Report of Investigation into the fatal accident on board Hong Kong registered oil tanker "*North Glory*" on 17 December 2014.

9 December 2015

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

Purpose of investigation

This incident is investigated in accordance with the Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (the Casualty Investigation Code) adopted by IMO Resolution MSC 255(84).

The purpose of this investigation conducted by the Marine Accident Investigation and Shipping Security Policy Branch (MAISSPB) of Marine Department, in pursuant to the Merchant Shipping Ordinance Cap. 281, the Merchant Shipping (Safety) Ordinance (Cap. 369), the Shipping and Port Control Ordinance (Cap. 313), or the Merchant Shipping (Local Vessels) Ordinance (Cap. 548), as appropriate, is to determine the circumstances and the causes of the incident with the aim of improving the safety of life at sea and avoiding similar incident in future.

The conclusions drawn in this report aim to identify the different factors contributing to the incident. They are not intended to apportion blame or liability towards any particular organization or individual except so far as necessary to achieve the said purpose.

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

Purpose of the investigation

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1. Summary

1.1 On 17 December 2014, the Hong Kong registered oil and chemical tanker "North Glory" (the *vessel*) encountered stormy weather while en-routing from Singapore to Changshu, Mainland China.

1.2 The second officer (the 2/O) requested the bosun to go to the forecastle deck to close a weather-tight door which was found opened by wave at sea. At about 1450 hours, when the *vessel* was in the approximate position 24° 53.5 N 122° 25.0 E, sea waves washed over the forecastle deck pushed the bosun to knock heavily against the deck fixtures. The bosun sustained serious injuries and was rescued by other crew members back to the cargo control room at the aft of the *vessel*.

1.3 The *vessel* was diverted to the nearest port in Keelung, Taiwan and the bosun was sent ashore for treatment. He was declared dead in hospital on the same day.

1.4 Investigation into the accident revealed the contributing factors as follows :

i. sea waves washing over the deck pushed the bosun to knock heavily against the deck fixtures when he was on the way to the forecastle deck for closing the weather-tight door of the bosun store;

ii. the master had not ensured that his crew followed the safety procedures regarding closing of all deck openings and weather-tight doors before sailing particularly in severe weather conditions; and

iii. the safety awareness of the 2/O and the deceased bosun was inadequate, as they had underestimated the danger of going to the forecastle deck for closing the weather-tight door while the *vessel* was sailing at rough sea.

2. Description of the vessel

2.1 Particulars of M.V. *North Glory*

Port of Registry	:	Hong Kong
IMO No.	:	9197040
Official No.	:	HK- 4040
Call Sign	:	VRNB9
Classification Society	:	American Bureau of Shipping
Type of Ship	:	Oil and Chemical Carrier
Year of Built	:	1998
Ship Manager	:	Dalian Haida International Fleet Management Co.Ltd.
Length	:	116 metres
Breadth	:	20.2 metres
Depth	:	11.2 metres
Gross Tonnage	:	7,092
Net Tonnage	:	4,062
Dead Weight	:	12,756 tonnes
Engine Power	:	4,192 kW
No. of Crew	:	22

Fig. 1 M.V. *North Glory*

2.2 ***North Glory*** is an oil and chemical tanker with twenty two cargo tanks and two cargo & slop tanks. The *vessel* was built by Asakawa Shipbuilding Japan in 1998 and was propelled by one six-cylinder Hitachi Zosen (Japan) 6S35MC marine diesel engine, capable of developing 4,192 kW of engine power. The *vessel* was owned by Hong Kong North Wind International Shipping and managed by Dalian Haida International Fleet Management Co.Ltd (the *Company*).

3. Sources of evidence

3.1 The master and crew members of the *vessel*.

3.2 Information provided by the management company of the *vessel*.

3.3 Autopsy report

4. Outline of events

(All times were local time GMT + 8 unless otherwise stated)

4.1 On the afternoon of 17 December 2014, the Hong Kong registered oil and chemical tanker *North Glory* (the *vessel*), under loading condition, was sailing from Singapore to Changshu, Mainland China. She encountered stormy weather with gale winds of force 6 to 7 on the Beaufort scale and heavy waves of about 5 metres high in position of about 40 nautical miles away from Keeling, Taiwan.

4.2 Due to poor weather, the deck crew including the bosun and two deck cadets did not need to work on deck duty in the afternoon. The second officer (2/O) and a duty seaman (OS) were on duty on the bridge.

4.3 At about 1445, the 2/O noticed from the bridge that the weather-tight door on the forecastle deck was opened (Fig.2). Seawater could have entered into the bosun store underneath the forecastle deck. So he instructed the bosun to close the door. Neither the master nor the chief officer (C/O) was informed of his instruction to the bosun.

