



MARINE SAFETY INVESTIGATION REPORT

OWNER	: SAREIA SHIPPING INC.
MANAGER	: OTONIO SHIP MANAGEMENT COMPANY INC.
NAME OF SHIP / CALL SIGN	: KYME / XUPY9
FLAG	: KING OF CAMBODIA
SCENE OF ACCIDENT	: İstanbul - Zeytinburnu Anchorage Area / TURKEY
DATE OF ACCIDENT / TIME	: 03.06.2014 / 15:15 LT
FATALITY / INJURY	: 1/-
DAMAGE / POLLUTION	: -/-

Board Resolution No: 18/DNZ-06/2019

Date: 16/12/2019

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

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.

The purpose of a marine accident investigation is to find the real causal factors that cause the marine accidents and thus to make recommendations to contribute for the development of legislation and practices directed to the safety of navigation, life, property and environment and to prevent similar accidents and incidents in the future.

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SUMMARY



Figure 1: Site of Accident

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

Cambodian flagged MV KYME which had departed from the port of Nemrut in Turkey and which was sailing to the port of Khakovka in Ukraine, in ballast condition, anchored at İstanbul Zeytinburnu anchorage at 09:00 on 03.06.2014 to supply water, bunker, provisions and spare parts.

Water, diesel bunker and lub oil were supplied to KYME which was at anchorage, one after the other. Agent boat YILDIRAY I was sent to the ship by the agent company Yıldıray Gemi Acenteliği Ltd. Şti. which was carrying out the agency services to the vessel, which went alongside the ship at 14:55 to supply provisions. Later on, as the agent boat was delivering the metal plates to the ship, which would be used for the ship's repair activities, using the boat's own Crane, the ship's chief officer was stuck between the metal plates and the the ship's starboard bulwarks. The chief officer was rescued from where he was stuck, but he lost his life despite the first aid.

As the investigation was continuing, KYME was sent for scrap and her disassembly was completed on 26.01.2015. As the ship was scrapped, the recommendations which were planned to be directed towards the company were not drafted in the report.

PART 1 - FACTUAL INFORMATION

1.1 Ship Particulars

KYME

Flag	King of Cambodia
Port of Registry	Phnom Penh
Call Sign	XUPY9
IMO Number	8866199
Type	General Cargo Ship
Owner	Sareia Shipping Inc.
Operator	Otonio Ship Management Company Inc.
Place and Year of Build	Komarno/ Slovakia /1972
Gross Tonnage	2457
Length Overall	107.35 Meter
Width	13,0 Meter
Cargo Information	Emty
Main Engine and Power	2 x Skoda/1030KW



Figure 2: M/V KYME

1.2 Voyage Particulars

KYME

Port of Departure	Nemrut/Turkey
Port of Arrival	Khahovka /Ukrayna
Number of Personnel	10
Minimum Manning	8
Type of Navigation	International

1.3 Agent Boat Particulars**YILDIRAY-I**

Flag	Turkish
Port of Registry	İstanbul
Call Sign	TC8939
Type	Agent Boat
Owner	Yıldırım Gemi Acenteliği LDT. ŞTİ.
Operator	Yıldırım Gemi Acenteliği
Place and Year of Build	Tuzla/Turkey /13.05.1996
Gross Tonnage	47.88
Tam Boyu	18 Metre
Length Overall	5 Metre
Main Engine and Power	Volvo Penta /330 BHP
Number of Personnel	2
Type of Navigation	Expedition of Port



Figure 3: YILDIRAY-I

1.4 Marine Casualty Information

Date of the Accident	03.06.2014/ 15:15
Type of the Accident (IMO)	Very Serious Marine Accident
Form of the Accident	Occupational Accident
Place of the Acciden	40° 58' 3"K - 28° 54' 5"D İstanbul Zeytinburnu Anchorage Area
Injured/Dead/Missing	-/-/1
Damage	None
Polluion	None

1.5 Environmental Conditions

Wind	Nort-Northeast 2 Boufor Force
Condition of the Sea	Calm
Vision	Good
Condiotiob of Weather	Clear

2.1 Course of Events

After the completion of her scrap Cargo at Nemrut Bay Habaş Port, MV KYME departed from the port at 20:15 on 01.06.2014 to sail to the port of Kherson in Ukraine in ballast condition. The ship passed Kumkale Burnu at 12:15 and started her Çanakkale Strait passage, passed Gelibolu Burnu at 17:25 and completed her Çanakkale Strait passage and dropped anchor at Zeytinburnu anchorage area (40° 58' 3"N - 28° 54' 5"E) on 03 06 2014 at 09:00 hours for water, bunker, provision and spare parts supply (Figure 4).

