



Transport Accident
Investigation
Commission

Final report

Tuhinga whakamutunga

Maritime inquiry MO-2023-201
Passenger vessel, Kaitaki
Loss of power
Cook Strait, New Zealand
28 January 2023

May 2026



The Transport Accident Investigation Commission

Te Kōmihana Tirotiro 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 (until 30 September 2024)
Chief Commissioner	David Clarke (from 1 October 2024)
Deputy Chief Commissioner	Stephen Davies Howard
Commissioner	Paula Rose, QSO
Commissioner	Bernadette Roka Arapere (until 6 November 2025)
Commissioner	David Clarke (until 30 September 2024)

Key Commission personnel

Chief Executive	Martin Sawyers
Chief Investigator of Accidents	Louise Cook
Commission General Counsel	Sid Wellik

Notes about Commission reports

Kōrero tāpiri ki ngā pūrongo o te Kōmihana

Citations and referencing

The citations section of this report lists public documents. Documents unavailable to the public (that is, not discoverable under the Official Information Act 1982) are referenced in footnotes. Information derived from interviews during the Commission’s inquiry into the occurrence is used without attribution.

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: Roll-on/roll-off passenger vessel, *Kaitaki*
(credit: KiwiRail Limited)

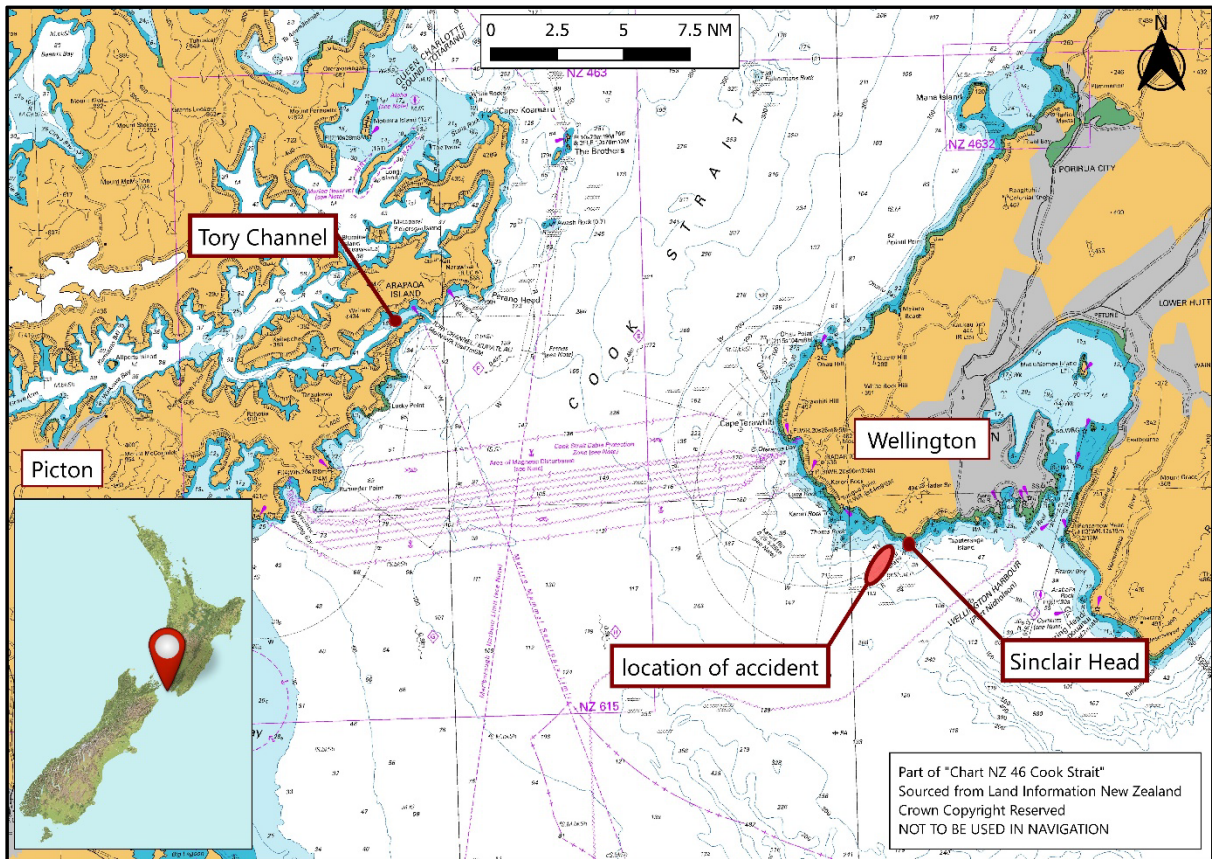


Figure 2: Location of accident

(Credit: Land Information New Zealand Toitū te Whenua)

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1 Executive summary

Tuhinga whakarāpopoto

What happened

- 1.1. On Saturday 28 January 2023, the KiwiRail Limited (KiwiRail) Interislander passenger ferry *Kaitaki* was in transit from Picton to Wellington on a scheduled service.
- 1.2. When the *Kaitaki* was approximately one nautical mile off Sinclair Head, the vessel lost all electrical and propulsive power (blackout).
- 1.3. Because of the vessel's proximity to the coast and the strong onshore weather conditions, the master broadcast a Mayday call.
- 1.4. The Rescue Coordination Centre New Zealand (RCCNZ) initiated its mass rescue operations escalation plan.
- 1.5. As the incident unfolded, various agencies took steps to prepare for a potential maritime mass rescue.
- 1.6. The *Kaitaki* was without propulsion for approximately one hour before the engines could be restarted and control returned to the bridge.
- 1.7. The *Kaitaki* then proceeded under its own power to Wellington, escorted by two tugs.
- 1.8. Near Wellington Heads,¹ the vessel's port-side main engine's gearbox developed a fault, resulting in a loss of propulsion on that side. Propulsion was quickly restored using a standby main engine.
- 1.9. The *Kaitaki* made its way without further incident into Wellington Harbour, berthing shortly after 2014 NZST.
- 1.10. RCCNZ maintained the mass rescue operation until the *Kaitaki* was safely berthed.
- 1.11. On 5 May 2023, the Commission published a preliminary report (Transport Accident Investigation Commission, 2023) having identified a safety issue with the rubber expansion joints (REJ). Deterioration had occurred over time, starting from the date of manufacture, because of service conditions and ageing.

Why it happened

- 1.12. When the *Kaitaki* was approximately one nautical mile off Sinclair Head, the starboard shaft generator tripped². As a result, the vessel suffered a blackout.
- 1.13. Shortly after, an REJ on the port auxiliary engine ruptured. This resulted in the loss of water from the high-temperature cooling water system, which provided cooling to all main and auxiliary engines.
- 1.14. The loss of water pressure from the cooling system meant none of the four main engines could be restarted safely. As a result, propulsion could not be restored quickly.

¹ The entrance to Wellington Harbour between Pencarrow Head and Palmer Head.

² Automatically shut down because of overload.

What we can learn

- 1.15. Rubber expansion joints deteriorate over time, starting from the date of manufacture, because of service conditions and ageing. To ensure their reliability, maintenance schedules must consider both their date of manufacture and date of installation.
- 1.16. Ships' crews should prioritise and practise escape and evacuation procedures to ensure the safety of all passengers and crew during emergencies.
- 1.17. Regular practical drills and exercises are essential to continuously improve escape, evacuation and rescue plans.

Who may benefit

- 1.18. Mariners, maritime operators, Cook Strait ferry operators, maritime regulatory agencies, maritime training institutes and providers, and agencies and operators involved in search and rescue operations may benefit from this report.

2 Factual information

Pārongo pono

Background

- 2.1. The KiwiRail Limited (KiwiRail) Interislander passenger ferry *Kaitaki* is a roll-on/roll-off (RoRo) ferry engaged solely on the Cook Strait. It operates multiple trips daily between Wellington and Picton. This route of approximately 50 nautical miles (NM) typically takes about three hours from berth to berth. The *Kaitaki* is the largest of Interislander's three ships and is classed³ with Lloyd's Register.
- 2.2. The *Kaitaki's* installed power generation, and propulsion systems comprised:
 - four main engines (forward, aft, port and starboard)
 - two auxiliary engines (port and starboard)
 - two shaft generators (port and starboard)
 - an emergency generator.
- 2.3. The four main engines are the primary power source for propulsion. The auxiliary engines and generators provide electrical power to the ship's onboard systems.

Narrative

- 2.4. At about 1415⁴ on Saturday 28 January 2023, the *Kaitaki* departed Picton for Wellington on a scheduled passenger service. There were 784 passengers and 80 crew on board.
- 2.5. At departure, three main engines were at constant revolutions, and the two auxiliary engines were on load⁵ (generating electricity and supplying power to various shipboard systems). Upon clearing East Head, Tory Channel, the master changed the engine configuration so that two main engines and the starboard shaft generator were on load.
- 2.6. The master then began the weekly fire and emergency drill. The drill included a full crew muster at emergency stations, a simulated fire in the crew accommodation and a simulated abandon ship muster.

³ A maritime classification society sets technical rules based on experience and research, confirms that designs and calculations meet these rules, surveys ships and structures during the process of construction and commissioning, and periodically surveys vessels to ensure they continue to meet the rules.

⁴ Times in this report are in New Zealand Daylight Time (Coordinated Universal Time + 13 hours) and are expressed in the 24-hour format.

⁵ 'Taken on load' means that the generator has been connected to the electrical distribution board and is beginning to supply power to shipboard equipment.

2.7. At 1631, about an hour after the drill ended and while the *Kaitaki* was approximately 1 NM off Sinclair Head following the passage plan,⁶ the starboard shaft generator tripped.⁷ The ship lost power briefly, until the emergency generator automatically started providing electrical power to emergency systems. The two main propulsion engines shut down a few minutes later. This resulted in the ship losing all electrical power (blackout).

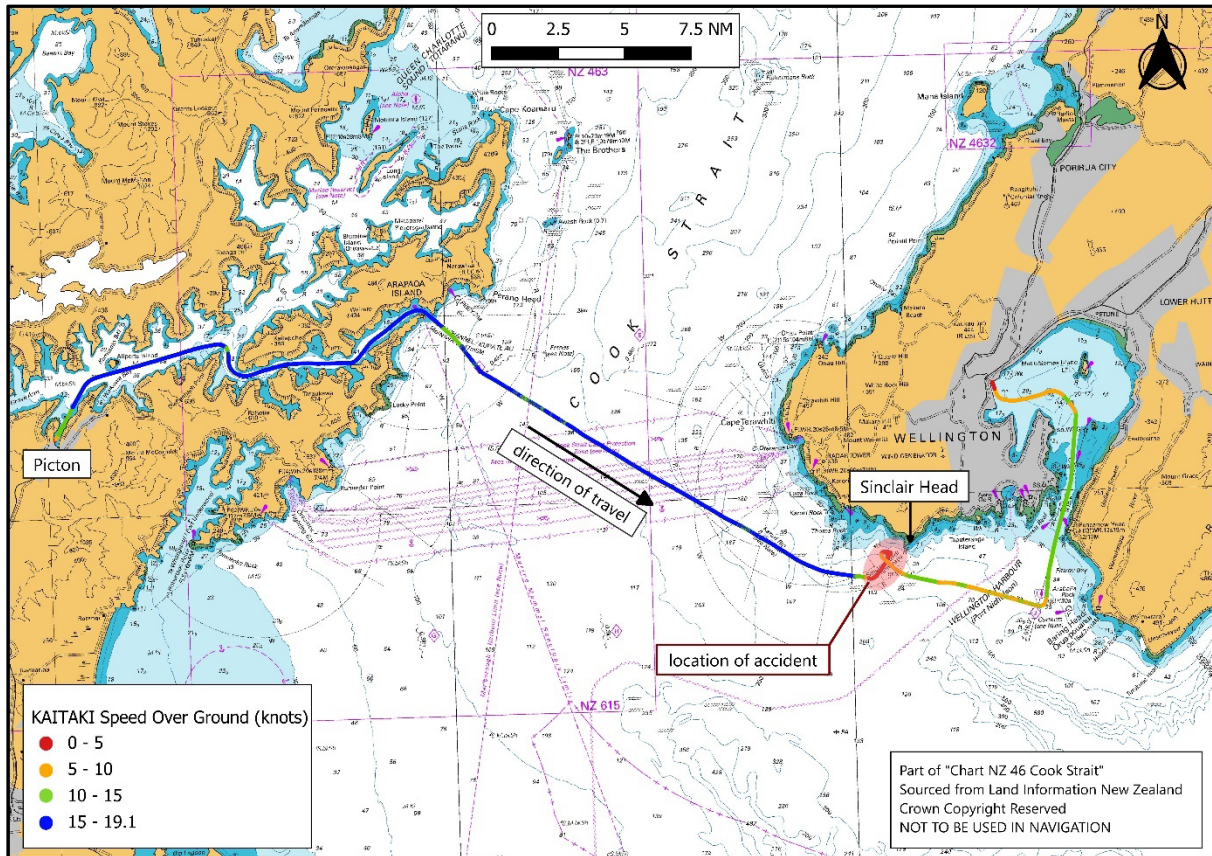


Figure 3: *Kaitaki* track and location of incident

⁶ This passage plan is long standing and aligns with other ferry operators and with the *Required knowledge for Cook Strait endorsement* produced by Maritime NZ (2018).

⁷ A shaft generator trip should not on its own cause a blackout; the standby auxiliary engines should automatically engage to maintain power before the propulsion plant shuts down.

2.8. Events leading up to the blackout followed the approximate timeline in Table 1 below.

Table 1: Timeline of events leading up to the blackout

Time	Events
1631	<ul style="list-style-type: none">• Multiple circuit breakers in the engine room tripped• On-load starboard shaft generator tripped• Emergency generator automatically started• Watchkeeping engineer started the port auxiliary engine• Watchkeeping engineer started the starboard auxiliary engine
1633	<ul style="list-style-type: none">• High-temperature cooling water low-level alarm sounded• Ruptured rubber expansion joint (REJ) discovered on port auxiliary engine
1634	<ul style="list-style-type: none">• Forward main engine shut down
1636	<ul style="list-style-type: none">• Aft main engine shut down

Events in the engine room

- 2.9. At about 1631, multiple circuit breakers in the engine control room tripped in rapid succession, indicating the starboard shaft generator was shedding load. Shortly after, the on-load starboard shaft generator tripped, causing a total loss of electrical power. The emergency generator automatically started, providing electrical power to emergency systems, including emergency lighting.
- 2.10. The second engineer and the watchkeeping engineer were present in the control room at the time. The watchkeeping engineer quickly initiated the engineer's alarm⁸ and started the port auxiliary engine, followed by the starboard auxiliary engine. The port auxiliary engine was then taken on load by closing the circuit breaker and restoring normal electrical power to the vessel.
- 2.11. At about that time several other engine crew, including the chief engineer, arrived in the engine control room.
- 2.12. The crew began trying to restart the seawater cooling pump, which had shut down during the power loss.
- 2.13. At 1633, the alarm panel in the engine control room registered a low-level alarm for the high-temperature cooling water. However, the watchkeeping engineer was in the engine room attempting to re-establish power and did not see the alarm.
- 2.14. At about that time, an engineer reported a ruptured REJ on the port auxiliary engine, with high-temperature cooling water leaking from the affected component (see Figure 4 and Figure 5). The leak resulted in the cooling water rapidly draining from the cooling system, passing through the ruptured REJ and into the engine room bilge system.⁹ By the time the rupture was noticed, most of the water from the high-temperature cooling system had drained.

