REPUBLIC OF THE MARSHALL ISLANDS

Maritime Administrator

PRISMA MARINE SAFETY INVESTIGATION REPORT

Fatal Fall from Height

Baltic Sea | 29 January 2025

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DISCLAIMER

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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

AED . . . . . Automatic External Defibrillator

ASD. . . . . Able Seafarer Deck

C.I.R.M. Rome. . . . . Centro Internazionale Radio Medico, Rome (International Radio Medical Centre, Rome)

C/O . . . . . Chief Officer

CH or Cargo Hold. . . . . Cargo Hold

CPR. . . . . Cardiopulmonary Resuscitation

DWT . . . . . Deadweight Tonnage

m . . . . . Meters

MEDEVAC . . . . . Medical Evacuation

MRCC. . . . . Maritime Rescue Coordination Center

NM . . . . . Nautical Mile

No. . . . . Number

OICNW. . . . . Officer in Charge of a Navigational Watch

OOW. . . . . Officer of the Watch

OS . . . . . Ordinary Seafarer

P&I Club. . . . . Property and Indemnity Club

PPE . . . . . Personal Protective Equipment

SMS. . . . . Safety Management System

UK MCA. . . . . United Kingdom Maritime and Coastguard Agency

VHF. . . . . Very High Frequency

DOCUMENTS CITED

COLREGs. . . . . Convention on the International Regulations for Preventing Collisions at Sea, 1974

COSWP. . . . . Code of Safe Working Practices for Merchant Seafarers

IMO Resolution MSC.133(76) . . . . . Adoption of Technical Provisions for Means of Access for Inspections

ISM Code . . . . . International Management Code for the Safe Operation of Ships and for Pollution Prevention

MLC, 2006 . . . . . Maritime Labour Convention, 2006

MSA 10-24 . . . . . Marine Safety Advisory No. 10-24, Fatalities Due to Falls From Height

MSA 12-25 . . . . . Marine Safety Advisory No. 12-25, Stop-Work Authority

STCW Code . . . . . Seafarers Training, Certification and Watchkeeping Code

PART 1: EXECUTIVE SUMMARY

On 29 January 2025, the Republic of the Marshall Islands-registered PRISMA, a geared five-hatch bulk carrier, managed by Maru LLC (the "Company"), was loitering in the Baltic Sea approximately 40–45 NM north of the Republic of Poland (hereinafter "Poland") coast. Work being done on board included painting the cargo holds in preparation for loading cargo at the ship's next load port.

A few minutes before 2200,[1] the Bosun, who was standing on scaffolding approximately 9.5 m above the tank top to paint the upper portions of frames located inside of CH No. 3, directed the ASD1 and ASD2 to move the scaffolding by 3 m. The Bosun remained on the scaffolding when it was moved. The scaffolding, along with the Bosun, fell as the two ASDs were putting the stabilizer arms in place.

The OS2, who was on deck, heard a loud noise from CH No. 3 and looked down into the cargo hold. He saw that the scaffolding had fallen and immediately reported by radio that the scaffolding being used in CH No. 3 had collapsed.

The ship's C/O, who had just gone out on deck, heard the radio call from the OS2 and immediately entered the cargo hold. While climbing down the Australia ladder, he observed that the scaffolding had fallen and that ASD1 and ASD2 were assisting the Bosun, who was lying on the tank top. The Bosun was wearing a safety harness with a lifeline. The clip on the lifeline was connected to the scaffolding.

The C/O examined the Bosun and determined that he was unconscious, had labored breathing and a weak pulse, and that his eyes did not respond to light. The C/O informed the Master of the Bosun's condition and requested medical equipment be brought to CH No. 3. The C/O, with assistance from the 2/O and other crewmembers, began administering first aid to the Bosun.

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

The Master informed the Company and requested medical advice from C.I.R.M. Rome. Based on advice from C.I.R.M. Rome, the Master directed the ship to proceed at full speed to the nearest port. The Master also made a PAN-PAN broadcast[2] on VHF Channel 16 requesting a MEDEVAC for the Bosun. MRCC Gdynia responded to the PAN-PAN broadcast and provided instructions for rendezvousing with a rescue helicopter and boat for MEDEVAC of the Bosun.

At 2259, the C/O informed the Master that the Bosun was deceased. The Master informed MRCC Gdynia, who then canceled the MEDEVAC.

The marine safety investigation conducted by the Republic of the Marshall Islands Maritime Administrator (the "Administrator") ruled out either a material or structural failure of the scaffolding but was otherwise not able to determine why the scaffolding fell. Factors identified by the Administrator's investigation that contributed to this very serious marine casualty included that:

1. the Bosun had remained on the scaffolding when it was moved;
2. the lifeline connected to the Bosun's safety harness was secured to the scaffolding;
3. implementation of stop-work authority on board was ineffective; and
4. there was ineffective supervision.

Other factors that may have contributed to this incident included:

1. ineffective implementation of the Company's permit to work procedure; and
2. that two of the scaffolding's four stabilizer arms had been removed.

The below lessons learned were identified.

- Safe-work procedures are administrative controls that must be implemented consistently by all crewmembers to be an effective means of reducing exposure to hazards.
- Scaffolding, bosun's chairs, staging, portable ladders, etc. must be set-up and used in accordance with the manufacturer's instructions.
- Lifelines connected to a safety harness must be secured to a strong point on the ship or a fall arrester connected to the ship and not scaffolding, staging, portable ladders, etc. to provide protection from falls.
- The use of stop-work authority can prevent marine casualties. For stop-work authority to be effective, crewmembers must not only be aware that they have this authority, but they must also have confidence that the authority is non-negotiable and can be exercised without fear of repercussion. Crewmembers must also be as familiar with how to issue and respond to a stop-work action or instruction as they are with their other shipboard duties.
- Work plans must prioritize watchstanding requirements (e.g., maintaining a proper lookout) and the rest-hour requirements in the STCW Code and MLC, 2006 over the course of the completion of routine ship-board tasks, such as preparing cargo holds for loading.

