



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

**Accident Investigation Report On**  
**The Flooding and Foundering of**  
**MURAT HACİBEKİROĞLU II**

**ANTALYA, off the Coast of Alanya Port**  
**19th of September 2016**

**06/DNZ-01/2017**

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This report is prepared by the Accident Investigation Board.

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## **PURPOSE**

This marine accident was investigated in accordance with the Bylaw 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) (Accident Investigation Code) and Resolution A.1075(28) Sea Accidents or Incidents, and European Union Directive 2009/18/EC.

Marine accident investigation shall be inadmissible in any judicial and administrative proceedings whose purpose or one of whose purposes is to attribute or apportion liability or blame.

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## **ABBREVIATIONS**

*GMT* : *Greenwich Mean Time*

*MT* : *Metric Ton*

*VHF* : *Very High Frequency*

*MAYDAY* : *Radio Distress Call Code*

*IMO* : *International Maritime Organization*

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

*KW* : *Kilo Watt*

## SUMMARY



**Figure 1:** Location of the accident

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

Turkish flagged general cargo ship MURAT HACIBEKİROĞLU II, while under way 35 nautical miles off the coast of Port of Alanya and carrying 1964,520 MT iron slag (raw material of cement) loaded from İskenderun İSDEMİR port, to be unloaded to İzmit Derince Aslan Cement port, made a distress call (MAYDAY) from VHF channel 16, on 19th of September 2016 between 14:00 – 15:00.

When communicated with the ship over radio, it was realized that ship was flooding and was progressively sinking. With the abandon ship order of the captain, 10 crew onboard launched the rescue boat and abandoned the ship. After the distress call made to the accident region, container ship ELECTRA A, which was navigating close to the mentioned region, reached the accident scene and recovered 10 casualty crew from the sea. Later on, casualty personnel of the ship was taken from ELECTRA A by the Turkish Republic Coast Guard boat (TCSG 92) which reached the accident scene and transported to Alanya port.

As a result of the accident, ship named MURAT HACIBEKİROĞLU II, sank completely. None of injury or death case happened as a result of the incident.

## **1. FINDINGS**

### **1.1 Factual Information**

|                         |   |
|-------------------------|---|
| Name of the Ship        | : MURAT HACİBEKİROĞLU II  |
| Flag                    | : Turkish   |
| Classification Society  | : Turkish Lloyd (TL)  |
| IMO Number              | : 8301046   |
| Type of Ship            | : General Cargo Ship  |
| Owner                   | : Hacibekiroğlu Shipping and Trading Co.                                  |
| Ship Manager            | : Hacibekiroğlu Shipping and Trading Co.                                  |
| Place and Year of Build | : DEARSAN Ship Construction Industry Co. Tuzla/İSTANBUL,<br>December 1984 |
| Gross Tonnage           | : 1213  |
| Length over all (LOA)   | : 63,1 meters   |
| Main Engine Power       | : 1000 BHP (745 KW)   |
| Last Port of Call       | : İskenderun / Turkey   |
| Next Port of Call       | : Derince/Kocaeli / Turkey  |
| Cargo Information       | : 1964,52 MT iron slag (raw material of cement)                           |
| Number of Crew          | : 10  |
| Type of Navigation      | : Cabotage  |



|                               |   |
|-------------------------------|---|
| Date and Time of the Accident | : 19 <sup>th</sup> of September 2016 / 14:20                                |
| Type of Accident              | : Very serious marine accident  |
| Place of the Accident         | : 35 nautical miles off the coast of Port of Alanya / East<br>Mediterranean |
| Injured/Dead/Missing          | : None  |
| Damage                        | : Total loss  |
| Pollution                     | : None  |

**Figure 2: General Arrangement Plan**

## **1.2 Environmental Conditions**

At the time of the accident, MURAT HACİBEKİROĞLU II was en route at the East Mediterranean waters, 35 nautical miles southwest of port of Alanya. Weather reported at the region was; wind direction from west and southwest with a scale of 2 and 4, partly cloudy, the sea was with moderate swell and the visibility was good.

## **1.3 Information About the Cargo Carried**

The ship was loaded with 1964,52 MT iron slag (residue of steelworks and blast furnaces) to be discharged at İskenderun İSDEMİR port. Blast furnace slag is a byproduct originated while producing steel in the blast furnaces placed at iron and steel plants. Blast furnace slag is cooled down suddenly and becomes granulated and then it is grounded. This grounded material either can be added to the cement or can be used separately in making of concrete.

