MARINE SAFETY INVESTIGATION REPORT

OWNER	:	RENEE Shippıng Ltd. / Abbay POLAT
MANAGER	:	CHEKKA Shipping Ltd. / -
NAME of SHIP / IMO No	:	JOELLE (9396969) / POLAT 1 (-)
FLAG	:	Malta / Turkey
SCENE of ACCIDENT	:	Bay of Mersin / Mediterranean Sea
DATE of ACCIDENT	:	22 March 2018
FATALITY / INJURY / LOSS	:	- / - / -
DAMAGE / POLLUTION	:	POLAT 1 Foundered / No pollution

Board Resolution No : 02/DNZ-10/2019 *Date : 26 / 09 /2019*

The sole purpose of this investigation is to make recommendations in order to prevent similar accidents and incidents within the framework of the legislation of the Transport Safety Investigation Board.

This report shall be inadmissible in any judicial or administrative proceedings whose purpose is to apportion blame or determine liability.

REPUBLIC OF TURKEY

MINISTRY OF TRANSPORT AND INFRASTRUCTURE

Transport Safety Investigation Center

JOELLE / POLAT 1

Marine Safety Investigation Report

Foundering of F/V POLAT-1 Due to the Collision

Bay of Mersin / East Mediterranean Sea

22 March 2018

This report is prepared by the Transport Safety Investigation Center.

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LEGAL BASIS

This marine accident was investigated in accordance with the By-law on the Investigation of Marine Accidents and Incidents which came into force after being published at the Official Gazette No.29056 on 10th July 2014.

Investigation procedures and principles are further applied by considering Resolutions of International Maritime Organization concerning International Standards and Recommended Applications for Safety Investigations Directed to MSC 255(84) (Casualty Investigation Code) and Resolution A.1075(28) Marine Accidents or Incidents, and European Union Directive 2009/18/EC.

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FIGURE LIST

ABBREVATIONS AND SYNONYMS

GMT *: Greenwich Mean Time*

VTMS *: Vessel Traffic Management System*

VTS *: Vessel Traffic Service*

VDR *: Voyage Data Recorder*

AIS *: Automatic Identification System*

ARPA *: Automatic Radar Plotting Aid*

VHF *: Very High Frequency*

STCW *: The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers*

ILO *: International Labor Organization*

IMO *: International Maritime Organization*

COLREGs *: Convention on the International Regulations for Preventing the Collisions*

AIS-B *: 2 Watt Output Powered AIS Device which is operated by non-SOLAS vessels*

OoW *: Officer on Watch*

SUMMARY

Figure 1: Location of the Accident

Note: All times in the Report are local times (GMT +3)

A Maltese-flagged general cargo M/V JOELLE set sail on the date of 22 March 2018 at 02.40 to transport 6800 tons of clinker cargo, which was loaded from Mersin port to Kalecik/KKTC (TRNC -Turkish Republic of Northern Cyprus) port. Shortly after the departure from the port, JOELLE and a Turkish-flagged fishing boat POLAT 1, which was trawling within the boundaries of Mersin port, collided at 03.25 and they caused a marine accident. Because of the accident, F/V POLAT 1 sank after a while and 3 crew members including the Master were rescued by another fishing boat before the boat sank. Damage to the paint along the stem post of the JOELLE occurred due to collision.

Because of the accident investigation carried out, it was concluded that neither M/V JOELLE nor F/V POLAT-1 had an effective lookout, which the Master Standing Orders were not followed on the M/V JOELLE, and that mental fatigue occurred on the OoW of JOELLE.

Based on the results of the accident investigation, the owner and operator of the vessel JOELLE and Directorate General of Coastal Safety were recommended.

SECTION 1 – FINDINGS

1.1 Ship Particulars

	JOELLE	POLAT-1
Flag	Maltese	Turkish
Classification Society	Lloyd Register (LR)	-
IMO Number	9396969	-
Type	Bulk Carrier	Fishing
Owner	RENEE Shipping Ltd.	ABBAY POLAT
Operator	CHEKKA Shipping S.A	-
Place and Year of Build	Zejiang/China-2007	Kurucaşile - 1990
Gross Tonnage	4822	45
Length Overall	108 meters	15,75 meters
Main Engine and Power	DAIHATSU – 2500 KW	VOLVO – 330 BHP

Figure 2: M/V JOELLE

Figure 3: F/V POLAT 1

1.2 Voyage Particulars

	JOELLE	POLAT-1
Port of Departure	Mersin	Mersin
Port of Arrival	Kalecik (TRNC)	Mersin
Cargo Information	6800 MT Clinker	-
Number of Personnel	15	3
Minimum Manning	13	2
Type of Navigation	Open Sea	Coastal (limited to 100 miles)

