Report of investigation into the death of the fitter and injury to the chief engineer onboard the Hong Kong registered bulk carrier "*Liberty Prrudencia*" at Taiwan Strait on 20 February 2014

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

15 April 2015

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 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.

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1 Summary

1.1. On 7 February 2014, the Hong Kong registered bulk carrier *Liberty Prrudencia* (*the vessel*) departed the port of Paradip, India after loading iron ore fines and bound for the port of Huanghua, China. The vessel was equipped with four cranes each with a grab. The grabs were normally stowed and secured on the pedestals on deck between the cargo hatch covers. The arrangement was such that the No.1 crane must be used to stow the No.1 grab on the designated pedestal and so on.

1.2. The steel wire (luffing and running wire) of No.1 crane was to be renewed in the loading port. The No.1 grab had been moved and secured by belts and chain blocks on the main deck near the No. 5 cargo hold on the starboard side. Owing to delay of new running wire delivery to the vessel at the loading port, the work on No.1 crane could not be completed before departure. The No.1 grab remained in the aforementioned position during sailing. The new wire was received at Singapore during bunkering and it was fitted to the No.1 crane on 13 February 2014 while the vessel was sailing at sea. However, due to poor weather, the grab could not be lifted by No.1 crane at sea.

1.3. On the evening of 20 February 2014, when the vessel was at the Taiwan Strait, the wind was Northeast with force 8 to 9 on Beaufort wind scale and wave height was about 4.5 meters. The lashing of the No.1 grab was loosened and the grab shifted away from the stowage position. In order to avoid damage to the grab and the vessel, crewmembers including an engine fitter and the chief engineer were called to put on extra lashing on the grab.

1.4. At about 1945 while the crewmembers were lashing the grab, sea wave suddenly washed on deck and the grab was pushed backward by the water to the accommodation. The engine fitter was trapped in between the grab and ship structure resulting to his death. The chief engineer was pushed by the sea water rushed on deck and bumped himself towards the aft gangway, he sustained injuries on his face and leg.

1.5. The investigation into the accident revealed the following contributing factors:

a) Before sailing the grab had neither been stowed at the designed pedestal nor secured properly on deck with appropriate arrangement; and

b) Comprehensive risk assessment was not carried out in association with the emergency operation, i.e. to secure the loosen heavy grab on deck in darkness and under heavy weather condition.

2 Description of the vessel “Liberty Prrudencia”

Flag :	Hong Kong, China
Port of Registry :	Hong Kong
IMO No. :	9250141
Call Sign :	VRHP4
Type :	Bulk Carrier
Keel Laid Year :	2002
Gross Tonnage :	30,374
Deadweight :	52,192
Length Overall :	191.56 m
Moulded Breadth :	32.26 m
Classification Society :	Det Norske Veritas
Shipbuilder :	Hyundai Mipo Dockyard Co., Ltd. Ulsan, Korea
Registered Owner :	Paramounta Liberty Shipping (HK) Ltd
Management Company :	The Liberty Marine Syndicate Pvt Ltd

2.1 The vessel has five cargo holds, located forward of the accommodation, which is serviced by four cargo cranes with grabs for handling bulk cargo.

3 Sources of evidence

3.1 Information from the management company of *Liberty Prrudencia*.

4 Outline of events

4.1 On 7 February 2014, the Hong Kong registered bulk carrier *Liberty Prrudencia* (*the vessel*) departed her loading port, Paradip, India and bound for port of Huanghua, China.

4.2 While the vessel was loading iron ore fines at the port, the steel wire (luffing and running wire) of No.1 crane was to be renewed. Before the work started, the No.1 grab had been moved and secured by belts and chain blocks on the main deck near the No. 5 cargo hold on the starboard side from its normal stowage position on the pedestal located between the No.1 and No. 2 cargo hatch on the port side (Figure 1).

4.3 After the steel wire of the crane had been removed, the vessel was informed that the new running wire for the crane, which should had been received by the vessel on 2 February 2014, could not be delivered on board before departure of the vessel. The steel wire could only be delivered in Singapore where the vessel would also receive fuel oil.

4.4 Since the No.1 grab could only be put back into its pedestal by means of the No. 1 crane, under such circumstance, it could not be shifted back and secured to its pedestal before sailing. Risk assessment regarding any possible movement of the No.1 grab while sailing at sea was not carried out by the master of the vessel.

Figure 1- the grabs were stored normally at the designed pedestal

4.5 On 13 February 2014, the vessel arrived in Singapore and the new wire was received. The crew started to put the wire back on the No.1 crane and the job was completed in two days while the vessel was sailing. However, due to deteriorating

weather, which was not permitted for lifting, the No.1 grab remained in the same position.

