



SAFETY INVESTIGATION REPORT

202005/012

REPORT NO.: 11/2021

May 2021

The Merchant Shipping (Accident and Incident Safety Investigation) Regulations, 2011 prescribe that the sole objective of marine safety investigations carried out in accordance with the regulations, including analysis, conclusions, and recommendations, which either result from them or are part of the process thereof, shall be the prevention of future marine accidents and incidents through the ascertainment of causes, contributing factors and circumstances.

Moreover, it is not the purpose of marine safety investigations carried out in accordance with these regulations to apportion blame or determine civil and criminal liabilities.

NOTE

This report is not written with litigation in mind and pursuant to Regulation 13(7) of the Merchant Shipping (Accident and Incident Safety Investigation) Regulations, 2011, shall be inadmissible in any judicial proceedings whose purpose or one of whose purposes is to attribute or apportion liability or blame, unless, under prescribed conditions, a Court determines otherwise.

The report may therefore be misleading if used for purposes other than the promulgation of safety lessons.

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MV SEAFARER **Fatal injury to a crew member** **in position 37° 29.60' N 012° 21.60' E**

12 May 2020

SUMMARY

On 08 May 2020, the Maltese registered bulk carrier *Seafarer* departed Istanbul, Turkey in ballast for Port Cartier, Canada.

On the morning of 12 May, the electrical technical (ETO) rating was tasked to prepare and layout a portable electric lantern at the entrance of the access trunk hatchway between cargo hold nos. 1 and 2, to the pipe tunnel.

At about 0940, the ETO rating was found lying motionless inside the access trunk. He had sustained severe head trauma and was pronounced dead.

The autopsy report concluded that the sustained fatal injuries were consistent with a fall from a height.

Following the accident, the Company reviewed the enclosed space access arrangements and issued a fleet safety information bulletin to all vessels highlighting the procedure and the need to provide safe means of access.

Considering the Company's safety actions, no safety recommendations have been issued by the MSIU.



FACTUAL INFORMATION

Vessel

Seafarer, a 94,542gt, dry-bulk cargo vessel was built in 2014 at Shanghai Waigaoqiao Shipbuilding Co. Ltd., China. She was owned by Ortesia Management Ltd., managed by Thenamaris Ships Management, Greece and classed with American Bureau of Shipping. The vessel's length overall was 292.00 m. Her summer draught was 18.32 m, corresponding to a summer deadweight of 180,973 tonnes.

Propulsive power was provided by a MAN-B&W 6G70ME-C9.2 diesel engine, producing 15,748 kW at 75 rpm. The vessel's maximum speed was about 15 knots.

A general arrangement plan of the vessel is shown in Figure 1.

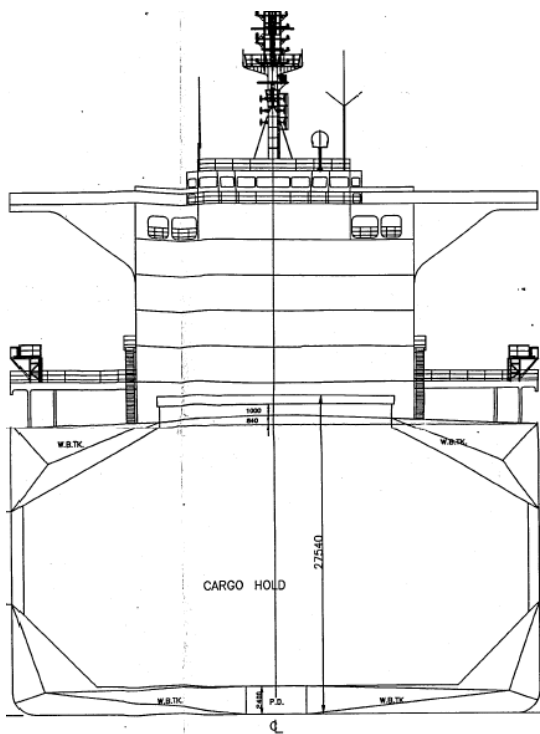


Figure 1: General arrangement plan

Access to pipe tunnel

The vessel was fitted with nine cargo holds. The engine-room and accommodation structure were located aft. The pipe tunnel, which extended along the full length of the vessel, had one access from the engine-room.