⁸ A call to action to all engineering crew.

⁹ A collection of pumps, pipes and tanks designed to remove water and other liquids that accumulate in the lowermost part of a ship's engine room.

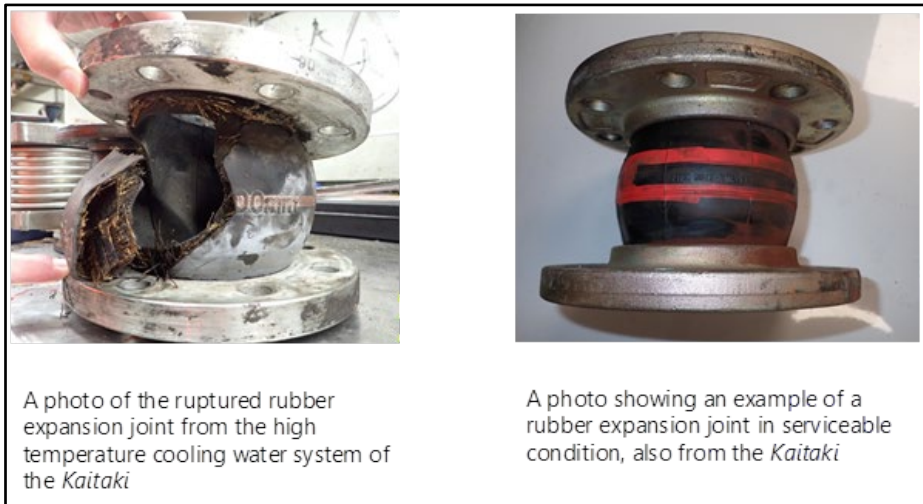


Figure 4: The ruptured REJ (left) and a serviceable REJ (right)

- 2.15. The four main engines and two auxiliary engines all used this high-temperature cooling water system. Low pressure from the system caused the port auxiliary engine to shut down, resulting in a second loss of electrical power. This was an automatic shutdown of the engines to prevent catastrophic damage to the two main propulsion engines. It was unclear whether the starboard auxiliary engine was carrying any electrical load at this time. However, the loss of cooling water pressure in the common cooling water system would have affected the starboard auxiliary engine, causing it to shut down too.
- 2.16. At 1634, the forward main engine shut down. At 1636, the aft main engine shut down, resulting in a complete loss of propulsion and electrical power. The crew made multiple attempts to restart the auxiliary generators and the main engines. Although they knew of the ruptured REJ and cooling water leak, the crew continued attempting to restart the port auxiliary engine. They eventually shifted focus to the starboard auxiliary engine.

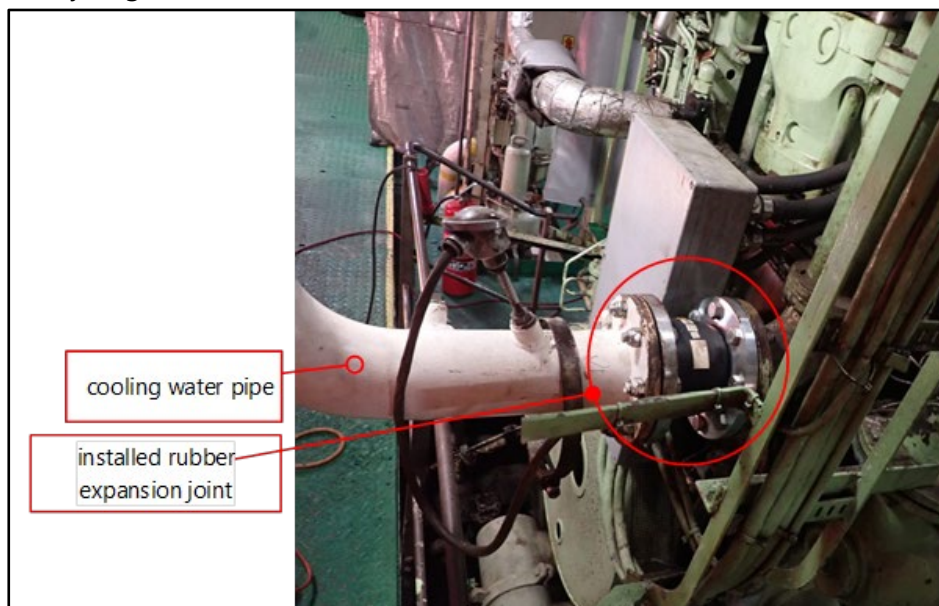


Figure 5: An installed REJ on board the *Kaitaki*

- 2.17. The situation was further complicated by a loss of air pressure in the starting air reservoir, essential for starting the auxiliary generators. Repeated restart attempts

depleted the reservoir and, with only one compressor available from the emergency generator switchboard, the start air system was slow to replenish.

- 2.18. Once the engine crew had isolated the high-temperature cooling water system, they started to refill the high-temperature cooling water tank (also called the expansion tank). The engineers estimated that refilling the expansion tank and restarting the generators would take approximately 45 minutes.
- 2.19. The loss of cooling water pressure meant the main engines could not be restarted safely and, as a result, propulsion could not be restored. The emergency generator continued to operate and provide electrical power for safety services.
- 2.20. At about 1757, the engineers successfully restarted an auxiliary generator and two main engines.

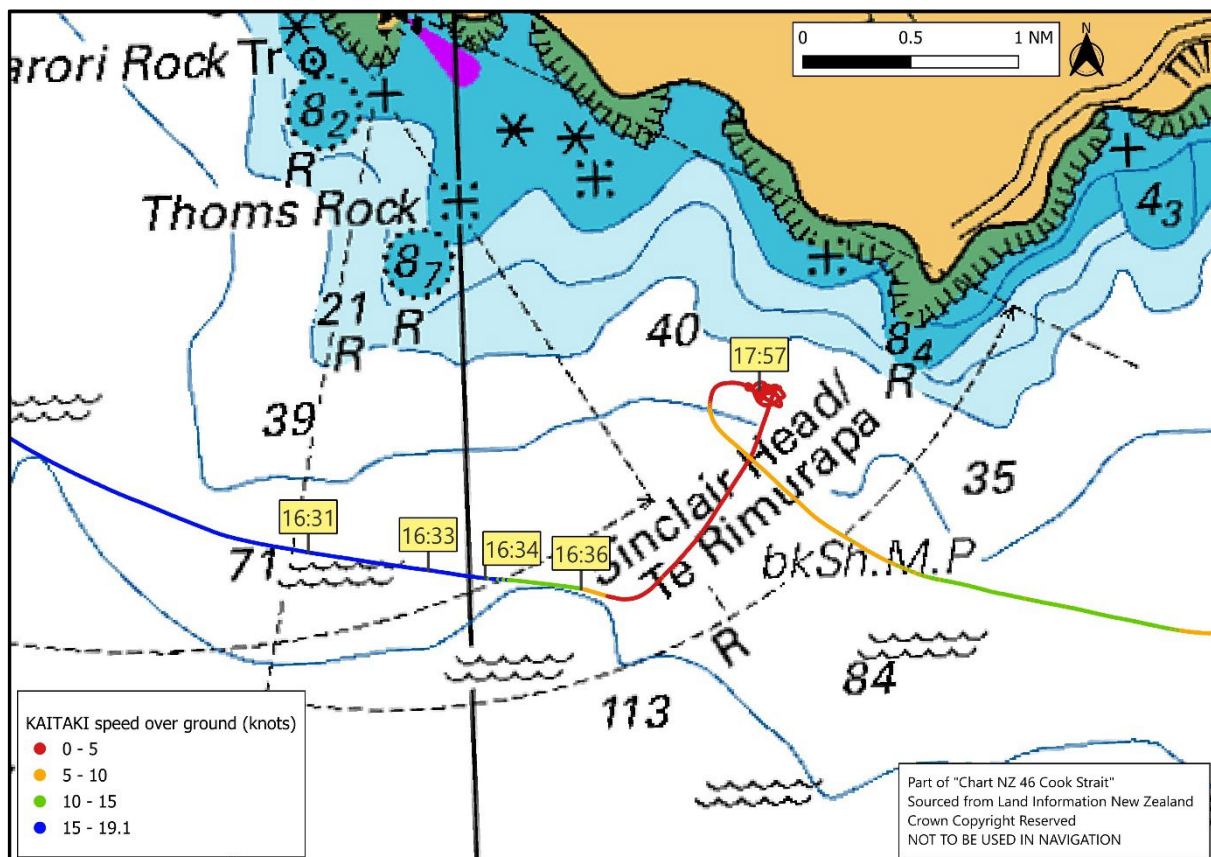


Figure 6: Close-up of the incident area with key time stamps

Events on the bridge

2.21. Events on the bridge followed the approximate timeline in Table 2.

Table 2: Timeline of events on bridge

Time	Events
1631	<ul style="list-style-type: none"> The master was conducting a post-drill debrief on the bridge.
1636	<ul style="list-style-type: none"> The blackout occurred. The master immediately instructed the bridge team to hand steer and turn the vessel into the direction of the southerly swell. Power to the steering motors was available from the emergency generator. The bridge crew had no steering for about three minutes until they were able to restart the steering motors. Without propulsion, the vessel began drifting towards the coast at a rate of approximately 3 knots (kt). The master consulted with the chief engineer to assess how long it would take to restore propulsion. The first estimate was 10 minutes, but it became clear that refilling the cooling water system and restarting the power plant¹⁰ would take significantly longer. To assist decision-making, the bridge crew referred to a hard copy of the master's decision-support system, which is designed to aid ship masters in emergency decision-making.
1648	<ul style="list-style-type: none"> The master raised a general emergency alarm, ordered all passengers to muster at assembly stations and issued lifejackets. The crew began preparing to launch lifeboats and life rafts, anticipating a potential evacuation. The master contacted Beacon Hill Signal Station in Wellington to inform it of the situation. The master also requested the <i>Aratere</i>, another Interislander ferry, to stand by for assistance. The <i>Aratere</i> was sailing from Wellington to Picton at the time.
1652	<ul style="list-style-type: none"> The crew let go the starboard anchor at a depth of about 60 metres (m). By 1656 there were eight shackles in the water (219.5 m of chain), but the anchor was unable to hold the vessel's position.
1658	<ul style="list-style-type: none"> A Sécurité call¹¹ was broadcast from the vessel and received by the Rescue Coordination Centre New Zealand (RCCNZ).
1700	<ul style="list-style-type: none"> The port anchor was let go at a depth of about 30 m.
1704	<ul style="list-style-type: none"> The master upgraded the Sécurité call to a Mayday¹² because of the uncertainty about how long the anchors would hold and how long it would take to restore engine power. During this time, the crew fielded multiple phone calls from shore while also conducting passenger roll calls and preparing for a possible evacuation.
1707	<ul style="list-style-type: none"> By this time, the crew confirmed that the anchors were holding. The vessel was approximately 0.8 NM from shore, with about 0.5 NM of safe water¹³ astern of the vessel.

¹⁰ The power plant of a vessel is comprised of its installed power generation equipment.

¹¹ The radio-telephone safety signal 'Sécurité' is used to indicate that the calling station has an important navigational or meteorological warning to transmit.

¹² The internationally recognised maritime distress call over radio communications is used to indicate that a vessel, aircraft or person is in grave and imminent danger and requires immediate assistance.

¹³ An area where a vessel may anchor or navigate without posing risk to itself, the environment or other vessels.

Time	Events
1725	<ul style="list-style-type: none"> All lifeboats were prepared for launch.¹⁴
1757	<ul style="list-style-type: none"> The engineering team informed the bridge that power had been restored. Two main engines were back online.
1802	<ul style="list-style-type: none"> The crew began heaving up the port anchor. By this time, two CentrePort¹⁵ tugs had arrived on scene and were standing by to assist.
1847	<ul style="list-style-type: none"> The starboard anchor was heaved up, and the vessel was made ready to continue its voyage to Wellington.
1918	<ul style="list-style-type: none"> The <i>Kaitaki</i> proceeded under its own power to Wellington, escorted by the two CentrePort tugs. The ship's speed was set at 9–11 knots, the maximum speed at which the tugs could safely escort the vessel.
2008	<ul style="list-style-type: none"> As the vessel passed Wellington Heads, a gearbox connected to the port-side main engine developed a fault, disabling propulsion power on that side. A standby main engine restored propulsion power to the port side. The vessel continued its voyage without further incident. The volunteer coastguard vessel <i>Reremoana</i>, a 9-m semi-enclosed rescue vessel, was standing by at Evans Bay to assist by distributing life rafts, in case the <i>Kaitaki</i> lost power again during its re-entry into Wellington.
2020	<ul style="list-style-type: none"> When the vessel was past Steeple Rock, the master stood down the passengers from their emergency assembly stations. A pilot boarded the vessel to assist the master to bring the ship into Wellington Harbour. A master-to-pilot exchange was held to ensure the bridge team had a shared mental model of how the pilotage would be conducted, including contingency plans for responding to another loss of propulsion.
2122	<ul style="list-style-type: none"> The vessel then manoeuvred into port and berthed.
2125	<ul style="list-style-type: none"> All passengers and crew disembarked the vessel safely, and the Mayday was cancelled.