2 PAN-PAN is an international urgency signal used in radio communications to indicate that someone needs help in a serious situation that is not life-threatening.

PART 2: FACTUAL INFORMATION

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

Ship particulars at the time of the incident: *see* chart to right.

Narrative

The Republic of the Marshall Islands-registered geared five-hatch bulk carrier PRISMA *(see Figure 1)* departed Gdańsk, Poland in ballast on the morning of 26 January 2025 and proceeded to a position approximately 40–45 NM north of the coast of Poland. It was planned for the ship to loiter while crewmembers cleaned and painted the cargo holds for loading cargo at Saint Petersburg, Russian Federation. It was expected that approximately seven days would be needed to clean and paint the cargo holds.

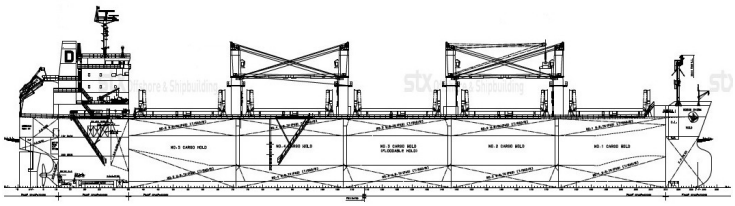

Figure 1: PRISMA General Arrangement.

The crewmembers cleaned all of the ship's cargo holds between 26–27 January 2025 before painting CHs Nos. 1 and 2 on 28 January 2025. None of the work in CHs Nos. 1 and 2 was reported to have required working from height. At approximately 0600 on 29 January 2025, the crewmembers started painting the lower portions of CH No. 3. There is no record that the atmosphere inside the cargo holds was checked before crewmembers started working in them on 26 January 2025 or on the following days. The cargo hold hatch covers were open while the crewmembers were working inside.

At 1000 on 29 January 2025, the C/O conducted a Toolbox Talk with the Bosun and deck ratings to review the work planned for the day, which included painting upper portions of CH No. 3. It was agreed during the Toolbox Talk that no work would be conducted at height until the Bosun informed the C/O that the scaffolding had been set-up and the C/O had both inspected the scaffolding and issued a Working Aloft Permit.

SHIP PARTICULARS

Vessel Name
PRISMA

Registered Owner
Helios Maritime Inc.

ISM Ship Management
Maru LLC

Flag State
Republic of the Marshall Islands

IMO No.	Official No.	Call Sign
9461805	10700	V7A7283

Year of Build	Gross Tonnage
2010	33,338

Net Tonnage	Deadweight Tonnage
18,901	57,254

Length x Breadth x Depth
184.3 x 32.3 x 18.5 m

Ship Type
Bulk Carrier

Document of Compliance Recognized Organization
Bureau Veritas

Safety Management Certificate Recognized Organization
Bureau Veritas

Classification Society
Lloyd's Register

Persons on Board
23 Crewmembers
2 Service Technicians

By early evening on 29 January 2025, they had finished painting the lower portions of CH No. 3 and the Bosun and deck ratings set-up the scaffolding in CH No. 3 in preparation for painting the upper portions of the cargo hold. Portable lights were used to light the inside of the cargo hold.

When the scaffolding was set-up with the wheels locked and two stabilizer arms (e.g., side supports) in place, the Bosun put on a safety harness with a lifeline and, carrying a paint spray gun, climbed to the platform located near the top of the scaffolding. After reaching the platform, which was approximately 9.5 m above the tank top, he secured the lifeline to the scaffolding. The ASD1 and ASD2 remained on the tank top inside of CH No. 3 to assist as directed by the Bosun. The OS2 was on the main deck to assist as needed.

After painting portions of the frames that were within range of the spray gun, the Bosun directed the ASD1 and ASD2 to move the scaffolding 3 m forward along the port side of the cargo hold. The two ASDs retracted the two stabilizer arms, unlocked the wheels and then moved the scaffolding as directed by the Bosun. The Bosun remained on the scaffolding while it was being moved.[3]

Both the ASD1 and ASD2 recognized that it was not safe for the Bosun to remain on the scaffolding when the two stabilizer arms were not secured and while it was being moved. They both indicated that they had not said anything since the Bosun was in charge of the work being done inside CH No. 3.

After moving the scaffolding, the ASD1 and ASD2 locked the wheels and started to extend the two stabilizer arms. The scaffolding with the Bosun on it suddenly fell as the two stabilizer arms were being extended. At approximately 2200, the OS2, who had not witnessed the scaffolding being moved, heard a loud noise from inside CH No. 3. He looked down inside the cargo hold, saw the scaffolding lying on the tank top, and reported by radio that the scaffolding had fallen.

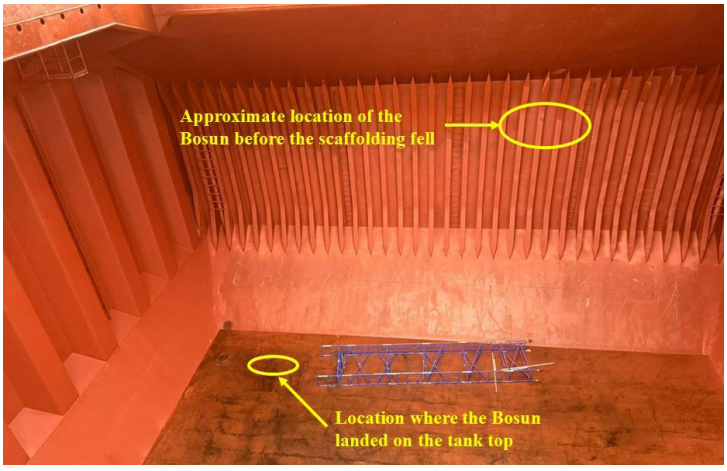

Figure 2: The approximate location of the Bosun before the scaffolding fell and location where the Bosun landed on the tank top inside of CH No. 3.