## **1.4 Ship History**

The ship was constructed in 1984 at Dearsan Shipyard, which was located in Tuzla Bay / İstanbul. Ship management was carried out by Bursalıoğlu Shipping and Trading Co. until 1990 from construction and from 1990 to until the date of accident; it was conducted by Hacibekiroğlu Shipping and Trading Co.

Last underwater and shaft survey was done on 5<sup>th</sup> of March 2014 at the Tuzla shipyards region while docking. On the same dates, blasting and painting works for underwater, hatch covers and hatch coamings and maintenance-repair works for the seawater lines and valves was carried out. After the mentioned maintenance and repairs, the ship was inspected in situ by the classification society of the ship, which was ClassNK (Nippon Kaiji Kyokai). Ship was making international voyage and after May 2016, it was started to make voyage in cabotage voyage region.



**Figure 3:** MURAT HACIBEKİROĞLU II

### **1.5 Key Personnel**

The master of the ship is 58 years old. He has a certificate of competency for master on ships below 1250 gross tonnage, making near coastal voyages. It was observed that he had all the certificates required according to STCW Code and the certificates had the proper date of validity. Master of the ship started the occupation in 1977 as an ordinary seaman and after 1996, he started to work as a deck officer and after 2002, he started to work as a master on ships. Master stated that, he had been working as a master on MURAT HACIBEKİROĞLU II for 13 months without interruption.

Chief engineer of the ship is 43 years old. He has a certificate of competency for restricted chief engineer on ships having a main engine power below 750 KW, making near coastal voyages. It was observed that he had all the certificates required according to STCW Code and the certificates had the proper date of validity. Chief engineer started the occupation as an oiler in 2004 and after 2005, he started to work as a restricted engineer officer and after 2008, he started to work as a restricted chief engineer on ships. Chief engineer stated that, he had

been working as a chief engineer on MURAT HACİBEKİROĞLU II ship for 26 months without interruption.

Ships' 2<sup>nd</sup> engineer is 21 years old. He has a certificate of competency for engineer officer on ships having a main engine power below 3000 KW. It was observed that he had all the certificates required according to STCW Code and the certificates had the proper date of validity. Ships' 2<sup>nd</sup> engineer started occupation in 2014 as an engineer officer on the BEKİR HACİBEKİROĞLU, which is under the ownership of the same company. He worked for 2 months at BEKİR HACİBEKİROĞLU. He stated that, he had been working for 7 months on MURAT HACİBEKİROĞLU II as a 2<sup>nd</sup> engineer.

### **1.6 Watchkeeping Routine**

Bridge and engine room watchkeeping routine while underway was stated as follows:

- 0200 – 0800 and 1400 – 2000: Chief Officer
- 0800 – 1400 and 2000 – 0200: Master
- 0000 – 0400 and 1200 – 1600: 2<sup>nd</sup> Engineer
- 0400 – 0800 and 1600 – 2000: Oiler
- 0800 – 1200 and 2000 – 2400: Chief Engineer

### **1.7 Sequence of Events Leading to Accident**

MURAT HACİBEKİROĞLU II, left İskenderun İSDEMİR port loaded with 1964,52 MT slag and onboard 10 crew on 17th of September 2016, at 23:50 and was bound for İzmit Derince Aslan Cement port. When the ship arrived at the 35 nautical miles southwest off the coast of Alanya port on 19th of September 2016 at 13:30, alarm was received from the engine room.