Incident response

- 2.22. At the time of the incident, New Zealand was responsible for one of the largest search and rescue (SAR) regions in the world,¹⁶ covering over 30 million square kilometres (km²).
- 2.23. The coordination of search and rescue operations (SAROPs) for the region was divided into two categories, Category I and Category II. Category I SAROPs were coordinated at a local level by the New Zealand Police (Police), covering searches within New Zealand on land, inland waterways and close-to-shore marine searches (usually within 12 NM of New Zealand). Category II SAROPs were coordinated at a national level by RCCNZ. These operations typically involve missing aircraft, aircraft in distress, searches for activated emergency locator beacons and offshore maritime operations within New Zealand's SAR region.
- 2.24. The Police and RCCNZ (the SAR coordinators) can task different types of resources and assets provided by various agencies and private operators. These include

¹⁴ The preparation of lifeboats did not mean that the master was expecting to abandon ship. It is good practice early in an emergency, as a precautionary measure. It would have saved precious time if the emergency had escalated and the master had required the ship to be evacuated.

¹⁵ The port company that operates the Wellington port.

¹⁶ Fulfilling its obligations under the 1979 International Convention on Maritime Search and Rescue.

helicopters, fixed-wing aircraft, vessels, land vehicles and people. Most SAR personnel are volunteers.¹⁷

- 2.25. The National Crisis Management Centre¹⁸ was already responding to serious flooding occurring in Auckland and was advised about the *Kaitaki*.
- 2.26. Several agencies were involved in the response to the incident. The table below describes their actions and the coordinating role of the RCCNZ.

Table 3: Actions of agencies involved in response to the incident

Agency	Actions
Beacon Hill Signal Station	At about 1650, Beacon Hill Signal Station ¹⁹ became aware of the evolving situation on board the <i>Kaitaki</i> . The station relayed this information to the Wellington Harbour Master.
The Wellington Harbour Master	The Wellington Harbour Master contacted the operations manager at CentrePort, informing them of the <i>Kaitaki</i> 's situation.
CentrePort	CentrePort tasked two harbour tugs with assisting the stricken vessel. The tugs departed Wellington at about 1706. CentrePort also dispatched its pilot launch, <i>Te Haa</i> , which arrived on scene at about 1723 carrying a pilot to assist the master to bring the ship into Wellington Harbour.
Interislander	<p>CentrePort invited Interislander staff to join their incident management team. As Interislander had already established their own team, they declined the invitation. Interislander maintained an open line of communication with CentrePort and the Wellington Harbour Master.</p> <p>Interislander had activated its emergency response plan, and an incident management team had already assembled in Wellington. A designated person was sent to liaise with RCCNZ and to act as a conduit between RCCNZ and Interislander.</p>

¹⁷ According to New Zealand Search and Rescue (2023), the sector consisted of 11,091 personnel, of which 89% were volunteers.

¹⁸ The National Crisis Management Centre is a facility designed for crisis management by central government, coordinating national responses to major emergencies.

¹⁹ Beacon Hill Signal Station provides Wellington Harbour Radio, continuously monitoring VHF Channels 04, 14, 16 and 62. The Wellington Regional Council operates Beacon Hill Radio and provides a 'Local Port Service' (LPS). An LPS offers information relating to harbour entry and departure, such as berthing, pilot, stevedore and line-handling arrangements. LPS does not control the movement of ships.

Agency	Actions
Police	<p>The Wellington Harbour Master informed the Police, who deployed the Wellington Police Maritime Unit (WPMU) launch, the <i>Lady Elizabeth IV</i>, to assist the <i>Kaitaki</i>. The <i>Lady Elizabeth IV</i>, an 18.5-m catamaran, was manned by four crew members.</p> <p>During the incident, Police were also actively engaged in:</p> <ul style="list-style-type: none"> • liaising with other emergency services and government agencies • coordinating welfare and logistics support for passengers and crew • managing public and media communications • ensuring continuity of care and onward travel for disembarked passengers.
The Wellington Harbour Master	<p>The Wellington Harbour Master then went to Beacon Hill to observe the situation and instructed the deputy harbour master to join the CentrePort incident management team.</p>
RCCNZ/Maritime New Zealand (MNZ)	<p>RCCNZ contacted the <i>Kaitaki</i> soon after receiving the Mayday call. After discussing the situation with the master, RCCNZ initiated a mass rescue operations escalation plan and began tasking various air and surface assets. They set up the emergency coordination centre at the RCCNZ.</p> <p>RCCNZ declared the incident a Category II response. RCCNZ takes the lead in Category II responses, with Police making the WPMU launch (<i>Lady Elizabeth IV</i>) available as an asset for RCCNZ's use.</p> <p>The <i>Lady Elizabeth IV</i> arrived on scene at about 1717. RCCNZ appointed the Police Coastal Master as on-scene coordinator.</p> <p>RCCNZ also contacted the MNZ duty controller²⁰ and duty senior manager to inform them both of the situation.</p>
MNZ	<p>After receiving notification from RCCNZ at 1653, the MNZ duty controller and duty senior manager discussed the notification in a phone call. The duty controller responded and went out to RCCNZ.</p> <p>As a courtesy, the duty senior manager sent a text message to the Director at 1722, approximately 25 minutes after receiving the RCCNZ information.</p> <p>The Director noticed this message 10 minutes later and attempted to contact the duty controller. The Director sought more information from various sources and also contacted the duty senior manager. During that conversation, they both were informed that the <i>Kaitaki's</i> engines had been re-engaged.</p>

²⁰ A Duty Controller is MNZ's on-call officer who acts as the national point of contact for significant and major maritime events.

Agency	Actions
The New Zealand Defence Force (NZDF)	At 1727, RCCNZ contacted the NZDF and requested search and rescue assistance. NZDF confirmed that they were activating an NH90 helicopter and tasking it to Wellington from their base at Ohakea.
Helicopter operators	Several other helicopter operators based in Wellington and Nelson offered to assist RCCNZ with any potential search and rescue efforts if required.
Wellington Free Ambulance	At 1811, Wellington Free Ambulance contacted RCCNZ to discuss ambulance resourcing requirements.

- 2.27. The *Kaitaki* was without propulsion for over one hour before the engines could be restarted and control of the engines returned from the engine room to the bridge ready for vessel manoeuvring.
- 2.28. The crew weighed anchor,²¹ and the vessel made its way towards its berth in Wellington Harbour, under escort of the tugs and pilot boat. During this journey, while off Wellington Heads, the gearbox connected to the port-side main engine developed a fault that disabled the vessel's port propulsion system. The issue was resolved when the standby main engine was started and engaged on the port shaft.
- 2.29. After picking up a pilot near Steeple Rock, the master stood down the passengers from their emergency assembly stations and the *Kaitaki* made its way without further incident into Wellington Harbour. The ship was safely tied up to its wharf at 2123 and the Mayday was then cancelled.²²
- 2.30. RCCNZ continued with its mass rescue operations plan while the *Kaitaki* was making way and stood down the response team only once the *Kaitaki* was safely alongside the wharf.

Vessel information

- 2.31. MV *Kaitaki* is a RoRo ferry built in 1995 by Van der Giessen de Noord of the Netherlands. It previously operated under the names, *Isle of Innisfree*, *Pride of Cherbourg*, *Stena Challenger* and *Challenger*. The ship was operated by Irish Ferries (1995–2001) and P&O Ferries (2002–05) before entering service with Interislander in 2005. The ship was registered in Ireland (1995–2002) and the United Kingdom (2002–17) before being registered in Wellington and re-flagged to New Zealand. Irish Continental Group owned the ship until 2017, when KiwiRail bought it.

Crew information

- 2.32. The master was first issued a certificate of competency, Standards of Training, Certification and Watchkeeping for Seafarers Convention II/2 master (unlimited), in 2013. The master joined Interislander in 2013 and had sailed as master on the *Kaitaki* since 2018.

²¹ Picking up the anchor.

²² Maritime Operations Centre radio communications report logs, VHF call from *Kaitaki* to Wellington Maritime Radio.

- 2.33. The chief engineer was first issued a certificate of competency, Standards of Training, Certification and Watchkeeping for Seafarers Convention III/1 & III/2 chief engineer (motorship only), in 2008. The chief engineer joined Interislander in 2017 and had sailed as chief engineer on the *Kaitaki* since then.

Ship operator

- 2.34. *Kaitaki* is owned by KiwiRail Limited (KiwiRail). It is operated by Interislander, a wholly owned subsidiary of KiwiRail.

Meteorological information

- 2.35. At the time of the incident, the wind was blowing from the south at 38 kt, gusting to 48 kt,²³ and there was a 2.0–2.5 m southerly swell.²⁴ The weather was severe but not uncommon in Cook Strait, which is one of the roughest sea areas in the world.
- 2.36. Tides for 28 January 2023 were:
- high water 1127 (1.7 m)
 - low water 1747 (0.6 m)
 - high water 2349 (1.7 m).²⁵
- 2.37. RCCNZ requested a Search and Rescue Forecast from MetService, who issued a special forecast at 1739, which stated:
- Wind: Southeast 35 knots gusting 45 knots, easing to southerly 30 knots gusting 40 knots this evening, and to southwest 20 knots early Sunday morning. Sea State: Very rough sea, easing this evening. Swell: Southerly swell 0.5 metres, rising to 1 metre. Sea Temperature: 16 degrees Celsius. Weather: Occasional rain, more persistent this evening. Possible sea fog from late evening. Remark: There is currently low-based cloud affecting the area. There is a risk that this may lower to sea fog from late this evening.

Maritime New Zealand's Maritime Incident Response

- 2.38. Maritime New Zealand (MNZ) operates the RCCNZ, which is the national coordination centre for maritime and aviation search and rescue operations within New Zealand's vast search and rescue region.
- 2.39. MNZ also operates the Maritime Incident Response Team (MIRT), which plays a crucial role in responding to maritime emergencies. Its operations are aligned to the Coordinated Incident Management System (CIMS), New Zealand's incident response framework, that standardises interagency approaches.
- 2.40. RCCNZ and MIRT utilise CIMS principles to ensure effective coordination and communication with other responding agencies during an incident, giving a unified and efficient response.

²³ Sourced from MetService; wind speed recorded at Tongue Point weather station.

²⁴ Sourced from master's statement.

²⁵ Sourced from Toitū Te Whenua Land Information New Zealand (LINZ).

- 2.41. MNZ’s incident response framework is based on three levels, which reflect an incident’s actual or potential seriousness: (1) minor/routine, (2) significant and (3) major. Seriousness is defined in terms of the consequences of the incident for:
- life
 - environment
 - economy (national and local)
 - property
 - the level of involvement or activity MNZ needs to undertake.
- 2.42. In determining the seriousness of an incident, the MNZ framework uses the table shown in Table 4.²⁶

Table 4: Characteristics of different categories of incidents (Maritime New Zealand, 2022)

INCIDENT	CHARACTERISTIC			
	SCALE	RISK	DURATION	INTEREST
Minor/routine	Small	Low	Short	Low – nil or few enquiries, information pushed
Significant	Moderate	Medium	Medium	Moderate – some enquiries, some information pull (local, regional, international)
Major	Large to very large	High	Long	High – many enquiries, significant information pull (national, international)

- 2.43. The MIRT procedures, as set out in the Integrated Maritime Incident Readiness and Response Strategy (MIRRS), state that, after receiving a notification from RCCNZ, the duty controller makes an initial assessment of the response required. If they assess that a MIRT is required, they contact the Director of MNZ to recommend a MIRT is established.²⁷ The Director then decides whether a MIRT should be established, in discussion with the duty controller and other relevant people (Maritime New Zealand, 2022).
- 2.44. The Director, having established a MIRT, appoints a MIRT controller²⁸ and, if needed, the National On-Scene Commander (for oil pollution response) is called up. The Director will make the decision based on the characteristics of the incident and skills needed. The MIRT controller has delegated powers under sections 248 and 249 of the Maritime Transport Act 1994.²⁹
- 2.45. The MIRT controller mobilises the MIRT, which leads to an activation phase in which staff with appropriate capabilities (for example, legal, policy, salvage and other aspects under the CIMS framework) are called into the response. This phase requires staff to relocate from wherever they are to the appropriate response hubs, which takes time. See Figure 7 below for the MIRT decision tree.

²⁶ In the Maritime Incident Readiness and Response Strategy (MIRRS).

²⁷ In this context, ‘established’ is the term used in MNZ’s documentation to refer to standing up the MIRT and has a defined start and finish.

²⁸ A person appointed to lead the Maritime Incident Response Team, once established by the Director.

²⁹ Sections 248 and 249 provide powers to the Director of MNZ in relation to hazardous ships, structures and operations.

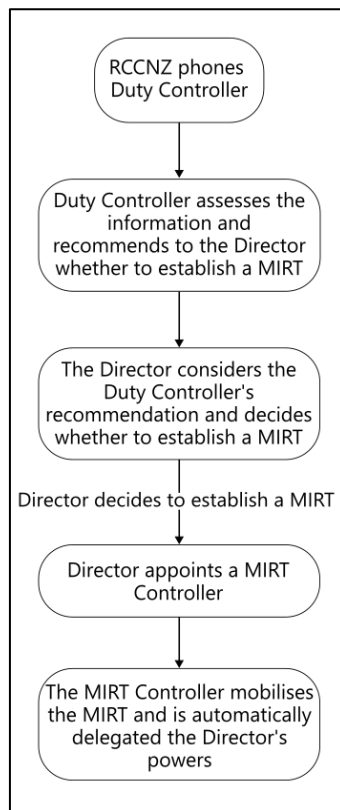


Figure 7: MIRT decision tree

2.46. MIRT’s three core functions, undertaken in various combinations depending on the scenario, are:

- monitoring – developing and maintaining situational awareness to determine what is occurring in the incident
- oversight – understanding the actions, or proposed actions, by the main parties, considering governmental and New Zealand perspectives on these actions, and forming a view as to their appropriateness
- intervention – considering options for intervention, using available powers and influence if actions are inappropriate or insufficient, and executing and managing the approved intervention.

