Marine Safety Investigation Unit

Transport Malta

SAFETY INVESTIGATION REPORT

202501/019 REPORT NO.: 01/2026 January 2026

MV *OCEAN CENTURY*

Fatal injury to a bunker / cargo surveyor, during the closing of a cargo hatch cover in the port of Gwangyang, Republic of Korea 24 January 2025

SUMMARY

On 24 January 2025, *Ocean Century* was preparing to load steel products at Hapo General Wharf, Gwangyang, South Korea. The vessel had arrived during the previous evening. Cargo holds were cleaned, and residual cargo collected in drums.

On the morning of the accident, the deck crew opened the hatch covers and removed the stored drums. Meanwhile, the bunker / cargo surveyor left the ship's office, after meeting with the chief engineer, the master, and the P&I representative.

Shortly after, one of the crew members proceeded to the cargo hold no. 2 hatch cover control station, to close the hatch cover. At approximately 0840, the electro-technical officer discovered the surveyor, fatally trapped between the aft part of cargo hold hatch cover no. 2 and the hatch coaming.

The safety investigation determined that in all probability, the cause of the accident was the surveyor's becoming trapped during the hatch cover closing process.

The MSIU has taken into consideration the safety actions taken by the Company and no recommendations have been made.

FACTUAL INFORMATION

Vessel

MV *Ocean Century* was a Maltese registered 31,540 gt Handymax bulk carrier (**Figure 1**). It was owned by Aska Marine Ltd. and managed by Fleet Management Middle East DMCC, United Arab Emirates (the Company). The vessel was built by IHI Marine United INC Yokohama Shipyard, Japan, in 2011. Korean Register of Shipping (KR) acted as the classification society, while Det Norske Veritas (DNV) acted for the vessel as the recognised organisation, in terms of the International Safety Management (ISM) Code.

Figure 1: Starboard side main deck on MV *Ocean Century*

Ocean Century had a length overall of 190.00 m, a moulded breadth of 32.26 m and a moulded depth of 18.10 m. The vessel had a summer draft of 12.73 m, corresponding to a summer deadweight of 55,848 metric tonnes (mt). At the time of the occurrence, *Ocean Century* was drawing forward and aft draughts of 4.10 m and 6.60 m, respectively.

The vessel was fitted with five cargo holds of conventional design, with double bottoms and top side tank structure. Cargo hold no. 2 was the largest cargo hold of all the five cargo holds, measuring 31.85 m by 23.80 m by 16.42 m. The vessel was also fitted with four sets of cargo hold cranes, with a designed safe working load of 30 mt (24 mt with the grab attached).

Propulsive power was provided by a 5-cylinder, RT-FLEX, two-stroke, DU-Wärtsilä-6RT-FLEX50 marine diesel engine, producing 8,890 kW at 89 rpm. The main engine drove a right hand five-blade fixed-pitch propeller, enabling the vessel to reach a service speed of 14.2 knots. *Ocean Trader* did not have UMS[1] certification.

Manning

The vessel's Minimum Safe Manning Certificate stipulated a crew of 16[2], *i.e.*, a master, a chief officer, a chief engineer, a second engineer, two navigational OOW, one engineering OOW, six deck ratings and three engine ratings. At the time of the accident, the vessel was manned by 20 crew members of Turkish, Vietnamese and Filipino nationalities.

The fatally injured person was not a crew member but a 44-year old bunker / cargo surveyor from the Republic of Korea. He had been appointed by the charterers and employed by a local cargo surveying company.

Cargo holds hatch covers

The cargo holds hatch covers were of the hydraulic end folding type (2 by 2 panels), operated by means of external hydraulic cylinders. The hatch covers were manufactured by Hatchtec Marine. As for multi-folding type of hatch covers, the panels folded within the stowage space at the end of the hatch trackways.

Information on the cargo hatch covers indicated that the closing time of the covers, when half open (*i.e.*, tent position), was exactly 57 seconds. At this position, the

[1] Periodically unattended machinery space.