The weather at the time was good with Beaufort Force 4 winds from the south southwest and waves of less than 0.5 m. The ship was not rolling, pitching, or yawing.

3 It could not be determined with certainty if, when the Bosun had previously used the scaffolding to work aloft, he had remained on the scaffolding when it was moved or if he had secured the lifeline connected to the safety harness to the scaffolding.

The C/O, who had just gone back out on deck to check on the work that was being done, heard the radio call from the OS2. The C/O immediately went to CH No. 3. While climbing down the Australia ladder to the tank top, he observed that the scaffolding had fallen and that the ASD1 and ASD2 were assisting the Bosun, who was lying on the tank top. The Bosun was wearing a safety harness with a lifeline that was secured to the scaffolding.

Upon reaching the cargo hold tank top, the C/O examined the Bosun and determined that the Bosun was unconscious, with labored breathing, a weak pulse, and pupils that were not responsive to light. The C/O informed the Master of the Bosun's condition and requested that medical oxygen, a stretcher, and a thermal blanket be brought to the scene.

The Master immediately directed the general alarm be sounded and that crewmembers take the equipment requested by the C/O to CH No. 3. He then informed the Company and contacted C.I.R.M. Rome for medical advice. C.I.R.M. Rome advised that the Bosun not be moved. The Master informed the C/O of the medical advice provided by C.I.R.M. Rome and then directed that PRISMA proceed at full speed toward the nearest port.

At 2220, the Master made a PAN-PAN broadcast on VHF Channel 16 requesting a MEDEVAC and medical assistance.

At approximately 2225, the C/O informed the Master that the Bosun's condition was getting worse. The Master directed the 2/O to take an AED to CH No. 3. Within a few minutes, the C/O and 2/O hooked up the AED and started following the prompts to revive the Bosun, who had stopped breathing.

At 2244, MRCC Kaliningrad contacted PRISMA to request information regarding the type of assistance that was required. A few minutes later, MRCC Gdynia contacted the ship with instructions for rendezvousing with a rescue helicopter and boat for the MEDEVAC of the Bosun. The Master instructed the ship's course be changed to proceed to the designated rendezvous position.

At 2258, the C/O observed that the Bosun remained unresponsive, without a pulse, and was not breathing. He also observed that the Bosun's pupils were becoming cloudy. He and the 2/O stopped trying to revive the Bosun.

At 2259, the C/O informed the Master that the Bosun was deceased. At 2309, MRCC Gdynia canceled the MEDEVAC after being informed by the Master that the Bosun was deceased. The Master informed the Company and then ordered the ship's speed be reduced and to resume loitering north of the coast of Poland. At 2330, the Company directed the Master to store the Bosun's body pending the ship's planned arrival at Saint Petersburg. The Bosun's body was moved from CH No. 3 to a walk-in refrigerator at 0130 on 30 January 2025.

Crew

PRISMA had a complement of 23 crewmembers, seven more than required by the Minimum Safe Manning Certificate issued by the Administrator. Two of the crewmembers who were on board, in excess of the required minimum safe manning, were assigned to the Deck Department. They were the Bosun and Deck Fitter.[4] Each crewmember held the appropriate Republic of the Marshall Islands-issued seafarer documentation for their position on board.

4 Other crewmembers who were on board in excess of the required minimum safe manning were the Electrical Engineering Officer, Fitter, Wiper, all of whom were assigned to the Engine Department, Chief Cook, and Messman.

The experience of the Master, C/O, and crewmembers who were working in CH No. 3 when the scaffolding fell is shown in the table below.

RANK	TIME ON BOARD PRISMA	TIME IN RANK	TIME WITH COMPANY	TOTAL TIME AT SEA
Master	3.4 months	6.4 years	3.4 months	28 years
C/O	1.7 months	3.4 years	11 months	17 years
Bosun	6.7 months	12 years	6.9 years	30 years
ASD1	6.7 months	5.4 years	6.9 months	6.8 years
ASD2	7.5 months	2.3 years	7.5 months	6.7 years

The Bosun, ASD1, and ASD2 all completed the Company required familiarization training within 24 hours of signing on board PRISMA. The familiarization training included an overview of the Company's permit to work system.

The Bosun, was an experienced seafarer who had 12 years of experience in rank during which time he had worked almost exclusively on board bulk carriers[5] and would have been familiar with the risks of working at height.

The ASD1 and ASD2 had each completed multiple contracts working on board bulk carriers and were familiar with the risks associated with working at height. Both understood that the Bosun should not have climbed the scaffolding and started working until a Working Aloft Permit had been issued and that it was not safe to move the scaffolding while the Bosun was on it. They both were aware that they had the authority to stop the work but did not say anything since the Bosun was in charge of the work being done in CH No. 3.

Crew Work / Rest Hours

The Master, C/O, Bosun, ASD1, ASD2, and OS2 each received at least the minimum amount of rest mandated by the STCW Code, Section A-VIII/1, paragraphs 2 and 3, and MLC, 2006, regulation 2.3 during both the 24-hour and seven-day period before the scaffolding with the Bosun on it fell.[6] Records of work and rest also indicated that the Master, C/O, ASD1, ASD2, and OS2 were all resting between the time that the scaffolding fell just before 2200 on 29 January 2025 and when the Bosun's body was moved from CH No. 3 to be stored at 0130 on 30 January 2025. This is in contrast with information provided by these seafarers regarding their actions arranging for the MEDEVAC of the Bosun or providing assistance to him. Additionally, the record of the Bosun's work and rest hours indicates he was resting on 26 January 2025 while crewmembers were conducting a fire and boat drill. During the seven days prior to the scaffolding falling, the rest hours for the C/O, ASD1, ASD2, and OS2 were divided into two periods except as shown below.