2.47. Figure 8 shows how MIRT integrates with MNZ’s incident response structure during a major maritime incident.

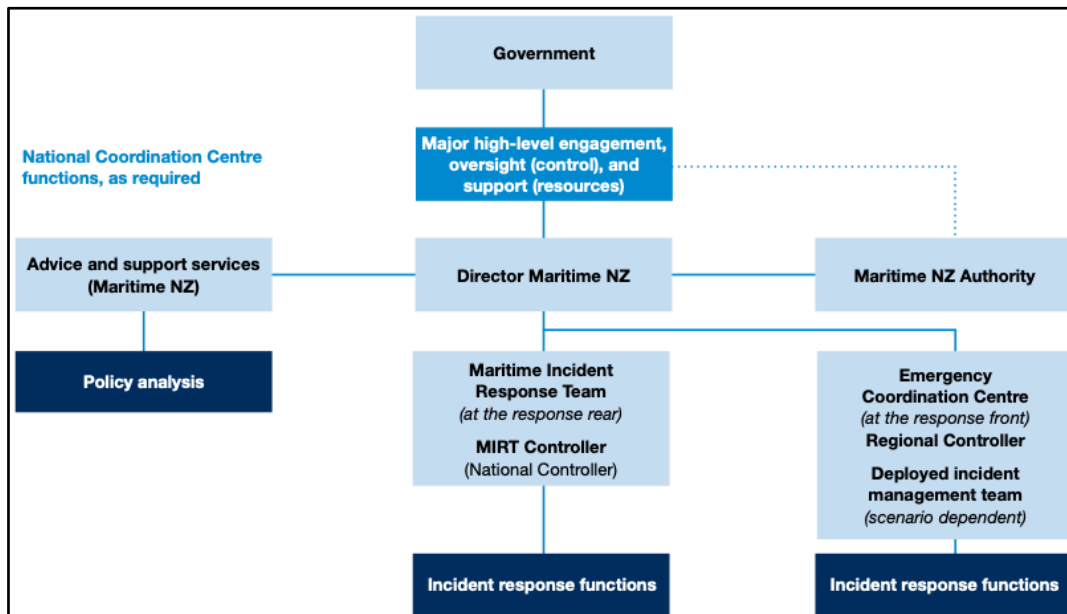


Figure 8: Maritime New Zealand's major maritime incident response

2.48. In response to a significant or major maritime incident, the Director will establish the MIRT and appoint a MIRT controller, who has delegated powers under sections 248 and 249 of the Maritime Transport Act 1994, to:

- mobilise the MIRT
- advise the Director throughout the incident and keep them fully informed
- establish the National Coordination Centre in accordance with CIMS principles, where MNZ is the lead agency in a response.

2.49. MIRT's role in a major maritime incident response also involves:

- facilitating the efficient and effective management of a national-level incident response function
- assisting, identifying and assembling resources, and coordinating with other agencies
- dealing with any ship or structure the Director deems hazardous, or the Director determines requires further assistance because of the complexity of an incident
- engaging regularly across government with other response organisations, so all response efforts are aligned, supplemented and utilised within the response.

International Safety Management Code certification

2.50. The International Convention for the Safety of Life at Sea (SOLAS) 1974, as amended, is an international maritime treaty that sets minimum safety standards for ship construction, equipment and operation. New Zealand is a signatory to the SOLAS convention and is obligated to implement its provisions. One of these provisions is the International Safety Management Code (ISM Code),³⁰ incorporated into

³⁰ The International Management Code for the Safe Operation of Ships and for Pollution Prevention (International Maritime Organization, 2013).

New Zealand law via the Maritime Transport Act 1994 section 17(4)(a) and Maritime Rules Part 21 – Safe ship management systems.

- 2.51. The ISM Code requires both the ship operating company and the ship itself to comply with their safety management system (SMS). An SMS is a structured and documented system that describes how the company and ship are operated to ensure:
- compliance with mandatory rules and regulations
 - applicable codes, guidelines and standards are taken into account.
- 2.52. The objectives of a good-practice SMS are ensuring:
- safe practices in ship operations and a safe working environment
 - all risks to ships, personnel and the environment are assessed, and appropriate safeguards are implemented
 - the safety management skills of personnel ashore and aboard ships continuously improve, including preparing for emergencies.
- 2.53. Interislander, and the ship *Kaitaki*, held appropriate ISM Code certificates.

3 Analysis Tātaritanga

Introduction

- 3.1. The *Kaitaki* experienced a sudden, complete loss of electrical and propulsion power, with 784 passengers and 80 crew on board. Despite the vessel initially drifting towards shore, the crew's actions arrested the drift, re-established power and safely navigated the vessel back to port. The incident underscores the importance of effective emergency procedures and the role of experienced maritime professionals (on board and on shore) in mitigating maritime risks.
- 3.2. The following section analyses the circumstances surrounding the incident to identify factors that increased either the likelihood of the incident occurring or the severity of its outcome. It also examines any safety issues that could adversely affect future operations.
- 3.3. Other non-contributory safety issues that could adversely affect future operations are also discussed.

Rubber expansion joints

Safety issue 1: Rubber expansion joints (REJs) deteriorate over time, not only because of service conditions but also because of age, starting from the date of manufacture. Therefore, maintenance schedules must consider both the date of manufacture and the date of installation to ensure REJ reliability.

- 3.4. Ships' machinery comprises an increasingly sophisticated and complex network of components. Individual components must be designed, constructed, operated, maintained and replaced in a systematic manner to reduce the likelihood of unexpected failures.
- 3.5. The ISM Code requires ship operating companies to have an approved SMS. The SMS must, among other things, ensure that the operator identifies critical equipment and systems³¹ and puts in place 'specific measures aimed at promoting the reliability of such equipment or systems'.
- 3.6. In 2007, Interislander commissioned a Failure Mode and Effect Analysis (FMEA) of the *Kaitaki's* credible failure scenarios that could result in loss of control of the ship. FMEA is a risk analysis technique used to assess potential failures in a system and the equipment that makes up that system. FMEA information is vital for understanding how to prevent failure, promote reliability and respond when failure occurs.
- 3.7. The 2007 FMEA identified that the failure of an REJ (referred to variously as 'Rubber compensator' or 'donut' in the FMEA report) would lead to a loss of high-temperature cooling water pressure. The loss of pressure would result in:
 - uncontrolled shutdown of running main and auxiliary engines
 - electrical blackout.

³¹ ISM Code section 10.3 defines critical equipment and technical systems as those 'the sudden operational failure of which may result in hazardous situations'.

- 3.8. While there are varying recommendations from manufacturers, Interislander's FMEA recommended that 'rubber compensators (donuts) are changed irrespective of condition after 2 years' service'.
- 3.9. REJs begin to deteriorate from their date of manufacture. Over time, the rubber hardens and becomes more susceptible to cracking and delamination. The REJs associated with the engines' high-temperature cooling water system were a safety-critical component on board the *Kaitaki*. Replacing them in accordance with the manufacturer's instructions or FMEA recommendations is critical to ensure reliability.
- 3.10. The REJ that ruptured was installed on the *Kaitaki* in 2018 and had been in service for about five years. Date markings on the REJ indicate it was manufactured in 2005, making it around 18 years old. The nature of the failure of *Kaitaki*'s REJ, in particular cracking and delamination, was consistent with deterioration owing to age.
- 3.11. Had Interislander implemented the FMEA recommendations, most importantly replacing all REJs every two years, it is **very likely** that the reliability of the REJs would have been assured and this incident would have been avoided.
- 3.12. Following from this, it is essential that vessel operators establish an effective framework for risk assessment and subsequent risk reduction. This framework should include the identification and assessment of the unique risks associated with each vessel in their fleet, and the implementation of measures to mitigate those risks. These assessments and mitigations must explicitly consider several key factors:
 - the age of the vessel
 - adherence to contemporary best practices in ship design and operations
 - the severe environmental conditions routinely encountered in Cook Strait.

Safety management system

Safety issue 2: Interislander had not established and/or implemented processes in its safety management system to ensure that each ship's risks were assessed and mitigated so far as reasonably practicable. This resulted in the ship's engineers being unfamiliar with emergency responses associated with risks specific to the vessel.

Decision support system for the master

- 3.13. SOLAS³² requires passenger ships such as the *Kaitaki* to have a master's decision-support system on the navigation bridge. The decision-support system must consider all foreseeable emergency situations and provide master's with decision-support for handling any combination of emergency situations.
- 3.14. The *Kaitaki* had hard copies of its decision-support system on the navigation bridge and in the engine control room. The *Kaitaki*'s bridge team was generally familiar with this system and used it in drills and exercises.
- 3.15. Overall, with the assistance of the master's decision-support system, the master and bridge team responded appropriately and in a structured way to this emergency.

³² SOLAS Part 1 Chapter III Regulation 29 – Decision Support Systems for Masters of Passenger Ships

Decision-support system for the engineers

- 3.16. While the master and bridge team responded appropriately and in a structured way to this emergency, the engineering team's response to the power and propulsion failure was less structured. An engineer on board described the scene as 'Organised chaos, everybody was everywhere trying to do everything.' Various crew members attempted to restart the main engines and the auxiliary engines. The attempts may have been successful sooner if the response had been more structured and focused on stabilising the systems necessary to operate the auxiliary engine, restore power and then attempt to restore main propulsion.
- 3.17. A lack of communication further hampered the recovery efforts. When the first blackout occurred, several engineers were attempting to reset tripped circuit breakers by toggling them on and off. They were unaware that others were simultaneously trying to start the pumps locally, which required the circuit breakers to be on.
- 3.18. The master's decision-support system is one element of an emergency response plan; it is developed to assist the master and the bridge team and is mandatory under SOLAS regulations. There is no such requirement for engineers.
- 3.19. On board the *Kaitaki*, an engineers' decision-support system was included as an appendix to the master's decision-support system documentation and was available in the engine room. That documentation included descriptions of procedures developed by the previous owner to respond to the loss of high-temperature cooling water, as this was a known potential failure that had occurred twice before. The Commission found no evidence that the engineers were familiar with, or had implemented or exercised, the engineers' decision-support system to assist in managing engineering or machinery-related emergencies.
- 3.20. By not implementing the engineers' decision-support system, the engineers missed an opportunity to resolve the mechanical failure sooner. A more structured and well-exercised engineer's response would have **likely** resolved the mechanical failure and returned propulsion sooner. This would have been critical had the ship's anchors not arrested the drift towards the shore. Time was a crucial factor, and if the ship had not been arrested by its anchors, a very serious marine casualty³³ was **virtually certain**.
- 3.21. This incident highlights the need for effective implementation of a decision-support system to assist crew in responding to an emergency, like that required for the master and bridge team under SOLAS regulations.
- 3.22. The Commission has made a recommendation on decision-support systems for engineers.

Risk management of an ageing fleet

Safety issue 3: Management of risks associated with ageing Cook Strait ferries has not kept pace with the increasing risk. Implementing strategies to mitigate evolving risk is important to ensure the continued safe operation of ferries across the Cook Strait.

- 3.23. The ISM Code requires ship operating companies to establish a risk management system³⁴ for identifying and managing hazards. In addition to eliminating or

³³ Defined in the International Maritime Organization's (IMO's) Casualty Investigation Code as a total loss of the ship, a death or severe damage to the environment (International Maritime Organization, 2008).

³⁴ Systematic process of anticipating, evaluating, and addressing potential risks specific to maritime operations to safeguard personnel, the environment, vessels and cargo while ensuring effective operations.

preventing hazards from causing harm, risk management should also identify potential emergency scenarios specific to the vessel and assist in developing response processes. Risk management and other SMS elements must comply with regulations and consider applicable industry codes and standards. The SMS, including risk management processes, must continuously improve.³⁵

- 3.24. Risk assessment is the product of identified hazards' consequences, likelihood and exposure. In considering the evolving risk of a Cook Strait ferry grounding, the Commission noted:
- older passenger ferries do not benefit from the safety in design, residual damage stability or structural strength compared with newer ferries; the potential consequences of a grounding may be higher for an older ferry
 - older passenger ferries are more likely to suffer mechanical failure unless they are sufficiently maintained
 - In 2022, Interislander reported that it transports about 850,000 passengers, 240,000 cars and up to \$14 billion worth of freight annually.³⁶ These figures are forecast to increase, which means increasing exposure of passengers and freight to risk.
- 3.25. As described in the international standard for risk management ISO 31000 (Risk Management – Guidelines) risks can emerge, change or disappear as an organisation's context changes. As ships age, their machinery, equipment and systems become less reliable, increasing operational risk.
- 3.26. To manage changes in risk appropriately, operators must continuously improve their risk management practices. This includes preventive actions (such as regularly reviewing risk assessments), enhancing planned maintenance systems and mitigation actions (such as improving response planning, training and resourcing for maritime incidents like groundings).
- 3.27. Interislander had not reviewed its FMEA since its initial publication in 2007. In this case, the management of risks associated with ageing Cook Strait ferries had not kept pace with the increasing risk.
- 3.28. The Commission has made a recommendation to improve the management of risk associated with ageing ferries.

Safe return to port

- 3.29. The International Maritime Organization (IMO) recognises the difficulty of safely evacuating large numbers of ships' passengers, who often include the elderly and children, and the search and rescue challenge this presents.
- 3.30. SOLAS Chapter II-1 sets out minimum safety standards in the construction, equipment and operation of ships. Good passenger ship design, construction, maintenance and operation should be continuously improving to reduce the risk of a serious incident. Nevertheless, maritime incidents do occur. The likelihood of an incident increases as a ship ages and its reliability decreases, unless maintenance protocols and methodology develop with it.

³⁵ ISM Code section 1.2.2 requires an SMS to 'continuously improve safety management skills of personnel ashore and aboard ships, including preparing for emergencies related both to safety and environmental protection'.

³⁶ <https://www.interislander.co.nz/about/news-and-stories/interislander-celebrates-60-years-of-connecting-aotearoa-new-zealand>.

- 3.31. In 2000, the IMO began a comprehensive review of passenger ship safety with the aim of identifying opportunities to improve the way large passenger ships are designed and built. The review emphasised:
- prevention of a casualty from occurring in the first place
 - that future passenger ships are designed with improved survivability so that, during an incident, people can stay safely on board as the ship proceeds to port.
- 3.32. In 2006, the Maritime Safety Committee (MSC)³⁷ adopted a package of amendments to SOLAS, namely SOLAS Chapter II-2, Regulation 21 – Casualty threshold, safe return to port and safe areas (International Maritime Organization, 2006). The amendments apply to passenger ships constructed after 1 July 2010 that are over 120 metres in length. The purpose of this regulation is to establish design criteria for a ship's safe return to port under its own propulsion after an incident (specifically a fire), and to provide functional requirements and performance standards for safe areas.
- 3.33. During the safe return to port phase of an incident, people escape to a 'safe area' on board the ship. Safe areas are spaces where basic services such as food, water, sanitation, medical care, lighting and ventilation are available. The safe return to port principle requires that some essential systems are operational for three hours to support the 'orderly evacuation' of the vessel.
- 3.34. The *Kaitaki* was built in 1995, well before the 2010 application date, and therefore does not, nor is obligated to, comply with this regulation. Despite this, the master's response during the incident aligned with a principle of safe return to port to the extent achievable given the *Kaitaki's* design. Passengers were prepared for a potential evacuation but remained on board, reflecting a core tenet of safe return to port that prioritises keeping individuals on the ship unless it becomes demonstrably unsafe.
- 3.35. When assessing the introduction of ferries to the Cook Strait trade, consideration should be given to design, construction and operation that is consistent with the principles of safe return to port. The context of RoRo passenger ships operating in Cook Strait should be taken into account.