Fig.2 The weather-tight door on the forecastle deck

4.4 At the instruction of the 2/O, the bosun put on his uniform and a safety helmet and started to go to the forecastle deck alone at about 1448. He did not inform his supervisor, i.e. the C/O, of his action.

4.5 When the bosun was on his way to the forecastle deck along the safe access (i.e. the catwalk as shown in Fig.3 and Fig.4), he had to stop several times to dodge the waves washing over the deck. The ship's course was kept unchanged while the bosun was going to the forecastle deck. At about 1450 when the *vessel* was in the approximate position 24° 53.5N 122° 25.0E, the bosun was seen trapped by waves washing over the forecastle deck and disappeared from the sight of the 2/O.

4.6 The *2/O* immediately ordered the OS to inform the C/O of the incident. At the same time, he called up all crew members through the public address system to rescue the bosun.

4.7 Shortly afterwards, the master arrived at the bridge. He immediately turned the *vessel* around to sail in downwind direction. In response to the announcement of the 2/O, a mechanic and a cadet successfully reached the forecastle deck at about 1455. They found the bosun kneeling beside the forward mast. He seemed to be suffering from a severe pain (Fig.3 & Fig.4).

4.8 A stretcher was made available to the bosun, but he insisted on walking back to the crew accommodation, with the assistance of the mechanic and the cadet. He was still conscious upon arrival at the cargo control room at the aft of the *vessel*. He complained that he was suffering a severe abdominal pain. Blood was then seen coming out from his mouth.

4.9 In order to send the bosun ashore immediately for medical treatment, the master informed the *Company* and altered the ship's course to proceed to the nearest port in Keelung, Taiwan.

4.10 The crew changed the bosun's set of wet clothing into a dry one, and put blankets on his body to keep him warm while he was lying on the floor in the cargo control room. At his request, a hot water bag was placed on his abdomen to relieve pain. He could drink water but occasionally vomited dark red blood. He requested assistance to change his lying position as he felt severe abdominal pain.

4.11 At 2025, the *vessel* arrived at the pilot station in the port of Keelung and then berthed afterward at 2054 where a rescue team from shore immediately embarked the *vessel*. However, the condition of the bosun got worst suddenly. He became unconscious and foam came out from his mouth. First aid treatment was applied to the bosun and he was sent to the hospital by an ambulance. However, he was declared dead in the hospital on the same day.