1. C/O's hours of rest were divided into three periods from 26–29 January 2025.
2. ASD1's rest hours were divided into three periods on 26 January 2025 and five periods on 27–29 January 2025.
3. ASD2's rest hours were divided into three periods on 23 January 2025 and five periods on 27–29 January 2025.

5 Since being promoted from ASD to Bosun, he had completed one contract on board a general cargo ship. All of the other contracts had been on board bulk carriers.

6 The records of work and rest hours for other crewmembers were not reviewed as part of the Administrator's marine safety investigation.

4. OS2's rest hours were divided into three periods on 26 January 2025, four periods on 28 January 2025, and five periods on 27 and 29 January 2025.

Company Procedures

As required by the ISM Code, the Company's SMS included procedures for ensuring that work on board Company-managed ships was conducted safely through the use of a permit to work system, that included Hot and Cold Work Permits and Working Aloft Permits. The Company's SMS also included procedures addressing higher risk activities, such as working aloft and enclosed space entry.

The Company's procedures for working aloft or over the side required that only experienced seafarers should be permitted to work from height or over the side and that safety harnesses be worn. They also required that supporting equipment (e.g., ladders, scaffolding, etc.) be checked before it was used but did not include guidance for the safe use of such equipment or for securing lifelines connected to safety harnesses.

The Company required that before a Working Aloft Permit was issued for any work aloft that the officer in charge of the planned work and the on-site supervisor:

1. review the risk assessment for working aloft;
2. inspect the equipment (e.g., scaffolding, staging, ladders, etc.) that was to be used;
3. verify that crewmembers assigned to work aloft are wearing the required PPE, which included a safety harness with lifeline; and
4. assess the weather to determine if the existing conditions might prevent the planned work from being conducted safely.

After issuing the Working Aloft Permit, the officer in charge of the planned work was required to conduct a Toolbox Talk with the crewmembers who were assigned to work aloft to review the hazards and associated controls identified on the risk assessment and the Working Aloft Permit that had been issued.

The Company's permit to work procedures included a provision giving any crewmember who observed an unsafe act or condition the authority to stop the work and suspend the relevant permit. Both the ASD1 and ASD2 acknowledged that they were aware they had the authority to stop work.

Onboard training addressing safe work practices was conducted each month. Topics that were addressed included the Company's permit to work system, working at height, and the authority of crewmembers to stop work.

Safety posters issued by the Administrator and the ship's P&I Club addressing prevention of falls from height were clearly posted in common spaces (e.g., Officer's Mess Room, Crew's Mess Room, Smoking Room) on board PRISMA.

Work Planning

The C/O reviewed the Company's risk assessment for cargo hold cleaning prior to issuing the Cold Work Permits for cleaning the cargo holds on 26 and 27 January 2025. He also reviewed the Company's risk assessment for working aloft prior to issuing the Cold Work Permits for painting the cargo holds on 28 and 29 January 2025.

Some of the hazards and associated controls identified on the risk assessment for working aloft using a bosun's chair, staging, or scaffolding are shown in the following table.

HAZARD	ASSOCIATED CONTROLS
Inadequate or inappropriate PPE; PPE not used	Use of Working Aloft Permit.
Inadequate equipment (ropes, blocks, stage)	Equipment checked prior to use. All equipment, especially ropes, to be thoroughly inspected prior to use. Ropes to be discarded in case any signs of wear and tear, fraying, exposure to chemicals, or any other damage observed.
Equipment failure (parting of rope)	Safety harness with fall arrester to be secured to a strong point of the vessel (e.g., ship) and not staging.

The C/O did not identify any additional hazards, including the reasonably foreseeable potential for the scaffolding to fall, or controls when he reviewed the risk assessments. He also did not identify any conditions that would require any work aloft inside the cargo holds to be stopped.

The C/O, as the officer in charge of preparing the cargo holds for loading, issued Cold Work Permits for cleaning CHs Nos. 1–5 on 26 and 27 January 2025, painting CHs Nos. 1–2 on 28 January 2025, and painting CH No. 3 on 29 January 2025. In addition to identifying the type and location of the work that was to be performed, the permits also identified the period of time for which each permit was valid, the assigned supervisor, the crewmembers assigned to complete the work, required PPE, any special conditions or precautions the crewmembers performing the work should be aware of, and any additional permits that might be required. Each permit also included the date and time when the identified work was completed as shown in the following table.

DATE	PERIOD VALID		TIME CLOSED
	FROM	TO	
26 January 2025	1200	2300	2230
27 January 2025	0630	1800	1750
	1800	2300	2230
28 January 2025	1000	2200	2200
29 January 2025	1000	2200	Not Recorded

The Cold Work Permits issued for the work done between 26–28 January 2025[7] did not identify any special conditions or precautions or any required additional permits. The required PPE included coveralls, safety helmet, safety shoes or boots, and eye protection. The permit issued on 29 January 2025 for painting CH No. 3 identified working aloft as a special condition and indicated that a Working Aloft Permit was required. The required PPE included the use of a safety harness and fall arrester.

7 Two Cold Work Permits for cleaning the cargo holds were issued on 27 January 2025.

The C/O conducted a Toolbox Talk with the Bosun and crewmembers who were assigned to clean and paint the cargo holds at 0600 on 27 and 28 January 2025, and at 1000 on 29 January 2025. The Toolbox Talks were attended by the Bosun, the three ASDs, two OSs, and Deck Fitter. Each of the Toolbox Talks was reported to have included a review of the work planned to be conducted that day and a review of the relevant Cold Work Permit and risk assessment.

