Final report MO-2016-202: Passenger ship, *Azamara Quest*, contact with Wheki Rock, Tory Channel, 27 January 2016

The Transport Accident Investigation Commission is an independent Crown entity established to determine the circumstances and causes of accidents and incidents with a view to avoiding similar occurrences in the future. Accordingly it is inappropriate that reports should be used to assign fault or blame or determine liability, since neither the investigation nor the reporting process has been undertaken for that purpose.

The Commission may make recommendations to improve transport safety. The cost of implementing any recommendation must always be balanced against its benefits. Such analysis is a matter for the regulator and the industry.

Final Report

Marine inquiry MO-2016-202
Passenger ship, *Azamara Quest*, contact with Wheki Rock, Tory Channel
27 January 2016

Approved for publication: March 2018

Transport Accident Investigation Commission

About the Transport Accident Investigation Commission

The Transport Accident Investigation Commission (Commission) is a standing commission of inquiry and an independent Crown entity responsible for inquiring into maritime, aviation and rail accidents and incidents for New Zealand, and co-ordinating and co-operating with other accident investigation organisations overseas. The principal purpose of its inquiries is to determine the circumstances and causes of occurrences with a view to avoiding similar occurrences in the future. Its purpose is not to ascribe blame to any person or agency or to pursue (or to assist an agency to pursue) criminal, civil or regulatory action against a person or agency. The Commission carries out its purpose by informing members of the transport sector and the public, both domestically and internationally, of the lessons that can be learnt from transport accidents and incidents.

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Important notes

Nature of the final report

This final report has not been prepared for the purpose of supporting any criminal, civil or regulatory action against any person or agency. The Transport Accident Investigation Commission Act 1990 makes this final report inadmissible as evidence in any proceedings with the exception of a Coroner's inquest.

Ownership of report

Citations and referencing

Information derived from interviews during the Commission's inquiry into the occurrence is not cited in this final report. Documents that would normally be accessible to industry participants only and not discoverable under the Official Information Act 1982 have been referenced as footnotes only. Other documents referred to during the Commission's inquiry that are publicly available are cited.

Photographs, diagrams and pictures

Unless otherwise specified, photographs, diagrams and pictures included in this final report are provided by, and owned by, the Commission.

Verbal probability expressions

The expressions listed in the following table are used in this report to describe the degree of probability (or likelihood) that an event happened or a condition existed in support of a hypothesis.

Terminology (adopted from the Intergovernmental Panel on Climate Change)	Likelihood of the occurrence/outcome	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	

The *Azamara Quest*

Contents

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Abbreviations

Commission	Transport Accident Investigation Commission
ECDIS	electronic chart display and information system
Port Marlborough	Port Marlborough New Zealand Limited

Glossary

bilge keel	a small plate keel located near the outer extremities of an underwater hull, designed to dampen any rolling motion
conduct	the control of the speed and direction of a vessel
double-bottom	tank at the bottom of the ship having the bottom plating as one of its boundaries
flood tide	the period between low water and high water when the sea level rises
knot(s)	nautical mile(s) per hour
off-track alarm	an alarm that sounds when a ship departs its planned route by a predesignated distance
passage plan	a ship's navigation plan, which ensures that the intended passage can be executed from the departure port to the arrival port in a safe and efficient manner with respect to both the vessel and the environment
pilotage	the process of directing the movements of a ship by visual or electronic observations of recognisable landmarks
pilot boat	a small launch 14.6 metres in length
port	the left-hand side of a ship when facing forward
starboard	the right-hand side of a ship when facing forward
voyage data recorder	Equipment that records information sourced from various on-board systems, including bridge microphone recordings

Data summary

Vehicle particulars

Name:	*Azamara Quest*
Type:	passenger ship
Limits:	unlimited
Classification:	Bureau Veritas
Length:	180.452 metres
Breadth:	28.3 metres
Gross tonnage:	30,277 gross registered tonnage
Built:	1999
Propulsion:	four Wärtsilä 12-volt 32E diesel generators
Service speed:	18 knots
Owner/Operator:	Azamara Quest Inc.
Port of registry:	Valletta (Malta)
Minimum crew:	21

Date and time	27 January 2016, 0915	
Location	Tory Channel eastern entrance	
Persons involved	passengers:	652
	crew:	394
	other:	one (harbour pilot)
Injuries	nil	
Damage	impact damage to starboard bilge keel and starboard propeller	

1. Executive summary

1.1. On 27 January 2016 the Maltese-flagged passenger ship *Azamara Quest* was en route to the port of Picton in New Zealand's Marlborough Sounds, with 652 passengers and 394 crew on board.

