Report of investigation into the fatal accident on board the Hong Kong registered bulk carrier "*Unison Medal*" at Ilo, Peru on 9 September 2019

The Hong Kong Special Administrative Region
Marine Department
Marine Accident Investigation Section

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Purpose of Investigation

The purpose of this investigation, conducted by the Marine Accident Investigation Branch (MAIB) of Marine Department, is to determine the circumstances and the causes of the incident with the aim of enhancing the safety of life at sea and avoiding similar incidents in future.

It is not intended to apportion blame or liability towards any particular organization or individual except so far as necessary to achieve the said purpose.

The MAIB has no involvement in any prosecution or disciplinary action that may be taken by the Marine Department resulting from this incident.

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Summary

On 8 September 2019, a Hong Kong registered bulk carrier "Unison Medal" (*the vessel*) berthed at the port of Ilo, Peru for cargo loading of copper concentrate. The loading operation commenced on the same day.

In the evening of 9 September 2019, an aft spring line was caught under a tyre fender on the quay while *the vessel* was subject to rolling and swaying under the wind and swell effects. The Master attempted to use a steel pipe to pry the aft spring line when he stood on the fender.

At 2239 hours, the aft spring line suddenly jerked free due to *the vessel*'s movement by waves. The Master was hit by the aft spring line and fell into the water. A rescue team was organized immediately to recover the Master from the water. Although first aid treatment was applied to the Master, he was declared dead later that night by the paramedics arrived onboard.

The investigation revealed that the Master probably had inadequate safety awareness to consider a safe way to free the aft spring line. The investigation also identified a safety issue of not following the Safety Management System (SMS) of *the vessel* to carry out proper risk assessment and take preventive measures in handling mooring line vulnerable to break by wind and swell.

1. Description of the vessel

Ship name	:	*Unison Medal* (Figure 1)
Flag	:	Hong Kong, China
Port of registry	:	Hong Kong
IMO number	:	9687150
Type	:	Bulk carrier
Year built, shipyard	:	2015, Oshima Shipbuilding Co. Ltd. Nagasaki, Japan
Gross tonnage	:	22,476
Net tonnage	:	12,174
Summer deadweight	:	37,431 tonnes
Length overall	:	179.99 metres
Breadth	:	30 metres
Engine output, type	:	6,650 kW, MAN B&W 5S50ME
Classification society	:	Nippon Kaiji Kyokai
Registered owner	:	Franklin Shipping (HK) Company Limited
Management company	:	Unison Marine Corp

Figure 1 *The vessel*

2 Sources of evidence

2.1 The information provided by the crew and the management company of *the vessel.*

3 Outline of events

(All times were local time UTC -5 hours)

3.1 On 8 September 2019, *the vessel* berthed alongside at the port of Ilo, Peru. Cargo loading of copper concentrate in bulk commenced afterwards.

3.2 At about 2100 hours on 9 September 2019, one of the mooring ropes chafed and parted due to the surge of waves dashing *the vessel* against the quay. The Third Officer (3/O) together with a seaman replaced the broken mooring rope at 2130 hours. The seaman was then dispatched to the No.1 ship's crane to assist the Chief Officer (C/O) in renewing the wire rope of the crane.

3.3 At the same time, the changing weather and sea condition had caught the attention of the Master. He went to the forward and aft mooring stations to check the mooring ropes condition. The Master found that the mooring ropes were subjected to abrasion with the quay when *the vessel* rolled and swayed under the effects of wind and swell. To reduce further wearing out of the mooring ropes, the Master decided using obsoleted fire hoses to wrap up the mooring ropes as abrasive guards. The Master wrapped one of the mooring ropes successfully. Before the Master proceeded to work on other mooring ropes, the 3/O reported to him that the aft spring line was caught under a tyre fender of the quay.

