MARINE SAFETY INVESTIGATION REPORT ON A VERY SERIOUS MARINE CASUALTY

VESSEL NAME	: YILMAZ KAPTAN
IMO NO	: 8132598
FLAG OF THE VESSEL	: Türkiye
LOCATION OF THE CASUALTY	: Antalya / Türkiye
DATE & TIME OF THE CASUALTY	: 19 September 2013 - 16:12 (GMT +3)
FATALITY / INJURY	: 1 dead - 2 injured
DAMAGE CONDITION:	: There was material damage on board YILMAZ KAPTAN and SEAGULL EGE-7.
ENVIRONMENTAL POLLUTION	: None

Board Decision No: *09 / D-04 / 2023*	**Date:** *17 / 04 / 2023*

The sole objective of this investigation is to make recommendations for the avoidance of similar casualties 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 casualty 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.

Also, MSC.255(84) [International Maritime Organization Resolutions on International Standards and Recommended Practices for Safety Investigations into Marine Casualties or Incidents (Casualty Investigation Code)], as well as IMO Resolution A.1075(28) (Guidelines to Assist Investigators in the Implementation of the Casualty Investigation Code), have also been taken into account for the procedures and principles of the investigation.

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ABBREVIATIONS

IMO *: International Maritime Organization*

GMT *: Greenwich Mean Time*

m *: Metre*

HP *: Horsepower*

TRNC *: Turkish Republic of Northern Cyprus*

GT *: Gross Tonnage*

TMO *: Grain Board of Agriculture*

SOURCE OF INFORMATION AND LIST OF REFERENCES

- *Logs of the vessel, YILMAZ KAPTAN*

- *Records of The Ship Operator*
- *Master and Crew of the vessel, YILMAZ KAPTAN*

LIST OF IMAGES

SUMMARY

Image 1 Location Of The Casualty

On 19 September 2013, Turkish flagged general cargo vessel, YILMAZ KAPTAN (IMO: 8132598) sailed towards the breakwater by heaving up anchor from the Antalya anchorage site in order to come alongside at the Asçimport berth in the Port of Antalya.

During the berthing manoeuvre, the master commanded the main engine to stop in order to reduce the speed, but the main engine could not be stopped due to the jammed handles of fuel pumps no 1 and 3. The master gave astern command to the main engine propulsion as the vessel proceeded towards the berth without slowing down her speed. However, since the main engine could not stop, it could not respond to the astern propulsion command as well. Since the vessel could not slow down her speed, she hit the berth at 16:12 by the starboard bow.

Upon impact, the vessel continued to proceed to TMO berth no: 10. Meanwhile, dockworkers fast the rope, which was suspended from the bow of the ship to the bollard at the berth. During the casualty which took place due to the rupture of the rope drum which became taut as the vessel moved at high speed, one deck cadet lost his life, while the chief officer and another deck cadet were injured.

The vessel, failed to reduce her speed, continued to proceed ahead and collided with the waste collection vessel SEAGULL EGE 7, which was moored at the berth. Due to the collision, the vessel SEAGULL EGE 7 was also damaged.

SECTION 1 – FACTUAL INFORMATION

1.1 Information of the Vessel

Flag	: Türkiye
Place / Year of Building	: Istanbul / 1979
Port of Registry	: İstanbul
Vessel Type	: General Cargo
Gross / Net Tonnage	: 942 / 481
Length Over All	: 73.05 m
Main Engine / Power	: SKL / 736 kW - 1000 HP

Image 2 The Vessel, YILMAZ KAPTAN

1.2 Information of Voyage

Port of Departure	: Famagusta
Port of Arrival	: Antalya
Passenger Capacity and Number	: -
Number of Crew	: 10
Minimum Safe Manning	: 9
Type of Navigation	: Near Coastal Voyage
Radio Safety Certificate Navigational Zones	: A1 + A2
Cargo Condition	: No Cargo (Ballast Condition)

1.3 Structural Characteristics and General Arrangement Plan of the Vessel

The vessel, YILMAZ KAPTAN was built in İstanbul in 1979. The length overall of the vessel is 73.05 metres, the breadth is 9.1 metres and the depth is 5.37 metres. Her main engine is a SKL brand generates 1000 horsepower.