1.2. A harbour pilot boarded the *Azamara Quest* outside the entrance to Tory Channel at 0900. The master and pilot exchanged information and discussed the passage plan through Tory Channel to Picton, in particular the strong currents in the tight turn required on entry to Tory Channel. However, due to miscommunication the passage inwards began with the master and pilot having different understandings of how the first turn would be conducted.

1.3. As a result the turn was initiated late and the ship never achieved a sufficient rate of turn to avoid contacting Wheki Rock close to the northern shoreline. The ship struck the rock, causing minor damage to the hull and damage to one propeller. Nobody was injured.

1.4. The Transport Accident Investigation Commission (Commission) found that the bridge team had no common (agreed) understanding of the plan for the ship to make the turn into Tory Channel because the details of how the turn would be made and the influence the tide would have on the ship during the turn had not been clearly communicated. Therefore, with no agreed plan, the task of the bridge team monitoring the ship's progress through the turn was set up to fail.

1.5. The Commission also found that the port company and pilot were relying on the pilot making five transits of Tory Channel using the port company pilot launch in order to maintain currency with the Pilot Training and Proficiency Plan, which did not meet the intent of the plan.

1.6. The Commission identified three key safety issues:

- the standard of bridge resource management on board the *Azamara Quest* did not meet the requirements of the company's safety management system, or the standards in the various International Maritime Organization publications[1]
- Port Marlborough's port risk assessment and Marlborough District Council's harbour risk assessment could not be easily integrated, making it difficult to have one integrated risk assessment for the harbour
- the port company allowing its pilots to use transits made on the pilot launch count towards the requirements of Port Marlborough New Zealand Limited's Pilot Training and Proficiency Plan created a risk of pilots not being sufficiently current to pilot large ships through Tory Channel.

1.7. The Commission made two new recommendations to address these safety issues.

1.8. The Commission has previously found poor bridge resource management under pilotage to be a factor contributing to accidents involving two other ships in New Zealand. The respective reports made several recommendations aimed at improving the standard of pilotage and making the transition of the pilot into the ship's bridge team more seamless on a global level.

1.9. A key lesson arising from this inquiry is:

- safe navigation in pilotage waters is a shared task of the bridge team and the pilot. This accident highlights the importance of a comprehensive pilot/master exchange of information and ensuring it is communicated to the rest of the bridge team.

[1] STCW Code table A-II/1: Specification of minimum standard of competence for officers in charge of a navigational watch on ships of 500 gross tonnage or more.

2. Conduct of the inquiry

2.1. On 27 January 2016 Rescue Coordination Centre New Zealand notified the Transport Accident Investigation Commission (Commission) of an incident reported as a near grounding of the passenger ship *Azamara Quest* on Wheki Rock near the entrance to Tory Channel, Marlborough Sounds.

2.2. The Commission opened an inquiry under section 13(1)b of the Transport Accident Investigation Commission Act 1990 and appointed an investigator in charge. Two other investigators were also appointed to the investigation team.

2.3. On 28 January 2016 two investigators from the Commission boarded the *Azamara Quest* in Napier to conduct interviews and gather evidence. The investigators then sailed with the ship to Tauranga and disembarked on 30 January 2016.

2.4. Data was downloaded from the ship's voyage data recorder[2], which included an audio recording of the bridge. Information from the voyage data recorder was used to recreate the actual voyage, including the status of the navigation equipment.

2.5. On 2 February 2016 three investigators travelled to Picton to interview Marlborough District Council's deputy harbourmaster. The Commission's investigators also interviewed two Port Marlborough New Zealand Limited (Port Marlborough) employees.

2.6. On 4 February 2016 an investigator boarded the *Azamara Quest* in Wellington to conduct a second interview with the master and collect further documentary evidence.

2.7. On 19 February 2016 the pilot on board the *Azamara Quest* at the time of the incident was interviewed at the Commission's office in Wellington.

2.8. On 12 July 2016 draft urgent recommendations were circulated to nine interested persons for comment. Nine submissions were received.

2.9. On 29 August 2016 the Commission approved the publication of the urgent recommendations.

2.10. Evidence analysis continued over the next seven months.

2.11. On 11 May 2017 the Commission requested further documentary evidence and conducted a telephone interview with Marlborough District Council's deputy harbourmaster.

2.12. On 4 August 2017 the investigator in charge requested further documentary evidence and conducted a telephone interview with Port Marlborough's business delivery manager.

2.13. On 14 December 2017 the Commission approved the draft report to be circulated to interested persons for comment.

2.14. The Commission received submissions from four interested persons, and any changes as a result of these submissions have been included in this final report.

