



REPUBLIC OF THE MARSHALL ISLANDS

Maritime Administrator

ECO GALAXY MARINE SAFETY INVESTIGATION REPORT

Occupational Fatality

Port Klang Pilot Station, Malaysia | 30 August 2023

Official Number: 6293

IMO Number: 9715555



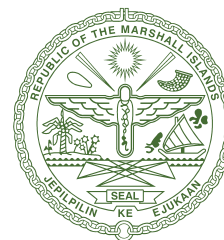
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AUTHORITY

An investigation, under the authority of the Republic of the Marshall Islands laws and regulations, including all international instruments to which the Republic of the Marshall Islands is a Party, was conducted to determine the cause of the casualty.



Maritime Administrator

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LIST OF ABBREVIATIONS AND ACRONYMS

| | |
|--------|--|
| 2/O | Second Officer |
| 3/O | Third Officer |
| ASD | Able Seafarer Deck |
| °C | Degrees Celsius |
| E | East |
| ECDIS | Electronic Chart Display and Information System |
| ILO | International Labour Organization |
| IMO | International Maritime Organization |
| ISM | International Safety Management |
| kn | Knots |
| LPG | Liquefied Petroleum Gas |
| m | Meters |
| mg | Milligrams |
| MOB | Man Overboard |
| MRSC | Maritime Rescue Sub-center |
| N | North |
| NM | Nautical Miles |
| NMOHSC | National Maritime Occupational Healty and Safety Committee |
| OOW | Officer of the Watch |
| PPE | Personal Protective Equipment |
| SAR | Search and Rescue |
| SMS | Safety Management System |
| UTC | Coordinated Universal Time |
| VHF | Very High Frequency |
| VTS | Vessel Traffic Services |

DOCUMENTS CITED

| | |
|-----------------------------|--|
| COSWP | Code of Safe Working Practices for Merchant Seafarers |
| MLC, 2006 | Maritime Labour Convention, 2006 |
| MSC.1/Circ.1182/Rev.1 | IMO Maritime Safety Committee Guide to Recovery Techniques |
| SOLAS | International Convention for the Safety of Life at Sea, 1974 |
| STCW Code | Seafarers' Training, Certification and Watchkeeping Code |



PART 1: EXECUTIVE SUMMARY

On 30 August 2023, at 0005,¹ ECO GALAXY picked up the Pilot at Port Klang pilot station, Malaysia. The ship was proceeding with a speed over ground of 8 kn and there was squally weather, reducing the visibility. The 3/O and ASD1 of ECO GALAXY welcomed the Pilot at the boarding area and, after completing the boarding procedures, the 3/O began to escort the Pilot to the Bridge. When leaving the boarding area, the 3/O and the Pilot heard a scream and shouting for help. They then realized that the ASD1 had fallen overboard. The 3/O ran aft to throw a lifebuoy to the ASD1 and meanwhile alerted the Master on the Bridge by means of his hand-held radio. The ASD1, who was not wearing a life jacket, was not able to reach the lifebuoy.

The pilot boat became aware of the situation and approached the ASD1 in the water. A crewmember on board the pilot boat grabbed a lifebuoy with light and jumped into the water to rescue the ASD1. Without having succeeded in aiding the ASD1, the crewmember was recovered by the pilot boat. After the pilot boat recovered their crewmember, sight of the ASD1 was lost.

On 1 September 2023, during a SAR operation coordinated by MRSC Johor Bahru, the ASD1 was recovered deceased.

The Republic of the Marshall Islands Maritime Administrator’s (the “Administrator’s”) marine safety investigation determined that the ASD1 most probably fell overboard while securing the rail chains of the pilot access point. The investigation was not able to determine the cause of the ASD1’s death.

¹ Unless stated otherwise, all times are ship’s local time (UTC +8).

The following lessons learned that were identified are that:

- (a) the decision to enact a rescue attempt without proper equipment or training carries a high degree of risk and using rescue cradles or similar equipment can help to successfully recover persons from the water;
- (b) the importance of proper oversight of crewmembers while working on deck and during seamanship evolutions; and
- (c) suitable PPE should be worn when the risk of falling overboard exists.

