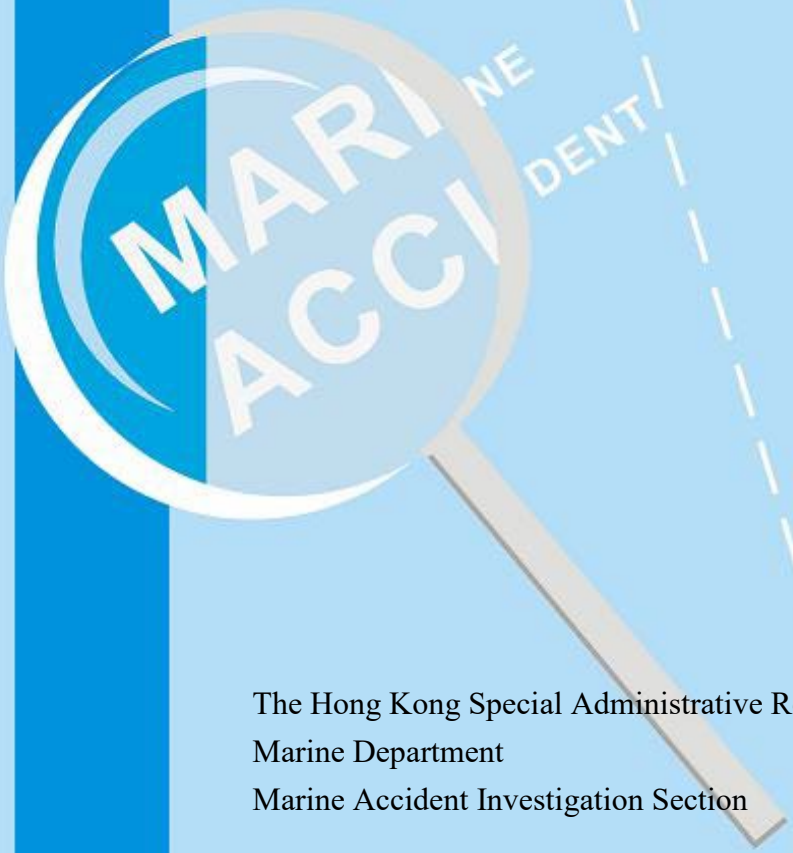
Report of investigation into a fatal accident on board the Hong Kong registered oil tanker "*Wisdom Venture*" at Jawaharlal Nehru Port, India on 19 April 2022



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

28 February 2023

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.

Table of contents Page

Summary

At 2048 hours on 18 April 2022, the Hong Kong registered oil tanker "Wisdom Venture" (*the vessel*) berthed at No. LB-01 terminal, Jawaharlal Nehru Port of Mumbai, India (*the discharging port*) for discharging part of Carbon Black Feedstock Oil (*the cargo*).

At 1312 hours on 19 April 2022, *the vessel* completed the discharge of *the cargo.* The access provided by a portable aluminum gangway (*the portable gangway*), which was placed perpendicularly to the ship's hull, from the jetty to the main deck adjacent to the starboard side manifold area of *the vessel* was no longer required. At 1555 hours, five deck crew (*the deck crew*), including the bosun, three able seamen (AB1, AB2, AB3), and a deck cadet (D/C) were assigned to retrieve *the portable gangway.* They planned to put it back to its storage location on the main deck by lifting it with the crane of *the vessel* and four wire rope slings.

As the outboard end of *the portable gangway* was at the jetty and the inboard end was at the deck rail, with seven meters each in length of the wire rope slings connected to their respective pad eyes on the gangway, the outboard slings were in tension whereas the inboard slings (*the sling wires*) were slack when commencing the lifting operation. When *the portable gangway* was gradually lifted to the deck level, *the sling wires* was still in slack condition since the inboard end of the gangway was still being supported by the deck rail. As outboard end of *the portable gangway* was lifted slightly above the deck rail, momentarily the tension of the slings at the outboard end forced *the portable gangway* to swing inboard causing *the sling wires* slipped out from the crane hook, resulting in the falling of *the portable gangway* onto the main deck. Unfortunately, AB3 was hit heavily by the falling gangway, lying unconsciously on the main deck with blood in his mouth. The Master immediately organized emergency medical team to apply first aid to AB3, including Cardiopulmonary Resuscitation (CPR), and sought emergency medical assistance from the local authority. At 1640 hours, AB3 was sent to a local hospital by ambulance for medical treatment, but he was declared dead later.