During the Toolbox Talk on 29 January 2025, the C/O told the Bosun and deck ratings that no work aloft should be conducted until he inspected the scaffolding and issued a Working Aloft Permit. The C/O had not issued a Working Aloft Permit before the Bosun started working aloft in CH No. 3 because he was waiting for the Bosun to tell him when the scaffolding was in place and ready for him to inspect it.

There is no record that a Toolbox Talk was conducted before the crewmembers started cleaning the cargo holds on 26 January 2025.

Scaffolding

The scaffolding in use on board PRISMA consisted of two vertical frames that were connected by horizontal and diagonal braces. One of the vertical frames had an integrated ladder. The platform was 2,000 mm long and 1,350 mm wide and was connected to the horizontal members of the vertical frames by hooks located at each of the platform's four corners. Locking wheels were fitted at the bottom of the vertical frames *(see Figure 3)*.

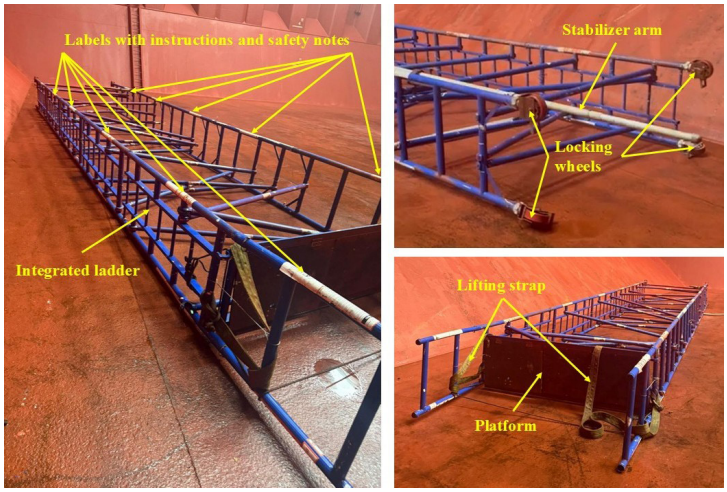

Figure 3: The scaffolding that was in use in CH No. 3 on 29 January 2025.

The scaffolding was fitted with four stabilizer arms that, per the manufacturer's instructions, were supposed to be secured in place when the scaffolding was being used *(see Figure 4)*. The manufacturer also required that the four wheels be locked. Two of the four stabilizer arms were removed in accordance with the Bosun's instructions when it was set-up before being used in CH No. 3 on 29 January 2025. The ASD1 and ASD2 did not question the Bosun when they were instructed to remove the two stabilizer arms.

Figure 4: The photograph on the left shows the scaffolding in use previously on board PRISMA with all four stabilizer arms in place. The photograph on the right shows the scaffolding lying on the tank top in CH No. 3 after it fell. The two stabilizer arms that had been removed are circled in red.

Labels that were affixed by the manufacturer along the length of each of the two vertical frames *(see Figure 3)* had instructions and safety notes that included guidance and cautions regarding the proper set-up and use of the scaffolding *(see Figure 5)*. The instructions included an image of the scaffolding with four stabilizer arms secured in place. These safety notes included the below information.

1. "Before use ensure the scaffolding is complete (i.e., fully assembled) and the wheels locked."
2. "Before moving the scaffolding ensure that it is clear of obstructions overhead and at ground level, and that no persons or material are upon it."
3. "Avoid subjecting the scaffolding to horizontal forces and that when moving it, it should only be pushed at the base."
4. "Stabilizer arms or outriggers and ballast should always be secured in place as specified."

Figure 5: Labels affixed to the scaffolding by the manufacturer.

No apparent defects or failures were observed, and all four wheels were found locked when the scaffolding was examined as part of the Administrator's investigation.

Recommended Best Practices

The UK MCA COSWP includes recommended best practices for the safe use of scaffolding. This guidance cautions that:

1. "great care should be taken to ensure the stability of the structure (e.g., scaffolding) and safe access to it;"
2. scaffolding "should be securely fixed to ensure that it cannot inadvertently move while in use;" and
3. crewmembers should "never move a scaffolding tower while people or materials are on the structure."[8]

PPE

The Bosun, ASD1, ASD2, and OS2 were each wearing the required primary PPE listed on the Cold Work Permit issued by the C/O on 29 January 2025 for painting CH No. 3. The Bosun was also wearing a safety harness with a lifeline that was connected to the scaffolding when it fell. Although fall arresters were available on board, one had not been rigged for use in CH No. 3 on the night of 29 January 2025.

The safety harness worn by the Bosun and lifeline were both intact and in good condition and the clip on the lifeline was operational when examined during the Administrator's investigation.

Lookout

The record of the ASD1's work and rest hours indicated that he was resting when, according to the ship's shipboard working arrangements and Deck Log, he was scheduled to be on duty as the assigned Lookout for the 0000–0400 navigational watch between 27–29 January 2025. Similarly, the record of the ASD2's work and rest hours showed that he was resting from 0400–0600 when he was scheduled to be on duty assigned as Lookout for the 0400–0800 navigational watch on 27–29 January 2025. The record of the ASD2's work and rest hours also showed that he was resting for about an hour during the period he was scheduled to be on duty as the Lookout for the 1600–2000 navigational watch between 27–29 January 2025.[9]

PRISMA's Deck Log Book recorded the ASD2 as having been on duty as the assigned Lookout during the 0400–0800 navigational watch on 29 January 2025. In contrast, when interviewed, neither the ASD1 nor the ASD2 reported having been on duty as part of the ship's navigational watch between the time that they started cleaning the cargo holds on the afternoon of 26 January 2025 and when the scaffolding fell on the night of 29 January 2025.