1.4 Information of Casualty

Date / Time of Casualty	: 19 September 2013 - 16:12 (GMT+3)
Casualty type classification	: Very Serious Marine Casualty
Type of Casualty	: Manoeuvring Casualty
Location of Casualty	: Port of Antalya
Dead - Injured	: 1 Dead - 2 Injured
Damage	: Rupture in the bow and deformation on the guard rails of the vessel YILMAZ KAPTAN. Break in the fore mast and guard rails of the vessel SEAGULL EGE 7.
Pollution	: N/A

1.5 Information on Environmental Conditions

Wind	: South - Southeast 3/4
Sea Condition	: Calm
Visibility	: Good
Weather Condition	: Clear

1.6 Manning of the Vessel

The master was 52 years old at the date of the casualty and was qualified to work as a master on vessels up to 3000 GT. He joined the vessel 2 months and 5 days ago; this was his 2nd contract with this qualification. He gained experience of one month in this qualification during his previous contract.

The chief officer was 49 years old at the date of the casualty and was qualified to work as a chief officer on vessels up to 1250 GT, operating near coastal voyages.

The casualty deck cadet was 21 years old at the date of the casualty and it was his first time to sail on that vessel. He joined the vessel approximately 45 days ago.

The chief engineer was 53 years old at the date of the casualty and was qualified to work as a chief engineer on vessels less than 750 kW, operating near coastal voyages.

The engine cadet was 20 years old at the date of the casualty and had joined the vessel 45 days ago.

The number of crew required to be on board by the “Minimum Safe Manning Certificate” is met. While one of the 3 deck crew is qualified as an able seaman, the other two are qualified as deck cadets.

The engine room employs a chief engineer, a second engineer and an engine cadet with an oiler certificate.

1.7 Crew Positions and Distribution of Tasks During the Berthing Manoeuvre

During the berthing manoeuvre, there were three crew members in total on the forecastle deck, including the chief officer and two deck cadets.

At the aft deck, a bosun who was qualified as an able seaman and a second engineer was on duty.

On the bridge, there was a radio officer together with the master, and the radio officer was at the helm.

At the bow where the casualty took place, two sets of ropes were laid on the deck, and one of them was suspended from the starboard hawsehole. During the manoeuvre, the rope on the starboard side was hauled out from the drum.

Four ropes on the bow and stern are used for mooring the vessel. Three of these ropes are located on the drums. There is no break or control system to keep the ropes on the drums stable or to slow down their running. Before manoeuvring, the ropes were planned to be hauled out as 2 bow ropes and 1 bow spring at the fore and 2 aft ropes and 1 aft spring at the stern.