The investigation identified that the contributory factors leading to the accident were: (a) the crew failed to follow the requirements of the

shipboard safety management system (SMS) and the "Code of Safe Working Practices for Merchant Seafarers"[1](*the Code*) to lift *the portable gangway* in a safe manner by using the manufacturer-qualified lifting accessories and stay away from the dangerous area during lifting operation; (b) the crew failed to identify the risk of using unqualified lifting accessories during *the risk assessment*; (c) the crew failed to follow the requirements of *the Code* to hold toolbox meeting before commencing the work; (d) the shipboard training in retrieving *the portable gangway* was ineffective; (e) the ship-shore communication between the crew and the shore person was ineffective during the lifting operation; and (f) the shipboard SMS failed to cover the alerts as identified from the hazards and associated risks to be discussed in the toolbox meeting according to the requirements of *the Code*.

[1] *The Code* is a publication required to be carried onboard Hong Kong ships pursuant to the Merchant Shipping (Seafarers) (Code of Safe Working Practices) Regulation (Cap. 478M)

1. Description of *the vessel*

Ship name	:	*Wisdom Venture* (Figure 1)
Flag	:	Hong Kong, China
Port of registry	:	Hong Kong
IMO number	:	9773741
Type	:	Oil Tanker
Year built, shipyard	:	2017, Sumitomo Heavy Industries, Ltd.
Gross tonnage	:	60,126
Net tonnage	:	32,993
Length overall	:	237.00 meters
Breadth	:	44.00 meters
Depth	:	21.80 meters
Engine power, type	:	11110 kW, MAN B&W 6G60 ME-C9.2
Classification society	:	Lloyd's Register Group Limited
Registered owner	:	Acclaim Shipping Limited
Management company	:	Wah Kwong Ship Management, Ltd.

Figure 1: *Wisdom Venture*

2. Sources of evidence

2.1 Information provided by the Master, the crew members and the management company (*the Company*) of *the vessel*.

3. Outline of events

(All times were local time UTC + 5.5 hours)

3.1 At 2048 hours on 18 April 2022, *the vessel* berthed at No. LB-01 terminal of *the discharging port* by starboard side to discharge *the cargo*.

3.2 After berthing at *the discharging port*, *the portable gangway* (Figure 2), 20 meters in length with weight of 772 kilograms, was rigged between the jetty and the middle of *the vessel* as an access. One end of *the portable gangway* rested on *the vessel*'s deck rail and the other end rested on the jetty.

Figure 2: *the portable gangway* secured on the deck

3.3 At 1142 hours on 19 April 2022, nine (9) new crew members joined *the vessel* when the cargo discharge operation was in progress.

3.4 At 1312 hours, the discharge operation was completed and the crew of *the vessel* commenced to prepare for ship departure.

3.5 At 1545 hours, *the deck crew* rigged a pilot ladder on the port side of *the vessel* and then moved to the starboard side to retrieve *the*

portable gangway under the instruction of bridge duty officer.

3.6 *The portable gangway* was lifted by the crane of *the vessel* through four wire rope slings of seven meters each connected between the crane hook and the pad eye of *the portable gangway*. One end of the sling eye was directly connected to the crane hook, and another end of the sling eye was connected to the pad eye of *the portable gangway* by using a shackle. (Figures 3, 4 and 5 refer).

3.7 The safe working load of the crane was 15 metric tons and maximum working radius was 29 meters, i.e. the crane hook could reach seven meters outside ship's hull (22 meters from crane post to ship hull).