2.15. The Commission approved the report for publication on 21 March 2018.

[2] Equipment that records information sourced from various on-board systems, including bridge microphone recordings

3. Factual information

3.1. Background

3.1.1. On 26 January 2016 the Maltese-flagged passenger ship, the *Azamara Quest*, was on passage from Akaroa to Picton on the north-eastern coast of New Zealand's South Island. The ship was on its maiden voyage to Picton and was due to arrive the following morning, on 27 January 2016. There were 652 passengers and 394 crew on board.

3.1.2. The port of Picton was accessible via two routes: a more direct northern entrance through Queen Charlotte Sound (shown in red, Figure 1); and a more difficult eastern entrance through Tory Channel (shown in green, Figure 1).

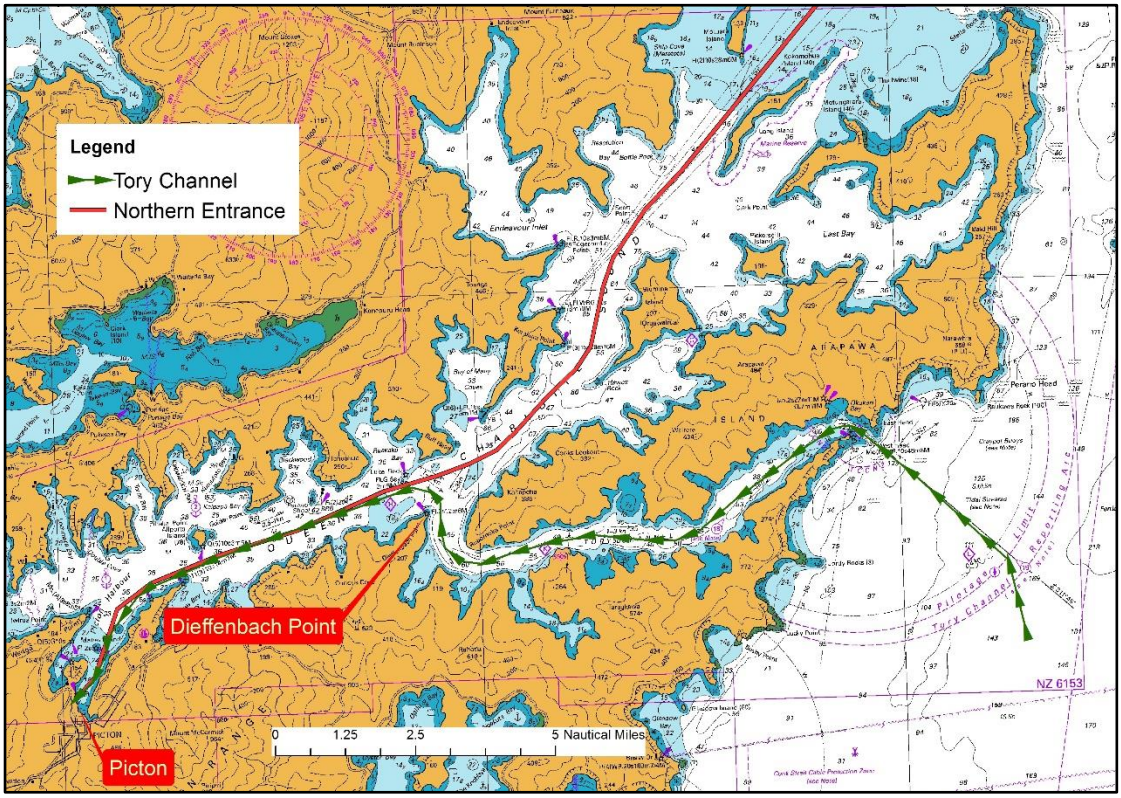

Figure 1
Chart detailing the two routes to Picton

3.1.3. Other than regular passenger ferries, only ships 200 metres or less in length were permitted to use Tory Channel. It was compulsory for ships of 350 gross tonnage or greater to have pilots on board for the Tory Channel transit. The *Azamara Quest* was just over 180 metres in length and had a gross tonnage of 30,277 and could therefore only transit Tory Channel with a pilot on board.

3.1.4. Prior to departing Akaroa, the crew emailed the ship's agent enquiring if the *Azamara Quest* could transit Tory Channel. The agent discussed this with the Picton pilot, who in turn referred him to Port Marlborough. Port Marlborough's senior pilot discussed this issue with the deputy harbourmaster and confirmed that the *Azamara Quest* could transit Tory Channel. The ship's crew then confirmed to the agent that they would transit Tory Channel because it offered a shorter passage to Picton than the alternative route.

