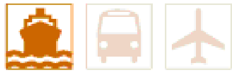

Marine Safety Investigation Unit

SAFETY INVESTIGATION REPORT

201110/009 REPORT NO.: 16/2012 September 2012

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 ARIANA
Fatality of one crew member
In position 01° 56'N 091° 01'E
06 October 2011

SUMMARY

On Friday, 07 October 2011, at around 1230 (LT), the Marine Safety Investigation Unit (MSIU) was notified that on 06 October 2011, at about 1705 (UTC), an engine-room fitter on board MV *Ariana* had fallen down a flight of steps after tripping on the boat deck stairway inside the accommodation. MSIU was also informed that the fitter had sustained serious head injuries, which eventually led to his death at about 1840 (UTC).

From the evidence gathered, it transpired that prior to the accident, the injured crew member was with several other crew members in the cabin of one of the officers, celebrating the latter's birthday. A quantity of alcohol was consumed.

Although no toxicology report was produced to MSIU following the post mortem examination, the consumption of alcohol, in addition to inappropriate footwear seemed to have been the main contributing factors to the accident.

Following the accident, a Safety Committee Meeting was held on board *Ariana,* and alcohol consumption and safe footwear were discussed among present crew members.

One recommendation has been made to the company, to ensure that its 'no alcohol' policy is effectively implemented on board.

MV *Ariana*

FACTUAL INFORMATION

Vessel, crew, and environment

Ariana, a 37955 GT bulk carrier was built in 1984 in Koyo Co. Ltd Dockyard in Mihara, Japan and was registered in Malta in 1999[1]. The vessel was owned by Candela Shipping Co. Ltd., managed by Alloceans Shipping Co. Ltd., Greece and classed by Lloyd's Register. The vessel's length overall is 228.96 m.

The vessel was regularly trading in the Far East. Before the accident, she had departed Singapore on 03 October 2011 at 2107 (LT) on a voyage to Brazil. *Ariana* had a complement of 24 crew members, all Ukrainian nationals.

The deceased, who was the only fitter on board *Ariana,* was 52 years old and an experienced seafarer. He had already served on other vessels as a fitter, an oiler, and a motorman in the past. His record of previous service with the company dated back to early 2006. Like most of the other crew members, he had joined the vessel less than a month before the accident, *i.e.* on 15 September 2011 in Zhanjiang, China.

According to his training records, the fitter had undertaken all the necessary training to satisfy the qualification requirements for his position on board and based on his current medical certificate, was of good health.

At the time of the accident, it was night time, with a westerly-south-west moderate breeze and slight seas with low southerly swell. The vessel's accommodation spaces, including the stairways were illuminated throughout by neon tubes. No unusual vessel motion was reported.

[1] At the owners' request, the vessel was cancelled from the Register of Maltese ships on 29 May 2012 after it has been sold for demolition.

The accident site

The area where the accident took place was inside the accommodation block of the vessel. The fall happened in the central stairway leading from the bridge deck to the immediate lower deck *i.e.* the boat deck.

Figure 1: The stairway leading from the bridge deck to the boat deck

The second engineer's cabin, which was the last place the deceased had been prior to the accident, was located on the bridge deck, forward of the stairway (Figure 2).

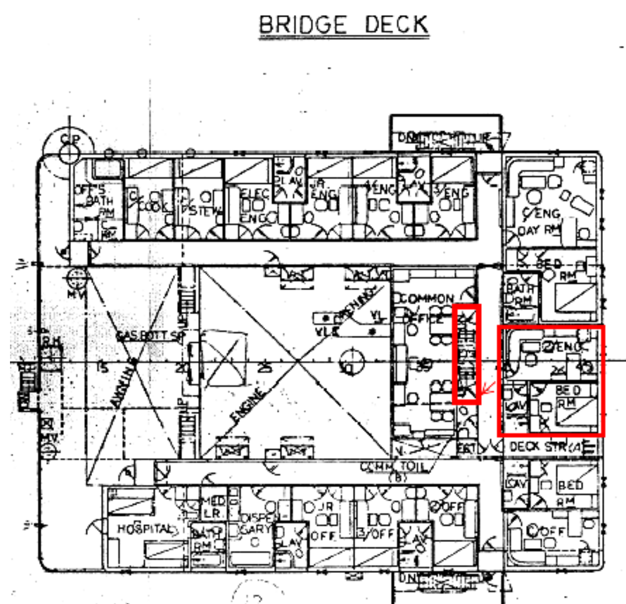

Figure 2: Location of the second engineer's cabin in relation with the stairway

The fitter's cabin was located on the boat deck's port side at the end of the corridor and forward of the stairway referred to above (Figure 3). The fitter was returning to his cabin from the

second engineer's cabin via the stairway when the accident occurred.