1.3 Marine Casualty Information

Date of the Accident	22.03.2018 / 03:25
Type of the Accident (IMO)	Very serious marine accident
Form of the Accident	Collision
Place of the Accident	Bay of Mersin / The Mediterranean Sea
Injured/Dead/Missing	-
Damage	Sunk (POLAT 1)
Pollution	None

1.4 Environmental Conditions

Wind	Northeasterly Breeze
Condition of the Sea	Calm
Vision	Good
Condition of the Weather	Clear

1.5 Mersin Vessel Traffic Service

Mersin Vessel Traffic Service, which covers Mersin and İskenderun Gulf, was founded in 2005 within the scope of the Vessel Traffic Management System Project carried out by the Ministry of Transport and Infrastructure. The responsibility for the operation, maintenance, repair and maintenance of the VTSs within the scope of VTMS project was given to the Directorate General of Coastal Safety by the decision of the Council of Ministers. Mersin VTS, whose establishment procedures were completed, consists of one center and eight Traffic Monitoring Stations (TMS). The locations and capabilities of the Traffic Monitoring Centers are given in the following table. ***(Figure 4)***

GTHM / TGİ	İl	İlçe	Radar	VHF	OTS	RYB	EOS	Meteo	VIS	MHF
Mersin (GTHM)	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	-	-

Figure 4: Mersin VTS Center

The primary purpose of the VTS founded within the scope of VTMS is to increase the safety of navigation, life, property and environment by providing Information Service, Traffic Organization Service, and Navigational Assistance Service within the scope of the area of

responsibility, within the framework of national and international legislation regarding active participant vessel traffic.

The area of Mersin VTS founded within this scope has been planned as three sectors with the names of Sector Mersin, Sector İskenderun and Sector Mediterranean and a separate VHF channel has been assigned for each sector. The establishment of the center has been completed and it is expected to be operational, soon. ***(Figure 5)***

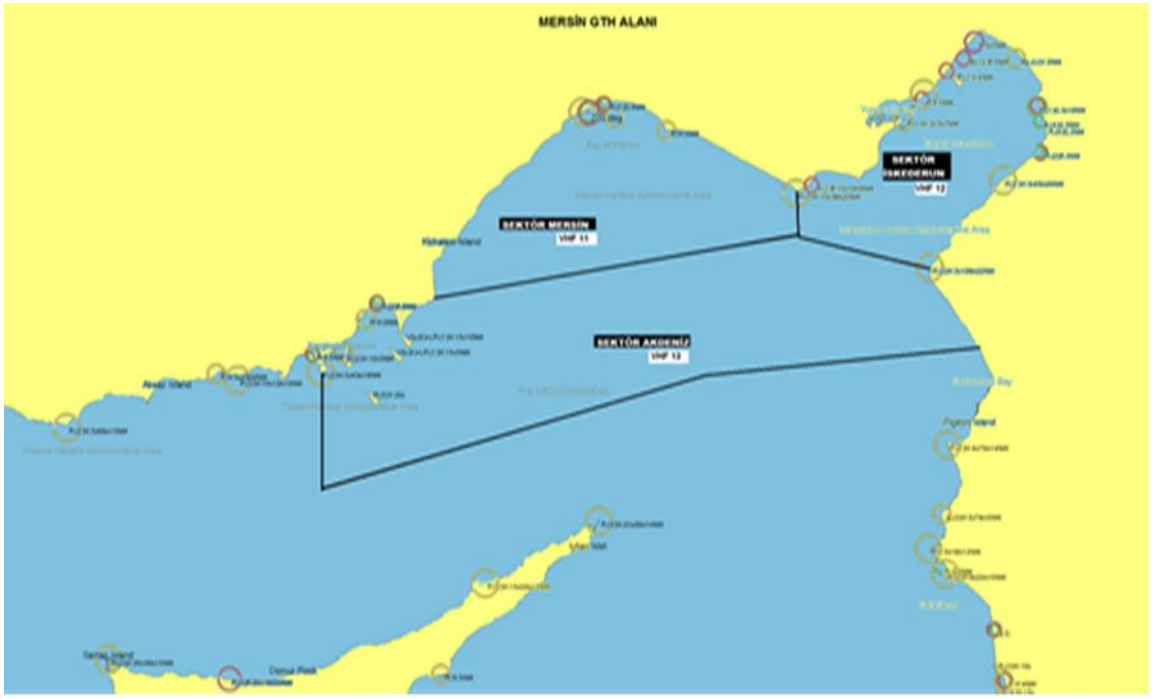

Figure 5: Mersin VTS Service Area

1.6 VDR (Voyage Data Recorder)

After the accident, VDR records information was requested from the vessel named JOELLE to be investigated. However, it was found that the Highlander brand HLD-A2 model VDR recorder on the vessel was out of order at the previous port, Kalecik port and a "Defect Report" dated 19.03.2018 with the code of VM-02/01 was issued. On the date of 20.03.2018, the device was re-checked in Mersin port, a “NCN Report” with the code of OS-05/02 was issued, and a technician was requested to eliminate the inconvenience at the next port.

