



REPUBLIC OF THE MARSHALL ISLANDS

Maritime Administrator

AMPHITRITE MARINE SAFETY INVESTIGATION REPORT

Occupational Fatality – Crushed by Anchor

Java Sea | 10 March 2025

Official Number: 4784

IMO Number: 9599157



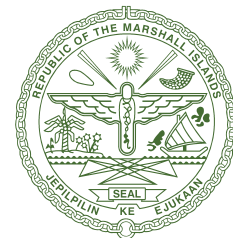
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AUTHORITY

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/E.....	Second Engineer
3/E.....	Third Engineer
ASD.....	Able Seafarer Deck
C/E.....	Chief Engineer
C/O.....	Chief Officer
DPA.....	Designated Person Ashore
kg.....	kilogram
m.....	Meter
mm.....	Millimeter
MT.....	Metric Tons
No.....	Number
OS.....	Ordinary Seafarer
PPE.....	Personal Protective Equipment
SMS.....	Safety Management System
UK MCA.....	United Kingdom Maritime and Coastguard Agency
UTC.....	Coordinated Universal Time
VTS.....	Vessel Traffic Services

DOCUMENTS CITED

COSWP.....	Code of Safe Working Practices for Merchant Seafarers
ISM Code.....	International Management Code for the Safe Operation of Ships and for Pollution Prevention
MLC, 2006.....	Maritime Labour Convention, 2006
MSA 12-25.....	Marine Safety Advisory No. 12-25, Stop-work Authority
STCW Code.....	Seafarers Training, Certification and Watchkeeping Code



PART 1: EXECUTIVE SUMMARY

Near the end of the regular workday on 10 March 2025, crewmembers on board the Republic of the Marshall Islands-registered AMPHITRITE, managed by Diana Shipping Services S.A. (the “Company”), were attempting to use a hydraulic jack to free the ship’s port anchor, which was stuck in the port side hawse pipe. Two prior attempts, the first using mooring lines on 9 March 2025 and the second using a hydraulic jack on the morning of 10 March 2025, were unsuccessful. At the time, the ship was underway on the Java Sea en route to Singapore. The anchor was secured using the windlass brake, chain stopper, and lashings. The existing and forecasted weather along the ship’s planned route was good.

For the third attempt to free the anchor, the ship’s Fitter and Bosun climbed down into the port side hawse pipe to put the hydraulic jack in place. The anchor moved suddenly as the Fitter and Bosun were climbing out of the hawse pipe after putting the jack in place. The Bosun, whose abdomen and legs were caught between the anchor chain and the hawse pipe, was seriously injured. Crewmembers were able to remove him from the hawse pipe by using a chain fall with wire sling to lift the anchor chain off of his abdomen and legs. The Fitter, whose torso was pinned between the anchor shank and the hawse pipe, suffered fatal injuries. He was later removed from the hawse pipe with the assistance of shore-based emergency response personnel.

The marine safety investigation conducted by the Republic of the Marshall Islands Maritime Administrator (the “Administrator”) determined that the decision to have crewmembers undertake a non-routine task and try multiple times to free the port anchor was made without assessing the risk of the anchor damaging the ship’s hull or being lost while the ship was en route to Singapore, or without consulting with the Company. The investigation also determined that not all reasonably foreseeable hazards associated with the use of either the mooring lines or a hydraulic jack had been identified during the pre-task risk assessments and that the Master and crewmembers had a false sense that it was safe to enter the hawse pipe. In addition, it was determined that some crewmembers recognized that it was not safe to enter the hawse pipe but had not exercised their stop-work authority, which they were aware that they had.

The below lessons learned were identified.

- Entering a hawse pipe containing an anchor or anchor chain for any reason is dangerous.
- Having an anchor stuck in the hawse pipe is a non-standard condition that even experienced seafarers may not encounter during their careers. Accordingly, freeing a stuck anchor is a non-routine task for which an established procedure likely does not exist.
- Non-routine shipboard tasks should not be undertaken without completing an assessment of all available alternative options, including waiting until arrival at port where appropriate shore-side support is available.

- Pre-task risk assessments can contribute to ensuring that routine and non-routine tasks can be conducted safely by providing a systematic means of identifying hazards associated with the planned task and controls for reducing the potential that a hazard will occur or the consequences if it does. To be effective, a pre-task risk assessment must address all reasonably foreseeable hazards associated with the task and the existing conditions for when it will be conducted. They also must not underestimate or downplay the potential consequences of the identified hazards or overestimate or exaggerate the potential effectiveness of the identified controls.
- 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. They must also have sufficient situational awareness to recognize when an unsafe act or condition exists. 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.

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

On the evening of 8 March 2025, the seven-hatch bulk carrier AMPHITRITE (*see Figure 1*) anchored using the ship’s port anchor in the roadstead off Balikpapan, Republic of Indonesia (hereinafter “Indonesia”), after loading approximately 85,800 MT of coal, to wait for high tide before proceeding outbound over the bar at the seaward end of the channel. Based on the nautical chart for the area, the nature of the seabed in anchorage was mud.