[2] At least two deck officers were to hold Global Maritime Distress and Safety System (GMDSS) General Operator's Certificates. Moreover, one of the crew members was required to be a fully qualified cook in terms of MLC 2006 – A.3.2.5.

approximate height of the hatch covers bottom section to the cargo hold coaming measured 1.1 m.

The final inspection of the cargo holds hatch covers at Ruitai Shipyard in China in October 2024, identified the need of adjustments to resting pads and stoppers. The hydraulic end-folding cargo hold hatch covers were inspected, revealing the need for de-rusting, painting, and necessitating rubber packing renewal. Bearing pads were adjusted with shims because of wear.

Coaming, compression bars, and cleats were maintained, and lubrication applied. Hydraulic components, including pumps, cylinders, and control stands were checked, with minor corrosion noted. Grease application and maintenance of hinges, stoppers, and rubber hoses were recommended.

The service report compiled by the manufacturer's service engineer confirmed that overall, the cargo hold hatch covers were found in normal working condition, with any necessary repairs completed before the vessel's departure from the shipyard.

Narrative[3]

On 24 January 2025, before arrival, the crew members on board *Ocean Century* were making the necessary preparations for the cargo loading operations, due at the next port of call, *i.e.*, Hapo General Wharf, Gwangyang, South Korea. Cargo residues from the previous cargo had been collected in drums, which were left inside the cargo holds. Since cargo holds were not kept open when the vessel is at sea, the hatch covers were closed again.

Eventually, *Ocean Century* berthed starboard side alongside to commence the loading of steel products bound for Mumbai, India. As planned for the morning, the deck crew prepared to open all the cargo hatch covers. The stored drums of cargo residues inside the cargo holds had to be removed, and the hatch covers for those cargo holds which were not planned to be loaded, had to be closed again.

By 0815, the drums from cargo hold no. 2 had been successfully removed and secured on the port side main deck by one of the ABs. The AB made his way to the starboard side main deck, passing through the cross deck. He noticed no persons in the area at the time.

With the drums removed from the cargo hold, and given that the loading operations were scheduled to commence in cargo hold no. 3, one of the ordinary seafarers proceeded to the cargo hatch cover local control station (**Figure 2**) to close the cargo hold.

From the local control station, the aft part of the cargo hold would be out of sight. With the pumps of the hydraulic system running, the ordinary seafarer started closing the hatch cover, commencing with the forward section and continued to close the aft section.

Figure 2: Cargo hold no. 2 hatch covers control station

Meanwhile, the bunker / cargo surveyor, who boarded the vessel earlier at about 0740, had been in a meeting with the chief engineer, the master, and the P&I representative. Prior to leaving the ship's office at the end of the meeting, which was at about 0825, none of

[3] Unless otherwise stated, all times are local.

the crew members were informed of his movements on deck.

At approximately 0840, the electro-technical officer discovered the bunker / cargo surveyor trapped between the aft part of cargo hold hatch cover no. 2 and the cargo hold hatch coaming (**Figures 3a** and **3b**), with evident fatal injuries.

Figure 3a: The position where the bunker / cargo surveyor was found

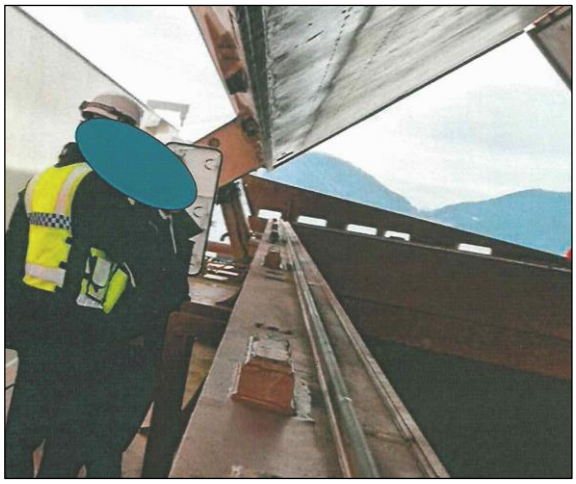

Figure 3b: Side view of the cargo hold hatch coaming where the bunker / cargo surveyor was found

Despite immediate emergency response, notification to port authorities, and medical attention, which included the dispatching of an ambulance, the bunker / cargo surveyor was pronounced dead on the vessel.