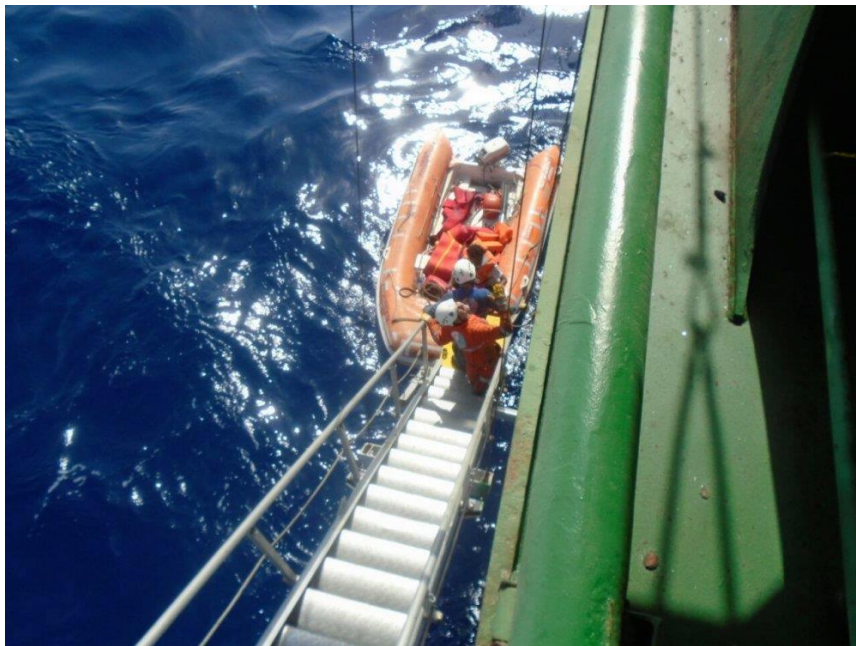
2nd engineer, at that time working inside the engine workshop, went down to engine room in order to control the reason for the alarm. Right after 2nd engineer, chief engineer went down to engine room as well. When 2nd engineer entered into the engine room, he saw that engine room was flooding and bilge alarm warning was blinking continuously on the alarm display panel.

As the water level was above the bilge pump level in the engine room, the pump was not be able to started-up. Chief engineer saw that the water level in the engine room was approximately 20-30 cm above the engine floor plate and stopped the engine, in order for engine not to be damaged.

Afterwards, he went to bridge and told the master that engine room was flooding rapidly and they could not able to detect where the water came from and stated that there was nothing to do. Thereupon, the master of the ship made a MAYDAY call to the public from the VHF radio and immediately gave abandon ship order. At 14:05 crew came to muster station with life jackets and thermal protected immersion suits and abandoned the ship by lowering the rescue boat.

In order to be protected from vortex that could possibly happen as a result of risk of sinking ship and from the ships' equipment that could possibly damage the rescue boat after going to surface as a result of sinking ship, they proceeded to approximately 150-200 meters off the ship.

ELECTRA A, which received the distress call and at that time was navigating close to MURAT HACIBEKİROĞLU II, reached the incident scene and recovered the casualty crew from the sea.



**Figure 4:** Recovery of the casualties to ELECTRA A

Meanwhile MURAT HACIBEKİROĞLU II sank completely at 15:36.



**Figure 5:** Sinking moment of MURAT HACIBEKİROĞLU II

Afterwards, MURAT HACIBEKİROĞLU II crew was taken from ELECTRA A with the TCSG 92 boat, which reached to accident scene and was under Coast Guard Command and was transported to port of Alanya.

## **2. ANALYSIS**

### **2.1 Reasons for Flooding of the Ship**

Clear evidence concerning why and where the engine room flooded from could not be presented in accordance with the investigation carried and statements of related personnel. Findings show that it seems likely that the engine is caused by malfunctions in the sea water pipelines or by opening of the keel bottom plate under the engine room.

It is understood by the survey reports that the periodic maintenance change and repair operations of the sea water pipelines (pipe, valve, seal, gasket) in the engine room were carried out during docking of the vessel on 24<sup>th</sup> of February 2014.

It was stated that the daily sounding values of the bilge cargo hold were taken and there was no alarm system. It has been found out that the bilge alarm in the engine room warned when it reached the set level. In addition, the chief engineer stated that he had checked the bilge level in his shift at the beginning of the hour and instructed other shifts in this way.

It has been found out that during docking of the vessel, area below waterline, cargo hatch covers and hatch coamings were blasted and painted and 42 anodes<sup>1</sup> were installed. As a result of the underwater plate thickness measurement process during docking, it was seen in the survey reports that the plate thicknesses were found appropriate and no change was made.

Considering the age of the vessel and date of the next dry docking survey would be on February, 2017, it was predicted that the possibility of corrosion, decay and failure that may occur in sea water pipeline would be one of the root causes.

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<sup>1</sup> *In order to protect the hull of the vessel from corrosion, it is painted with a suitable paint and also cathodic protection is preferred. Cathodic protection is provided by welding the galvanic anodes to the vessel's hull.*





was sinking, showing sinking of the ship from the aft side without making heel to starboard or port side, clear away the possibility of flooding of the holds (Figure 7).



**Figure 7:** Snapshot of the sinking

## **2.2 Responsibility of the Crew**

According to Bylaw on Seafarers (national legislation), which regulates working and watchkeeping order on ships, article 84, clause a, item 1 and 2 stipulates that seafarers; shall be provided a minimum of 10 hours rest in any 24 hour period and a minimum of 77 hours rest in any 7 days period. The time between consecutive rest periods shall not be more than fourteen hours.