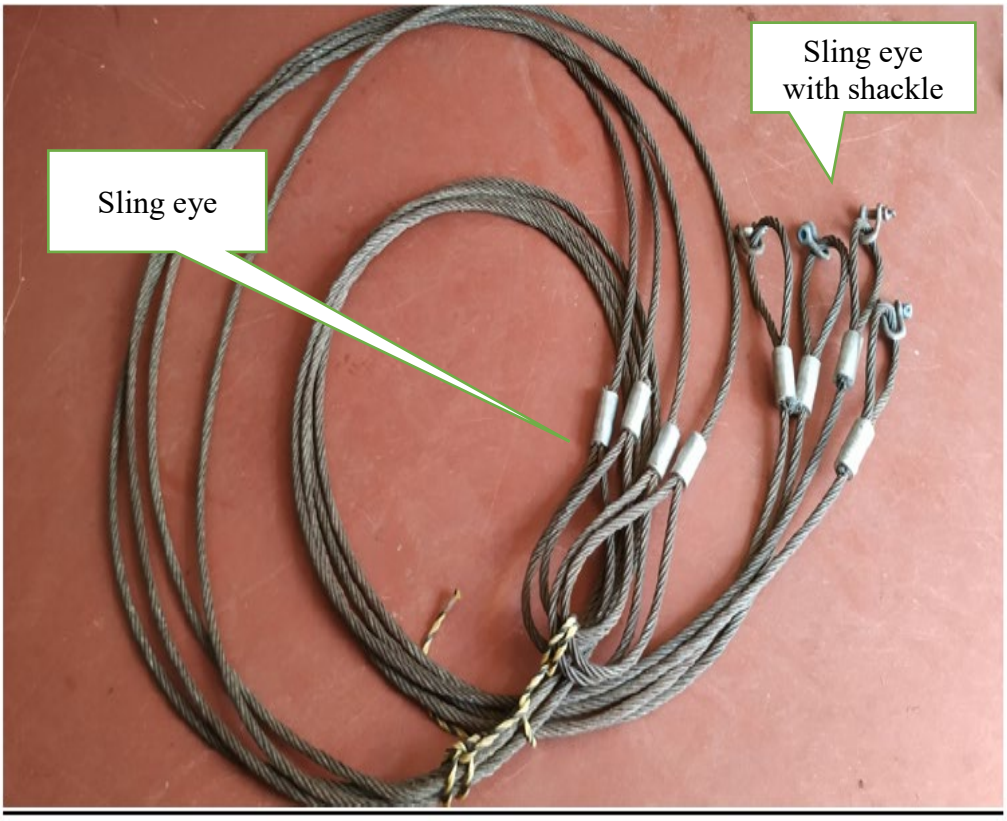


Figure 3: four wire rope slings with shackles

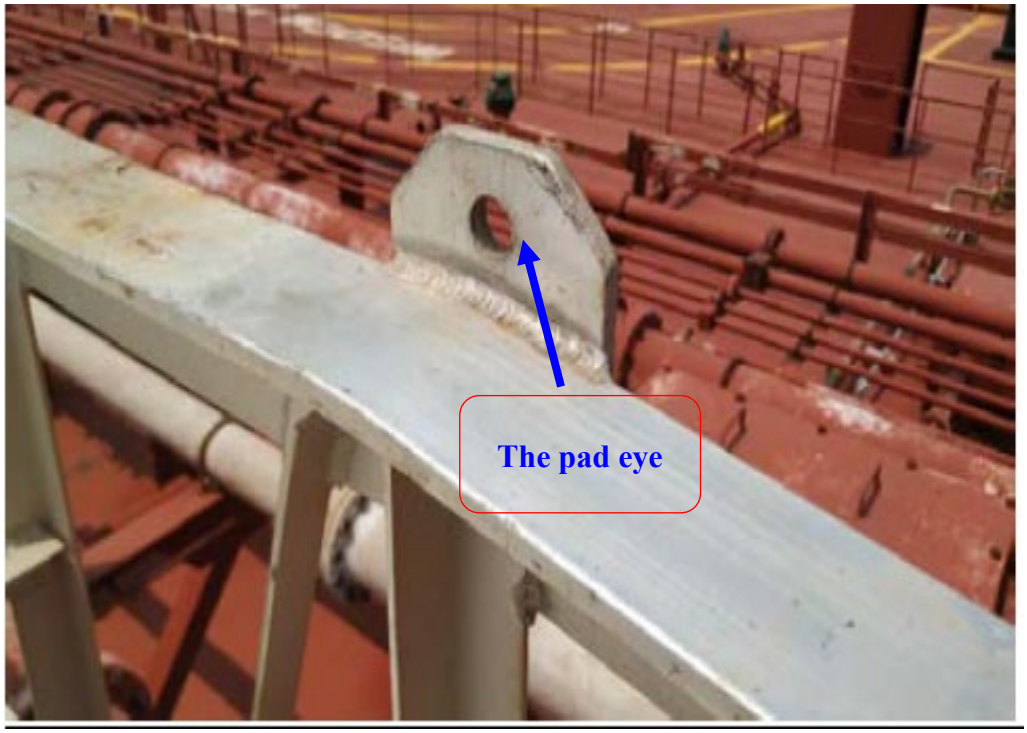


Figure 4: the pad eye of *the portable gangway*

Figure 5: the crane hook

3.8 The bosun supervised the retrieving operation of *the portable gangway* and acted as a signaller at the scene for the lifting

operation. The AB1 operated the crane of *the vessel*. The AB2 was responsible for removing the step ladder (Figure 6) and tidying up the ropes and other equipment on deck. The AB3 controlled a lanyard connected to the inboard end of *the portable gangway*. The D/C controlled another lanyard connected to the crane hook. A shore personnel controlled the outboard end of *the portable gangway* by using a lanyard. Three lanyards were used in order to maintain the steadiness of *the portable gangway* during the lifting operation (Figure 7).