3.2. Narrative

3.2.1. At about 0800 on 27 January 2016, the first officer took over the bridge watch. His team included the second officer, a helmsmen and a lookout.

3.2.2. At about 0830, half an hour prior to arriving at the eastern entrance to Tory Channel, the bridge team conducted a pre-arrival briefing. Pre-arrival briefings were standard practice on board the *Azamara Quest*.

3.2.3. The briefing was attended by the master, staff captain, safety officer, first officer, second officer, bosun, helmsman and lookout.

3.2.4. During the briefing, details of the passage plan[3] were discussed. The entrance to Tory Channel was identified as a high-risk area that required large course alterations.

3.2.5. The expected speeds and weather conditions were also discussed, and they noted that the ship would be entering Tory Channel with a flood tide[4]. The bridge team agreed that: the pilot would have the conduct[5] of the ship; the master would have overall navigational command; the staff captain would be in charge of communications; the first officer would be in charge of electronic navigation and collision avoidance; and the second officer would be in charge of plotting the ship's position on the navigational chart.

3.2.6. At about 0900 the Picton pilot embarked about 3.5 nautical miles from West Head at the entrance to Tory Channel. Once the pilot was on the bridge, the master gave him a standard briefing regarding the ship's manoeuvring characteristics and confirmed that the *Azamara Quest* had no deficiencies. The pilot and the master then discussed and agreed the intended passage plan, noting a strong flood tide. The pilot/master information exchange is discussed in detail in the analysis section of this report.

3.2.7. At about 0912 the conduct of the ship was handed over to the pilot.

3.2.8. The ship was lined up with the leading navigation lights[6] and entered Tory Channel without incident. However, the first alteration of course to port[7] was initiated after the ship passed the point where the pilot had intended to start the turn. By then the ship had drifted slightly to starboard[8] of the planned track (see Figure 2).

[3] A ship's navigation plan, which ensures that the intended passage can be executed from the departure port to the arrival port in a safe and efficient manner with respect to both the vessel and the environment.
[4] The period between low water and high water when the sea level rises.
[5] The control of the speed and direction of the vessel.
[6] Two light beacons, one above and behind the other, that when in line indicate that a ship is on the preferred track.
[7] The left-hand side of a ship when facing forward.
[8] The right-hand side of a ship when facing forward.

