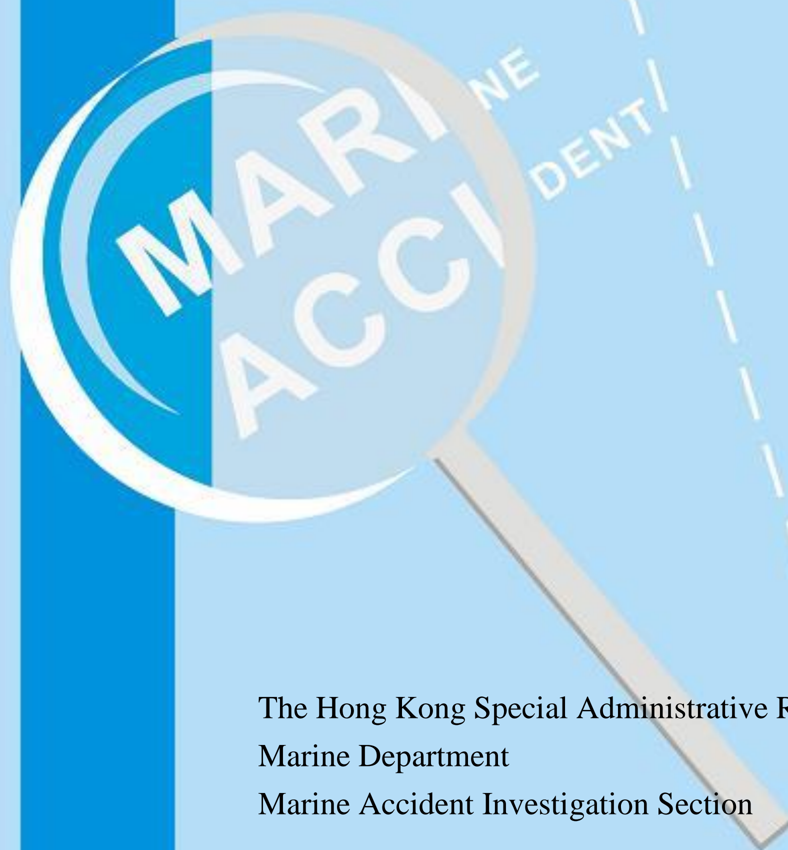
Report of investigation into the fatal accident on board the Hong Kong registered general cargo ship "*Ocean Gold*" at Kwangyang, South Korea on 15 January 2021



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

04 January 2022

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 10 January 2021, the Hong Kong registered general cargo ship "Ocean Gold" (*the* vessel) berthed at Kwangyang, South Korea to discharge coal cargo.

At about 1510 hours on 15 January 2021, the Ordinary Seaman *(the OS*) reported to the Second Officer (*the 2/O*) that the cargo of the No.1 cargo hold (*the hold*) was completely discharged. *The 2/O* instructed the duty Able Bodied Seaman (*the AB*) with *the OS* to close *the hold's* hatch cover. At about 1515 hours, *the AB* found *the O*S lying on the bottom of *the hold* and realized that *the OS* could have fallen onto the bottom of *the hold* from the hatch coaming at a height of 13.28 metres. He reported the incident to *the 2/O* via portable radio for help. A shipboard rescue team was immediately organised when the Chief Officer (*the C/O*) received the report. *The OS* was transferred to shore by the ship crane with a stretcher. He was then conveyed to a local hospital for first-aid treatment. Unfortunately, *the OS* was later declared dead on the same day.

The investigation revealed that the main contributory factors causing the accident were lack of safety awareness of *the OS* who underestimated the risk of falling from height while working on the hatch coaming; supervision of the operation of the cargo hold hatch cover (*the hatch cover operation*) not meeting the requirements of the Code of Safe Working Practices for Merchant Seafarers (COP) [1] and the shipboard Safety Management System (SMS); lack of effective communication among the team members of *the hatch cover operation*; and the ineffective shipboard training in the safe operation of work at height and *the hatch cover operation*.

[1] Section 4 of Cap.478M "Merchant Shipping (Seafarers) (Code of Safe Working Practices) Regulation" refers.

