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The conduct of BMSR ID investigations is guided by MSC.255(84) [International Maritime Organisation Resolutions on International Standards and Recommended Practices for Safety Investigations into Marine Accidents or Incidents (Casualty Investigation Code)], IMO Resolution A.1075(28) [Guidelines to Assist Investigators in the Implementation of the Casualty Investigation Code], and the Marine Accident Investigators International Forum (MAIIF) Manual.



Fatal fall from height on board DSM Capella Kalamata, Greece 20 January 2024



DSM CAPELLA AT ANCHOR OFF KALAMATA, GREECE

BMSR ID Safety
Investigation Report 1/2024

SUMMARY

On 20 January 2024, a deck rating fell from a suspended portable gangway while working aloft in hold No.5 of the Barbados registered general cargo ship, *DSM Capella*. The ship was at anchor, off Kalamata, Greece. The deck rating was transferred ashore by a local passenger launch and then on to a nearby hospital by ambulance. He was declared to be deceased shortly after arrival.

The safety investigation identified that:

- The portable gangway was jury-rigged to enable its use as a painting platform. It was suspended about 11m above the hold bottom when the deck rating fell.
- The portable gangway was stationary and stable at the time, and the trigger for the deck rating's fall was not seen.
- Rope guardrails fitted around the portable gangway were ineffective, possibly due to insufficient tension. Although the deck rating was wearing a safety belt and lanyard, the lanyard was not attached to the gangway structure or crane slings and therefore the rating's fall was not arrested.
- The portable gangway was used to work aloft because the ship did not carry a dedicated platform, and it was necessary for the holds to be maintained prior to the next cargo being loaded.
- The safety management of the work aloft in the holds relied on a generic risk assessment and on the ratings involved following instructions. Consequently, important aspects of the work process such as supervision, communication, the potential hazards associated with the use of the portable gangway, the limitations of the lanyards provided, and emergency response, were not fully considered.

Following the accident, Stemship Management Ltd, *DSM Capella*'s safety manager issued a safety advisory to all ships for which it held safety responsibilities. Diamond Ship Management (DMCC), the ship's operational and commercial manager also commenced an initiative to provide elevator working platforms to its fleet to improve safety when working at height during hold maintenance and painting. In view of the actions taken, no recommendations have been made.

FACTUAL INFORMATION

Course of Events

The Fall

At 0600 on 20 January 2024, the Barbados registered cargo ship *DSM Capella* anchored 0.5nm off Kalamata, Greece (**Figure 1**) to embark spare engine parts. The weather was fine, with clear skies and light winds.

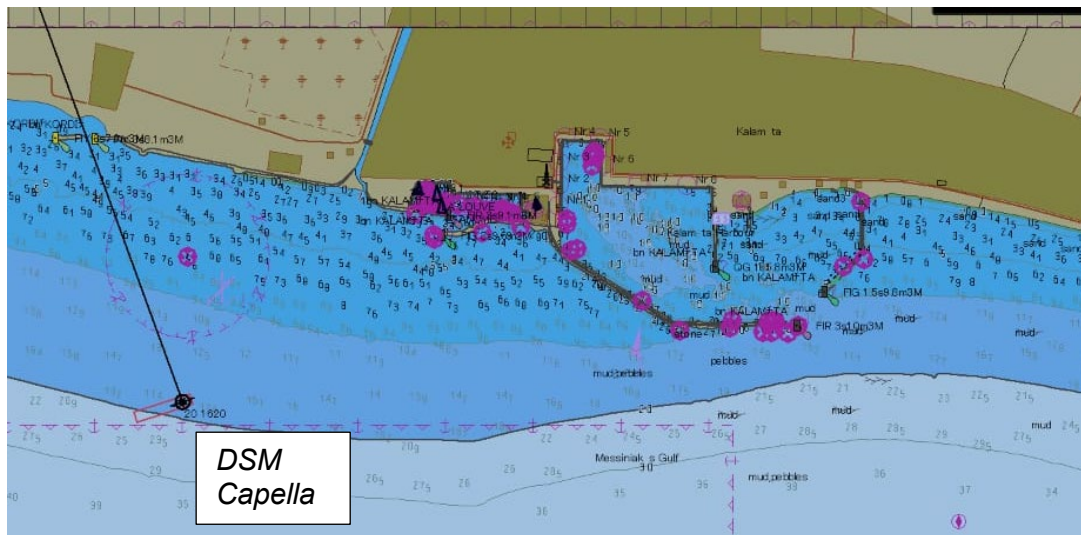


Figure 1 – DSM Capella anchorage position

At 0800, the chief officer (C/O) met with the bosun and the other deck ratings to discuss the day's work. At about the same time, a port state control (PSC) officer boarded to conduct an expanded PSC inspection. During the morning, the deck crew conducted maintenance in hold No. 5 (**Figure 2**). This focused on the chipping and painting of corroded areas that could be reached from the bottom of the hold.