3.4 The Master went to the quay to assess the condition of the aft spring line while the 3/O went to the aft mooring station to set free the aft spring line by operating the mooring winch. However, the aft spring line became tighter and was securely caught under the tyre fender. The 3/O came down and took a steel pipe trying to pry the aft spring line from the tyre fender but in vain. He tried to look for an alternative method to free the aft spring line.

3.5 The Master stood on the tyre fender and attempted to pry the aft spring line with the steel pipe (Figure 2), but also failed. As *the vessel* rolled

and swayed occasionally, the 3/O at the quay noticed that the aft spring line would soon be parted or jerked free from the bottom of the tyre fender. He then reminded the Master to keep a safe distance from the aft spring line. However, the Master ignored the warning and kept on standing on the tyre fender beside the quay.

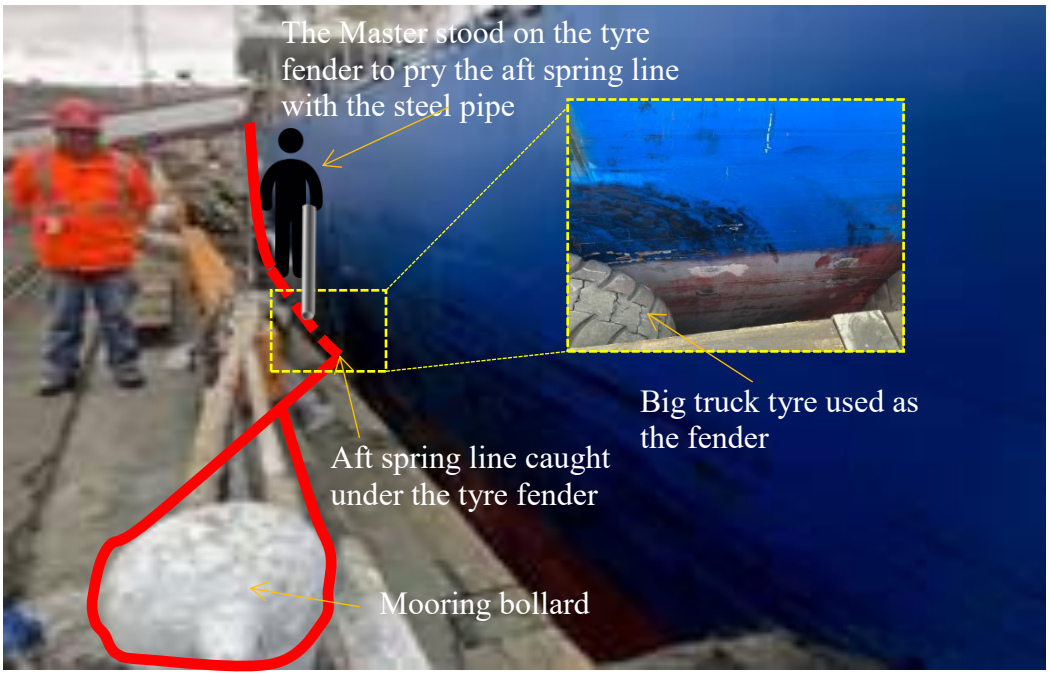

Figure 2 Reconstruction diagram showing the location of the Master.

3.6 At about 2239 hours, the aft spring line suddenly jerked free from the bottom of the fender. The neck of the Master was hit by the aft spring line, and he fell into the water from the gap between *the vessel* and the quay.

3.7 At the material time of the accident, the C/O, who finished his work on the crane, came to the quay asking the 3/O the condition of the aft spring line. Both of them noticed the Master was hit and fell into the water. The C/O immediately organized a rescue team and informed the local agent to arrange shore medical assistance. A crew together with one stevedore upon arrival at the scene jumped into the water to rescue the Master.

3.8 At about 2245 hours, the Master was recovered from the water. First

aid treatment was applied to him immediately. However, the Master was declared dead later that night by the paramedics arrived onboard.