SHIP PARTICULARS		
Vessel Name AMPHITRITE		
Registered Owner Guam Shipping Company Inc.		
ISM Ship Management Diana Shipping Services S.A.		
Flag State Republic of the Marshall Islands		
IMO No. 9599157	Official No. 4784	Call Sign V7ZB5
Year of Build 2012	Gross Tonnage 51,905	
Net Tonnage 32,423	Deadweight Tonnage 98,697	
Length x Breadth x Depth 236 x 38 x 19.9 m		
Ship Type Bulk Carrier		
Document of Compliance Recognized Organization Lloyd’s Register		
Safety Management Certificate Recognized Organization Lloyd’s Register		
Classification Society Nippon Kaiji Kyokai		
Persons on Board 25		

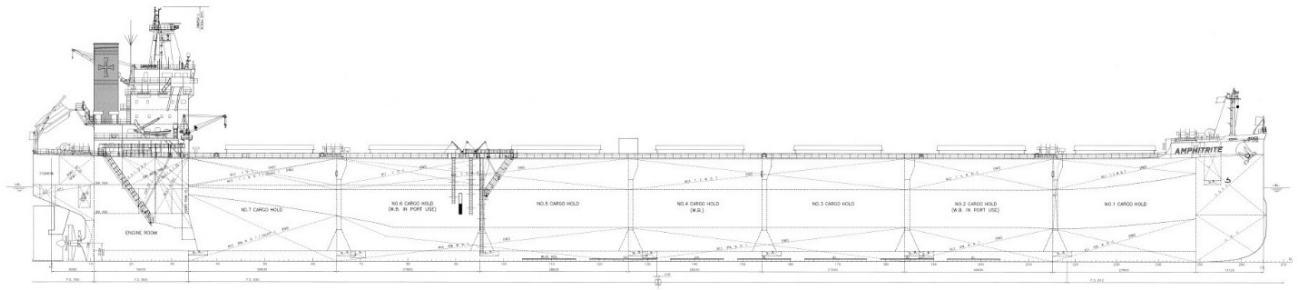


Figure 1: AMPHITRITE General Arrangement.

A pilot embarked AMPHITRITE at 0940¹ on 9 March 2025. Following completion of the Master / Pilot exchange, the ship's crewmembers began heaving up on the port anchor in preparation for getting underway. The anchor was aweigh by 0955. When the anchor was lifted from the water a few minutes later, crewmembers observed that the anchor's crown and flukes were covered with clay and mud. The C/O informed the Master, who ordered the anchor lowered into the water so it could be washed as the ship transited the channel.

The pilot disembarked AMPHITRITE at 1130 after the ship crossed over the bar at the seaward end of the port approach channel and proceeded en route to Singapore, where the ship was due to stop for bunkers.

The force of the water, as the ship transited the channel outbound to sea, had not been enough to remove all the clay and mud from the anchor, so the C/O directed crewmembers to raise the anchor and wash it using the ship's anchor wash system and fire hoses as the ship commenced its sea passage to Singapore. The crewmembers could not wash all the clay and mud off the anchor, so the Master instructed the C/O to secure it for sea.

The anchor, when brought into the hawse pipe, did not align properly and became stuck, so it was not possible to either lower or bring the anchor completely home. The crewmembers then secured the port anchor using the windlass brake, chain stopper, and lashings (i.e., wire rope). Neither the Master nor any of the ship's other management level officers (i.e., the C/O, C/E, and 2/E) reported having seen such a situation in their time at sea.

The weather at the time was good with Beaufort Force 4 winds from the northeast and seas of approximately 1–1.5 m. The swell was less than 1 m. The forecast weather along the ship's route to Singapore was for similar conditions.

Sometime after 1200, as the ship continued en route to Singapore, the Master met with the C/O, C/E, and 2/E, to discuss how to free the port anchor, which weighed approximately 8,325 kg, so it could be properly housed. It was decided to attempt to free the anchor by putting mooring lines over the anchor flukes and then using mooring winches to heave on the mooring lines. Following this meeting, the C/E documented what had been decided and the C/O prepared a risk assessment.²

Crewmembers passed mooring lines through chocks that were fore and aft of the anchor and then placed the eyes of the mooring lines over the flukes, the tips of which were approximately 1.5–2.5 m below the forecastle deck and under

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

2 The documented work plan and risk assessment are discussed later in this report.

the flare of the bulwarks (see Figure 2).³ They then used mooring winches to heave on the mooring lines, alternating between the line that led forward and the line that led aft, to try to free the anchor. The effort was not successful.



Figure 2: Photograph of AMPHITRITE's port anchor showing the position of the flukes when the anchor was stuck in the hawse pipe. The normal position of the flukes is indicated by the red image, which was added.

The crewmembers verified that the windlass brake was set, the chain stopper engaged, and the lashings secured before stopping to try and free the anchor on the afternoon of 9 March 2025.

During breakfast on the morning of 10 March 2025, the Master, who was concerned about the possibility of the anchor coming loose if the ship started pitching with waves striking the bow, discussed options with the C/O, C/E, and 2/E on how to free the port anchor. It was decided that they would try using a portable hydraulic jack to apply pressure on the anchor shank in way of the shackle to free the anchor. It was also decided that the Fitter and Bosun would go into the hawse pipe (see Figure 3) to rig the hydraulic jack and that members of the ship's deck and engineering staff would assist. It was also agreed that the Master and C/O would brief the Bosun and the C/E would brief the Fitter about the plan for freeing the anchor.

