



Transport Accident  
Investigation  
Commission

# **Final report**

## **Tuhinga whakamutunga**

***Maritime inquiry MO-2023-204***  
***Bulk carrier Poavosa Brave***  
***Serious injury***  
***Off Tauranga***  
***23 June 2023***

**October 2024**





# The Transport Accident Investigation Commission

## Te Kōmihana Tiro tiro Aituā Waka

### ***No repeat accidents – ever!***

“The principal purpose of the Commission shall be to determine the circumstances and causes of accidents and incidents with a view to avoiding similar occurrences in the future, rather than to ascribe blame to any person.”

*Transport Accident Investigation Commission Act 1990, s4 Purpose*

The Transport Accident Investigation Commission is an independent Crown entity and standing commission of inquiry. We investigate selected maritime, aviation and rail accidents and incidents that occur in New Zealand or involve New Zealand-registered aircraft or vessels.

Our investigations are for the purpose of avoiding similar accidents and incidents in the future. We determine and analyse contributing factors, explain circumstances and causes, identify safety issues, and make recommendations to improve safety. Our findings cannot be used to pursue criminal, civil, or regulatory action.

At the end of every inquiry, we share all relevant knowledge in a final report. We use our information and insight to influence others in the transport sector to improve safety, nationally and internationally.

### ***Commissioners***

Chief Commissioner	Jane Meares
Deputy Chief Commissioner	Stephen Davies Howard
Commissioner	Paula Rose, QSO
Commissioner	Bernadette Roka Arapere
Commissioner	David Clarke

### ***Key Commission personnel***

Chief Executive	Martin Sawyers
Chief Investigator of Accidents	Naveen Kozhuppakalam
Investigator-in-Charge for this inquiry	Jennifer Cuttriss
Commission General Counsel	Cathryn Bridge

# Notes about Commission reports

## Kōrero tāpiri ki ngā pūrongo o te Kōmihana

### *Photographs, diagrams, pictures*

The Commission owns the photographs, diagrams and pictures in this report unless otherwise specified.

### *Verbal probability expressions*

For clarity, the Commission uses standardised terminology where possible.

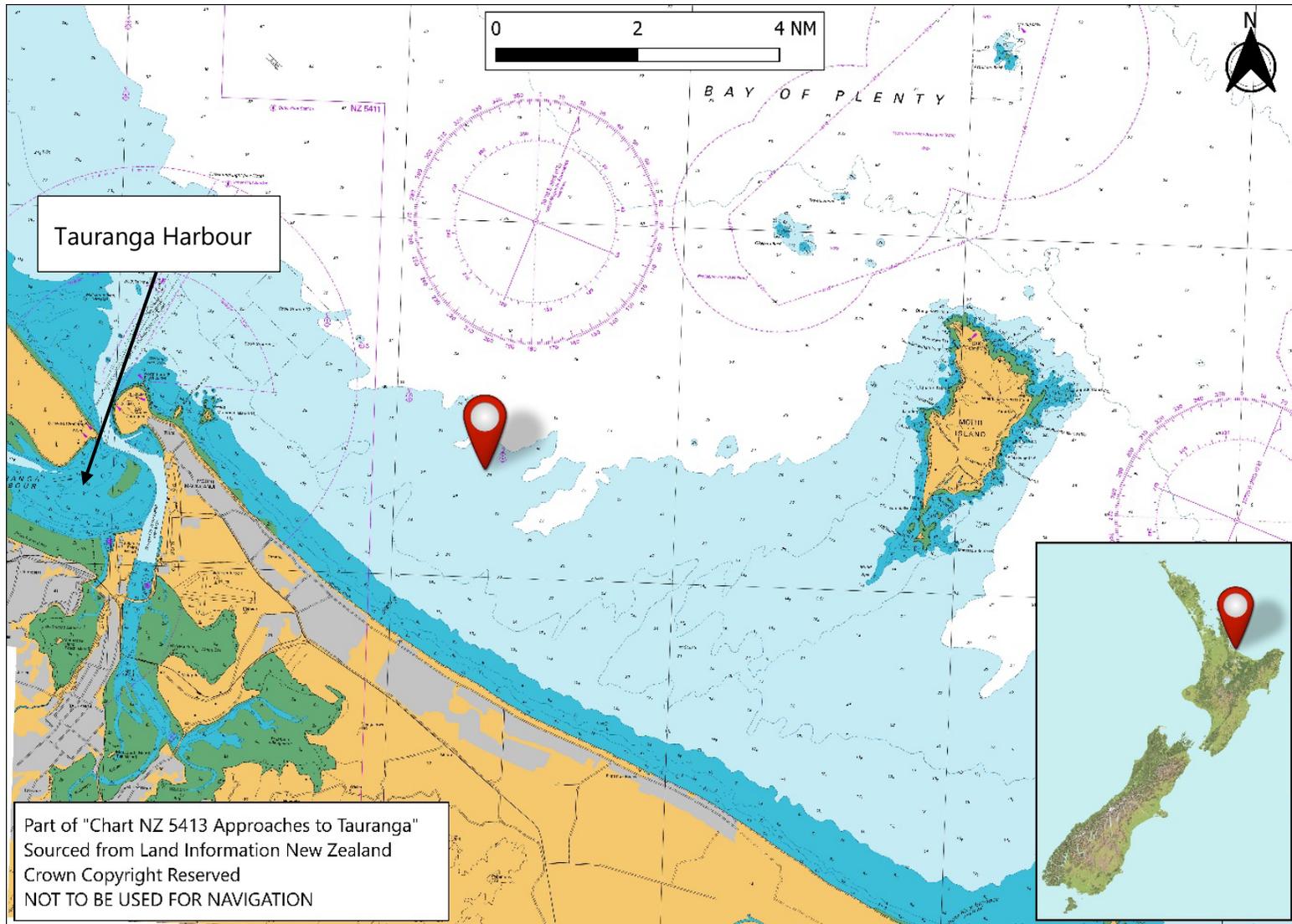
One example of this standardisation is the terminology used to describe the degree of probability (or likelihood) that an event happened, or a condition existed in support of a hypothesis. The Commission has adopted this terminology from the Intergovernmental Panel on Climate Change and Australian Transport Safety Bureau models. The Commission chose these models because of their simplicity, usability, and international use. The Commission considers these models reflect its functions. These functions include making findings and issuing recommendations based on a wide range of evidence, whether or not that evidence would be admissible in a court of law.