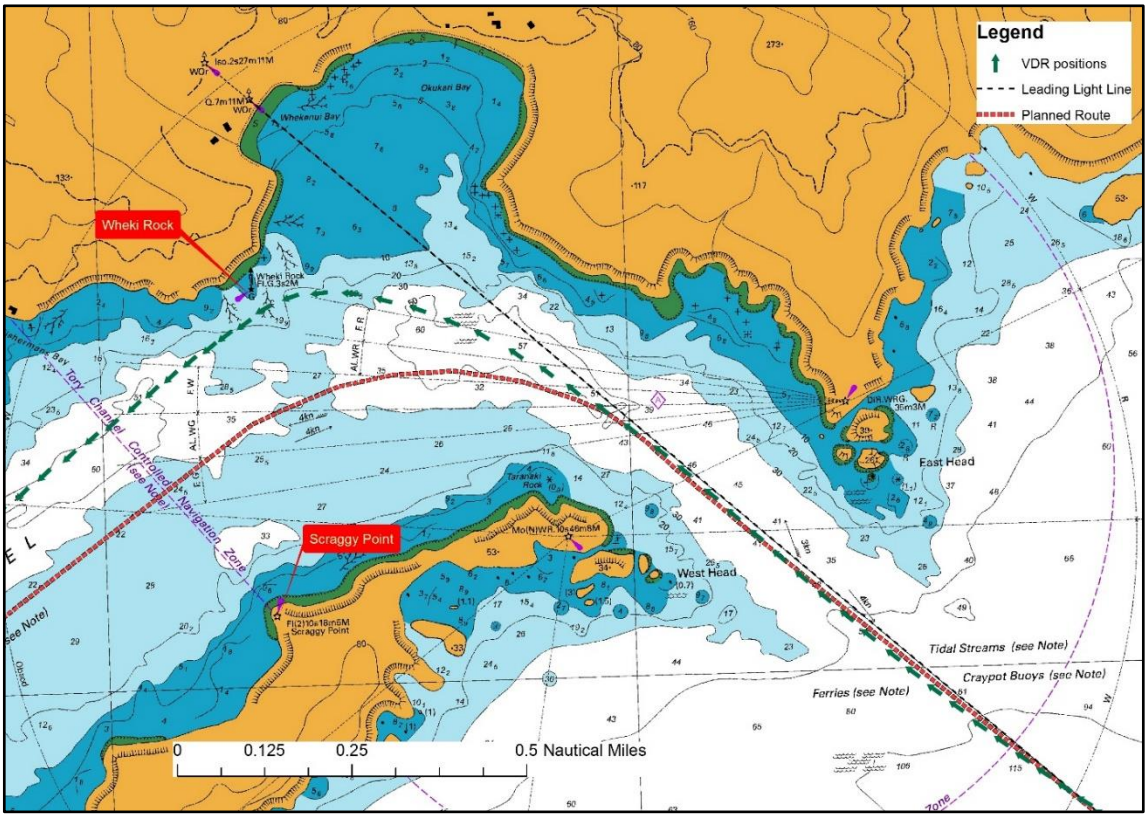

Figure 2
Voyage data recorder positions showing deviation from the planned track

3.2.9. The pilot initiated the turn using three degrees of port rudder, followed by successive increases to five and 10 degrees' rudder when he realised the ship was wide in the turn (to starboard of the planned track).

3.2.10. Even with these increases in rudder angle, the master and pilot realised that the ship was going to go dangerously close to Wheki Rock, so they ordered 20 degrees of port rudder, immediately followed by maximum port rudder. The ship responded with a rapid turn to port. When the ship was approaching the closest point to Wheki Rock, the master ordered the helm maximum to starboard in an attempt to arrest the rapid port turn and prevent the stern striking Wheki Rock. However, the ship bilge keel[9] and the starboard propeller made contact with the rock as the ship passed. The ship was then navigated back to the centre of the channel and continued on its passage to Picton without further incident.

3.2.11. The bridge team initially thought the ship had not made contact with Wheki Rock. However, the master decided to initiate a damage inspection and asked the chief engineer to report on the condition of the starboard propulsion system, and the staff captain to inspect the double-bottom tanks[10] on the starboard side for any sign of water ingress. After inspection, the staff captain confirmed that there was no ingress of water into any of the tanks and the chief engineer confirmed that the starboard propulsion shafting and associated machinery appeared to be functioning normally.

3.2.12. On arrival, the deputy harbourmaster, who was the acting harbourmaster at the time, met separately with the pilot and the master and discussed what they thought was a near-miss incident. The master informed the deputy harbourmaster that he had commissioned an

[9] A small plate keel located near the outer extremities of an underwater hull, designed to dampen any rolling motion.
[10] Tanks at the bottom of the ship having the bottom plating as one of its boundaries.

underwater survey as a precaution, just to be sure that the ship had not sustained any damage to the hull.

3.2.13. The underwater survey found damage on the starboard aft side near double-bottom tank 7804 and the starboard propeller, indicating that the ship had made contact with Wheki Rock (see Figures 3 and 4). Bending damage was observed on the starboard bilge keel and starboard propeller blades. However, there was no indication that the watertight integrity of the hull had been breached.

3.2.14. The *Azamara Quest* departed Picton after the classification society[11] had reviewed the damage report and was satisfied that the ship was safe to sail.