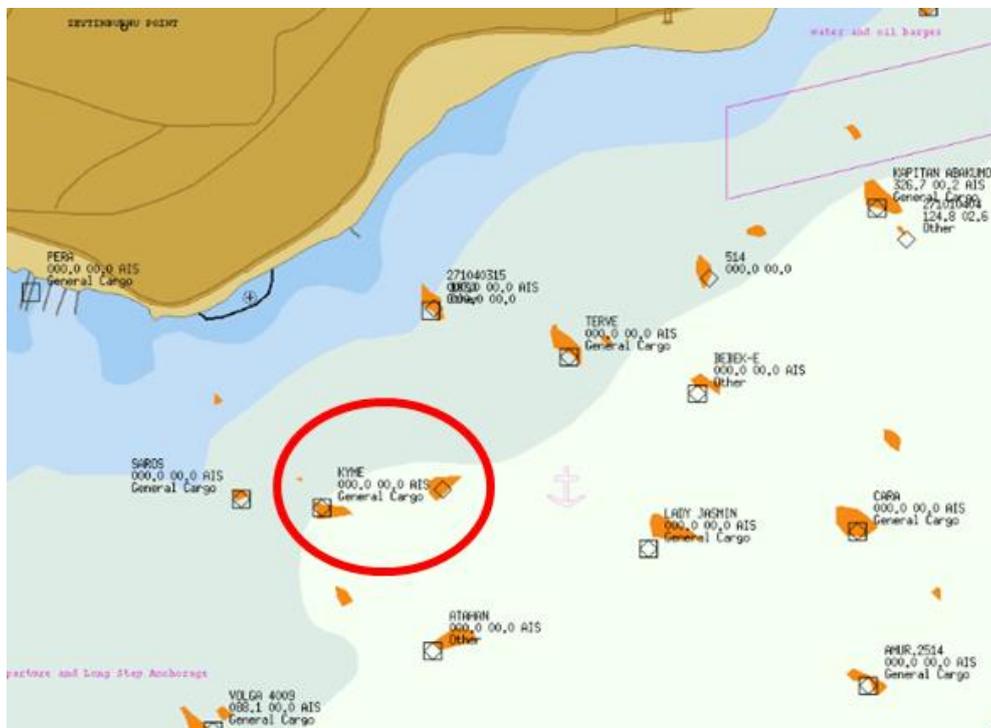


Figure 4: KYME's Anchorage Position

2.2 Events Prior to the Accident

MV KYME was supplied 30 tonnes of water between 09:15 and 10:05, 40 tonnes of diesel oil and 1,18 tonnes of lub oil between 12:10 and 13:35. Later on, agent boat YILDIRAY I (Figure 5), which was sent by the agent company Yıldırım Gemi Acenteliği Ltd. Şti. for provision and spare parts supply, came alongside the vessel at the position of starboard No. 4 hold and was safely moored to the vessel by means of one rope from the forward and another rope from her aft. YILDIRAY I was preparing to lift the provision basket at her aft side, using her own Crane¹ (Figure 6-7). In this regard, while the boat's captain was at the operation seat to operate the boat's crane, the seaman at the boat was preparing to fix the slings of the provision basket to the crane's hook.



Figure 5: Agent Boat YILDIRAY I

¹ Ship's crane, being a crane system to load heavy loads onto or to unload them from ships using the hook at its end, is one of the most important parts of ship transportation sector.

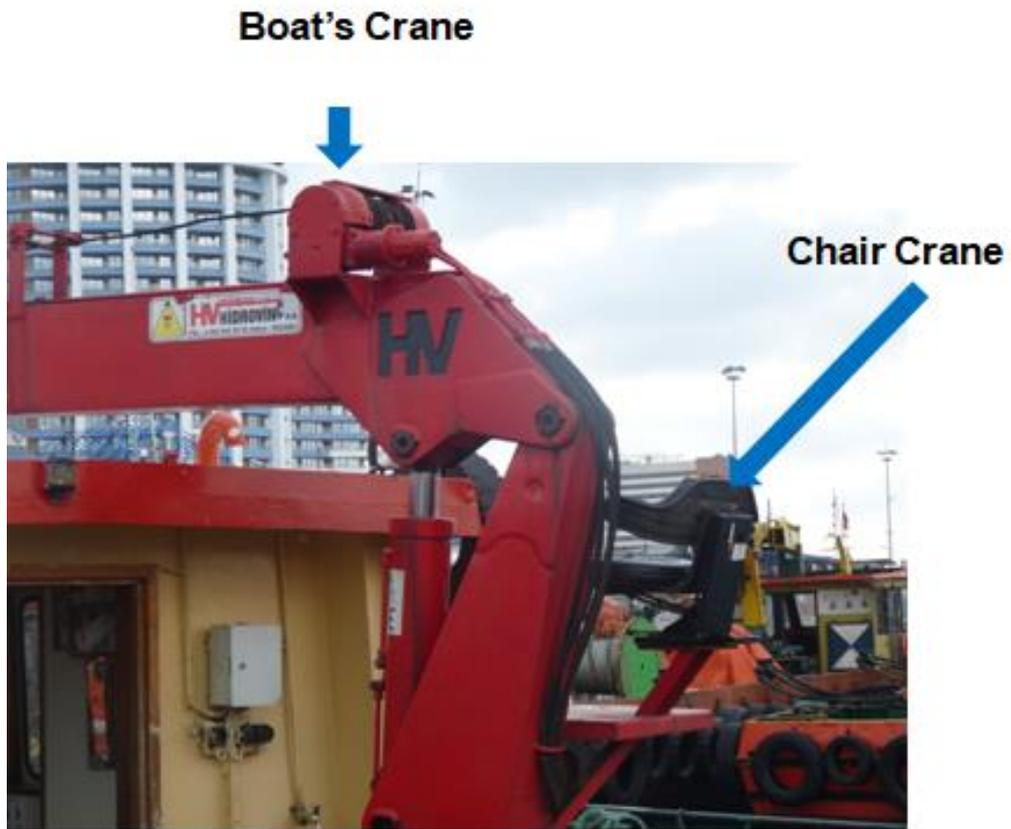


Figure 6: YILDIRAY I's Crane



Figure 7: YILDIRAY I's Crane

After the provision basket was put over the No. 4 hold by the ship's crane, the boat's seaman went up to the Captain's Office in order to give him the cash money sent to the ship and to have the agency invoice signed. The provision basket which was emptied by the ship's crew was taken back to the boat's aft by the boat's crane. Upon the chief officer's orders to place the 10 pieces of metal plates over the No. 1 hold, each of which weighed 100 kg and with the dimensions 1,5x2,5 metres, the agent boat YILDIRAY I moved from the side of starboard No. 4 hold towards the side of starboard No. 1 hold.