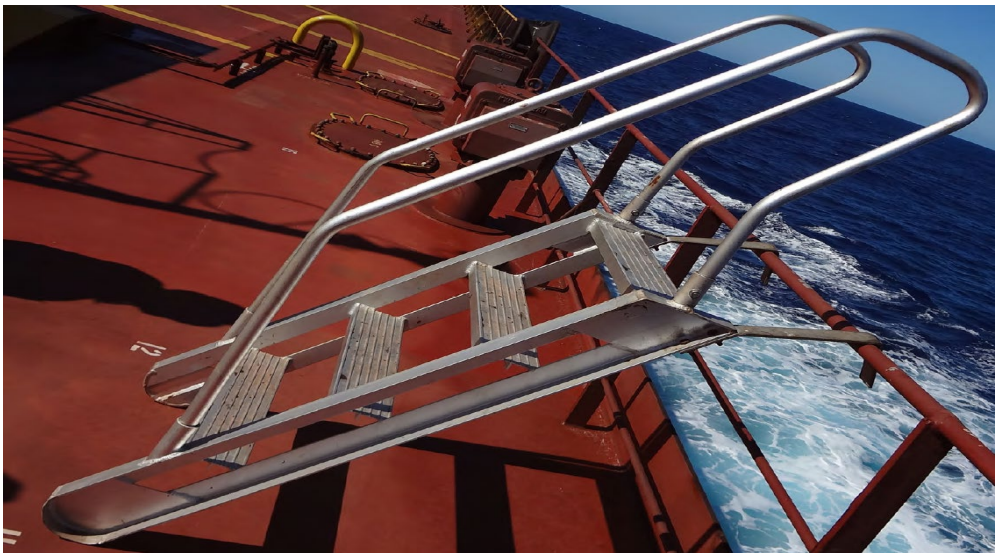


Figure 6: Step ladder

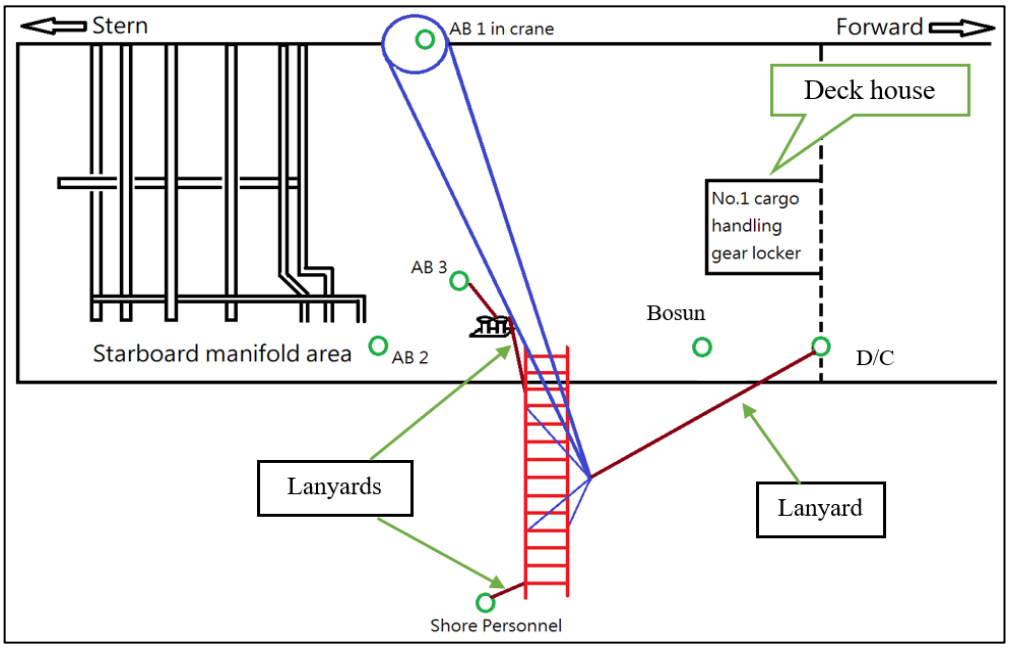


Figure 7: Schematic diagram of on-site operation

3.9 At about 1610 hours, *the sling wires* were slipped out suddenly from the crane hook, resulting in the falling of *the portable gangway* onto the main deck. Unfortunately, AB3's leg was hit heavily by the falling gangway and he was lying on the main deck unconsciously with blood in his mouth (Figure 8 & 9).