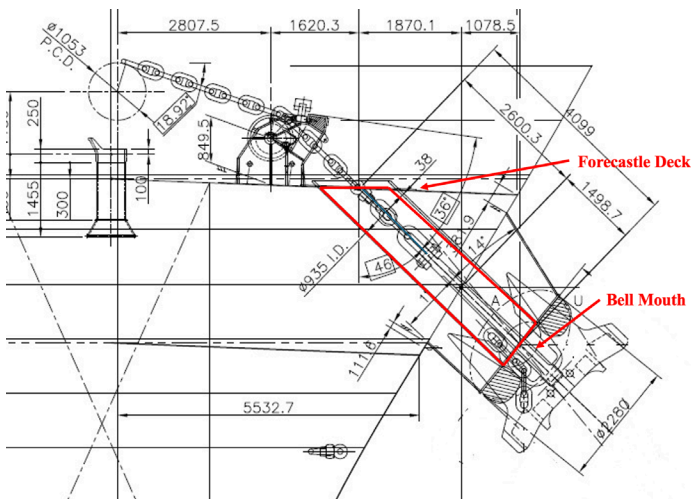


Figure 3: Drawing of the hawse pipe (outlined in red). The length of the hawse pipe was 2,600 mm from the forecastle deck to the side shell and 1,499 mm from the side shell to the bell mouth. The interior diameter of the hawse pipe was 985 mm.

³ When interviewed as part of the Administrator's investigation, crewmembers did not provide a consistent or clear account of how the eyes of the mooring lines had been passed over the flukes.

After breakfast, the C/E documented the agreed plan for freeing the port anchor and the C/O prepared a risk assessment and Cold Work Permit.⁴ At the time, the ship was underway on the Java Sea off the southeast coast of Borneo. The weather continued to be good with Beaufort Force 4 winds from the north northwest and seas of approximately 1–1.5 m.

At approximately 1030, the Master, C/O, C/E, 2/E, and other crewmembers went forward to try to free the anchor, which was still secured by means of the windlass break, chain stopper, and lashings. The 2/E and Fitter climbed or reached down into the hawse pipe and placed a portable hydraulic jack in position on the forward side of the anchor shank just below the shackle for the anchor chain (see Figure 4).



Figure 4: The port side hawse pipe showing the hydraulic jack (circled in red) in position on the forward side of the anchor shank. The hand pump for the hydraulic jack is on deck.

After the 2/E and the Fitter were clear of the hawse pipe, the 2/E worked the hand pump to operate the hydraulic jack. He continued pumping until the gauge on the handpump showed there was 20 bar of pressure on the hydraulic jack. There was no indication that the anchor had moved, so it was decided to not continue trying to free the anchor.

The Master first informed the Company sometime during the afternoon of 10 March 2025 that the port anchor was stuck in the hawse pipe and that attempts to free it using mooring lines and a hydraulic jack had been unsuccessful. The Master, who remained concerned about the possibility of the anchor coming loose and damaging the ship's hull if the ship encountered rough sea conditions, also informed the Company that they would try again later that day by using the hydraulic jack to put pressure on the other (e.g., aft) side of the anchor shank. The Master was reported to have told the Company that a risk assessment had been conducted and that the risk was within acceptable limits.

At approximately 1700, the Master told the C/O and C/E they would try again to free the port anchor by using the hydraulic jack to put pressure on the aft side of the anchor shank. The C/E informed the 2/E and Fitter. He also directed the Electrician and Engine Cadet, neither of whom had assisted with the attempt that morning to use the hydraulic jack to

⁴ The documented work plan, risk assessment, and Cold Work Permit are discussed later in this report.

free the anchor, to go forward to assist. The C/O informed the Bosun and the two OSs and directed them to go forward to assist. The weather at the time was similar to what it had been earlier that day.

The Fitter and Bosun, both of whom were wearing safety harnesses with lifelines secured to the guardrail, climbed down into the port hawse pipe to put the hydraulic jack in place on the aft side of the anchor shank. They could not put the hydraulic jack in place because the gap between the hawse pipe and the aft side of the shank was larger than on the forward side of the shank. Either the C/E or 2/E then directed one or more of the crewmembers who were on the Forecastle to get some flanges to place between the side of the hawse pipe and the base of the jack (see Figure 5).

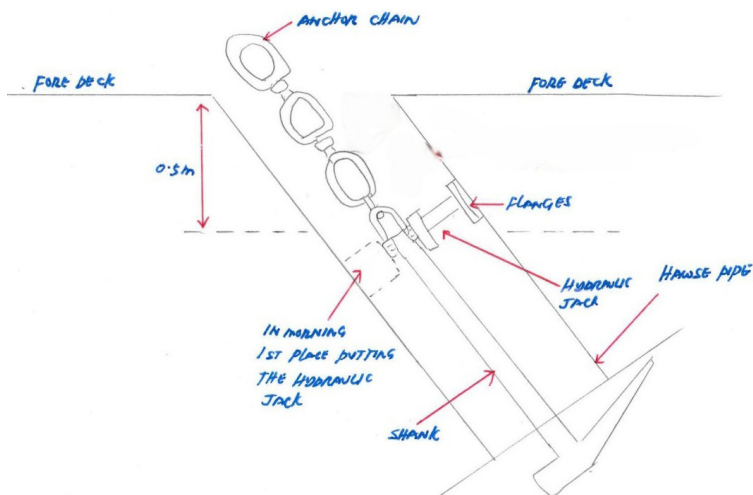


Figure 5: Sketch prepared by the 2/E showing the location of the hydraulic jack when it was put in place for the second attempt to free the port anchor on 10 March 2025. The drawing does not show how far the ram was extended from the cylinder.

The flanges were handed down to the Bosun who then held them against the side of the hawse pipe while the Fitter put the hydraulic jack in position. They then climbed out of the hawse pipe. The hydraulic jack did not stay in place when the 2/E started working the handpump, so the Fitter and Bosun climbed back into the hawse pipe and put the hydraulic jack back in place. As they were positioning the hydraulic jack, the Fitter called “a little bit” to the 2/E, who then worked the hand pump to extend the ram enough to hold the jack in position. The Fitter and Bosun started climbing out of the hawse pipe once the hydraulic jack was in place.