PART 2: FACTUAL INFORMATION

The following Factual Information is based on the information obtained during the Administrator’s marine safety investigation.

ECO GALAXY Pilot Boarding Area

ECO GALAXY is a gas carrier built in 2015 in Shimonoseki City, Japan. The ship has a depth of 8.90 m and the designed draft is 6.80 m. In laden summer draft condition, the Upper Deck is 2.70 m above sea level.

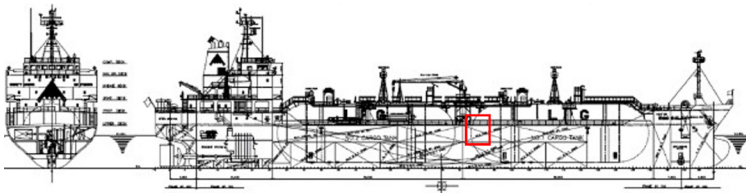


Figure 1: ECO GALAXY General Arrangement plan. The location of the starboard side pilot boarding area is shown in the red square.

There is a dedicated pilot boarding area on either side of the Upper Deck, near the midship section on the ship’s port and starboard sides (see Figure 1), where the fixed railing is interrupted and replaced by two removable chains that are permanently secured to a stanchion on one side and that can be opened by a hook on the opposite stanchion when the boarding area is in use. The pilot boarding area is painted with anti-skid paint. A lifebuoy with a light is located adjacent to the boarding area (see Figure 2).

SHIP PARTICULARS

Vessel Name
ECO GALAXY

Registered Owner
Wolverines Inc.

ISM Ship Management
Stealth Maritime Corporation S.A.

Flag State
Republic of the Marshall Islands

| | | |
|---------------------------|-----------------------------|---------------------------|
| IMO No. 9715555 | Official No. 6293 | Call Sign V7LL5 |
|---------------------------|-----------------------------|---------------------------|

| | |
|------------------------------|-------------------------------|
| Year of Build 2015 | Gross Tonnage 5,320 |
|------------------------------|-------------------------------|

| | |
|-----------------------------|------------------------------------|
| Net Tonnage 1,995 | Deadweight Tonnage 5,878 |
|-----------------------------|------------------------------------|

Length x Breadth x Depth
110.11 x 18.2 x 8.9 m

Ship Type
Gas Carrier

**Document of Compliance
Recognized Organization**
Lloyd’s Register

**Safety Management Certificate
Recognized Organization**
Lloyd’s Register

Classification Society
Lloyd’s Register

Persons on Board
16

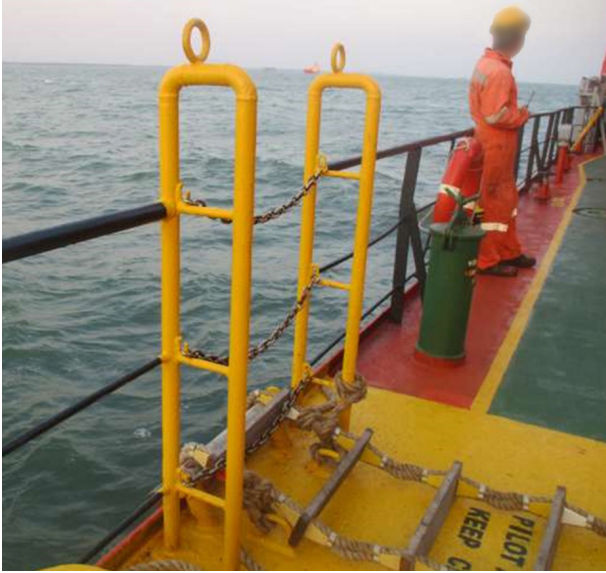


Figure 2: Starboard side pilot boarding area.

The starboard side pilot boarding area is illuminated with floodlights on deck and near the Navigation Bridge Deck. All lights were working at the time of the incident.