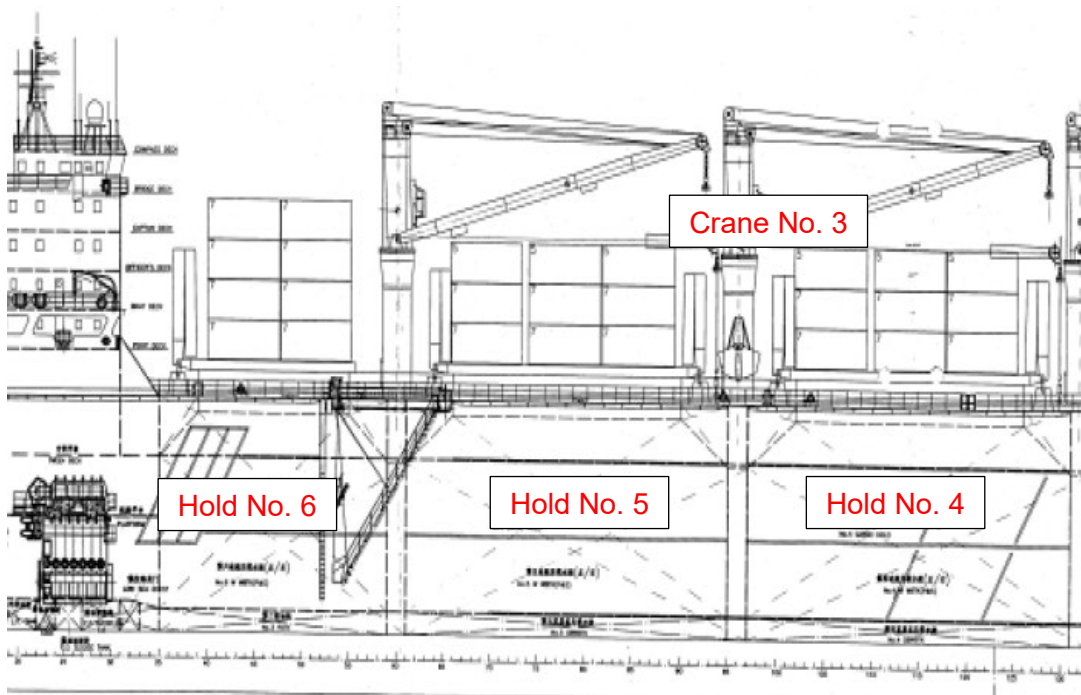


Figure 2 – Extract of DSM Capella's general arrangement showing holds 4,5 and 6

Meanwhile, the captain attended to the PSC officer. He was assisted by the chief engineer (C/E), C/O and the second officer (2/O) when necessary for specific aspects of the inspection.

Between 1200 and 1300, the deck crew had lunch. On completion, the bosun told two deckhands (Able Seaman1 (AB1) and AB2) to chip and prime the hatch coaming inside the upper section of hold No.6. This was to be done from a portable gangway hoisted into position by crane. The bosun checked that AB1 and AB2 were wearing applicable personal protective equipment (PPE), including safety harnesses with lanyards. He also instructed them to be careful, to keep the

lanyards secured, to pay attention and not to make any sudden movements when on the portable gangway.

During the afternoon, work in the lower section of hold No.5 and the hatch coaming inside hold No.6 continued. The portable gangway was attached to crane No.3, which was operated by the bosun, and was repositioned several times to enable the deck hands to work on the hatch coaming at the hold's sides and forward and aft ends. When AB1 and AB2 required the portable gangway to be re-positioned, they attracted the attention of other deck crew by shouting. Portable ultra-high frequency (UHF) radios were carried by the captain, the C/O and the bosun.

At 1400, the PSC officer disembarked from the ship on completion of his inspection, and at 1500, the deck crew stopped work in the cargo holds for a coffee break. Thirty minutes later, work in the holds resumed, now including the bottom of hold No.4.

Shortly after, AB1 and AB2 finished chipping and painting the hatch coaming inside hold No.6. The two deckhands returned to the deck and were told by the bosun to now chip and paint the inner hatch coaming of hold No.5. To facilitate this, AB1 and AB2 climbed on to the main deck from the portable gangway, which was then moved by the bosun from the upper section of hold No.6 to the starboard side aft of hold No.5 (**Figure 3**) using crane No.3.