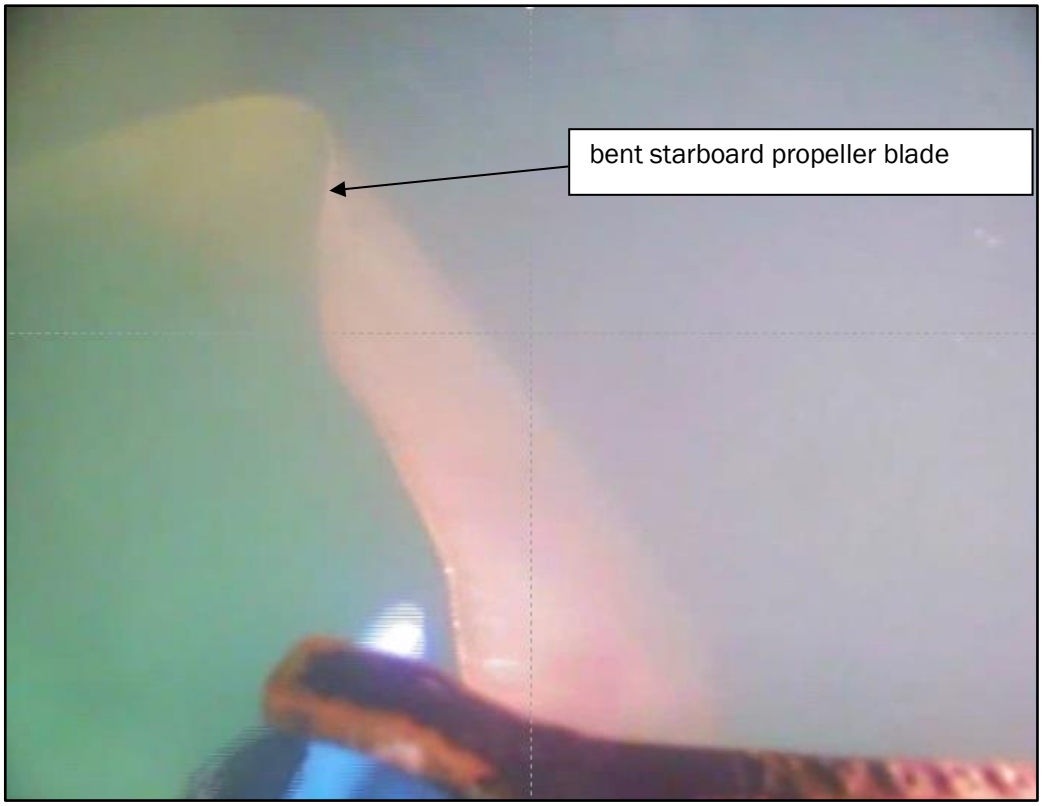

Figure 3
Bent starboard propeller blade

[11] A non-governmental organisation that establishes and maintains technical standards for ships.