SECTION 2 – NARRATIVE

The sequence, times of the events that led to the marine accident and location of the people were mostly based on statement of eyewitnesses and interviews done.

2.1 Course of Events

2.1.1 JOELLE

Clinker loading operation of the vessel JOELLE in Mersin port completed on the date of 22 March 2018 as of 01.00. The vessel has completed the necessary navigation preparations in order to transport 6800 tons of clinker load/cargo to the Kalecik port of TRNC. The port pilot boarded the ship at 02.00 and the vessel departed at 02.40 after completing the port departure maneuver. Following the pilot's departure, the Master left the bridge and went to his cabin to rest.

The vessel has started its navigation to follow the full speed 179º T route. 2nd Officer and an able seaman, who was a helmsman, were on the bridge. ARPA and AIS device were activated. Around 03.10, it was noted that fishing boats were observed around port bow and starboard bow of the vessel. Around 03:25, a quake was felt when 2nd Officer was busy positioning in front of the map desk, and 2nd Officer first checked whether there was any contact from the radar, then observed the area around from the bridge's windows, and he continued his routine duties as he could not make any detection.

At 06.30, the Turkish Coast Guard patrol boat made a call from the 16th channel of VHF and during this call, they reported that the vessel involved in a collision and requested the Master to return to the Mersin port in order to carry out the necessary investigations and to take statements.

2.1.2 POLAT-1

On the night of March 22, 2018, the F/V POLAT 1, along with other fishing boats, was trawling in the 110º-120ºT route at a speed of 2.7 knots. The boat master was lying down on the bridge after the trawl nets had been thrown into the sea. The other two staff was sitting in the lounge. At 03.25, they went up to the deck after they startled with a loud noise. They saw a vessel collided them and was getting away from them, and they checked the boat and found that the stem was split/cracked. They tried to cover the hole with the tarpaulin to slow

down the boat's taking in water. Meanwhile, the master returned to the bridge and detected with the AIS device that the ship collided them was M/V JOELLE.

Data obtained from Mersin VTS regarding the moment of collision confirm the situation. ***(Figure 6)***, ***(Figure 7)***, ***(Figure 8)***, ***(Figure 9)***