Crew

ECO GALAXY had a complement of 16 crewmembers, two more than what was required by the Minimum Safe Manning Certificate issued by the Administrator. All crewmembers were medically fit and in possession of valid certificates for their assigned position.

The ASD1 was a 57 year old Filipino national who joined the Company in 2003 and had 13.7 years in rank. On 21 June 2023, he was declared medically fit for duty without restrictions and later joined ECO GALAXY on 15 July 2023. He was diagnosed with an Atherosclerotic Aorta and Thoracic Spondylosis, but these conditions were not considered to affect his ability to join a ship. The ASD1 was also diagnosed with Hypertension which needed to be controlled by taking Amlodipine Besylate 10 mg (hereinafter “Amlodipine”) daily and lifestyle modification. Both the diagnosis and the medication had been declared to the Company.

Besides Amlodipine, Diclofenac (Philflam DR) 50 mg (hereinafter “Diclofenac”)² and Paracetamol³ were also encountered among the ASD1’s personal effects. The ASD1 had not declared to the Master or to the Company that he was taking Diclofenac.

The ASD1 was working daily from 0800 to 1700 and was not assigned to a navigational watch. One of the ASD1’s tasks was to install the pilot ladder and to welcome the Pilot on board regardless of the time of day. On 29 August 2023,

2 A non-steroidal anti-inflammatory drug, Diclofenac is a medicine that reduces swelling (inflammation) and pain. It is used to treat aches and pains, as well as problems with joints, muscles, and bones (see <https://www.nhs.uk/medicines/diclofenac/>).

3 Paracetamol is a common painkiller used to treat aches and pain. It can also be used to reduce a high temperature (see <https://www.nhs.uk/medicines/paracetamol-for-adults/>).

the ASD1 worked the day shift from 0800 to 1700, installed the pilot ladder from 2030 to 2130, and started working again at 2330 to welcome the Pilot.

The 3/O on board ECO GALAXY was a 51 year old Filipino national. He joined the ship on 2 April 2023 and had been working with the company for 10 years, of which 4.5 years were in the rank of 3/O.

The Master on board ECO GALAXY was a 50 year old Filipino national. He joined the ship on 7 May 2023 and had been working with the Company for 16.8 years, of which 8.1 years were in the capacity of Master.

The Administrator did not find any indication that any crewmembers involved with this marine casualty did not receive the required amount of rest mandated by the IMO's STCW Code, Section A-VIII/1, paragraphs 2 and 3 and the ILO's MLC, 2006, Regulation 2.3.

Narrative

On 29 August 2023, around 2000, ECO GALAXY was loaded with a butane / LPG mixture and the ship's freeboard was 2.70 m when the ship arrived near the pilot station at Port Klang, Malaysia. Around 2030, the ASD1 and ASD2 rigged the pilot ladder at the starboard side, about 1 m above sea level. Around the same time, ECO GALAXY was informed that the Pilot would only embark around midnight, and subsequently the ship dropped anchor to wait for the arrival of the Pilot.

At 2330, ECO GALAXY heaved up its anchor to meet the Pilot at the pilot station. Sunset was recorded at 1920, and the weather was inclement with squally conditions and reduced visibility less than 5 NM. A Beaufort Force 5 westerly wind was blowing. The sea was moderate with waves of approximately 1 m and a slight swell. Reportedly, the waves were not significant for the size of the ship and the ship was not rolling. The outside temperature was 28°C. The seawater temperature was 25°C. There was a westerly current, less than 1 kn.

Around midnight, the pilot boat approached ECO GALAXY. The Master had the con⁴ and he was assisted by the 2/O, who had the 0000 to 0400 navigational watch. A Lookout and a Helmsman were also present and on watch on the Bridge. ECO GALAXY's speed was approximately 8 kn. The Master had switched on all the floodlights to have good visibility on deck. The 3/O and the ASD1 proceeded to the starboard pilot boarding area to welcome the Pilot. They were each wearing a raincoat, a safety helmet, safety shoes, a coverall, and gloves. Neither the 3/O nor the ASD1 were wearing a lifejacket. The 3/O was holding a hand-held radio to communicate with the Bridge.

