



Issued February 2024

# REPORT MARINE 2024/04

***Fall overboard from the cruise ship  
'Viking Mars' at Invergordon in Scotland  
18 August 2023***

*The Norwegian Safety Investigation Authority (NSIA) has produced this report exclusively for the purpose of improving safety at sea.*

*A safety investigation is conducted in order to determine the sequence of events and causal factors, study factors of importance for preventing marine accidents and improving safety at sea, and publish a report and any safety recommendations. It is not the NSIA's task to apportion blame or liability under criminal or civil law.*

*This report should not be used for purposes other than preventive maritime safety work.*

# About the investigation

## Purpose and method

The NSIA has classified the incident as very serious based on to the definition in the Maritime Code. The purpose of this investigation has been to clarify what led to a crew falling down and dying in connection with work rigging a walkway. Furthermore, the NSIA has assessed what can contribute to increasing safety and preventing similar accidents and the extent of damage in the future.

The accident and the circumstances surrounding it have been investigated and analysed in line with the NSIA's framework and analysis process for systematic safety investigations (the NSIA method<sup>1</sup>).

## Sources of information

The factual information is based on conversations with representatives from the shipping company. Interviews have been conducted with crew on board where this has been possible in accordance with the NSIA framework. In addition, NSIA has had access to documentation from the shipping company's safety management system, and documentation from the Norwegian Maritime Authority as well as several similar investigations.

## The investigation report

The first part of the report, 'Factual information', describes incident data and provides a description of the sequence of events with associated data and information obtained in connection with the accident.

The second part of the report deals with 'The NSIA's assessments' of the sequence of events and contributing factors based on factual information and investigations carried out. The investigation has focused on conditions related to operations with gangway, which means that circumstances and factors that have been found to be less relevant for explaining and understanding the accident are not discussed.

The report ends by summarizing and highlighting the 'Safety Learning' from this incident.

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<sup>1</sup> See <https://www.nsia.no/About-us/Methodology>

# Factual information

## Data relating to the incident.

<b>Vessel</b>	
Name	Viking Mars
Flag state	Norway
Classification society	DNV
IMO number / call sign	9833187/LACR8
Type	Cruise ship
Build year	2022
Owner	Viking Cruises
Responsible for ISM (shipping company)/DOC holder	Wilhelmsen Ship Management AS
Construction material	Steel
Length	228,2
Type of voyage	14 days cruise around the British Isles
Persons on board	930
<b>Information about the accident</b>	
Date	18 August 2023
Type of accident	Person overboard
Location where the accident occurred	Invergordon, Scotland
Location on board where the accident occurred	Side of ship, deck 2
Injuries/fatalities	1 fatality
Damage to ship/the environment	Not applicable
Ship operation	Rigging of gangway
At what point in the voyage was the vessel	Berthed

## Sequence of events

On 18 August 2023, the cruise ship arrived in Invergordon, Scotland.

The vessel moored at the quay at just over 08:00 local time, and the gangway was prepared for use on deck 2, since the tide was at its lowest during the mooring. When the tide rose after a few hours, the height from deck 2 was too great, which meant the gangway would have to be moved to deck 1, see Figure 1. The plan was to move the gangway after a safety drill that was initiated just before 10:00.