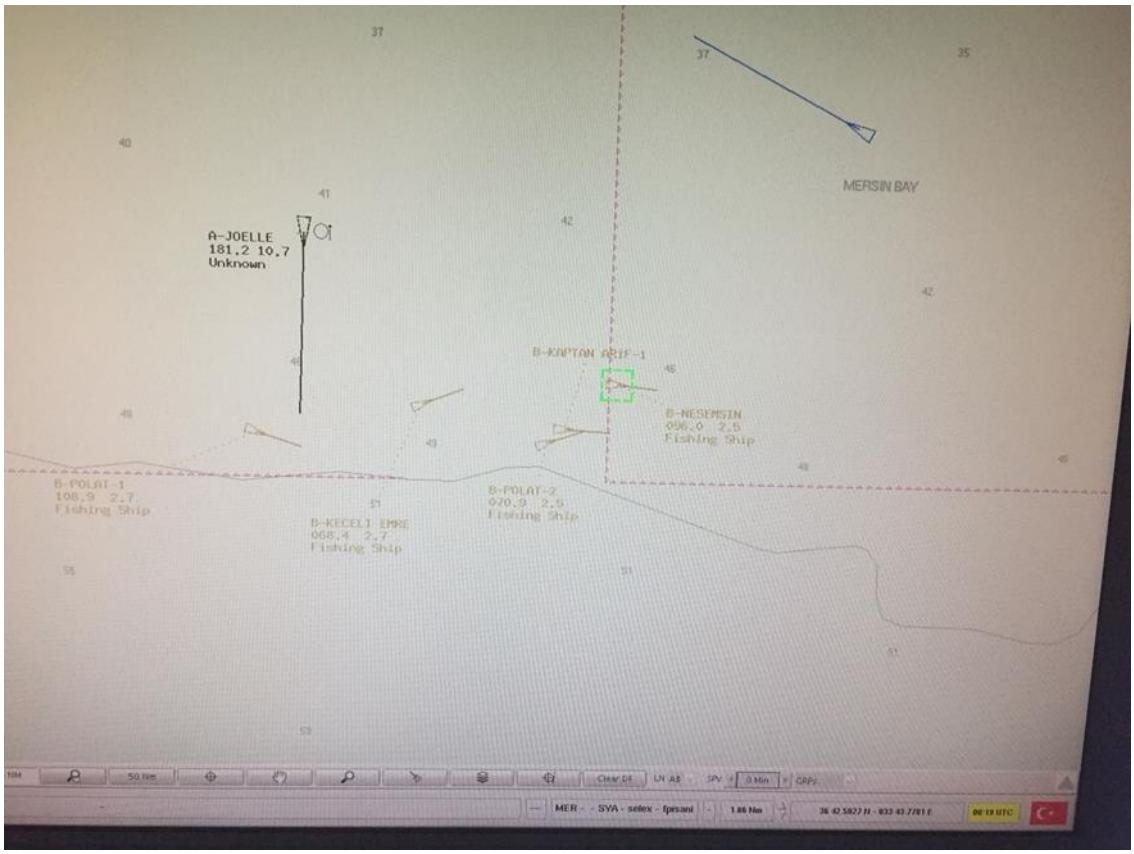

Figure 6: Data obtained from Mersin VTS (03.19)

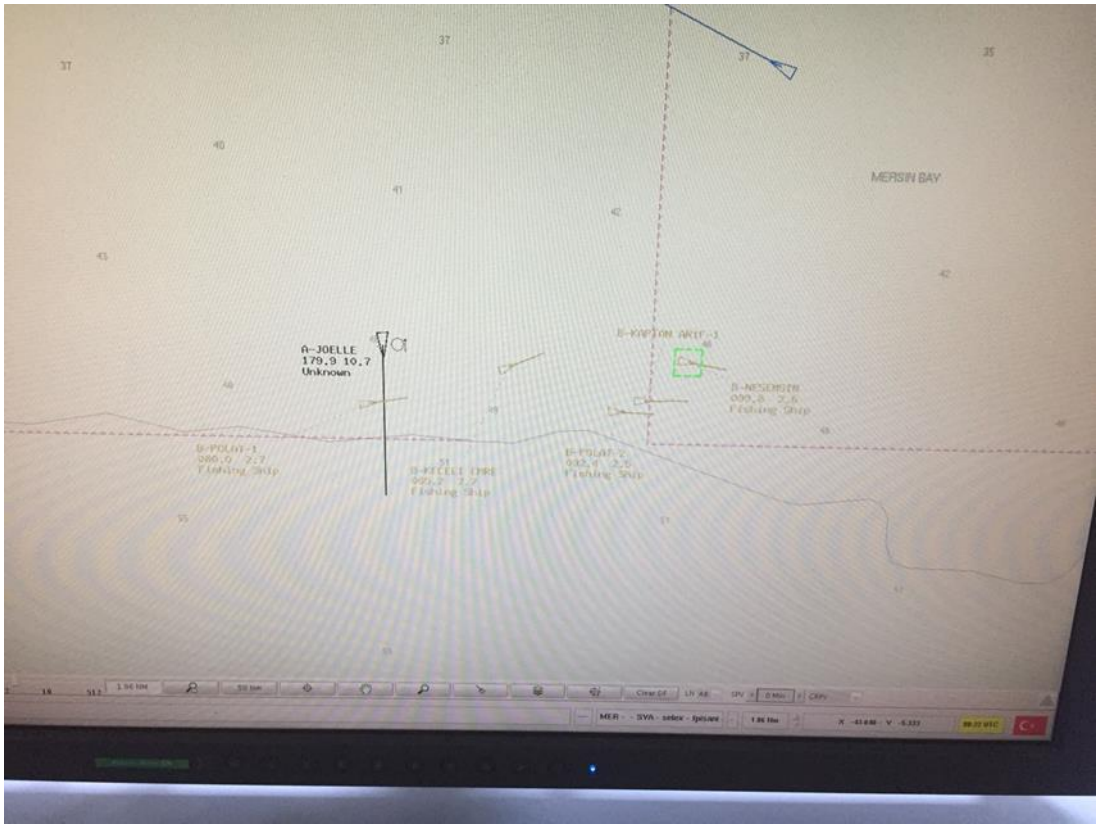

Figure 7: Data obtained from Mersin VTS (03.23)