YILDIRAY I came alongside the ship again by giving ropes from her forward and aft. Then she prepared to deliver the metal plates by her own crane. At this moment, the ship's crew were taking their positions to receive the plates safely on board. For this purpose, the chief officer took a position at starboard deck, where he could command the crew according to the boat crane's movements and the two seamen and one oiler took their positions somewhere close to the location where the plates would be placed. In the meantime, the ship's Captain started to communicate with İstanbul VTS² to arrange the departure manoeuvres. The 2nd Officer was preparing the bridge for the departure manoeuvre. Chief Engineer went down to the engine room to make the necessary preparations for the departure manoeuvre. The boat's captain was sitting at the crane operating seat and the boat's seaman took his position at the aft to fix the metal plates' slings to the crane's hook. The chief officer ordered to place 10 metal plates over the No. 1 hold. The metal plates which were lifted by the boat's crane which was operated by the boat's captain were placed over the ship's deck.

After the metal plates were placed over the deck, the chief officer requested the boat's captain to place the plates again over the hatch cover. Then the chief officer entered between the ship's bulwark and the metal plates in order to shorten the slings which were used to lift the metal plates to place over the hatch cover.

At this instance, the side of the metal plates which were leaning towards the hatch-coaming moved towards the bulwarks and the chief officer who was standing between the bulwarks and the metal plates was stuck at 15:15 (Figure 8)

² VTS:Vessel Traffic Services



Figure 8: The position where the chief officer was stuck between the metal plates and the ship's bulwark

2.3 After the Accident

At the time of the accident, the two seamen and the oiler who were assigned to receive the metal plates were standing over the No.1 cargo hold hatchcover. After the accident, the seaman A who saw that the chief officer was stuck went down to the deck and tried to help the chief officer who was trying to push the plates that came over him, by pushing the plates towards the hold. In the meantime, the other seaman over the hatchcover and the boat's captain moved the metal plates slightly using the boat's crane and thus helped the chief officer to relieve from between the metal plates and the bulwark.

The chief officer who could get out of the place where he was stuck by leaning towards the seaman A's shoulder, walked a few steps and then fell down over the deck. The second officer who saw the abnormal movements and heard the voices from the bridge, ran down

to the deck to understand what happened. In the meantime, the Captain who was at the bridge was looking at the incident site, trying to understand what was happening.

When the 2nd Officer reached the sites of the incident, the chief officer was lying face up on the deck and was breathing with difficulty. The 2nd officer controlled whether his breathing canal was open and in order to facilitate his breathing started artificial respiration. In the meantime the Captain had come to the casualty and informed the ship's DPA³ on the telephone. The company officials contacted the tele-health center in order to assist the Captain with the first aid. The Tele-Health Center contacted the Captain 3-4 minutes later, guiding him about the first aid to be administered to the casualty and on the other hand they assigned health personnel to apply medical first guide to the casualty. With the guidance of the Tele-Health Center, artificial respiration and heart massage was applied for about 15 minutes and as the efforts were seen to be useless adrenalin injection was applied. After the injection, artificial respiration and heart massage was continued and after it was seen that no result was achieved, second adrenalin injection was applied. The medical personnel arrived at the incident site at 16:15 and artificial respiration and heart massage was continued until they arrived.

When the medical staff boarded the vessel and inspected the casualty, they found that the casualty had died. Later on, another team consisting of on-scene investigation police accompanied by a medical doctor checked the casualty by hand and visually at 21:45 to reveal the cause of the casualty's death. As a result of the inspection, extensive purpleness was detected on the casualty's back due to his position and any breaking, hit or act of force was not observed.

2.4 KYME Crew

At the Minimum Safe Manning Document issued by the flag state, the Kingdom of Cambodia, a total of 8 crew members is required. There were 10 crew members on the day of the accident and this is above the requirements of the Minimum Safe Manning Document. One of the crew members is Az Azerbaijan national, 3 of them are Turkish and 6 crew members are Ukrainian. Ship's working language is English.

³ DPA : Designated Person Ashore

2.2.1 Ship's Captain

The ship's Captain is 49 years old and has nearly 9 years of experience as a master. He applied to the maritime administration of the Kingdom of Cambodia in order to endorse his competence that he received from the Republic of Azerbaijan. Upon receiving the approval to work as a captain on ships of 3000 gross tonnage and above on 28th February 2014, he joined the ship as a Captain. He did not witness the accident as he was busy with the departure procedures of the ship on the bridge at the time of the accident.

2.2.2 The Casualty

The deceased casualty is 49 years old. He has the competence as Chief Officer on ships under 3000 GRT navigating in coastal waters (STCW Code II/2). It is found out that he has all the certificates that are required by the STCW Code and that the certificates are valid. He had applied to the Kingdom of Cambodia for the endorsement of his competence which was granted by the Republic of Turkey. He has applied to move to certify the adequacy of the maritime administration.