Terminology	Likelihood	Equivalent terms
Virtually certain	> 99% probability of occurrence	Almost certain
Very likely	> 90% probability	Highly likely, very probable
Likely	> 66% probability	Probable
About as likely as not	33% to 66% probability	More or less likely
Unlikely	< 33% probability	Improbable
Very unlikely	< 10% probability	Highly unlikely
Exceptionally unlikely	< 1% probability	



**Figure 1: Bulk carrier *Poavosa Brave***

(Credit: marinetraffic.com)



**Figure 2: Location of accident**

(Credit: Base navigational chart from Land Information New Zealand)

# Contents

## Rārangi take

<b>1</b>	<b>Executive summary</b> .....	<b>3</b>
	What happened.....	3
	Why it happened .....	3
	What we can learn.....	3
	Who may benefit .....	3
<b>2</b>	<b>Factual information</b> .....	<b>4</b>
	Narrative.....	4
	Personnel information .....	7
	Vessel information.....	7
	Meteorological information.....	8
	Recorded data.....	8
	Organisational information.....	8
<b>3</b>	<b>Analysis</b> .....	<b>9</b>
	Introduction .....	9
	Responsibility and authority on board.....	9
	Safely stopping unsafe work .....	13
<b>4</b>	<b>Findings</b> .....	<b>15</b>
<b>5</b>	<b>Safety issues and remedial action</b> .....	<b>16</b>
	General.....	16
<b>6</b>	<b>Recommendations</b> .....	<b>17</b>
	General.....	17
	New recommendations .....	17
<b>7</b>	<b>Key lessons</b> .....	<b>18</b>
<b>8</b>	<b>Data summary</b> .....	<b>19</b>
<b>9</b>	<b>Conduct of the Inquiry</b> .....	<b>20</b>
	<b>Abbreviations</b> .....	<b>21</b>
	<b>Glossary</b> .....	<b>22</b>

## Figures

<b>Figure 1: Bulk carrier, Poavosa Brave</b> .....	<b>iii</b>
<b>Figure 2: Location of accident</b> .....	<b>iv</b>
<b>Figure 3: Starboard side stanchions, lowered position</b> .....	<b>4</b>

<b>Figure 4: Starboard side stanchions, raised position.....</b>	<b>5</b>
<b>Figure 5: Starboard side main deck beside number 5 hatch, facing towards the bow of <i>Poavosa Brave</i>.....</b>	<b>6</b>
<b>Figure 6: Risk assessment pro-forma for raising the stanchions.....</b>	<b>11</b>
<b>Figure 7: Wind speed, direction and vessel heading data from the vessel's ECDIS.....</b>	<b>12</b>

# 1 Executive summary

## Tuhinga whakarāpopoto

### What happened

- 1.1. On 23 June 2023 a crew member was seriously injured on board the bulk carrier *Poavosa Brave*.
- 1.2. The vessel was at anchor outside Tauranga Harbour and the crew was preparing the cargo securing gear for a full cargo consignment of logs. They were using one of the on board cranes to erect a set of the collapsible stanchions<sup>1</sup> on the main deck.
- 1.3. As the deck crew completed this task, an able-bodied seafarer was struck by the crane block<sup>2</sup> and suffered very serious injuries.

### Why it happened

- 1.4. The weather and sea conditions were not suitable for using the crane to hoist up the stanchions. The master ordered that the crane was not to be used and assigned the crew alternative work for the day.
- 1.5. The wind and sea conditions eased during the morning. The bosun<sup>3</sup> decided to hoist a set of stanchions as a training exercise for the crew. The bosun did not inform the master or the chief officer<sup>4</sup> that the crew was going to do this job.
- 1.6. When the chief officer heard the crane operating, they went out on deck to tell the crew to stop the work. Upon arriving at the work area, the chief officer did not communicate with the bosun and gave the crew an order that conflicted with the crew's work plan.
- 1.7. Subsequently, the chief officer ordered the crew to approach the crane block when it was not stable or safe to approach.

### What we can learn

- 1.8. Safety is compromised when lines of authority and responsibility are not followed.
- 1.9. The benefits of risk assessment and job safety analysis are lost when unplanned or unauthorised work is undertaken.
- 1.10. When stopping work that is perceived to be unsafe, people should take a moment to determine how the work can be stopped safely, without introducing new hazards.

### Who may benefit

- 1.11. Maritime operators, seafarers, regulators and training institutions may all benefit from the findings in this report.

---

<sup>1</sup> A vertical support structure used to secure cargo, such as logs, on the upper deck of a vessel

<sup>2</sup> A component of the crane system on a vessel – containing the crane hook, swivel, bearing, sheaves, pins and frame – that is suspended by a crane's hoisting wire or load chains

<sup>3</sup> Abbreviated version of boatswain: foreman or supervisor of the deck crew

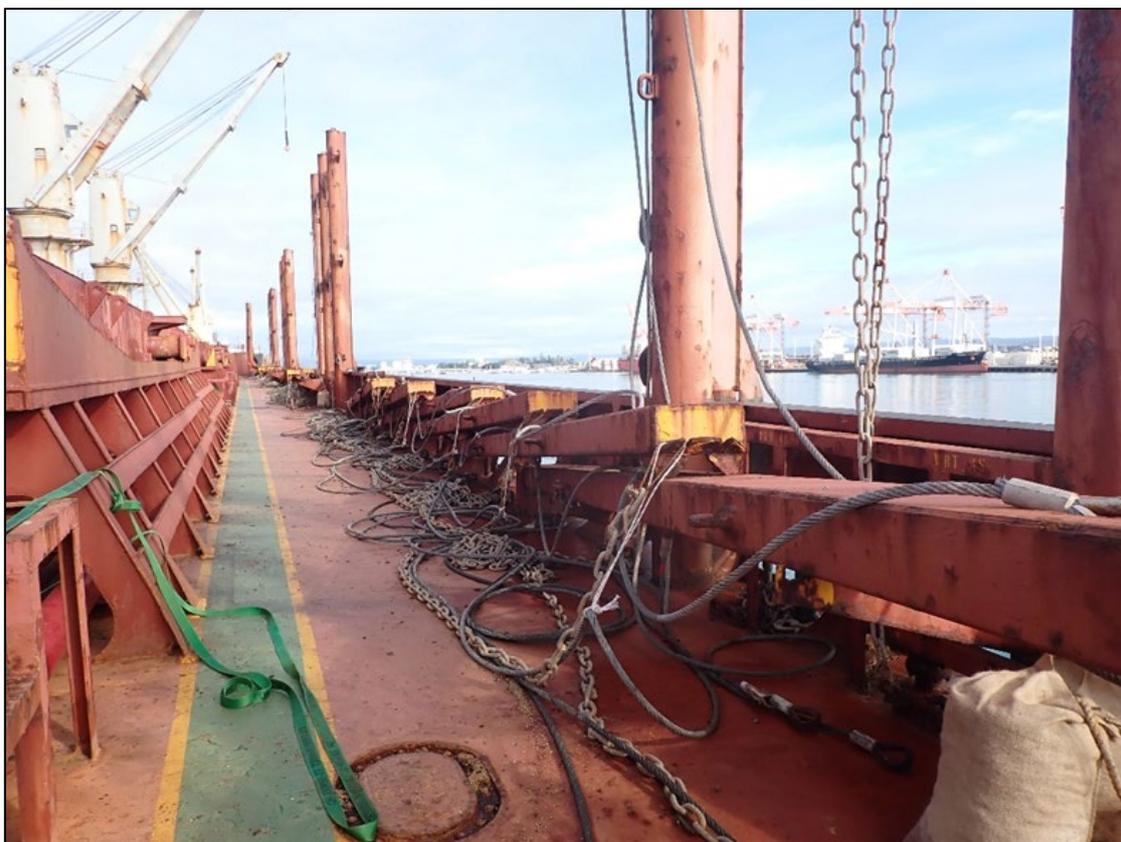
<sup>4</sup> Deck officer next in rank below master, head of the deck department; also known as the first officer