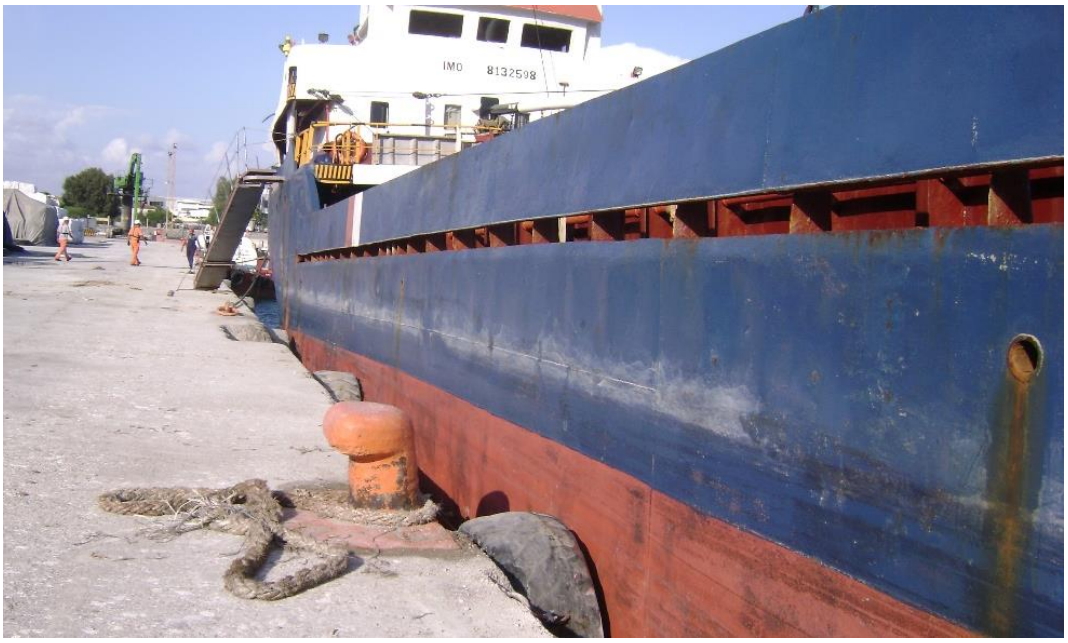

Image 3 Vessel Aboard The Berth And Parted Rope

SECTION 2 – NARRATIVE

2.1 Sequence of Events

The vessel YILMAZ KAPTAN departed from the Port of Famagusta, TRNC and arrived at the Anchorage Site No: 1 to berth at the Port of Antalya and anchored at 23:50 on 13 September 2013. On 19 September 2013, at 15:30, the vessel heaved up her anchor and started berthing manoeuvre. Since the company didn't request and the vessel was not subject to mandatory pilotage, the vessel didn't take a pilot.

The master set the main engine to a dead slow ahead at the entrance of the breakwater. Meanwhile, the vessel's speed was 4.5 knots. When the vessel was clear from the end of the breakwater, the main engine was brought to stop. To direct the bow of the vessel towards the port side, the main engine set ahead for 15-20 seconds and then was stopped again. The master, realising that the speed of the vessel was more than required, ordered the main engine dead slow astern. When the master realised that the main engine did not stop, he first commanded slow astern and then half astern. Although the commands from the bridge were responded by the engine room, the main engine kept running as the fuel pumps no 1 and 3 continued to supply fuel to the main engine of the vessel.

Meanwhile, the spring line from the starboard bow of the vessel was suspended from the hawsehole towards the mooring boat. The mooring boat could not catch the spring line due to the speed of the vessel. The vessel, which could not be stopped, hit the berth from the starboard bow. After the vessel hit the berth, dockworkers on the shore grabbed the mooring rope and made fast it to the bollard at the berth.

Image 4 Arrival Of Medical Teams To The Casualty Scene

The vessel continued to sail ahead and collided with the waste collection vessel SEAGULL EGE 7, which was moored at the berth.

After the vessel hit the berth, the mooring boat leaned against the vessel from the stern and tried to help the vessel to stop by thrusting towards the berth for about five minutes. For about 38 seconds after the impact to the berth, the vessel YILMAZ KAPTAN was still moving ahead while she was leaning against the vessel SEAGULL EGE 7.

Image 5 Damages To YILMAZ KAPTAN And SEAGULL EGE 7

Meanwhile, the engine cadet who was serving as an oiler tried to pull the stuck gas levers manually together with the chief engineer, but they failed to do so. After about 2 minutes, the chief engineer and the engine cadet intervened with the gas levers of the fuel pumps no 1 and 3 with a hammer and stopped the main engine. Meanwhile, the second engineer went down to the engine room and ran to the bridge to report the incident to the master.