4 Analysis

Certification, training and experience

4.1 The statutory trading certificates of *the vessel* were valid and in order. *The vessel* was manned by 22 crew members including the Master.

4.2 The Master had worked in the company for about 5 months and joined *the vessel* on 4 April 2019. He had more than 5 years' experience as master. He possessed a Class 1 Certificate of Competency issued by China valid until 27 April 2020, and held a valid Class 1 Licence (Deck Officer) issued by the Hong Kong Marine Department (HKMD) on 1 April 2019.

4.3 The 3/O had worked in the company for about 4 months and joined *the vessel* on 20 May 2019. He had about a year of experience as third officer. He possessed a Class 3 Certificate of Competency issued by China valid until 1 June 2020, and held a valid Class 3 Licence (Deck Officer) issued by HKMD on 14 September 2018.

4.4 There was no abnormality noted with regard to the certification and experience of the crew concerned.

Weather and sea condition

4.5 The weather was partly cloudy with southeasterly wind of Beaufort Wind Scale force 5 with fresh breeze, rough sea and moderate swell. *The vessel* was exposed to wind and swell without the protection of breakwater or barrier (Figure 3). Although *the vessel* was moored to the quay, she still rolled and swayed moderately resulting in the aft spring line caught under the tyre fender.

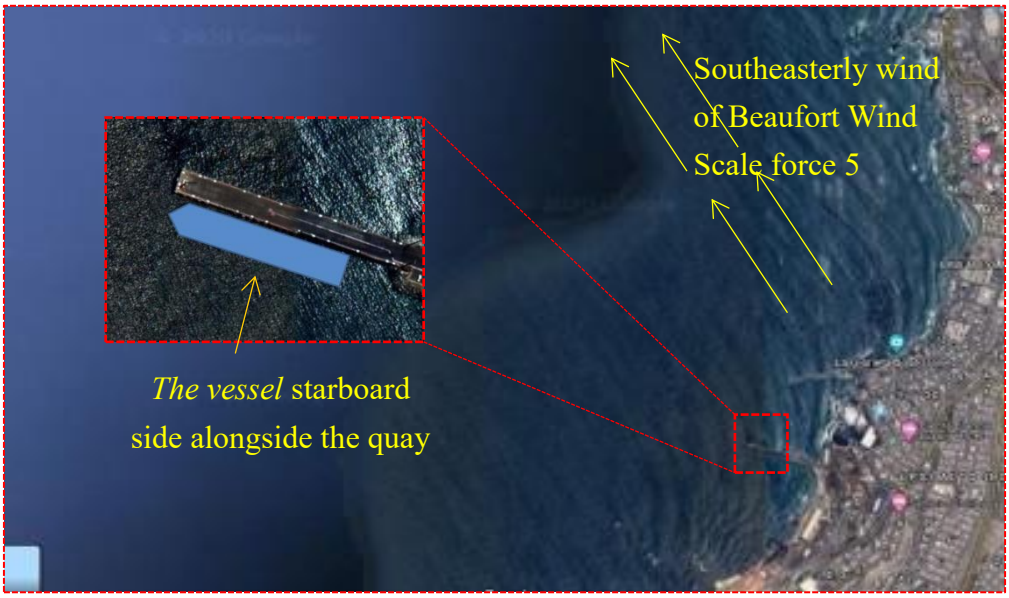

Figure 3 *The vessel* was exposed to wind and swell without the protection of breakwater or barrier.

Fatigue, alcohol and drug abuse

4.6 There was no evidence to show that any crew onboard suffered from fatigue at work, abuse of alcohol or drugs.

Cause of death

4.7 The autopsy report revealed that the cause of death of the Master was due to the multiple injuries with cerebral edema, spinal fracture and fracture of first cervical vertebra which were consistent with the accident.