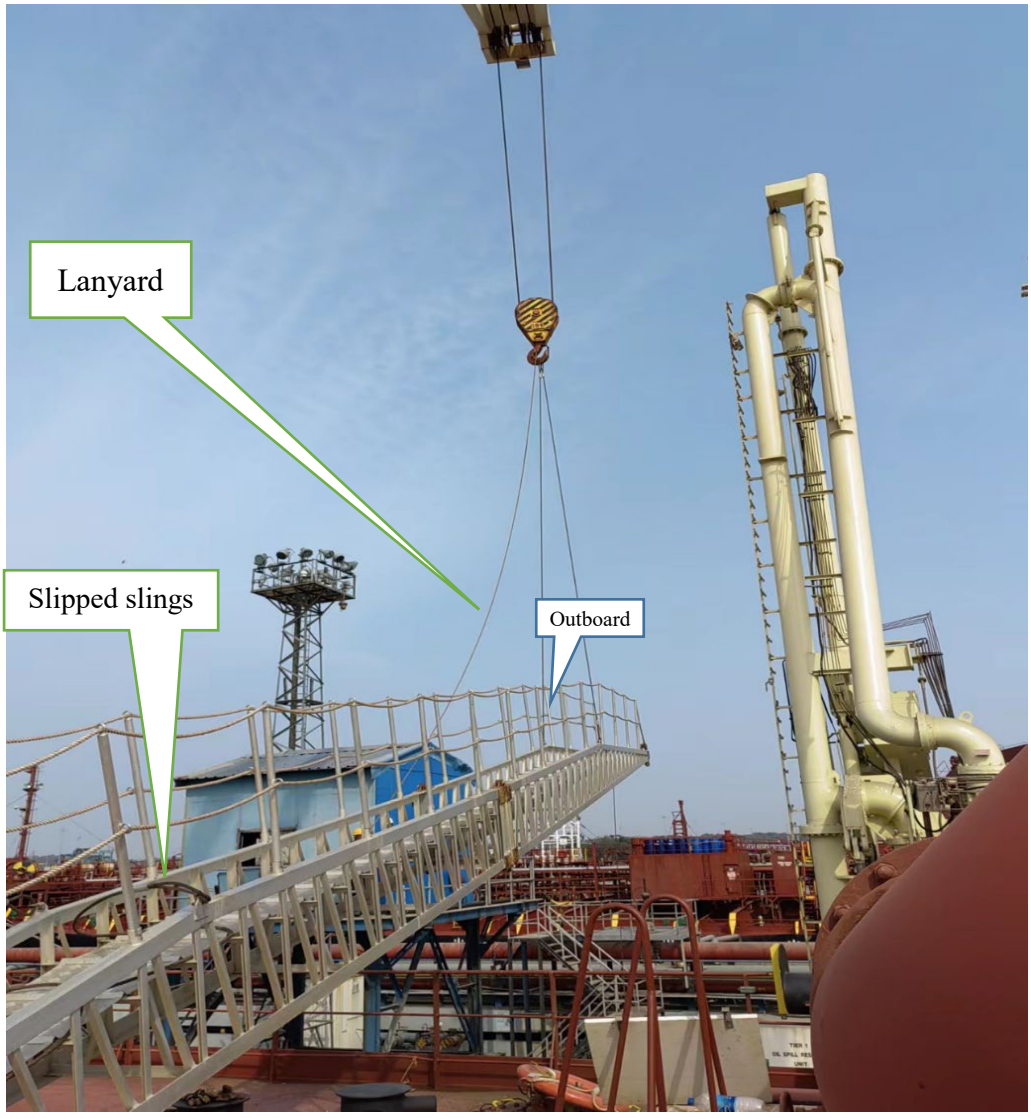


Figure 8: The scene of the accident

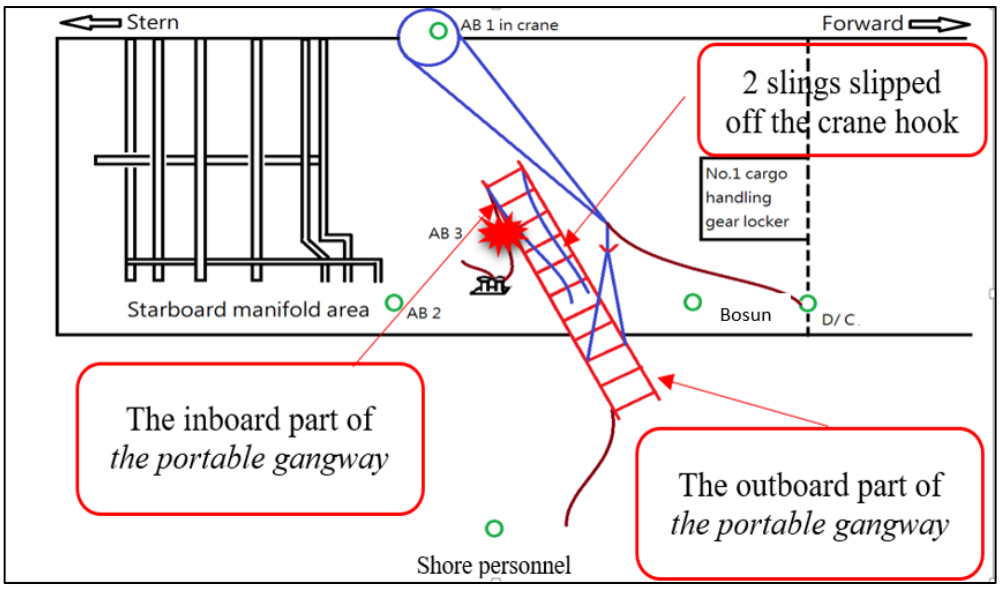


Figure 9: Schematic diagram after *the sling wires* slipped off from the crane hook

3.10 At 1612 hours, the bosun reported the accident to the Master of *the vessel*. The Master immediately organized emergency medical team and applied the first aid to AB3, including Cardiopulmonary Resuscitation (CPR). At the same time, the Master also contacted local authority for emergency medical assistance.

3.11 At 1635 hours, shore ambulance arrived at the jetty, and AB3 was transferred from the main deck of *the vessel* to the jetty and sent to a local hospital for emergency medical treatment.

3.12 Unfortunately, AB3 was declared dead by the hospital at 1750 hours on 19 April 2022.

4. Analysis

Certificates and manning

4.1 The statutory trading certificates of *the vessel* were valid and in order. *The vessel* was manned by 23 crew members, including the Master, and fulfilled the requirements stipulated in the Minimum Safe Manning Certificate of *the vessel*.

4.2 The Master joined *the vessel* on 7 November 2021. He had about ten years of experience as a master. The Master possessed a Master Certificate of Competency issued by Ukraine, valid until 4 September 2024.

4.3 The C/O joined *the vessel* on 6 September 2021. He was recently promoted on board as a chief officer. The C/O possessed a chief officer Certificate of Competency issued by China, valid until 20 January 2027.

4.4 The 2/O joined *the vessel* on 6 April 2022. He had about three years of experience as a second officer. The 2/O possessed a second officer Certificate of Competency issued by China, valid until 22 March 2026.