At approximately 1715, the port anchor moved suddenly as the Fitter and Bosun were climbing out of the hawse pipe. The Bosun, who was closest to the deck, had his abdomen and legs caught between the anchor chain and the hawse pipe, and immediately yelled for help. The Fitter, whose torso was pinned between the anchor shank and the hawse pipe with his head toward the anchor flukes, was not responsive.

The Master immediately went to the Bridge and tried without success to contact Banjarmasin⁵ VTS and then Toboneo⁶ Port Control to request assistance in arranging medical assistance for the injured crewmembers. Toboneo Port Control directed the Master to work through a local shipping agent to arrange for medical assistance. The Master informed the Company of what had happened and the need to appoint a local agent to make arrangements for medical assistance for the Fitter and Bosun.

⁵ Banjarmasin, Indonesia was the port closest to AMPHITRITE's position.

⁶ Toboneo Anchorage is located off the coast of South Borneo in Indonesia that is primarily used by vessels loading coal that is transported via barges.

As the Master was informing the coastal State authorities, crewmembers rigged a chain fall with a wire sling to lift the anchor chain off the Bosun so that he could be removed from the hawse pipe. As this was being done, the C/O and an OS went aft to the ship’s Hospital to get a stretcher and first aid equipment. Within a few minutes, the C/O and OS returned forward, and the C/O, with assistance from crewmembers, began administering first aid and medical oxygen to the Bosun, who had been removed from the hawse pipe. The Bosun was subsequently transported to the ship’s Hospital, where crewmembers continued to administer first aid.

Immediately after the Bosun had been removed from the hawse pipe, a crewmember climbed down into the hawse pipe and tied a line around the Fitter’s leg to prevent him from falling out of the hawse pipe. Crewmembers then tried, without success, to use the chain fall to lift the anchor shank off the Fitter, who remained unresponsive, so that he could also be lifted out of the hawse pipe.

At 1830, AMPHITRITE’s course was altered to proceed to Toboneo Anchorage. By this time the Bosun’s condition had worsened. The Master contacted Med Solution and was advised that the Bosun required urgent medical care.

AMPHITRITE anchored at Toboneo Anchorage at 2310. At approximately 0300 on 11 March 2025, a launch arrived alongside the ship. The Bosun, who was unconscious, was transferred to the launch by stretcher for transport to a hospital.

Shore-based emergency response personnel embarked AMPHITRITE on 12 March 2025 and took over efforts to remove the Fitter, who remained unresponsive, from the hawse pipe. He was removed from the hawse pipe at 1515 and was determined to be deceased. The Fitter’s body was subsequently disembarked and transported to shore.

Crew

Each of the crewmembers who were on board AMPHITRITE on 10 March 2025 held appropriate seafarer documentation issued by the Administrator for their position on board the ship.

The experience of the ship’s management level officers, Fitter, and Bosun is shown in the following table.

RANK	TIME ON BOARD AMPHITRITE	TIME IN RANK	TIME WITH COMPANY	TOTAL TIME AT SEA
Master	0.6 months	3.7 years	9.2 years	34 years
C/O	0.6 months	0.8 years	2.4 years	10 years
C/E	9.4 months	5.2 years	4.3 years	30 years
2/E	7.5 months	0.6 years	17 years	17 years
Fitter	7.5 months	5.7 years	0.6 years	6.7 years
Bosun	4.2 months	0.3 years	10.5 years	10.5 years

All were experienced seafarers and, except for the Fitter, had each been on board Company-managed ships for two or more years.

The Administrator did not observe any indication that any crewmembers, who had assisted with the various attempts that were made on 9 and 10 March 2025 to free the port anchor, had failed to receive the amount of rest mandated by the STCW Code, Section A-VIII/1, paragraphs 2 and 3 and MLC, 2006, regulation 2.3.

Company Procedures

The Company's permit to work system required that a work planning meeting be held before a permit to work was issued. The stated purpose of the work planning meeting was "to prepare a detailed work plan for the hazardous work and brief all personnel involved at all levels (supervision, safety, execution of work) on the details of the work." Work planning meetings were supposed to be chaired by the ship's Master and attended both by the officer responsible for the planned work and each of the crewmembers assigned to conduct the work. Topics required to be discussed during the work planning meeting included:

1. the location where the work would be conducted;
2. the risks and hazards related to the planned work;
3. safety measures, including required PPE, to be taken to ensure that the work could be conducted safely; and
4. actions to be taken if there was a change of crewmembers who were conducting the work or of conditions while the work was being performed.

Permits to work could be issued for a maximum period of eight hours and were required to be signed by both the officer responsible for the planned work and the crewmembers who were assigned to conduct the work. The Company's procedures also required the work site to be inspected by both the officer responsible for the planned work and the crewmembers who were assigned to conduct the work to ensure it was safe.

The Company's permit to work procedures included the following general observation: "The issuance of a permit does not, by itself, make a job safe. Adherence to the permit and the identification of any deviations from the specified controls or expected conditions are essential in completing the task safely."