Environment

The vessel's records indicated that around the time of the accident, the sky was clear, and the visibility was 10 nautical miles. A light breeze was blowing from the Northeast, while the sea state was slight, with low swell. The air and sea temperatures were recorded to be 4 °C and 11 °C, respectively.

ANALYSIS

Aim

The purpose of a marine safety investigation is to determine the circumstances and safety factors of the accident as a basis for making recommendations, and to prevent further marine casualties or incidents from occurring in the future.

Cause of the accident

The autopsy report confirmed that the bunker / cargo surveyor suffered from severe head injuries as a result of being trapped between the closing cargo hold no. 2 folding hatch cover and the cargo hold hatch coaming. In view of the absence of witnesses, the safety investigation could not determine why the bunker / cargo surveyor had positioned himself in the area.

Condition of the cargo hold hatch cover hydraulic control system

Available information confirmed that the latest detailed inspection of the cargo holds hatch cover closing mechanisms (October 2024), including the hydraulic system, confirmed they were in good working condition. All components were examined thoroughly, with no detected signs of malfunction, wear, or defects that could have compromised their operation.

Whilst no issues were reported by the crew members during the period between the latest detailed inspection and the accident, the hydraulic systems were also tested for leaks,

pressure stability, and performance, meeting all required standards.

As a result, the safety investigation determined that the hatch cover mechanism on cargo hold no. 2 functioned properly at the time of the fatal accident.

Planned maintenance records made available to the safety investigation revealed that since the extensive inspection in the dry-docks, two maintenance activities were carried out, *i.e.*, a monthly inspection of the hatch cover body and fittings, cylinders, pistons and pins, and a three-monthly inspection in accordance with the planned maintenance system of the vessel. All inspections were reportedly satisfactory, and no technical issues were recorded.

Since none of the data suggested failure and / or abnormality in the operation of cargo hold no. 2 hatch cover, it was concluded that the cargo hold closing mechanism was not a contributing factor to the accident.

Monitoring of the cargo hold hatch cover during the closing operation

The chief officer and the third officers were the duty officers at the time of the accident. However, after checking cargo hold no. 3, both officers made their way towards the gangway on starboard side, aft. Other crew members were engaged on different duties elsewhere on deck and other areas of the ship.

An AB and one OS were operating the cargo hold hatch covers. Prior to commencing the closing of the cargo hold hatch cover operation, the crew conducted an inspection of the surrounding area to ensure it was clear of obstructions and / or personnel. Given that the closing procedure had been initiated, then it was clear that at the time of the final inspection, the area had been confirmed clear. Hence, the cargo surveyor must have approached the cargo hold hatch coaming not only after the crew members' inspection, but also without them being made aware. Then, with the cargo hold hatch cover closing slowly, it was clear that none of the crew members expected any other person to approach the cargo hold and look over its hatch coaming during this transition phase of the covers closing down.

In fact, at the time of closing, there were no crew members stationed around the cargo hold, except for the designated operator at the local control station.

With the cargo hold hatch cover panels in the 'tent' position, the crew member at the control station had no direct line of sight to the aft section of the hatch cover (**Figures 4a** and **4b**). Consequently, the crew member was unable to visually detect the presence of the bunker / cargo surveyor in the vicinity[4].