4.5 The 3/O joined *the vessel* on 4 August 2021. He had about one year of experience as a third officer. The 3/O possessed a third officer Certificate of Competency issued by China, valid until 5 June 2022.

4.6 The bosun joined *the vessel* on 6 August 2021. He had about seven months of experience as a bosun.

4.7 The AB1 joined *the vessel* on 4 August 2021. He had about eight months of experience as an AB.

4.8 The AB2 joined *the vessel* on 6 September 2021. He had about eighteen months of experience as an AB.

4.9 The AB3 joined *the vessel* on 19 April 2022. He had about fourteen months of experience as an AB.

4.10 The D/C joined *the vessel* on 19 April 2022. He had about seven months of experience as a cadet.

4.11 There was no abnormality onboard with regard to the certification and qualification of the crew concerned.

Fatigue, alcohol and drugs abuse

4.12 There was no evidence to show that the crew on board suffered from either fatigue at work or abuse of alcohol and drugs.

Weather and sea conditions

4.13 On the day of the accident, the weather was cloudy with northwesterly wind of Beaufort wind scale Force 3. The sea had large wavelets with scattered whitecaps, and the visibility was good. The weather and the sea conditions were not considered to be the contributory factors to the accident.

Cause of death

4.14 The certificate of "Registration of Unnatural Death" stated that the AB3 was hit heavily on his leg by *the portable gangway*. The sudden hitting on leg caused AB3 fell on the main deck and lost consciousness and that his face and head were also injured. The death was declared at 1750 hours on 19 April 2022.