4.6 The weather forecast indicated that the weather would get worse in the next few days. On 16 February 2014, the lashing of the grab was inspected and extra lashing added. On 18 February2014, one additional lashing to the grab was applied again.

4.7 On the evening of 20 February 2014 when the vessel was at the Taiwan Strait, the chief officer was on duty with a deck rating on the bridge. They heard some noise and found that it was caused by the skidding of the No.1 grab on deck and they noticed that the lashing was loosened. The grab had already skidded aft about five to six meters. The master was informed and it was decided that more lashing to the grab be put to avoid moving and causing damage to the ship. The deck crew, together with the engine fitter and the chief engineer, were mustered to handle the emergency situation.

4.8 The chief officer was in charge of the work. At that time, the grab was about three meters forward of the crew accommodation. The chief engineer was the last one that arrived at the site. He saw the chief officer arranging the lashing and was just about to tie the belt. In less than a minute, at about 1915 local time (UTC + 8), one Able-Bodied seaman (AB) standing just in front of the grab noticed an unexpected heavy wave shipping on deck. The AB alerted all crew immediately. At that moment, the engine fitter was standing right aft of the grab while the chief engineer was at a short distance (inboard) on the left side of the engine fitter.

4.9 The chief officer pulled the ordinary seaman beside him and they hid under the hatch coaming. Other crew members who were standing on the left side (inboard) of the grab also took their shelter under the hatch coaming. After the wave had subdued, the chief officer immediately conducted head-count to check whether any crewmember had fallen overboard. It was found that the engine fitter was missing. The crewmembers observed that the grab had moved further backwards towards the crew accommodation and by that time, they found the engine fitter was trapped between the grab and the ship structure (Figures 2 and 3). He was unconscious. The chief engineer was also pushed by wave, hit the aft gangway and sustained injuries to his face and leg.

4.10 At the time of the accident, the wind was Northeasterly with force 8 to 9 on Beaufort wind scale and wave at sea was about 4.5 meters.

4.11 The master was called immediately and attended the scene. Crewmembers were mustered. Chain blocks were used to move the grab. Finally, the engine fitter

was released and sent to ship's hospital for treatment. Nonetheless he was certified dead by the master of the vessel at about 2005 on the same day. The dead body had been kept in the freezer until the vessel arrived at the Huanghua, China.

4.12

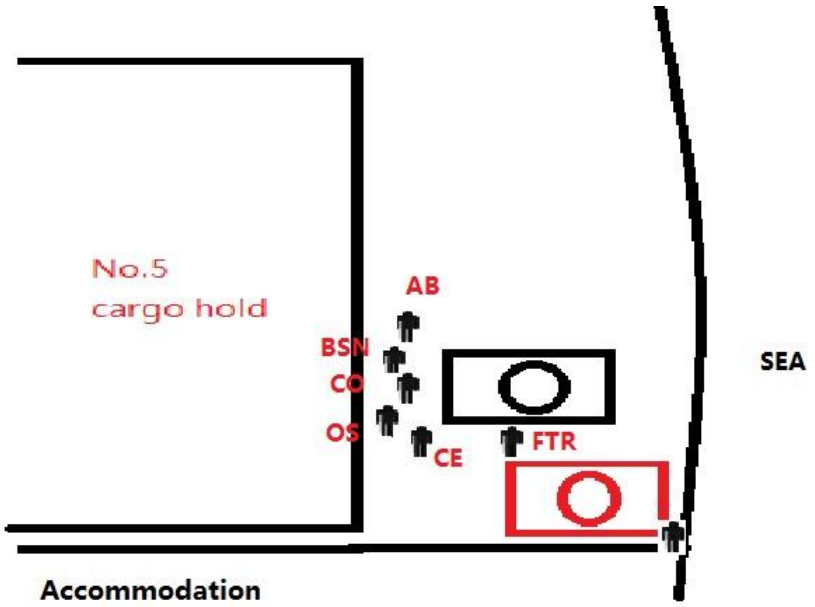

Figure 2- sketch of the working site of securing the grab (the grab moved from the black square to the red square and the engine fitter got trapped)

Figure 3- after the accident, the grab was temporarily secured at the accident site

5 Analysis

Certification and Experience

5.1 The master began his seagoing career in 1982 and was qualified as a master of ship in 2001. He held a valid certificate of competency as a master of vessel over 500 gross tonnage or more. He joined *the vessel* on 26 October 2013.