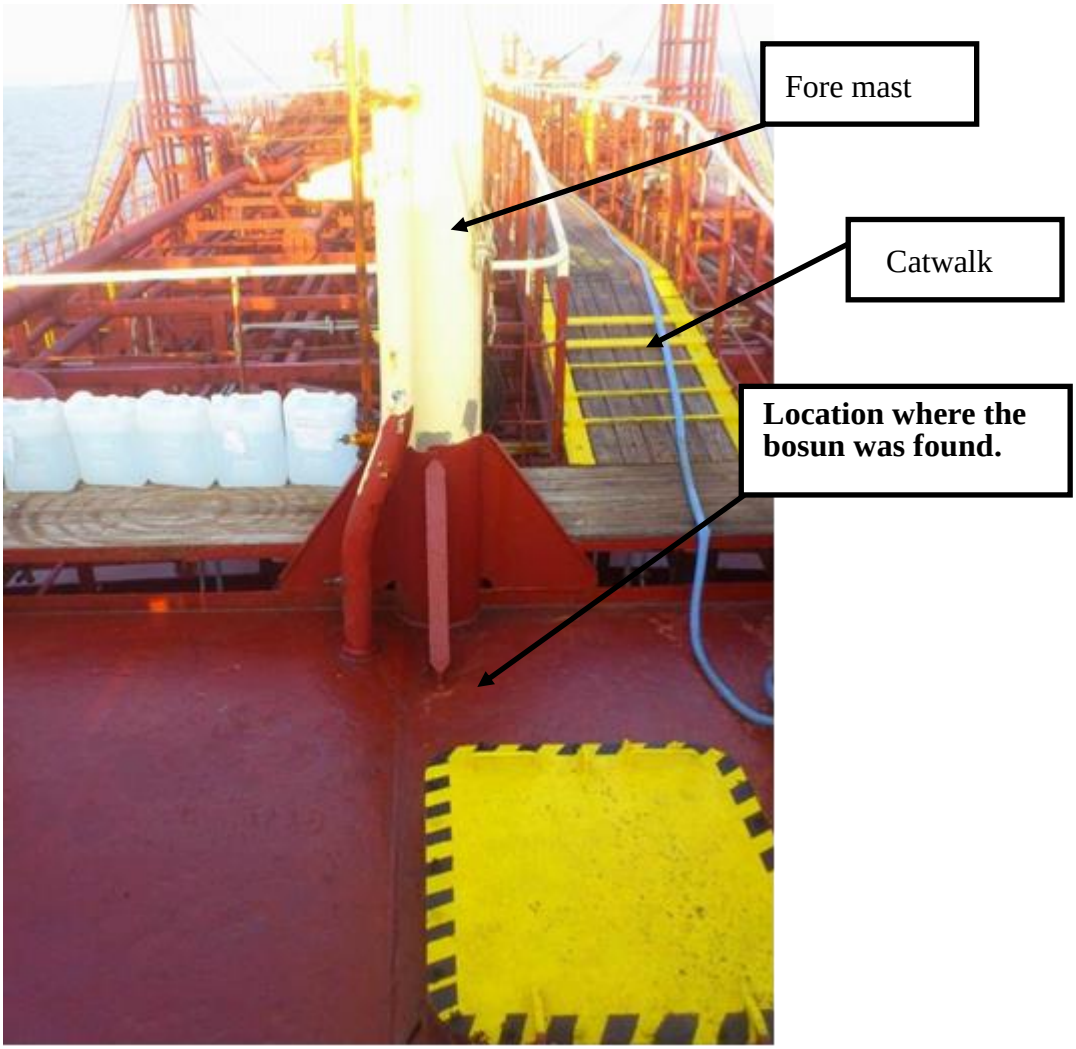

Fig.3 Location where the bosun was found

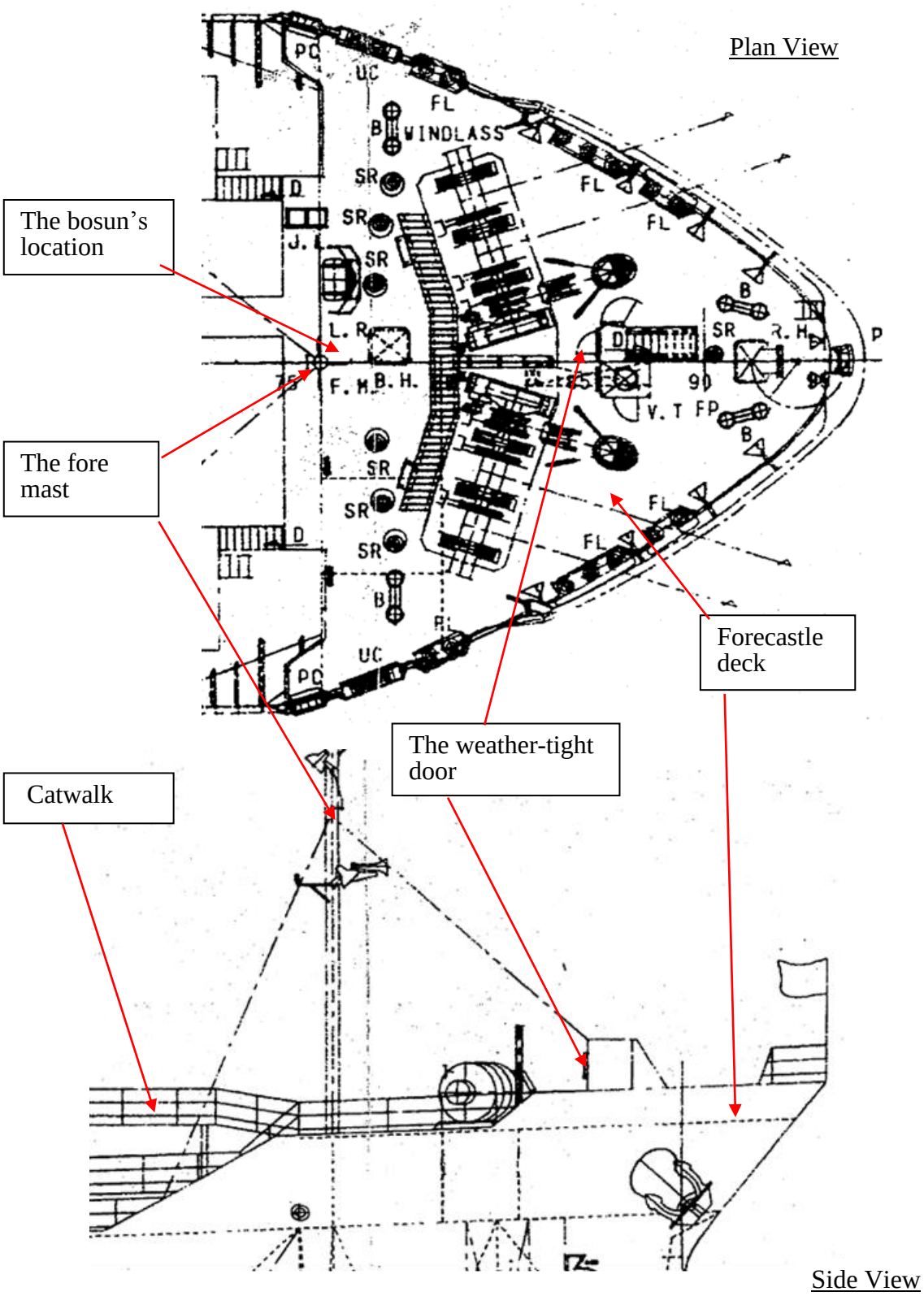

Fig.4 The Forecastle Deck, Plan View & Side View

5. Analysis

Manning of the *vessel*

5.1 The *vessel* was manned by a total of 22 crew members from Mainland, China.

5.2 The master had served as a shipmaster for a total of about 2 years. He possessed a Certificate of Competency as master on ships issued by the People's Republic of China valid until 4 September 2019, and a Class 1 License (Deck Officer) issued by the Hong Kong Marine Department on 1 December 2014. He signed on the *vessel* as a master 2 weeks before the incident.

5.3 The chief officer (*C/O*) had served as a chief officer for about 2 years. He had experience working as an internship master for about 4 months. He possessed a Certificate of Competency as master on ships issued by the People's Republic of China valid until 20 May 2019, and a Class 1 License (Deck Officer) issued by the Hong Kong Marine Department on 15 September 2014. He signed on the *vessel* as a chief officer about 4 months before the incident.

5.4 The second officer (*2/O*) had served as a second officer for about 2 years. He possessed a Certificate of Competency to work as watch-keeping officer on ships issued by the People's Republic of China valid until 10 August 2019, and a Class 3 License (Deck Officer) issued by the Hong Kong Marine Department on 15 September 2014. He signed on the *vessel* as a second officer about 4 months before the incident happened.

5.5 The bosun held a Certificate of Competency at navigation support level issued by the People's Republic of China on 23 December 2013 valid until 26 January 2030. He had had about 20 years of seagoing experience. He joined the *vessel* on 10 March 2014 as a bosun and he had had about 5 years working experience as a bosun before the incident happened.

Working hours and Alcohol Abuse

5.6 There was no evidence to show that any crew member including the deceased bosun suffered from fatigue at work.

5.7 There was no indication or evidence of alcohol abuse of the bosun.

Weather and Sea Condition

5.8 On 17 December 2014, the *vessel* encountered northeast monsoon with near gale-force wind of force about 6 to 7 on the Beaufort scale. Wave height was about 5 metres and seawater had been shipping on deck.