Accessories for lifting operation

4.15 Section 5.2.3 of the "Health, Safety and Environment Manual" (*the HSE manual*) of the shipboard SMS states that a lifting operation should be carried out in a safe manner, the lifting appliances operator should be guided by *the Code* and Section 19.2.7 of *the Code* states that the configuration of slinging should be taken into account when selecting accessories for lifting.

4.16 According to the investigation report of *the Company*, the lifting operation of *the portable gangway* as required by its manufacturer was to be carried out by a composite lifting unit which had a master link connecting with the four wire rope slings and the crane hook (figure 10). However, at the time of the accident, the four sling eyes were directly connected to the crane hook (Figure 11) . It was

found that *the deck crew* did not follow the shipboard SMS and *the Code* requirements to lift *the portable gangway* in a safe manner by using the manufacturer-qualified lifting accessories.

Figure 10: the manufacturer-qualified composite lifting unit of *the portable gangway*

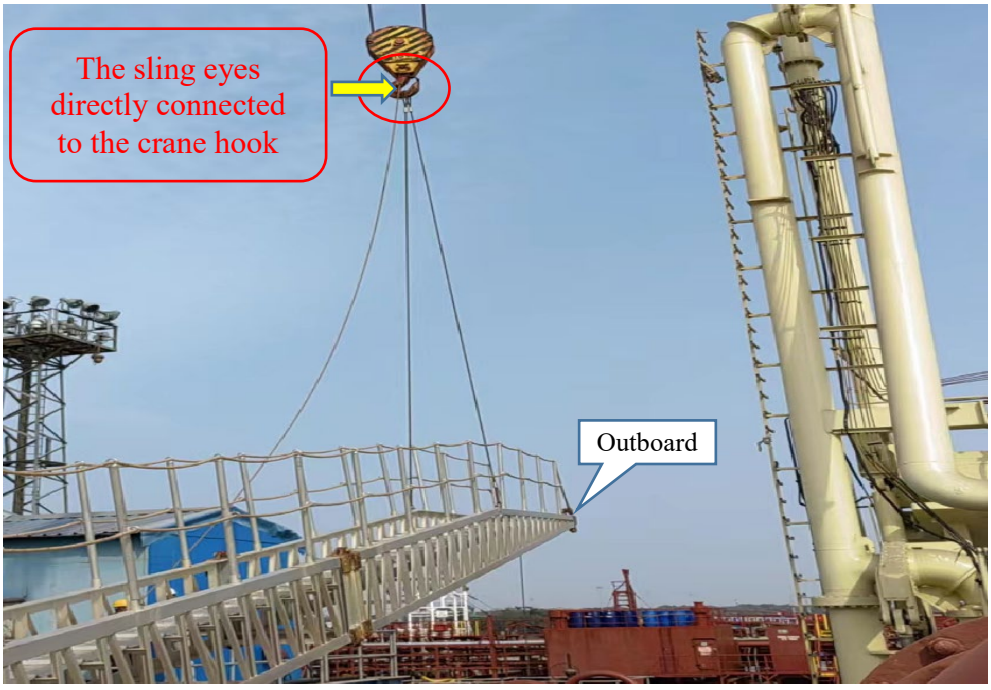


Figure 11: the slings connected to the crane hook at the time of the accident

Risk assessment and toolbox meeting

4.17 Section 10.3 of *the HSE manual* of shipboard SMS states that a risk assessment should be conducted before carrying out the job, including identification of hazards, assessing potential consequences, assessing risk factor, etc.

4.18 The risk assessment of rigging and retrieving *the portable gangway (the risk assessment)* was carried out onboard *the vessel* on 18 April 2022 before the lifting operation of *the portable gangway*. The hazards, potential consequences, and preventive measures were identified in *the risk assessment*. However, the risk of using the sling eye directly connected to the crane hook for lifting *the portable gangway* was not identified. As such, *the risk assessment* on board *the vessel* was not effective.

4.19 Section 1.2.5 "Risk awareness and risk assessment" of *the Code* states that a key tool in ensuring that all involved in the work have a clear understanding and awareness of any hazards and their associated risks is the carrying out of a toolbox talk or meeting before the work commences.

4.20 The investigation found that the toolbox meeting for retrieving *the portable gangway* was not held before commencing the lift thus failure to follow *the Code* requirements.

4.21 Section 6.14.1 of the "Shipboard Management Manual" (*the SMM*) states that the toolbox meeting is required only to discuss the related incidents, alerts, circulars received or unsafe acts or conditions observed on board, new equipment used on the job, etc. However, the hazards and associated risks of the work were not covered in *the SMM* as alerts to be discussed in the toolbox meeting in accordance with the requirements of *the Code* mentioned in the above paragraph 4.19.