## 2 Factual information

### Pārongo pono

#### Narrative

- 2.1. On 5 June 2023, *Poavosa Brave* departed Port Pirie (Australia) on a voyage charter<sup>5</sup>, bound for Tauranga with a cargo of wheat and beans.
- 2.2. At 0618<sup>6</sup> on 14 June 2023, the vessel arrived and anchored at Tauranga roads.<sup>7</sup> A pilot<sup>8</sup> boarded at 0846 and at 1030 the vessel was secure alongside number 7 berth, Mount Maunganui. Over the next five days, the cargo was discharged and the voyage charter ended.
- 2.3. At 2100 on 19 June 2023, the vessel departed the berth and returned to Tauranga roads, where at 2233 it was brought up to anchor at number 3 anchorage. Whilst at anchor, a new voyage charter started. The crew was required to prepare the vessel for a full cargo consignment of logs. This included erecting sets of collapsible stanchions (see Figures 3 and 4) on the main deck.



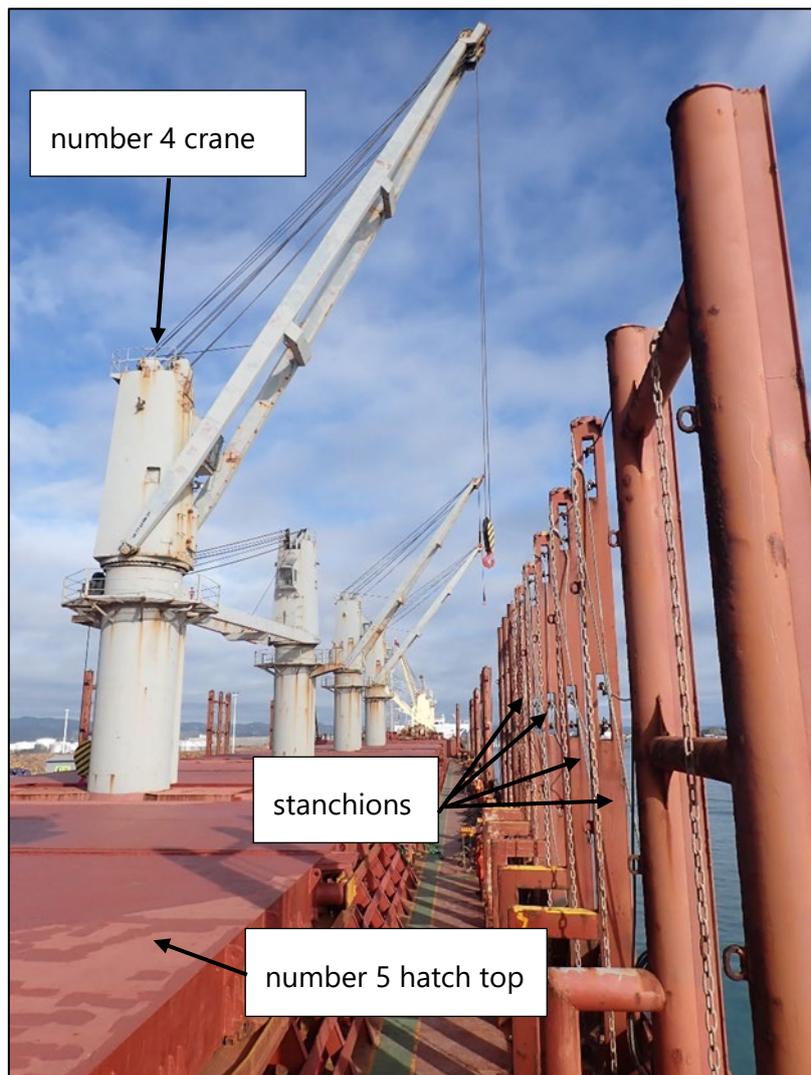
**Figure 3: Starboard stanchions, lowered position**

<sup>5</sup> When a vessel and crew are hired for a voyage carrying a specified cargo between a load port and a discharge port

<sup>6</sup> All times in this report reference New Zealand Standard Time (Universal Time Coordinated + 12 hours)

<sup>7</sup> Alternative name for roadstead or anchoring ground; a sheltered body of water near the shore where a vessel can lie reasonably safely at anchor

<sup>8</sup> Qualified person authorised to pilot incoming and outgoing vessels in a pilotage area or areas as listed in Maritime Rules Part 90: Pilotage



**Figure 4: Starboard stanchions, raised position**

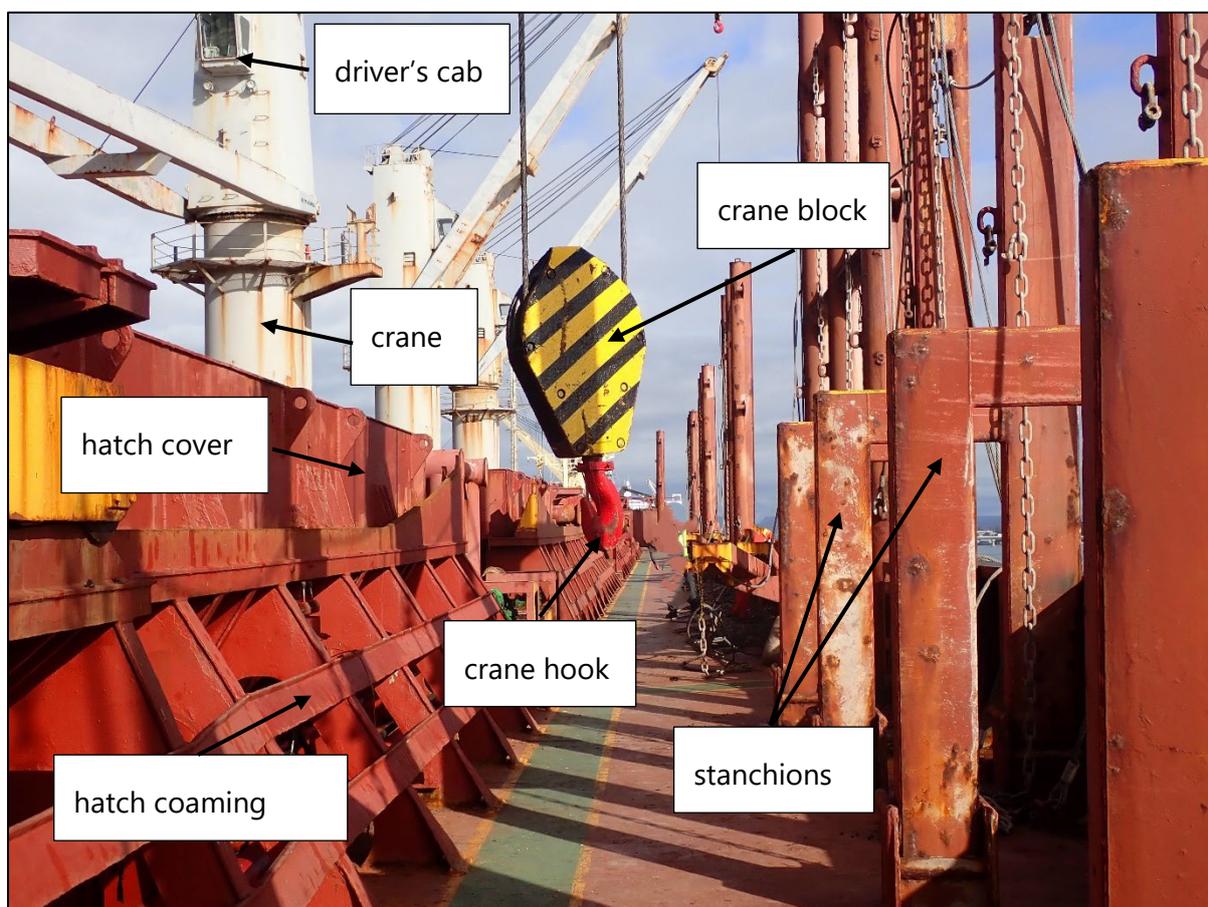
- 2.4. At 0700 on 23 June, the bosun went to the bridge for a routine morning meeting with the master and the chief officer. The master told the bosun that the weather and sea conditions were not suitable for the crew to use the crane to pull up the collapsible stanchions, and that the job could be done after the vessel was alongside the berth. The deck crew then carried out alternative jobs, such as cleaning the crane housings<sup>9</sup> and greasing the door handles.
- 2.5. At 1330, the bosun, three able-bodied seafarers<sup>10</sup> (ABs) and one ordinary seaman<sup>11</sup> (OS) went out on deck, to the starboard side of number 5 hatch, to pull up the stanchions. The bosun thought that the weather had eased and wanted to take the opportunity to train the crew. The bosun briefed the crew about how the stanchions would be pulled up. After going through the work plan step-by-step, the bosun went up to the driver's cab to operate the crane.
- 2.6. At 1345, all the stanchions at the starboard side of number 5 hatch were upright and secured.