The Company's safe work procedure required that the hazards associated with a planned task and controls for those hazards be identified before a permit to work was approved. To support this, the Company maintained a library of risk assessments for routine shipboard tasks. As stated above, the identified hazards and controls were required to be reviewed during the work planning meeting. Approval from the Company was required before a Master approved a permit to work for a task for which the assessed risk, after all identified controls were implemented, was determined to be medium or high.⁷

In the event of an emergency, Masters of Company-managed ships were authorized by the Company's safe work procedures to "authorize any necessary work to preserve the safety of the crew, vessel and cargo as well as the protection of the environment." The Master was required to inform the DPA or ship's Superintendent "as soon as circumstances allow" when this authority was exercised.

The Company's safe work procedures also included a provision that "in the event of an extraordinary situation" either the DPA or the ship's Superintendent could approve any deviation from the Company's established procedures for

⁷ In such cases, both the DPA and the Company's Technical Manager had to approve the work.

some activities such as enclosed space entry, hot work outside of the Engine Room Workshop, or for working aloft, over the side, or on ladders.⁸

In accordance with the Company’s safe work procedures, any crewmember on board a Company-managed ship had the “right and duty” to exercise stop-work authority if the seafarer considered that an action or condition was unsafe. The Company also required that Masters of Company-managed ships encourage crewmembers to exercise their stop-work authority to prevent unsafe acts and conditions.

Work Plans, Risk Assessments, and Permits to Work for Freeing the Port Anchor

Use of Mooring Lines

The work plan prepared by the C/E and approved by the Master on 9 March 2025 documented the decision that had been made by the Master, C/O, C/E, and 2/E when they met sometime after 1200 to use mooring lines to try to free the anchor. It did not address how the crewmembers would put the mooring lines on the anchor, or the use of the mooring winches to heave on the lines. It also did not address PPE that would be used or safeguards other than that the anchor would be secured using the windlass break, chain stopper, and lashings for ensuring the planned work could be conducted safely. The work plan identified the Master as being responsible for the work, the C/O as being responsible for safety, and that the work would be done by the Bosun, deck ratings, C/E, 2/E, Fitter, and Assistant Fitter. Based on the work plan, the work would start at 0900 on 9 March 2025 and would be completed by 1700 that same day.

The risk assessment for using the mooring lines to free the port anchor that was prepared by the C/O and approved by the Master was based on the Company’s risk assessment for the manual handling of lines on a painted mooring winch warping drum. The identified hazards, which included sudden slippage of the mooring line on the mooring winch drum, were some of those commonly associated with the use of a mooring winch to handle mooring lines during mooring operations or when warping a ship along a berth.⁹ The identified controls included proper maintenance of the mooring winches and experienced crewmembers controlling the mooring winches and handling lines. No additional hazards or controls were identified by the C/O or Master. The risk assessment identified the planned work as a routine operation. The risk associated with using mooring lines to free the anchor was determined to be low when the identified existing controls were implemented.

A permit to work was not issued for using mooring lines to try to free the port anchor on the afternoon of 9 March 2025.

Use of a Hydraulic Jack

The work plan that was prepared by the C/E and approved by the Master on 10 March 2025 after the Master met with the C/O, C/E, and 2/E on the morning of 10 March 2025 indicated that:

1. a hydraulic jack would be placed on either side of the anchor shank to free the port anchor;
2. the anchor would be secured using the windlass break, chain stopper, and lashings;

8 The other activities for which a deviation could potentially be approved were electrical work (under 1,000 volts), diver’s underway inspection and repairs, and working on deck during adverse weather conditions.

9 The other identified hazards were incompetent personnel, slippery surfaces, and improper communication among involved personnel during mooring / unmooring operations. A parted mooring line or “snap back” was not identified as a hazard on the standard risk assessment for the manual handling of lines on a painted mooring winch warping drum.

3. the handpump would be operated to put pressure on the hydraulic jack only when no one was inside the hawse pipe;
4. the Bosun would assist the Fitter with placing the hydraulic jack between the anchor shank and the side of the hawse pipe; and
5. the risk assessment for working with tools was applicable for the planned work.

The work plan also identified the Master as being responsible for the planned work, the C/O being responsible for safety, and that the work would be conducted by the Bosun, an ASD, two OSs, the Deck Cadet, C/E, 2/E, 3/E, Fitter, Assistant Fitter, Electrician, and the Electrical Cadet. The work plan did not identify the PPE that was required to be used.

The C/O prepared, and the Master approved, a risk assessment based on the Company's risk assessment for working with tools for using a hydraulic jack to free the port anchor. The identified hazards included flying objects or other fragments, high pressure, improper use of a tool, inadequate supervision or work instructions, and loose equipment and trailing hoses.¹⁰ The existing controls for these hazards included the use of required PPE, the Company's SMS procedures for the use of power and hand tools, and use of work permits. Additional controls for these hazards that were identified by the C/O are shown in the following table.

HAZARD	ASSOCIATED CONTROLS
Flying objects or other fragments	<ul style="list-style-type: none"> • Use of suitable PPE to protect head, face, eye, body, hands, and feet were used by crewmembers operating tools and those who were close to the area where the work was being conducted
Use of high pressure	<ul style="list-style-type: none"> • Restrict access to personnel required for operation of equipment • Keep bystanders away from the working range of the tool
Improper use of tool	<ul style="list-style-type: none"> • The tool / equipment must be used in accordance with the maker's operating instructions • Portable tools shall only be used in adequately lit and ventilated areas • Ensure that the area on which the user is working is safe / steady and free from any obstruction / unguarded opening
Inadequate supervision or work instructions	<ul style="list-style-type: none"> • The work should be supervised by an experienced crewmember • A work-related safety meeting should be conducted prior to the work discussing work planning arrangements, relevant safety precautions, and individual duties / responsibilities
Loose equipment and trailing hoses	<ul style="list-style-type: none"> • Any flexible hoses / cables to be deployed in the work area should be temporarily secured on rails or other fixed supports

The risk assessment identified the use of a hydraulic jack to free the anchor as a non-routine operation. The assessed risk of using a hydraulic jack to free the anchor was determined to be low when the identified existing and additional controls were implemented.