Except for the referenced entry during the 0400–0800 navigational watch on 29 January 2025, none of the watch entries made between the time that PRISMA got underway from Gdańsk and when the Bosun fell on the night of 29 January 2025 recorded that a designated Lookout was on duty. The Deck Log Book included a table showing the ASD who was assigned as the designated Lookout for each navigational watch. The indicated assignments were consistent with the ship's Table of Shipboard Working Arrangements.

8 *See UK MCA COSWP*, section 17.7 and Annex 17.4.

9 The record of the ASD3's work and rest hours was not examined as part of the Administrator's marine safety investigation.

PART 3: ANALYSIS

The following Analysis is based on the above Factual Information.

Fall of Scaffolding and the Bosun's Fatal Injuries

The ASD1 and ASD2 reported that the scaffolding fell suddenly as they were putting the stabilizer arms in place. Although it could be determined that either a mechanical or structural failure or the motion of the ship did not cause the scaffolding to fall, the reason it fell could not be determined with certainty. However, the fact that the Bosun was on the scaffolding when it was moved and that he fell with it directly contributed to his fatal injuries.

Use of Scaffolding

Scaffolding such as that which was being used on board PRISMA can provide an effective platform from which to work at height. However, because scaffolding is inherently the least stable when it is not secured in place and while it is being moved due to the height of its center of gravity,[10] it is essential that it be set-up and used in accordance with the scaffolding manufacturer's instructions.

Both the scaffolding manufacturer's instructions for setting up and using the scaffolding, which include the safety notes on the labels affixed on the scaffolding, and the best practices in the UK MCA's COSWP contained provisions addressing the inherent instability of scaffolding. These included the scaffolding manufacturer's instruction for the scaffolding to be fully assembled, which included the use of all four stabilizer arms and that all wheels be locked before it is used. Additionally, both the scaffolding manufacturer's instructions and the recommended best practices in the UK MCA's COSWP unequivocally state that no person or material should be on the scaffolding when it is being moved.

Use of PPE

The Bosun was, as required by the Company's risk assessment for working aloft, wearing a safety harness with a lifeline while he was on the scaffolding. However, contrary to the Company's risk assessment, which identified connecting the lifeline to a fall arrester that was secured to the ship and not the scaffolding as a means of reducing the risk associated with an equipment failure, he had instead connected the lifeline directly to the scaffolding. Although the Bosun was protected against the possibility of falling off the scaffolding, he was not protected against the scaffolding falling due to a mechanical or structural failure or from being moved either intentionally or unintentionally.

Stop-work

Stop-work authority can prevent marine casualties by allowing crewmembers, regardless of their position on board, to manage safety in real time by giving them the responsibility, obligation, and right to stop work that poses or creates an imminent danger to themselves, others, the ship and cargo, or the environment. For stop-work authority to be effective, it is not enough for crewmembers to be aware that they have this authority. They must

10 Generally, the height of the center of gravity will be located at approximately half the height of the scaffolding. The actual height of the center of gravity will vary based on several factors, including the number, height and weight of any platforms being used, and the weight and location of any persons and equipment that might be on the scaffolding.

also have confidence that the authority is non-negotiable and can be exercised without fear of repercussion. Crewmembers must also be as familiar with how to both issue and respond to a stop-work action or instruction as they are with their other shipboard duties.

There were multiple times when the chain of events that preceded the Bosun falling with the scaffolding might have been broken if either the ASD1 or ASD2 had exercised their stop-work authority. These included when the Bosun:

1. instructed the ASD1 and ASD2 to remove two of the four stabilizer arms from the scaffolding when they set it up inside of CH No. 3;

2. started to climb the scaffolding; and

3. remained on the scaffolding after instructing the ASD1 and ASD2 to move it 3 m.

Both the ASD1 and ASD2 were aware they had the authority to stop work if they observed an unsafe act or condition. They were also aware that the scaffolding was supposed to be set-up with four, not two stabilizer arms, that the C/O had not issued a Working Aloft Permit, and that it was not safe for the Bosun to remain on the scaffolding without stabilizer arms in place and while it was being moved. However, they both stated that they had not said anything to the Bosun since he had been in charge of the work that was being conducted in CH No. 3. This is an indication that neither the ASD1 nor the ASD2 were confident that they could exercise their stop-work authority without fear of repercussion.

Company's Safe Work Procedures

Similar to the safe work procedures that are part of many ship managers' SMS, the Company's safe work procedures included a permit to work system. A permit to work system does not make a job safe. Rather, a permit to work system contributes to ensuring work can be conducted safely by establishing a system for communicating the scope of work to be conducted, identifying hazards associated with the planned work, and the controls that must be followed. Permit to work systems are a type of administrative control[11] and are effective only if implemented consistently both by the crewmembers who are responsible for planning a particular task (e.g., the C/O) and by the crewmembers assigned to complete the task (e.g., the Bosun, ASD1, and ASD2).

The Company's procedures for working aloft were only partially implemented on board PRISMA on 29 January 2025. The C/O, as the officer in charge of preparing the ship's cargo holds for loading, had reviewed the Company's risk assessment for working aloft prior to issuing a Cold Work Permit for painting the cargo holds. He had also conducted a Toolbox Talk with the Bosun and deck ratings during which he told them that no work aloft should be conducted until after he inspected the scaffolding and issued a Working Aloft Permit. However, the Bosun, who was aware of the Company's procedures and that the C/O had not issued a Working Aloft Permit, had not informed the C/O when the scaffolding had been set-up and had instead started working aloft.

It is not known why the Bosun decided to work aloft without a permit. A Working Aloft Permit would not have prevented the scaffolding from falling; however, it could potentially have contributed to the Bosun not having been on the scaffolding when it fell if the C/O had reviewed the hazards associated with the use of scaffolding and the controls for addressing those hazards with the Bosun, ASD1, and ASD2 when he inspected the scaffolding before issuing the permit.