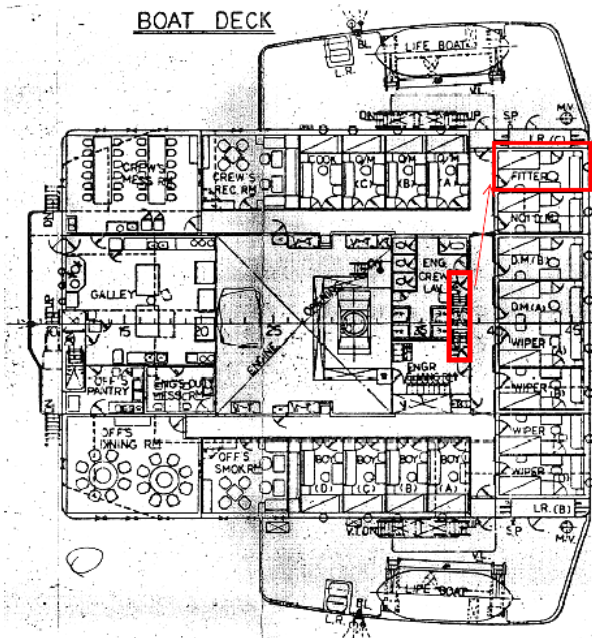

Figure 3: The fitter was returning to his cabin, located on port side of the boat deck transverse alleyway

Narrative

Several crew members had decided and agreed to celebrate the second engineer's birthday on board. A party was held on 06 October in the second engineer's cabin on the bridge deck. Evidence indicated that an unknown amount of alcohol was consumed. During the party, the fitter was in the company of the second engineer, the electrician, one of the oilers, and the welder. It seemed that the fitter was also amongst those celebrating and drinking.

At around 2305, the fitter left the second engineer's cabin, and proceeded to his cabin on the boat deck below. He was wearing a pair of slippers. At the time of the accident, one of the oilers heard the fall and upon investigating the matter, he found the fitter unconscious at the bottom of the stairway with a serious head injury on the left forehead (Figure 4).

Help was immediately summoned. The other crew members provided first aid. Medical assistance was sought by satellite phone. Notwithstanding the treatment and medications, the injured crewmember succumbed to his wounds and was declared dead at 0040 on 07 October 2011.

Figure 4: The bottom end of the stairway where the injured crew member was found

During the time of the accident, the fitter was off duty. He had gone to rest at about 1900 on 05 October 2011 and woke up at 0720 on 06 October 2011. He also had two rest periods between 1200 and 1300 on 06 October and at 1700 on the same day.

ANALYSIS

Aim

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

Alcohol consumption

The Company's Safety Management Manual, section 7.10.4.2.2.3 stipulated that no alcohol should be consumed on board. However, from the gathered evidence, it was clear that some crew members, including the deceased, consumed a quantity of alcohol during the second engineer's birthday party. It was highly

probable that this may have contributed to the accidental fall of the fitter down the stairway.

No toxicology test report was submitted for the purpose of the safety investigation[2]. Despite this, the evidence retrieved from the crew members attending the second engineer's party, indicated that the deceased did consume an unknown quantity of alcohol.

Figure 5: Party leftovers and bottles of alcohol found inside the cabin were the party had been organised

It was also stated that the fitter had left the second engineer's cabin, unaccompanied and wearing a pair of bedroom slippers, which may not have been suitable for use outside cabin spaces.

Circumstances of the fall

The last crew members to talk to the fitter prior to the accident were the oiler, the welder, and the electrician. In fact, the fitter was discovered by the oiler who was in close proximity of the area of the accident.

Nobody actually saw the deceased fall down the stairway. He was last seen a few moments before the accident in the second engineer's cabin on the bridge deck. It seemed to be the fitter's intention to return to his cabin on the boat deck, below.

There were at least twelve steps on the stairway leading from the bridge deck to the boat deck, within the superstructure. The steps were quite narrow and steep. Hand rails were fitted on either side of the stairway.

Each stair had rubber non-slip edging fitted at the edge. However, the steepness of the steps with their limited surface foot space would have necessitated extra caution under normal conditions. The steps would have been even more dangerous if the vessel was rolling or pitching. The same would apply if someone not lucid or intoxicated attempted to descend the stairs.

Effects of alcohol vary from one individual to another, depending on several physiological factors. However, alcohol is considered to impair motor co-ordination and judgment.

Figure 6: Aft section stiffeners protrude towards the stairway

[2] Managers confirmed that no toxicological tests were carried out.

It was also noticed that on the aft side of the stairway, there were a number of stiffeners. The frames protruded by several centimetres into the stairway (Figure 6).

