REPUBLIC OF BULGARIA
MINISTRY OF TRANSPORT, INFORMATION TECHNOLOGY AND COMMUNICATIONS

1000 Sofia, 9 "Dyakon Ignatiy" strt.
tel.: (+359 2) 940 9771
fax: (+359 2) 988 5094

www.mtitc.government.bg
mail@mtitc.government.bg

Aircraft, Maritime and Railway Accident Investigation Directorate
Maritime Accident Investigation Unit

FINAL REPORT

Investigation of a very serious marine accident – DEATH OF A CREWMEMBER IN A FALLING IN THE CARGO HOLD OF M/V ANNA M, 2014

2019

FOREWORD:

Extract from the Merchant Shipping Code:

Art. 79. *(Amended, SG № 41/2001, amended, SG № 113/2002, amended, SG № 87/2005, in force since 01.01.2006, amend., SG № 92/2011, amend., SG № 93/2017, SG № 62/2019, in force since 06.08.2019)*

(*1) Investigation of marine accidents and incidents shall be carried out by investigating officers in the specialized unit for investigation of marine accidents and incidents at the Ministry of Transport, Information Technology and Communications.*
(2) The investigation under para. (1) aims to contribute to enhancing the safety of maritime transport and preventing marine casualties by identifying the causes and circumstances of the occurrence of a particular accident without making any conclusions about the existence of fault or liability. The investigation under para.(1) shall be carried out separately and irrespectively of the criminal administrative penal or civil proceedings conducted in respect of the same marine accident and shall not be prevented, suspended or delayed by reasons of the conduct of such proceedings.

Note: Investigation materials should not be used in litigation and/or settlement of trade disputes, and the specialized unit, or the Ministry of Transport, Information Technology and Communications, can neither be a part to nor involved in such proceedings and disputes.
The report is published on the Internet at the official website of the Ministry of Transport, Information Technology and Communications: https://www.mtitc.government.bg/.

All times are UTC +2 hours.

CONTENTS

SUMMARY

On 8 December 2014 at 1933, a 43-year-old crewmember of m/v *Anna M* was found in a helpless condition with severe head trauma at the bottom of the empty cargo hold № 1, near the vertical ladder to enter the hold. The ship was anchored on Varna roadstead in expectation of permission to enter the port. A medical evacuation was carried out to the suffered ashore, where a doctor ascertained his death. There were no immediate eyewitnesses to the accident, but the nature of the injuries and the location of the body suggested a dropping from the vertical ladder and fall from a great height to the bottom of the cargo hold.

The conclusion of the investigators was that the main cause for that was the failure of the crewmember to comply with the safety rules for descending the vertical ladders. Contributing causes of the accident were the bad condition /deformation/ of the vertical ladder of cargo hold №1, as well as violation of the ship's rules - entering without a permit in the cargo hold.

Following the accident, the ship owner AB DENIZCILIK VE TICARET LTD had undertaken a set of measures aimed at preventing, minimizing and eliminating the risks of such incidents, and the investigators therefore did not make any safety recommendations.

Fig. 1 *m/v ANNA M*

1. FACTUAL INFORMATION.

1.1. VESSEL'S DATA	
Name	*ANNA M*
Flag/nationality	Turkey
IMO №	8212336
Ship owner	AB DENIZCILIK VE TICARET LTD
Port of registration	ISTANBUL
Manager and Operator	AB DENIZCILIK VE TICARET LTD (5292452)
Classification authority	Turk Loudy
Type	General cargo ship
Date of built	1984
Shipyard	DESAN SHIPYARD - ISTANBUL, TURKEY
Gross tonnage	998 t
Length (max)	67.37 m
Width (max)	10.4 m
Deadweight	1 923.23 t