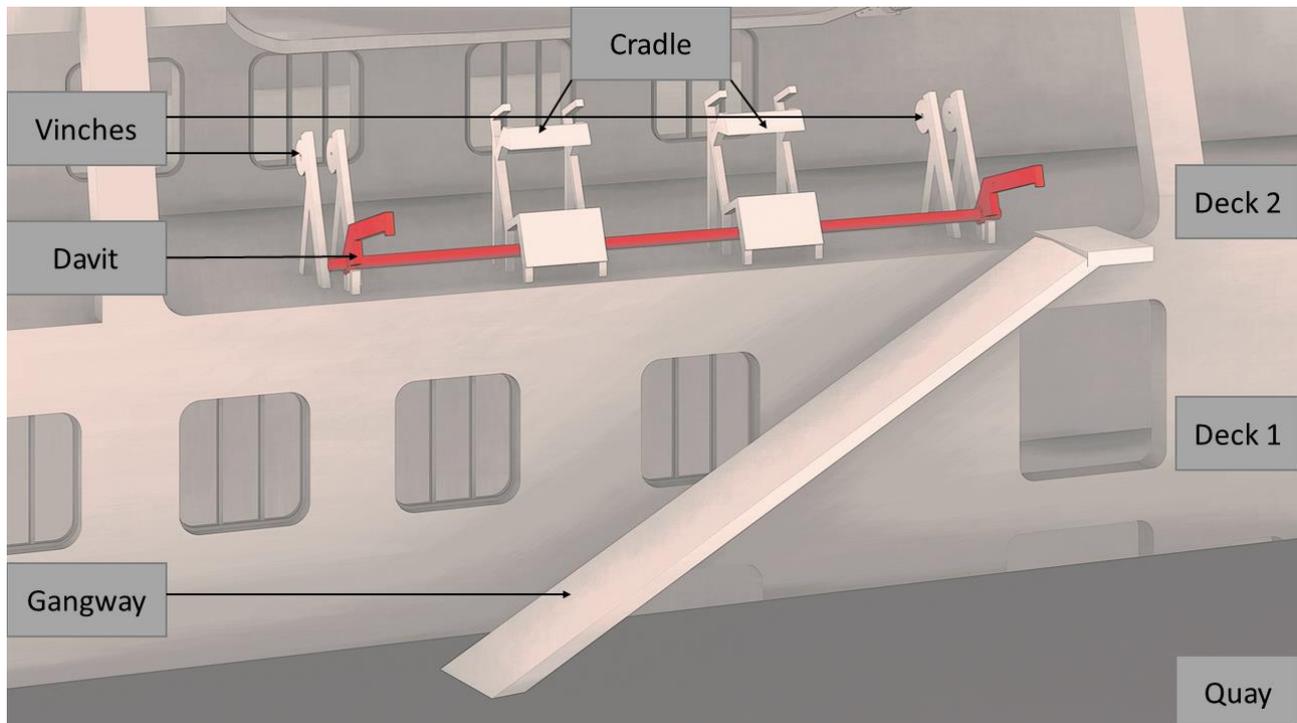


Figure 1: Description of the gangway system and in relation to different decks and quay. Illustration: NSIA

Dedicated crew members were usually responsible for work involving the gangway, but if additional work capacity was required, tasks were assigned to the resources available.

Several activities were planned for the passengers, who were transported to land in groups and into tour buses waiting on the quay. The schedule was busy with several parties involved in the planning. Other tasks relating to the ship's operation also had to be attended to.

When the safety drill was completed, preparation got under way to move the gangway from deck 2 to deck 1. The work started on deck 2. Several people assisted during the work operation on deck 1 and on the quay. Deck crew who had completed the safety drill and were available were asked to assist with the move, although this was an unfamiliar task for them. A work supervisor was also in place who was responsible for the procedure and for attending to safety. This person also had several other areas of responsibility. Many tasks were lined up for the deck crew that day, and there was a sense of being pushed for time.

The crew dismantled the railing and the safety net to release the gangway so that cables could be lowered and connected to raise the gangway. The crew involved in the work on moving the gangway had to use it to get up and down from the quay area, without it being secured.

On deck 2, three people were initially involved in the work on the gangway. Person 3, who operated the winch, had not done so before and was given an introduction to which buttons to press by person 4 standing beside them. Person 4 handled the cable and had experience in

preparing the gangway. Person 1 observed the work from the forward part of the davit and called person 2 from the deck crew. Person 2 watched the cable of the forward davit.