Shipboard training

4.22 Section 5.2.3 of *the HSE manual* of shipboard SMS states that all persons should be trained before operating a lifting appliance. According to the shipboard training record, the crew of *the vessel* were trained in "rigging of *the portable gangway* and cargo crane operation" on 19 April 2022. However, *the deck crew* did not follow the manufacturer's requirements to use the required lifting accessories, and the AB3 positioned himself in a dangerous area during lifting of *the portable gangway*. The investigation revealed that the shipboard training in retrieving *the portable gangway* was ineffective.

Onsite communication

4.23 Section 1.2.2 "Good communications" of *the Code* states that an effective communications and workforce involvement is crucial in ensuring a safe living and working environment, including understanding their roles and responsibilities, orders, instructions, etc.

4.24 According to the above paragraph 3.8, three lanyards were used for maintaining the steadiness of *the portable gangway* during lifting operation, and were controlled by the AB3, the D/C, and a shore personnel separately. According to *the Company* report, the AB3 kept the lanyard in tight as instructed by the bosun, and the lanyard of the outboard end of *the portable ladder* controlled by the shore personnel was released during lifting, resulting in *the sling wires* forced out of the crane hook due to a sudden enormous momentum making imbalanced weight distribution. It revealed that the communication between *the deck crew* and the shore personnel was ineffective during the lifting operation.

5. Conclusions

5.1 At 2048 hours on 18 April 2022, *the vessel* berthed at No. LB-01 terminal of *the discharging port* for discharging *the cargo.*

5.2 At 1312 hours on 19 April 2022, *the vessel* completed the discharge of *the cargo.* At 1555 hours, *the deck crew* were assigned to retrieve *the portable gangway* which was rigged perpendicular to the ship's hull as access between the jetty and the main deck adjacent to the starboard side manifold area of *the vessel*. *The portable gangway* was lifted by using the crane of *the vessel* with four wire rope slings and planned to be moved back to its storage location on the main deck.

5.3 As the outboard end of *the portable gangway* was at the jetty and the inboard end was at the deck rail, with seven meters each in length of the wire rope slings connected to their respective pad eyes on the gangway, the outboard slings were in tension whereas the inboard slings (*the sling wires*) were slack when commencing the lifting operation. As outboard end of *the portable gangway* was lifted slightly above the deck rail, all of a sudden, the tension of the slings at the outboard end forced *the portable gangway* to swing inboard causing *the sling wires* slipped out from the crane hook, resulting in the falling of *the portable gangway* onto the main deck. Unfortunately, AB3 was hit heavily by the falling gangway, lying unconsciously on the main deck with blood in his mouth. The Master immediately organized emergency medical team to apply first aid to AB3, including Cardiopulmonary Resuscitation (CPR), and sought emergency medical assistance from the local authority. At 1640 hours, AB3 was sent to a local hospital by ambulance for medical treatment, but he was declared dead later.

5.4 The investigation revealed that the contributory factors leading to the accident were as follows:

(a) the crew failed to follow the requirements of shipboard SMS and *the Code* to lift *the portable gangway* in a safe manner by using the manufacturer-qualified lifting accessories and stay away from the dangerous area during lifting operation;

(b) the crew failed to identify the risk of using unqualified lifting

accessories during *the risk assessment*;

(c) the crew failed to follow the requirements of *the Code* to hold toolbox meeting before commencing the work;

(d) the shipboard training in retrieving *the portable gangway* was ineffective;

(e) the ship-shore communication between the crew and the shore person was ineffective during the lifting operation; and

(f) *the SMM* of the shipboard SMS failed to cover the hazards and associated risks of work as alerts to be discussed in the toolbox meeting according to the requirements of *the Code*.

6. Recommendations

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

(a) strictly follow the requirements of shipboard SMS, the manufacturer and *the Code* to lift *the portable gangway* in a safe manner;

(b) strictly follow the requirements of *the Code* to hold toolbox meeting before commencing work;

(c) enhance effective shipboard training in retrieving *the portable gangway*; and

(d) ensure effective communication among all persons participating in lifting operation, including the shore personnel.

6.2 The management company should consider revising the shipboard SMS to ensure that the hazards and associated risks to work are included in *the SMM* and conduct an internal audit on *the vessel* to ensure that the crew members strictly follow the requirements of *the SMM* to carry out toolbox meeting onboard.

6.3 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 entirety, was sent to *the Company* and the Master of *the vessel* for comments.

7.2 By the end of the consultation, there was no comment received from the above-mentioned parties.