Escape, evacuation and rescue

- 3.36. Ferries such as the *Kaitaki* are designed to carry large numbers of passengers. In emergencies, the safe and efficient escape, evacuation and rescue of people are crucial to prevent harm and fatalities.
- 3.37. An Escape, Evacuation and Rescue Analysis (EERA) is a risk analysis methodology used to understand the best response options for major accidents on a ship. The objective of an EERA is to understand how passengers and crew escape the scene of an emergency, are evacuated from the ship and are rescued to a place of safety.
- 3.38. In 2016, the IMO issued the MSC.1/Circ.1533 revised guidelines on evacuation analysis for new and existing passenger ships (International Maritime Organization, 2016). These guidelines made evacuation analysis mandatory for RoRo passenger ships constructed on or after 1 July 1999, and for other passenger ships carrying more than 36 passengers constructed on or after 1 January 2020. Because the *Kaitaki* was

³⁷ The MSC deals with all matters related to maritime safety and maritime security that fall within the scope of the IMO, covering both passenger ships and all kinds of cargo ships. This includes updating the SOLAS Convention and related codes, such as those covering dangerous goods, life-saving appliances and fire safety systems.

built in 1995, four years before the SOLAS regulation threshold, it was not required to comply with these guidelines.

- 3.39. Furthermore, current maritime rules in New Zealand do not require compliance with these IMO guidelines. There is no evidence that MNZ has actively shared these guidelines with Interislander and other ferry operators in New Zealand.
- 3.40. While compliance was not mandatory for the *Kaitaki*, these guidelines represent best practice for ensuring passenger safety. On passenger vessels that do not comply with the guidelines, crew may not have undergone the rigorous analysis needed to understand and optimise escape, evacuation and rescue procedures in major accidents. In an emergency, the ship's systems and procedures for getting people to safety might not be as effective as they could be, potentially increasing the risk of harm or fatalities. Further, if a ship's watertight integrity is breached, the lack of a comprehensive EERA could make it more difficult to evacuate passengers and crew safely during an incident, increasing the risk of casualties.
- 3.41. Since the incident, Interislander has commissioned a second EERA and created an Emergency Towing Booklet for the *Kaitaki*. While Interislander has taken safety action, the Commission has made a recommendation to MNZ on this matter.

Emergency response

Safety issue 4: When New Zealand suffers a major maritime event involving the evacuation and rescue of a large number of people from a ship, an appropriate level of preparedness and coordination between agencies is required. A lack of continuous improvement and exercise of a mass rescue operation escalation plan reduces the likelihood that the response will be coordinated and effective.

- 3.42. This section examines the preparedness and coordination between agencies for the *Kaitaki* incident.
- 3.43. The United Nations Convention on the Law of the Sea, Article 98 places obligations on ship masters to render assistance. These obligations are expanded in SOLAS Chapter V Regulation 33 – Distress situations: obligations and procedures. Mayday is an IMO Standard Marine Communications Phrase.³⁸ All mariners and maritime regulators should be well acquainted with the critical importance of prompt action when receiving a distress message.
- 3.44. Historically, New Zealand suffers a major maritime incident roughly every 10 years. In 1968, the sinking of the inter-island ferry *Wahine* resulted in the loss of 51 lives and exposed critical vulnerabilities in maritime safety and emergency preparedness during severe weather conditions. More recently, the grounding and total loss of the container ship *MV Rena* in October 2011³⁹ resulted in widespread environmental pollution. It required complex salvage operations, highlighting ongoing vulnerabilities of our response systems.
- 3.45. To prepare for an effective response to an incident, all organisations that might be involved need a comprehensive understanding of their operational context, unique responsibilities, the scalability of available resources (both internal and whole-of-government) and legal obligations.

³⁸ IMO Resolution A.918(22).

³⁹ See Transport Accident Investigation Commission (2014) for details.

- 3.46. Preparation, planning, resourcing and response to maritime emergencies require a sound understanding of foreseeable maritime emergency scenarios. Preparedness relies on expert maritime support to understand the nature of the emergency and whether the response is adequate.

International planning frameworks

- 3.47. IMO and the International Civil Aviation Organization (ICAO) have produced the three-volume International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual for maritime and aviation search and rescue (International Maritime Organization and the International Civil Aviation Organization). The IAMSAR Manual provides a common aviation and maritime framework for organising SAR services. The IAMSAR Manual has three volumes:
- Volume I discusses the global SAR system framework of national and regional SAR systems and cooperation with neighbouring states
 - Volume II assists personnel to plan and coordinate SAR operations and exercises
 - Volume III helps personnel on board aircrafts and vessels with performance of SAR and on-scene coordinator functions.
- 3.48. The International Maritime Rescue Federation (IMRF)⁴⁰ has published summary guidance on Mass Rescue Operations (International Maritime Rescue Federation, 2022, updated 2025). The IMRF's guidance supports the information included in the IAMSAR Manual about a consistent international Mass Rescue Operations (MRO) response.

New Zealand planning frameworks

- 3.49. Once passengers and crew have been evacuated from a ship, the master has much less control over the situation. The success of a rescue operation relies on external assistance and the effectiveness of New Zealand's maritime response framework.
- 3.50. The CIMS is New Zealand's national response framework. The purpose of CIMS is to enable New Zealand to respond effectively to a broad range of incidents, including mass rescue. It aims for coordination across functions and organisations by:
- establishing a common structure, functions and terminology
 - tailoring the framework to specific circumstances
 - allowing organisations to develop their CIMS-aligned processes and procedures
 - taking into account each organisation's unique responsibilities, resources and legislative authority. (Officials' Committee for Domestic and External Security, Department of the Prime Minister and Cabinet, 2019)
- 3.51. However, CIMS does not provide a detailed blueprint for executing a maritime emergency response, as that is not its purpose. Maritime emergencies often involve unique challenges, such as the requirement for personnel with incident management

⁴⁰ An international non-government organisation that supports SAR organisations to develop and improve maritime SAR capacity worldwide. It does this by providing guidance, facilitating training, and enabling SAR providers to share knowledge and expertise between members across the IMRF community. Its work is vital to raising standards and improving overall global SAR capability.

skills, specialised teams, technical knowledge of vessel operations and salvage, and an understanding of the complexities of the maritime environment.

- 3.52. If the *Kaitaki* had grounded, the master would have required external assistance. This assistance would have involved moving people from the ship to a place of safety ashore, as well as conducting salvage operations and responding to any pollution outcomes. To do this successfully, external assistance providers need to have a shared mental model of the nature of the assistance required and how it would be provided. At the time of the incident there was a lack of common understanding and coordination among the various stakeholders. Additionally, there was limited capability to carry out this operation safely in the prevailing severe weather conditions, close to a rugged shoreline with large breaking waves.

Maritime New Zealand's Incident Readiness and Response Strategy

- 3.53. Maritime New Zealand developed the MIRRS and MIRT structures in response to the Murdoch Report.⁴¹ During the *Kaitaki* incident, RCCNZ notified the duty controller of the ship's incapacitation, which qualified as a major incident using MNZ's definitions. The duty controller made an assessment that a MIRT was not required. When the Director became aware of the event, they made the decision not to establish the MIRT as the response was underway and the engines were re-engaged.

Harbour master

- 3.54. Beacon Hill Signal Station (Beacon Hill) had listened to a VHF radio conversation between the ferries *Aratere* and *Kaitaki* about the developing situation. Beacon Hill understood the seriousness of the situation and alerted the Wellington Harbour Master. The harbour master then alerted CentrePort and continued to monitor the unfolding situation from Beacon Hill, delegating their deputy to liaise with CentrePort.
- 3.55. The Police and RCCNZ are the only two legally constituted authorities with responsibility for maritime search and rescue coordination in New Zealand. However, the harbour master plays an important role in coordinating and contributing to any emergency response effort within their port area. Their responsibilities in such an event may include:
- acting as the point of contact and liaising with emergency services, at least at the initial stages of the incident
 - maintaining focus on navigational safety throughout the incident
 - overseeing any necessary pollution-control measures.
- 3.56. While the harbour master was in contact with various agencies throughout the incident, including Interislander's Designated Person Ashore,⁴² it was unclear how they were integrated into the incident's overall response structure. It is important the harbour master's role in a major maritime incident, such as a grounding or collision, is adequately defined and understood by all stakeholders responding to the incident.

⁴¹ An independent review into MNZ's response to the *MV Rena* incident on 5 October 2011 (Murdoch, 2013).

⁴² The Designated Person Ashore plays a vital role in monitoring the safety and pollution-prevention aspects of the vessel operation and is responsible for following the requirements of a safety management system and all mandatory guidelines.

The New Zealand Police

- 3.57. Police maintain emergency response plans for maritime incidents and regularly participate in interagency exercises, including those involving mass rescue scenarios.
- 3.58. Police personnel involved in maritime operations received specific training in:
- on-scene coordinator responsibilities
 - search and rescue operations
 - the CIMS.
- 3.59. The Police Coastal Master of the Wellington Police Maritime Unit (WPMU) recalled being notified of the incident by the harbour master. The WPMU launched the *Lady Elizabeth IV* (see Figure 9) as soon as a fourth crew member was on board. They noticed that the two tugs were also making their way to sea.
- 3.60. Shortly after the *Kaitaki's* master declared Mayday, RCCNZ declared the incident a Category II response. RCCNZ takes the lead in Category II responses, with Police making the WPMU launch available as an asset for RCCNZ's use.



Figure 9: Wellington Police Maritime Unit launch, *Lady Elizabeth IV*, in the Cook Strait
(Credit: Kevin Templeton)

- 3.61. When selecting an on-scene coordinator it is important for SAR coordinators to consider the operational profile of all available assets. The Police Coastal Master was appointed on-scene coordinator by RCCNZ. The WPMU launch, *Lady Elizabeth IV*, was purpose-built for Cook Strait operations and well-equipped for SAR, but experienced challenging environmental conditions on the day of the incident.
- 3.62. The Interislander ferry, *Aratere*, also responded to the Mayday and was stationed about 1.3 nautical miles (NM) southwest of the *Kaitaki*. The *Aratere* master was

qualified and available to undertake the task of on-scene coordinator. The *Aratere* would have been a stable platform with a large crew resource available to assist in that role.

CentrePort

- 3.63. CentrePort first became aware of the evolving emergency when the harbour master contacted the port's marine manager. Recognising the seriousness of the situation, the marine manager and the CentrePort chief executive officer worked through the relevant issues together before contacting the tugs, confirming both tugs were fully manned for extended operations (four crew each), and sent them to the incident.
- 3.64. CentrePort controlled the two tugs. It confirmed to the Commission that the tugs had limited capacity for rescue and were unsuitable for towing outside harbour limits⁴³ in the prevailing conditions on the day.

RCCNZ's Mass Rescue Operations Escalation Plan

- 3.65. RCCNZ has a Mass Rescue Operations (MRO) Escalation Plan. It defines an MRO as one requiring immediate assistance for large numbers of people in distress and needing more capabilities than are normally available to SAR authorities.
- 3.66. Given the MRO Escalation Plan is part of the MIRRS, the Commission considers that review of the MRO Escalation Plan should be conducted as part of the scheduled MIRRS update. This should be done by MNZ working jointly with the Ministry of Transport. Together, they should develop an enduring Emergency Offshore Response Capability and operating model with a corresponding interagency and stakeholder periodic exercise programme. The Commission has made a recommendation on this matter (see Section 6).

Interagency drills and exercises

- 3.67. SOLAS Chapter V Regulation 7 states:

Passenger ships to which chapter I applies shall have on board a plan for co-operation with appropriate search and rescue services in the event of an emergency. The plan shall be developed in co-operation between the ship, the company, as defined in regulation IX/1, and the search and rescue services. The plan shall include provisions for periodic exercises to be undertaken to test its effectiveness. The plan shall be developed based on the guidelines developed by the Organization.

- 3.68. The IMRF states that 'Preparing for MROs necessitates inclusive planning, clear role definitions, and joint training among all parties involved, not merely authorities. Risk assessments must be continuous, with planners identifying vulnerabilities and addressing deficiencies in personnel and equipment. Plans should remain adaptable and undergo regular reviews and tests.'⁴⁴
- 3.69. It was unclear whether the drills or exercises periodically undertaken by Interislander and RCCNZ tested the effectiveness of their emergency response plans' interactions as required by SOLAS Chapter V Regulation 7.

⁴³ The *Kaitaki* incident occurred outside the harbour limits.

⁴⁴ <https://www.international-maritime-rescue.org/news/when-every-second-counts-the-imrf-launches-its-updated-mro-guidance-for-maritime-mass-rescue>

- 3.70. Interislander has conducted drills on an ad hoc basis to assess their preparedness for emergencies such as fires, abandon ship or man overboard situations. However, there appear to be shortcomings in several areas when assessed against the requirements of SOLAS Chapter V, Regulation 7 and Maritime Rules Part 23 – Operating procedures and training. These regulations mandate cooperation with search and rescue services (RCCNZ) in the form of a plan that includes periodic exercises to test its effectiveness.
- 3.71. Interislander has conducted 11 exercises over the past 10 years, with three involving RCCNZ. Records show that Interislander and RCCNZ conducted various joint workshops, but they did not fulfil the specific requirements for SAR exercises under SOLAS Chapter V, Regulation 7; they lack the practical, on-site elements necessary to adequately test the cooperation plan and its effectiveness in a real-world scenario.
- 3.72. Nationally, there is a need to ensure maritime response coordination and integration is at an appropriate level at all ports in New Zealand. The Commission considers that more needs to be done to ensure all parties involved in an incident response have a common understanding of the response plan and their role in it, and that they are ready to execute it. The Commission considers it is important that MNZ updates the MIRRS to provide a structured system of continuous improvement to assure that all lessons from maritime incidents are captured.
- 3.73. The Commission has made a recommendation to address this safety issue (see Section 6).

Maritime Incident Response Team

Safety issue 5: Duty controllers require access to specialised maritime subject matter expertise. They also need decision-making processes to be able to respond effectively to maritime incidents.

The Maritime Incident Readiness and Response Strategy (MIRRS)

- 3.74. In March 2013, an independent review of Maritime NZ's response to the MV *Rena* incident on 5 October 2011 (Murdoch, 2013) was published. Following this review, MNZ developed the MIRRS. This MIRRS has been refreshed four times between 2015 and 2022, incorporating lessons from exercises and incident reviews, as well as keeping alignment with CIMS updates. The MIRRS sets the strategic intent and direction for how MNZ maintains and enhances its readiness for effective response to an incident. It defines what MNZ's role is as a national regulatory response agency. MIRRS supports the development of an integrated emergency response involving:
- the MIRT
 - the Marine Pollution Response Service (MPRS), which manages oil spills
 - Maritime Incident Readiness and Response (MIRR), formed in 2019 to work with MIRT, improving response capability to other maritime incidents
 - RCCNZ, which manages the search and rescue response.