Figure 3 – Reconstruction showing the initial position of the portable gangway in hold No.5

AB1 and AB2 climbed over the hatch coaming of hold No.5 and onto the gangway. The gangway was then lowered between 2m and 2.5m to enable the full depth of the hatch coaming to be reached. The portable gangway rested against the lower section of the hatch coaming and was stable, and the two deckhands could still reach the top of the hatch coaming with their arms outstretched. The gangway was secured in position by other deck crew by attaching tag lines from the gangway to securing points on deck. The bosun and the assisting deck ratings then returned to continue working at the bottom of hold No.6.

AB1 and AB2 started to chip and paint the corroded areas they could reach. AB1 started to work at the forward end of the portable gangway and AB2 at the aft end.

The intention was for both deckhands to work towards the centre of the gangway and then request for the gangway to be repositioned. Both deckhands were focused on their work and did not talk.

At about 1618, AB2 was looking directly at the area of hatch coaming he was chipping when he heard a very loud noise. He quickly turned, saw AB1 lying face-down and motionless on the hold bottom below, and immediately started shouting to raise the alarm. There was no-one else in hold No.5 and AB1 had fallen about 11m.

The Response

AB2's shouting was heard by the C/O who was on the main deck forward of hold No.5. He immediately went via a manhole and stairway to the hold bottom where AB1 was lying under the forward end of the portable gangway. He was unconscious and appeared to have broken limbs. There was also blood on AB1's head and on the deck. A broken painting roller (without extension) was lying 2m forward of AB1, and his safety helmet was towards the port side of the hold bottom. As AB2 continued to shout for assistance, the C/O relayed the alarm using his hand-held radio. He then quickly made his way to see the captain. The C/O remained in hold No.5 for about 30 seconds.

AB2's shouting was also heard by deck ratings working in the bottom of the cargo holds, including the bosun who was overseeing the chipping and painting being conducted in hold No.6. The bosun also made his way to the bottom of hold No.5 but by the time he arrived, the C/O had already left the scene via an alternate stairway. AB1 remained motionless but the bosun saw blood coming from AB1's mouth and turned him onto his side.

The captain was working in his cabin when he heard crew shouting and running on the starboard side of the main deck. He immediately went to see what was happening and was told that one of the crew had fallen. He went to the bridge, and at 1620, he informed the local port authority of the accident via very high frequency (VHF) radio, channel 12 and requested an urgent boat transfer and medical assistance. By now, most of the ship's crew were aware of the emergency.

The portable gangway was lowered by crane to the bottom of hold No.5 and AB2 joined the bosun. The bosun and AB2 removed several stanchions from the portable gangway and lifted AB1 onto it. The gangway with AB1, the bosun and AB2 was then hoisted onto the starboard side of the main deck. AB1 was showing no signs of life so the C/E administered cardiopulmonary resuscitation (CPR). However, AB1 did not respond, and CPR was stopped. The 2/O, the ship's medical officer, then gave AB1 oxygen through a face mask which he had collected from the vessel's medical centre. AB1 was also moved onto a stretcher.

On completion of the VHF call to the port authority, the captain went to the main deck and realised that AB1 was in a critical condition, if not already deceased. He returned to the bridge and called the local port authority again to try and speed up AB1's evacuation. He also telephoned the ship's agent.

At 1655, the passenger launch *Panagia Thalassini* arrived alongside *DSM Capella*'s starboard side with a coxswain and a coastguard official onboard. AB1 remained on the portable gangway which was lowered on to the launch by crane. AB1 was transferred onto *Panagia Thalassini* which then returned to Kalamata. The C/O and an oiler accompanied AB, who remained unconscious and motionless throughout the transit.

At 1710, *Panagia Thalassini* arrived alongside in Kalamata and AB1 was transferred to a waiting ambulance which had been arranged by the local coast guard through the Hellenic National Emergency Aid Centre. The C/O and the oiler remained on the launch which returned them to *DSM Capella*.

At 1730, AB1 arrived at the Messinia Public Hospital and was declared to be deceased. The cause of death on his death certificate was listed as injuries to the head, chest, and upper and lower extremities due to falling from height.

Post-mortem examination

At the start of the safety investigation, the BMSR Investigation Department requested a copy of the report of the post-mortem examination of AB1 from the Kalamata Coastguard via the Hellenic Bureau of Marine Casualty Investigation (HBMCi). However, the BMSR Investigation Department was advised by the HBMCi on **3 September 2024** that the post-mortem examination report remained pending. A copy of the report had still not been received at the time of publication.