Upon receiving the approval to work as a chief officer on ships of 3000 gross tonnage and above on 7th November 2013, he joined the ship as a Chief Officer.

2.5 Captain of the Agent Boat YILDIRAY I

Boat Captain is 39 years old. He started his maritime career as a seaman in 1997 and he currently holds a competency as an able seaman. He has been working on agent boats which carry supplies to ships since 2004.

2.6 Other Ship and Boat Crew Responsible For the Ship's Supply

During the supply of metal plates from the boat to KYME, two able seamen and one oiler took part in the operation along with the Chief Officer, while the boat captain and one able seaman took part from the boat. All the people in the supply operation witnessed the accident.

PART 3–ANALYSIS

In the Analysis of the marine accident, sequence of events and the evidence collected during the investigation were taken into account and it was aimed to identify and determine causal factors so as to reach useful conclusions to allow safety recommendations fort he root causes.

3.1 Probable Cause of the Accident

The Chief Officer had planned to place the 10 pieces of metal plates over the No. 1 hold and requested from the agent boat's captain to place the metal plates to the position he showed him. During the transfer of the metal plates from the boat to the ship, the Chief Officer, two able seamen and one oiler took part in the operation. The able seamen and the Oiler were standing close to the position where the metal plates would be placed over the No. 1 hold. The Chief Officer was standing on the starboard deck close to the forward part of No. 1 hold and was directing the agent boat's captain with lift up and lower down commands from a safe distance.

KYME's moulded depth registered in the International Tonnage Certificate is 5.5 metres. The ship's draught at the position where the metal plates would be transferred to the ship was 1.2 metres (Figure 9)



Figure 9: The side where YILDIRAY I came alongside M/V KYME

Calculating the current draught and the moulded depth, the ship's bulwark's height from the sea level is approximately 7 metres. Deducting the boat's freeboard from this distance, the distance between the boat's deck and the place where the metal plates were given to the ship is approximately 6 metres.

As the place where the metal plates would be loaded was very high and as the length of the slings which would be used to lift the metal plates to the ship was very long, the crane boom's length was not sufficient to place the metal plates over the hold.

Thereupon, the boat captain was able to place the long side of the steel plate on the starboard deck and the other long side on the ship's deck by resting to the ship's hatch coaming (Figure 10).

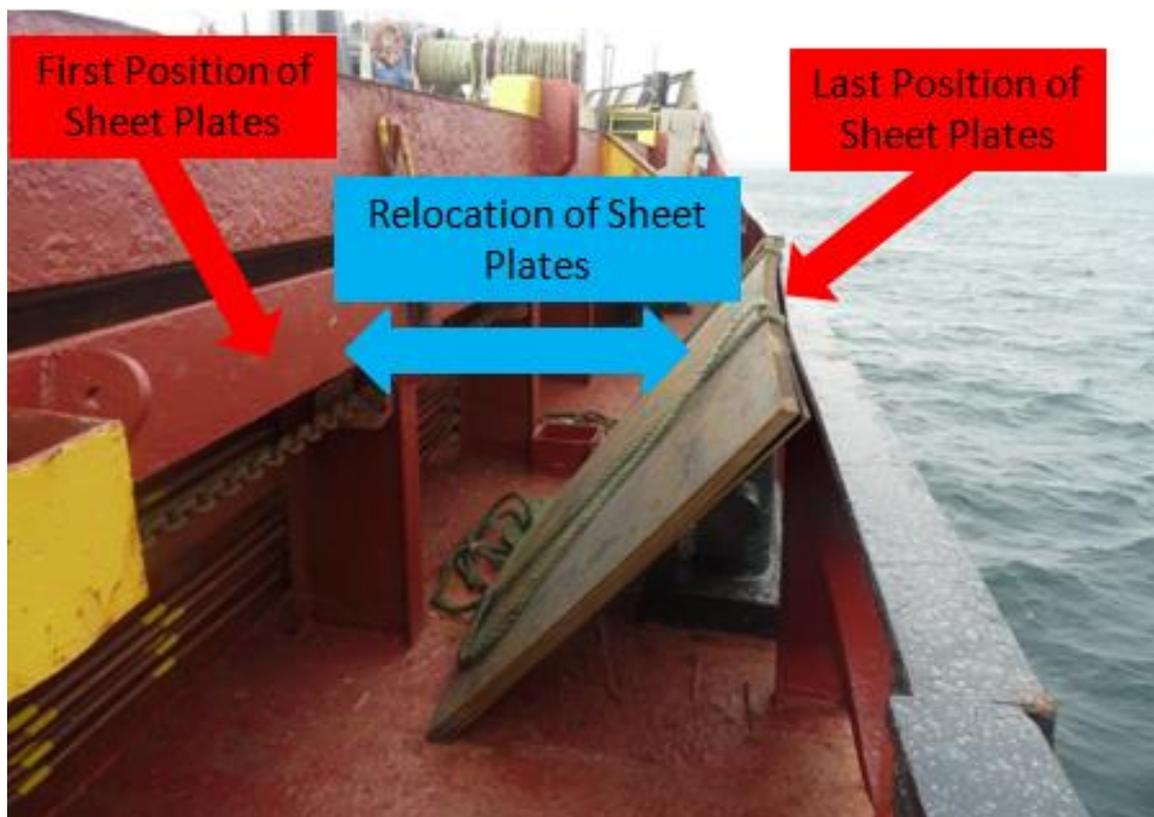


Figure 10: The metal plates which were placed on deck

The Chief Officer was not satisfied with the position where the metal plates were placed and repeated his request to place them over the hold. After the conversation between the

boat captain and the Chief Officer⁴, the Chief Officer entered between the ship's bulwark and the metal plates in order to shorten the slings which were used to lift the metal plates. At this instance, the metal plates moved and the Chief Officer was pressed at the ship's bulwark.