1. Description of the vessel

Ship name	:	*Ocean Gold* (Figure 1)
Flag	:	Hong Kong, China
Port of registry	:	Hong Kong
IMO number	:	9336751
Type	:	General cargo ship
Year built, shipyard	:	2006, Japan/Kanda Shipbuilding Co. Ltd
Gross tonnage	:	20,211
Net tonnage	:	10,948
Summer deadweight	:	32,317.09 tonnes
Length overall	:	177 metres
Breadth	:	28.4 metres
Engine power, type	:	6620 kW, Mitsubishi 6UEC52LA
Classification society	:	Nippon Kaiji Kyokai
Registered owner	:	Ocean Gold Maritime Inc.
Management company	:	Ocean Longevity Shipping & Management Co., Ltd

Figure 1 *The vessel*

2. Sources of evidence

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

3. Outline of events

(All times were local time UTC + 9 hours)

3.1 On 30 December 2020, *the vessel* was fully loaded with coal cargo departed from Nakhodka, Russia heading to Kwangyang, South Korea for discharging.

3.2 On 10 January 2021, *the vessel* berthed at Kwangyang, South Korea and commenced cargo discharge.

3.3 At about 1445 hours on 15 January 2021, in order to arrange cargo hold cleaning for the next loading, *the 2/O* entered *the hold* to inspect its condition when cargo discharging of *the hold* was nearly completed.

3.4 At about 1508 hours, the 2/O climbed out of *the hold* and returned to the starboard side gangway for his duty watch. At that time, *the AB* was on duty at the starboard side gangway and *the OS* was patrolling on the main deck.

3.5 At about 1510 hours, *the OS* reported to *the 2/O* that the bulldozer was lifted out and cleared from *the hold*. While *the OS* was reporting to him, *the 2/O* instructed *the AB* to close *the hold's* hatch cover together with *the OS*.

3.6 At about 1515 hours, *the AB* arrived at *the hold* via the starboard side passageway and looked for *the OS* on the main deck but in vain. Afterwards, *the AB* found that *the OS* was lying on the bottom of *the hold*. He realized that *the OS* could have fallen onto the bottom of *the hold* from the hatch coaming at a height of 13.28 metres and reported the incident to *the 2/O* immediately via his portable radio. *The 2/O* requested the foreman of the stevedore to call an ambulance for urgent assistance and then he proceeded to *the hold* to check the condition of *the OS*.

3.7 At about 1520 hours, *the C/O* organised a shipboard rescue team immediately when he received the incident report through his portable radio. A rescue team was mustered and the first-aid treatment was applied to *the OS*.

3.8 At about 1530 hours, *the OS* was transferred to shore from *the hold* by the ship crane with a stretcher. He was then conveyed to a local hospital for first aid treatment. Unfortunately, *the OS* was declared dead on the same day.

4. Analysis

The vessel's certificates and manning

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 10 years and joined *the vessel* on 9 August 2020. He had about 8 years of experience as a master. He possessed a Class I Certificate of Competency issued by China valid until 18 November 2025.

4.3 The Chief Officer had worked in the Company for about 4 years and joined *the vessel* on 9 August 2020. He had about 1 year of experience as a chief officer. He possessed a Class II Certificate of Competency issued by China valid until 25 September 2023.

4.4 The Second Officer had worked in the Company for about 6 years and joined *the vessel* on 9 August 2020. He had about 2 years of experience as a second officer. He possessed a Class III Certificate of Competency issued by China valid until 26 June 2024.

4.5 *The AB* had worked in the Company for about 4 years and joined *the vessel* on 9 August 2020. He had about 2 years of experience as an able bodied seaman.

4.6 *The OS* had worked in the Company for about 1 year and joined *the vessel* on 9 August 2020. He had about 5 months of experience as an ordinary seaman.

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

Fatigue, alcohol and drug abuse

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

Weather and sea conditions

4.9 On the day of the accident, *the vessel* was berthed alongside at Kwangyang, South Korea. The weather was overcast with northeasterly wind of Beaufort Wind Scale force 3. The sea was calm and had a visibility of 10 nautical miles. The weather and the sea conditions were not considered to be the contributory factors to the accident.

Cause of death

4.10 The death certificate stated that the deceased suffered head injury, depressed skull and brain injury. The cause of death was head trauma injury which was consistent with the accident of falling from height.

Unsafe working practice on board

4.11 The cargo in *the hold* was completely discharged. The hatch coaming was covered by cargo residue which was slippery in nature (Figure 2).