¹⁰ The other identified hazards were adverse weather / sea conditions, high temperature in the working area, fatigue, inadequate familiarization / training, noise, vibration, inhalation of dust, use of unsuitable spare parts, modified tools, electricity, and hair or clothing becoming entangled in moving parts.

The C/O also drafted, and the Master approved, a Cold Work Permit that was valid from 1000–1800 on 10 March 2025 for using the hydraulic jack to free the port anchor. The permit identified the C/O as the officer responsible for both the planned work and safety. The Fitter and Bosun were identified as crewmembers who would perform the work. Special conditions that were included on the permit included that no one would be in the hawse pipe when the hydraulic jack was operated. The required PPE that was listed on the Cold Work Permit was coveralls, gloves, safety helmet, and safety shoes.

Pre-task Safety Briefings

The C/O and C/E conducted a short briefing for the crewmembers who were tasked with rigging and then using mooring lines during the afternoon of 9 March 2025 to try to free the port anchor. This briefing was focused on how the mooring lines would be rigged and did not include a discussion of the hazards associated with the planned task.

At approximately 1030 on 10 March 2025, the C/O explained the plan for using a hydraulic jack to the Bosun, the deck ratings, and the Deck Cadet when they went forward to free the anchor. The C/E had a similar discussion with the 2/E, 3/E, Fitter, and Assistant Fitter. When they explained how the hydraulic jack would be used, both the C/O and C/E stated that no pressure would be put on the hydraulic jack until the Fitter and Bosun were out of the hawse pipe. Crewmembers reported that neither the Master, C/O, nor C/E otherwise reviewed the hazards associated with the planned use of the hydraulic jack.

Crewmembers tasked with assisting during the second attempt to free the port anchor using the hydraulic jack stated that neither the Master, C/O, nor C/E reviewed either how the work would be done or the hazards associated with the task before the Fitter and Bosun entered the hawse pipe at approximately 1700 on 10 March 2025. Some of the crewmembers also said it was not clear whether the Master, C/O, or C/E was directing the work or how they were supposed to assist.

Some crewmembers also said that it seemed dangerous for crewmembers to go into the hawse pipe but that they did not say anything (e.g., exercise their stop-work authority). These crewmembers stated that they were aware that they had stop-work authority but did not indicate why they had not exercised it. These crewmembers said they personally would not have done anything that they felt was not safe but would not say anything unless asked.

PART 3: ANALYSIS

The following Analysis is based on the above Factual Information.

Decision to Free the Port Anchor

The decision to try to free the port anchor, first using mooring lines and, when that was not successful, a hydraulic jack, while the ship was on passage en route to Singapore was based on the Master's concern that the anchor would come loose and hit the hull if the ship started pitching with waves striking the bow. The Master's concern was legitimate as a loose anchor can potentially damage a ship's hull, which if the shell plate is breached can lead to flooding of the Forecastle and other forward spaces. It can also result in the loss of an anchor and chain.

The potential for a loose anchor to damage a ship's hull is highest in heavy weather and it is possible for the anchor's flukes to contact the side shell. Neither condition existed while AMPHITRITE was on passage to Singapore given that the:

1. construction of the hawse pipe (*see Figure 3*) held the port anchor away from the hull so that the flukes were not contacting the shell plate;
2. port anchor was secured by the windlass brake, chain stopper, and lashings, which prevented it from moving outboard, down the hawse pipe, and then contacting the hull; and
3. forecast along the ship's route was for good weather with Beaufort Force 4 winds and 1–1.5 m high waves.

Although the Master's concern was legitimate, there is no indication that he, in coordination with the C/O, C/E, and 2/E, all of whom were management level officers, had assessed the risk of the port anchor damaging AMPHITRITE's hull while the ship was en route to Singapore either before deciding to have the ship's crewmembers try freeing it by first using mooring lines and then with a hydraulic jack. Similarly, there is no indication that the Master had consulted with the Company regarding the potential for the port anchor to damage the hull during the planned voyage to Singapore. There is also no indication that the Company questioned the Master's decision to try to free the port anchor when he informed them that the first attempts to free it had not been successful but that they would try again using the hydraulic jack.

The Master's decision to have the ship's crewmembers to try freeing the port anchor with mooring lines and, when that was not successful, with a hydraulic jack, was within his overriding authority and responsibility for the safety of the ship and crew.¹¹ However, consulting with the ship's other management level officers or with the Company regarding the necessity of trying to free the port anchor prior to the ship's arrival at Singapore, or any other port along the ship's planned route where shoreside support was available to assist with freeing the anchor, would also have been consistent with the Master's overriding authority and responsibility for the safety of the ship and crew.

Routine Versus Non-routine Tasks

An anchor can become stuck in a hawse pipe.¹² However, having an anchor stuck in the hawse pipe is a non-standard condition that even experienced seafarers, including AMPHITRITE's Master and other management level officers, may not encounter during their careers. Accordingly, freeing a stuck anchor is not a routine shipboard task with an existing standard procedure. Rather, freeing a stuck anchor is a non-routine task.