The ship crew, the boat captain and the boat's seaman who witnessed the incident gave their testimonies in different manners.

According to the ship's seamen, there wasn't any load at the slings that were carrying the metal plates. Nevertheless, the slings were upright and slightly loose and the slings' eye was hanging at the boat crane's hook. Again according to the ship's crew, the waves caused by the seabus passing nearby and other waves had affected the agent boat and the metal plates which were tied to the crane's hook and which were leaning towards the hatch-coaming leaned towards the Chief Officer one by one and pressed him at the bulwarks. Upon seeing this, one seaman jumped from the hatchcover to the deck and helped the Chief Officer while the other two crew members tried to pull the metal plates which were tied to the crane's hook towards the hatch cover, with the help of the slings. Right after the Chief Officer was pulled from where he was pressed towards the aft of the vessel, the metal plates moved again towards the ship's bulwark.

According to the statements of the boat captain and the boat's seaman, the metal plates were left leaning towards the hatchcoaming of No. 1 hold of KYME and the boat captain took the boat crane to the boat. Later on, while the Chief Officer was pulling⁵ the slings to shorten their length, 4-5 pieces of metal plates moved towards the Chief Officer. At this instance, while the Chief Officer was trying to hold the metal plates with his hands that he raised to his chest, he was stuck between the metal plates and ship's bulwark. The boat captain directed the boat crane towards the ship and the seamen attached the slings' eyes to the boat crane's hook. As the boat captain pushed the metal plates with the boat's crane

⁴ The Ukrainian crew witnessed the incident, but as they did not know Turkish, they couldn't understand the conversation between the boat captain and the Chief Officer.

⁵ The boat's seaman did not see how the metal plates tumbled down.

towards the hatchcover, the Chief Officer moved out of the place from where he was stuck⁶.

Each metal plate weighed 1 ton. As there were 10 pieces of these metal plates at the slings, total weight reached 10 tonnes. On the other hand, for the metal plates not to slide over the deck, they needed to be placed leaning to the hatch-coaming. It is not possible for the metal plates to slide towards the Chief Officer while he was trying to take the slings. This could be possible only when the ship rolls strongly towards starboard and port sides due to strong waves when there is a storm in the region or which may be caused by seacrafts passing close to the ship.

When we look at the ship's logbook regarding the prevailing weather conditions at the time of the accident, the wind at 08:00 on 03.06.2019 was 2 Beaufort from North-Northeast and the sea was calm. It is evaluated that the ship was not affected from these weather conditions.

Additionally, VTS screen shots were taken regarding the ship's anchorage area at 10-minute intervals (Figures 11,12,13,14). In the light of these pictures, it is concluded that no seacraft had passed very close to KYME, which could have affected the vessel. With regard to the information about the weather conditions and the views acquired from the VTS, it is seen that there weren't any waves that would cause the ship to roll strongly to her starboard and port sides. While this situation reduces the probability of the accident to occur in line with the boat captain's and boat seaman's statements, it increases the probability of the accident to occur in the way as the ship crew had given their testimonies.

⁶ The boat's seaman stated that the Chief Officer came out the place where the incident occurred with the help of a seaman.