The pipe tunnel was fitted with a permanently fixed lighting system.

There were also three access trunk hatchways located on the main deck, between cargo hold nos. 1 and 2 (Figure 2), 5 and 6, and 8 and 9. Vertical ladders inside the access trunks led to the pipe tunnel. The vertical ladder arrangement was divided into five sections. Each section had a small platform in between with fixed lights at platform A and platform D (Figures 3 and 4).



Figure 2: Access trunk hatchway and vertical ladder leading to pipe tunnel

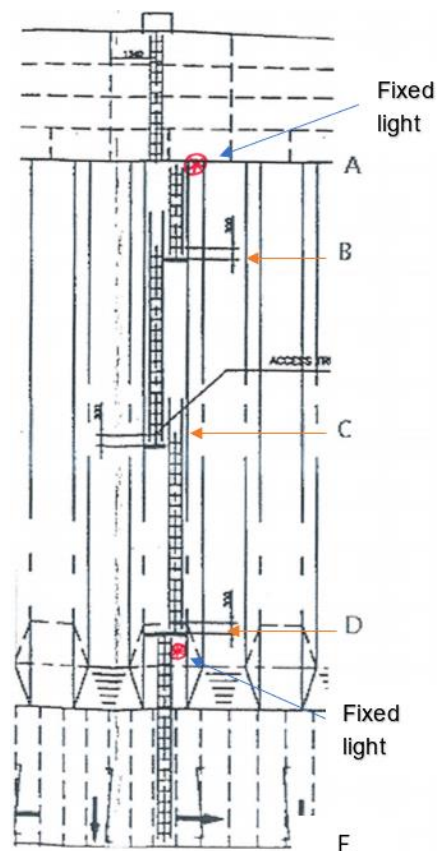


Figure 3: The vertical ladder and fixed lighting system, and the position of platforms A, B, C, D and E in the access trunk



Figure 4: Photo showing platform A and vertical ladder leading to platform B

Crew members

Seafarer's Minimum Safe Manning Certificate required a crew of 15. At the time of the accident, there were 21 crew members on board. All officers, engineers and ratings were from the Philippines.

The deceased crew member was 51 years old and was a qualified electronics engineer. Having satisfied the requirements of section A-III/7 of the STCW Code, he was engaged as an electrotechnical (ETO) rating. This was his third contract with the Company. His previous two contracts were completed on board oil tankers. He had reportedly attended several training sessions on enclosed space entry requirements and drills for rescue of persons. His medical examination prior to joining *Seafarer* had found him fit for service at sea.

The ETO rating embarked the vessel in Shanghai, China on 07 August 2019. At the time of the accident, he had been on board *Seafarer* for approximately 9 months.

Environment

The wind was West Northwesterly, Force 3. The sea state was slight with a Northwesterly 0.5 metre swell. The air temperature was

recorded at 19 °C. The weather was generally fine and there was neither rolling nor pitching.

Narrative¹

Seafarer departed Istanbul, Turkey on 08 May 2020, on a ballast passage to Port Cartier, Canada.

On the morning of 12 May 2020, the engine-room crew members planned to repair a ballast line passing through the pipe tunnel. However, the fixed lighting system installed in the pipe tunnel and the access trunk was out of order. As inclement weather was expected during the Atlantic transit, priority was given to the ballast line repairs, and repairs on the tunnel / access trunk lights were deferred to a later date.

Prior to carrying out the repairs, a tool-box meeting was held in the engine-room. An oiler and the ETO rating were tasked to prepare and layout a temporary lighting equipment outside the access trunk hatchway located between cargo hold no. 1 and 2. As the oiler was instructed to first locate the chain block, the ETO rating, equipped with a portable radio, was told to wait for his assistance.

The repair team, consisting of the chief engineer, the second engineer, the third engineer and the wiper, accessed the pipe tunnel from the engine-room. At about 0850, the ETO rating was seen on the main deck carrying portable light equipment. He was wearing PPE *i.e.*, a safety helmet and shoes, gloves and a working overall.