Ship Management

DSM Capella's operational, technical, and crewing management was undertaken by Diamond Ship Management (DMCC) which had offices in Piraeus, Greece, and Dubai, United Arab Emirates. The company managed 14 ships divided into two fleets. The first fleet comprised eight ships, including *DSM Capella*, all of which were relatively modern, handysize, cargo ships for which the management responsibilities falling under International Safety Management (ISM) Code were delegated to Stemship Management, Piraeus. The second fleet comprised six older ships of various types, including three livestock carriers. The ISM manager for the older vessels was African Express, based in Rumania. Although ships' crews were recruited by Diamond Ship Management (DMCC), the ISM managers issued contracts of employment.

Crew

General

DSM Capella's crew of 23 were all Syrian nationals apart from the C/O who was an Egyptian national. All of the crew held the required STCW¹ qualifications for their position on board and they had been on board for between 6 and almost 11 months. The official language on board was English, although the spoken language of the crew was Arabic.

The deck ratings comprised the bosun, and six ABs/ordinary seamen. The C/O organised the deck department's watch bill. The C/O, bosun and all remaining deckhands were breathalysed for alcohol at 1730 on 20 January 2024 and no alcohol consumption was identified.

The Deceased

AB1 was Saeid Amer, who was 31-years of age. He was a devout Muslim and did not drink alcohol. He also had no known medical conditions and was not known to be taking any drugs or medication. His latest medical certificate was dated May 2023 and stated:

The seafarer named in this document has been identified and examined and has been found to be free from any medical condition likely to be aggravated by service at sea or to render the seafarer unfit for such service or to endanger the health of other persons on board.

Saeid was between 160cm and 165cm tall and weighed about 65Kg. He kept himself physically fit through regular visits to the vessel's gym and was a popular

¹ International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978, as amended (STCW Convention)

member of the crew. Saeid was reported to be a good worker who followed instructions.

Saeid joined *DSM Capella* on 3 July 2023 for his first contract on board, but his second with Diamond Ship Management. Saeid had kept the 0000 - 0400 and 1200-1600 watches at sea between the 11 and 17 January 2024 and had been day working between 0800 and 1700 on 18 and 19 January. The records of hours of work and rest showed that he had a minimum of 14 hours rest each day between 1 and 19 January 2024.

Equipment

The portable gangway and crane

The portable gangway (**Figure 3 and Figure 4**) was made of aluminium and was 10m in length and 70cm wide with thirty steps, 34cm apart. It weighed 250Kg and eight stanchions of about 1m in height were fitted on each side of the gangway at intervals of 1.2m. Rope was rove at the top and mid-levels of the stanchions to form all-round guardrails. The distance from the upper rope securing point at the top of each stanchion to the mid-stanchion rope securing point was 40cm. The distance between the mid-stanchion rope securing point and the base of each stanchion on the gangway's metal structure was 56cm. The gangway's metal framework was 24cm above the walkway (**Figure 5**) but decreased towards its ends.

The stanchions at the gangway's extremities were inset by about 1m. To rig the gangway for use as a painting stage, the rope guardrails were tied off across these stanchions thereby enclosing 8m of the gangway's length. The outer 1m at each end of the gangway were not enclosed by the rope guardrails (**Figure 6**).

The gangway was last load tested to 300Kg/m² on 1 May 2023. It was also inspected and the gangway's treads, side stringers, cross members, decking, support points, stanchions and hand ropes were found to be in a satisfactory condition. The portable gangway was stowed on the main deck, aft of No.5 hold when not in use.

No.3 crane (**Figure 2**) was used to hoist and position the portable gangway in hold No.5. It was manufactured by Macgregor and had a radius of 26m and a safe working load of 40t. The crane was not specifically authorized for man-lifting operations.



Figure 4 – Potable gangway (stanchion and guardrail heights)



Figure 5 - Portable gangway (toe board height)



Figure 6 - Portable gangway (end-on)

Personal Protective Equipment

The personnel protective equipment (PPE) on board *DSM Capella* was provided by Diamond Ship Management. At the time AB1 fell, he was wearing safety shoes (**Figure 7**), a safety helmet, gloves, goggles, overalls, and a safety belt or harness with a single 1.5m fall arrest lanyard (**Figure 8**). The tread on the safety shoes, and the safety helmet were in good condition, and the spring hooks at either end of the lanyard were in working order.



Figure 7 – The sole of one of the safety shoes worn by AB1



Figure 8 – Safety belt and lanyard worn by AB1

Tools

AB1 and AB2 each used small chipping hammers weighing less than 0.5 Kg and 10cm wide rollers with a 40cm handle to chip and paint from the portable gangway. A 1m extension for the paint rollers was also available on the portable gangway.