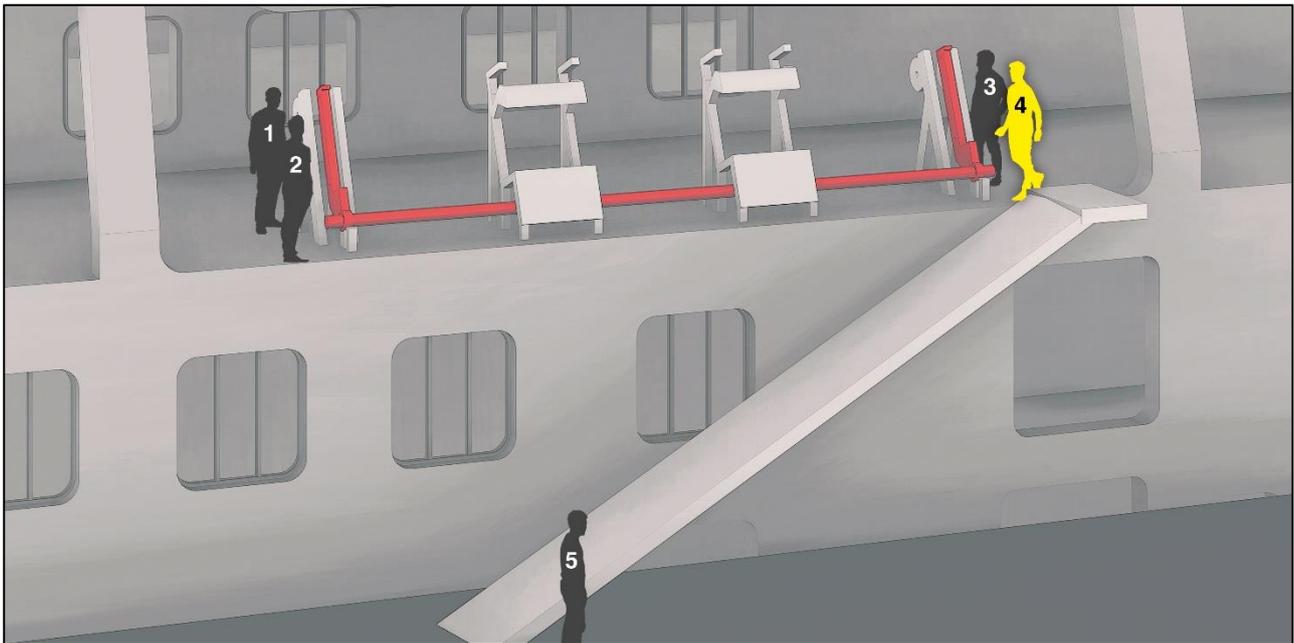


Figure 2: The four people on deck 2. In the image, person 4 has moved out onto the gangway. The davit is marked in red colour and the cradle in white colour. Illustration: NSIA

The davit was hoisted back into its cradle after it had been mounted on deck 2, so that it would not obstruct access. The deck crew first had to lower the davit into a horizontal position before the cables could be connected to the gangway. Thereafter, the plan was to connect the cables and lower the gangway to deck 1.

Person 3, who operated the winch, moved the cables on the instruction from person 4 standing beside them. This was done gradually. When the davit was in a vertical position, it stopped. When further cable was run out, it became slack, while the davit was stuck. Person 4 moved from the deck onto the gangway. This person pulled the cable in an attempt to loosen the davit, see Figure 3. Person 3 was told that it was enough and put the control down.