The crew involved in the manoeuvre on the forecastle tried to make fast the rope to the bollard on the vessel by slack away rope on the drum to avoid any load on the rope given to the bollard on the shore, but they failed to catch the running of the rope. When the manoeuvring crew on the forecastle noticed that the rope was rapidly running and tautening, they realised the danger and tried to escape. However, the drum on which the taut rope was wrapped broke off from its place and hit the first officer and injured him, and the cadet was seriously injured by getting stuck between the drum and the pillars.

Image 6 The Part Of The Broken Rope Remaining On The Bollard

The over-taut rope broke after the vessel had moved about 10 metres further and the tension on the drum disappeared.

The other deck cadet dragged the injured deck cadet to a safe place in the midship and attempted to apply first aid. The deck cadet who was delivered to the ambulance which arrived 20 minutes after the casualty could not be saved and lost his life.

Image 7 Drum Causing The Casualty By Being Broken Off

SECTION 3 – ASSESSMENT

While assessing the marine casualty under investigation, it is aimed to identify and determine the factors that caused the casualty by considering the sequence of events and data obtained during the investigation.

3.1 Main Engine Malfunction

Due to the unexpected malfunction of the main engine of the vessel before the casualty, the main engine on the ahead course could not stop and therefore the speed of the vessel was not slowed down, which initiated the process leading to the casualty.

To minimise the casualty risks that may result from main engine malfunctions, it is very important for the crew to be on the alert with the appropriate and sufficient number of crew, to know and follow the precautions to be taken against unexpected malfunctions, especially in a vessel navigating in narrow waterways or executing berthing / departure manoeuvres at ports. Malfunction to do so will not only avoid casualties resulting from the main engine of the vessels but will also significantly increase the probability of serious consequences of such casualties. In such cases, the first thing to do is anchoring. However, if this is not possible, the course of the vessel should be altered to a safe area and an attempt should be made to stop the vessel.

As the main engine unexpectedly failed during the process leading up to the casualty, towards the end of the berthing manoeuvre, it was not possible to anchor or stop the vessel by altering her course to a safe area, or to get appropriate external assistance for the manoeuvre.

However, the intervention of the oiler and chief engineer with a hammer to stop the fuel pumps after the main engine failed to stop due to the malfunction of the fuel pumps no 1 and 3 to cut off the fuel despite the command to stop indicates that the vessel was not prepared for unexpected malfunctions. This not only suggests that the main engine malfunctioned due to the maintenance and overhaul deficiencies but also indicates the lack of preparation and precautions to be taken against emergencies.

On the other hand, a similar malfunction occurred about a month ago during the mooring manoeuvre. However, there was no evidence of any serious maintenance of the fuel pumps. Also, on the casualty day, the engine astern propulsion tests that should have been run before the manoeuvre was omitted. It is considered that the maintenance and overhaul of the main engine was not performed on time and the necessary engine tests were not carried out on the

day of the casualty, which were among the factors that contributed to the process leading to the casualty.