<sup>9</sup> Structures that surround and protect a crane's machinery

<sup>10</sup> Experienced seafarers competent to perform the usual and customary duties on deck

<sup>11</sup> Seafarer, aged 18 or more, who has not qualified to be rated as an AB

- 2.7. At 1350, the chief officer, who had heard the crane running, came out on deck to tell the crew to stop the work. However, the stanchions were already upright and secured and the final task was to unhook the stanchion pull wire (the pull wire).
- 2.8. The bosun's workplan was for the crew to unhook the pull wire after the crane hook was landed and stable on the deck next to number 5 hatch (see Figure 5). However, the bosun mis-landed the hook on top of number 5 hatch. As the bosun started to reposition the hook from the hatch top to the deck, the chief officer told the crew to go up to the hatch top to unhook the pull wire. There was no communication between the chief officer and the bosun.
- 2.9. Shortly after 1350, as the bosun repositioned the crane hook and as the three ABs began to climb up to the hatch top, the vessel started to roll. As the vessel rolled, the suspended crane block started to swing. Two of the ABs, who were further away from the crane block, ran away from the reach of the crane block and hook. The third AB had climbed further up the hatch coaming<sup>12</sup> and did not run away. The hook swung back and struck the third AB, pushing them up against the hatch coaming and hatch cover. They climbed back down the hatch coaming and sat down on the deck, injured. The other two ABs quickly moved their colleague away from the crane block.



**Figure 5: Starboard main deck beside number 5 hatch, facing towards the bow of *Poavosa Brave***

- 2.10. At 1355, the rest of the crew mustered on deck to provide medical aid. They moved the injured AB to a more sheltered area and began to monitor blood pressure and body temperature. They wrapped the injured AB in blankets and a coat.

<sup>12</sup> Vertical structure around a hatch, or other opening in the deck, to prevent water ingress

- 2.11. Between 1403 and 1411, the master contacted the shipping agent<sup>13</sup> and Port of Tauranga customer services to get help.
- 2.12. At 1412, the shipping agent phoned 111 and arranged for a rescue helicopter to deploy to the vessel. Emergency services dispatched a helicopter from Ardmore Airport within 20 minutes.
- 2.13. At 1510, the helicopter arrived at the vessel's location and lowered a medic onto the deck. The medic assessed the AB's injuries and at 1602 the injured AB was winched off the vessel and flown to Tauranga Hospital.
- 2.14. On 0051 on 24 June 2023, the injured AB was transferred to Auckland City Hospital for further treatment of their injuries.
- 2.15. On 9 August 2023, the injured AB was repatriated to the People's Republic of China for their ongoing hospital care and recovery.

### **Personnel information**

- 2.16. The master held overall authority and responsibility for the safety of the vessel, the people on board, the cargo, and the environmental effects of the maritime operation. The master graduated from maritime school in 2010 before joining their first vessel as a cadet. From 2019 until 2021, they sailed as chief officer and completed their first placement as master from January to August 2022. During their career progression, the master gained experience carrying log cargo. The master joined *Poavosa Brave* on 9 January 2023.
- 2.17. The chief officer graduated from maritime school in 2010 before progressing through placements as AB, third officer and second officer. They completed their first placement as chief officer in 2021. Their only experience carrying log cargo was on one other vessel, but they had experience of driving cranes as an AB. On board *Poavosa Brave*, the chief officer was second-in-command of the vessel and in charge of the deck department. The chief officer's duties included navigation watches, deck administration, responsibility for deck maintenance, cargo planning and preparation of lashing gear. As well as holding responsibility for ensuring a safe work environment on deck, the chief officer was the delegated ship safety officer and accident prevention officer.
- 2.18. The bosun had 33 years' experience working at sea on vessels similar to the *Poavosa Brave*. They had worked as bosun for 25 years and had experience carrying log cargo on at least ten other vessels. The bosun's role was to follow the orders of the chief officer and to lead the deck crew in performing the deck work assigned by the chief officer.

### **Vessel information**

- 2.19. *Poavosa Brave* was a mid-size handy<sup>14</sup> bulk carrier, registered in Panama and operated by Wisdom Marine International Inc. (Wisdom Marine).

---

<sup>13</sup> Person who acts for one or more of the parties with an interest in the vessel charter; the same agent may act on behalf of the ship owner and the charterer

<sup>14</sup> Handy bulk carriers are approximately 10,000 to 39,999 deadweight tons

## **Meteorological information**

- 2.20. The vessel's anemometer<sup>15</sup> fed into, and was recorded by, the Electronic Chart Display and Information System (ECDIS). It recorded the wind direction as southeast on the day of the accident. The windspeed ranged from about 17 to 21 knots (kts) for most of the day, although it eased to 7 to 10 kts during the morning.
- 2.21. Tidal predictions at Tauranga for the day showed high water at 1041 and the next low water at 1640, so the tide was ebbing<sup>16</sup>.

## **Recorded data**

- 2.22. Data on the vessel's voyage data recorder was not saved before it was automatically overwritten. However, data stored on the vessel's ECDIS was recovered by the Commission's investigators and is referred to in this report.

