5
Emek 06490
ANKARA / TURKIYE

**Telephone / Fax** : + 90 312 203 14 31

**E-mail** : dekik@denizcilik.gov.tr

**Web** : www.udhb.gov.tr

## PURPOSE

The main purpose of investigating a marine accident is to identify the factors causing the accident, with the aim of improving the safety of lives of personnel and passengers at sea, preventing similar accidents in the future and enhancing safety of navigation. It is not the purpose to apportion liability, nor to apportion blame to anyone or any party.

## NOTE

This marine accident is investigated in accordance with the Marine Accident Investigation Act, which came into force after being published in the Official Gazette with reference number 26040 on 31.12.2005.

This report is not written with apportionment of liability in mind and is not intended to be used in court of law. It endeavours to identify and analyze the relevant safety issues pertaining to the specific accident, and to make recommendations aimed at preventing similar accidents in the future.

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## DEFINITIONS AND ABBREVIATIONS

| | | |
|---|---|---|
| ARPA | : | Automatic Radar Plotting Aid |
| Bulbous bow | : | A protruding bulb at the front of a ship just below the waterline |
| Cable | : | Unit of length equal to 1/10 nautical mile |
| CPA | : | Closest point of approach |
| EBL | : | Electronic Bearing Line |
| GMT | : | Greenwich Mean Time |
| Knot | : | Unit of speed equal to one nautical mile per hour |
| NM | : | Nautical Mile (a unit of length that is exactly 1852 metres) |
| OOW | : | Navigational Officer of the Watch |
| SAR | : | Search & Rescue |
| VHF | : | Very High Frequency |
| VRM | : | Variable Range Marker |

## SUMMARY

**Figure 1: Location of the Accident**

All times in this report are local times (GMT+2)

Upon completion of the loading operations at the port of Durres/ALBANIA, the Turkish flagged M/F ANKARA left the port and headed towards the Italian port of Bari at 23:05 on 19th October 2011. The course of the vessel was 267° and the passage was estimated to take eight hours. The master was keeping the watch on the bridge and there was one lookout.

The Malta flagged M/V REINA 1 had loaded its cargo at the port of Novorossiysk/RUSSIA and left the port at 00.05 on 13th October 2011. The vessel was proceeding on a northerly course towards the discharge port of Bar/MONTENEGRO. The second mate was the navigational officer of the watch (OOW) and there was one A/B as a lookout on the bridge.

At 0020, the master of ANKARA detected a ship on the radar. The target was on ANKARA's port bow and at a distance of 8,5 nm. He started to monitor the vessel on the radar screen using the VRM (Variable Range Marker) and EBL (Electronic Bearing Line).

At 00:40 hours, when the two vessels were at a distance of 2,5 nm from eachother, the OOW on REINA 1 contacted the master of ANKARA and explained that the actual courses of the vessels were creating a risk of collision. He notified him of his intention to change his course to starboard in order to pass from the stern of ANKARA. The master of ANKARA replied that his vessel was faster and instead, it would be enough if REINA 1 would change its course to port by few degrees so that the two vessels could pass eachother safely. It was mutually agreed that REINA 1 would make a small change in its course to port side.

Following the VHF communication, ANKARA maintained its course and speed whilst REINA 1 altered course by 5° to 6° to port side.

On 21 October 2011, at 00:49 hours, at a distance of only one to two cables between the two vessels, the OOW of REINA 1 made another call to ANKARA and explained that it was passing too close. He also asked for clarifications on ANKARA's intentions. However, very shortly after this call, both vessels collided about 19 nm off the port of Durres in position 41° 15,78′ N - 019° 01,19′ E.

REINA 1 sank within minutes of the collision. There were no serious structural damages to ANKARA's hull that would have affected its buoyancy. Shortly after the collision, its crew members launched the vessel's fast rescue boats to carry out search and rescue (SAR) operations. The master and chief mate of REINA 1 were rescued during these operations. Some time later Albanian and Italian Coast Guard teams, together with and another cargo vessel which was in the vicinity of the accident, started search and rescue operations. However, the other eight crew on REINA 1 remained missing when the SAR operations were called off several days after the accidents.

At 11:15 hours, ANKARA was authorised by Durres Port Authority to proceed to Bari in order to disembark its passengers and discharge its cargo.

## CHAPTER 1 – FACTUAL INFORMATION

### 1.1 INFORMATION ABOUT VESSELS AND ACCIDENT

**Particulars of ANKARA**

| | | |
|---|---|---|
| Name | : | ANKARA |
| Flag | : | Turkish |
| Place and Date of Built | : | Poland / 1983 |
| Port of Registry | : | İstanbul |
| Type of ship | : | Class A Ferry |
| Owner | : | Denizciler Turizm ve Denizcilik A.Ş. / İstanbul |
| Gross Tonnage | : | 10870 |
| Net tonnage | : | 4100 |
| DWT | : | 1790 mt |
| IMO No | : | 7615672 |
| Call sign | : | TCYX |
| Length overall | : | 127,50 m. |
| Breadth | : | 19,41 m. |
| Depth | : | 12,36 m. |
| Draft | : | 5,428 m. |
| Main Engine | : | 4 X 4200 BHP (Zcoda Sulzer) |
| Bow Thruster | : | 2 X 800 BHP |
| Crew | : | 46 |
| Passenger | : | 189 |
| Capacity | : | 214 vehicle + 500 passenger + 100 crew |
| Port of Departure | : | Albania / Durres |
| Port of Arrival | : | Italy / Bari |

**Particulars of REINA 1**

| | | |
|---|---|---|
| Name | : | REINA-1 |
| Flag | : | Malta |
| Place and Date of Built | : | Istanbul / 1991 |
| Type of ship | : | General Cargo |
| Owner | : | Reina Shipping Co.Ltd. Valletta / Malta |
| Class | : | Bureau Veritas |
| Gross tonnage | : | 2345 |
| Net tonnage | : | 932 |
| DWT | : | 3217 mt |
| IMO No | : | 8802478 |
| Call sign | : | 9HIK7 |
| Length overall | : | 78,00 m. |
| Breadth | : | 12,80 m. |
| Depth | : | 7,56 m. |
| Draft | : | 6,2 m. |
| Cargo | : | 3181,755 mt aluminium products ( pipes/slabs/billets ) |
| Port of Departure | : | Russia / Novorossiysk |
| Port of Arrival | : | Montenegro / Bar |