Portable Gangway

Access and Egress

To use the portable gangway as a painting stage suspended at height inside cargo holds No.6 and then No.5, the gangway was hoisted by crane with lifting slings (**Figure 3**). It was lowered inside the hold adjacent to, and parallel with, the hatch coaming until the top of the stanchions were level with the top of the coaming. AB1 and AB2 then secured their lanyards to the slings and climbed over the hatch-coaming onto the gangway. The gangway was then lowered between 2m and 2.5m to enable the deckhands to chip and paint the full depth of the hatch coaming. Lines from the gangway were secured on deck to reduce the platform's movement. To enable the deckhands to work along the area of the portable gangway enclosed by the rope guardrails, the deckhands had to periodically change the attachment point of their lanyards on the metal gangway structure at the base of the stanchions.

When repositioning the portable gangway, the securing lines were slackened, and the gangway was hoisted towards the top of the hatch-coaming. The deckhands then attached their lanyards to the lifting slings and climbed over the hatch-coaming onto the deck. The tools used by the deckhands remained on the portable gangway during both lowering and hoisting.

Previous Use

The portable gangway had been used by the crew as a painting stage on one previous occasion. On 8 December 2023, it was used to chip and paint the upper sections of the front of the accommodation. On that occasion, AB1 was one of the two the deck crew who worked from the portable gangway.

Safety Management Documentation

DSM Capella's onboard safety management system (SMS) was issued by Stemship Management Ltd and contained several documents concerned with working at height. These included:

- Form TD-11 - a risk assessment form covering 'Works performed high up and outboard' (**Figure 9**), which was approved on 16 February 2021.
- F001/01, which was a permit to work that was required to be completed for all work activities that were not routine.
- F002/01 – a working aloft or overside permit.

Hazard Description	Failure Effects	Risk Rating			Initial Risk Category	Control measures to be taken	Risk Rating			Final Risk Category
		F	I	R			F	I	R	
1	2	3	4	5	6	7	8	9	10	11
Falling from height in water or on a firm surface.	Injury, death	3	4	12	High	Introduction Instructing on safety, use of safety means and PPE, performance of safety rules, reception of the sanction to work at height or behind a board of a vessel. At falling the person from height for a board or on a firm surface saving operations are carried out, at easy damages there is a first medical aid, at heavy - actions on evacuation of the victim from a vessel are carried out.	1	4	4	Low
The human factor - absence of skills, preparations, knowledge or extreme weariness	The harm, put to a vessel. Traumas of the personnel.	3	3	9	Medium	Matrix of training and acquisition by staff./pre-trip criterion of experience. /Company SMS. /acquaintance with duties/trainings onboard. Risk Assessment. /conformity to procedures. /instructing on safety. The sanction and competence for performance of work. /corresponding means of an individual defence. /sufficient rest before work. /good communication. The appropriate control				Low
Slippery/ Stumble / the Exposure temperature influences	Traumas/illnesses of the personnel	2	3	6	Medium	The zone is free from oils, greasing, an ice, tools. /Company SMS. Risk Assessment. The sanction to work at height / behind a board is filled also the log assistant to the captain or the log mechanic are notified. The assignee supervising work. All equipment is checked up before use. /if there is no suitable point of fastening of the equipment to a design of a vessel, it is necessary to establish the additional safety ends. /check up points of fastening of the equipment to the case of a vessel before use. / the clothes corresponding weather, and means of an individual defence Are used.	2	2	4	Low

Figure 9 – Extract of Risk Assessment Form TD 11 covering 'works performed high up and outboard'

Both a permit to work and a working aloft or overside permit were raised on 20 January 2024 for the chipping and painting of the inside of cargo holds No.5 and No.6. The permits were issued following a discussion on the work to be completed during the day between the C/O and the bosun at 0800. The permit to work was approved by the C/O and the special precautions shown on the permit stated: 'THE INSTRUCTIONS OF THE CH.OFF.MUST BE ADHERED TO.' The working aloft or overside permit was signed by the C/O as the responsible officer, and by the captain. A specific risk assessment for working at height in the holds using the portable gangway was not recorded.

Monthly safety committee meetings were routinely attended by the captain, C/O, C/E, 2/O, second engineer, the electrician, the bosun and the cook. Minutes of the meetings from September 2023 were examined but no safety concerns or corrective actions were identified.

Inspections

Flag State

An annual flag State and Maritime Labour Convention (MLC) inspection was conducted by a Barbados Maritime appointed nautical inspector on 11 January 2024 in Monfalcone, Italy. No deficiencies were noted. The MLC inspection did not cover all aspects required in a full MLC audit. Consequently, areas including risk assessments were not checked.

Port State Control

The PSC inspection conducted on 20 January 2024, which was completed about 3 hours before AB1's fall, identified one deficiency. This concerned the fire dampers, which did not properly close. A previous recent PSC inspection at Vung Tau, Vietnam on 17 November 2023 did not identify any deficiencies, and a PSC inspection in Novorossiysk, Russia, on 29 September 2023 identified four deficiencies. These deficiencies were related to alternative power supplies for

radio communications, the fire detection and alarm system, lifebuoys, and winches and capstans.