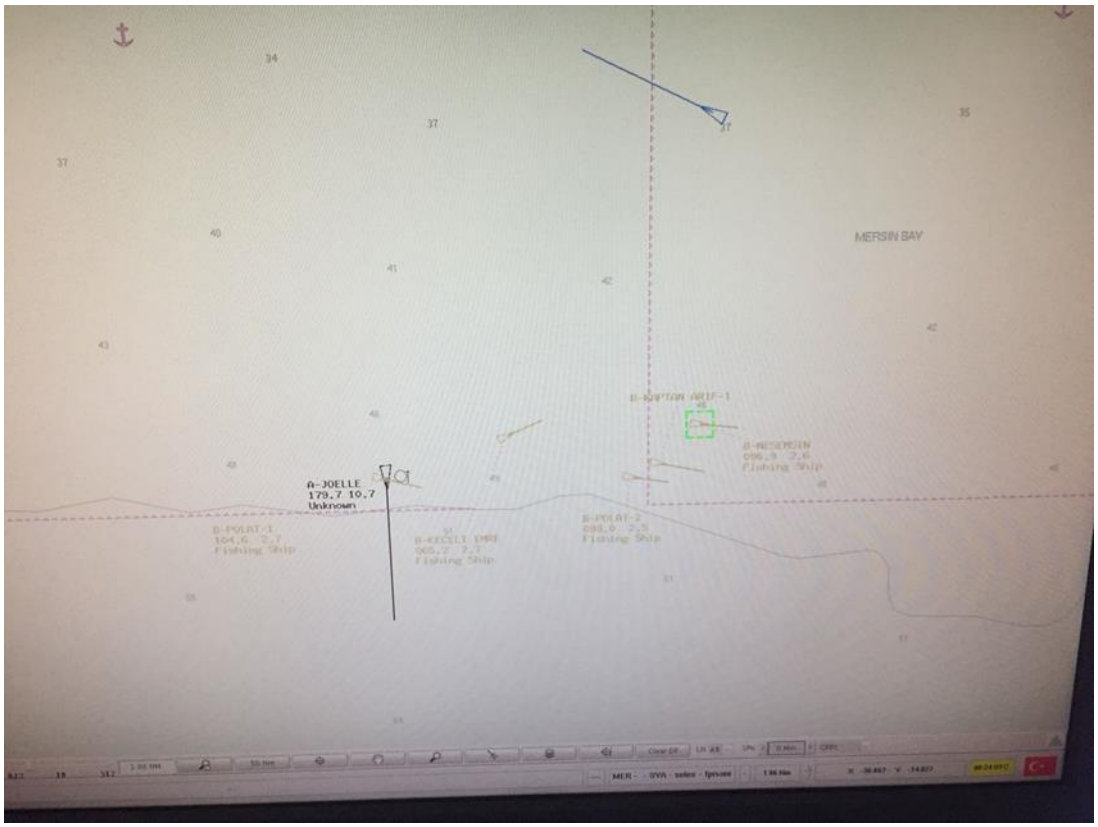

Figure 8: Data obtained from Mersin VTS (03.25)

Figure 9: Data obtained from Mersin VTS (03.40)

2.2 Events Aftermath of the Accident and Search and Rescue

Following the accident, while the crew of the F/V POLAT 1 tried to cover the split where the boat was taking in water, the Master requested assistance from other fishing boats that were navigating nearby. The F/V KEÇELİ EMRE and F/V KAPTAN ARİF 1 that were navigating nearby reached F/V POLAT 1 in 10-15 minutes.

While they were trying to discharge the water on the boat by the help of the pump, the two fishing boats came, took the boat POLAT 1 between each other, and started to tow towards the nearby Çamlıbel fishing port. However, due to the inability to stop the water getting in the boat, the POLAT 1 sank 2.5 nautical miles away from the port. The boat crew were recovered by the F/V KEÇELİ EMRE and returned to the port.

M/V JOELLE altered her course in line with the request of the Coast Guard patrol boat and returned to Mersin port.

2.3 Damage

After the accident, M/V JOELLE returned to the Mersin port, during the investigation carried out where the vessel dropped anchor, the damage to the paint at the starboard bow, and on the waterline at the starboard broadside drew attention. ***(Figure 10)*** It was stated in the interviews with the ship's crew that the aforementioned paint damage had occurred before.

The head/stem of the F/V POLAT-1 was completely damaged due to the collision. ***(Figure 11)*** The boat, which was tried to be towed into the port by other boats after the accident, sank due to the inability to discharge the water taken in from the head side. POLAT-1 was removed from the wreck place one year after the accident date and a report indicating that the vessel was unusable and unregistered respectively.

