



SAFETY INVESTIGATION REPORT

201802/018

REPORT NO.: 04/2019

February 2019

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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Adam Asnyk
 Serious injury to crew member
 in position 23° 57.7' N 118° 37.4' E
 15 February 2018

SUMMARY

Adam Asnyk, a Maltese registered general cargo ship was on a ballast passage from Zhuhai (China) to Xingang. On 15 February 2018, at about 1820, a crew member fell from a height of about 10 metres during a cargo hold cleaning operation, which resulted in serious injuries to the person. The crew member sustained multiple fractures to his leg, arm and pelvis. He was recovered from the cargo hold and administered first aid. The vessel then diverted to Xiamen where the injured crew member

was disembarked.

The safety investigation concluded that the crew member who was cleaning the cargo hold with a hose lost his balance as he tried to free the snagged hose. The cargo hold washing was also being carried out from an area, which was neither designed nor designated for this purpose.

On the basis of the safety actions implemented on board, no recommendations have been made to the Company.



FACTUAL INFORMATION

Vessel

Adam Asnyk was a 24,115 gt, Maltese registered general cargo vessel built by COSCO Dalian Shipyard in China, in 2009. The vessel has a length overall of 199.8 m, a moulded breadth of 27.80 m and a moulded depth of 15.5 m. She had a summer deadweight of 30,346 tonnes, corresponding to a summer draught of 11.0 m.

Adam Asnyk was owned by Kamil Norwild Shipping Company and managed by Chinese-Polish Joint Stock. *Adam Asnyk* was operated on the spot market, carrying bulk and break-bulk cargoes worldwide. She was fitted with five cargo holds and four deck cranes. *Adam Asnyk* could also carry containers in her cargo holds and on the main deck.

Crew members

At the time of the accident, the vessel was manned by a crew of 23. Most of the crew members were Polish, with a number of deck ratings and cadets from the Philippines. The second mate was from Belarus. The vessel was manned in excess of the Minimum Safe Manning Document issued by the flag State Administration. The working language on board was English and the Safety Management System (SMS) was also available to the crew in English.

The injured AB was 63 years old and was a Polish national. He had the necessary qualifications to serve as a rating forming part of a navigational watch.

The AB had first gone to sea in 2001. He had been employed by the present Company since completing his first contract with another Company. This was his third contract on board *Adam Asnyk*. He had last joined the vessel on 27 November 2017 in Shanghai. His latest medical examination was conducted on 02 November 2017 and he was declared fit for duty as an AB.

Narrative

Adam Asnyk departed Zuhai, China at 1700 on 14 February 2018, after discharging a cargo of iron ore. The vessel was in ballast and bound for Xingang, China, where she was scheduled to load project cargo. Her estimated arrival date at Xingang was 19 February.

The next day, on 15 February, the crew were tasked to clean cargo hold no. 4 (starboard side) in preparation for loading the next cargo. Prior to starting the work, a safety and task briefing was held at about 0800 by the chief mate and the deck crew members.

Soon afterwards, the crew members were deployed. Initially, the cargo residue was removed, followed by the sweeping of the cargo hold. This work was carried out over the day, with the crew members taking their usual meal and coffee breaks. They then stopped at approximately 1700 for dinner and resumed work at about 1800 so as to wash down the cargo hold.

At about 1800, the bosun entered the cargo hold first, after switching on the extra lighting. Thereafter, AB-1 (the injured crew member) and AB-2 connected a fire hose to a sea water hydrant on the main deck in close proximity to cargo hold no. 5 (starboard). It was reported that AB-2 then opened the valve of the fire hydrant while AB-1 stood over the entrance of cargo hold no. 4 (starboard) and rinsed the cargo hold's access from above.

Even before accessing the cargo hold access hatchway to descend below, both crew members were aware that they would need a longer hose. They therefore took another fire hose and connected the two hoses. AB-2 again opened the valve and AB-1 descended the access ladder. At the first platform (Figure 2), AB-2 passed him the pressurised fire hose (with the nozzle shut). Sufficient length was passed over to AB-1 to grasp it under his left arm.