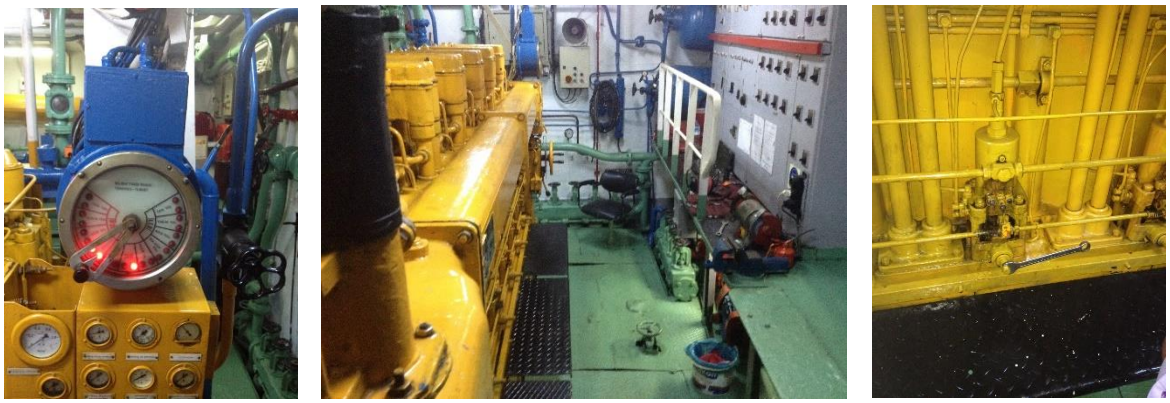

Image 8 Engine Telegraph, Main Engine and Fuel Pump

3.2 Crew Equipment and Condition in the Manoeuvring Location on the Forecastle

The "Minimum Safe Manning Certificate" requires the vessel to have two Group-1 deck crew and one Group-2 deck crew. One Group-1 crew can be substituted by a cadet. Thus, one of the two people in Group-1 can be a cadet.

It appears that a cadet was also employed on the vessel instead of the Deck Crew in Group-2. This appears that the cadet is acceptable both for the equivalence or superiority of the cadet over the seaman as well as for the legislation as the radio officer also qualifies as a seaman.

The manoeuvring crew on the forecastle consisted of the chief officer and two deck cadets. On the date of the casualty, the two deck cadets who were on duty manoeuvring on the forecastle of the vessel were 21 years old. The deceased deck cadet had joined the vessel 45 days ago.

The cadets on board may not have completed their training, their experience may be insufficient and their awareness of the occupational hazards may be poor. The main duty of the cadet on board is to observe and learn. The cadet prepares himself to be an officer by integrating the theoretical education he has received in the educational institution with the practical education on board. A seaman assigned to a vessel as a cadet should not be considered as manpower on board. Therefore, the ship owners/operators should provide the cadets with training about the work they will do before assigning them to work on board. Afterwards, the cadets should be continuously informed about the risk assessments related to their work, the description of the working conditions and the changes and risks that may appear under the working conditions.

However, any work that goes beyond the physical and psychological capacities of the cadets and requires a great deal of experience and training should be restricted. If the cadets will be

assigned after completing the trainings and field orientation regarding their work, it is acceptable for them to assist in the manoeuvre/be at the manoeuvre location provided that the necessary safety precautions are taken and they are instructed and supervised/controlled by a competent person. Even in such a case, they should not be held responsible for heavy and dangerous work which is under the responsibility of the bosun or able seaman and it should be ensured that they are not exposed to any danger.

Considering that the deceased cadet boarded this ship for the first time for training, it is obvious that he did not have sufficient sea and manoeuvring experience.

Since the forecastles of the vessels are exposed to serious hazards during manoeuvres, the chief officer, the most senior officer on board, is generally assigned in charge of the manoeuvring location of the forecastle on merchant vessels. However, it is usual for the chief officer, bosun, and the able seaman to accompany the first officer during manoeuvring at the forecastle. There was no bosun or able seaman on the forecastle of the vessel during the berthing manoeuvre that led to the casualty, and the chief officer manoeuvred with two inexperienced cadets. It is obvious that this circumstance led to a vulnerability in safety during the manoeuvre.

At the aft castle, a bosun who was qualified as a seaman and a second engineer were on duty. Although it may not appear to be ideal in the manoeuvring location on the aft castle, at least it was manned by crew members with sea experience.

3.3 Malfunction to Take Pilotage and Use Tugboat

Due to her gross tonnage, YILMAZ KAPTAN is not obliged to take pilotage and tugboat assistance for berthing and departure manoeuvres in ports as per our national legislation. It is considered that this practice brings about a serious vulnerability for the masters who are not familiar with the port manoeuvres and especially in the manoeuvres of vessels which may have engine malfunctions.