Figure 10: Image from JOELLE after the accident

Figure 11: Image from POLAT-1 after the accident

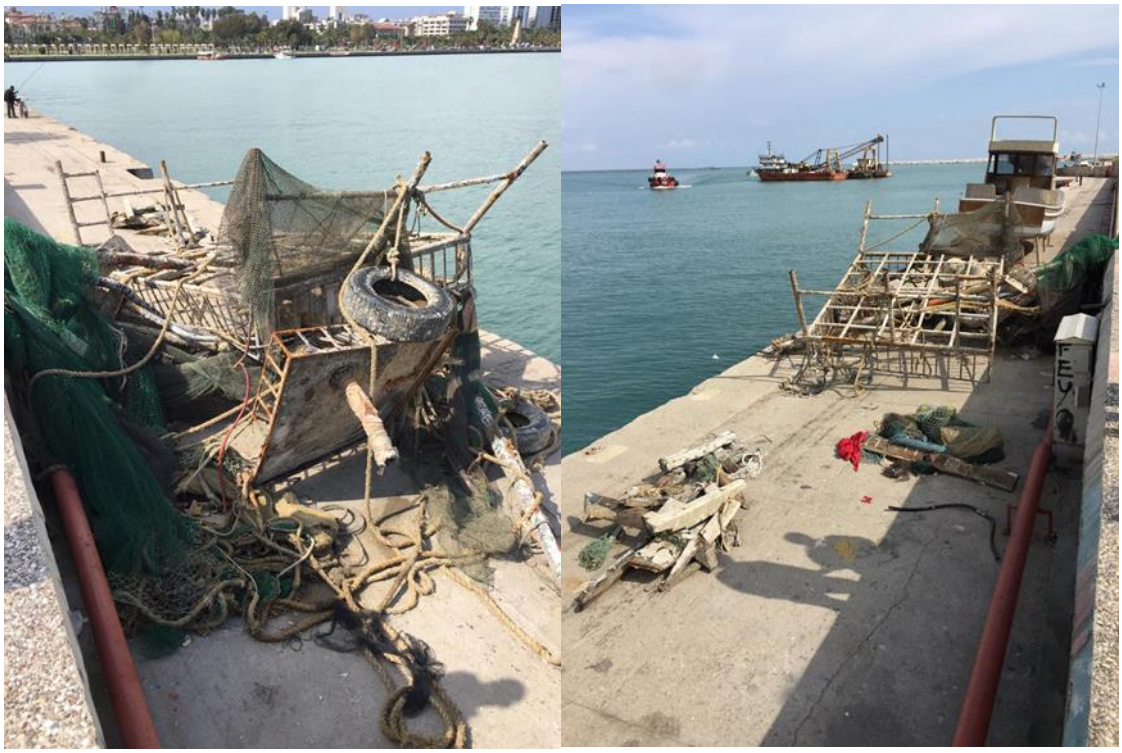

Figure 12: Image of the boat POLAT-1 that was removed from the shipwreck

SECTION 3 – ANALYSIS

In the marine accident investigation, it was aimed to determine and identify the factors that led to the accident in order to obtain fructuous conclusions resulting in safety recommendation on root causes by taking into account the sequence of the events and the data obtained during the investigation.

3.1 Lookout – Actions of The Both OoW's

One of the most important tasks that should be performed regularly during the watch is to carry out a proper lookout by sight and hearing. While performing this task, the OoW's should take into account in maximum the navigation signs seen around the vessel, which may jeopardize the safety of the vessel's navigation safety, such as surface vehicles, lighthouses and buoys, and the whistle sounds that are heard.

Rule 5 of International Rules for the Prevention of Collision At Sea 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 of the risk of collision".

Additionally, Chapter VIII Part 4-14 of the STCW Code states that;

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

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

.3 detecting ships or aircraft in distress, shipwrecked persons, wrecks, debris and other hazards to safe navigation"

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 Part 4-1 of the Standards of Training, Certification and Watchkeeping (STCW) for Seafarers 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 helmsperson are separate…"*

3.1.1 JOELLE

It was understood from the statements that the OoW of M/V JOELLE conducted an environmental control from the radar before coming to the front of the map desk for positioning, then was engaged in positioning in front of the map desk and at the same time, the A/B on the bridge was engaged in steering. When the above-mentioned provisions are considered, it was determined that OoW of M/V JOELLE was unable to detect the POLAT 1's echo while carrying out environmental control with radar, and subsequently engaged in positioning without carrying out environmental control effectively using the visual and other navigational aids. In addition, it can be understood from the statements that there were no other lookout on the bridge or anybody assigned other than the OoW due to the inability of the A/B on the bridge to carry out an extra lookout duty, as he was busy with steering.

Based on these situations, the fact that the OoW did not carry out a complete and effective lookout and that a lookout other than the OoW was not assigned within the framework of the relevant provisions was considered to be a contributing factor.