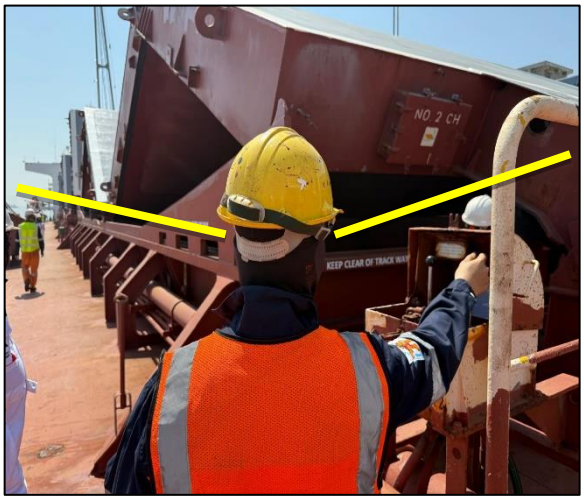

Figure 4a: Cargo hold hatch cover in the 'tent' position (partially closed), obscuring the line of sight to the crew member

[4] It has to be stated that the visibility around the cargo hold hatch coaming area was considered to be fair with both sections of the cargo hold hatch covers in the fully open position.

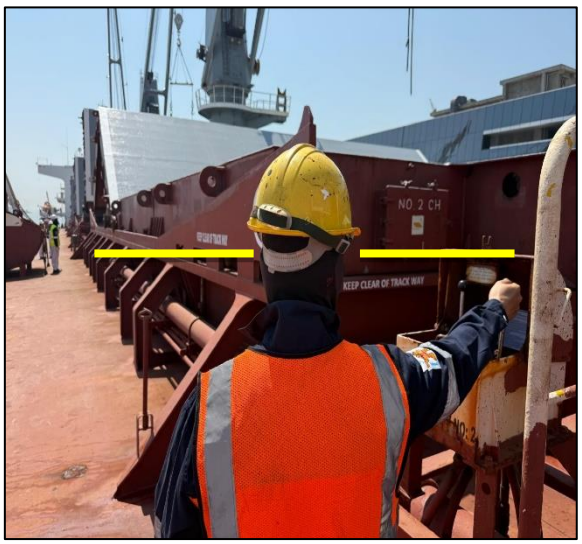

Figure 4b: Totally obscured line of sight of the aft cargo hold hatch coaming with the forward panels closed, and the aft panels in the 'tent' position

Given the operator's limited field of view (facing aft), the closing operation proceeded without awareness of any potential obstruction; an issue which remained even with the cargo hold hatch covers would have been completely closed.

Moreover, the absence of a dedicated lookout or additional safety measures, such as direct communication or visual confirmation of a clear deck until the closing operation was over, meant that the bunker / cargo surveyor's close proximity to the cargo hold hatch coaming was not detected in good time to stop the closing operation.

This highlighted a situation of contextually bounded situation awareness during the cargo hold hatch cover closing process.

The situation awareness aspect and hazard awareness

Contextually bounded situation awareness arises when individuals involved in an operation misperceive or do not recognise critical elements in their environment, leading to 'erroneous' actions. In complex and high-risk environments, such as cargo operations, where simultaneous events compete for the attention of crew members, accurate situation awareness is emergent and depends on access to real-time information, effective communication, and clear procedural safeguards.

In the case of the cargo hold hatch cover accident, the crew member lacked direct visibility of the aft section, which meant that he was unaware of the bunker / cargo surveyor's presence. The absence of crew members in the vicinity, and a lack of procedural application to ensure a clear deck during the operation, may have further contributed to the discrepancy in his awareness *versus* what was actually on deck. The accident highlighted how workplace systems can set up individuals for 'failure', by limiting their ability to perceive hazards.

However, rather than attributing directly, the accident to the crew member's level of awareness, the safety investigation opted to look into the broader system that shaped his actions. The safety investigation is of the view that the design of the control station, the absence of safety redundancies, and gaps in procedural checks may have influenced how the accident dynamics evolved within a very short period of time.