On 30 August 2023 at 0005, the Pilot embarked ECO GALAXY. The 3/O reported to the Bridge that the Pilot had safely boarded the ship. After completing the standard boarding procedures, the Pilot advised the 3/O and ASD1 to leave the pilot ladder in the rigged position as he would use the same pilot ladder to disembark after berthing. The 3/O then escorted the Pilot toward the Bridge and the pilot boat proceeded toward the port.

4 The person who has the con holds the authority to give helm orders and is responsible for the ship's navigation and maneuvering.

When the 3/O and the Pilot were approximately 20 m away from the pilot boarding area, they heard a scream and shouting for help in Tagalog.⁵ The 3/O and Pilot turned around and did not see the ASD1 on deck. When the 3/O looked over the side, he saw a person floating in the water moving toward the starboard quarter of ECO GALAXY.

The 3/O assumed that it was the ASD1, based on the shouting he heard and as he could not locate the ASD1 on deck. The 3/O alerted the Bridge, by means of his hand-held radio, and ran toward the starboard quarter where he took a lifebuoy with line and threw it to the ASD1. He was not able to observe if the ASD1 could reach the lifebuoy. Meanwhile on the Bridge, the MOB position, 02°51.15'N, 101°15.22'E, was plotted on the ECDIS and the Master ordered all deck and search lights switched to the on position (see Figure 3).

As the 3/O ran to the Poop Deck, the Pilot proceeded to the Bridge. The pilot boat that had just left when the MOB incident occurred, proceeded toward the ASD1 in the water.

When the Pilot arrived on the Bridge, the Master immediately sought his advice to turn the ship around. Subsequently, the Pilot contacted Port Klang VTS, but as the ship was sailing inside the navigation channel to Port Klang and the depth outside of the channel was insufficient, the VTS advised to wait until passing Selat buoy.

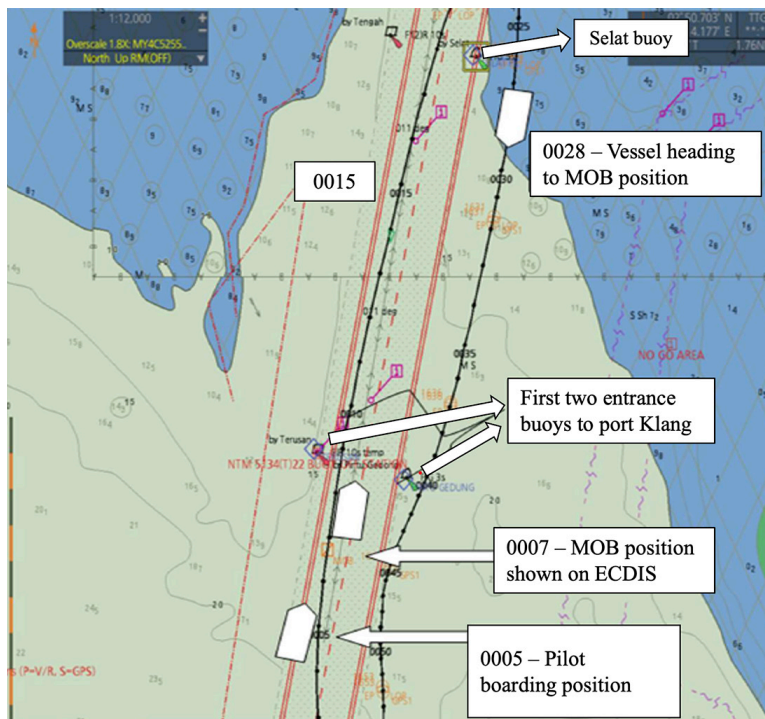


Figure 3: Track of ECO GALAXY from anchorage.

