Report of investigation into the fatal accident of a stevedore on board the container vessel *"NYK Orpheus"* at Berth No.7 of Kwai Chung Container Terminals, Hong Kong on 14 June 2014

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

28 July 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 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 incidents 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 14 June 2014, the Japan registered container ship *NYK Orpheus* moored alongside berth No.7 of Kwai Chung Container Terminals, Hong Kong. At about 0800 on 14 June 2014, the works supervisor and stevedores boarded the vessel for container cargo handling works.

1.2. At about 1035, a stevedore, who was alone walking on top of the hatch cover in the vicinity of its edge port side near bay No.7, fell backward down from a height of about 2 metres onto the deck passage. Nobody witnessed the incident. He was only seen lying on the deck passage by a crane operator at about 1050.

1.3. Later on, other stevedores on board the vessel arrived at the scene for assistance. At about 1115, the injured was conveyed to the hospital. He was certified dead on 18 June 2014.

1.4. The investigation revealed that the main contributing factors to the accident were that the deceased stevedore:

a) tripped and lost his balance while walking in the vicinity of the edge of the hatch cover rendered him sustaining fatal injuries at the back of his head after falling down backward from a height of about 2 metres onto the deck passage; and

b) worked alone, lost valuable time for receiving immediate medical treatment as nobody saw him falling at the material time.

2 Description of the vessel(s)

2.1 Particulars of *NYK Orpheus*

Port of Registry :	Tokyo
IMO No. :	9313008
Type of Vessel :	Container Vessel
Year of Built :	2008
Built At :	IHI Marine United Inc.
Owners :	Eurydice Maritima Ltd., Tokyo, Japan SMFL Demeter Co., Ltd., Tokyo, Japan
Length :	336 metres
Breadth :	45.80 metres
Depth :	24.2 metres
Gross Tonnage :	99543
Net Tonnage :	35697
Engine Power :	65210 kW
No. of Crew :	23

Fig 1 ***NYK Orpheus***

3 Sources of evidence

3.1. Two stevedores of the Everbest Port Services Limited;

3.2. The stevedore supervisor of the Everbest Port Services Limited;

3.3. Supervisor in charge of the Everbest Port Services Limited;

3.4. Container handling crane operator of the HK International Terminals Ltd.;

3.5. Weather report from the Hong Kong Observatory;

3.6. CCTV footage provided by the HK International Terminals; and

3.7. Autopsy report of the Deceased.

4 Outline of events

(All times are local time (UTC +8))

4.1 On 14 June 2014, the Japan registered container ship *NYK Orpheus* (the *vessel*) moored alongside berth No.7 of Kwai Chung Container Terminals, Hong Kong.

4.2 At about 0800 on 14 June 2014, four groups of stevedores, led by a works supervisor, boarded the *vessel* for container cargo handling works. Each group consisted of four stevedores, two of them responsible for removing containers lashings while the other two responsible for recording details of containers and communicating with crane operator respectively. The groups were assigned to work at different locations (bays) on board.

4.3 At about 1000, a crane operator, who worked with the group of stevedore at the forward of the *vessel*, operated the shore crane to discharge containers from inside the cargo hold. As containers stowed inside cargo hold were bounded by cell guides, it was no need for the stevedores to remove any container lashings.

4.4 As such, three of the four stevedores in the group were taking a rest while the fourth stevedore (hereafter called Stevedore A) worked alone on deck recording details of containers. At about 1030 (based on CCTV footage as there was no eye witness), Stevedore A was walking on top and in the vicinity of the port side edge of hatch cover near bay No.7. At about 1035, he fell down from the top of the hatch cover. Nobody saw him falling down.

4.5 At about 1050, the crane operator using the shore crane lifted and suspended a container over the wharf while waiting for a truck to arrive for receiving the container. Inside the control cabin, the crane operator saw a person (Stevedore A) lying on the deck passage in the vicinity of bay No.7.

4.6 The crane operator used walkie-talkie to communicate with Stevedore A. At first, Stevedore A was seen by the crane operator capable to raise his hand but he could not answer the crane operator through walkie-talkie. The crane operator immediately informed the person in charge of the wharf.

4.7 The works supervisor of the stevedores was informed of the situation through walkie-talkie. He asked other stevedores to go for checking. At the scene, Stevedore A was found lying unconsciously with his face up on the deck passage. The works supervisor was reported of the accident and he immediately informed the police.