It would have also been ideal if the safety investigation had the opportunity to analyse the awareness of the cargo / bunker surveyor, which definitely did not match what has happening, a few metres above his head.

Symbolic and incorporeal safety barrier systems

In high-risk environments, effective safety management involves both symbolic and incorporeal barrier systems to mitigate risks.

Symbolic barriers, such as warning signs, labels, and physical markings, serve as visual reminders of hazards. These barriers play a crucial role in alerting personnel to potential dangers. Warning signs had been posted in the area of the cargo holds (**Figures 5** and **6**). However, whilst noting that the fatality did

not happen at the cargo hold hatch cover trackway, it must be stated that symbolic barrier systems in complex socio-technical systems are the weakest of all safety barrier systems.

The safety investigation did not exclude the possibility that they may have been missed. It is not uncommon that warning signs are missed due to a combination of familiarity and cognitive overload. Studies indicate that (non-interactive) warning signs normally 'blend' into the background and tend to lose their impact over time.

Figure 5: The instruction posted on the hydraulic control station

Figure 6: One of the warning signs at the cargo hold's hatch cover trackway

Incorporeal barrier systems, on the other hand, include safety procedures, training, and operational protocols designed to control risks at an organisational level. Information obtained by the safety investigation suggested that whilst a cargo hold hatch cover safety checklist had not been prepared, the SMS procedure addressing the opening and closing of cargo hold hatch cover was neither referred to on board, nor communicated to other persons boarding the ship. Consequently, the crew members may have not been adequately prepared to respond effectively to an unforeseen situation such as then one they faced during this incident.

The absence of procedural application for cargo holds hatch cover operations meant that standardised precautions, such as mandatory visual inspections, communication protocols were not given effect. Even more, designated personnel to oversee the closing process had not been assigned.

Fatigue and alcohol / drug abuse

Alcohol tests were carried out after the accident on all crew members. All the tests carried out returned negative results. Moreover, the autopsy report also confirmed that alcohol / drugs were not contributory to the fatal accident.

Crew members' hours of work and rest indicated that they were in accordance with the relevant international requirements. The safety investigation did not have details of the quality and duration of sleep patterns.

However, the behaviour of the crew members prior and after the accident, did not indicate that it was influenced by fatigue and alcohol. To this effect, crew members' fatigue and alcohol were not considered contributing factors to the accident.

The safety investigation had no access to the hours of rest and sleep of the fatally injured bunker / cargo surveyor.

CONCLUSIONS[5]

1. The bunker / cargo surveyor sustained fatal injuries after becoming trapped between the closing cargo hold hatch cover and the cargo hold hatch coaming.
2. The crew members operating the hatch cover lacked direct visibility of the aft section.
3. The local control station's position and design limited the operator's field of view, making it difficult to detect any obstructions to the moving cargo hold hatch covers.
4. There were no implemented mandatory visual inspections, communication protocols, or assigned personnel to oversee the entire closing process of the cargo hold hatch cover.
5. Warning and cautionary signs may have been missed due to familiarity and cognitive overload.
6. The SMS procedure addressing the opening and closing of cargo hold hatch cover was neither referred to on board, nor communicated to other persons boarding the ship.
7. The cargo hold hatch cover closing mechanism, including the hydraulic system, was in good working condition at the time of the accident.
8. Regular maintenance and inspections confirmed no malfunctions, wear, or defects.
9. There was no technical failure of the cargo hold hatch cover system which could have contributed to the accident.