## **Organisational information**

- 2.23. Occupational safety, health and the wellbeing of seafarers is governed by two major conventions:
- the Maritime Labour Convention (MLC 2006), adopted by the International Labour Organization (ILO)
  - the International Convention for the Safety of Life at Sea, 1974 (SOLAS Convention), adopted by the International Maritime Organization (IMO).
- 2.24. New Zealand and Panama are member states of the IMO and the ILO and have both ratified MLC 2006 and the SOLAS Convention.
- 2.25. The objective of MLC 2006 is to ensure that seafarers' work environment on board ships promotes occupational health and safety. It places an obligation on vessel owners to adopt effective health and safety policies and programmes of work. This obligation includes evaluation of risk, as well as training and education of seafarers, to prevent work accidents, professional injuries and illnesses.
- 2.26. Chapter IX of the SOLAS Convention<sup>17</sup> mandates operator and vessel compliance with the International Safety Management Code<sup>18</sup> (the ISM Code). The objectives of the ISM Code are to ensure safety at sea, prevent human injury or loss of life, and avoid damage to property and the marine environment. Vessel operators are required to develop, implement and maintain a safety management system (SMS) that contains vessel-specific instructions and procedures.
- 2.27. Wisdom Marine and *Poavosa Brave* held valid certification, verifying their compliance with the MLC 2006 and ISM Code. We discuss the SMS, as implemented on board the vessel, in section 3.

---

<sup>15</sup> A device that measures wind speed and direction

<sup>16</sup> When the tide is falling from high water to low water

<sup>17</sup> SOLAS Chapter IX Management for the Safe Operation of Ships. Regulation 3 Safety management requirements

<sup>18</sup> The International Safety Management Code is a set of guidelines established by the IMO for the Safe Operation of Ships and for the protection of the environment by shipowners and operators

## 3 Analysis Tātaritanga

### *Introduction*

- 3.1. The following section analyses the circumstances surrounding the event to identify those factors that increased the likelihood of the event occurring or increased the severity of its outcome. It also examines any safety issues that have the potential to adversely affect future operations.
- 3.2. While no new safety issues were identified, there are significant lessons arising from the circumstances of this accident.

### *Responsibility and authority on board*

- 3.3. Maritime safety management systems define the roles, responsibilities and authority of vessel crew members and shore staff. Traditionally, seafarers worked in an environment controlled by autocratic or hierarchal leadership because vessel safety depended upon subordinates following orders without question.
- 3.4. The maritime industry has evolved to include more consultative and participatory leadership, by which there is more communication between officers and crew about work safety. However, there remains the need for crew members to follow any reasonable order, given by a person of higher rank, in the interest of safety. This accident shows that risk assessments, work procedures and risk controls can be rendered ineffective when lines of authority and responsibility are not followed.
- 3.5. In its SMS, Wisdom Marine described its objectives as a maritime operator as follows:
  - to create a safe and healthy working environment on board
  - to create secure employment and career development opportunities for its entire staff
  - to provide efficient quality service for safe, pollution-free, and economical operation of the vessel.
- 3.6. The SMS gave full responsibility to the master for the 'safety of life, ship and cargo' and for the welfare and satisfaction of the crew. The master was required to make every effort, subject to their best judgement, to ensure the smooth and efficient operation of the vessel.
- 3.7. On the day of the accident the chief officer and the bosun had their daily morning meeting on the bridge to discuss the crew's jobs for the day. The morning meeting was an important part of the bosun's workday, when they received information and instructions from the chief officer and, when necessary, from the master. In preparation for the upcoming log cargo, the crew was required to erect the collapsible stanchions that support and secure the logs on the main deck. The procedure for erecting the stanchions involved using one of the on board cranes to lift a wire that pulled up a set of connected stanchions. Once erect, the crew would secure the stanchions in position before releasing the pull wire from the crane hook.
- 3.8. During the first three days at anchor the crew were unable to raise the stanchions because the weather had been poor with wind and rain. On the day of the accident,

the master checked the weather conditions shortly after waking up. The weather had improved, but the wind was still about 17 to 21 kts and the vessel was rolling from time to time. Sea conditions causing the vessel to roll would influence any load suspended on the crane wire, including the crane block which weighed 690 kilograms (kg).

- 3.9. The master determined that it was too dangerous for the crew to use the crane to pull up the stanchions. Knowing that the bosun was eager to raise the stanchions before the vessel arrived alongside, the master attended the daily meeting on the bridge specifically to tell the bosun not to pull up the stanchions. The master told the bosun that there was no hurry to raise the stanchions and to wait until the vessel was secured alongside the berth.
- 3.10. Although the master and chief officer gave the bosun and the deck crew alternative jobs to do instead of the stanchions, these jobs were completed by lunch time. After the lunch break, the bosun decided that the wind and sea conditions had improved sufficiently to train the crew how to raise the stanchions. The bosun considered this to be a routine job, but the crew was not familiar with the procedure. The bosun did not discuss their intentions with the chief officer or the master. When the crew gathered on deck near number 5 hatch, the bosun led a 'toolbox talk' that included step-by-step instructions for raising the stanchions. They also discussed dangerous areas, and when and where to stand clear. The bosun then climbed up to the crane driver's cab, intending to give the crew further instructions using the walkie-talkie radio.
- 3.11. Because they were familiar with the task and believed that it was routine, the bosun started the job without consulting the master or the chief officer. On the day of the accident, the chief officer had completed a risk assessment pro-forma for lifting the stanchions (see Figure 6); the Commission was unable to determine what time it was completed. The risk assessment pro-forma identified the 'very high risk' status of the job if carried out without additional control measures. However, the chief officer reassessed the risk status to 'very low risk' despite the application of minimal risk control measures. Nonetheless, the master disallowed the job, and their authority was required to reinstate that work.

*Wisdom Marine International Inc.*  
**RISK ASSESSMENT**

Work Area: Upper Deck  
 Work Activity: Pull up stanchions  
 No of crew involved: 1  
 Vessel: POAVOSA BRAVE  
 Date: 2023/6/23  
 Officer Assessing Risk on Board: C/O: L

FORM NO: WMR-OC-19  
 VERSION: 1.3  
 DATE: 2015.11.27

**Section 1 : Hazard Analysis of the intended work**

No.	Description of identified Hazards	Existing control measure to protect personnel from harm
1	Slips or falls on deck	Existing control measure to protect personnel from harm
2	Fall of persons, tools, & material etc from height	All loose objects within and adjacent to the working area must be secured or removed. The person tailing the person working.
3	Block shackles, wire rope etc broken to hurt crew	Don a safety harness and fall arresting gear. Never carry tools up and down ladders. Rig a line to raise and lower tools.
4		Check and keep clear of dangerous areas
5		
6		
7		
8		
9		
10		

**Section 2 : Assessment of Risk Factor**

Likelihood of Harm	Severity Of Harm			Hazard No.	Likelihood of Harm	Severity of Harm	Risk Factor
	Slight Harm	Moderate Harm	Extreme Harm				
Very Unlikely	VERY LOW RISK	VERY LOW RISK	HIGH RISK	1	Likely	Moderate Harm	High Risk
Unlikely	VERY LOW RISK	MEDIUM	VERY HIGH RISK	2	Very Likely	Extreme Harm	Very High Risk
Likely	LOW RISK	HIGH RISK	VERY HIGH RISK	3	Likely	Extreme Harm	Very High Risk
Very Likely	LOW RISK	VERY HIGH RISK	VERY HIGH RISK	4			
				5			
				6			
				7			
				8			
				9			
				10			

To assess the risk factor arising from the hazard:  
 1. Select the expression for likelihood which most applies to the hazard:  
 2. Select the expression for severity of harm which most applies to the hazard:  
 3. Cross reference using the above table to determine the level of risk:  
 4. If the risk factor is medium or above (yellow orange or red) additional control measures should be implemented and recorded in section 3.