When the working order and watchkeeping routine reviewed, there was not detected any unconformity with regard to the related provisions of the above mentioned bylaw.

It has been observed that the ship was manned with adequate personnel according to safe manning procedures. If it is assumed that one of the engine department personnel becomes ineffective because of health issue or another problem, it is understood that the remaining personnel might possibly be forced to work in an effort, out of the normal working standards.

On the other hand, it was detected that 2<sup>nd</sup> engineer was in the engine workshop for taking some tools, whom normally supposed to be watchkeeping in the engine room around the hours when the engine room started flooding. It attracts the attention that it is considered as a lack of effective wacthkeeping that the related personnel was not in the engine room at that time.

2<sup>nd</sup> engineer went down to engine room immediately after hearing the alarm. He opened the alarm display panel and saw the warning given was bilge water alarm and afterwards he closed it. Later on he realized that alarm warning light was blinking and decided to have a look at the bilge section. At that time chief engineer came into engine room and saw the water level, after black out he stopped the main engine. 2<sup>nd</sup> engineer saw that the water level was above the bilge pump and as a result, he could not start the pump.

It is understood that, watchkeeping personnel could not act timely in detecting the trouble and responding to it as the results of the statements. It is assessed that effective precautions could not be taken as detecting the leakage on time and starting the bilge pump.

### **2.3 Emergency Drills**

It is known that emergency drills carried out at specific periods on ships, increases the awareness, decreases the disorder and provides competency in using life saving appliances. It is understood that the crew arrived the muster station by taking life jackets following the masters' abandon ship order. According to evaluations, it was understood that watertight compartment doors were not closed and general alarm was not given after abandon ship order.

It is a fact that closing the watertight doors will slow down the loss of the ship and crew will gain time, and giving a general alarm will increase awareness of the crew.



**Figure 8:** Casualty crew members on the rescue boat

It attracts the attention that and it is an another observation that the capacity of the rescue boat, which was used instead of liferaft, was 6 persons while the crew comprised of 10 persons. In addition, it was observed that one personnel was not wearing a life jacket as can be seen from Figure 8.

In the light of the issues mentioned above, it is understood that ships' emergency drills were not carried out periodically or as required, and as a result, the anticipated awareness did not occur at the personnel.

#### **2.4 Search and Rescue (SAR)**

Master of the ship made a public broadcast and stated that they would abandon the ship. Afterwards the crew abandoned the ship with the rescue boat and taking into account the possibility of sinking of the ship, they proceeded to a point 150 – 200 meters away from the ship and waited for help. Receiving the abandon ship call and navigating close to the incident scene, ELECTRA A, approached the incident scene and recovered the casualty crew to their ship by making an effective rescue.

When taking this situation into account, it is assessed that, because ELECTRA A was navigating close to the incident scene, it prevented the casualty crew from a bigger tragedy, while they abandoned the ship with a rescue boat instead of a liferaft.



### **3. CONCLUSIONS**

- 1.** According to the accident report given by the master of the ship, it is understood that the prevailing weather conditions in the region at the time of accident did not affect the accident.
- 2.** It is assessed that, the reason for flooding of the ship was because of a failure occurred in the engine room seawater lines or originated from failure of keel bottom plate of the engine room.
- 3.** When the flooding started in the engine room, 2<sup>nd</sup> engineer, watchkeeping personnel at that time, was not inside the engine room.
- 4.** After receiving the alarm, chief engineer and 2<sup>nd</sup> engineer went down to the engine room but they could not able to find the opportunity to search for where the water came from and they could not start the bilge pump in order to discharge the seawater from the engine room.
- 5.** After the abandon ship decision was taken, watertight doors, was not closed and general alarm was not given.
- 6.** Abandoning the ship was carried out with a rescue boat (6 persons capacity) instead of with a liferaft (16 persons capacity)
- 7.** It was observed that one of the crew who abandoned the ship was not wearing a lifejacket.

### **4. RECOMMENDATIONS**

#### **4.1 To Hacıbekiroğlu Shipping and Trading Co.**

Hacıbekiroğlu Shipping and Trading Co. is recommended to:

- 1.** Ensure that emergency drills are being carried out periodically and effectively on the ships under its' fleet or management,
- 2.** Ensure that effective watchkeeping in the engine room is being carried out on the ships under its' fleet or management and periodic controls are being carried out that are required in the engine room.