**Accident Details**

| | | |
|---|---|---|
| Date and Time | : | 20 October 2011 / 00:50 (Local Time) |
| Location of the Accident | : | Adriatic Sea / 19 nautical mile from Port of Durres |
| Position of the Accident | : | 41° 15,78′ N - 019° 01,19′ E |
| Injury / Death / Loss | : | 8 lost (Crew of REINA 1) |
| Damage | : | REINA 1 sank / Minor damage on the bow of ANKARA |
| Pollution | : | None |

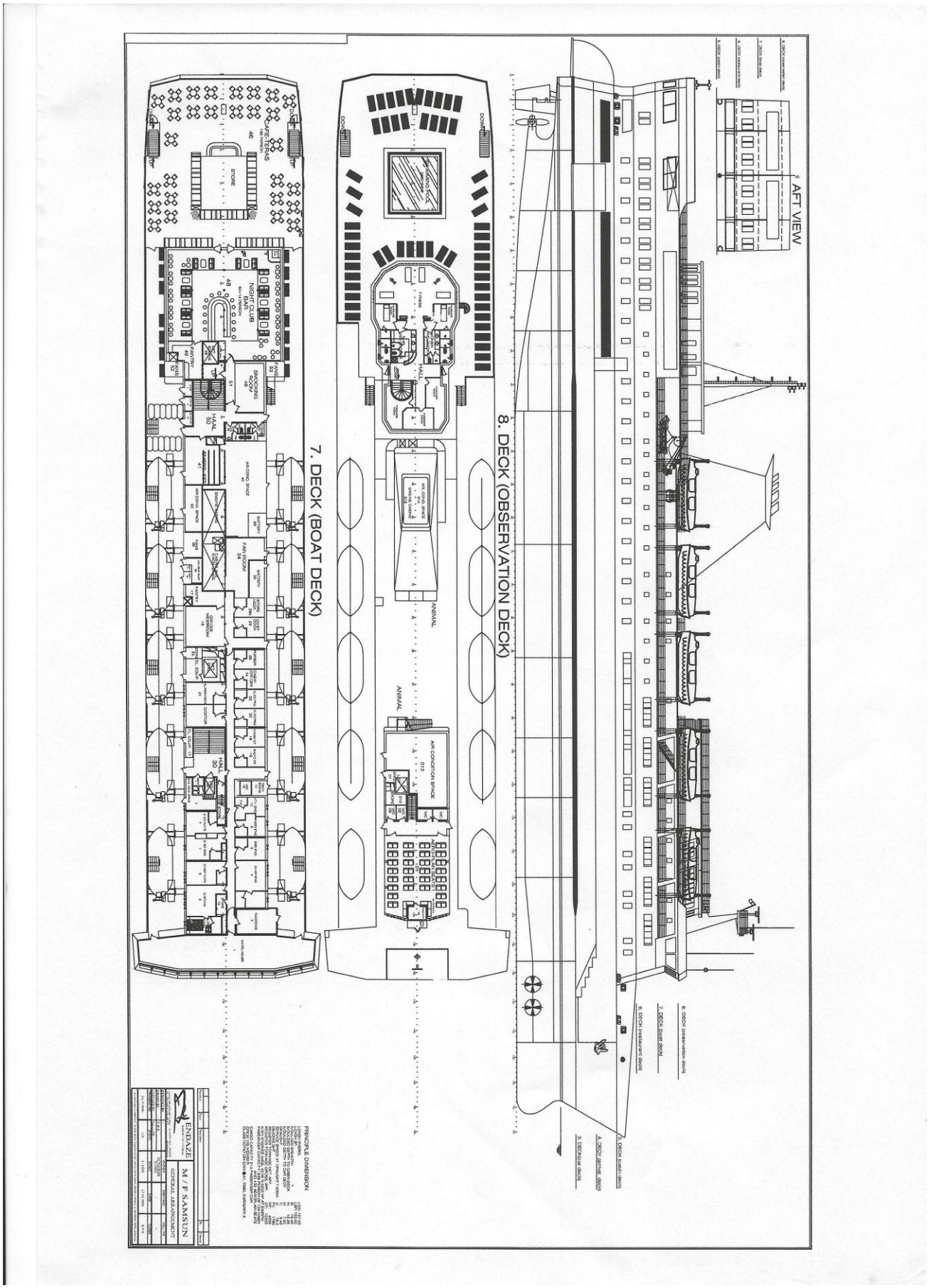


**Figure 2: General Arrangement Plan of ANKARA**

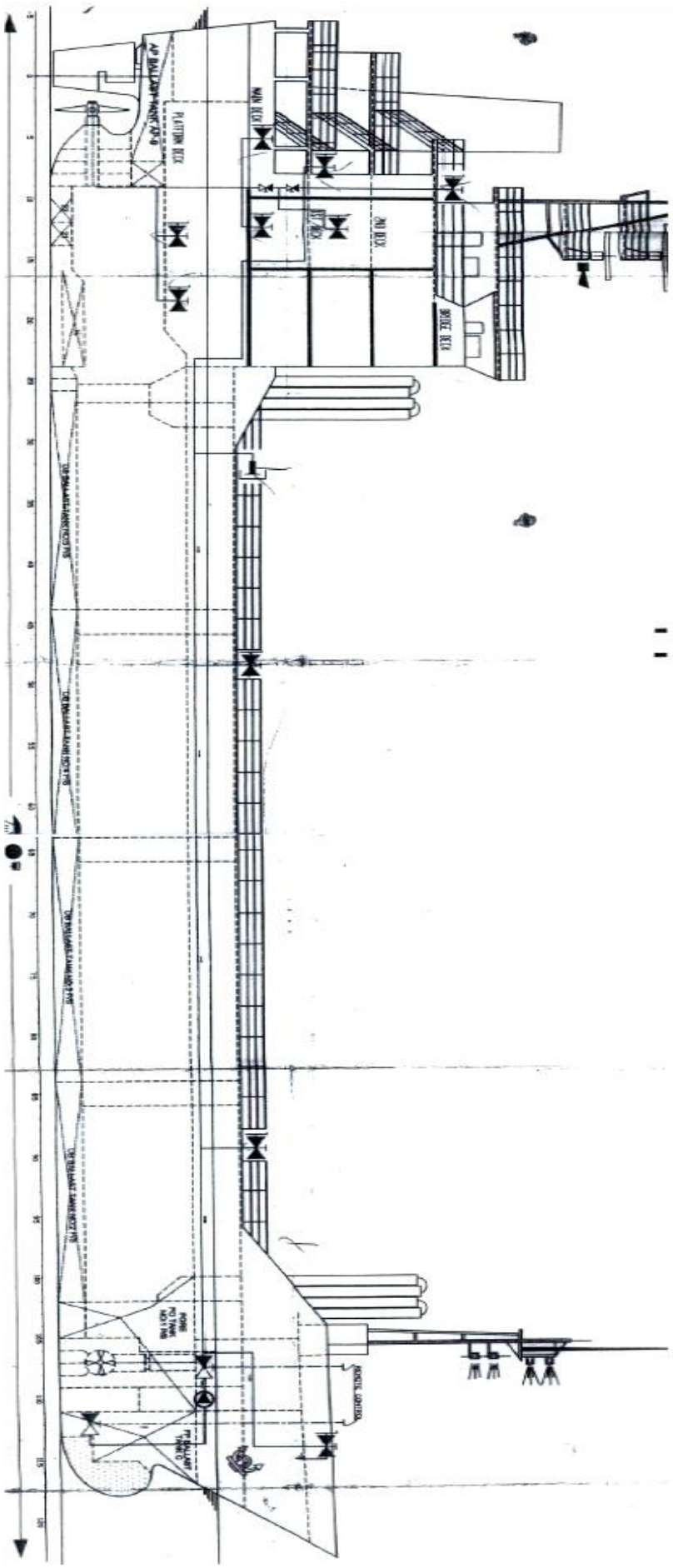


**Figure 3: Plan of REINA 1**

## 1.2 WEATHER AND SEA CONDITIONS

At the time of the accident, calm weather conditions prevailed in the region. The wind was blowing from the southeast (SE) at Force 3 on the Beaufort Scale. The sea state was 2 to 3. The sky was partly cloudy. There were no meteorological conditions such as rain, fog or mist that would have caused adverse effects on the visibility or created false echoes on the radar screen; visibility was clear.

## 1.3 THE ACCIDENT - COURSE OF EVENTS

Having completed its loading operations at 22:55 on 19th October 2011 at the port of Durres in Albania, the Turkish flag ferry ANKARA, heaved up anchor at 23:05 and started its voyage towards the port of Bari in Italy. The vessel had been working on a regular line between these ports since 05th July 2011. ANKARA was manned by 46 crew, had 189 passengers and a cargo load of 60 vehicles on board. At 23:30, the vessel reached full sea speed, which was about 15,5 knots. There is one single course between the ports of Durres and Bari, which was 267° and the sea passage was estimated to take approximately eight hours to complate. After the departure from the port of Durres, the master took over the watch; there was one able seaman as a lookout and the vessel was on auto pilot. The radar was set on head up display.

Prior to the accident, the other vessel involved in the collision was the Malta flagged REINA 1, had been trading the Eastern Mediterranean Sea and the Adriatic Sea. She had loaded wheat in bulk in Alexandria, Egypt to Trieste, Italy. She also had discharged cargo at Rijeka, Croatia where she loaded steel products to Ileksa, Turkey. From Ileksa, the