3.1.2 POLAT 1

F/V POLAT-1 crew took rest after they completed throwing trawl nets. The boat master stated that he had lied down on the couch of the bridge after activating his flashlights indicating that he was trawling as required by the COLREGs. It was revealed from the records that meanwhile, the boat was moving at a speed of 2.7 knots in the 110°-120° T route by trawling.

It was understood from the statements that the master was only able to detect JOELLE approaching (crosswise) to his own boat by checking the AIS-B device at the boat after the accident, and he could not effectively carry out the lookout task because he was having a rest on the bridge during the accident. Although the boat POLAT 1 had priority of way according to COLREGs, the Master did not attempt to engage in collision prevention maneuver as he was unable to carry out a proper and effective lookout.

Therefore, the fact that the POLAT 1 master, like the JOELLE's OoW, did not carry out an effective lookout is considered to be another factor causing the accident.

3.2 Bridge Resource Management

Bridge Resource Management is the effective management and integration of human and technical resources provided to the bridge crew to ensure safe and efficient navigation of the vessel. The principles of Bridge Resource Management are an important issue for the Master and the Officers who are on navigation shift. Optimized Bridge Resource Management takes full advantage of all the technical advantages of bridge navigation equipment, and maintains the safety of navigation by providing appropriate communication and information exchange at all levels of the bridge crew while maintaining the situational awareness of watch officers.

More specifically, the principles of Bridge Resource Management are presented under "*Principles Applying to Watchkeeping Generally*" in Section 3, Part VIII of STCW Code, as well as under "*Principles to be Observed in Keeping a Navigational Watch*" in Section 4.1, Part VIII.

The aforementioned provisions ensure that the masters take appropriate actions for the regulation and management of navigational watches and that the watch officers carry out their duties effectively. As a result, the bridge crew is assisted in decision-making, possible mistakes are prevented and measures are taken to prevent or reduce the causes of marine accidents that may occur.

The Master of JOELLE left the bridge to rest after the completion of the Mersin port departure maneuver and the pilot left the vessel. However, it was revealed that the Master did not publish the "Night Orders", which includes especially evaluation of the traffic conditions present in the area and is published in order to ensure the healthy functioning of the watch and increase the situational awareness, and furthermore no lookout other than the OoW was assigned for the night watch.

In addition, considering the fact that JOELLE’s OoW did not make sufficient use of the electronic navigational devices on the bridge while carrying out the lookout task, it was concluded that the failure to implement the bridge resource management principles adequately was a contributing factor to the accident.

3.3 Watch / Master's Standing and Night Orders

"Watchkeeping Arrangements and Principles to be observed" titled Article 10 of Part 4 of Section A-VIII/2 of STCW of states "The master of every ship is bound to ensure that watchkeeping arrangements are adequate for maintaining a safe navigational watch… "

In this context, Ship Master instructs OoWs with Standing Orders. These orders, which contain a comprehensive list of rules necessary for navigation safety, should be observed and followed up continuously by the OoW's.

The "Night Orders", which is an addition of the Standing Orders, are the "Orders" in which the matters the OoW's should be aware of regarding the weather, sea and traffic conditions specific to that navigational area during the Master's rest are set and are signed by each watch officer responsible for the watch on the bridge.

Keeping Navigational Watch titled Article 32 of Part 4-1 of Section A-VIII of STCW Code states that;

"It is of special importance that at all times the officer in charge of the navigational watch ensures that a proper lookout is maintained. In a ship with a separate chartroom the officer in charge of the navigational watch may visit the chartroom, when essential, for a short period for the necessary performance of navigational duties, but shall first ensure that it is safe to do so and that proper lookout is maintained."

It was seen that the Standing Orders of the Master of the JOELLE were prepared in accordance with the Vessel's Safety Management Manual and signed by the Master, 1st Officer and 2nd Officer. It was determined that Night Orders based on Standing Orders were prepared and signed before the navigation of the Kalecik-Mersin started on the date of 19.03.2018 and no night order regarding the navigation of Mersin-Kalecik was published on 22.03.2018 which is the date of the accident.

Within the framework of the aforementioned provisions, it was considered that the inability to create awareness of the OoW due to the fact that the night orders were not published by the Master of JOELLE was another factor contributing to the accident.

3.4 Mersin VTS

As stated in Article 1.5, the establishment of Mersin VTS Center was completed and was expected to be operational. In this way, it is planned to prevent the loss of life and property and environmental pollution by providing navigational assistance service in navigation areas such as Mersin port with increasing traffic density. It is expected that the VTS Center will make a significant contribution to the prevention of the factors causing such accidents.

3.5 Weather and Sea Conditions

According to the data and information obtained, the weather and sea conditions during the accident are not considered to be a factor for the marine accident investigated.