Meanwhile, a crewmember on board the pilot boat grabbed a lifebuoy with a light and jumped into the water to rescue ASD1. Reportedly, the ASD1 was unable to grab the lifebuoy or to grab the hand of the crewmember and appeared non-responsive. The crewmember from the pilot boat was recovered from the water, and by the time the crewmember was on board the pilot boat, the ASD1 was out of sight.

5 Tagalog is a Philippine language. Although the working language on board was English, Tagalog was often used between crewmembers as their local language.

After the Pilot's VHF call to VTS, the Pilot hailed the pilot boat in Malay by means of VHF. At 0012, the pilot boat informed the Pilot on board ECO GALAXY that the pilot boat crewmember was recovered from the water. Based on the information received from the pilot boat, the Pilot and the Master wrongly assumed that the ASD1 was rescued. By 0018, it became clear that the ASD1 was still in the water and out of sight of the pilot boat. ECO GALAXY had now reached the Selat buoy and the Master immediately ordered the Pilot to turn the ship around. At 0020, the general alarm was sounded to muster all the crewmembers to assist in the search for the ASD1 in the water. The Operator, agent, and local authorities were informed that an MOB incident had occurred. Port Klang Traffic Control and West Port Control were contacted to request assistance to find the ASD1.

At 0124, ECO GALAXY anchored approximately 1 NM north of the MOB position to avoid hindering the traffic and installed a sharp lookout. Shortly thereafter, the Pilot disembarked.

In the morning of 30 August 2023, the Malaysian Navy and Coast Guard initiated a SAR operation to locate the ASD1. Later that morning, ECO GALAXY received permission to proceed to port.

MRSC Johor Bahru coordinated the SAR operation from 1230 onward. On 1 September 2023 at 1027, the ASD1 was found deceased in the water.

PART 3: ANALYSIS

The following Analysis is based on the above Factual Information.

Cause of Fall Overboard

No crewmembers witnessed the fall of the ASD1 overboard. The 3/O and the Pilot were walking toward the accommodation and had their backs toward the ASD1. The 3/O assumed that the ASD1 was following him together with the Pilot. He was not aware of the ASD1's activity at that moment. The pilot boat, having just turned away from ECO GALAXY was no longer witnessing activities on board the ship.

As the Pilot had informed the 3/O and the ASD1 that the pilot ladder could be kept in place, no handling was required other than closing the two removable chains (*see Figure 2*). Most probably, the ASD1 fell overboard while attempting to close the chains between the two upright stanchions but the reason for falling overboard could not be determined with certainty. It was possible that the ASD1 slipped on the wet deck despite the anti-skid paint or that he tripped over a part of the pilot ladder that was lying on deck or over a securing point on deck. As the activity of the ASD1 before falling overboard was not witnessed, it could not be excluded that he was checking or repairing a part of the pilot ladder over the ship's side and lost his balance.

Medical Condition

The ASD1 was diagnosed with Hypertension and was in possession of Amlodipine on board ECO GALAXY. There was no indication that he was not taking the medication as prescribed.

The ASD1 was also in possession of Diclofenac, a prescribed medicine that reduces inflammation and pain. During the investigation, it could not be determined if any medical advice was given to the ASD1 to take Diclofenac whilst suffering from Hypertension and/or to combine Diclofenac with other medication. When taking Diclofenac tablets or capsules, more than 1 in 100 people encounter side effects such as nausea, vertigo, headaches, stomachache, or mild rash.⁶ The ASD1 had not complained about any of the described side effects since he joined ECO GALAXY.

Two weeks before joining ECO GALAXY, on 21 June 2023, the ASD1 was medically examined and did not declare the use of Diclofenac during this examination, nor did he declare it to the Company or the Master.

A copy of the autopsy report was not available for the Administrator's investigation and thus it was not possible to confirm or exclude any relationship between the medications that were taken and the fall into the water and any relationship between the medical condition of the ASD1 and the cause of death.