4.8 Stevedore A was seen vomiting. His forearm and eyeballs were swollen with blood coming out from the eyes. The posture of his body lying on the deck was - head pointed to the wharf and slightly to the aft of the *vessel*; feet pointed to bay No.7 and slightly to the fore of the *vessel* (Fig. 3). His helmet was seen located at the left side of his head. His safety shoes and reflective vest were on his body.

4.9 At about 1115, an ambulance arrived at the scene and took the Stevedore A to hospital for treatment. He was certified dead in the hospital on 18 June 2014.

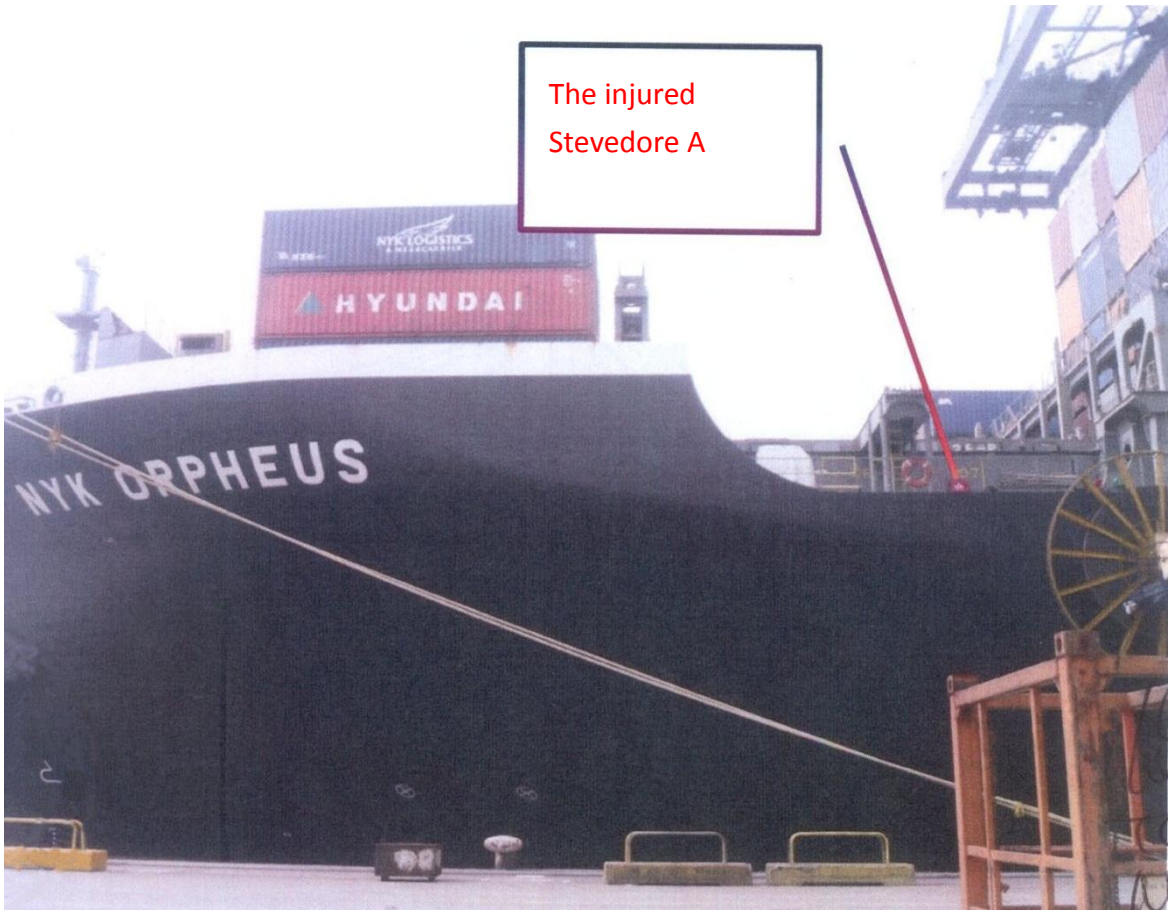

Fig. 2 - The location of the injured Stevedore A

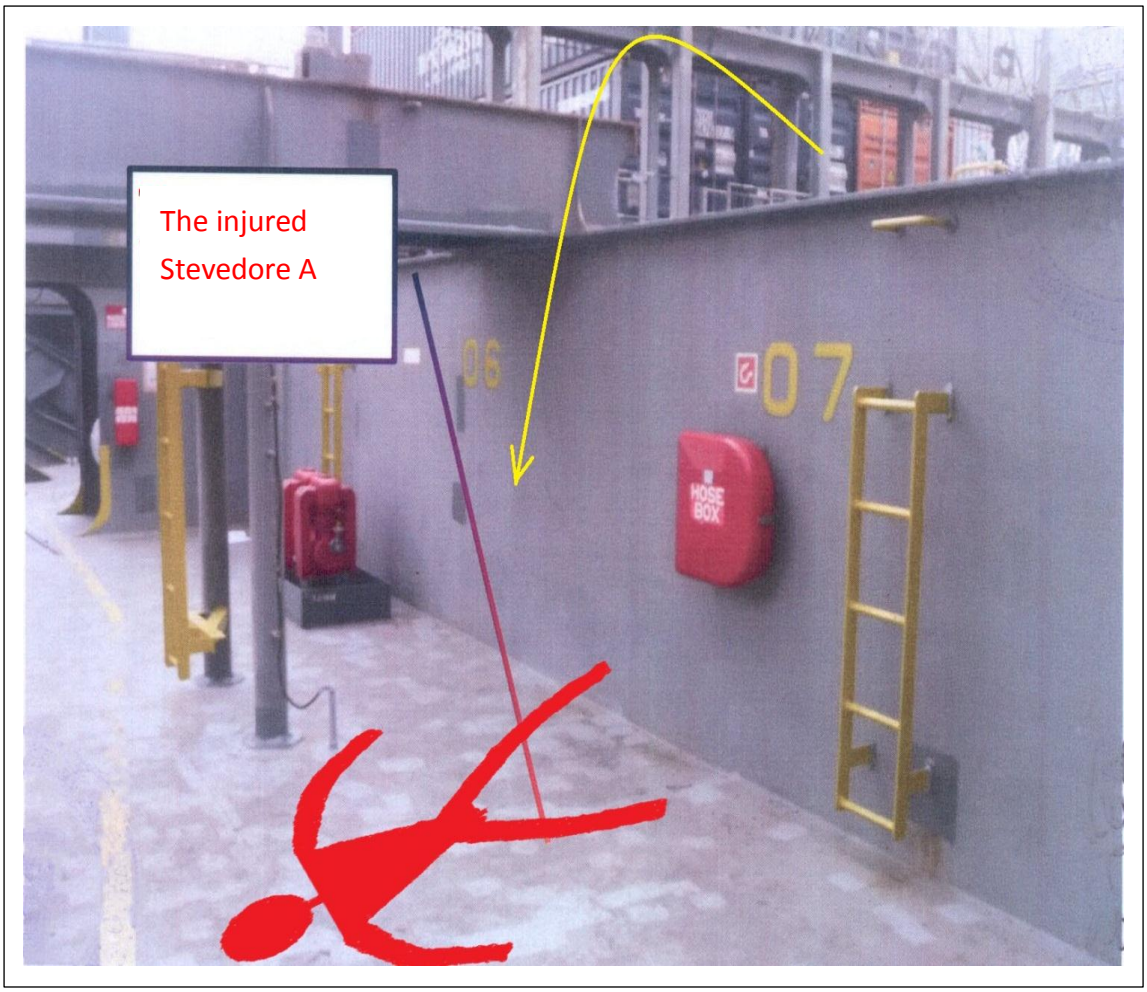

Fig. 3 - Stevedore A fell down from hatch cover onto the deck passage

5 Analysis

5.1 Working experience & training

5.1.1. The works supervisor had about 23 years of shipboard cargo handling works experience and had worked for the current company (the Everbest Port Services Limited) for about 8 years as a foreman. He held a valid Certificate of Training on Works Supervisor Safety Training Course (Shipboard Cargo Handling) issued on 9 May 2001 and a Certificate of Training on Shipboard Cargo Handling Basic Safety Training Course of validity until 16 June 2016. He was certified to work as a works supervisor on board ships for carrying out cargo handling works in Hong Kong.

5.1.2. The Stevedore A had 30 years of shipboard cargo handling works experience. He had worked for the Everbest Port Services Limited for about 20 years. He held a Certificate of Training on Shipboard Cargo Handling Basic Safety Training Course of validity until 31 October 2015. He was certified to work on board ships for carrying out shipboard cargo handling works in Hong Kong.