Holds

On 17 January 2024, the C/O inspected the condition of the cargo holds. The inspection of hold No.5 identified that the hold condition due to rust, along with the condition of the hatch coaming were 'poor'.

The last cargo to be carried in hold No.5 was steel billets and the captain had been advised that the next cargoes were to be corn and wheat from Ukraine. In order to prepare and clean the holds as required by the charter party, emphasis was placed on hold maintenance after sailing from Monfalcone. During the passage to Kalamata, the focus was on chipping and painting the lower sections of the holds that could be reached from the hold bottom, as the sea conditions prevented the suspended portable gangway from being used to paint the inner hatch-coamings. Many of the crew, including the captain and C/O worked in the hold bottoms during the passage in order to complete the task.

Painting of holds was usually done in dry dock, although Diamond Ship Management expected ship's crews to 'touch-up' when required. Generally, it was the lower section of the cargo holds that required attention, and these areas could usually be reached from the hold bottoms without the need for working aloft.

Guidance

The Code of Safe Working Practices for Merchant Seafarers (COSWP) issued by the United Kingdom Maritime and Coastguard Agency is a widely referenced nautical publication which provided best practice guidance for improving health and safety on board ships. Aspects relating to the working aloft task being undertaken on board *DSM Capella* were addressed in Chapter 17 of the publication, and included:

17.1.1 Anyone working in a location where there is a risk of falling may be regarded as working at height. In addition to work on ladders, staging and scaffolding, this includes undertaking work inside a tank, near an opening such as a hatch, or on a fixed stairway.

17.1.2 Work at height should be subject to risk assessment, and suitable control measures should be taken to protect those who may be put at risk. Depending on the severity of the risk, a permit to work may be required (e.g. for working aloft).

17.2.1 Work should only be carried out at height if there is no reasonably practicable alternative to doing so. Where work must be carried out at height, the Company must ensure that such work is properly planned, appropriately supervised and carried out in as safe a manner as is reasonably practicable. Planning should include undertaking a risk assessment. This may include consideration of potential risks from falling objects or fragile surfaces and planning for emergency situations.

17.2.2 Only competent people should engage in any activity relating to work at height, or use of equipment for work at height, including the organisation, planning and supervision of such activities.

17.2.4 Work equipment should be selected that is fit for purpose.

17.2.6 Personnel working aloft should wear a safety harness with a lifeline or other arresting device at all times (see section 8.10). A safety net should be rigged where necessary and appropriate.

17.2.14 Tools and stores should be sent up and lowered by line in suitable containers, which should be secured in place for stowage of tools or materials not

presently being used. Tools should be secured by a lanyard, e.g. to the seafarer's wrist or harness, when in use.

17.4.1 Cradles should be at least 430 mm (17 inches) wide and fitted with guardrails or stanchions with taut ropes to a height of 1 metre (39 inches) from the floor. Toe-boards add safety.

Barbados registered vessels were not required to carry the COSWP.

ANALYSIS

The Fall

The actions of AB1 immediately before he fell approximately 11m from the portable gangway to the bottom of hold No.5 are not known. They were not seen by AB2, with whom he was working, or any other crew member. Notwithstanding that the portable gangway was secured against the hatch coaming and was reportedly stable, and there is no evidence to indicate AB1 was fatigued or suffering from illness, the trigger for his fall has numerous possibilities. These include slipping, tripping, losing balance, and over-reaching.

The position where AB1 landed in the hold bottom was directly under the forward end of the gangway from where he had been working, and the presence of his broken paint roller nearby, possibly indicates that he was holding the roller when he fell and therefore might have been painting or reloading the roller.

This analysis will focus on the potential reasons why the physical control measures in place were not effective. In particular, why the rope guardrails did not prevent AB1 from falling, and why the lanyard attached to AB1's safety harness was not secured to the portable gangway and therefore did not arrest his fall. The analysis will also examine the rationale for the ship's crew working aloft in the cargo holds, the suitability of the equipment used, the applicable safety procedures, and the response of the ship's crew.

Collective Fall Prevention

To have fallen off the section of portable gangway that was enclosed by the rope guardrails, AB1 must have fallen over, through or under the ropes on the inboard side of the gangway. The height of the vertical stanchions above the walkway on which AB1 was standing was at least 1m, and therefore as advised in the COSWP. However, although the gaps between the upper and mid-level rope guardrails, and between the mid-level guardrail and the gangway's metal framework were 40cm and 56cm respectively, and the distance between the supporting stanchions was 1.2m, the effectiveness of the stanchions and the rope guardrails as a fall prevention system was reliant on the rope guardrails being taut.