vessel proceeded to Novorossiysk, Russia and loaded 3181 mt aluminium products (slabs and billets) to Bar, Montenegro and Koper, Slovenia. The vessel berthed at Novorossiysk on 11 October and a cargo plan was prepared for all parties concerned. The loading operations were completed on 12 October and soon after the crew members started inspecting the hatch covers and securing them in preparation for sailing. The securing operation lasted two hours.

The voyage plan was prepared by the second officer and reviewed together with the master and chief officer. Following completion of the necessary formalities, REINA 1 left the port at 00.05 on 13$^{th}$ October 2011 bound for Bar, Montenegro. The master, chief officer and second officer kept a conventional 4-on 8-off navigational watch. The vessel was scheduled to pass through the Bosphorus, and stop at Istanbul anchorage for provisions. The voyage was uneventful and the vessel arrived safely at Istanbul anchorage for her scheduled stop.

Provisions were safely loaded and after about 2.5 hours, REINA 1 heaved up her anchors and resumed her voyage to the Adriatic Sea. No abnormalities were reported during the evening watches on the day before the accident. After handing over his watch to the master, the chief officer left the bridge and went to the officers' rest room. He had a cup of tea, socialised with several of the crew members and proceeded to his cabin, which was located on the port side below the bridge and overlooking the cargo area. The master's watch was also uneventful and at about 2345, the second officer arrived on the bridge to take over the watch. The look-out had also arrived on the bridge at about the same time to relieve the bosun.

The master handed over the watch to his reliever, who looked well rested and fresh. The weather was clear and there were no particular issues which were discussed. The master requested that he is called one hour before pilot station since the vessel's ETA at Bar was 0700 the following day. The master spent about 15 minutes on the bridge discussing the plans until eventually he retired to his cabin at about 0010. The vessel was on a course of 004°, at an approximate speed of 9 knots.