11 Administrative controls are lower-level means of reducing risk. Higher-level means of reducing risk are those that either eliminate the hazard, substitute the hazard with one that is less hazardous, or isolate the hazard (US NIOSH, Hierarchy of Controls (https://www.cdc.gov/niosh/hierarchy-of-controls/about/index.html)).

It might also have prevented the scaffolding from being used with only two stabilizer arms. In addition, the Cold Work Permits that the C/O issued for painting CHs Nos. 1–3 on 28 and 29 January 2025 were both valid from 1000–2200, whereas the Bosun and deck ratings had started painting the cargo holds at approximately 0600 on both days.

The Company's procedures for working aloft or over the side required supporting equipment such as scaffolding, portable ladders, staging, bosun's chairs, etc., to be checked before being used, but did not include guidance, such as that provided by the scaffolding manufacturer or included in the UK MCA's COSWP, addressing how to safely use this type of equipment.

The Company's risk assessment for working aloft using a bosun's chair, staging, or scaffolding identified inadequate equipment and equipment failure as hazards associated with working aloft. However, both inadequate equipment and equipment failure were focused on the ropes used to rig a bosun's chair or staging and did not otherwise identify the potential for other types of equipment failures, including mechanical or structural defects of scaffolding, portable ladders, staging, bosun's chair, etc.

The primary purpose of Toolbox Talks is to provide an opportunity to review the scope of any planned work, the procedures that will be followed, the associated hazards, and the controls that will be in place to ensure the work can be conducted safely with the crewmembers assigned to conduct the planned work. As such, Toolbox Talks are an important tool for ensuring that crewmembers have a clear understanding of planned work and awareness of any associated hazards and controls before they start the work. As previously stated, there was no record of Toolbox Talks having been conducted on 26 January 2025 and that the Toolbox Talk on 29 January 2025 was conducted almost four hours after the Bosun and deck ratings started work.

Work / Rest Hours

The STCW Code, section A-VIII/1 establishes minimum hours of rest and MLC, 2006, standard A.2.3 establishes maximum hours of work for seafarers that are intended to reduce the potential for seafarers to become fatigued. Both also prohibit a seafarer's hours of rest in any 24-hour period being divided into more than two periods, one of which cannot be less than six hours in length. Whereas the STCW Code requirements are applicable to seafarers assigned duty as an officer in charge of a watch or as a rating forming part of a watch, the MLC, 2006 requirements are applicable to all seafarers.

Records of seafarers' daily hours of rest are required to be maintained as a means of monitoring and verifying compliance with the rest hour requirements mandated by the STCW Code and MLC, 2006.[12] Based on their records of work and rest hours, the Master, C/O, ASD1, ASD2, and OS2 were all resting between the time the scaffolding fell and when the Bosun's body was moved from CH No. 3. This contradicts their individual statements and accounts of their activities during this period. This discrepancy is an indication that their records of work and rest hours were not accurate.

The C/O's, ASD1's, ASD2's, and OS2's rest hours were divided into three to five periods while the ship's cargo holds were being prepared for loading between 26–29 January 2025. This is an indication of a lack of awareness

12 *See STCW Code*, section A-VIII-1, paragraph x and MLC, 2006, standard A2.3, paragraph 12.

on board regarding the requirements of the STCW Code and MLC, 2006 other than the mandated maximum hours of work and minimum hours of rest.

Lookout

Per COLREGs Rule 5, "every vessel shall at all times maintain a proper look-out." Therefore, with the exception of daylight hours when the principles of navigation watchstanding in the STCW Code, section A-VIII, part 4-1 conditionally permit an OICNW to serve as a ship's Lookout,[13] a ship's navigational watch will at a minimum consist of an OICNW as the OOW and a deck rating as the designated Lookout.

The information available to the Administrator indicates that a designated Lookout likely was not on duty on board PRISMA during non-daylight hours or at times when the existing conditions might not have been appropriate for the OOW to serve as Lookout while the ship was loitering off the coast of Poland between 26–29 January 2025.

Safety Culture

"An effective safety culture will support a shipboard environment that encourages and requires all on board to proactively consider their own and others' safety."[14] An effective safety culture requires all crewmembers from the Master to the most junior to "believe in safety, think safety, and be fully committed to safety."[15] Consistent implementation of established shipboard procedures and compliance with applicable regulations are indications of an effective safety culture.

There were several indications that there was not an effective safety culture on board PRISMA when this very serious marine casualty occurred. These included:

1. multiple deviations from the Company's safe work procedures including that the:
   (a) Bosun ignored the C/O's instructions by working aloft without the C/O first inspecting the scaffolding and issuing a Working Aloft Permit;
   (b) Bosun and deck ratings started painting CH No. 3 on 29 January 2025 almost four hours before the C/O met with them to conduct a Toolbox Talk to review the work planned for the day;
   (c) Cold Work permits issued by the C/O for painting CHs Nos. 1–3 between 28–29 January 2025 were not valid when the Bosun and deck ratings started painting the cargo holds on both of those days; and
   (d) C/O did not identify the reasonably foreseeable potential of the scaffolding falling or any conditions when work should be stopped during his review of the Company's risk assessment for working aloft using a bosun's chair, staging, or scaffolding, on the morning of 29 January 2025;
2. neither the ASD1 nor the ASD2 felt they could exercise their stop-work authority without fear of repercussion even though they both were aware that:
   (a) it was not safe to remove two of the stabilizer arms from the scaffolding;

13 Factors required to be considered when determining if an OICNW may serve as a ship's Lookout are listed in STCW Code, section A-VIII, part 4-1, paragraph 16.

14 *See* International Chamber of Shipping and International Shipping Federation, *Guidelines on the Application of the IMO International Safety Management Code*, 4th edition (2010), page 86.

15 *Ibid*, p. 88. See also the preamble of the *ISM Code*.