Safety awareness

4.8 Paragraph 3.12.10 of Chapter 3 "Living on board" of the Code of Safe Working Practices for Merchant Seafarers (the Code)[1] states that "*Mooring and unmooring operations provide the circumstances for potentially serious accidents. Personnel should never stand in the*

[1] In accordance with Section 4 of Cap. 478M "Merchant Shipping (Seafarers) (Code of Safe Working Practices) Regulation", all Hong Kong registered vessels are required to carry the "Code of Safe working Practices for Merchant Seafarers" onboard.

bight of a rope or near a rope under tension, and they should treat ropes on drums and bollards with the utmost care."

4.9 The Code in paragraph 26.3.13 also states that "*When moorings lines are under strain, all personnel in the vicinity should remain in positions of safety ....*"

4.10 In the accident, the aft spring line was in tension. It was unsafe to pry the aft spring line with a steel pipe. Both the 3/O and the Master underestimated the whipping effect of the tensioned aft spring line when freed or parted. There was also no room for them to get a shelter when standing on the uneven tyre fender. To release the aft spring line caught by the tyre fender, the 3/O had suggested slackening the line and adjusting it from the mooring bollard onshore. But they finally did not apply standard seamanship practices and took a shortcut that put themselves into a risky situation. The situation was worse, when the Master stood on the tyre fender and the aft spring line would jerk out or part at any moment due to *the vessel*'s movement. Unfortunately, the aft spring line slipped off suddenly and hit the neck of the Master resulting in his death.

4.11 In this accident, the Master did not adhere to the Code and did not utilize standard seamanship practices to free the aft spring line by shifting the load of the aft spring line to another line in advance. It revealed that the Master probably had inadequate safety awareness to consider a safe way to free the aft spring line.

Risk assessment

4.12 The initial risk assessment (form MRP-FM04) of the shipboard SMS states that further risk assessment is required for the mooring and unmooring operation. However, there was no evidence to show that risk assessment had been carried before such operation.

4.13 The mooring of *the vessel* at the terminal without breakwater was vulnerable to the wind and swell. However, there was no evidence

to show that a risk assessment and proper preventive measures had been made when the mooring line was chafed and broken. This was indicated by the Master's arrangement of using an old fire hose to wrap the mooring line as its abrasive guard. Furthermore, there was no enhanced patrolling to closely monitor the mooring situation and timely adjust the mooring lines to avoid the mooring line broken or trapped at the fender, etc.

5 Conclusions

5.1 On 9 September 2019, a fatal accident happened onboard *the vessel* at port of Ilo, Peru while she was moored alongside an unprotected quay to load copper concentrate. The Master stood on a tyre fender intending to use a steel pipe to pry the aft spring line caught by the tyre fender. The aft spring line suddenly set itself free from the fender when *the vessel* rolled and swayed under the effects of wind and swell. The Master was hit by the spring line and fell into the water. A rescue team was organized immediately to recover the Master. Although first aid treatment was applied, the Master was declared dead later that night by the paramedics arrived onboard.

5.2 The investigation revealed that the main contributory factor to the accident was that the Master probably had inadequate safety awareness to consider a safe way to free the aft spring line with standard seamanship practices.

5.3 The investigation also identified a safety issue that *the vessel* failed to carry out proper risk assessment and take preventive measures in handling mooring line vulnerable to break by wind and swell.

6 Recommendations

6.1 The management company should issue notice/circular informing all masters, officers and crew of its fleet of the findings of the investigation and lessons learnt from this accident and instruct them to:

(i) strictly carry out risk assessment to identify the potential risks and well plan key operations with all the necessary safety precautionary measures;

(ii) follow the Code and utilize the standard seamanship practices during daily mooring operation; and

(iii) enhance the safety awareness, including the awareness of the risks and hazards associated with the mooring operation, to improve the safety culture onboard.

6.2 A Hong Kong Merchant Shipping Information Note is to be issued to promulgate the lessons learnt from this accident.

7 Submission

7.1 The draft investigation report, in its entirely, was sent to the management company for comments.

7.2 By the end of the consultation, there was no comment received from the management company.