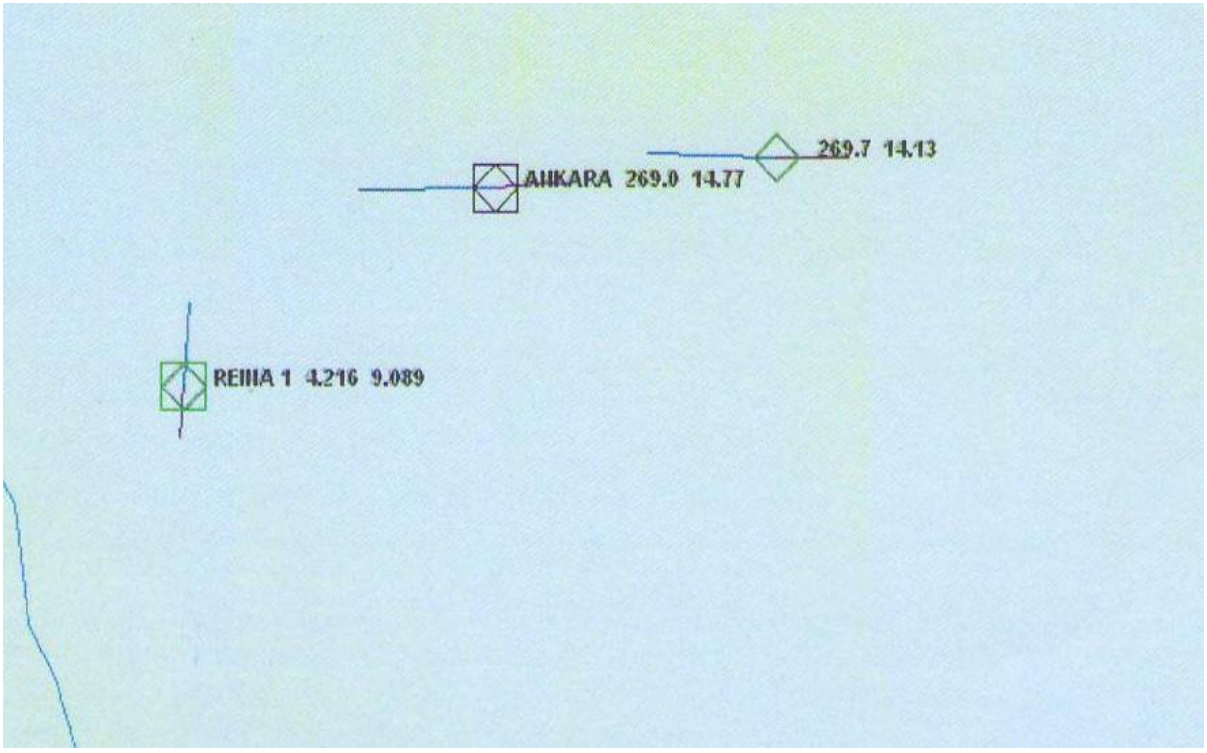


**Figure 4: AIS screen display (1)**

During his watch, the master of ANKARA had plotted a vessel on the radar, which was at a distance of 14 nm on the port bow. At the time, he was convinced that there wasn't a crossing situation. At approximately 00:20 hours, the look-out drew the master's attention and reported another vessel on the port bow. The vessel was later identified as REINA 1. The master started to monitor REINA 1 using the VRM (variable range marker) and EBL (electronic bearing line).

When the master first started to monitor REINA 1, the vessel was at a distance of 8,57 nm and its bearing was 241°. The first communication between the two vessels took place at 00:40, when the vessels were approximately 2,5 nm from each other. The OOW of REINA 1 called ANKARA via VHF. In the meantime, the master of ANKARA was still monitoring the position of REINA 1. This communication and subsequent calls on VHF between the two vessels were in Turkish.

Although there were no changes in the bearings from the moment REINA 1's echo was detected by ANKARA until REINA 1 contacted ANKARA via VHF, both vessels maintained their respective courses and speeds.

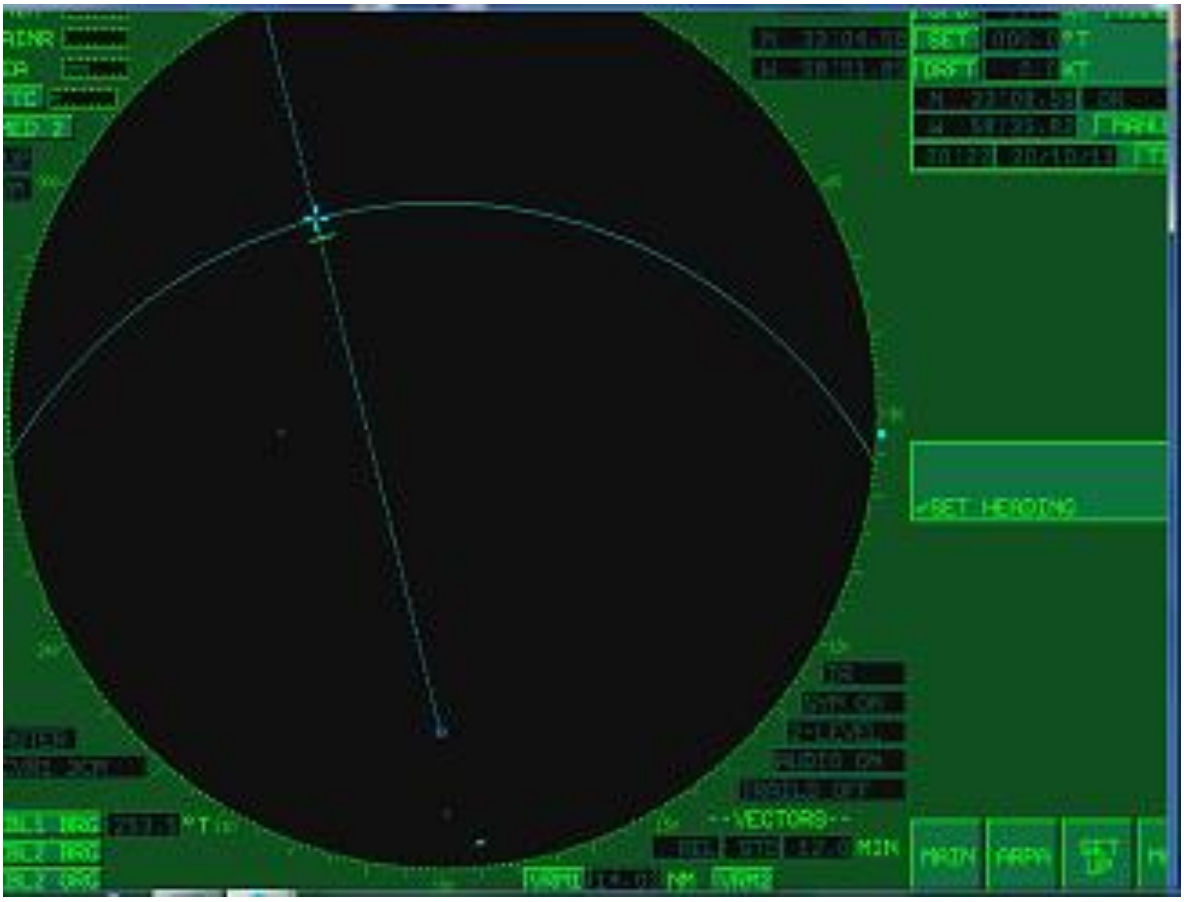


**Figure 5: The screen shot when REINA 1 first appeared on the radar**

Following the first communication on VHF Channel 16, both vessels first switched to Channel 17 and subsequently to Channel 06. The OOW of REINA 1 informed ANKARA that REINA 1 was on the port bow of ANKARA. The OOW also explained that as both vessels were on a collision course, his intention was to alter his course to starboard and pass aft of ANKARA. However, ANKARA's master replied that there was no need for such a bold manoeuvre. He remarked that, his vessel was fast enough to pass ahead of REINA 1. Instead, he stated that REINA 1 should slightly alter its course to port and it would still pass aft of ANKARA and at a safe distance. After this short communication where it was mutually agreed that REINA 1 would slightly alter its course to port, both vessels switched back to VHF Channel 16.