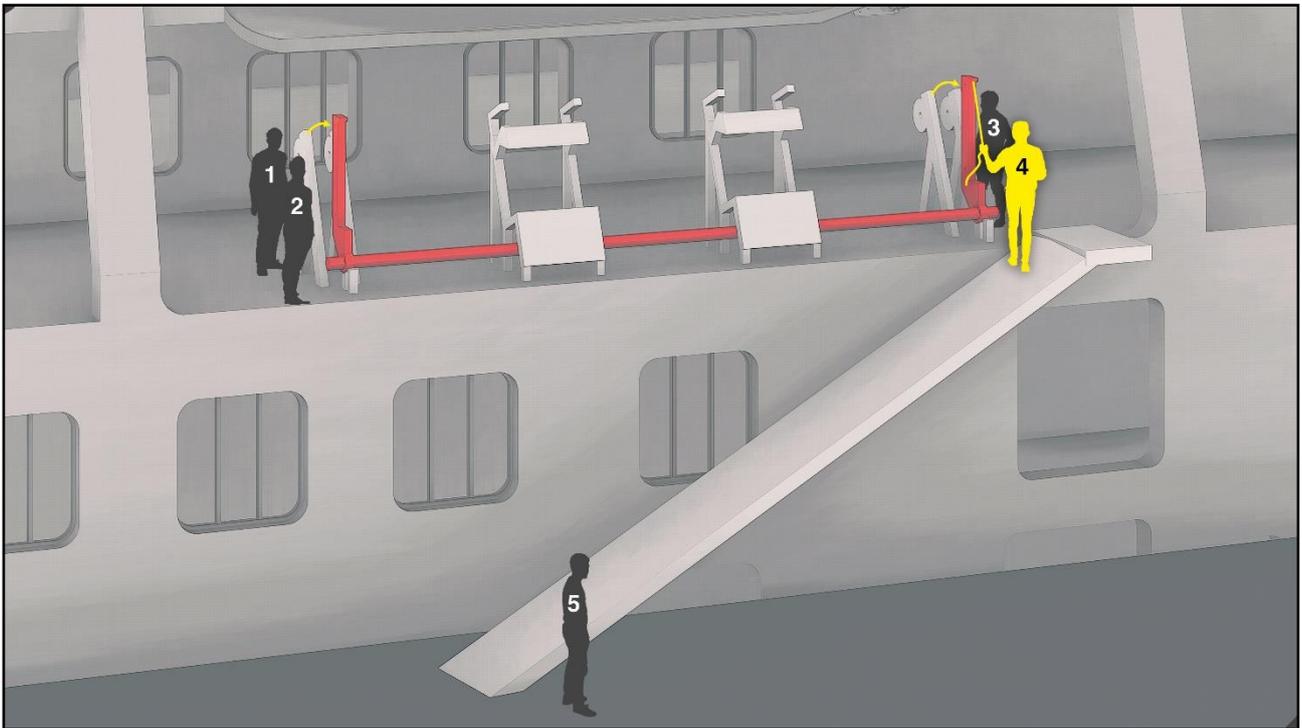


Figure 3: Person 4 pulling the cable marked in yellow colour. Illustration: NSIA

With slack cable it was nothing to prevent the davit from falling. The davit came loose and struck person 4 who lost balance and fell down on the quay.

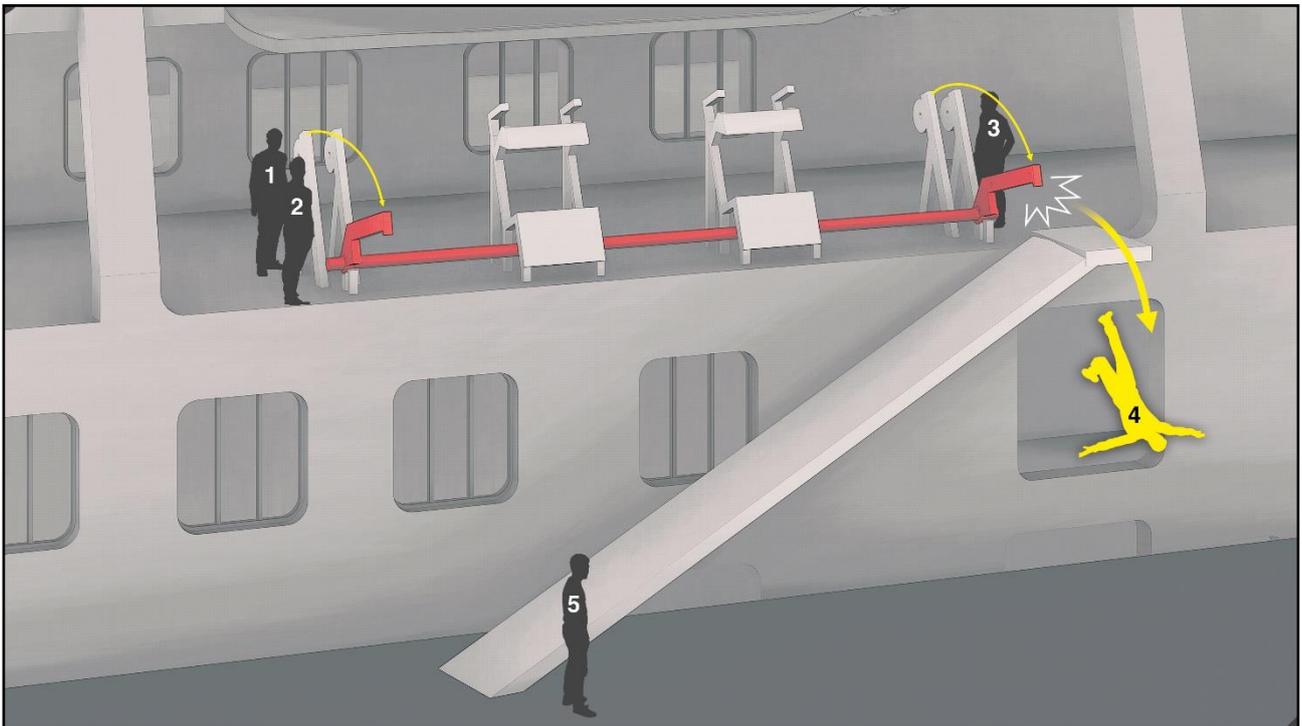


Figure 4: Person 4 falling after being struck by the davit. Illustration: NSIA.