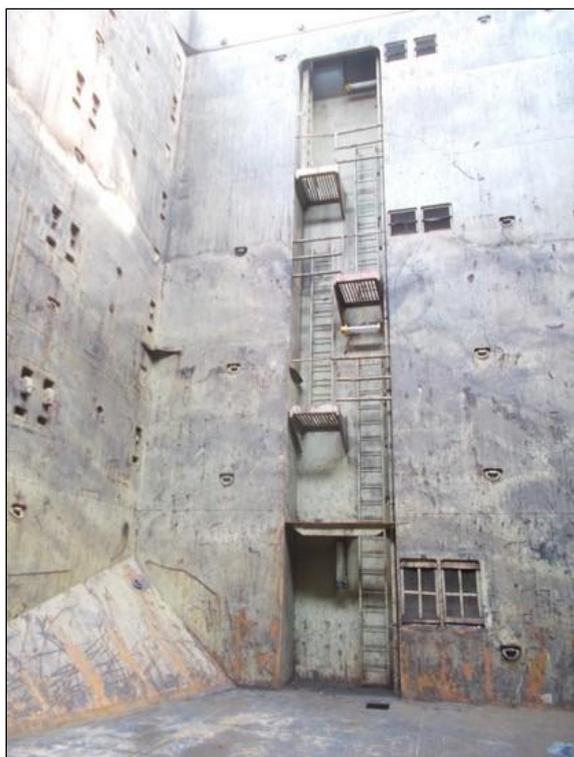


Figure 2: Access ladder to cargo hold no. 4 (starboard)

From this position on the first platform, AB-1 washed the upper parts of the cargo hold's starboard side, including the side brackets and support. As this area was about to be completed, AB-2 descended the ladder and AB-1 stepped aside to allow him to descend to the next level so that the hose could be passed to him at tank top level (Figure 2).

At about 1820, as AB-1 completed the washing of the starboard side, he turned his attention to the port side and since the hose was too short to direct the water jet towards that area, he tugged at the hose with no result. He then tugged again and this time, more length of the hose came down.

The extra length of hose fell on AB-1 and since it was charged with water and with considerable weight, it somehow managed to cause the safety railing to dislodge upwards from its position (Figure 3). This also resulted in AB-1 losing his balance and his hold on to the fire hose and consequently he

fell through the open railing. As he fell, he instinctually grabbed hold of the hose again but slipped down until he came to the end of the hose. He then lost his grip and fell on to the tank top.



Figure 3: Safety railing on first platform

AB-1 landed on both of his legs and then fell on to his back. AB-2, who had witnessed the entire accident, immediately raised the alarm. The bosun, deck fitter and another AB working in the cargo hold rushed to the injured person to assess his physical condition, and relayed the information to the bridge. The master raised the alarm and both the chief mate and second mate proceeded to the cargo hold to assess the injured person's condition and administer first aid.

At about 1830, the hatch covers were opened and the injured person was lifted out of the cargo hold, using one of the deck cranes. He was subsequently shifted to the vessel's hospital. At 1951, the master established contact with MRCC Shantou to seek assistance and at 2000, the vessel diverted to Xiamen. At about 2023, the master also sought medical assistance from Tele-Medical Advice, Gdynia.

Eventually, the vessel dropped anchor at Xiamen anchorage at 0020 on 16 February and the injured crew member was disembarked at 0150 on a boat that the vessel's agent had hired.

Injuries to the AB

The AB suffered multiple injuries including multiple pelvic fractures, thoracic and lumbar fractures, fracture of the left ankle, fracture of left calcaneus, fracture of the sternum and an anterior mediastinal hematoma, traumatic wet lung.

Following hospitalisation, he underwent a number of major and minor operations and was finally released from the hospital in China in June 2018. He was then repatriated to Poland for rehabilitation and by November 2018, he was reported to be able to walk again unaided.

Environmental conditions

At the time of the accident, the wind was from the Northeast (Force 2) and the sea was smooth. Air temperature was 17 °C and the sea temperature was recorded at 12 °C.

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, to prevent further marine casualties or incidents from occurring in the future.

Fatigue and alcohol

Evidence suggested that the crew members were well rested, having also taken frequent rest breaks throughout the day. In addition, reports did not suggest that alcohol or drugs could have contributed to the accident. Therefore, on this basis, neither fatigue nor alcohol was considered to have contributed to the accident.

Ship movements

Considering the weather conditions at the time of the accident, there were no reported movements of the ship and therefore these

were not considered as contributing factors to the accident.

Immediate cause of the accident

The safety investigation concluded that the immediate cause of the accident was the crew member's loss of balance in close proximity of an inadequate barrier system, leading to a fall from a height.