Following the VHF communication, ANKARA maintained its course and speed. REINA 1, which initially intended to alter course to starboard side, changed its course to port after the VHF communication, by 8° to 9°.

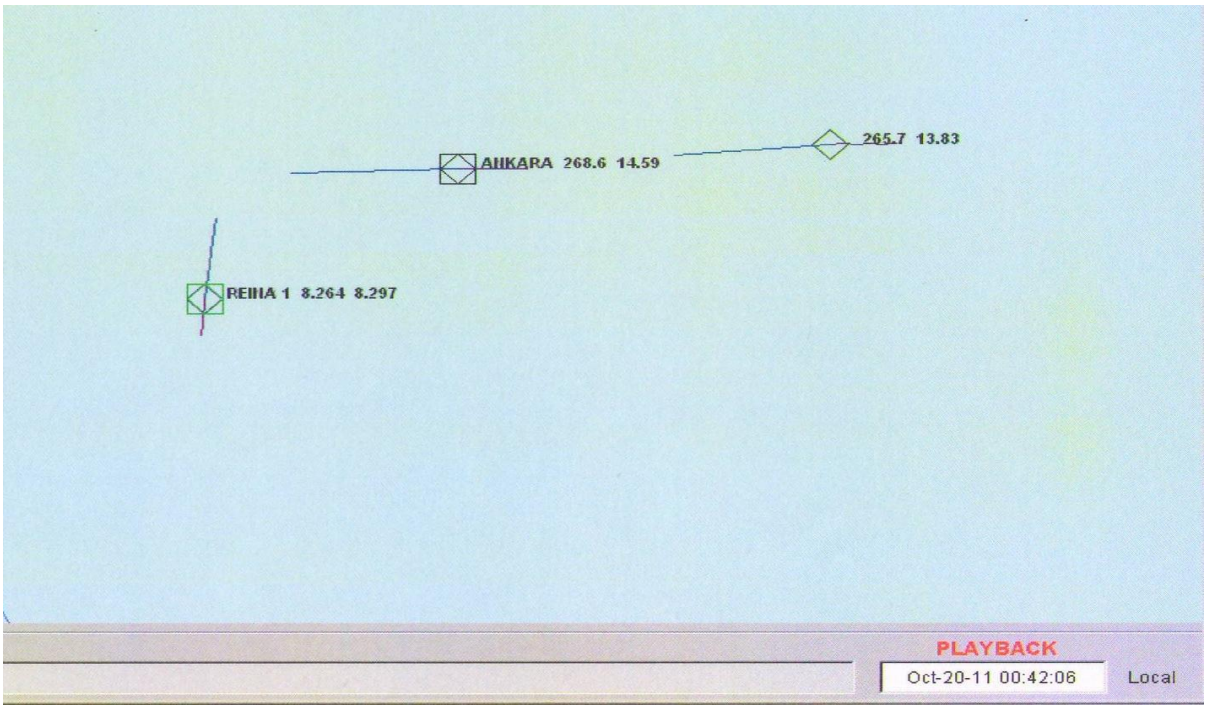


**Figure 6: AIS screen shot (2)**

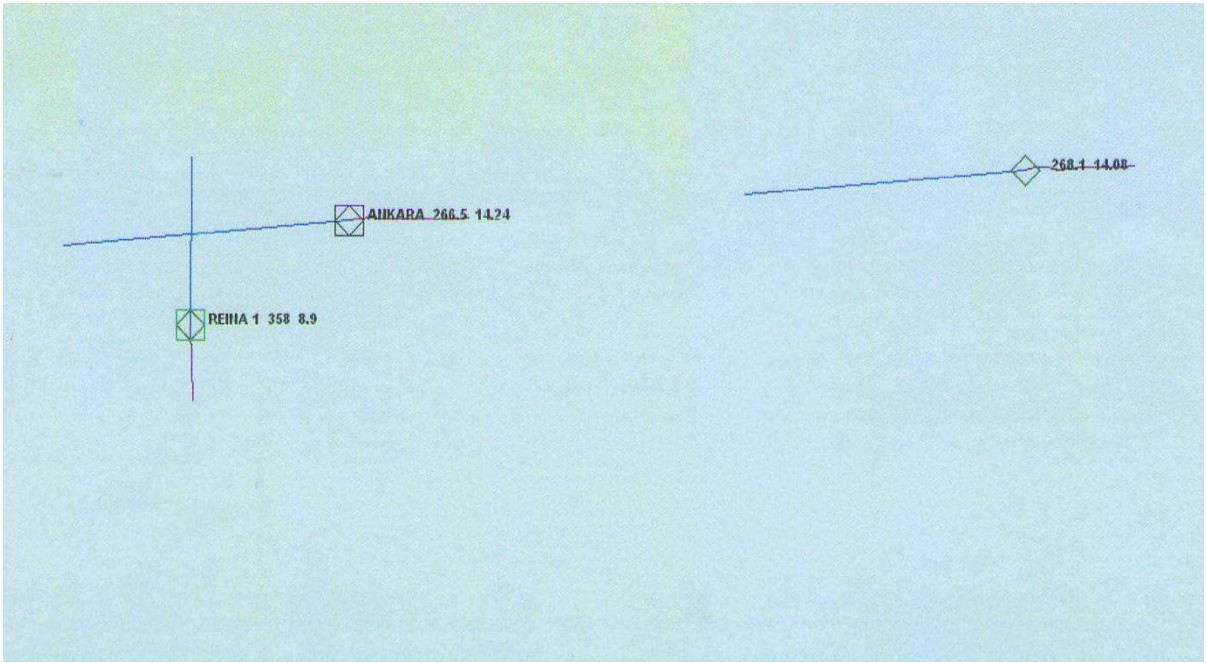


**Figure 7: AIS screen shot (3)**

At 00:49 hours, when the distance between the two vessels was just one to two cables, the OOW of REINA-1 called ANKARA and in an anxious tone repeated that ANKARA was passing too close. He asked again about the vessel's intentions. Similarly anxious, the master of ANKARA shouted on the VHF that REINA 1 should alter course hard to port. He also altered course to starboard by adjusting the auto pilot. However, distance between the two ships was too small and both vessels could not accomplish their respective manoeuvre. Consequently, ANKARA's bow collided with REINA 1 in way of its side shell plating, just aft of amidships. ANKARA hit REINA 1 at angle of 90°.