Safety Culture

The SMS on board ECO GALAXY contains a PPE Matrix⁷ which stated that a buoyancy aid or a personal flotation device should be used when working with boats, near the ship's side, and when working over the ship's side. The crewmember involved in the transfer of persons was to wear a personal flotation device when installing the pilot ladder and during the transfer of persons.⁸ As part of the familiarization procedure completed upon joining ECO GALAXY,⁹ both the 3/O and the ASD1 were familiar with the PPE Matrix. Neither the ASD1 nor the 3/O were wearing a life jacket when the Pilot boarded the ship and consequently were not complying with the Company's SMS. Interviews with the ship's crewmembers indicated that personal flotation devices were not always used during the transfer of persons.

The crew of ECO GALAXY is required to discuss the activities on board in daily work planning meetings and toolbox meetings¹⁰ which includes the correct PPE to be worn. The Pilot's boarding was not part of the daily work planning meeting that was held on 29 August 2023. No indication was found during the investigation that a toolbox meeting was carried out in relation to the boarding of the Pilot on 29 August 2023.

The Master and the OOW were present on the Bridge and observed the ASD1 and the 3/O proceeding to the pilot boarding area. Neither the Master nor the OOW could recall after the incident whether the 3/O and the ASD1 were wearing a lifejacket at that moment.

The risk assessment¹¹ for rigging the pilot ladder, as conducted on 29 August 2023, was signed by the ship's four ASDs, three Deck Officers, and the Master on 29 August 2023 and addressed the risks related to an improperly rigged pilot ladder. The risk assessment further specified additional risk control measures for the Pilot climbing the ladder.

6 Detailed information on Diclofenac medicine consumed by individuals for the treatment of pain and reduction of swelling (see <https://www.nhs.uk/medicines/diclofenac/>).

7 See Safety, Health and Hygiene Manual — Appendix I — PPE Matrix, as part of the ship's SMS.

8 See Procedure M2.2.5.3 Pilot/transfer of personnel operation, as part of the ship's SMS.

9 See Form OP 146 Crew Familiarization and Hand Over Report, as part of the ship's SMS.

10 See Procedure M2.2.5.6: Daily Work Planning/Toolbox Meeting, as part of the ship's SMS.

11 See Form SF 118: Risk Analysis-Risk Assessment, as part of the ship's SMS.

Wearing a lifejacket was a control measure in case the pilot ladder was swinging and the wearing of safety shoes, leather gloves, and a helmet were identified as control measures against slipping and falling. The risk assessment did not address any risks related to the safety of the crew in respect to the rigging of the pilot ladder or in the boarding of the Pilot.

The PPE Matrix also requires a safety harness to be worn when working over the ship's side. Generally, a safety harness was not worn when welcoming a Pilot on board as this activity did not include any work over the ship's side. It could not be determined if the ASD1 was carrying out unplanned work over the ship's side at the moment that he fell overboard.

Familiarity with Pilot Boarding

Between 30 August 2022 and 30 August 2023, ECO GALAXY had called Port Klang 27 times at regular intervals. In the same period, other ports in the South-East Asia region were frequently called as well (see Figure 4).



Figure 4: Voyages of ECO GALAXY between 30 August 2022 and 30 August 2023.

The ASD1 joined the ship on 15 July 2023. It was the seventh time on board ECO GALAXY that the ASD1 was engaged in a Pilot transfer at Port Klang.

The crew of ECO GALAXY was familiar with the weather conditions in the area during that time of the year, including squally weather as was observed at the time of the incident.

It can be concluded that Pilot transfers were frequently and regularly executed on board ECO GALAXY which could have led to risk normalization. Dangerous conditions can be perceived as normal over time and accepted practice and silent deviations from procedure may arise.¹²

¹² Nejc Sedlar, Amy Irwin, Douglas Martin, Ruby Roberts, A qualitative systematic review on the application of the normalization of deviance phenomenon within high-risk industries, *Journal of Safety Research*, Volume 84, 2023, Pages 290-305, ISSN 0022-4375, (see <https://doi.org/10.1016/j.jsr.2022.11.005>).