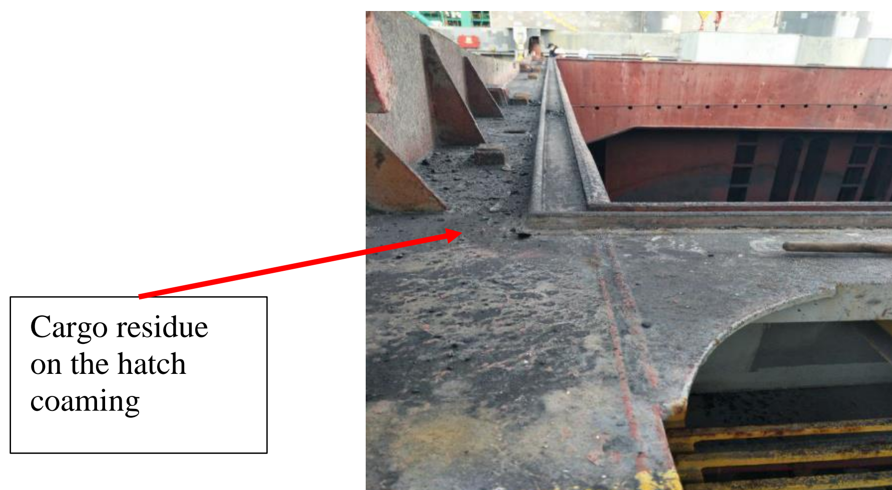

Figure 2 The cargo residue on the hatch coaming of *the hold*

4.12 At the accident scene, it was found that a dustpan was located on the bottom of *the hold* about 1 metre beside *the OS* (Figure 3) and a broom was left on the hatch coaming (Figure 4). *The 2/O* confirmed that there was no dustpan on the bottom of *the hold* when he was inspecting *the hold*. No one noticed how the OS fell onto

the bottom of the hold. The suspected spot where *the OS* fell onto the bottom of the hold was at the hatch cover coaming.

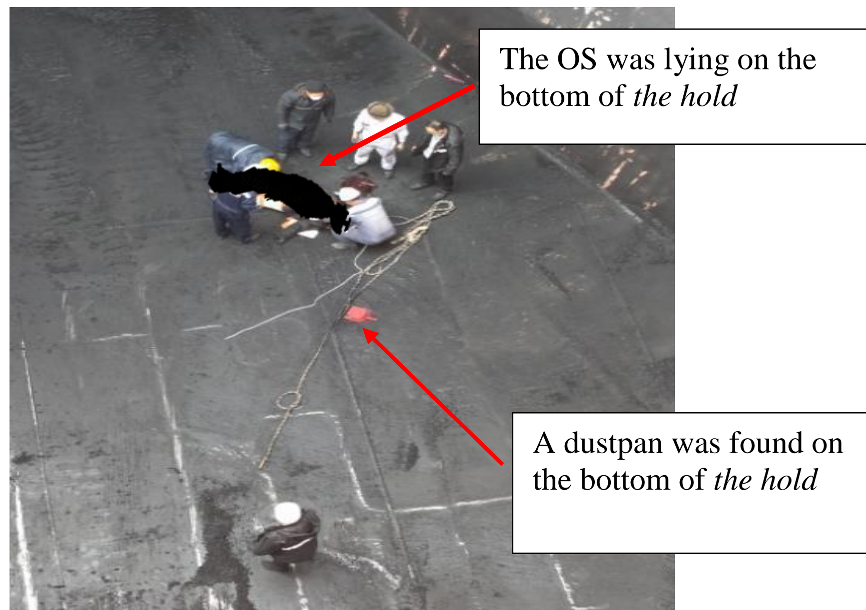

Figure 3 The OS was found lying on the bottom of *the hold*

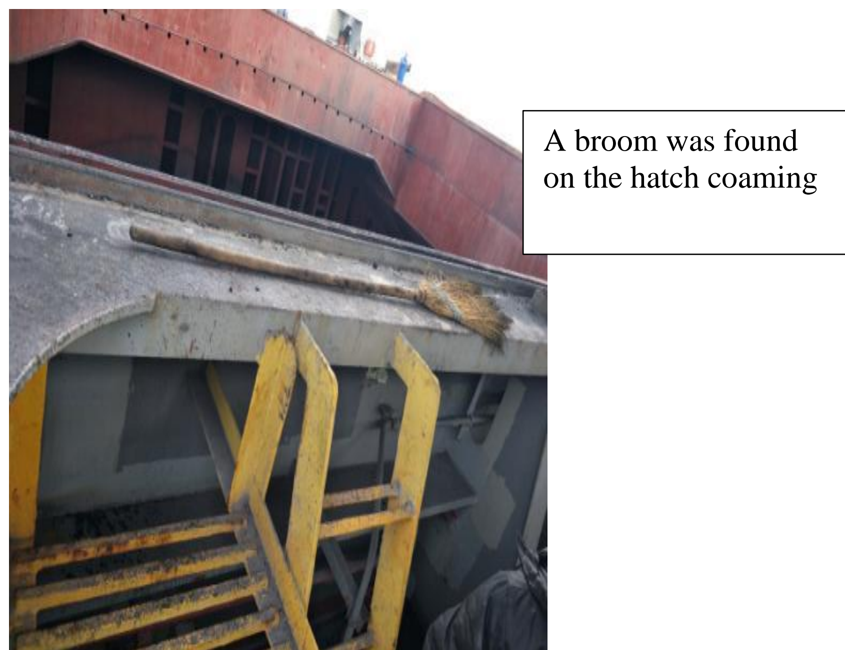

Figure 4 A broom was left on the hatch coaming

4.13 In normal practice, the broom and the dustpan were used together for cleaning purpose. A broom and dustpan which were respectively left on the hatch coaming and the bottom of the hold