In this case, it was not possible to accurately determine the status of the guardrails at the time of the fall because the rope guardrails were un-tied and several stanchions were removed to enable AB1 to be transferred from the hold bottom to the main deck, and then on to the passenger launch. However, although, no concerns were raised about the tautness of the rope guardrails, the possibility that the reconfiguration of the rope guardrails to enclose the gangway ends (**Figure 6**) adversely impacted on their effectiveness, cannot be discounted. That AB1's fall was not noticed by AB2 until he heard AB1 land on the hold bottom also indicates that AB1 was unable to grab and hold onto a guardrail when passing over, through or under them.

Personal Fall Arrest Equipment

AB1 was wearing a safety harness with a 1.5m lanyard attached. However, it is evident from his landing on the hold bottom and the correct functioning of the spring hook when checked after the accident, that the lanyard was either not secured, or not secured effectively, to the portable gangway structure when AB1 fell over or through the rope guardrails.

AB1 was reported to be compliant with instructions and requirements related to safety. He had worked from the portable gangway to chip and paint the accommodation front in December 2023, he had been reminded of the importance of wearing the safety belt and securing the lanyard before he had started the task on 20 January 2024, and he had also already completed the chipping and painting of the hatch coaming inside hold No.6. AB1 was therefore familiar with the task and the use of the lanyard. Consequently, the reason or reasons for the lanyard not being secured to the gangway at the time of his fall, which made the lanyard a potential trip hazard, are also subject to conjecture.

The length of the lanyard potentially hindered AB1's movement, and therefore the periodic adjustment of the lanyard's securing point that was required to mitigate this limitation possibly influenced AB1's actions. However, it is not known whether AB1 did not use the lanyard because it impeded efficiency, and he had confidence in the collective protection afforded by the rope guardrails, or whether he was changing the lanyard's securing point when he fell. Both of these possibilities indicate the potential pitfalls of using single, rather than twin lanyards, when working at height.

Hold Maintenance

The task of chipping and painting the hatch coaming inside hold No.5 stemmed from the ship's holds not meeting the standard required to carry the next intended cargoes of wheat and corn. The lower sections of each cargo hold could be painted from the hold bottom using paint rollers on extended handles. However, the upper sections needed to be accessed by other means.

The preparation of the cargo holds was a major goal that had to be completed before the next cargo was embarked. Although the painting of the cargo holds was deemed an annual dry-dock task, 'the touching up' of the paintwork by the crew could not be avoided without adverse commercial consequences. The importance of this task was demonstrated by the 'hands – on' involvement of the captain and the C/O during the passage from Monfalcone. However, that the painting of the upper areas of the holds was deferred until conditions were more suitable when at anchor, indicates both the captain and the C/O were conscious of the risks associated with working at height.

Equipment Suitability

As *DSM Capella* did not carry portable scaffolding equipment or dedicated suspended access (elevator/work) platforms which could be used to work aloft inside the cargo holds, it was necessary for the crew to improvise. This led to the portable gangway being jury-rigged as a stage suspended from a crane hook by slings. Although the use of portable gangways as painting platforms is common on-board general cargo ships and the method had been successfully used for a similar purpose on the accommodation front on board *DSM Capella* several weeks earlier, the use of jury-rigged platforms is prone to increase risk. Such equipment is not designed for the task and its use requires man-lifting considerations to be taken into account.

In this case, the portable gangway was in date for test and in a satisfactory condition, and the gangway was wider than the width advised in the COSWP. In addition, although the No.3 crane on board *DSM Capella* was not specifically authorized for man-lifting operations, the suspension of the gangway was well within its design and working limits. Nonetheless, the potentially reduced effectiveness of the rope guardrails, the limited options available to secure single safety lanyards, and the increased likelihood of platform instability due to the gangway's suspension and the sudden movement of those working from it, adversely impacted on the gangway's suitability for working aloft. As a general principle, the use of lifting equipment which has not been specifically designed for lifting or suspending people should only occur in exceptional circumstances.

Safety Procedures

The use of a ship's crane and the portable gangway to enable deckhands to work aloft required procedural safeguards including a risk assessment, permits to work, and crew briefings or toolbox talks. However, on this occasion, there was no task specific risk assessment completed. Instead, the safe performance of the task of chipping and painting the hatch-coaming was largely reliant on a generic risk assessment for working at height or overside (**Figure 9**), which was ambiguous. The permits to work also lacked detail, which indicates they were raised because they were required by the process, rather than to make the conduct of the task safer.