[5] **Conclusions and safety actions shall not create a presumption of blame and / or liability.**

SAFETY ACTIONS TAKEN DURING THE COURSE OF THE SAFETY INVESTIGATION

During the progress of the safety investigation, the Company took the following safety actions:

i. cargo holds hatch cover operating procedures were included in the relevant operations' manual;

ii. serving and joining crew members were familiarised with the newly implemented procedures;

iii. fresh warning signs were displayed near the wheel tack of the cargo hold hatch cover tracks on port and starboard sides;

iv. a warning sign has been posted on the operating lever to alert the operator to confirm hatch coaming is clear before closing / opening the hatch cover;

v. a Company-wide safety stand-down call with all regional leaders through to ship superintendents was held on the accident;

vi. a case study on the accident was presented at the Company's Junior Officer Crew Conference, where the important role of safety leaders was emphasised. Over 200 officers were in attendance. The plan is to repeat the case study at future conferences for officers and ratings alike;

vii. shipboard management on all managed vessels has been briefed to comply with the Hatch Cover operation procedure available in the Company's SMS manual;

viii. all vessels have been requested to identify the area specific to the vessel cargo hold hatch coaming construction and stencil hazards marking to highlight the danger location;

ix. all vessels were required to prepare a ship-specific cargo hold hatch cover operation checklist for opening and

closing. This had to also emphasise the continuous look-out that had to be maintained;

x. all vessels were requested to ensure that all cargo hold hatch cover operations are reviewed to identify the cargo hold hatch cover section, which had to be either opened or closed first, to maximise on the visibility around the coaming;

xi. the decision at management level was taken to enhance the internal audit checklist;

xii. a specific requirement for ship specific checklist was included in the Cargo Operation Manual;

xiii. a reflective training session was conducted by the attending Operation Director along with the Master and the deck crew.

SAFETY LESSONS

This accident highlights the risk posed by moving hatch covers when operations rely solely on a single operator with restricted visibility. Although hatch cover systems may function exactly as designed, they can nonetheless present a fatal hazard. Where operators cannot maintain a clear line of sight to all danger zones, the absence of a dedicated lookout, positive confirmation of a clear deck, or enforced communication protocols creates a latent condition for potentially fatal injuries.

The fatality further demonstrates the limitations of symbolic safety barrier systems when not reinforced by effective procedural controls. Warning signs, while necessary, are insufficient on their own in high-risk tasks. Visiting personnel, including surveyors and contractors, may be unaware of vessel-specific hazards unless actively briefed and integrated into shipboard safety systems. Robust incorporeal barrier systems, such as ship-specific checklists, mandatory deck clearance verification, assigned oversight roles, and clear control of third-party movements, are essential to prevent individuals from unknowingly entering danger zones during hatch cover operations.

RECOMMENDATIONS

Taking into consideration the actions taken by the Company, no safety recommendations have been made.

SHIP PARTICULARS

Vessel Name:	*Ocean Century*
Flag:	Malta
Classification Society:	Korean Register of Shipping (KR)
IMO Number:	9485033
Type:	Bulk Carrier
Registered Owner:	Aska Marine Ltd.
Managers:	Fleet Management Middle East DMCC, United Arab Emirates
Construction:	Steel
Length Overall:	190.00 m
Registered Length:	186.48 m
Gross Tonnage:	31,540
Minimum Safe Manning:	16
Authorised Cargo:	Solid bulk

VOYAGE PARTICULARS

Port of Departure:	Taicang, China
Port of Arrival:	Gwangyang, South Korea
Type of Voyage:	International
Cargo Information:	In ballast
Manning:	20

MARINE OCCURRENCE INFORMATION

Date and Time:	24 January 2025 at about 08:30 (LT)
Classification of Occurrence:	Very Serious Marine Casualty
Location of Occurrence:	Hapo General Wharf, Gwangyang, South Korea
Place on Board	Main deck
Injuries / Fatalities:	One fatality (non-crew member)
Damage / Environmental Impact:	None reported
Ship Operation:	Normal Service / Alongside
Voyage Segment:	Alongside
External & Internal Environment:	The sky was clear, and the visibility was 10 nautical miles. A light breeze was blowing from the Northeast, while the sea state was slight, with low swell. The air and sea temperatures were recorded at 4 °C and 11 °C, respectively.
Persons on board:	21