Emergency Response

Emergency response procedures¹³ are available to guide the Bridge team on board ECO GALAXY when an MOB incident occurs. The procedures include immediate actions to be considered on board such as the release of an MOB buoy from the Bridge wing, marking the ship's position in relation to the MOB position, maneuvering to turn the ship, sounding of the general alarm, and the launch of the rescue boat and/or a life raft.

Four persons were present on the Bridge when the MOB occurred; the 3/O was on deck. The Pilot was proceeding to the Bridge shortly after the ASD1 had fallen into the water. The pilot boat was still in the vicinity and approached the ASD1 shortly after he had fallen into the water.

When the ASD1 fell overboard, the ship's speed was approximately 8 kn and the ASD1 quickly reached the ship's starboard quarter. The 3/O first informed the Bridge and then threw a lifebuoy with line towards the ASD1. The MOB buoy near the Bridge wing had not been launched.¹⁴

Since ECO GALAXY was entering the approach channel to Port Klang, to safely turn the ship back towards the MOB position, it was necessary to first obtain advice from the VTS. When the Pilot arrived at the Bridge, the Master immediately asked for advice to turn the ship. The Master was informed by the Pilot that this was not possible as the available depth outside the channel was insufficient.

Launching a rescue boat was assessed by the Master, but due to the weather conditions and the limited visibility, it was considered by the Master as unsafe to operate a rescue boat. The launch of a life raft had not been considered.¹⁵

As it was initially understood by the Pilot, that the ASD1 had been rescued by the crew of the pilot boat, the general alarm was delayed, being sounded approximately 12 minutes after the ASD1 had fallen overboard. Although it cannot be stated with certainty, this delay likely did not significantly affect the outcome of the emergency response, as additional lookouts would likely not have been able to visually sight the ASD1 in the water due to the prevailing weather conditions, darkness, and presence of deck lighting affecting night vision. Additionally, the ship was still moving away from the MOB position, as it was not possible to immediately turn the ship.

Rescue Operation and Cause of Death

The pilot boat arrived at the location of the ASD1 quickly after the ASD1 had fallen into the water. The pilot boat was not equipped with a device such as a rescue basket or a cradle to lift a person in a horizontal position from the water.¹⁶

A crewmember of the pilot boat took a lifebuoy and jumped into the water. The crewmember was not wearing a personal flotation device and was not attached to a safety line.

13 See Emergency Response Manual — Appendix 1 Contingency Plans — Man Overboard/Search and Rescue/Recovery persons from the water, as part of the ship's SMS.

14 The standard response is to release one of the two lifebuoys that are capable of quick release from the Bridge. Each are provided with a self-igniting light and a self-activating smoke signal. See SOLAS regulation III/1.3

15 See MSC.1/Circ.1182/Rev.1 paragraph 5.5, ECO GALAXY was making way through the water and could not immediately turn. Guiding the liferaft towards the person in distress would not have been possible.

16 The preferred means of recovery is to lift a person from the water. Additionally, to reduce the risk of cardiac arrest the person should, when possible, be lifted in a horizontal or near-horizontal position, See MSC.1/Circ.1182. Rev.1, paragraph 10.5.6.

There was no indication that the act of the crewmember was planned and his response placed him at risk of requiring assistance as well.¹⁷

It was reported that the ASD1, who was conscious after falling into the water, was not able to reach the lifebuoy that was thrown by the 3/O. The ASD1 was also not able to reach the hand of the crewmember who jumped in the water or to grab the lifebuoy that the crewmember of the pilot boat had taken with him. Neither was the ASD1 able to swim to the crewmember or to the pilot boat. The ASD1 could not be located after the crewmember of the pilot boat was back on board.

The ASD1 was wearing a coverall, a raincoat, and safety shoes, but was not wearing a life jacket. There was a moderate sea with waves of 1 m in height. These conditions may have complicated the ability of the ASD1 to stay above the surface of the water.

PART 4: CONCLUSIONS

The following Conclusions are based on the above Factual Information and Analysis and shall in no way create a presumption of blame or apportion liability.