3.6 Fatigue

Although there is no universally accepted technical definition of fatigue, everyone involved in vessel operations should be careful about the factors that may contribute to fatigue including but not limited to those identified by the IMO, and should consider them when deciding about vessel operations.

In fact, Article 3 titled "Guidance Regarding Watchkeeping" of Part B-VIII/1 of STCW states that;

In applying regulation VIII/1, the following should be taken into account:

.2 *that the frequency and length of leave periods, and the granting of compensatory leave, are material factors in preventing fatigue from building up over a period of time.*

Furthermore, seafaring itself has a system of work that is subject to risk factors related to fatigue, such as physical and mental health. Because of the studies, it is revealed that factors such as long-term contract periods, short trip arrangements, watch arrangements exceeding 4 hours, etc. cause poor mental functions and have a clear effect on job performance.

More specifically, in the maritime sector, long working times, which are reported as normal working times of 26 weeks or more, are common. Studies have shown that in more than 80% of the cases, fatigue increases as the length of the working time increases. In addition, because the vessels stay at the ports for shorter periods, the effect of the decrease in the necessary landing/disembarkation and resting opportunities of the crew on the cumulative fatigue is undeniable.

It is understood that the rest and working hours of the crew on the M/V JOELLE was regulated and implemented in accordance with the requirements of the ILO and STCW Conventions. In addition, it was found that 2nd Officer of JOELLE, who was responsible for keeping a navigational watch on the night time, joined the vessel on the date of 03.05.2017 and had been working onboard for a total of 11 months until the day of the accident.

In view of the above-mentioned provisions and investigations, it is considered that long-term contract duration and short-term trips such as Mersin-Kalecik might have caused mental and reactional fatigue on the JOELLE's OoW. Therefore, the notable decrease seen in the situational awareness of the watchkeeping officer was considered to be one of the factors causing the accident.

However, the master of the F/V POLAT-1 stated that he had rested on the bridge by lying after participating in the work of throwing trawl nets into the sea. It was assumed that the master, who was exhausted in the process of throwing trawl nets into the sea, might have lost his self-situational awareness and thus this was another factor causing the accident.

3.7 Alcohol and Drug

After the accident, the results of the alcohol test carried out on the crew of the boat POLAT-1 were found to be within the legal limits. No information was obtained on whether any alcohol or drug test is carried out on the personnel of the M/V JOELLE regarding the accident. Nevertheless, it was considered that there was no behavior or action related to JOELLE that could show any effect of drugs or alcohol during the investigation.

SECTION 4 – CONCLUSIONS

4.1 The OoW of M/V JOELLE did not able to carry out a proper and effective lookout.

4.2 During the night watch time, a lookout crewmember was not assigned in order to enhance the ability for lookout in accordance with the relevant provisions of STCW.

4.3 The master of POLAT 1 did not carry out a proper and effective lookout.

4.4 Obligations, duties, tasks and functions, as foreseen and emanating through STCW Code applicable standards, were disregarded by the Master and the bridge resource management in relation to technical resources was poor as Instructions and procedures were not in place.

4.5 Night Orders regarding the navigation of Mersin-Kalecik was not published and thus a sufficient self-situational awareness was not constituted on the OoW.

4.6 The importance of the operational readiness of the Mersin VTS Center, whose installation phase was completed, has been demonstrated once again in order to monitor the traffic in the Mersin region and raise awareness in the prevention of accidents.

4.7 The prevailing weather and sea conditions in the region did not affect the marine accident.

4.8 Long-term contract period and short-term trips such as Mersin-Kalecik have caused a mental and reactional fatigue on the JOELLE's OoW.

4.9 The Master of POLAT 1 self-situational awareness was reduced due to the fatigue.

SECTION 5 – RECOMMENDATIONS[1]

Considering the analysis and conclusions obtained from the accident investigation, the following recommendations were given.

RENEE Shipping Corp. Ltd. and CHEKKA Shipping S.A. are recommended;

9/03-19 To disseminate a circular throughout their fleet in order to ensure the Master Standing Orders to be followed effectively. ***(4.1, 4.2, 4.4)***

10/03-19 To take appropriate actions, including a familiarization and/or recurring training, in order to maintain a proper and effective lookout at all times in their fleet to comply with the respective provisions of the STCW Code ***(4.5)***

11/03-19 To revise the Company's recruiting policy in order to reduce mental fatigue on crew taking into consideration the trip frequencies and workload on the ports, ***(4.8)***

Directorate General of Coastal Safety is recommended;

12/03-19 To accelerate the VTS Centers operational readiness in which installation phase was completed in order to prevent similar accidents in the future ***(4.6)***

[1] Not any recommendation was addressed to the owner/operator of the F/V POLAT 1 since it is no longer engaged in commercial activity.