Maritime Incident Response Team (MIRT)

- 3.75. MIRRS requires the Director of MNZ to establish the MIRT in response to information received from the duty controller of any significant or major maritime incident, such

as that involving the *Kaitaki*. MIRRS also requires the MIRT to have Standard Operating Procedures for mobilisation and demobilisation of an incident response.

- 3.76. Maritime New Zealand has advised the Commission that the key competencies of a duty controller include that they:
- are trained in the CIMS framework
 - are trained in the MIRRS, response plans, processes, role cards and mobilisation steps
 - hold the right personality attributes and exercise sound judgement.
- 3.77. The MIRRS identifies that the MIRT controller appointed by the Director leads the MIRT function in a mass rescue operation involving a ferry or cruise ship.
- 3.78. The MIRT structure is aligned with CIMS but also includes investigation and salvage functions.

The MIRT response to the *Kaitaki* incident

- 3.79. The RCCNZ promptly notified the duty controller of the *Kaitaki's* incapacitation, and the duty controller responded and went out to RCCNZ. The duty controller advised the Commission that having appraised the situation, they saw only two possible outcomes:
- the ship would make it safely into port
 - the ship would not make it into port, necessitating a rescue operation.
- 3.80. The duty controller stated that if the situation deteriorated to a mass rescue, there was time to bring in more people and grow the response.
- 3.81. While the MIRT was not established, a number of MNZ staff informally fulfilled some of the functions of the MIRT roles to help support the response.
- 3.82. The incident was ongoing and there was no certainty that there would not be another incident as the *Kaitaki* attempted to return to port over the next 3 hours and 2 minutes. In fact, as the vessel was passing Wellington Heads on its return to port, a gearbox connected to the port-side main engine developed a fault, disabling propulsion power on that side. The issue was resolved when a standby main engine restored propulsion power to the port side. The *Kaitaki* master kept the passengers and crew at emergency muster stations until the ship was within harbour limits.
- 3.83. The formal establishment of the MIRT (even after the engines were re-engaged) would have resulted in the Director appointing a MIRT controller, who then would have mobilised the MIRT to support the response to the incident in the following ways:
- establish a dedicated team, with clear roles and responsibilities, to gather information to support the incident controller (being the MIRT controller)
 - share information with the Director of MNZ to keep them fully informed throughout
 - arrange additional staff to support the RCCNZ if needed
 - identify and source available resources to support the response.

- 3.84. The MIRT controller has the delegated powers of the Director of MNZ to intervene if insufficient and inappropriate actions occur (for example, to issue instructions to vessels of convenience to take specific action).
- 3.85. A not-under-command⁴⁵ passenger ship, close to a lee shore in a gale, with 864 passengers and crew on board would be considered a major maritime incident. It would require the establishment of a MIRT because of the following factors:
- severe risk of grounding or allision⁴⁶ with rocks
 - potential for catastrophic vessel damage
 - high probability of significant loss of life
 - extremely challenging and dangerous rescue and evacuation conditions
 - substantial risk of large-scale oil pollution.
- 3.86. The MIRT is a response structure rather than a standing team. The process to establish the MIRT takes time as each member of the MIRT is identified and contacted, then brought together.
- 3.87. Establishing the MIRT at the earliest opportunity facilitates the efficient and effective management of aspects of a significant or major maritime incident (including rescue, environmental protection and salvage) by keeping the Director of MNZ fully informed. While RCCNZ continued leading the search and rescue response until the *Kaitaki* was berthed alongside, not establishing the MIRT would have affected MNZ's ability to respond promptly, had the situation escalated further.
- 3.88. The Commission considers the duty controller role would benefit from the holder having a decision-making process to guide them, as well as timely access to expert maritime advice, so they can promptly respond to a significant or major incident.

Post-incident debriefs

- 3.89. New Zealand's capability to respond to a major maritime incident has improved since the *MV Rena* grounding, which led to the creation of the MIRT structure. However, there are opportunities to learn from each maritime incident, including the near grounding of the *Kaitaki*.
- 3.90. Maritime New Zealand planned and conducted a series of internal debriefs, as well as external meetings with other agencies and the operator, to review what occurred on the day of the incident. The debriefs identified what went well and what could have been done better. Several safety actions resulted from those debriefs.
- 3.91. MNZ informed the Commission of the following *Kaitaki* debriefs:

Date	Activity
31 January 2023	Executive Leadership Team debrief
23 February 2023	Debrief <i>Kaitaki</i> and <i>Maersk</i> events meeting
3 April 2023	Incident Controller Catch-up and debrief
6 April 2023	<i>Kaitaki</i> mayday call debrief at RCCNZ (multi-agency)

⁴⁵ The Convention on the International Regulations for Preventing Collisions at Sea (1972) defines the term 'vessel not under command' as meaning a vessel which, through some exceptional circumstance, is unable to manoeuvre and is therefore unable to keep out of the way of another vessel.

⁴⁶ In which a moving vessel strikes a stationary object, such as rocks.

- 3.92. Lessons regarding the MIRT were identified via these debriefs. From the evidence provided to the commission, the only debrief that specifically addressed the role of the incident controllers in the *Kaitaki* event was the 'Incident Controller catch-up'. This was a one-hour regular meeting, and one of the seven agenda items was 'Update post *Kaitaki/Maersk* debrief', which combined the debriefs of the two incidents and included two discussion prompts: out-of-hours guidelines, and MIRR refresh.
- 3.93. The Incident Controller catch-up meeting notes showed the discussion focused on the initial notification process and the lessons to be taken from that. The notes also demonstrated that they considered the incident was largely resolved when the *Kaitaki* engines were re-engaged. As discussed in previous sections of this report, the risk of a catastrophic outcome remained significant until such time as the vessel was safely berthed.
- 3.94. The MIRT is an important response structure for MNZ that assures effectiveness for its overall response to a significant maritime casualty. The MIRT system has not been established frequently because of the extraordinary nature of the conditions that trigger it. Further, the people filling the various roles are required to execute procedures and responsibilities that are different from their normal working roles.
- 3.95. Because of the importance of the role of the MIRT and its infrequent deployment, any opportunities to identify lessons should be maximised by a robust post-incident debrief.
- 3.96. A structured debrief process would methodically analyse each stage of the MIRT process and could uncover additional lessons.

Emergency towage and salvage

Safety issue 6: New Zealand does not have sufficient, readily available emergency towage and salvage capability to adequately manage the foreseeable risk of a ship becoming disabled and escalating to a marine casualty with consequential fatalities or serious harm and/or serious harm to the environment.

- 3.97. At 1636, when the *Kaitaki* lost all power, the wind was blowing from the south at about 38 kt, gusting to 48 kt, and there was a 2.0–2.5 m southerly swell. The weather was severe but not uncommon in Cook Strait, one of the roughest sea areas in the world (Maritime New Zealand, 2018)
- 3.98. The ship lying off a lee shore meant that the prevailing weather was pushing the ship towards the shore. The ship's bridge team estimated it would have run aground in 12 minutes, if the anchors had not arrested the drift.
- 3.99. The actual and forecast wind, seas and currents significantly increased the complexity of evacuating passengers and crew from the ship, if needed. The calculated time for low tide was 1747, which meant that the current was expected to change.⁴⁷ This would have changed the external environmental forces and **about as likely as not** affected the way the anchors were holding the ship.

⁴⁷ Land Information New Zealand notes, 'The tidal streams in and around Cook Strait are unreliable and mariners are warned to exercise every precaution when navigating in the vicinity.'

- 3.100. Severe weather also increased the complexity of safely securing the two harbour tugs for an emergency tow. Moreover, had the tugs been made fast and attempted to tow the vessel from danger, it is **very likely** to have resulted in a secondary incident. This is because:
- the *Kaitaki* and tug crews' training did not include emergency towage using the harbour tugs
 - the harbour tugs were not designed, constructed, equipped or certified for ocean emergency towage
 - the *Kaitaki*'s bitts⁴⁸ had a lower maximum breaking strength compared with the tug ropes, which could have resulted in the bitts on the vessel failing before the parting of the towline.
- 3.101. Unlike other nations, including Australia, the United States and many European states, New Zealand doesn't have dedicated emergency towage capability. The need for this capability has been previously reviewed by the government, and again as a result of this incident.
- 3.102. Newer ferries, built after 2010 to the latest standards, may to some extent mitigate New Zealand's current lack of emergency towage capability available at short notice in Cook Strait.
- 3.103. CentrePort has two harbour tugs (see Figure 10) that are ideally suited for their tasks: primarily the safe berthing, unberthing and manoeuvring of ships within the port. The ports of Picton and Nelson, on the other side of Cook Strait, are similarly equipped with harbour tugs.
- 3.104. Harbour tugs lack the characteristics required of an emergency towage vessel. Nonetheless, CentrePort, appreciating the seriousness of this evolving incident, directed both tugs to the *Kaitaki* to offer any assistance they could safely provide.



Figure 10: Wellington harbour tugs *Tiaki* (left) and *Tapuhi* (right)
(Credit: CentrePort Limited)

- 3.105. In New Zealand, the most capable tugs with the most appropriately trained crews have operated offshore Taranaki, supporting the oil and gas industry. The capability and number of offshore support vessels (OSVs) in New Zealand have depended on oil and gas activity. The enduring downturn of this industry has reduced the capability and number of OSVs in New Zealand.

⁴⁸ Mooring points on board a vessel.

- 3.106. The lack of local emergency towage and salvage capability has been well understood for many years. Several studies have examined this issue, all reaching the same conclusion: the potential response to hazards that require emergency towage, or salvage, should be commensurate with the risk, and appropriate to the evolving risk context.
- 3.107. The Commission has made a recommendation about towage and salvage (see Section 6).

4 Findings

Ngā kitenga

- 4.1. The safety-critical REJs associated with the engines' high-temperature water cooling system were not replaced after two years of service, in accordance with the recommendations in the Interislander's FMEA. The REJ that failed had been in service for at least five years and was approximately 18 years old.
- 4.2. Had Interislander implemented the FMEA recommendations, most importantly replacing all REJs every two years, it is **very likely** that the reliability of the REJs would have been assured.
- 4.3. Overall, with the assistance of the master's decision-support system, the master and bridge team responded appropriately and in a structured way to this emergency.
- 4.4. The Commission found no evidence that the engineers were familiar with, or had implemented or exercised, the decision-support system to assist in managing engineering or machinery-related emergencies.
- 4.5. A more structured and well-exercised engineer's response would have **likely** resolved the mechanical failure and returned propulsion sooner. This would have been critical had the ship's anchors not arrested the drift towards the shore.
- 4.6. Time was critical, and if the ship had not been arrested by its anchors, a very serious marine casualty was **virtually certain**.
- 4.7. The actual and forecast wind, seas and currents significantly increased the complexity of evacuating passengers and crew from the ship, if needed. The calculated time for low tide was 1747, which meant that the current was expected to change. This would have changed the external environmental forces and **about as likely as not** affected the way the anchors were holding the ship.
- 4.8. Interislander's management of risks associated with ageing Cook Strait ferries has not kept pace with the increasing risk of an ageing fleet in the hostile Cook Strait environment.
- 4.9. While the harbour master was in contact with various agencies throughout the incident, it was unclear how they were integrated into the incident's overall response structure.
- 4.10. Had the tugs been made fast and attempted to tow the vessel from danger, it is **very likely** to have resulted in a secondary incident.
- 4.11. The *Kaitaki* was built in 1995. Since then, passenger ship designs have evolved to improve survivability. Most notable is the concept that emergency response planning should consider the 'ship is its own best lifeboat'. The *Kaitaki* does not benefit from some of these design improvements; however, the Interislander's emergency response procedures do reflect that the 'ship is its own best lifeboat' and that evacuation is a last resort.
- 4.12. Any ferry introduced to the Cook Strait trade should be designed, constructed and operated consistent with safe return to port principles. Any selection of a Cook Strait ferry should consider the specific risk context of RoRo passenger ships operating in this hostile environment.

- 4.13. While RCCNZ continued leading the search and rescue response until the *Kaitaki* was berthed alongside, not establishing the MIRT would have affected MNZ's ability to respond promptly, had the situation escalated further.
- 4.14. New Zealand's capability to respond to a major maritime incident has improved since the *MV Rena* grounding, which led to the creation of the MIRT structure.
- 4.15. The joint workshops held by Interislander with RCCNZ, while valuable, did not fulfil the specific requirements for SAR exercises under SOLAS Chapter V, Regulation 7. This is because they lacked the practical on-site elements necessary to adequately test the cooperation plan and its effectiveness in a real-world scenario.
- 4.16. At the time of the incident, although it was clear that RCCNZ was leading the maritime mass rescue operation, there was a lack of common understanding and coordination among the various stakeholders. There was limited capability to carry out this operation safely in the prevailing severe weather conditions, close to a rugged shoreline with large breaking waves.

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.

Safety issue 1: Rubber expansion joints (REJs) deteriorate over time, not only because of service conditions but also because of age, starting from the date of manufacture. Therefore, maintenance schedules must consider both the date of manufacture and the date of installation to ensure REJ reliability.

- 5.3. On 5 May 2023, the Commission published a preliminary report (Transport Accident Investigation Commission, 2023), making the following recommendations to MNZ to address this issue:

To require KiwiRail to provide evidence to Maritime NZ's satisfaction that safety-critical rubber expansion joints onboard all vessels within KiwiRail's Interislander fleet are fit for purpose, taking into account the manufacturer's guidance, namely:

- they should be no older than eight months from the date of manufacture when installed
- they are inspected annually, including visual, tactile and hardness measurements
- regardless of inspection findings, safety-critical REJs should be replaced after five years. (008/23).

To alert all vessel operators using rubber expansion joints within a vessel's safety-critical system to the importance of taking into account the date of manufacture, in addition to the time in service, in their maintenance schedules to ensure they are fit for purpose. (009/23).

- 5.4. On 1 May 2023, the Commission gave notice to KiwiRail of the recommendation.
- 5.5. On 3 May 2023, MNZ replied:

We write to you in response to the Final recommendation MO-2023-201: Passenger Vessel, Kaitaki loss of power, Cook Strait, New Zealand 28 January 2023 notifying Maritime NZ of the final shape of recommendation's 008/23 and 009/23 to be included in your report. Maritime NZ accepts the final recommendation 008/23 and 009/23; as outlined in your letter.