This was considered to be a potential hazard if somebody suddenly lost footing whilst (or) before descending. It was not excluded that when the fitter fell down the stairway, he may have made physical contact with one or more of these frames, which could have caused eye and head injuries, and eventual death.

Based on the position in which the fitter was found, *i.e.* face down and at the bottom of the narrow stairway (Figure 4), it was very likely that the fitter did actually make contact with the side walls when falling down.

Moreover, the footwear worn by the fitter at the time of the accident (Figure 7) may have contributed to the fall as well.

Figure 7: Footwear worn by the fitter at the time of the accident

Safety culture on board

The International Maritime Organization has agreed amendments to the STCW Convention, effective from 01 January 2012, which will require administrations to establish limits of not greater than 0.05% blood alcohol level or 0.25 mg alcohol in the breath for masters, officers and other seafarers whilst performing designated safety, security, and marine environmental duties. The limit only applies to those vessels covered by the Convention.

A company's alcohol and drug abuse policy reflects the company's concern to ensure that all crew members will be able to respond to any emergency situation at any time. It was the master's responsibility to enforce the company's policy. Moreover, as part of their SMS, all crew members had declared that they were familiar with the company's safety and environmental protection policies.

Notwithstanding the company's Drug & Alcohol policy, a birthday party was organised on board and alcohol consumed. Based on the observations that there were empty bottles in the cabin, it would appear that the company's alcohol and drug abuse policy was not being effectively implemented on board.

A culture, which has safety as a core value, will necessitate all involved (ashore and on board) to share common values and beliefs. Collectively, these will guarantee an overriding priority to safety on board.

It is acknowledged, however, that a safety culture is not created or engineered – at least not easily. The company needs to establish (safety) goals and communicate them in a clear and strong manner to personnel ashore and on board alike. This is crucial because only clear safety goals will encourage crew members to play a role, which would help ensure that the very same (safety) goals are reached.

If safety goals are crucial, their setting and personal attributes are vital for the achievement of the safety culture within the company, including the ship. This is so because studies have shown that people are neither deterministically controlled by their environment nor entirely self-determining.

Instead, they exist in a state of reciprocal determinism with their environments whereby they and the environments influence one another in what researchers define as a perceptual dynamic interplay.

Thus, irrespective of whether one or more crew members were intoxicated, the climate on board the ship (the safety environment) did not reflect a situation where safety goals were considered to be a core value in the (safe) management of the ship. This is not necessarily to say that this was a chronic problem on board the ship. It remains, however, that there were a number of team members on board who did not contribute in the creation / maintenance of a safety culture.

This accident was considered to be a snapshot of the safety culture on board – the safety climate. As such, it was a situation where collective actions by the crew members did not promote the company's relevant safety policy. The party and availability of alcohol did not reflect a strong focus on safety.

CONCLUSIONS

1. Whilst the fitter may have simply lost his footing, the most probable cause of the accident was his slipping and falling down the steep stairway from the bridge deck to the boat deck under the influence of alcohol;
2. The fitter was seen drinking alcohol during the party by other members of the crew;
3. The bed slippers worn by the fitter may have been contributory to the fall;
4. The fitter was not accompanied to his cabin and was alone when the accident happened;
5. The stairway leading to the boat deck was very steep;
6. There were a number of stiffeners on the sides of the stairway, which in itself was quite narrow.
7. The circumstances on board at the time of the accident did not reflect a situation on board where safety goals were a core value on board.

RECOMMENDATIONS

Alloceans Shipping Co. Ltd. is recommended to:

16/2012_R1 Establish measures to implement and enforce its Alcohol and Drug Policy on board its managed ships.

SHIP PARTICULARS

Vessel Name:	*ARIANA*
Flag:	Malta
Classification Society:	Lloyd's Register
IMO Number:	8014150
Type:	Bulk Carrier
Registered Owner:	Candela Shipping Company Ltd.
Managers:	Alloceans Shipping Co. Ltd.
Construction:	Steel
Length Overall:	228.96 m
Registered Length:	218.47 m
Gross Tonnage:	37955
Minimum Safe Manning:	16
Authorised Cargo:	Dry Bulk

VOYAGE PARTICULARS

Port of Departure:	Singapore
Port of Arrival:	Sao Francisco Do Sul, Brazil
Type of Voyage:	International
Cargo Information:	Various grades of grain
Manning:	24

MARINE OCCURRENCE INFORMATION

Date and Time:	2305 on 06 October 2011
Classification of Occurrence:	Very Serious Marine Casualty
Location of occurrence:	International Seas
Place on board	Crew accommodation stairway
Injuries / fatalities:	One fatality
Damage/environmental impact:	None
Ship Operation:	On passage
Voyage Segment:	Transit
External & Internal Environment:	It was night time, with a west-south-west moderate breeze and slight seas with low swell.
Persons on board:	24