When AB-1 tugged the fire hose forcibly the second time for more slack, a length of the hose fell on him, and somehow caused the top protective railing to move upwards. As he lost his balance, he fell through the opening in the platform. There were a number of reasons why the railing failed:

- i. the locking pin that would have locked the railing and prevent it from lifting upwards was never in place from the design stage of the ship (Figure 3), although it had been reported locked¹;
- ii. the intermediate railing between the platform floor and the top railing was never in place from the design stage of the ship (Figure 4); and
- iii. an examination of the structure revealed that neither a locking pin nor an intermediate railing had been fitted since the vessel was brought into service in 2009².

It was estimated that the weight of one metre of pressurised hose was about 5.0 kgs. Therefore, even if between four and five metres of fire hose had toppled on AB-1, that would suggest a weight of between 20 kgs and 25 kgs - sufficient to either knock somebody off balance or for that person to instinctively move aside to avoid the falling weight.

¹ It would appear that the crew members interpreted the term 'locked' as being in place, rather than secured.

² This will be discussed further in the 'Analysis' part of the safety investigation report.

exercise, rather than going down the cargo hold to the tank top.

Working at a height, the crew members were not wearing a safety harness tethered to a strong point⁴. It was possible that this was due to two main reasons – the SMS did not make any reference to cleaning of the cargo hold from the platform and the work was nonetheless deemed safe enough to be undertaken from the cargo hold access platform without the need of a safety harness.

Moreover, the injured crew member was in a complex situation since they were handling a pressurised fire hose to wash the cargo hold. In the adopted position on the platform, the injured crew member had to handle the fire hose unassisted by the other crew member.

Since there was never the understanding that the cargo hold was to be washed from the platform, the weight and lack of flexibility of a charged fire hose had not been discussed during the toolbox meeting and therefore any related risks had not been identified.

CONCLUSIONS

1. The immediate cause of the accident was the crew member's loss of balance, leading to a fall from a height;
2. The injured crew member tugged the fire hose forcibly for more slack and caused it to fall on him, leading to the top protective railing being dislodged in the process. This in turn caused him to lose his balance and he fell through the opening in the platform;
3. The locking pin that should have locked the railing and prevent it from lifting upwards had never been installed since the ship was designed and built in 2009;

⁴ This was considered to be protective barrier system.

4. The control measure identified in the risk assessment was ineffective given that the cargo hold was being cleaned from the platform rather than the cargo hold's tank top;
5. The crew members were not wearing a safety harness tethered to a strong point;
6. In the adopted position on the platform, the injured crew member had to handle a charged fire hose unassisted by the other crew member;
7. The risks associated with the handling of a charged fire hose were not identified during the toolbox meeting.

SAFETY ACTIONS TAKEN DURING THE COURSE OF THE SAFETY INVESTIGATION⁵

During the course of the safety investigation, the Company took the following actions:

1. The S & Q Department, together with the Operation Department has compiled instructions to present a safe and correct way of preparation to clean / wash the cargo hold;
2. Securing pins have been installed on all removable handrails in way of the access platforms in order to ensure unintentional opening;
3. Existing instructions on working at height have been amended;
4. New and more comfortable lifelines and harnesses have been procured to replace the existing ones.

⁵ Safety actions should not create a presumption of blame and/or liability.

SHIP PARTICULARS

Vessel Name:	<i>Adam Asnyk</i>
Flag:	Malta
Classification Society:	Polski Rejestr Statkow
IMO Number:	9432115
Type:	General Cargo
Registered Owner:	Kamil Norwld Shipping Company Ltd
Managers:	Chinese-Polish Joint Stock
Construction:	Steel
Length Overall:	199.8 m
Registered Length:	189.0 m
Gross Tonnage:	24,115
Minimum Safe Manning:	15
Authorised Cargo:	In ballast

VOYAGE PARTICULARS

Port of Departure:	Zhuhai, China
Port of Arrival:	Xingang, China
Type of Voyage:	International
Cargo Information:	In ballast
Manning:	23

MARINE OCCURRENCE INFORMATION

Date and Time:	15 February 2018, 1820 hours (UTC +8)
Classification of Occurrence:	Serious Marine Casualty
Location of Occurrence:	23° 57.7' N 118° 37.4' W
Place on Board	Cargo hold
Injuries / Fatalities:	Extensive injuries to pelvis, legs and arm requiring hospitalisation
Damage / Environmental Impact:	None
Ship Operation:	In passage
Voyage Segment:	Mid-water
External & Internal Environment:	Slight seas, Northeasterly Force 2 wind
Persons on board:	23