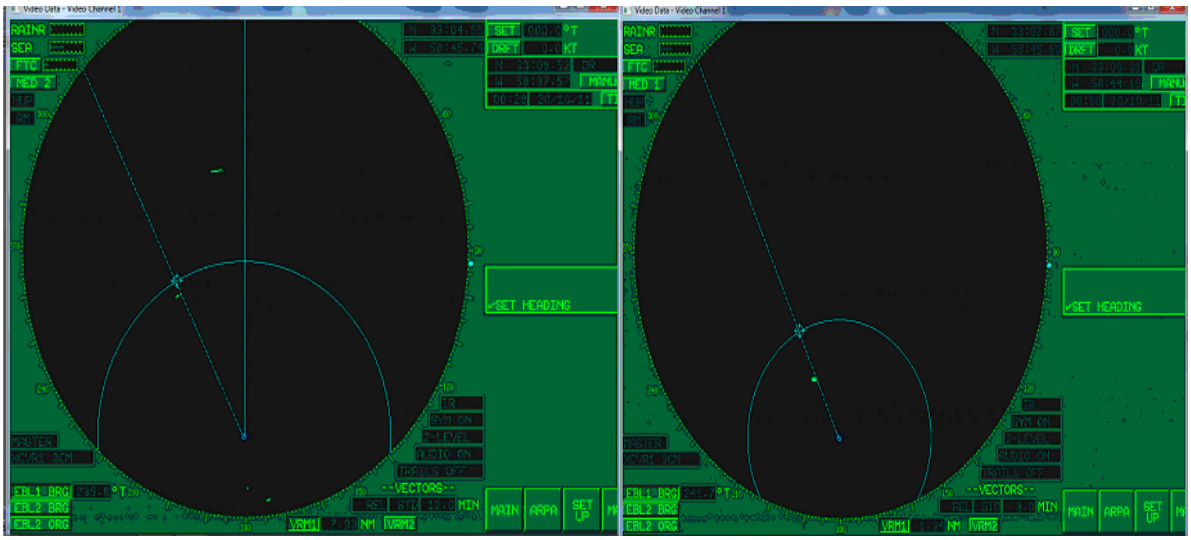

**Figure 8: REINA 1's bearing not changing at 8 nm and 7 cable distances**

At the time of the collision, the bulbous bow of ANKARA penetrated the starboard side of REINA 1 at a position between amidships and the accommodation area of the vessel. Soon after the collision, the master stopped ANKARA's engines; however with the momentum of the vessel, REINA 1 was pushed for several metres. REINA 1 sustained progressive flooding soon after the collision and started to list to starboard side, and against ANKARA's bow. REINA 1's bow started to sink slowly into the water. Fearing that this situation would endanger the safety of the passengers and crew on board his vessel, the master of ANKARA requested main engines' control on the bridge and approximately two minutes after the collision, he started the main engines' astern. About one minute after the two vessels separated, REINA 1 lost its reserve buoyancy and sank.

The master of ANKARA deduced that there was no serious damage to his ship that could affect its buoyancy/stability. There were two cracks on the forward ramp, approximately 2,5 metres above the water line. The vessel sustained other hull damages in way of the forward ramp, bulbous bow and to a number of structural elements inside the fore peak tank (including frames, stiffeners, stringers, etc.)

**Figure 9: Damage to the bow of ANKARA (1)**

**Figure 10: Damage to the bow of ANKARA (2)**

Immediately after REINA 1 sank, ANKARA launched its fast rescue boat and started search and rescue operations. Shortly thereafter, the master and chief mate of REINA 1 were found alive, taken on board ANKARA and administered first aid.

Moreover, following the emergency calls made by ANKARA, Albanian and Italian coast guard teams and another cargo vessel in the vicinity joined the SAR operations. Notwithstanding all the efforts and availability of resources, eight crew members of REINA 1 remained missing when the SAR operations were called off on 21 October 2011 at 11:15 hours. Following the necessary authorisations, ANKARA resumed its voyage to Bari to discharge the cargo and disembark the passengers. The vessel was alongside at Bari at about 21:00 hours.

## CHAPTER 2 – ANALYSIS

### 2.1 Early And Substantial Action

Rule 15 of the "International Convention for the Prevention of Collision at Sea"(COLREGS), which regulates "Crossing Situations" states that: "when two power-driven vessels are crossing, the vessel which has the other on the starboard side must give way and avoid crossing ahead of her."

In addition Rule 16 requires that: "the give-way vessel must take early and substantial action to keep well clear."

According to the provisions of Rule 15, REINA 1 was the give-way vessel. However, the VHF communications between two vessels were made when the distance between the two vessels was only 2,5 nm. In case of a doubt regarding the safe passage of the two vessels, the VHF communication should have been established long before, at least when the distance was 6 nm and in any case the manouevre to avoid collision should have been completed before the distance was 3 nm, in accordance with good seamanship practices.

Moreover, the manoeuvre, which was an alteration of course by a few degrees only, was not substantial to ensure a safe passing distance between the vessels.

Therefore, this manoeuvre by REINA 1 cannot be considered to be an “early and substantial action” as required by Rule 16.

### 2.2 Action of the Stand-On Vessel

Rule 17 of the COLREGS 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.

(b) When, from any cause, the vessel required to keep her course and speed finds herself so close that collision cannot be avoided by the action of the give-way vessel alone, she shall take such action as will best aid to avoid collision.

(c) A power-driven vessel which 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.

Although the master of ANKARA observed that REINA 1 had not taken the necessary early and substantial action neither before the VHF communication, nor after that communication, the master of ANKARA did not take any action to avoid the collision, as required by Rule 17. ANKARA maintained its speed and course until it was very close distance/time before the collision.

### 2.3 Calling the master on the Bridge

As it is understood from the VHF conversation, OOW of REINA 1 perceived that his vessel was in a crossing situation with ANKARA and their current courses were bringing the vessels to a risk of collision and that his vessel was the give-way vessel according to COLREG.

However, it is understood that he could not come to a clear decision and he was in doubt about the manouevre he should perform, because;

- he did not take any action until the distance was 2.5 nm, and communicated with the OOW of ANKARA via VHF to ask his intentions,

- although his initial intention was to change the course to starboard, after the communication with the master of ANKARA, he later changed his mind.