**Section 3 : Additional Control Measures to Reduce the Risk of Harm.**

No.	Further Risk Control Measures	Likelihood of Harm	Severity of Harm	Risk Factor
1	Wearing safety shoes, protective helmets, safety belts	Very Unlikely	Slight Harm	Very Low Risk
2	Training crew going aloft in the proper donning and use of the safety harness and fall arresting gear	Very Unlikely	Moderate Harm	Very Low Risk
3	Check tools carefully, obey command, keep away from dangerous areas	Very Unlikely	Moderate Harm	Very Low Risk
4				
5				
6				
7				
8				
9				
10				

Additional Comments: 額外意見:  
 Signed on this Risk Assessment: The intended work activity is: \_\_\_\_\_

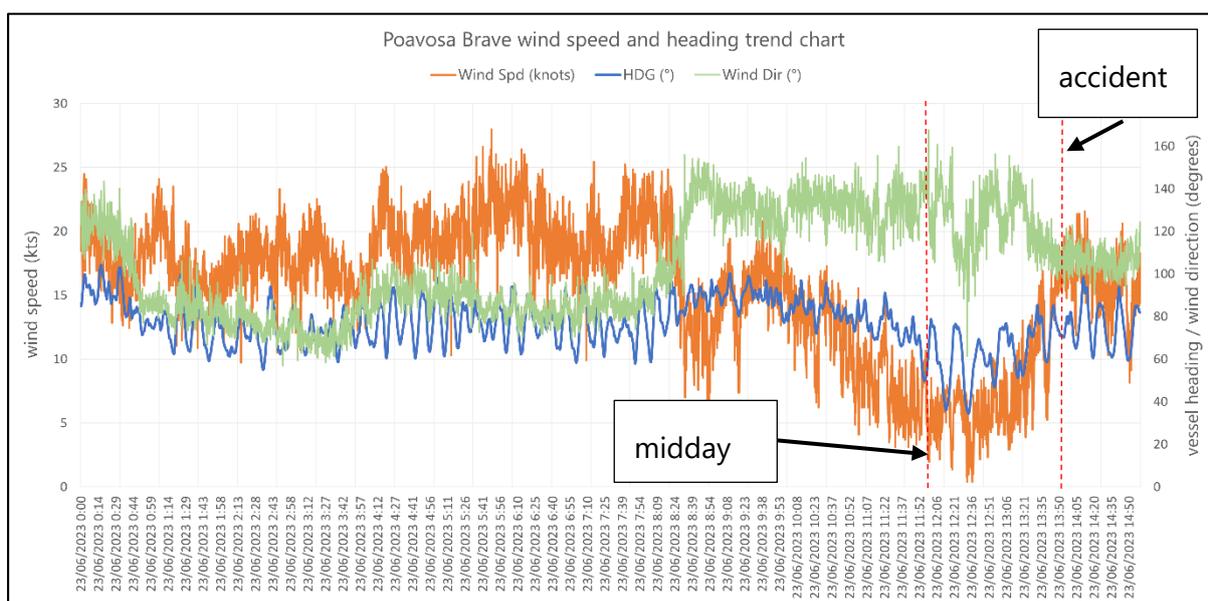
Even if the risk is reduced to a tolerable or acceptable level, or very low risk even after the additional control in Section 3, Please contact Company to discuss.

**Figure 6: Completed risk assessment pro-forma for raising the stanchions**

3.12. The SMS risk assessment procedure for 'very high risk' ratings stated:

These risks are unacceptable. Substantial improvements in risk control are necessary so that the risk is reduced to a tolerable or acceptable level. The work activity should be halted until the risk controls that are implemented reduce the risk so that it is no longer very high. If it is not possible to reduce the risk the work should remain prohibited.

- 3.13. The master thought that there was no need to take the risk of raising the stanchions while the vessel was at anchor and therefore prohibited the work. The SMS did not require all risk assessment and job safety activities to be documented, so there was no documented record of the master prohibiting the work activity. However, the master, the chief officer and the bosun confirmed that the master had stated in the morning that the crew was not to pull up the stanchions. Although the bosun wanted to progress with preparing the vessel for the log cargo, the Commission found no evidence of commercial pressure to erect the stanchions. The bosun perceived the work as being routine but did not have the authority to reinstate the work without the master's permission.
- 3.14. Data recorded by the vessel's ECDIS showed that the weather conditions eased off throughout the morning, but the wind speed increased gradually from around midday (see Figure 7).



**Figure 7: Wind speed, direction and vessel heading data from the vessel's ECDIS**

- 3.15. The bosun was very experienced and well-respected by the crew. The bosun had instructed the crew to keep clear of the crane block and to remain in a safe area until the bosun stabilised the crane block and called the crew to approach and unhook. When the chief officer arrived, the task was almost completed and the crew were waiting in a safe area on the deck at the forward end of number 5 hatch. In following the chief officer's instructions, they moved into an area that was unsafe when the crane block was suspended.
- 3.16. Despite the wind easing to around 5 kts during the morning, winds of about 16 to 17 kts, gusting to 23 kts were forecast for the afternoon. The significant wave height<sup>19</sup> forecast for the afternoon of 23 June was around 1.9 to 2.1 metres (m) with a maximum wave height of about 3.5 m. These conditions were only a slight improvement on the morning's conditions.
- 3.17. Because the bosun did not tell the master and chief officer of their intention to raise the stanchions, there was no opportunity for the master to exercise their judgement on whether it was safe for the work to proceed. There was no opportunity for the chief officer to implement the SMS policies on risk assessment and safe work. The

<sup>19</sup> The average height of the highest one third of the waves experienced over time

bosun's work plan was based on the wind and sea conditions as the bosun observed them throughout the morning. However, the chief officer and the master were not party to the work plan and were unable to assess its suitability against the prevailing conditions and the forecast conditions.

- 3.18. The vessel's lines of authority and responsibility were not followed, resulting in the risk assessment procedure and the safe work procedure becoming ineffective, and a serious accident occurred.

### ***Safely stopping unsafe work***

- 3.19. The SMS contained a safe work procedure intended to strengthen the crew's health and safety and prevent occupational accidents. This procedure described the purpose and responsibilities of the ship safety officer and included the duty of any crew member to stop unsafe work.