(b) the Bosun had ignored the C/O's instructions by working aloft before the C/O inspected the scaffolding and issued a Working Aloft Permit: and

(c) it was not safe for the Bosun to remain on the scaffolding when it was moved;

3. ineffective oversight by the C/O, who was the officer in charge of preparing the ship's cargo holds for loading, of the work that was conducted on board on 29 January 2025;

4. crewmembers' records of work and rest hours for the seven-day period, that included preparing the ship's cargo holds for loading on 26–29 January 2025:

   (a) did not accurately reflect the number of hours worked or rest received; and

   (b) that hours of rest had been divided into more than two periods; and

5. the apparent prioritization of preparing the ship's cargo holds for loading over maintaining a proper lookout.

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 included:

   (a) that the Bosun remained on the scaffolding when it was moved;

   (b) that the lifeline on the Bosun's safety harness was connected to the scaffolding and not to the ship or to a fall arrestor;

   (c) ineffective onboard implementation of stop-work authority; and

   (d) ineffective oversight by the C/O of work being conducted in the cargo holds on 29 January 2025.

2. Additional causal factors that may have contributed to this very serious marine casualty included:

   (a) ineffective onboard implementation of the Company's permit to work procedures;

   (b) that the Company's procedures for working aloft did not address the safe use of scaffolding or other equipment, such as portable ladders, staging, bosun's chairs, etc.;

   (c) that the Company's risk assessment for working aloft using a bosun's chair, staging, or scaffolding did not identify equipment failures to include mechanical or structural defects of scaffolding, portable ladders, staging, bosun's chair, etc.; and

   (d) the removal of two of the scaffold's four stabilizer arms before it was used in CH No. 3 on 29 January 2025.

3. Additional issues that were identified but did not contribute to this very serious marine casualty included:

   (a) improper onboard implementation of the work and rest hour requirements in the STCW Code and MLC, 2006 in that:

(i) the Master's, C/O's, and other crewmembers' work and rest hour records for 29–30 January 2025 indicated they were resting and not that they were actively engaged in providing assistance to the Bosun after the scaffolding fell; and

(ii) the C/O's and other crewmembers' hours of rest were divided into more than two periods while the ship's cargo holds were being prepared for loading between 26–29 January 2025; and

(b) a dedicated Lookout was likely not on duty during hours of darkness or when the existing conditions might not have been appropriate for the OOW to serve as PRISMA's only Lookout while the ship was loitering off the coast of Poland between 26–29 January 2025.

PART 5: PREVENTIVE ACTIONS

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

1. Issued a circular making all Company-managed ships aware of the fatal accident involving the scaffolding being used on board PRISMA, a summary of the findings of the Company's investigation, and safety measures that were required to be immediately implemented on board all Company managed ships including that:
   (a) scaffolding was not to be used on board unless a detailed risk assessment was conducted, that the method of securing the scaffolding was verified as being safe, and written approval was received from the Company;
   (b) disciplinary action should be taken for any unauthorized use of scaffolding;
   (c) a Safety Committee meeting be held within seven days of receipt of the circular to reinforce compliance with the Company's stop-work policy, permit to work system, and to review the lessons learned that were identified during the Company's investigation; and
   (d) C/Os must personally verify and approve any work aloft and that Masters remain responsible for enforcing compliance with the procedures for working aloft.

The Company's safety circular also included the following statement: "Safety is a shared responsibility, and every crewmember must remain vigilant, follow procedures, and prioritize risk awareness."

The Administrator has taken the following Preventive Actions:

1. Issued MSA 12-25 addressing how stop-work authority can contribute to preventing marine casualties by allowing seafarers, regardless of their position on board, to manage safety in real time, with several recommendations for improving the implementation of stop-work authority onboard Republic of the Marshall Islands-registered ships.

PART 6: RECOMMENDATIONS

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

1. It is recommended that the Company:
   (a) review and, as necessary, revise its procedures for:

(i) working aloft to include instructions for:

1. the safe use of scaffolding, portable ladders, bosun chairs, etc., taking into account the relevant manufacturer's instructions and recommended best practices; and
2. securing lifelines connected to safety harnesses while working aloft; and

(ii) safe work to ensure work plans for completing routine onboard tasks, such as preparing cargo holds for loading, prioritize watchstanding requirements (e.g., maintaining a proper lookout at all times) and the rest hour requirements in the STCW Code and MLC, 2006;

(b) review and, as necessary, revise its onboard training requirements to:

(i) reinforce Company expectations that any crewmember regardless of their position on board can exercise stop-work authority without fear of repercussion; and

(ii) include scenarios for crewmembers to practice exercising their stop-work authority;

(c) undertake a fleet-wide safety campaign on board Company-managed ships focused on:

(i) reinforcing Company expectations regarding the importance of consistent implementation of safe work procedures both by crewmembers who are responsible for planning a particular task and by crewmembers who are assigned to complete the task;

(ii) ensuring crewmembers understand how to properly set-up and use scaffolding, portable ladders, bosun chairs, etc. and how to use safety harnesses with lifelines and fall arresters; and

(iii) ensuring every crewmember working on board a Company-managed ship:

1. is aware that they have stop-work authority and are responsible for stopping work that poses or creates an imminent danger to themselves, others, the ship and cargo, or the environment;
2. understands this authority is non-negotiable; and
3. is familiar with how to issue and respond to a stop-work action or instruction;

(iv) ensuring that crewmembers not only accurately report their work and rest hours, but that senior officers prioritize watchstanding requirements and the STCW Code and MLC, 2006 rest hour requirements, including both the number of required rest hours within any 24-hour and seven-day period and the maximum number of periods that rest hours can be divided between, when planning onboard work; and

(v) obtaining feedback from crewmembers who may be pressured or encouraged to underreport or misreport their work and rest hours; and

(d) review the lessons learned from this very serious marine casualty with Masters and senior officers during on-signing briefings.

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