Although the procedure adopted for access and egress to and from the gangway, reduced the deckhands' exposure to man-lifting hazards, and the jury-rigging of the portable gangway indicates a degree of forethought and adaptation, the consideration of other key areas typically included in planning processes was lacking. Consequently, the conduct of the ABs working on the gangway was frequently unsupervised, communication was dependent of other persons being in earshot, the tools used on the gangway were not secured, and although the ship's crew reacted positively, no thought had been given regarding the actions to be taken in the event of a fall.

The safe use of the portable gangway to work aloft in the holds was based on the expectation that the deckhands concerned adhered to the process of accessing and leaving the suspended portable gangway, did not move suddenly, and kept their safety belt lanyard attached to the gangway. However, the circumstances of this accident indicate that such expectation was optimistic. They also indicate that the application of safety procedures on *DSM Capella* was more a matter of routine and compliance, than of understanding and conviction.

Emergency Response

Although no pre-determined responses to a fall from the portable gangway had been planned, the shouts of AB2 were heard by the deck crew, and the ensuing response was immediate. In the circumstances, the actions taken to move AB1 from the hold, the provision of CPR and oxygen, the alerting of Kalamata port and the request assistance were all positive and timely.

The shifting of AB1 onto the portable gangway and again onto a stretcher were well-intended. However, the potential adverse medical consequences of these actions are not known. Similarly, the consequences resulting from a lack of examination by trained medical practitioners until AB1's arrival at the local hospital over 1 hour after his fall, cannot be determined.

CONCLUSIONS

- The deceased either fell over, through or under the rope guardrails fitted to the portable gangway.
- The effectiveness of the rope guardrails fitted around the portable gangway was possibly reduced due to insufficient tension.
- AB1 was wearing a safety belt and lanyard when he fell, but the lanyard was not attached to the gangway structure or crane slings and therefore his fall was not arrested.
- The portable gangway was used to work at height because the ship did not carry a dedicated platform, and it was necessary for the holds to be maintained prior to the next cargo being loaded.
- The safety management of the work aloft in the holds was rudimentary. Although the use of a jury-rigged portable gangway as a platform for working at height is a common practice, reliance on a generic risk assessment and on the ratings involved following instructions was **optimistic**.
- The absence of a specific risk assessment for the use of the portable gangway resulted in important aspects such as supervision, communication, tool security and emergency response being largely overlooked.
- The response of the ship's crew was positive and timely, although the potential adverse consequences of moving AB1 and the absence of trained medical practitioners until his arrival at the local hospital are not known.

ACTION TAKEN

Diamond Ship Management (DMCC), *DSM Capella*'s operational and commercial manager has:

- Provided elevator work platforms on board *DSM Capella* and *DSM Norwich* to enable hold maintenance and painting as part of an ongoing fleet-wide initiative to eliminate the use of platforms suspended by crane for working at height.

Stemship Management, *DSM Capella*'s ISM manager has:

- Issued an urgent safety advisory to all ships for which has ISM responsibilities, to raise awareness and instil a heightened sense of caution among all crew to prevent similar incidents in the future. The key areas highlighted in the advisory were risk assessment, safety equipment, training and awareness, and supervision.

RECOMMENDATIONS

In view of the actions taken, no recommendations have been made on this occasion.

Safety recommendations shall in no case create a presumption of blame or liability.

SHIP PARTICULARS	
Vessel's name	<i>DSM Capella</i>
Flag	Barbados
Classification society	Registrano Italiano Navale (RINA)
IMO number	9271511
Type	General Cargo
Registered owner	DSM Capella Marine Ltd
ISM Manager	Stemship Management Ltd
Commercial Manager	Diamond Ship Management (DMCC)
Year of build	2004
Construction	Steel
Gross tonnage	22654
Minimum safe manning	16
Authorised cargo	General Cargo/Containers
VOYAGE PARTICULARS	
Port of departure	Monfalcone, Italy
Port of arrival	Istanbul, Türkiye
Type of voyage	International
Cargo information	In Ballast
Manning	23
ACCIDENT INFORMATION	
Date and time	20 January 2024 at 1618
Severity	Very Serious Marine Casualty
Location of incident	Kalamata anchorage, Greece (37° 01.0N, 022° 05.8E)
Place on board	No. 5 cargo hold
Injuries/fatalities	One fatality
Damage/environmental impact	None
Ship operation	At anchor
External & internal environment	Daylight and dry with good visibility. Wind: westerly force 2, sea state 1
Persons on board	23
Shore Authority Involvement and Emergency Response	
Involved parties	Hellenic Coast Guard, Hellenic National Emergency Aid Centre, and Kalamata Port Control
Assets used	Passenger launch Panagia Thalassini Ambulance
Actions taken	Transfer of injured person from ship to Kalamata port, and from Kalamata port to local hospital