3.4 Internal Communication on Board

Many parties, especially the bridge group, pilots, crews of tugboats, engine room group, and mooring groups at the bow, stern and at ports, come together, especially during the berthing and departure manoeuvres of the vessels in ports. Manoeuvres can be executed safely and soundly only through accurate and comprehensible communication. Therefore, it is one of the most important elements of manoeuvres to ensure accurate and comprehensible communication between the groups so that they can act coherently with each other.

However, it is important to equip each group with communication devices that have been tested before the manoeuvres to share fast, reliable and comprehensible information between the group that plans the manoeuvre on the bridge and the group that manoeuvres depending on the developing conditions due to the risks and characteristics of vessel manoeuvres.

YILMAZ KAPTAN is equipped with an internal announcement system instead of a hand-held radio for communication between the bridge and the group involved in the manoeuvre on the forecastle. Nevertheless, the internal announcement system did not function efficiently. On the other hand, since neither the master of the vessel communicated with the engine room nor the chief engineer, who was in charge of the manoeuvre in the engine room, communicated with the bridge during the manoeuvre, the master of the vessel was unaware of the engine malfunction. The chief engineer sent the oiler to find out what happened after the first impact. This indicates that the communication between the engine room and the bridge was not satisfactory. Therefore, it is considered that the sudden main engine malfunction could not be reported to the group on the forecastle and therefore, the persons involved in the manoeuvre on the forecastle were not aware of the impending danger. Considering the events related to the occurrence of the casualty, it is considered that the lack of coordination between the engine room - bridge - forecastle communication resulted in a vulnerability in manoeuvring safety.

3.5 Planning Manoeuvre on the Forecastle

Planning is important when running any mooring operation. Planning should also include control measures and a course of action if there is a potential hazard. Risk assessment and control measures should be reviewed for each new operation, and planning should take into account the expected mooring configuration, with particular attention to the possible risk of backlash-rope breakage. Manoeuvring points where mooring operations are carried out should be kept in good order, ropes should be hauled out from the drums at sufficient length and mooring ropes should be closely monitored. Also, when deciding the length of the rope to be hauled out on the deck, any emergencies that may arise should be taken into consideration. Effective planning also includes informing all seamen sufficiently about the mooring operations, ensuring that they know what to do, and positioning them in less hazardous sections of the deck.

Since there was no planning for safe manoeuvring on the forecastle of the vessel in the casualty that occurred, the mooring ropes were hauled out directly from the drum without made fast the bollards, which endangered the safety of manoeuvring on a vessel with a track on it.

SECTION 4 – CONCLUSIONS

1. During the berthing manoeuvre, the main engine of the vessel could not stop due to a malfunction.
2. The engine group of the vessel was unprepared to fix the unexpected malfunction of the main engine of the vessel.
3. There were no procedures for the emergencies that may arise in the engine room of the vessel and procedures for the necessary precautions to be taken.
4. Having regard to the dangers of the operations performed especially on the forecastle during the berthing and departure manoeuvres of the vessels, the operations that should be carried out by the bosun or able seaman were assigned to two inexperienced cadets.
5. Before berthing to the port, the ropes that would be hauled out from the bow of the vessel were not hauled out on the deck, and manoeuvres were tried to be executed with the rope hauled out directly from the rope drum.
6. Before berthing to the port, the mooring ropes that would be hauled out to the shore on the forecastle were given directly from the hawsehole without making fast the bollards after the rope drum without being sufficiently hauled out, and the dangers that may arise in case of unusual load on the drum were not foreseen in advance.
7. There was an insufficient number of qualified crew on board to carry out the manoeuvring operations safely.
8. The malfunction on board had recurred a month before the casualty, but no comprehensive maintenance work was carried out after the malfunction had been accurately identified and rectified.
9. There was no evidence to show that the main engine was maintained regularly and efficiently.
10. There was no healthy/efficient communication between the bridge and the forecastle.
11. The necessary communication between the bridge and the engine room during manoeuvring and at the time of the casualty was not established.
12. The engine was not tested for astern propulsion before the casualty.
13. The weather and sea conditions were not a factor in the occurrence of the casualty.