- 5.6. KiwiRail has taken the following safety action to address this issue:
 - reviewed planned maintenance programmes
 - identified all REJs in place
 - replaced all of these sources of single point failures.

- 5.7. The Commission acknowledges that MNZ and KiwiRail have taken safety action in response to the preliminary report recommendations (008/23) and (009/23). The Commission has not reissued the preliminary recommendations.

Safety issue 2: Interislander had not established and/or implemented processes in its safety management system to ensure that each ship's risks were assessed and mitigated so far as reasonably practicable. This resulted in the ship's engineers being unfamiliar with emergency responses associated with risks specific to the vessel.

- 5.8. On 28 July 2025, KiwiRail informed the Commission that the following safety action had been taken:

Failure Modes Effects and Criticality Analysis (FMECA). In March 2023, Interislander commissioned DNV to undertake a holistic assessment of the ships and maintenance practices. This was done in two phases with Phase 1 and 2 completed in series.

Phase 1 – a targeted look across the three ships' systems to identify the criticality and level of redundancy of components in systems relating to propulsion, steering, cargo and mooring⁴⁹ operations, electric power generation and distribution, navigation, heeling system, and fire main and fire detection systems:

- Using a Failure Modes Effects and Criticality Analysis (FMECA) approach 790 risk assessments were undertaken across 34 systems in each of the three vessels.
- It created a matrix of critical systems and their components, graded their level of risk and impacts against baselined international criteria. This provided a solid understanding of the risk profile of each vessel and was the foundation for Phase 2.

Phase 2 – an analysis of maintenance actions undertaken throughout the life of each ship, including reviewing the Interislander planned maintenance and procurement system (AMOS) and analysis of its records and spare parts for the identified critical systems and equipment. From the combined results of Phases 1 and 2, Interislander technical managers were able to:

- Recommend configuration or design changes to ship systems (eg, adding additional pipes, valves or sensors to cooling systems) that could provide better early warning of technical issues, enhance system redundancy or provide the ability to better recover from a system outage. These changes will be implemented for each vessel at its next dry dock (Kaitaki – August 2024, Aratere – March 2025, and Kaiarahi – expected mid-2026).
- Review planned maintenance tasks and add new tasks into the asset maintenance system.
- Review spare parts inventories in each ship and in stores. In particular, we were able to identify where spares to support critical systems were missing and made improvements to inventory holding processes. This work is continuing.

All observations and recommendations from DNV for phases 1 and 2 have subsequently been implemented by Interislander.

Risk Management. Following the FMECA study, Beca was commissioned to convert the raw DNV findings into BowTie® format to enhance the usability of the data and assist with both visualising the relationship between hazards,

⁴⁹ A procedure to make fast the ship with a fixed or a floating object (such as a jetty, pier, ship, barge or buoy)

threats, consequences, and barriers (controls and mitigations). The aim of this work was to identify what controls exist and highlight where controls are either missing or not fully effective and therefore require further refinement. To do this they conducted workshops with Interislander subject matter experts to validate the DNV findings, identify or derive practical asset controls and then rate the effectiveness of those controls. This was conducted in Aug–Sep 2024. The resulting diagrams for the three ships are now loaded and being actively updated into the recently purchased BowTie® software. Additionally, the results have been incorporated in the ship asset management plans.

- 5.9. On 11 December 2025, KiwiRail informed the Commission that it was developing an updated engineer decision support system, focusing on contingency procedures for engine room emergencies.
- 5.10. The Commission welcomes the safety action being taken. However, as this action has not yet been completed, the safety issue remains, and the Commission has made a recommendation in Section 6 to address this issue.

Safety issue 3: Management of risks associated with ageing Cook Strait ferries has not kept pace with the increasing risk. Implementing strategies to mitigate evolving risk is important to ensure the continued safe operation of ferries across the Cook Strait.

- 5.11. On 28 July 2025, MNZ informed the Commission that:

Maritime NZ already encourages operators to conduct and regularly review Escape, Evacuation and Rescue Analyses. Inspectors regularly assess the crew's ability to respond effectively to on board emergencies such as fire, abandon ship, and other emergency scenarios during Flag State Inspections & also ISM audits. As part of these processes, Maritime NZ inspectors assess a vessel's real-time operational readiness by observing emergency drills, including shipboard and ship-to-shore scenarios, and by verifying drill records, procedures, and crew competence in line with national and international requirements.

These assessments cover critical aspects of emergency preparedness, including communication protocols, mustering, familiarity with equipment & systems, and, where appropriate, the physical launching of survival craft. The objective is to confirm that emergency response systems are functional, effective, and well understood.

Options to manage non-compliance range from education, issuing non-conformities to requiring drills to be repeated under supervision through to detention. In more serious cases, vessels may be detained until deficiencies are addressed. Through our inspections and audits, Maritime NZ has directed operators to review and strengthen their emergency procedures, and in some cases, required drills to be repeated under supervision until they met the expected standard of compliance. We can provide further information on times when we have done this.

However, while the Circular does not apply to older vessels, we will consider what other information within this circular may be useful, and not be widely available, and if needed work to promulgate this information to ferry operators.

- 5.12. Since the incident, the harbour master has issued a direction that routes the Cook Strait ferries further off the South Coast in certain southerly conditions, allowing more time for disabled ships to make repairs, for assistance to be provided, or for shore-based response plans to be instigated.

- 5.13. The harbour master, in conjunction with CentrePort, has made recommendations to Cook Strait ferry operators to have emergency tow lines available on board their ships that may be deployed from a dead ship to any towing vessel of opportunity.
- 5.14. While the Commission acknowledges the work being done by MNZ, the promulgation of the IMO MSC. 1/Circ. 1533 and availability of associated guidelines would encourage consistent best practice across the industry. As this safety issue remains, the Commission has made a recommendation in Section 6 to address this issue.

Safety issue 4: When New Zealand suffers a major maritime event involving the evacuation and rescue of a large number of people from a ship, an appropriate level of preparedness and coordination between agencies is required. A lack of continuous improvement and exercise of a mass rescue operation escalation plan reduces the likelihood that the response will be coordinated and effective.

- 5.15. On 25 July 2025, the Ministry of Transport informed the Commission that it was engaged with MNZ's work programme to refresh the Maritime Incident Readiness and Response Strategy. The Ministry also stated that it was engaging at a strategic level with MNZ, and the other Crown transport agencies, in ensuring readiness for any major transport incident. In consultation with the sector, the Ministry of Transport prepared the 'Guide to Transport Emergency Management for Aotearoa New Zealand'. The Ministry will continue to review and update this, ensuring it aligns with any national-level system improvements established by initiatives under 'Strengthening Emergency Management: a roadmap for investment and implementation' (New Zealand Government, 2025), announced by the Minister of Emergency Management and Recovery on 27 June 2025, and the Emergency Management Bill (No. 2).
- 5.16. On 28 July 2025, MNZ informed the Commission that:
 - Following the *Kaitaki* incident, we undertook an exercise series, which involved our plans being tested at both the national and regional levels alongside all key SAR sector partners.
 - We reinforce readiness by decision making training (a bespoke course delivered by specialist external trainers in two two-day courses in May)
 - We now undertake regular (weekly or fortnightly) initiation and escalation exercises across Maritime NZ responses, sometimes involving key partners.
 - All SAROs are trained on MROs and the recently completed (completed 18 July 2025) 13 Week SARO course includes modules and exercises focused on MROs and CIMS.
 - Our operating standards have, or continue to evolve, such as in 2024 with the adoption of a new SAR aviation standard to ensure consistent approach for all helicopter operators.
 - There has been the formation of a Cook Strait working group whereby Maritime NZ leads multi-agency and operator table top and practical exercises to ensure the response model is understood by all stakeholders in the region. This includes NZ Police, port representatives, Harbourmasters, WREMO, ferry operators, RCCNZ and representatives from the MIRT.
- 5.17. In the Commission's view, the safety action taken has addressed the safety issue. Therefore, the Commission has not made a recommendation.

Safety issue 5: Duty controllers require access to specialised maritime subject matter expertise. They also need decision-making processes to be able to respond effectively to maritime incidents.

5.18. On 13 October 2025, MNZ confirmed to the Commission that since the *Kaitaki* incident it has:

- Further strengthened the initiation and mobilisation phase of a response, including exercising it fortnightly, to minimise the risk that under pressure Duty Controllers, or others, do not follow procedures and processes;
- Implemented the use of the Signal app, with a pre-populated group of recipients so that contacts for key response functions receive early and instant messaging about an event initiating at the same time.
- Clarified that the Duty Senior Manager is not part of the process.
- Updated Maritime Response Model and associated processes, procedures and role cards.
- The updated Maritime Response Lessons Management Policy and Procedure.
- Alignment and updating with the latest DPMC national security risk register and exercise programme.
- The interim EORC model, operating procedures and SOPs, including the Cook Strait working group.

5.19. Maritime New Zealand also informed the Commission that it is revising the MIRRS and the plans under it to include:

- An updated environmental scan and risk assessment to inform goals and outcomes.
- Port of refuge approach for New Zealand.
- Updating the Mass Rescue Operations Plan.
- Ensuring there are robust plans and exercises for key risk areas around our coast, working with Regional Councils, Ports, communities/iwi and other agencies (these plans will consider not just mass rescue, but oil pollution response and other maritime incident response elements).

5.20. On 12 December 2025, MNZ informed the Commission that:

Post this incident we have further formalised our de-brief and lessons capture processes as we look to continually improve. The evolution of Maritime NZ's lessons management process follows the OILL (observation, insight, lessons identified, lessons learned) approach which is largely recognised as best practice in response and emergency management communities.

5.21. KiwiRail informed the Commission that it had formulated a revised drill plan. In September 2025, KiwiRail coordinated Operation SLIDECLEAR, a comprehensive emergency preparedness exercise involving MNZ, RCCNZ, Police, Wellington Harbour Master, Wellington Region Emergency Management Office (WREMO), CentrePort, Coastguard Tautiaki Moana and Wellington City Council. KiwiRail plans to build upon

this and collaborate with MNZ to develop, and then implement, a wider maritime incident response strategy assessment.

- 5.22. In the Commission's view, the safety action taken has addressed the safety issue. Therefore, the Commission has not made a recommendation.

Safety issue 6: New Zealand does not have sufficient, readily available emergency towage and salvage capability to adequately manage the foreseeable risk of a ship becoming disabled and escalating to a marine casualty with consequential fatalities or serious harm and/or serious harm to the environment.

- 5.23. Maritime New Zealand had informed the Commission during its investigation that it has a maritime incident response strategy. It has previously done work on risk assessment relating to serious marine casualties, and the level of salvage and rescue capability needed and available. However, it agrees this work could be strengthened and updated. It is already undertaking work as outlined below.

- Responded to a number of earlier findings in relation to SAR responsibilities, in particular mass rescue, following TC Gabrielle, the response to the Kaitaki loss of propulsion incident in 2023, and through the TAIC recommendations associated with the Enchanter boating tragedy. This has resulted in establishing a new Major SAR Incident Plan (that has now been validated and exercised), the completion of the first set of SAR focused aviation standards and the establishment of new SOPs between MNZ and NZ Police to better facilitate mutual advice and support for complex SAR scenarios.
- Undergone significant refresh under the Te Korowai o Kaitiakitanga Organisational Strategy of our response functions. Changes have enabled a broader, and more integrated focus on readiness and response planning and coordination and the benefits have been seen in events like the Manahau.

As part of our Maritime Incident Readiness and Response Harm Prevention Programme we are currently reviewing our Maritime Incident Response Strategy to develop a more integrated response strategy that focuses on reducing and preparing for new and emerging risks whilst maintaining the existing readiness and response capability at the regional and national level. This is including looking at areas most susceptible to marine casualty and whether the current capabilities are appropriate.

We have previously provided extensive advice and sought bids for emergency towage. In Budget 2023 Maritime NZ received \$600,000 for the business case development and subsequent procurement plan for an emergency ocean response capability (EORC) for Cook Strait. This is a significant response and salvage capability to improve the resilience of our national surface transport network. Maritime NZ is working with the Ministry of Transport and technical experts to refresh and refine a business case undertaken in 2023.

Issues with the Maritime Transport Act 1994 are well defined. For readiness and response specifically, the levies, statutory role clarity, response and enforcement powers (of direction) can inhibit preventive measures or an effective incident response, which in turn increases environmental and safety risks. Maritime NZ has, and will continue to, provide advice on legislation and funding reform requirements to ensure our readiness and response output is appropriately resourced for the current and future risks.

- 5.24. In April 2025, the government announced that it had contracted an open-ocean tug through to June 2026, to be based between the Cook Strait area and Taranaki, while it works on a long-term plan for a potential new national tug service. In its 2024 budget, Cabinet agreed to put \$600,000 aside for a business case to explore options and costs for emergency towing capability, with a particular focus on the Cook Strait.
- 5.25. Cabinet considered a business case for investment in emergency ocean response capabilities (EORC) and directed the Ministry of Transport to provide further advice to procure this capability on a predominately user-pays basis.
- 5.26. While the government initially intended contracting the open-ocean tug through to June 2026, with a possible extension to 2027 while other long-term options were considered, in November 2025 it decided to end the contract in February 2026.
- 5.27. The Commission welcomes safety measures already taken by MNZ. However, without emergency towage and salvage capabilities, this safety issue remains, and therefore the Commission has made a recommendation in Section 6 to address this issue.

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 could 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

Recommendations to KiwiRail

Recommendation 1

- 6.3. On 25 March 2026, the Commission recommended that KiwiRail review their emergency response planning, training, resourcing and risk mitigations to assure themselves they could effectively respond to a maritime emergency. The review should include examination of international conventions, resolutions and guidance that outline best practices. **[005/26]**
- 6.4. On 13 April 2026, KiwiRail replied:

This recommendation is accepted.

A revised drill plan has been formulated. In September 2025, KiwiRail coordinated Operation SLIDECLEAR, a comprehensive emergency preparedness exercise involving multiple agencies. The first day consisted of onboard activities aboard the Kaitaki, while the second day focused on a deskbased emergency response scenario.

Participating agencies included Maritime New Zealand (MNZ), the Rescue Coordination Centre New Zealand (RCCNZ), New Zealand Police, Wellington Harbourmaster, Wellington Region Emergency Management Office (WREMO), CentrePort, New Zealand Coastguard, and Wellington City Council.

We plan to build upon these efforts and look forward to collaborating with Maritime NZ as they continue to develop, and then implement, a wider maritime incident response strategy assessment.