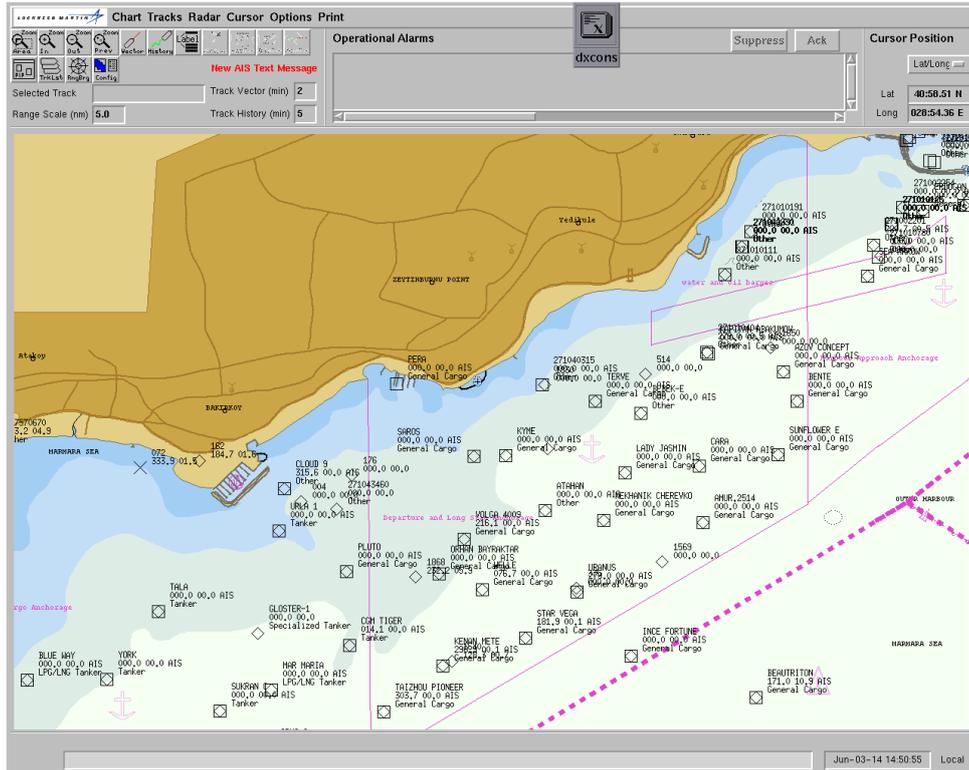


Figure 11: VTS Screen Shot at 14:50

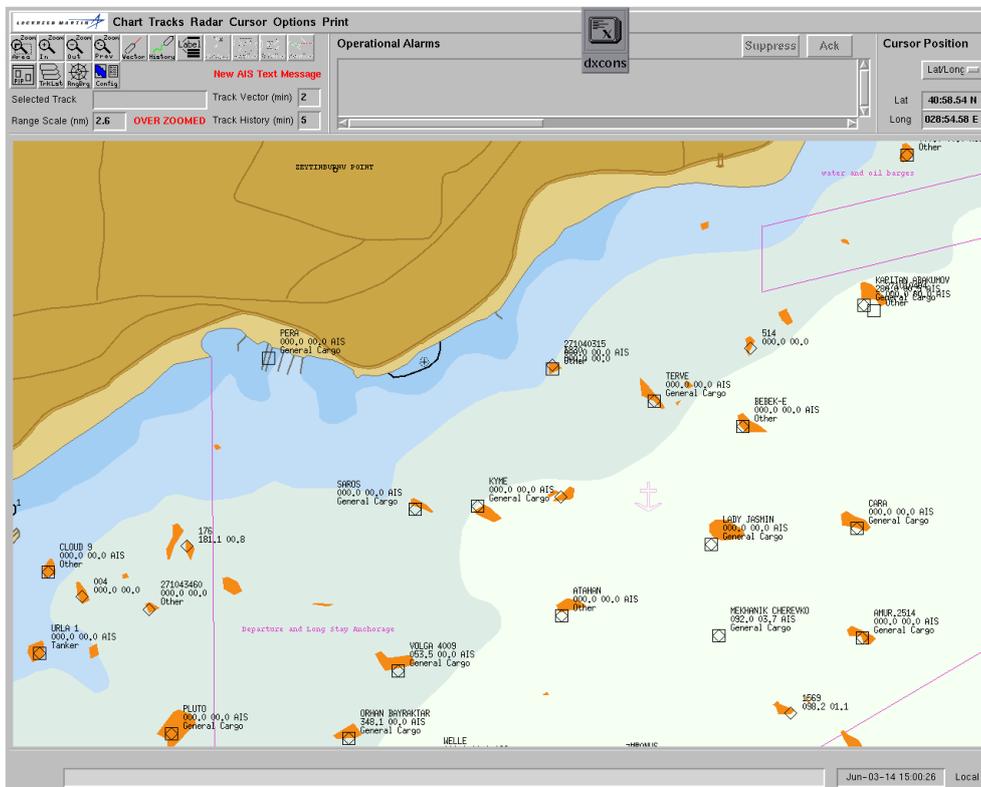


Figure 12: VTS Screen Shot at 15:00

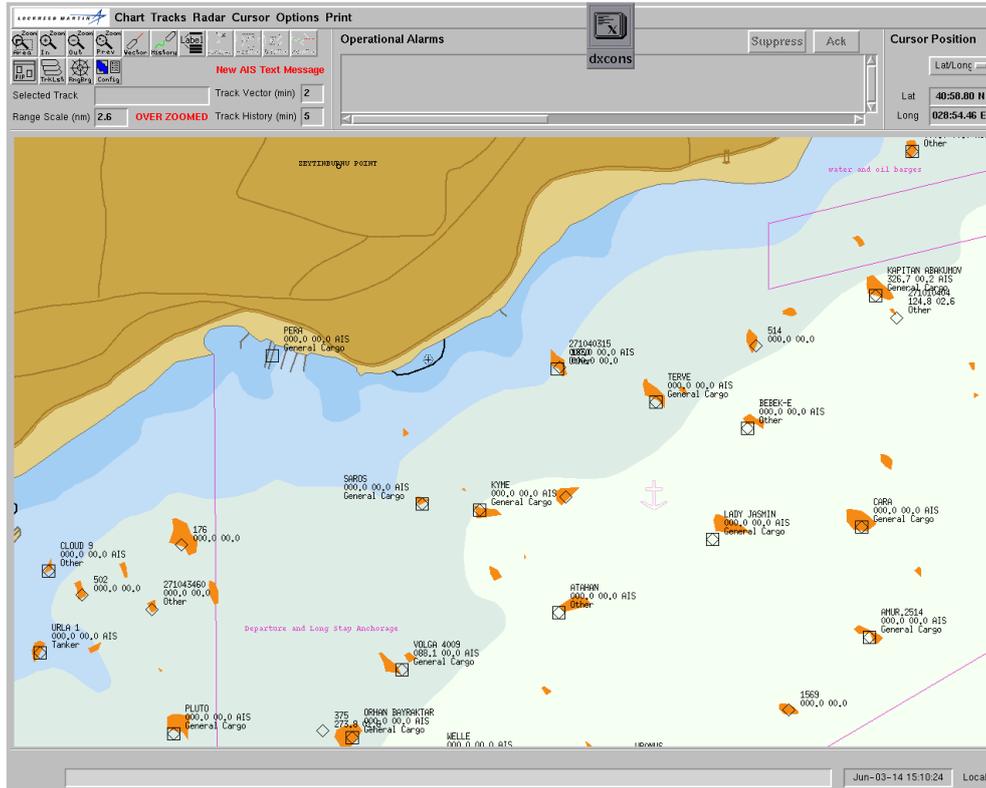


Figure 13: VTS Screen Shot at 15:10

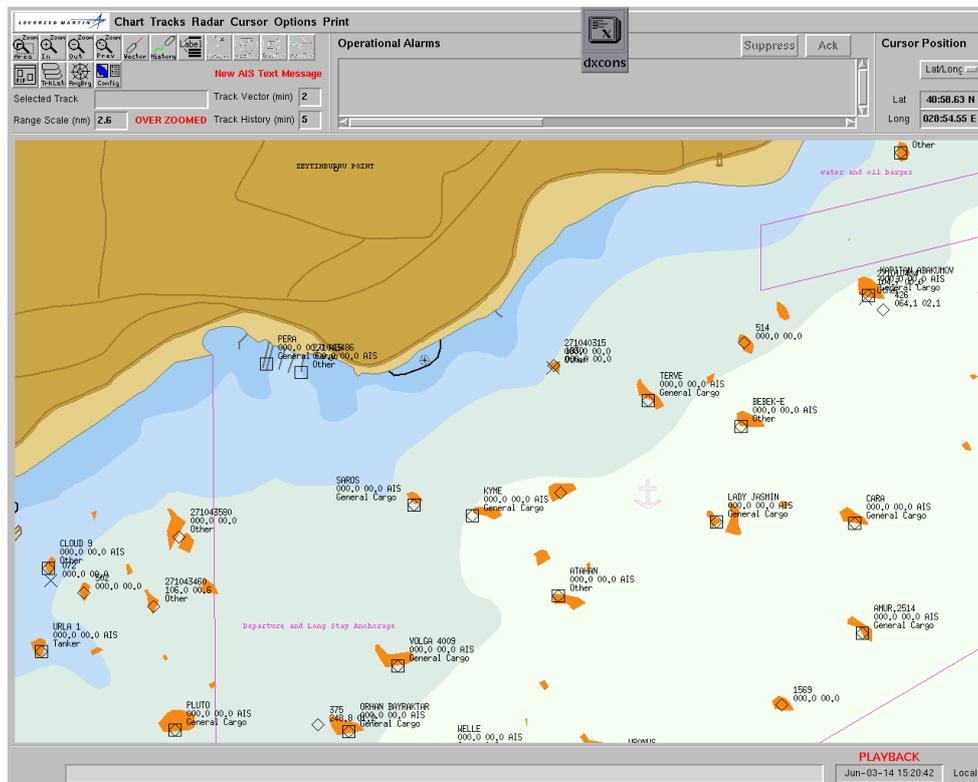


Figure 14: VTS Screen Shot at 15:20

3.2 Safety Precautions When Using A Crane

The ship's Captain could not reveal a procedure at the ship's ISM⁷ manual regarding the taking on board provision or loading/discharging operations by shore/ship cranes. For this reason, it could not be evaluated whether the provision supply operation was in line with the work safety and other relevant procedures at ISM manual. However the provision supply operation was assessed with regard to the general rules that need to be observed during loading/discharging operations carried out by cranes on ships.

The crane and its rigging should be suitable for the work being performed and the rigging should be checked in advance so as not to cause any troubles. The last periodical maintenance of the subject crane was carried out on 30.04.2012 (Annex-1).before the metal plates were lifted to the ship, the provision basket was lifted to the ship without any troubles. Thus, it is seen that the crane and its rigging was appropriate for the provision. However, during the lifting of the metal plates, rope slings were used. Although when the rope slings are examined externally, it is observed that they are not the usual type of polyester slings (Figure 15) used for loading operations on ships and that the safe working weight required on these ropes are not provided on the rope, any splitting to yarns or deformation that would prevent the sling from performing adequately were not observed.