Life-saving first aid was administered, and the injured person was taken to hospital by helicopter, where he was later pronounced dead as a result of the injuries sustained in the fall.

## Normal operation of the gangway

The supplier had provided a manual for the operation of the gangway available on board.

The crew did not consider preparation of the gangway work at height, as this was normally done from deck 1. The crew had not experienced such a large tidal range as in Invergordon, Scotland and had therefore never prepared the gangway from a deck above deck 1, see Figure 5 and Figure 6. The work method from deck 2 was different compared with from deck 1 since the davit had to be withdrawn back to the cradle so not to obstruct free passage.

The crew did not usually wear helmets or fall protection equipment for this job, which they did not do on the day in question either.



Figure 5: The gangway system shown in connection with a demonstration. The davit lowered into horizontal position from the cradle. Photo: NSIA



Figure 6: The davit in an approximately vertical position. Photo: NSIA

Two winches were installed in the cradle. The cables from these were connected to the gangway. This enabled the gangway to be raised and lowered on the outside of the ship. The davit stopped at a horizontal angle and the gangway could be lowered and connected to the desired deck. When the gangway had been connected to one side of the desired deck, the other winch could run out more cable so that the gangway reached the quay. Railings and safety nets could then be fitted.

When the gangway was mounted on deck 2, the davit had to be returned to its cradle so as not to obstruct access. According to the user manual, the davit, with the gangway, had to be raised back after use with both cables. The manual did not describe how to raise the davit back alone, without the gangway attached. The investigation has shown that when only one wire was used, the davit got a slight twist so that one side did not come into full contact with the crib.

## Risk assessment

In 2022, the shipping company conducted a risk assessment of work involving the gangway. This identified relevant hazards and risks, and measures taken to mitigate these.

According to the risk assessment and the safety management system, the work was described as work at height, and fall protection equipment and flotation had to be used.

## Measures implemented

The shipping company has implemented a range of safety measures after the accident, see appendix A.

# The NSIA's assessments

In this assessments, the NSIA has chosen to focus on some of the specific factors that impacted the accident, with the aim of highlighting factors that we believe provide the most universal safety learning.

## Preparation for moving the gangway

The gangway had previously only been used from lower decks. Moving the gangway from deck 2 had thus not been done before, and this involved new elements compared with preparation from deck 1.

Some of the deck crew who were familiar with the preparation of the gangway were busy completing a safety drill, and were replaced by crew without such experience. Person 4 who handled the cable was experienced in preparing the gangway, but the others were not.

The generic risk assessment referred to fall protection equipment should be used when rigging the gangway. On board, this work was not considered work at height, as the gangway was usually used from deck 1. This had become an incorporated practice on board. It was therefore not common for the deck crew to use fall protection equipment for this job.

Crew members went up and down the gangway without it being secured, which was not identified as a risk. The NSIA finds that this had become a normalised routine that was not perceived as hazardous, and that over time had become the accepted norm.

The supervisor stood on the quay, was responsible for the process of moving the gangway also had several other tasks and responsibilities to attend to. In the situation that arose, no one was available to guide and potentially intervene to avert the incident. In order to ensure safe work operations, an established practice is needed whereby a supervisor is available to both motivate and guide the crew.

## Operation of the gangway

It had never previously been necessary to use the gangway from deck 2, and this meant that the gangway system had to be operated slightly differently than usual. The davit could not be in an extended position but had to be hoisted back to the cradle so as not to obstruct access. Normally, when the gangway was used from deck 1, this was not an issue, as the davit could remain in an extended position on the outer side of the ship without being a hindrance, and the cables could hang freely until the gangway was to be removed.

The accident happened when the crew had to lower the davit to connect the cable. Without the weight of the gangway, the davit stopped when the shock springs no longer had the force to push, and, without the weight of the gangway, a tipping point arose when there was no tension in the cable. The same happened during testing of the system with the NSIA present.

The effect of gravity with the weight of the gangway also usually meant that this was not a problem. When further cables were run out, without the weight of the davit tightening the cable, the davit was allowed to drop the length of the released cable before stopping in a horizontal position. This was also the case on the day of the accident.

## **From project to operation**

The ship was handed over from the shipyard to the shipping company in 2022. On handover of the gangway system, the crew on board had not been given good enough training in its use.