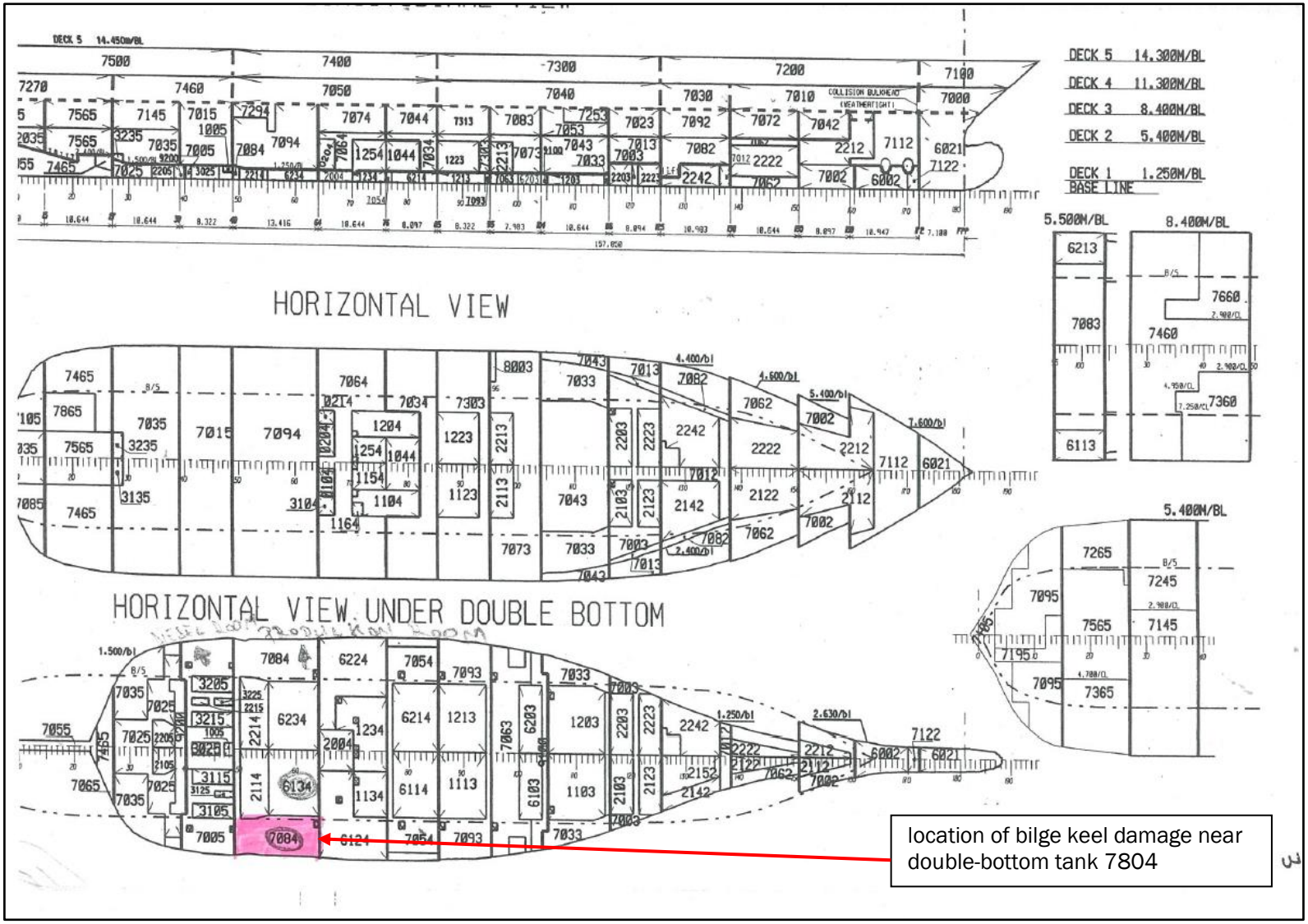

Figure 4
Damage to bilge keel near double-bottom tank 7804

3.3. Environmental conditions

3.3.1. It was daylight when the ship entered Tory Channel. The visibility was described by the pilot as moderate and well in excess of one nautical mile.

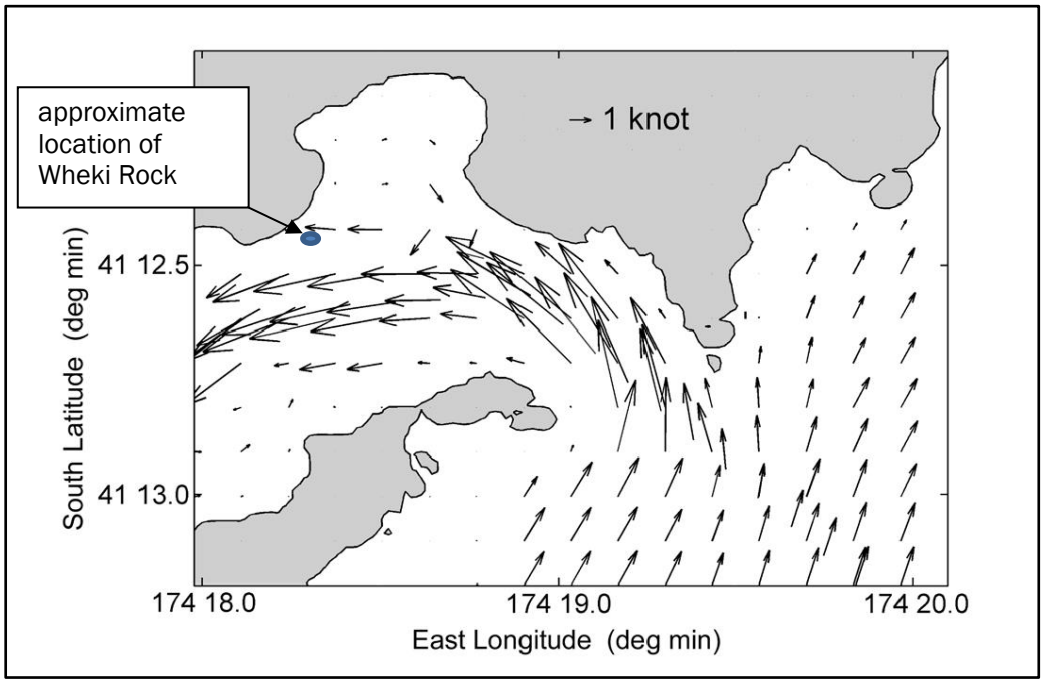

Figure 5
Tory Channel entrance, tidal stream at spring tide, three hours before high water
(the length of the arrows is representative of the strength of the tidal stream)

3.3.2. The tidal stream was about 6 knots[12] through the eastern entrance to Tory Channel. Land Information New Zealand described the tidal conditions as:

> Tide rips form along the western approaches to the entrance and eddies from around Okukari Bay. Some cross channel shear is present but is generally weak relative to normal channel flow.

3.3.3. The *Azamara Quest* made its approach through the eastern entrance to Tory Channel on a flood tide, about 3.5 hours before high water.

3.4. Port operations and pilotage

3.4.1. The Commission considered the arrangement for regulating and providing pilotage[13] services for the port of Picton. The following information is provided for background. Any relevance to this accident is discussed in the analysis section of this report.

3.4.2. The New Zealand Port and Harbour Marine Safety Code was introduced to assist port operators and regional councils to manage marine operations in ports and harbours by providing a framework for the preparation of a port and harbour safety management system. The implementation of the code is voluntary.

3.4.3. A step in implementing the code is for regional councils and port operators to each develop and document its own safety management system. The harbour safety management system is built around a harbour risk assessment undertaken by the regional council. It incorporates a port risk assessment carried out by any port operator for areas and activities covered by its port marine operations (see Figure 6).