However, the rope slings used in the operation (Figure 16) had to be shortened, owing to remaining long for the work done.



Figure 15: Polyester Slings Used for Ship Loading and Unloading Operations

⁷ ISM : International Safety Management Code



Figure 16: Rope Slings Used for the Loading of Metal Plates to the Vessel

The cranes should be operated by specialist operators and at the time of the accident the agent boat's crane was being operated by the boat's captain. According to the boat captain's statement, as it is considered that he was engaged at supply operations for ten years, he has sufficient experience for the work he is performing. However he does not hold documents of training and expertise which will demonstrate his expertise.

The operator who uses the crane during loading must have sufficient knowledge and experience, and must work with maneuverers (pointers) that can work in harmony with him regarding loading and unloading operations. Lifting, lowering or transporting of loads must be carried out according to the hand and arm signs to be given by trained maneuverers (pointers). The maneuverer must be located where he can see the crane operator. Operators must comply with each stop signal given by the maneuverer. The pointer must ensure the safety of the workers before signaling to pull a rope or a sling from under a lowered object. The maneuvers shall be supervised by a responsible person

and measures must be taken against the oscillations of the load and the dangerous situation of the object. When working with the crane at sea, the effects of the sea and the wind on the crane should be taken into consideration and extra attention should be paid to maneuvers.