1. Causal factors that contributed to this very serious marine casualty include:
 - (a) not wearing a lifejacket when the risk of falling overboard is present.
2. Additional causal factors that may have contributed to this very serious marine casualty include:
 - (a) deviations from safety procedures on board ECO GALAXY regarding Pilot transfers, potentially resulting from risk normalization.
3. Additional issues that were identified but that did not contribute to this very serious marine casualty include the:
 - (a) crewmember of the pilot boat who had no training as a rescue swimmer, jumped into the water without wearing a lifejacket or being connected to the ship by a lifeline, to assist the ASD1 after he fell into the water; and
 - (b) absence of any rescue device on board the pilot boat to lift a person from the water.

¹⁷ See MSC.1/Circ.1182/Rev.1, paragraph 10.3.10. It is also noted that water safety organizations worldwide advise that persons who are not specially trained as rescue swimmers or lifeguards should not enter the water to assist another person. See for example: The Royal National Lifeboat Institution, How to rescue someone from drowning (see <https://rnli.org/magazine/magazine-featured-list/2017/march/how-to-rescue-someone-from-drowning>); Royal Life Saving Australia, How to Carry Out a Rescue Safely (see <https://www.royallifesaving.com.au/stay-safe-active/in-an-emergency/how-to-carry-out-a-rescue-safely>); and American Red Cross, Water Safety: Know What to do in an Emergency (see <https://www.redcross.org/get-help/how-to-prepare-for-emergencies/types-of-emergencies/water-safety.html>). MSC.1/Circ.1182/Rev.1, paragraph 10.5.8 states that persons who are not able, without assistance, to get into a rescue basket or other device may be assisted by a crewmember from the recovering ship provided that the crewmember is “wearing personal protective equipment and a safety line.” This guidance also states: “remember, however, that this should be planned for.” Guidelines issued by the NMOHSC regarding procedures for responding to a man overboard state that crewmembers assisting with the recovery of a person in the water “must be wear[ing] immersion suits and be securely attached to lifelines, which in turn are attached to a boat fall or to the ship.” See NMOHSC, Guidelines to Shipping Companies on Procedures in Cases of Man Overboard, p. 4. These guidelines are referenced in the COSWP, sections 4.6 and 4.7.

PART 5: PREVENTIVE ACTIONS

In response to this very serious marine casualty, the Company has taken the following Preventive Actions:

1. During visits to the vessels of the fleets and during audits, there will be a campaign to focus on safe working practices and safe shipboard operations.
2. The lessons learned from this incident will be discussed during safety meetings on board, during the annual senior officers' conference and during web conferences with crewmembers.
3. A review of the PPE Matrix and the emergency response procedures has been executed.
4. Shorebased pre-embarkation training related to procedures to be followed during Pilot and personnel transfer operations has been conducted for all Company's crewmembers.
5. Stricter criteria for fitness for duty prior to embarkation have been adopted by the Company.
6. A Pilot and Personnel Transfer Campaign has been initiated to all ships in the Company-managed fleet using reflective learning material.
7. Criteria for Pilot and personnel transfer operations have been developed within the Company.
8. Rank specific age limits for all seafarers have been adopted.
9. More frequent MOB drills have been implemented over the entire fleet.
10. An evaluation of the safety culture of the organization has been carried out by an external party.

PART 6: RECOMMENDATIONS

The following Recommendations are based on the above Conclusions and in consideration of the Preventive Actions taken.

1. The Company is recommended to ensure that:
 - (a) risk assessments, safety meetings, and toolbox meetings are held as required by the Company's SMS; and
 - (b) PPE is worn as required by the Company's SMS.
2. The Malaysian Marine Department is recommended to consider:
 - (a) requiring Malaysian-registered launches used in Malaysian waters to transport seafarers and other persons to embark or disembark a ship be fitted with rescue cradles or similar devices; and
 - (b) making operators of launches used in Malaysian waters to transport seafarers and other persons to embark or disembark a ship aware of the need for crewmembers to receive regular training for recovering persons from the water.

The Administrator's marine safety investigation is closed. It will be reopened if additional information is received that would warrant further review.