The Company's safe work procedures included provisions that addressed emergency and extraordinary situations. Given that the port anchor was secured with the windlass brake, chain stopper, and lashings, and that the existing and forecast weather conditions along the ship's planned route was good, there is no indication that having the port anchor stuck in the hawse pipe was an emergency situation that required immediate action prior to the ship's arrival at Singapore or any other port along the ship's planned route where shoreside support may have been available to assist with freeing the anchor.

¹¹ ISM Code, Part A, paragraph 5.2.

¹² The Administrator is aware of similar incidents that occurred on board a Hong Kong-registered ship in 2014 and a Republic of Singapore-registered ship in 2017.

Having the ship's port anchor stuck in the hawse pipe was an extraordinary situation. However, it was not a situation for which the provision in the Company's safe work procedures addressing deviations from existing procedures due to extraordinary situations was applicable. This is because that provision was applicable to routine tasks or activities for which established procedures existed (e.g., enclosed space entry, hot work outside of the Engine Room Workshop, working aloft, over the side, or on ladders, etc.), and not non-routine tasks for which existing procedures did not exist.

The risk assessment for using a hydraulic jack to free the port anchor identified the task as a non-routine operation. However, the lack of guidance in the Company's safe work procedures for addressing non-routine tasks contributed to the effort to free the anchor being managed as if it was a routine task.

Work Planning

The Master conducted work planning meetings with the ship's other management level officers on the afternoon of 9 March 2025 and on the morning of 10 March 2025 to develop plans for how to free the port anchor. Although the Company's safe work procedures required that work planning meetings be chaired by the ship's Master and attended by crewmembers who were responsible for supervising and those who were assigned to conduct the planned task, these planning meetings only involved the Master, C/O, C/E, and 2/E. Crewmembers stated it was a common practice on board the ship for only the Master and management level officers to participate in work planning meetings and for the management level officers to then review what was decided with the crewmembers who would conduct the work.

Based on the Company's safe work procedures, work planning meetings were intended to provide a detailed plan for how hazardous work would be conducted. The work plans for using mooring lines on 9 March 2025 and for using a hydraulic jack on 10 March 2025 to free the port anchor both provided a general overview of what would be done to free the anchor using either mooring lines or a hydraulic jack. However, whereas the work plan for using the hydraulic jack included information about how the jack would be put in place, the work plan for using the mooring lines did not address either how the mooring lines would be placed on or otherwise secured to the anchor, or the use of the mooring winches to take tension on the mooring lines. Neither work plan addressed the potential for the anchor to rotate along its longitudinal axis while the mooring lines were being placed on the anchor nor while the hydraulic jack was being put into position.

Pre-task Risk Assessment

Pre-task risk assessments can contribute to ensuring that both routine and non-routine tasks can be conducted safely by providing a systematic means of identifying hazards associated with the planned task and controls for reducing the potential that the hazard will occur, or the consequences if it does. However, for a pre-task risk assessment to be effective, it must address all reasonably foreseeable hazards associated with the planned task and the existing conditions when it will be conducted. They must also not underestimate (e.g., downplay) the potential consequences of those hazards or overestimate (e.g., exaggerate) the potential effectiveness of the identified controls.

The risk assessments used as the basis for the pre-task risk assessments for the use of mooring lines and then a hydraulic jack to try to free the port anchor were, respectively, the Company's standard risk assessment for the manual handling

of lines on a painted mooring winch warping drum and for working with tools.¹³ Although these standard risk assessments addressed some of the hazards related to the use of mooring lines or a hydraulic jack to free the port anchor, neither addressed all reasonably foreseeable hazards associated with either of these methods. Some of the reasonably foreseeable hazards associated with using mooring lines or a hydraulic jack to free the anchor included the potential for:

1. a crewmember to fall overboard while putting mooring lines on the anchor;
2. a mooring line parting when under tension;
3. the anchor to rotate along its longitudinal axis when a crewmember was in the hawse pipe; and
4. a crewmember to fall overboard through the hawse pipe while putting the hydraulic jack in place.

The assessed risk with all the identified controls implemented for using either mooring lines or a hydraulic jack to free the port anchor was low, which meant that the Master was not required to get approval from the Company before having the crew attempt to free the anchor on either 9 or 10 March 2025. It cannot be determined, based on the information that is available, if the risk of using either mooring lines or a hydraulic jack to free the port anchor would have been assessed as low if the above reasonably foreseeable hazards had been identified and addressed as part of the pre-task risk assessments.

The Company's safe work procedures also required that the hazards and associated safety measures related to the planned work be discussed during the work planning meeting and documented as part of the agreed work plan. The work plans for using mooring lines and a hydraulic jack both required that the anchor be secured to prevent it from moving outboard in the hawse pipe while crewmembers were attempting to free it. Additionally, the work plan for using the hydraulic jack required that there not be any hydraulic pressure on the jack when the Fitter and Bosun were inside the hawse pipe. However, neither included any additional hazards or associated safety measures related to the use of either mooring lines or a hydraulic jack to free the port anchor.

The Master acknowledged that because the port anchor had not moved when they used mooring lines in an attempt to free it, he and other crewmembers had a false sense that the anchor would not move unexpectedly and that it was safe for a crewmember to enter the hawse pipe to put the hydraulic jack into position. This false sense of safety was reinforced when the anchor did not move during the first attempt using the hydraulic jack.

Pre-task Safety Briefings

The primary purpose of a pre-task safety briefing, or Toolbox Talk, is to provide an opportunity for the crewmember assigned to supervise a particular task to review with the crewmembers assigned to conduct the task the:

1. scope of the task;
2. procedures that will be followed; and
3. associated hazards and controls that will be in place to ensure it can be conducted safely.