5.2 The chief officer had about 15 years of seagoing experience. He was newly promoted to chief officer in 2013 and joined *the vessel* on 16 December 2013.

5.3 The deceased engine fitter had served on board ships as an engine fitter since 1999. He joined *the vessel* on 2 December 2013. His medical certificate showed that he was fit for duty on board ship.

The stowage of the grabs onboard

5.4 According to the ship design, the vessel had five cargo holds and four cranes, each was provided with a steel grab. The grabs were stowed in the pedestals located on cross decks on the port side of the cargo holds. The arrangement was such that the No.1 crane must be used to stow the No.1 grab on its pedestal and so on.

5.5 According to the company, the luffing and running wire for No.1 crane was planned for renewal in the port of Paradip, India. Before the work started, the No.1 grab had been moved and secured by belts and chain blocks on the main deck near the No. 5 cargo hold on the starboard side. The new running wire was scheduled to be delivered to the vessel in the port of Paradip, India on 2 February 2014 but the supplier could not make it on time and not even before ship's departure. As such, upon departure of the vessel from the port of Paradip, India on 7 February 2014, the work on the No.1 crane had not yet been completed. Therefore, the No.1 grab remained stowing on deck.

5.6 Later on, the new running wire was received by the vessel on 13 February 2014 in Singapore. The wire was put back the No.1 crane and the job was completed in two days during ship sailing. However, due to poor weather, the No.1 grab could not be lifted at sea and hence was not placed back on its pedestal.

Risk assessments

5.7 Adverse weather was predictable during the voyage as it was typical in the China Sea during that season. According to the company's procedure, the ship's cranes should not normally be used at sea unless the weather is good. Therefore, once the vessel departed from the port of Paradip, India and then later on from the Singapore, there was little chance for the crew to use ship cranes to lift and shift the No.1 grab back to

its designated pedestal during the voyage.

5.8 The grab was secured on deck by belts and chain blocks, without addition frame structure welded on deck, before departure from the port of Paradip, India. It was evident that risk assessment associated with the decision to place a heavy machinery component on deck during a voyage anticipated with adverse weather condition had not been carried out comprehensively.

5.9 After the steel wire replacement work of the No.1 crane had been completed on 15 February 2014 (i.e. two days after departed Singapore on 13 February 2014), due to poor weather, the No.1 grab remained in the same position. Additional lashings were applied to the grab on 16 and 18 February 2014 in view of the worsening weather condition during the voyage. However, there was no evidence that the situation had been fully appraised.

5.10 Before the accident happened on the evening of 20 February 2014, the crew were mustered to handle the emergency situation (i.e. to avoid the grab move on deck and damage ship structure) while the vessel was sailing in the Taiwan Strait under adverse weather condition with Northeasterly wind force 8 to 9 on Beaufort wind scale and wave at sea about 4.5 meters. Under such circumstance, it was very dangerous for the crew to come close to the grab for adding lashing. There was no evidence that risk assessment associated with the operation (i.e. to work on deck in darkness and under heavy weather condition) had been carried out comprehensively. Possible measures would be to alter ship course for a calmer or sheltered waters before the operation; to turn the vessel leeway over the starboard side for better protection of the crew from wind and wave during operation, etc.

6 Conclusions

6.1 On 7 February 2014, the Hong Kong registered bulk carrier *Liberty Prrudencia* (*the vessel*) departed the port of Paradip, India after loading iron ore fines and bound for the port of Huanghua, China. The vessel was equipped with four cranes each with a grab. The grabs were normally stowed and secured on the pedestals on deck between the cargo hatch covers. The arrangement was such that the No.1 crane must be used to stow the No.1 grab on the designated pedestal and so on.

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6.5 Investigation into the accident revealed the following contributing factors:-

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7. Recommendations

7.1 A copy of the report should be sent to the master and the management company of the vessel drawing their attention of the findings of this incident and the lessons learnt. The management company of the vessel should provide guidelines or instructions to the vessel addressing at least of the followings:

a) The cargo grabs on board should be stowed in the designated stowage position at all time before sailing. If the grabs or other heavy objects are to be secured on deck or on board, they must be properly secured with appropriate arrangement; and

b) In dealing with unexpected emergency situations, the master must carry out comprehensive risk assessment and take all possible measures to minimize the risks to crew and the vessel.

The management company of the vessel should inform the Marine Accident Investigation Section of Marine Department, Hong Kong regarding the actions taken in accordance with the findings of this accident investigation.

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 in part or in entirety to that person or organization for their comments.

8.2 The draft report has been sent to:

the management company and the master of *Liberty Prrudencia* for comment, no submission was received from them.