About 30 minutes later, at 0920, the second engineer called the ETO rating on the portable radio. Receiving no response, he sent the oiler to look for him. The oiler was unable to find the ETO rating on deck and hence, decided to look for the oiler in the

¹ Unless otherwise stated, all times are ship's times (UTC +3).

engine-room. Returning to the engine-room, he met the master and informed him about the ETO rating. The master, who was on his way to check the progress of the pipe repairs, proceeded to the access trunk hatchway between cargo hold no. 1 and 2.

Climbing down the vertical ladder, the master observed a safety helmet, a broken portable light and one shoe on platform C (Figure 5).



Figure 5: Portable light, safety shoe and safety helmet as found on platform C

He also noticed fragments of the portable light on platform D. Further down on platform E, he saw the ETO rating, lying motionless. The chief engineer and the repair team, who were working close-by in the pipe tunnel, were called-in by the master. No vital signs were detected.

The Company was immediately informed and following advice by Med Solutions

International, the body was retrieved from the space. *Seafarer* was then diverted to Cagliari, Italy for forensic / clinical autopsy.

Post-mortem examination

The post-mortem examination was carried out on 13 May 2020. The examination confirmed death as a result of polytrauma (chest and skull trauma). It also confirmed that the fatal injuries were consistent with a fall from great height.

ANALYSIS

Aim

The purpose of a marine safety investigation is to determine the circumstances and safety factors of the accident as a basis for making recommendations, and to prevent further marine casualties or incidents from occurring in the future.

Probable cause of the fall

Given that no crew member witnessed the entry of the ETO rating into the access trunk hatchway, the precise time of the accident could not be established. The MSIU, however, is aware that he was last seen on deck at 0850, whilst the ‘no response’ warning to the second engineer’s radio call was at 0920. This suggested that the accident must have occurred sometime during this period.

Indications of scratch marks on the bulkhead suggested a fall between platforms B and C. The crew member was found on platform E, about 16.0 m from platform B. Given that effective natural light into the access trunk hatchway only reached platform A, the likelihood of missing a step, grip or balance whilst going down the ladder in darkness between platforms B and C, was not ruled out by the safety investigation.

Fatigue and alcohol /drugs

Prior to the accident, *Seafarer* had been at sea for four days. During this time, the ETO rating was engaged on day work, doing non-watchkeeping duties of 9 hours. His hours of rest document indicated that he had received adequate rest before reporting for work on the day of the accident. Following the accident, all crew members on board were tested for alcohol. The results were negative.

The autopsy report did not refer to traces of drugs and alcohol in his system. Moreover, the MISU was informed that no toxicological tests had been carried out. Based on the available information, fatigue and alcohol / drugs were not considered to be contributory factors to this accident.

Recognition and acceptance of risk

Information available to the MSIU indicated that a risk assessment had been carried out for safe entry, the pipe tunnel space had been ventilated, and measured for toxic gases and oxygen deficiency. With respect to light intensity, alternative lighting arrangements had been made before the chief and second engineer entered the pipe tunnel. It seemed reasonable to hypothesise that additional light source may have been anticipated near the site of the repair works. During the toolbox meeting, safe execution of tasks was addressed. However, the safety investigation was unable to establish the explicit instructions given to the ETO rating.

Analysis of the documentary evidence suggested that the ETO rating was only expected to lay out the portable light at the access of the trunk hatchway and wait for the oiler to assist him. It was considered likely that at that point in time, it was not expected for the ETO rating to go down the vertical ladder. The safety investigation was informed that this expectation was 'inferred' during the toolbox meeting. The ETO rating did not communicate with the repair team and it is not known how long he had waited for the oiler to turn-up.

There was no information available to evaluate the factors which set him off down the access trunk. Thus, the safety investigation hypothesized that the action of the ETO rating were very likely to have been influenced by:

- routine on board practice of ascending / descending vertical ladders;
- previous entries in similar circumstances have been successful and without any accident;
- space in the pipe tunnel had been successfully checked safe for entry;
- experience of working on oil tankers and his understanding of hazards related to enclosed spaces; and
- enough natural light down to the first three platforms.