- 3.20. As the ship safety officer, the chief officer was appointed to look after the safety of the crew on board. The operator's expectations were listed as the following goals:

- promote a safety culture
- preach safety awareness by means of training and motivation
- recognise what could go wrong
- act when something does go wrong.

- 3.21. The responsibilities of the chief officer, as the ship safety officer, included:

- looking out for potential hazards and the means of preventing incidents on board ship that directly affect the health and safety of the crew
- supervising and ensuring crew's working practices comply with the safe working requirements within the SMS
- enhancing the crew's awareness and attitude with respect to the safety on board and thereby taking substantial steps for enhancing safety
- giving training to shipboard personnel as necessary
- to stop the ship operation if it directly affects the safety of the crew or the ship.

- 3.22. The safe work procedure also assigned responsibilities to certain roles. The chief officer was required to:

- assess potential risks before assigning work to the crew
- identify relevant risk control measures and implement them before proceeding with the work
- organise a toolbox meeting to brief crew about work assignments and potential hazards.

- 3.23. The bosun was required to:

- supervise deck work
- monitor the crew
- correct and report any deficiency to the chief officer.

- 3.24. The safe work procedure empowered any crew member to stop unsafe work. It specifically stated that:
- every crew has the responsibility and authority to stop work immediately, without fear of reprisal, when they believe a stop work situation exists.
- 3.25. When a crew member identifies a potentially dangerous condition or activity, a 'stop work' intervention should immediately be put into place, allowing every crew potentially at risk to pause until a resolution is met.
- 3.26. The chief officer realised that the crew were using the crane to pull up the stanchions – a job that had been deemed too dangerous to do on that day. The chief officer intended to tell the crew to stop work immediately but when they got to the site, the stanchions were already upright and secured. The chief officer then decided to wait until the crew had released the pull wire and then the chief officer intended to order the bosun to stop using the crane.
- 3.27. Although the chief officer intended to stop unsafe work, they did not communicate this intention with the bosun. Neither did the chief officer discuss the bosun's work plan with the crew to determine how and where the pull wire would be released from the crane hook. The bosun's work plan mitigated the risk of personnel being struck by the crane block through the identification of safe and unsafe areas. The bosun expected the crew to remain in a safe area until the crane block was stable and the bosun instructed them to approach.
- 3.28. When the chief officer ordered the crew to climb onto the hatch lid to release the pull wire, this order directed the crew into a potentially unsafe area. This area became unsafe when the bosun, unaware of the chief officer's intervention, started to relocate the hook to the deck as had been planned with the crew earlier. This relocation coincided with the vessel rolling because of the prevailing sea conditions. The bosun thought that the crew would remain standing in the safe area and that everybody would be clear of the crane block and hook while suspended. A hazardous situation was created because: firstly, the bosun had engaged the crew in a task that the master had told them not to do; and secondly, because the chief officer gave the crew an order that conflicted with the crew's safe work plan for carrying out the task.
- 3.29. It is **very unlikely** that the accident would have occurred if the bosun had communicated their intention to erect the stanchions to the chief officer and the master. This would have allowed the responsible and authorised officers either to again prohibit the work, or to establish a safe system of work that was known to all relevant participants in the activity.
- 3.30. It is **very unlikely** that the accident would have occurred if the chief officer had determined what the work plan was before giving the crew an order that conflicted with their work plan.

## 4 Findings

### Ngā kitenga

- 4.1. No mechanical issue with the crane contributed to the accident.
- 4.2. It is **very unlikely** that the accident would have occurred if the bosun had communicated their intention to erect the stanchions to the chief officer and the master. This would have allowed the responsible and authorised officers either to again prohibit the work, or to establish a safe system of work that was known to all relevant participants in the activity.
- 4.3. There was no communication between the chief officer and the bosun when the chief officer arrived on deck. Therefore, the chief officer did not know the bosun's work plan and inadvertently sent the crew into a dangerous area. Because of the rank and authority of the chief officer, the crew followed the order.
- 4.4. As the crew climbed the hatch coaming, the vessel started to roll, causing the crane block and hook to swing. The crane block struck the AB pushing them up against the hatch coaming, causing very serious injuries.
- 4.5. It is **very unlikely** that the accident would have occurred if the chief officer had determined what the work plan was before giving the crew an order that conflicted with their work plan.

## 5 Safety issues and remedial action

### Ngā take haumarū me ngā mahi whakatika

#### General

- 5.1. Safety issues are an output from the Commission's analysis. They may not always relate to factors directly contributing to the accident or incident. They typically describe a system problem that has the potential to adversely affect future transport safety.
- 5.2. Safety issues may be addressed by safety actions taken by a participant. Otherwise the Commission may issue a recommendation to address the issue.
- 5.3. No new safety issues have been identified. However, there are significant lessons arising from the circumstances of this accident (see section 7).
- 5.4. Wisdom Marine completed an internal investigation and issued a fleet circular to raise awareness about this accident. The company's SMS required crews to discuss fleet circulars, the accidents and the lessons learned, at each shipboard safety committee meeting.
- 5.5. On 4 July 2023 the crew of *Poavosa Brave* completed additional onboard training about risk assessment and toolbox talks.

## **6 Recommendations**

### **Ngā tūtohutanga**

#### ***General***

- 6.1. The Commission issues recommendations to address safety issues found in its investigations. Recommendations may be addressed to organisations or people and can relate to safety issues found within an organisation or within the wider transport system that have the potential to contribute to future transport accidents and incidents.
- 6.2. In the interests of transport safety, it is important that recommendations are implemented without delay to help prevent similar accidents or incidents occurring in the future.

#### ***New recommendations***

- 6.3. The Commission issued no new recommendations.

## **7 Key lessons**

### **Ngā akoranga matua**

- 7.1. Safety is compromised when lines of authority and responsibility are not followed.
- 7.2. The benefits of risk assessments and safe work plans are lost when carrying out unplanned or unauthorised work.
- 7.3. When work is perceived to be unsafe, it is good practice to take a moment to determine how that work can be stopped safely, without introducing new hazards.

## 8 Data summary

### Whakarāpopoto raraunga

#### *Vehicle particulars*

Name:	<i>Poavosa Brave</i>
Type:	Bulk carrier
Class:	Nippon Kaiji Kyokai (known as ClassNK)
Limits:	Unlimited
Length:	169.37 m
Breadth:	27.20 m
Gross tonnage/Deadweight:	17018/28367 tonnes
Built:	2018 Imabari Shipbuilding Company, Japan
Propulsion:	Makita-Mitsui-Man B&W 6S42MC (Mark VI)
Service speed:	14 kts
Owner/operator:	Wisdom Marine International Inc.
Port of registry:	Panama

***Date and time*** 23 June 2023, 1350

***Location*** Tauranga, anchorage #3

***Persons involved*** Able-bodied seafarer

***Injuries*** Very serious injuries

***Damage*** Nil

## 9 Conduct of the Inquiry

### Te whakahaere i te pakirehua

- 9.1. On 23 June 2023, Maritime New Zealand notified the Commission of the occurrence. The Commission subsequently opened an inquiry under section 13(1) of the Transport Accident Investigation Commission Act 1990 and appointed an Investigator-in-Charge.
- 9.2. On 24 June 2023, the Chief Investigator of Accidents issued a Protection Order, under section 12 of the Transport Accident Investigation Commission Act 1990. The order related to number 4 crane and associated equipment involved in the accident, and its purpose was to preserve and protect any evidence.
- 9.3. In accordance with section 14(3) of the Transport Accident Investigation Commission Act 1990, the Chief Investigator of Accidents consented to Maritime New Zealand boarding the vessel to conduct their own investigation into the accident.
- 9.4. On 25 June 2023, three Commission investigators travelled to Tauranga to interview witnesses and collect evidence from the vessel.
- 9.5. On 29 May 2024, the Commission approved a draft report for circulation to eight interested parties for their comment.
- 9.6. Five interested parties responded that they had no comment. Three did not respond.
- 9.7. On 29 August 2024, the Commission approved the final report for publication.