¹³ Pre-task risk assessments include both generic and task-based risk assessments. The Company's standard risk assessments are examples of generic risk assessments. These are high level risk assessments that address hazards associated with a particular task (e.g., enclosed space entry, working at height, etc.) but not the hazards associated with performing that task on a given ship on a given day. This is because a generic risk assessment cannot address the factors that may exist when the task is conducted. A task-based risk assessment should address not only those hazards that are addressed by a relevant generic risk assessment but also hazards that are associated with the conditions that exist when the task is performed on a given ship on a given day. See the UK MCA, COSWP, Section 1.2.5.

As such, they are an important tool for ensuring that the crewmembers have a shared understanding of the planned work, how it will be conducted, and awareness of any associated hazards and controls before they start work.

Pre-task safety briefings are particularly important when, as was the case on board AMPHITRITE, crewmembers assigned to conduct a non-routine task do not participate in the work planning meeting. However, the effectiveness of the briefings that were conducted before crewmembers tried freeing the port anchor using mooring lines on the afternoon of 9 March 2025, and before the first attempt to free the anchor using the hydraulic jack on the morning of 10 March 2025, was compromised by the fact that neither included a review of the hazards associated with either method. Although both the C/O and C/E stated that no pressure would be put on the hydraulic jack when they briefed crewmembers from their respective departments on the morning of 10 March 2025, the effectiveness of those briefings was compromised by the fact that they did not provide an opportunity for the crewmembers from both departments to have a common understanding of how the work would be conducted or who was in charge.

Stop-work Authority

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 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.

Crewmembers on board AMPHITRITE were aware that they had stop-work authority. Some also indicated that they thought it was dangerous for crewmembers to go into the hawse pipe but did not raise their concerns. It was not possible to determine with certainty why crewmembers who thought it was dangerous to go into the hawse pipe did not exercise their stop-work authority.

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 the:
 - (a) lack of guidance in the Company's safe work procedures addressing non-routine tasks;
 - (b) decision to undertake a non-routine task and try to free the port anchor, which was stuck in the ship's port hawse pipe, without either assessing the risk of the anchor damaging the ship's hull or being lost while the ship was en route to Singapore, or consulting with the Company;
 - (c) ineffective pre-task risk assessment and work planning for the use of mooring lines and then a hydraulic jack to free the port anchor in that neither identified all reasonably foreseeable hazards associated with the use of either method to free the anchor;

- (d) Master and other crewmembers had a false sense that it was safe for a crewmember to enter the hawse pipe to put the hydraulic jack in place; and
 - (e) sudden movement of the port anchor.
2. Additional causal factors that may have contributed to this very serious marine casualty included:
- (a) ineffective onboard implementation of the Company's stop-work authority;
 - (b) the fact that not all crewmembers who were involved with trying to free the port anchor participated in the work planning meetings held on 9 and 10 March 2025;
 - (c) that the pre-task safety briefs that were conducted did not include a discussion of the hazards associated with either the use of mooring lines or a hydraulic jack to free the anchor and were conducted separately by the C/O and C/E for crewmembers assigned to their respective departments; and
 - (d) the lack of a pre-task safety brief before the second attempt on 10 March 2025 to free the port anchor using a hydraulic jack.
3. Additional issues that were identified but that did not contribute to this very serious marine casualty included:
- (a) the Company's standard risk assessment for the manual handling of lines on a painted mooring winch warping drum did not identify a mooring line parting as a hazard associated with this operation.

PART 5: PREVENTIVE ACTIONS

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

1. Undertook a fleet-wide safety campaign focused on stop-work authority.
2. Distributed lockout, tag out kits to all ships in the Company's managed fleet along with a presentation addressing lockout, tag out procedure.
3. Revised the Company's Cold Work Permit and procedures regarding the operation of anchoring equipment based on the lessons learned from this incident.

The Administrator has taken the following Preventive Actions:

1. Issued MSA No. 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 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. MSA No. 12-25 includes several recommendations for improving the implementation of stop-work authority on board 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) revise its safe work procedures to:
 - (i) included guidance for identifying and managing non-standard conditions;
 - (ii) include requirements for planning and conducting non-routine tasks taking the lessons learned from this very serious marine casualty into account; and
 - (iii) require that all reasonably foreseeable hazards associated with all aspects of routine and non-routine tasks be addressed when conducting a pre-task risk assessment, work planning meeting, and safety briefs;
 - (b) review and, as necessary, revise its onboard training requirements:
 - (i) addressing safe work procedures to include the identification and management of non-standard conditions and procedures for planning and conducting both routine and non-routine tasks;
 - (ii) for conducting pre-task risk assessments to emphasize the importance of identifying all reasonably foreseeable hazards associated with a task; and
 - (iii) for exercising stop-work authority to reinforce Company expectations that any crewmember regardless of their position on board can exercise stop-work authority without fear of repercussion and to include scenarios for crewmembers to practice exercising this authority;
 - (c) undertake a fleet-wide safety campaign on board Company-managed ships focused on:
 - (i) reinforcing Company expectations regarding the importance of complete and consistent implementation of safe work procedures when conducting both routine and non-routine tasks; and
 - (ii) ensuring crewmembers on board Company-managed ships can identify a non-standard condition and can distinguish between routine and non-routine tasks;
 - (d) review the lessons learned from this very serious marine casualty with Masters and management level officers during on-signing briefings; and
 - (e) review and, as necessary, revise all standard risk assessments for tasks involving handling lines to address a line parting while under tension.

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