CONCLUSIONS

1. The autopsy concluded that fatal injuries sustained by the ETO rating were caused by a fall from a height;
2. It is likely that the ETO rating either missed a step, lost his grip or balance while climbing down the vertical ladder;
3. The fixed lighting system in the pipe tunnel and access trunks was not working;
4. Fatigue and alcohol / drug were excluded as a contributory factor to the fall;
5. The pipe tunnel had been ventilated and measured for toxic gases and oxygen deficiency and determined safe for entry;
6. The ETO rating was expected to lay out the portable light outside the access trunk hatchway and wait for the oiler.

SAFETY ACTIONS TAKEN DURING THE COURSE OF THE SAFETY INVESTIGATION²

Following the accident, the Company conducted an internal investigation and took the following actions within its Safety Management System:

- The internal investigation report, analysis and its findings were circulated amongst the fleet vessels and brought to the attention of joining crew members;
- A Safety Information Bulletin was promulgated, stressing the importance of toolbox talks, clear specific instructions and ensuring that they are understood by personnel before commencing any job;
- All vessels were required to conduct an additional safety meeting to discuss this accident and safety procedures for entering enclosed spaces;
- Where the requirements of tank entry permit could not be fully complied with, a risk assessment is being required to be carried out to identify additional risks involved. Moreover, before entry, the responsible officer is required to ensure that all risk mitigation measures identified in the risk assessment are implemented;
- Entry into an enclosed space alone or without proper supervision is being strictly forbidden. A two-person entry into the enclosed space is now required, with a stand-by crew member at the entrance to act in the event of an emergency. The stand-by crew member is required to be in direct contact with persons inside the enclosed space and with the navigating bridge or control room as required;

- Duty officers on the bridge and in the cargo / engine control room are to be made aware of the enclosed space entry operations. Access to rescuers and rescue equipment shall always be ensured;
- When ascending or descending ladders, the three-contact point rule (two hands and a foot or two feet and a hand on the ladder) must be applied, with the use of a safety harness and safety line, except where their use is not possible. Moreover, the area must be well illuminated and free of obstruction to prevent the risk of trips and slips.

RECOMMENDATIONS

Taking into consideration the safety actions taken by the Company, no safety recommendations have been issued.

² **Safety actions shall not create a presumption of blame and / or liability.**

SHIP PARTICULARS

| | |
|-------------------------|-------------------------------------|
| Vessel Name: | <i>Seafarer</i> |
| Flag: | Malta |
| Classification Society: | American Bureau of Shipping |
| IMO Number: | 9686314 |
| Type: | Bulk Carrier |
| Registered Owner: | Ortesia Management Ltd. |
| Managers: | Thenamaris Ships Management, Greece |
| Construction: | Steel |
| Length Overall: | 292.00 m |
| Registered Length: | 286.62 m |
| Gross Tonnage: | 945542 |
| Minimum Safe Manning: | 15 |
| Authorised Cargo: | Dry bulk |

VOYAGE PARTICULARS

| | |
|--------------------|------------------|
| Port of Departure: | Istanbul, Turkey |
| Port of Arrival: | Gibraltar |
| Type of Voyage: | International |
| Cargo Information: | In ballast |
| Manning: | 21 |

MARINE OCCURRENCE INFORMATION

| | |
|----------------------------------|--|
| Date and Time: | 12 May 2020 at 0940 (LT) |
| Classification of Occurrence: | Very Serious Marine Casualty |
| Location of Occurrence: | 37° 29.60' N 012° 21.60' E |
| Place on Board | Access trunk leading to the pipe tunnel |
| Injuries / Fatalities: | One fatality |
| Damage / Environmental Impact: | None |
| Ship Operation: | In transit |
| Voyage Segment: | In transit |
| External & Internal Environment: | Clear with a visibility of 15 nautical miles. The wind was from the West Northwest at 12 knots. The air temperature was 19 °C. |
| Persons on board: | 21 |