During the transfer of the metal plates to KYME, while the captain of the agency boat was employed as the crane operator, the Chief Officer of KYME served as the maneuverer. However, in such operations, there should be workers who are responsible for attaching and detaching the slings. However, on KYME, the workers (ship's crew) who would detach the slings from the metal plates were standing over the hatchcover. Since the nationality of the crew is different from that of the Chief Officer, the working language of the ship is English. However, as the Chief Officer and the boat captain were speaking in their own language (Turkish) and since the Chief Officer and the ship's crew could not communicate sufficiently between themselves, the ship's crew could not comprehend the operation being conducted sufficiently. In this regard, the Chief Officer was in a condition as both the maneuverer and also the worker to detach the slings.

According to the occurrence of the accident, it is observed that the metal plates were placed on the deck safely but the rope slings were not lowered as sufficiently as would be safe to detach the rope slings from the crane's hook. However, before the crane operator and the maneuverer could reach a sufficient agreement, the Chief Officer who was both the maneuverer and the person who was detaching the slings tried to shorten the rope slings by entering between the plates and ship bulwarks and thus the accident occurred. This clearly shows that the maneuverer and the crane operator were not working in good harmony.

3.3 Fatigue

The captain of the agent boat had two days' leave before the day of the accident and slept at around 22:00 the day before the accident. He took over the duty from the previous boat captain in the agent boat at around 08:00-08:30 on 03.06.2014. Then he did 2 rounds of service with the boat. He was rested for 2-3 hours on his boat before they sailed to KYME for provision supply. There is no evidence that the accident was caused by the fatigue of the boat captain.

The watch routine of the Chief Officer of KYME on the bridge is between 04:00-08:00 and 16:00-20:00 both during voyage and at anchorage. According to the Logbook records, he kept his bridge watch between 16: 00-20: 00 before the day of the accident. At 04:00 on the day of the accident, he took over the navigation watch from the second officer and handed over the watch to the Captain at 08:00. Later on at 09:00, he was assigned at the forecastle of the ship for anchorage. There is no evidence that the accident was caused by the fatigue of the Chief Officer.

PART 4 – CONCLUSIONS

- 4.1** Ship crew other than the Chief Officer who participated in the crane maneuver at the time of the accident, to help take the metal plates onto the ship could not understand the crane maneuver sufficiently.
- 4.2** A vessel traffic that could affect the ship before and at the time of the accident was not detected from the images obtained from the VTS.
- 4.3** According to the meteorological data for the day of the accident, it can be seen that the weather conditions did not affect the oscillation of the ship.
- 4.4** There are no labels indicating the suitability of the rope slings used to lift the metal plates from the agent boat to the ship at the time of the accident, for the job performed.
- 4.5** It is highly probable that, during the accident, the rope slings used to lift the metal plates from the agent boat to the ship were attached to the crane's hook.
- 4.6** The Chief Officer was stuck between the metal plates and the ship's bulwark while he was shortening the slings which were over the metal plates at the starboard side of No. 1 hold and lost his life in the aftermath.
- 4.7** Fatigue is not a factor for the occurrence of the accident.

PART 5 - RECOMMENDATIONS

While the accident investigation was continuing, MV KYME entered the Kursan Gemi Söküm facilities at Aliğa in Turkey on 19.12.2004 for scrapping operations. Ship's scrapping was completed on 26.01.2015.

As the ship was scrapped, the recommendations that were planned to be included in the Report, to be directed to the ship's manager were not drafted.

Annex 1 Periodic Maintenance Form



Sultan Orhan Mah. Küçük Sanayi Sitesi B 2 Blok No:12
41480 Gebze / KOCAELİ Tel: (0282) 643 20 58 Fax: (0282) 643 20 58
Web: www.hidrovinc.com E-mail: hidrovinc@hidrovinc.com

PERİYODİK BAKIM FORMU**FİRMA BİLGİLERİ:**

FİRMA ADI : YILDIRAY GEMİ ACENTALIĞI TİC. LTD.ŞTİ
ADRES : Kemaraltı Cad: Balkan Han: No: 15 KARAKÖY/İSTANBUL
TELEFON : 021 244 44 53
FAX : 0212 293 96 29

MAKİNE BİLGİLERİ:

VİNCİN TİPİ : HV-5
ARAÇ MARKASI : YILDIRAY 1 (1445390)
ARAÇ TİPİ : ACENTA BOTU
ARAÇ PLAKASI : İSTANBUL 7031

YAPILAN KONTROLLER:

KAYNAK KONTROLÜ	X	VALFLERİN KONTROLÜ	X
POMPA KONTROLÜ	X	SIZDIRMAZLIK KONTROLÜ	X
BAĞLANTI ELEMANLARI KONT.	X	İJALAT TAMBURU KONTROLÜ	X
VİNÇ KUMANDA KONTROLÜ	X	KANCA KONTROLÜ	X
		KULE DÖNÜŞ KONTROLÜ	X
SİLİNDİRLER KONTROLÜ			
MUKAVEMET KONTROLÜ	X	BAĞLANTI CİVATALARI KONTR.	X
KAPASİTE KONTROLÜ	X		
ÖLÇÜ KONTROLÜ	X	BASINÇ KONTROLÜ	X
HORTUM KONTROLÜ	X		

Yukarıda açık bilgileri yazılı araç üzerine monteli vinç 30/04/2012 tarihinde firmamızda genel bakımdan geçmiş olup, çalışmasını engelleyici her hangi bir problem bulunmamıştır.
HİDROVINÇ İŞ MAK. SAN. TİC. A.Ş. »


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