The investigation has shown that the user manual did not describe how the davit should be raised back without the gangway. The deck crew had therefore found a way to use the gangway system themselves. A good handover of the gangway system could have given the crew a better understanding of correct use and challenges. This is not considered to be a direct cause, but one of several contributory factors.

## **Perceived time pressure**

Preparation of the gangway was important in order to ensure that the ship's programme was not delayed, and that the logistics on the quay did not become problematic. On such a vessel, it is important that work tasks go according to plan and that there are no delays. Perceived time pressure affects the situation and those involved in different ways, and may result in actions and tasks being performed differently than initially intended or planned. Through conversations and demonstrations on board, the NSIA found that time pressure had affected the crew's work situation also after the accident. It is therefore important that the framework conditions for safe work are incorporated as the work norm through clearly structured safety management. Supervisors who have been assigned particular responsibility to ensure that work processes are conducted with acceptable risk must be given the opportunity to focus on ongoing work operations. Perceived time pressure among supervisors with multiple simultaneous work operations may negatively impact their oversight function and thus also safety.

# Safety learning

Several factors contributed to the accident happening. The NSIA wishes to highlight the following points:

- In order for safety to be a natural part of the crew's day-to-day work, the management must clearly communicate this goal and ensure that it is well understood and embraced by those who carry out the work.
- The shipping company's and the onboard supervisors must be the primary safety culture example, and must set an ideal with respect to compliance with safety management. Simultaneously, the supervisor on board must balance their own tasks so that they have the time and opportunity to attend to their supervisory function.

Norwegian Safety Investigation Authority  
Lillestrøm, 26 February 2024

# Appendices

# Appendix A The shipping company's measures implemented 23.01.2024



## INCIDENT INVESTIGATION REPORT

### 7 Recommendations and improvement

The investigation team has identified the following recommended corrective and preventive actions, based on the above root cause analysis.

No	Action	Responsible	Status/ Deadline
1	Send reminder to fleet on the importance of wearing safety harness at all times when working from heights and overside	Fleet Manager	DONE 18.08.2023
2	Vessel's safety committee to meet in order to analyse the cause, consequences and to decide on measures to prevent recurrence of the incident.	Master	DONE 21.08.2023
3	Initiate a "Safety Stand Down Hour" for Viking fleet with focus on Daily Work Plan, PPE, Toolbox Talk, Risk Assessment and Stop Work Authority	Head of HSEQ (Norway)	DONE 21.08.2023
4	Instruct fleet of temporary measure for gangway deployment, recovery, and any other changes to the gangway setup should now include the attendance of Bosun	Fleet Manager	DONE 26.08.2023
5	Ensure all vessels in fleet are familiar with makers operating instructions and crew involved in rigging accommodation ladder training accordingly	Fleet Manager	DONE 03.09.2023
6	HSEQ Superintendent sail with vessel for 5 days to follow up on implementation on;  - Use of PTW and toolbox talks. - Toolbox Talk before any job that poses a risk of harm to people, property or the environment. - Use of PPE in all required areas on board - Use of Daily Work Plan Meetings	HSEQ Manager	DONE 11.09.2023
7	Request maker to update operation manual (Ch.4.3) for all vessels with the same installation to describe how to safely bring the two davits outboard to re-connect and hoist the gangway (reversing action 19 in Ch. 4.2)	Fleet Manager	IN PROGRESS EST. Jan 2024
8	Review and align OMCV 7.102 vs CV-D100 regarding responsibility for rigging accommodation ladders and gangways	HSEQ Manager / Fleet Manager	DONE 30.09.2023

Viking Mars – Hit & Fall from Height

## INCIDENT INVESTIGATION REPORT



9	Review checklist D41H and consider moving item "Rigging of gangway and accommodation ladder" to section applicable for all ranks in Deck Department.	HSEQ Manager	DONE 30.09.2023
10	Issue a Global Experience Feedback	HSEQ Manager / GHSEQ	DONE 24.10.2023
11	Conduct a review of ship-specific RA's in Viking fleet for Rigging of Accommodation ladders	HSEQ Manager	DONE 30.09.2023
12	Review PMS jobs for the accommodation ladder and arrangements.	Vessel Manager / Fleet Manager	DONE 31.08.2023
13	Ensure relevant crew is aware of the location various equipment user manuals are filed on board.	Fleet Manager	IN PROGRESS EST. Jan 2024

Table 4 Recommended preventive and corrective actions