1.2. VOYAGE INFORMATION		
Last visited ports	Constanta, Romania Bandirma, Turkey Constanta, Romania	08.12.2014 27.11÷28.11.2014 16.11÷18.11.2014
Sailing port	Constanta, Romania	
Destination	Varna, Bulgaria	
Type of voyage	International	
Load Information	Under ballast	
Crew	9	
Working language	Turkish	

1.3. INFORMATION ABOUT THE MARINE ACCIDENT	
Date and time	08.12.2014, 19:33
Type of accident	Very serious marine accident
Position and coordinates	43º 12',05 N 027º 58',88 E, Varna roadstead
Weather conditions	Good visibility – 6-8 nm, daytime, wind - 1 BN[1] from N, waves -1 BN, light rain
Place on board	Cargo hold № 1
Consequences	Deceased crewmember
Consequences for the ship and load	None
Consequences for the environment	None

1.4. INFORMATION ABOUT THE SHIP.

Anna M is a 998 t general cargo ship, built in 1984 in Istanbul, Turkey. The vessel was flying the flag of the Republic of Turkey, and was owned and operated by AB DENIZCILIK VE TICARET LTD. The ship has two cargo holds for general and bulk cargoes. It is powered by a 747 kW main engine, 6-cylinder S.K.L 6NVD48A-2U. The engine is directly connected to the propeller and provides a ship speed of 13 knots.

The ship has Cargo Ship Security Certificate, International Safety Management Certificate, Maritime Labor Certificate, as well as all other certificates of IMO, confirming the ship's

[1] BN - Beaufort number from Beaufort wind force and wave height scale

suitability, safety and compliance with international shipping safety requirements, documented by the Administration of the flag - Republic of Turkey. The ship's safety management system was certified by the TURK LOYDU Classification Organization and meets the requirements of the International Management Code for the Safe Operation of the Ships and for Pollution Prevention (ISM Code) for the relevant type of ship.

1.5 ACCESS TO CARGO HOLD № 1.

Entry into the hold No. 1 is made from the upper deck - starboard side, through the entrance hatch/**Fig. 2, Fig. 3**/, mounted on a 60 cm high coaming. A handle is welded inside the coaming to provide support in case of using the ladder . The entrance is designated as a restricted area.

Fig. 2 Entrance hatch – cargo hold № 1

Fig. 3 View from the entrance hatch to the vertical ladder

The vertical ladder /**Fig. 4**/ for descent into hold No. 1 is located on the right side of the bow bulkhead of the hold. The ladder has a total height of 6.5 m and consists of three parts, firmly attached to the bow bulkhead of the hold. The upper part of the ladder leads to the platform of the twin deck, at a height of the floor 4.5 m. The middle and the lower part of the ladder are separated by a horizontal full frame of the bulkhead, part of the structural framing of the ship, at a floor height of 2.5 m. The ladder is without safety rails or brackets. The steps of the upper part of the ladder are metal rods with circular cross section, highly corroded and do not provide good grip, especially when wet or when using gloves. The ladder itself in this part is deformed. The middle and bottom part of the ladder are in good condition and their steps are square-sectioned metal rods.

Fig. 4 View of hold № 1 and the vertical ladder.

1.6 INFORMATION ABOUT THE DECEASED CREWMEMBER.

The deceased crewmember was 43 years old, a Turkish citizen. He had worked on board of the ship for 1 year and 3 months. The medical certificate, issued a year before the accident, certified his good health. He had all the necessary certificates attesting to his professional competence to perform his duties. At the time of the accident he was rested and in good physical condition.

The physicochemical examination, appointed after the accident, did not indicate the presence of alcohol in the blood.

2. DESCRIPTION.

On 8 December 2014 at 1130 m/v *Anna M* was at anchor in Varna Roadstead /**Fig. 5**/. The ship arrived from Constanta unloaded, under ballast.