Shipboard safety procedures

5.9 The "Instruction for Ship's Handling in Rough Sea" in the shipboard Safety Management Manual (SMM) provided detailed instructions on the handling of severe weather conditions encountered by the *vessel* during voyage. The crew had to, inter alia, verify the proper closure of all deck openings and weather-tight doors, including the weather-tight door on the forecastle deck. Three days before the accident (i.e. on 14 December 2014), a storm forecast warning had already been received by the master through the radio. The crew on board should have had sufficient time to check thoroughly all deck openings and weather-tight doors. Had the weather-tight door been checked and secured properly beforehand, it would not have been pushed open by heavy waves and hence the risk of fatalities of crew members resulting from attending to close the said door would have been avoided.

5.10 The 2/O found out that the weather-tight door on the forecastle deck was opened. There was a danger of seawater entering into the forward compartment that might affect the ship's stability. However, he did not immediately explain the situation to the master of the *vessel*. Instead, he instructed the bosun to go to the forecastle deck to close the weather-tight door. The 2/O did not strictly follow the relevant requirements stipulated in the Seafarers' Training, Certification and Watchkeeping (STCW) Convention and Code[1].

5.11 In the SMM regarding "Emergency Responding On board", it is stated that when an emergency occurs on board, alarm should be sounded immediately and the master should coordinate all crew members for rescue. In this incident, when the 2/O could not see the bosun in the forecastle deck, he immediately ordered the OS1 to inform the chief officer, instead of the master, of the incident. At the same time, he called up all crew members, through the public address system, to rescue the bosun. The master came to the bridge, probably after hearing the broadcast by the 2/O, and took over the command of the *vessel* and the emergency situation. However, some crew members had already gone to the forward to rescue the bosun. Therefore, the rescue operation was not executed in a coordinated manner according to the established procedures.