# Abbreviations

## Whakapotonga

AB	able-bodied seafarer
ECDIS	electronic chart display and information system
ILO	International Labour Organization
IMO	International Maritime Organization
OS	ordinary seaman
SMS	safety management system
SOLAS	International Convention for the Safety of Life at Sea, 1974

## Glossary

### Kuputaka

able-bodied seafarer	experienced seafarer, competent to perform the usual and customary duties on deck
anemometer	instrument for measuring wind speed
bosun	abbreviated version of boatswain: foreman or supervisor of the deck crew
chief officer	deck officer next in rank below master, head of the deck department; also known as the first officer.
crane block	a component of the crane system on a vessel – containing the crane hook, swivel, bearing, sheaves, pins and frame – that is suspended by a crane’s hoisting wire or load chains
crane housing	structure that surrounds and protects a crane’s machinery
hatch coaming	vertical structure around a hatch, or other opening in the deck, to prevent water ingress
ordinary seaman	seafarer, aged 18 or more, who has not qualified to be rated as an AB
roads	roadstead or anchoring ground; a sheltered body of water near the shore where a vessel can lie reasonably safely at anchor
shipping agent	person who acts for one or more of the parties with an interest in the vessel charter
stanchion	a vertical support structure used to secure cargo, such as logs, on the upper deck of a vessel
voyage charter	when a vessel and crew are hired for a voyage carrying a specified cargo between a load port and a discharge port



## Kōwhaiwhai - Māori scroll designs

TAIC commissioned its four kōwhaiwhai, Māori scroll designs, from artist Sandy Rodgers (Ngāti Raukawa, Tūwharetoa, MacDougal). Sandy began from thinking of the Commission as a vehicle or vessel for seeking knowledge to understand transport accident tragedies and how to avoid them. A 'waka whai mārama' (i te ara haumarū) is 'a vessel/vehicle in pursuit of understanding'. Waka is a metaphor for the Commission. Mārama (from 'te ao mārama' – the world of light) is for the separation of Rangitāne (Sky Father) and Papatūānuku (Earth Mother) by their son Tāne Māhuta (god of man, forests and everything dwelling within), which brought light and thus awareness to the world. 'Te ara' is 'the path' and 'haumarū' is 'safe' or 'risk free'.

### **Corporate: Te Ara Haumarū - the safe and risk free path**



The eye motif looks to the future, watching the path for obstructions. The encased double koru is the mother and child, symbolising protection, safety and guidance. The triple koru represents the three kete of knowledge that Tāne Māhuta collected from the highest of the heavens to pass their wisdom to humanity. The continual wave is the perpetual line of influence. The succession of humps represents the individual inquiries.

Sandy acknowledges Tāne Māhuta in the creation of this Kōwhaiwhai.

### **Aviation: Ngā hau e whā - the four winds**



To Sandy, 'Ngā hau e whā' (the four winds), commonly used in Te Reo Māori to refer to people coming together from across Aotearoa, was also redolent of the aviation environment. The design represents the sky, cloud, and wind. There is a manu (bird) form representing the aircraft that move through Aotearoa's 'long white cloud'. The letter 'A' is present, standing for a 'Aviation'.

Sandy acknowledges Ranginui (Sky father) and Tāwhirimātea (God of wind) in the creation of this Kōwhaiwhai.

### **Maritime: Ara wai - waterways**



The sections of waves flowing across the design represent the many different 'ara wai' (waterways) that ships sail across. The 'V' shape is a ship's prow and its wake. The letter 'M' is present, standing for 'Maritime'.

Sandy acknowledges Tangaroa (God of the sea) in the creation of this Kōwhaiwhai.

### **Rail: rerewhenua - flowing across the land**



The design represents the fluid movement of trains across Aotearoa. 'Rere' is to flow or fly. 'Whenua' is the land. The koru forms represent the earth, land and flora that trains pass over and through. The letter 'R' is present, standing for 'Rail'.

Sandy acknowledges Papatūānuku (Earth Mother) and Tāne Mahuta (God of man and forests and everything that dwells within) in the creation of this Kōwhaiwhai.



## Transport Accident Investigation Commission

### **Recent Maritime Occurrence reports published by the Transport Accident Investigation Commission (most recent at top of list)**

MO-2023-204	Bulk carrier, Poavosa brave, serious injury, off Tauranga, 23 June 2023
MO-2022-203	Container vessel, Capitaine Tasman, stevedore fatality during container loading operations, Port of Auckland, 19 April 2022
MO-2022-202	Bulk carrier, ETG Aquarius, stevedore fatality during coal loading operations, Lyttelton port, 25 April 2022
MO-2022-207	Fishing vessel Boy Roel, serious workplace injury, Off Tauranga, Bay of Plenty, New Zealand, 12 December 2022
MO-2022-206	Charter fishing vessel i-Catcher, Capsize, Goose Bay, Kaikōura, New Zealand, 10 September 2022
MO-2023-201	Passenger vessel Kaitaki, Loss of power, Cook Strait, New Zealand, 28 January 2023
MO-2021-204	Recreational vessel, capsized and sinking with three fatalities, Manukau Harbour entrance, 16 October 2021
MO-2021-205	Container vessel Moana Chief, serious injury to crew member, Port of Auckland, New Zealand, 10 December 2021
MO-2020-205	General cargo vessel, Kota Bahagia, cargo hold fire, Napier Port, 18 December 2020
MO-2021-202	Factory fishing trawler Amaltal Enterprise Engine room fire, 55 nautical miles west of Hokitika, 2 July 2021
MO-2021-203	Collision between fishing vessel 'Commission' and container ship 'Kota Lembah', 84 nautical miles northeast of Tauranga, Bay of Plenty, New Zealand, 28 July 2021
MO-2021-201	Jet boat KJet 8, loss of control, Shotover River, Queenstown, 21 March 2021
MO-2021-203	Collision between fishing vessel 'Commission; and container ship 'Kota Lembah', 84 nautical miles northeast of Tauranga, Bay of Plenty, New Zealand, 28 July 2021

Price \$13.00

ISSN 2815-8806 (Print)  
ISSN 2815-8814 (Online)