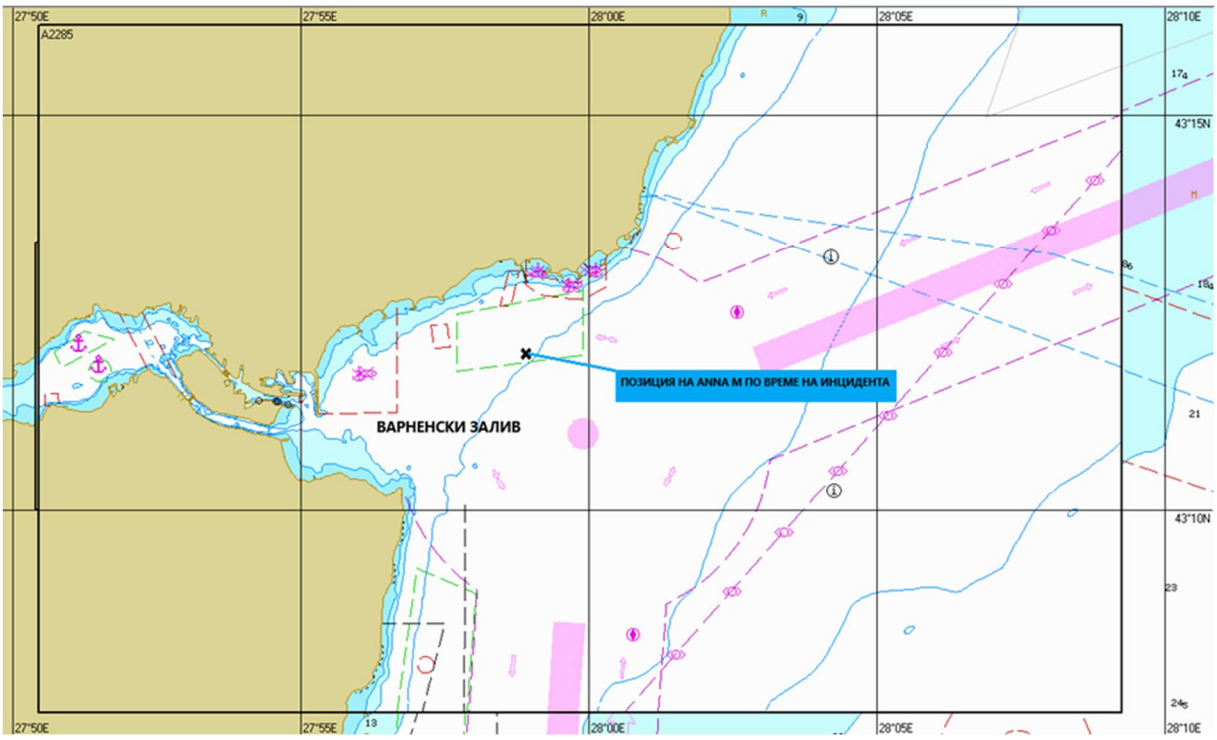

Fig.5 Position of the ship - Varna anchorage

At 1910, the ship's crew received traffic control clearance to enter the port and started preparation the ship. On the bow, the second officer and the injured ordinary seaman prepared the windlass to weigh the anchor.

At 1920, the anchor chain was partially picked up when a new order from the traffic control was received - to stop the operation and wait until the second order.

At 1925 the anchor was lowered again. The master of the ship stayed on the bridge. Through the megaphone, he released the crewmembers from the bow to return to the stern's living quarters so that they did not get excessively wet from the pouring rain.

At 1930, while waiting for permission to begin the port maneuver, the second officer and the helmsman entered cargo hold № 1 for inspection. The hold was already cleaned and empty. The holds' covers were closed because of the pouring rain. The hatch of the vertical ladder for entering the hold was open and locked. Lighting was provided in the cargo hold. The second officer was staying on the twin deck while the helmsman went down to the bottom of the hold to check if there was any water left after the floor had been washed. There were puddles on the floor that the helmsman began to dry.