5.12 In the SMM, it is stated that all medical treatment should be carried out according to the "Ship Captain's Medical Guide" and its supplements. Accordingly, "Radio Medical Advice" is recommended for dealing with serious wounds such as internal bleeding and abdominal wounds. However, the master did not seek such medical advice. It may have contributed to the bosun's not receiving proper first aid treatment

[1] According to the (STCW Code) Section A-VIII/2 paragraph 40, *"the officer in charge of the navigational watch shall notify the master immediately - in heavy weather, if in any doubt about the possibility of weather damage; and in any other emergency or if in any doubt."*

in good time while the *vessel* was diverting to the nearest port for the rescue.

Safety awareness

5.13 The bosun was asked by the 2/O to close the weather-tight door located on the forecastle deck. Despite facing stormy weather, he accepted the order without informing or seeking any safety advice from his supervisor (i.e. the C/O). He put on his uniform and a safety helmet before going out to the forecastle deck alone. It appeared that the 2/O and the bosun had under-estimated the risks of going out to the open deck while the *vessel* was sailing in a rough sea condition. The job to just close a weather-tight door might sound trivial, but it would be dangerous if the associated risks according to the prevailing circumstances were not taken into account, such as the heavy weather condition in this incident.

5.14 When crew members heard the broadcast made by the 2/O, some of them went to the forecastle deck to rescue the bosun. It was a brave act, but with the benefit of hindsight, they were fortunate in not encountering heavy waves washing over the deck in the course of their action.

The autopsy report

5.15 The autopsy report revealed that the death of the bosun was due to injury of abdominal organs and contusion of chest wall. Multiple bruises were found on the skull, the face and the neck.

5.16 Considering the findings of the autopsy report, it was likely that the bosun had been pushed by waves to knock heavily against fixtures on the forecastle deck.

6. Conclusion

6.1 On 17 December 2014, the Hong Kong registered oil and chemical tanker encountered stormy weather while en-routing from Singapore to Changshu, Mainland China.

6.2 The second officer (the 2/O) requested the bosun to go to the forecastle deck to close a weather-tight door which was found opened by wave at sea. At about 1450 hours, when the *vessel* was in the approximate position 24° 53.5 N 122° 25.0 E, sea waves washed over the forecastle deck pushed the bosun to knock heavily against deck fixtures. The bosun sustained serious injuries and was rescued by other crew members back to the cargo control room at the aft of the *vessel*.

6.3 The *vessel* was diverted to the nearest port in Keelung, Taiwan and the bosun was sent ashore for treatment. He was declared dead in hospital on the same day.

6.4 Investigation into the accident revealed the contributing factors as follows:

i. sea waves washing over the deck pushed the bosun to knock heavily against the deck fixtures when he was on the way to the forecastle deck for closing the weather-tight door of the bosun store;
ii. the master had not ensured that his crew followed the safety procedures regarding closing of all deck openings and weather-tight doors before sailing particularly in severe weather conditions; and
iii. the safety awareness of the 2/O and the deceased bosun was inadequate, as they had under-estimated the danger of going to the forecastle deck for closing the weather-tight door while the *vessel* was sailing at rough sea.

6.5 The investigation also revealed the following safety factors:

i. the rescue operation was not executed in a coordinated manner according to the established safety procedures. Crew members rushed to the forecastle deck upon hearing the broadcast by the 2/O instead of under the command of the master as per the shipboard safety procedures; and
ii. the master did not seek radio medical advice, as per the shipboard safety procedures, which might have made the bosun unable to receive proper and timely first aid treatment while the *vessel* was diverting to the nearest port for rescue.

7. Recommendation

7.1 The shipowners and ship management company of the *vessel* should issue safety circular to inform all masters, officers and crew on board the *vessel* of the findings of and lessons learnt from this accident.

7.2 The shipowners, the ship management company and masters of the *vessel* should take appropriate measures to enhance the safety awareness of its crew members; and to ensure that the relevant shipboard safety procedures for dealing with similar situations are strictly followed.

7.3 A Merchant Shipping Information Note (MSIN) should be issued to promulgate the lessons learnt from this accident.

8 Submission

8.1 In the event that the conduct of any person or organization is commented in an accident investigation report, it is the policy of the Marine Department to send a copy of the draft report, either in part or in its entirety, to that person or organization for their comments.

8.2 The draft report was sent to the following parties for their comments:

a) the shipowner, ship management company and master of the *vessel*; and

b) the Ship Safety Branch of the Marine Department.

By the end of the consultation, there was no feedback from all the above recipients.