5.2 Working hours, alcohol and drug

5.2.1. The shift pattern of stevedores was 24-hour work starting at 0800 on a day and taking a 24-hour rest afterwards. The Stevedore A started working at 0800 on 14 June 2014 after a day off. The accident happened at about 1035 (i.e about 2-1/2 hours of work). Stevedore A should not have suffered from fatigue at work.

5.2.2. There was no evidence to show that Stevedore A was under the influence of alcohol and/or drugs at the time of the accident.

5.3 Personal protective equipment

5.3.1. The Stevedore A worn safety helmet, safety shoes and reflective vest. After the accident, it was found that his safety helmet had fallen off. It appears that the safety helmet could not protect him from head injury (see paragraph 5.5.1).

5.4 The weather conditions

5.4.1. At the time of the accident, the temperature was about 32^{o}C and the relative humidity was at about 45%. There was light wind blowing and the water in the terminal basin was calm.

5.4.2. The vessel was moored alongside berth in the container terminal, the effect of wind and wave motion at the material time should not contribute to the accident.

5.5 Autopsy report of the Deceased

5.5.1. The autopsy showed that comminuted fractures at left and right temporal and parietal bones, cerebral edema were noted, contusions were noted in bilateral frontal and temporal lobes.

The causes of death appears to be:

(a) traumatic intracranial hemorrhage;

(b) cerebral contusion; and

(c) head injury.

5.6 Possible cause of the accident

5.6.1. There was no witness to the accident. The CCTV footage provided by the container terminals, albeit of pictures not so clear displayed, revealed that Stevedore A had fallen down from the hatch cover onto the deck passage.

5.6.2. Stevedore A was seen lying unconsciously with his face up on the deck passage. The body posture suggested he fell backward from the hatch cover onto the deck passage.

5.6.3. Stevedore A had worn safety helmet. However, it appears that the safety helmet could not protect him from head injury.

5.6.4. It was highly probable that, at 1035 on 14 June 2014, Stevedore A tripped and lost his balance while walking in the vicinity of the edge of the hatch cover thus causing him falling down backward from a height of about 2 metres onto the deck passage. He sustained fatal head injuries at the back of his head.

5.6.5. As he was working alone, the accident was only discovered at 1050 and he was sent to hospital at 1115. A loss of valuable time for immediate medical treatment could have contributed to his death.

6 Conclusions

6.1 On 14 June 2014, the Japan registered container ship *NYK Orpheus* moored alongside berth No.7 of Kwai Chung Container Terminals, Hong Kong. At about 0800 on 14 June 2014, the works supervisor and stevedores boarded the vessel for container cargo handling works.

6.2 At about 1035, a stevedore, who was walking alone on top of the hatch cover in the vicinity of its edge port side near bay No.7, fell backward down from a height of about 2 metres onto the deck passage. Nobody witnessed the incident. He was only seen lying on the deck passage by a crane operator at about 1050.

6.3 Later on, other stevedores on board the vessel arrived at the scene for assistance. At about 1115, the injured was conveyed to the hospital. He was certified dead on 18 June 2014.

6.4 The investigation revealed that the main contributing factors to the accident were that the deceased stevedore:

- tripped and lost his balance while walking in the vicinity of the edge of the hatch cover rendered him sustaining fatal injuries at the back of his head after falling down backward from a height of about 2 metres onto the deck passage; and
- worked alone, lost valuable time for receiving immediate medical treatment as nobody saw him falling at the material time.

7 Recommendations

7.1 A copy of the report should be provided to the following parties and organizations advising them the findings of the investigation:

a) the stevedore company (the Everbest Port Services Ltd), the works supervisor and the family members of the deceased stevedore;
b) the HK International Terminals Ltd.; and
c) the master of *NYK Orpheus.*

7.2 The stevedore company should issue safety work instructions to its works supervisors and stevedores engaging in cargo handling works on board ships requiring them to take the following safety precautions:

a) works supervisors and stevedores should always be cautious when staying or working at height with a risk of falling down; and
b) as far as practicable, works supervisors and stevedores should not work alone on board ships.

7.3 A Merchant Department Notice 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 criticized in an accident investigation report, it is the policy of the Marine Department that a copy of the draft report should be given to that person or organization so that they can have an opportunity to express their comments on the report or offer evidence not previously available to the investigating officer.

8.2 Copy of the draft report has been sent to the following parties for comments

a) the stevedore company (the Everbest Port Services Ltd), the works supervisor and the family members of the deceased stevedore; and
b) the master of *NYK Orpheus*.

8.3 Received comment from the family member of the deceased stevedore, appropriate amendment had been made for the report.