At 1933, the second officer and the helmsman hear a loud yell. The helmsman saw the seafarer's body lying motionless on the floor of the hold, near the base of the ladder, with a

safety helmet thrown several meters away. The helmsman immediately went to the sufferer, lifted him slightly and saw that there was blood from his nose and mouth. Shocked by the view, the he missed to check for pulse and breath. The second officer got on the deck and notified the master, who reported to the traffic control for the incident and requested medical evacuation of the casualty. The presence of vital signs of the injured was checked by the second engineer who did not detect breathing and pulse.

At 2015, a rescue boat from the Directorate "Maritime Administration"-Varna arrived and the injured was taken on board the boat and then transported to the port. At the quay, the seafarer was examined by a medical team. The doctors from the Emergency Medical service had just ascertained his death.

The forensic examination identified as the immediate cause of death the severe open cranial-brain trauma as well as the spinal cord trauma resulting from the impact with or on a solid blunt object with a wide flat surface. They could be obtained by falling from a considerable height with the head down, during impact on the underlying surface, with subsequent forced neck folding. Scarring had also been found on the inner surface of the left thigh, the result of impact and tangential action (friction) with or on a blunt object with a prominent edge.

No injuries were found that could not be explained by a fall from a height.

Prior to the accident, the injured seafarer was not ordered to enter cargo hold № 1 to carry out any activity there. It should have been in the aft superstructure, in the expectation of the start of the port maneuver.

3.ANALYSIS.

3.1. CAUSE FOR FATAL INJURY

There were no immediate eyewitnesses to the accident with the crewmember. The investigators excludes the possibility of falling as a result of accidental slipping on the wet deck and falling through the hatch opening, since the hatch is mounted on high coaming.

From the nature of the injuries and the location of the body, it could be concluded that the most probable cause of the accident is an attempt to enter cargo hold № 1 on the vertical ladder, drop and fall head-on on the floor of the hold. The severity of the injuries showed that the victim had fallen from the top of the ladder. A fall from a lower height would not cause the serious damage found in the forensic examination. Body abrasions could be explained by its contact with obstacles during the fall, such as the edges of the opening of the twin deck and/or the triangular platform between the middle and the lower part of the ladder.

Loss of support when going down the ladder and subsequent falls could be due to distractions, rusty and wet steps, and poor lighting as well.

Considering the sea service of the seaman and the safety training courses passed, his satisfactory physical condition and the rest taken before the accident, it could be concluded that the cause for the fall was not lack of experience, poor physical condition or accumulated fatigue.

3.2. REASON FOR ENTERING THE CARGO HOLD

The investigation of the accident did not provide a definite answer to the question of the reason the injured seafarer had made an attempt to enter the hold №1 without having an explicit order. His decision could have been due to a desire to help with its drainage, an intention to talk to someone in the cargo hold, or to take a tool or equipment from there. No matter the reason, entering in the restricted area(hold) without permission is a violation of the rules of the ship**.**

4. CONCLUSIONS.

The main cause of the very serious accident was the sufferer's failure to comply with the ship's safety rules, namely, an attempt to enter the cargo hold without permission and a breach of the safety rules, when going down and up on ladders, which are not structurally secured with a safety rings.

Possible contributing causes of the accident/fall/ could be:

1. Distraction due to side factors - phone call, unusual hold noise, etc.

2. Slipping, tripping, loss of grip on wet steps, etc.
3. The structural layout and poor condition of the vertical ladder in cargo hold №1, which requires caution when using it.

5. ACTIONS UNDERTAKEN.

Immediately after the accident, the ship owner AB DENIZCILIK VE TICARET LTD undertook a set of measures aimed at preventing, minimizing and eliminating the risks of such incidents. The upper part of the vertical ladder for entry into cargo hold No.1 had been replaced.

6. SAFETY RECOMMENDATIONS.

In view of the actions taken by the ship owner AB DENIZCILIK VE TICARET LTD, the investigators did not make safety recommendations.