It is evaluated that, although his intention before the VHF communication to change the course to starboard was the most accurate maneuvering option, the reply of the master of ANKARA drew the OOW of REINA 1 more into doubt and error.[1]

It is one of the most important requirements of safety of navigation that the watckeeping officers shall call the master on the bridge without any delay whenever they are in doubt during the navigational watch. This would allow the master sufficient time to evaluate the prevailing situation on the bridge and take all the necessary actions. The master on REINA 1 was, however, called at a very late stage and just seconds before the collision happened. By the time he arrived on the bridge, the collision was about to happen and he had no time to assimilate and analyse the conditions in order to take the necessary actions.

### 2.4 Situational Awareness

The analysis of the VDR data and other sources of evidence indicate clearly that the master of ANKARA had erroneously perceived the course of REINA 1. This was so because:

- he disagreed with the initial intentions of the OOW on REINA 1, and instead he requested an alteration course of 5° to port side for a comfortable and safe passage,

- in their conversation after the VHF communication, master of ANKARA told the lookout that REINA 1's intention to pass aft of ANKARA was erroneous and not practicable,

- in his explanations on how the accident happened to the crew members (chief engineer, chief mate, etc) who came on the bridge right after the collision and in his telephone communication with the company representative after the accident, master of ANKARA told that the two vessels were on parallel courses and REINA 1 altered its course suddenly towards ANKARA.

Although the courses of the two vessels were in fact approximately 90° to one another, the master of ANKARA had a perception that REINA 1's course was parallel (or close to parallel) to his vessel's course.

It may be concluded that situation awareness and the steep hierarchical situation between the master of ANKARA and REINA 1 played a central role in the way the accident dynamics developed. Studies suggest that situation awareness has three components, *i.e.* gathering information, interpreting the gathered information, and anticipating future states.

[1] *The presence of another vessel behind the starboard quarter of ANKARA which was proceeding in the same direction as ANKARA, might be a supporting element for the OOW of REINA 1 to take action in accordance with the reply of the master of ANKARA. The OOW of REINA 1 might have thought that a change of course to starboard to pass aft of ANKARA could cause another crossing situation with the other vessel and he might have to continue to steer further to starboard and this might cause a gross deviation from the vessel's original course.*

Gathering the information is considered to be the basic level of situation awareness and depends on the way the situation is perceived. For instance, taking into consideration the accident, the perception of the situation on board ANKARA would have been definitely influenced by the way information from the navigational equipment was being received by the master.

Irrespective of the quality of the gathered information, interpretation of that data would have been the next step. It is therefore clear that the quality of the information would have played a crucial role on the interpretation. The master was experienced and the fact that the data was not analysed correctly and the crossing situation was missed is indicative of a wrong mental model. It has to be appreciated that mental models are not necessarily formed from experience but also from the information that was gathered. Nonetheless, the master was convinced that the perceived situation was a reflection of the actual situation outside the bridge windows to the extent that the correct interpretation of the OOW on REINA 1 was either rejected or ignored. This is also symptomatic of confirmation bias on the side of ANKARA's master.

As already described above, the evidence indicated that the OOW on REINA 1 had an accurate awareness of the situation. He gathered enough data to interpret the crossing situation. He correctly judged that his ship was the give-way vessel and he correctly anticipated that the vessels would collide unless some action is taken. Notwithstanding the OOW's interpretation, the change in course was not enough to avoid the collision. In addition, he was very late not only to make the evaluation of the situation, but also to make a contact with ANKARA and make the necessary manouevre to avoid collision.

It is very probable that the confidence which the master of ANKARA had and his persistence, may have influenced the OOW on REINA 1 and even created doubts on the way the situation was being interpreted (even if these doubts were never clarified on VHF or with the master of REINA 1). It is also very possible that the OOW on REINA 1 refrained from querying the matter with a very senior and much more experienced seafarer, even if on board another ship.

### 2.5 Excessive Self-Confidence

The master of ANKARA perceived that, although there was no significant change in the bearing of REINA 1, as his vessel was relatively much faster, he could easily pass in front of the bow of REINA 1 and a few degrees of change of course to port side by REINA 1 would make this passage much easier. Although the bearing of REINA 1 was not changing and the distance between the vessels was gradually decreasing, his perception did not change until the very last moments.

The master of ANKARA did not assign the look-out on the bridge for the manual steering of the wheel due to the possibility that he would have to steer hard to one side for an instant manoeuvre to avoid collision and instead continued on auto pilot until the time of collision.

The master of ANKARA might have acted with an excessive self confidence until the last moment despite the risk of collision, as his vessel was faster than REINA 1 and had an effective manoeuvring ability in comparison with the other vessel. He also thought that there was a much less experienced officer on REINA 1 in comparison with his past career and seagoing experience.

## 2.6 Effective Use of the Navigational Aids

After the notification by the lookout, the master of ANKARA started to track REINA 1 using the EBL and VRM on his radar. He continued to monitor the vessel in this way until a few minutes before the collision. The radar display was in head up/relative motion mode.

As explained in the Radar's Operation Manual, the ARPA functions (plotting/tracking a target) cannot be activated in this mode and they can only be used in the course up and north up screen modes.

Had the master used course up or north up modes and track the ship using the "plotting" function of the ARPA radar, he would have determined REINA 1's true course and CPA (closest point of approach) clearly. Then he would have understood that the courses of two vessels were not parallel and it was a crossing situation where the vessels were going into collision.

In addition to this, one of the basic methods to determine whether or not a ship's course is creating risk of collision, (changes in its bearing or the extent which its course is changing) is by the use of gyro repeater/pelorus. Proper use of such equipment can give an excellent indication on whether or not a ship is creating a risk of collision. However, ANKARA has a closed bridge deck, with no bridge wing. Moreover, there was no gyro repeater on the bridge console.

It is evident that in the moments prior to the collision, the master of ANKARA was not monitoring the progress of REINA 1 with the use of the gyro repeater, but only by using the EBL and VRM functions of the ARPA radar. As the gyro repeater is located on the fly bridge, it is probable that the master did not find it practicable to leave his watch on the bridge to monitor the bearing of REINA 1 using the gyro repeater. Rather, he was satisfied to monitor REINA 1 with the use of the radar, which nonetheless was not set in the better display option.