Recommendation 2

- 6.5. On 25 March 2026, the Commission recommended that KiwiRail effectively implement the decision-support system for its vessels' engineering departments and regularly exercise it to ensure crew familiarisation and its effectiveness. **[006/26]**
- 6.6. On 13 April 2026, KiwiRail replied:

This recommendation is accepted.

An updated Engineer Decision Support System has been developed focusing on contingency procedures for engine room emergencies. Training for the 1.5 day

Engine Room Response Training is currently being delivered to all engineering officers at Nelson Marlborough Institute of Technology.

Using an Engine Room Simulator, this will equip engineers of all ranks with the skills to identify, assess, and respond to a variety of emergency situations. The course builds both technical competence and effective team-working capability.

Recommendations to Maritime New Zealand

Recommendation 3

6.7. On 25 March 2026, the Commission recommended that Maritime New Zealand actively promulgate IMO MSC.1/Circ.1533, 'Revised guidelines on evacuation analysis for new and existing passenger ships' and issue associated guidelines to all passenger ferry operators, and strongly encourage them to conduct and regularly review Escape, Evacuation and Rescue Analyses (EERAs) consistent with these guidelines, regardless of vessel construction date. **[007/26]**

6.8. On 12 December 2025, Maritime New Zealand provided the following response to the safety issue:

Maritime NZ agrees in principle with this recommendation, noting the following:

Maritime NZ already encourages operators to conduct and regularly review Escape, Evacuation and Rescue Analyses. Inspectors regularly assess the crew's ability to respond effectively to on board emergencies such as fire, abandon ship, and other emergency scenarios during Flag State Inspections & also ISM audits. As part of these processes, Maritime NZ inspectors assess a vessel's real-time operational readiness by observing emergency drills, including shipboard and ship-to-shore scenarios, and by verifying drill records, procedures, and crew competence in line with national and international requirements.

These assessments cover critical aspects of emergency preparedness, including communication protocols, mustering, familiarity with equipment & systems, and, where appropriate, the physical launching of survival craft. The objective is to confirm that emergency response systems are functional, effective, and well understood.

Options to manage non-compliance range from education, issuing non-conformities to requiring drills to be repeated under supervision through to detention. In more serious cases, vessels may be detained until deficiencies are addressed. Through our inspections and audits, Maritime NZ has directed operators to review and strengthen their emergency procedures, and in some cases, required drills to be repeated under supervision until they met the expected standard of compliance.

However, while the Circular does not apply to older vessels, we will consider what other information within this circular may be useful, and not be widely available, and if needed work to promulgate this information to ferry operators.

6.9. On 14 April 2026, Maritime New Zealand provided an updated response:

Maritime will consider this recommendation

Maritime NZ's position regarding this recommendation remains unchanged from our response on 12 December 2025.

Recommendation 4

6.10. On 25 March 2026, the Commission recommended that Maritime New Zealand prioritise the review of its Maritime Incident Readiness and Response Strategy (MIRRS) to ensure it is consistent with international conventions, resolutions and guidance, and incorporates the following:

- an updated national maritime risk assessment
- specific Cook Strait response plans
- an across-stakeholder exercise programme. **[008/26]**

6.11. On 12 December 2025, Maritime New Zealand provided the following response to the safety issue:

We agree with this recommendation. We have prioritised, and are currently, developing version 6 of the MIRRS which incorporates lessons and actions from responses over the last few years. The revised MIRRS, and plans under it, will include:

- An updated environmental scan and risk assessment to inform goals and outcomes.
- Port of refuge approach for New Zealand.
- Updated Maritime Response Model and associated processes, procedures and role cards.
- The updated Maritime Response Lessons Management Policy and Procedure.
- Alignment and updating with the latest DPMC national security risk register and exercise programme.
- Operating procedures and SOPs, including the Cook Strait working group.
- Updating the Mass Rescue Operations Plan.
- Ensuring there are robust plans and exercises for key risk areas around our coast, working with Regional Councils, Ports, communities/iwi and other agencies (these plans will consider not just mass rescue, but oil pollution response and other maritime incident response elements).

6.12. On 14 April 2026, Maritime New Zealand provided an updated response:

Maritime NZ accepts and is implementing this recommendation

Maritime NZ is developing the Maritime Incident Readiness and Response Strategy 2026-2030 which will incorporate the **New Zealand Marine Oil Spill Readiness and Response Strategy 2022-2026** and the **Integrated Maritime Incident Readiness and Response Strategy Issue 5 March 2022** into one overarching maritime incident readiness and response strategy that includes our search and rescue responsibilities. It will also incorporate observations and lessons from responses over the last few years. The revised MIRRS Strategy, and plans under it, will include:

- An updated environmental scan and risk assessment to inform goals and outcomes.
- Port of refuge approach for New Zealand.

- Updated Maritime Response Model and associated processes, procedures and role cards.
- The updated Maritime Response Lessons Management Policy and Procedure.
- Alignment and updating with the latest DPMC national security risk register and exercise programme.
- Operating procedures and SOPs, including working closely with Cook Strait stakeholders.
- Updating our major SAR response and mass rescue operations plans.
- Ensuring there are robust plans and exercises for key risk areas around our coast, working with Regional Councils, Ports, communities/iwi and other agencies (these plans will consider not just mass rescue, but oil pollution response and other maritime incident response elements).

Recommendation 5

6.13. On 25 March 2026, the Commission recommended Maritime New Zealand work with the Ministry of Transport and collaborate with other stakeholders to continue to develop, and then implement, a wider maritime incident response strategy assessment to identify areas most susceptible to very serious marine casualties, particularly mass fatality events, and strengthen the salvage and rescue capability in those areas. **[009/26]**

6.14. On 12 December 2025, Maritime New Zealand provided the following response to the safety issue:

Maritime NZ agrees with this recommendation.

We will continue to work closely with the Ministry of Transport (MoT) on the MIRRS version 6 and to identify where strengthened search and rescue capabilities are needed along our coastline.

6.15. On 14 April 2026, Maritime New Zealand provided an updated response:

Maritime NZ partially accepts the recommendation

Maritime NZ will continue to work closely with the Ministry of Transport (MoT), and with other stakeholders, on the MIRR Strategy 2026-2030, and as part of that strategy, and our ongoing work, will continue to determine which areas are susceptible to not only serious marine casualties but also environmental risks. Off the back of this work, we will also continue to make recommendations, and/or provide advice, on how salvage and rescue capability can be strengthened.

However, we note at this point in time the Government has made the decision not to support a Government funded EORC capability given the costs involved and the small occasions when it would be needed.

We also note that salvage of a maritime casualty is the responsibility of the owner of the vessel, working through their insurer to appoint a salvor.

Therefore, because Maritime NZ is not directly responsible for the salvage of a maritime casualty, and we cannot fund EORC, we are not able to strengthen the maritime salvage capability available in New Zealand as worded in the recommendation.

Notice of recommendations

- 6.16. The Commission gives notice to KiwiRail that it has issued recommendation 5 **[009/26]** to Maritime New Zealand and that this recommendation will require the involvement of KiwiRail.
- 6.17. The Commission gives notice to StraitNZ Bluebridge Limited that it has issued recommendation 5 **[009/26]** to Maritime New Zealand and that this recommendation will require the involvement of StraitNZ Bluebridge Limited.
- 6.18. The Commission gives notice to the Ministry of Transport that it has issued recommendation 5 **[009/26]** to Maritime New Zealand and that this recommendation will require the involvement of the Ministry of Transport.

7 Other safety lessons

Ngā akoranga matua

- 7.1. Relatively minor maintenance issues can have serious consequences and threaten the safety of passengers and crew.
- 7.2. Regulators and ferry operators should continuously review the planning, training and resourcing of their response to foreseeable hazards of operating in the Cook Strait.
- 7.3. When selecting an on-scene coordinator it is important for SAR coordinators to consider the operational profile of all available assets.
- 7.4. FMEAs need to be repeated regularly to address the change in risks and then be implemented.
- 7.5. Safe return to port principles should be considered when procuring ferries for the Cook Strait trade.
- 7.6. It is good practice, depending on the emergency's context, to use the ship itself as the best lifeboat.
- 7.7. CIMS provides a well-established framework for developing consistent emergency response plans. However, individual government agencies and other stakeholders retain responsibility for developing operational plans that address their unique emergency contexts.

8 Data summary

Whakarāpopoto raraunga

Vehicle particulars

Name:	<i>Kaitaki</i>
Type:	RoRo passenger vessel
Classification:	Lloyd's Register
Length:	179.31 m
Breadth:	23.44 m
Gross tonnage:	22,365 tonne
Built:	1995
Propulsion:	4 X Adria diesel DD 23,040 kW
Service speed:	19 kt
Owner/operator:	Interislander, KiwiRail Limited
Port of registry:	Wellington, New Zealand

Date and time 28 January 2023, 1652

Location Off Sinclair Head, Cook Strait, New Zealand

People involved 864 crew and passengers

Injuries Nil

Damage Nil

9 Conduct of the inquiry

Te whakahaere i te pakirehua

- 9.1. On 28 January 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. Between 29 and 31 January 2023, four Commission investigators boarded the vessel while it was berthed in Wellington to gather evidence and conduct interviews.
- 9.3. On 22 March 2023, the Commission approved a draft preliminary report for circulation to four interested parties for their urgent comment given the nature of the safety concern raised.
- 9.4. The Commission received three submissions, and the final preliminary report included the resulting changes.
- 9.5. On 30 April 2023, the Commission approved the final preliminary report for publication. On 5 May 2023, the final preliminary report was published. The Commission continued its inquiry, following further lines of inquiry.
- 9.6. On 30 April 2025, the Commission approved a draft report for circulation to 13 interested parties for their comment.
- 9.7. The Commission received 12 responses, all of which were submissions. As a result of the submissions, the Commission prepared a further draft report.
- 9.8. On 8 October 2025, Commission investigators met with representatives of Ferry Holdings Limited to discuss the company's approach to procuring new ferries.
- 9.9. On 30 October 2025, the Commission approved this further draft report and sought further comment from all interested parties.
- 9.10. The Commission received six responses, all of which were submissions.
- 9.11. On 24 February 2026, Maritime New Zealand appeared at a formal Commission hearing and provided a further submission to the Commission.
- 9.12. The Commission considered all submissions and any changes as a result of these submissions have been included in the final report.
- 9.13. On 25 March 2026, the Commission approved the final report for publication.

Abbreviations

Whakapotonga

CIMS	Coordinated Incident Management System
FMEA	Failure Mode and Effect Analysis
IAMSAR	International Aeronautical and Maritime Search and Rescue
ICAO	International Civil Aviation Organization
IMO	International Maritime Organization
IMRF	International Maritime Rescue Federation
IMT	Incident Management Team
ISM Code	International Safety Management Code
MIRRS	Maritime Incident Readiness and Response Strategy
MIRT	Maritime Incident Response Team
MNZ	Maritime New Zealand
MPRS	Marine Pollution Response Service
OSV	Offshore Support Vessel
RCCNZ	Rescue Coordination Centre (New Zealand)
REJ	Rubber expansion joint
RoRo	Roll-on/Roll-off
SAR	Search and Rescue
SMS	Safety Management System
SOLAS	The International Convention for the Safety of Life at Sea

Glossary

Kuputaka

Bilge system	A collection of pumps, pipes and tanks designed to remove water and other liquids that accumulate in the lowermost part of a ship's engine room
Critical equipment and systems	ISM Code section 10.3 defines critical equipment and technical systems as those 'the sudden operational failure of which may result in hazardous situations'
Generator tripped	Generator automatically shut down because of overload
IMO	The International Maritime Organization is a specialised agency of the United Nations responsible for regulating maritime transport
IMRF	The International Maritime Rescue Federation is an international non-government organisation that supports SAR organisations to develop and improve maritime SAR capacity worldwide. It does this by providing guidance, facilitating training, and enabling SAR providers to share knowledge and expertise between members across the IMRF community. Its work is vital to raising standards and improving overall global SAR capability.
Mayday	The internationally recognised maritime distress call over radio communications used to indicate that a vessel, aircraft or person is in grave and imminent danger and requires immediate assistance
MIRT Controller	A person appointed to lead the Maritime Incident Response Team, once established by the Director
Mooring	A procedure to make fast the ship with a fixed or a floating object (such as a jetty, pier, ship, barge or buoy)
Not under command	The Convention on the International Regulations for Preventing Collisions at Sea (1972) defines the term 'vessel not under command' as meaning a vessel which, through some exceptional circumstance, is unable to manoeuvre and is therefore unable to keep out of the way of another vessel.
On-scene coordinator	A person designated by RCCNZ to coordinate search and rescue operations within a specified area
Risk management system	Systematic process of anticipating, evaluating, and addressing potential risks specific to maritime operations to safeguard personnel, the environment, vessels and cargo while ensuring effective operations

Safety management system	An organised system of operational procedures, mandatory safety rules and risk reduction measures that safeguard the vessel and the maritime environment
Sécurité call	The radio-telephone safety signal 'Sécurité' (pronounced say-cure-ee-tay) is used to indicate that the calling station has an important navigational or meteorological warning to transmit
SOLAS	The International Convention for the Safety of Life at Sea is an international maritime treaty that sets out minimum safety standards in merchant ships' construction, equipment and operation. SOLAS Chapter V, 'Safety of Navigation', includes regulations for ships to carry the IAMSAR Manual and obligations and procedures for ships to respond to distress situations.
Vessel's power plant	The power plant of a vessel is comprised of its installed power generation equipment

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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-2025-202	Jet boat Discovery 2, allision with canyon wall, Skippers Canyon, near Queenstown, 25 February 2025
MO-2024-207	Pilot vessel, Takitimu II, grounding, Stirling Point, Bluff, New Zealand, 26 December 2024
MO-2023-205	Bulker carrier, Achilles Bulker, loss of rudder, off the Port of Tauranga, 24 July 2023
MO-2024-203	Fishing vessel, Chokyu Maru No.68, grounding, The Noises, Hauraki Gulf, 16 April 2024
MO-2023-203	Container vessel, Shiling, loss of control, Wellington harbour, 15 April 2023
MO-2024-201	Passenger vessel Fiordland Navigator, grounding, Doubtful Sound, 24 January 2024
MO-2022-206	Charter fishing vessel, i-Catcher, capsize, Goose Bay, New Zealand, 10 September 2022
MO-2023-206	Fishing vessel, Austro Carina, Stranding at Red Bay, Banks Peninsula, 24 September 2023
MO-2023-202	Collision between Passenger Ferry, Waitere and recreational vessel, Onepoto, Paihia, Bay of Islands, 13 April 2023
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

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