might deduce that *the OS* probably lost his balance and fell onto *the hold* when he was working on the hatch coaming without informing anyone, thus resulting in the fatal accident.

Safety requirement for work at height

4.14 The investigation revealed that the requirements of COP and the shipboard SMS had not been properly implemented.

(a) Section 5.4, Procedure No. S-504 of SMS stated that the personnel for high overhead or over side operation should wear non-slip shoes and fasten the safety belt which should be tied up at a secured position and an additional safety net shall be laid below operation space if necessary. However, *the OS* neither wore a safety belt nor laid a safety net below the operation space.

(b) Chapters 8.10, 17.1.2 and 17.2.6 of COP stated that personnel working aloft should wear a safety harness with a lifeline or other arresting device at all times, and a permit to work should be issued before carrying out work at height. *The OS* did not wear a safety harness with a lifeline or other arresting device when he was working on the hatch coaming and did not obtain a permit to work from his supervisors.

Supervision and communication of the operation of the hatch cover

4.15 Chapter 16.2.8 of the COP stated that all personnel involved with the handling and/or operation of hatch covers should be properly instructed in their handling and operation; and all stages of opening or closing hatches should be supervised by a responsible person. However, *the 2/O or C/O*, as a duty officer or a responsible person, did not provide *the AB* and *OS* any safety instructions or guidance on *the hatch cover operation* and did not supervise *the hatch cover operation* at the scene.

4.16 The investigation also revealed that effective communication among the team members of *the hatch cover operation* was not established.

(a) *The AB, OS,* or *2/O* did not communicate with each other to ensure the hatch coaming of *the hold* was cleared of cargo residue or restriction before closing. Hence, they failed to follow the manufacturer's instruction manual of the hatch cover.

(b) *The 2/O, AB, or C/O* did not notice that *the OS* was cleaning the cargo residue on the hatch coaming alone.

Training and familiarization

4.17 *The OS* had about 9 months of sea experience, including 5 months of experience as an ordinary seaman on board *the vessel*. *Although the OS* attended a safety training of the operation of the hatch cover on 16 August 2020, he did not realize the danger of working alone for *the hatch cover operation.*

4.18 *The 2/O* and *C/O* did not provide safety instructions or guidance on *the hatch cover operation* and they did not supervise *the hatch cover operation* at the scene, as described in paragraph 4.15, which showed that the responsible officers were probably not performing their responsibility as required by the COP and SMS.

4.19 Therefore, the investigation revealed that the shipboard training in the safe operation of work at height and *the hatch cover operation* was not effective.

5. Conclusions

5.1 On 15 January 2021, *the vessel* berthed at Kwangyang, South Korea to discharge coal cargo. *The 2/O* instructed *the AB* and *OS* to close the hatch cover of *the hold* when the cargo in *the hold* was completely discharged. *The OS* fell from the hatch coaming at a height of about 13.28 metres, lying on the bottom of *the hold,* while he was cleaning the hatch coaming alone. A rescue team was organised and *the OS* was transferred out from *the hold* to shore. He was conveyed to a local hospital for medical treatment. However, he was declared dead later on the same day.

5.2 The investigation had identified the following contributory factors leading to this accident were:

(a) *the OS* had inadequate safety awareness and underestimated the risk of falling from height while working on the hatch coaming;

(b) the supervision of *the hatch cover operation* did not meet the requirements of the COP and SMS;

(c) the communication among the crew for the *hatch cover operation* was insufficient; and

(d) the training in the safe operation of working aloft and the hatch cover operation was ineffective.

6. Recommendations

6.1 The management company should issue circulars 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:

(a) enhance safety awareness and safety culture on board to ensure the permit to work system to be followed before working aloft;

(b) strictly follow the requirements of the COP and SMS in *the hatch cover operation*;

(c) enhance the communication among the crew during the key operations especially when carrying out t*he hatch cover operation*; and

(d) enhance the shipboard safe operation training, such as work at height and *the hatch cover operation* and assess its effectiveness.

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 entirety, was sent to the management 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 party.