## 2.7 Visual Observation

The fact that master of ANKARA thought REINA 1 was nearly on a parallel course to ANKARA brings to mind the possibility that he was not keeping an effective lookout visually or using binoculars. Taking into consideration that the visibility was good, if a good observation was made regarding the sight of the navigational lights, he could have realised that REINA 1's course was not parallel (or close to parallel) to ANKARA, but she was proceeding on a crossing situation course.

If the courses would be close to parallel to each other, ANKARA would be in the position of an overtaking vessel and the master of ANKARA would only see the stern light of REINA 1. However ANKARA was in a position that her master could see REINA 1's starboard sidelight and the masthead lights.

**Figure 11: Bridge deck of ANKARA**

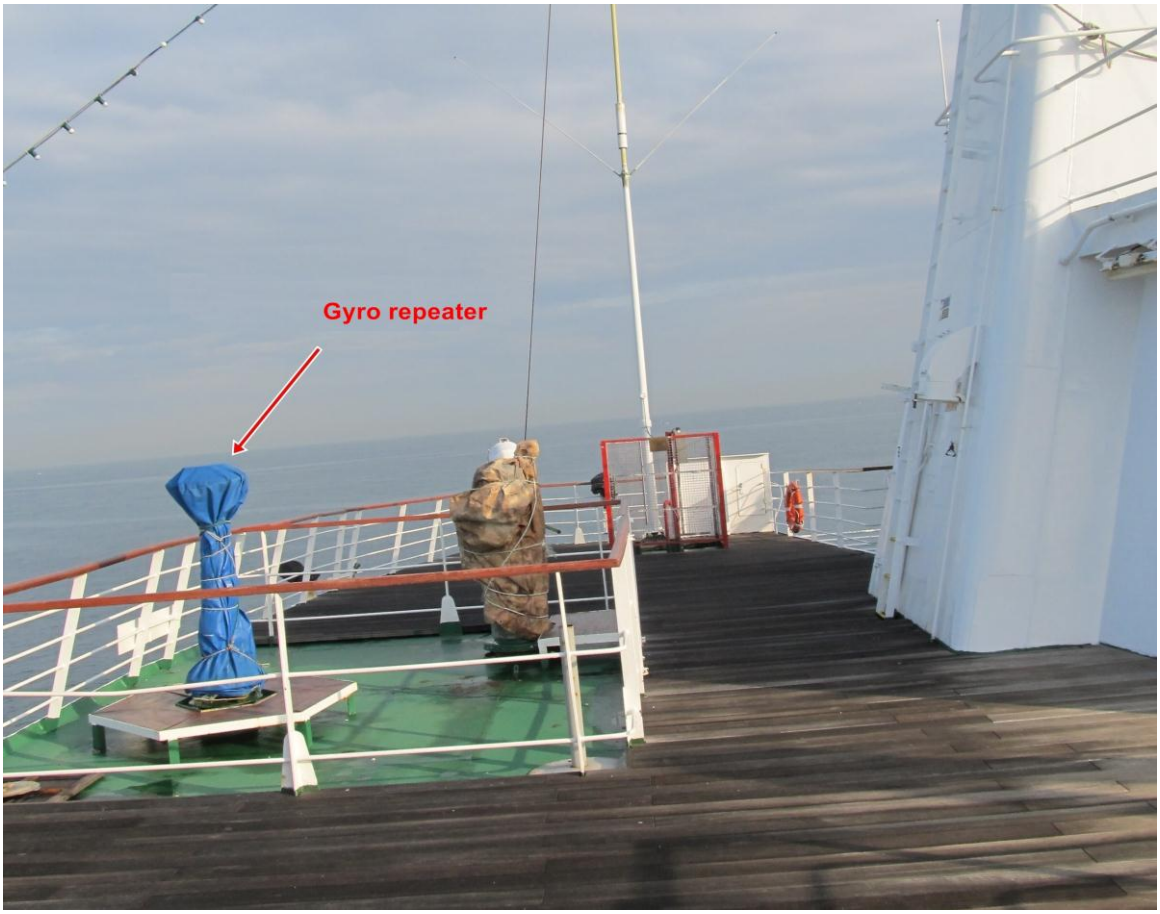


**Figure 12: Gyro repeater on the flying bridge of ANKARA**

## CHAPTER 3 – CONCLUSIONS

The safety issues related to the occurrence of the accident are as follows:

**3.1** Although REINA 1 was the give-way vessel according to the “International Convention For The Prevention Of Collision At Sea”, the OOW did not take early and substantial action to avoid collision.

**3.2** Although the master of ANKARA realised that REINA 1, which is the give-way vessel did not take the necessary action, he did not take any action to avoid collision as required by the “International Convention For The Prevention Of Collision At Sea”.

**3.3** Although both vessels were being monitored by the OOWs well before the collision happened, the first VHF contact was established at a point when there was very little distance between the vessels.

**3.4** Whereas the VHF communication did not involve clear statements and doubts on the prevailing situation were not clarified.

**3.5** Although the OOW of REINA 1 was hesitating and undetermined about the action he should take for a safe manoeuvre, he only called the master very shortly before the collision.

**3.6** The master of ANKARA preferred to monitor REINA 1 on his radar screen without plotting the vessel. This caused a false perception on the course that REINA 1 was navigating.

**3.7** The master of ANKARA was overconfident and for this reason he thought that an early change of course or speed to avoid collision was unnecessary.

## CHAPTER 4 – SAFETY RECOMMENDATIONS

It is recommended that;

### 4.1 The Managing Company of ANKARA (Denizciler Turizm ve Denizcilik A.Ş.)

Should issue an instruction on the subject matters below to the crew who are watchkeeping on the bridge on board vessels under its operation,

**4.1.1** The ARPA functions of the radar shall certainly be used,

**4.1.2** With the consciousness of and responsibility for the safety of hundreds of passengers and tens of crew on board, the company should issue an instruction to remind the crew to keep safe distances from vessels that may create risk of collision and early and substantial action shall be taken as required by the “International Convention For The Prevention Of Collision At Sea”

**4.1.3** Clear and easily understandable statements shall be used during the VHF communications with other vessels,

### 4.2 The Managing Company of REINA 1 (Reina Shipping Co.Ltd.)

**4.2.1** The Company should issue an instruction and send to all vessels under its management to require masters to safeguard a working environment where the watchkeeping officers on the bridge will be conscious that they shall call the master without losing any time whenever they are in doubt and without hesitation thereof.

***The content of this Report shall not be used to blame or to apportion liability between the parties of the accident.***