[12] Nautical mile(s) per hour.
[13] The process of directing the movements of a ship by visual or electronic observations of recognisable landmarks.

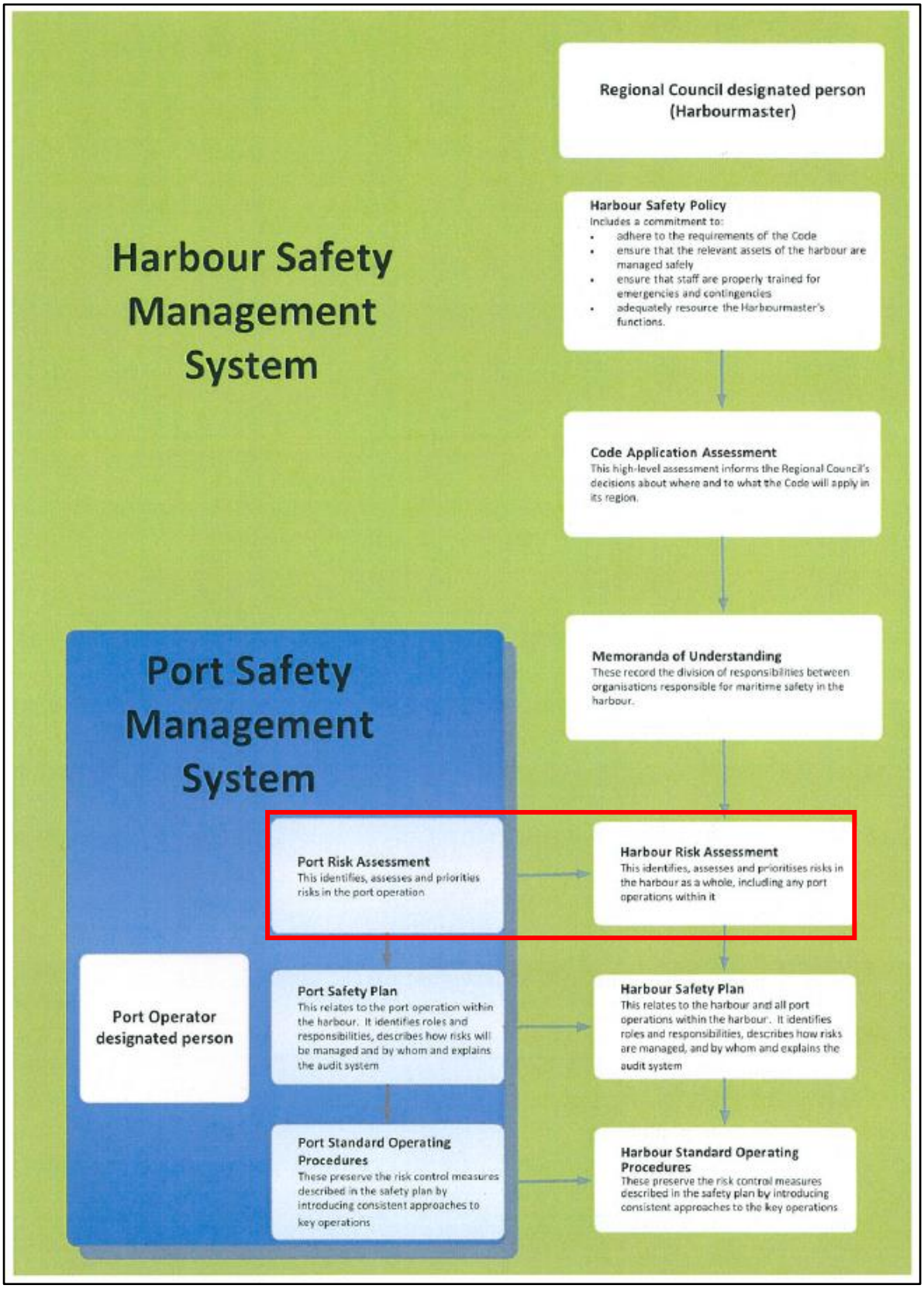

Figure 6
Port and harbour safety management system

3.4.4. Commercial activities at the port of Picton were undertaken by Port Marlborough, a company wholly owned by Marlborough District Council. Marlborough District Council was also the harbour authority responsible for the navigation and safety of all maritime activities within the harbour. Marlborough District Council discharged this responsibility through a council-appointed harbourmaster. Pilot and harbour towage services for shipping in Marlborough were provided by Port Marlborough New Zealand Limited Marine Services. Figure 7 shows how the different organisations at the port of Picton interfaced.

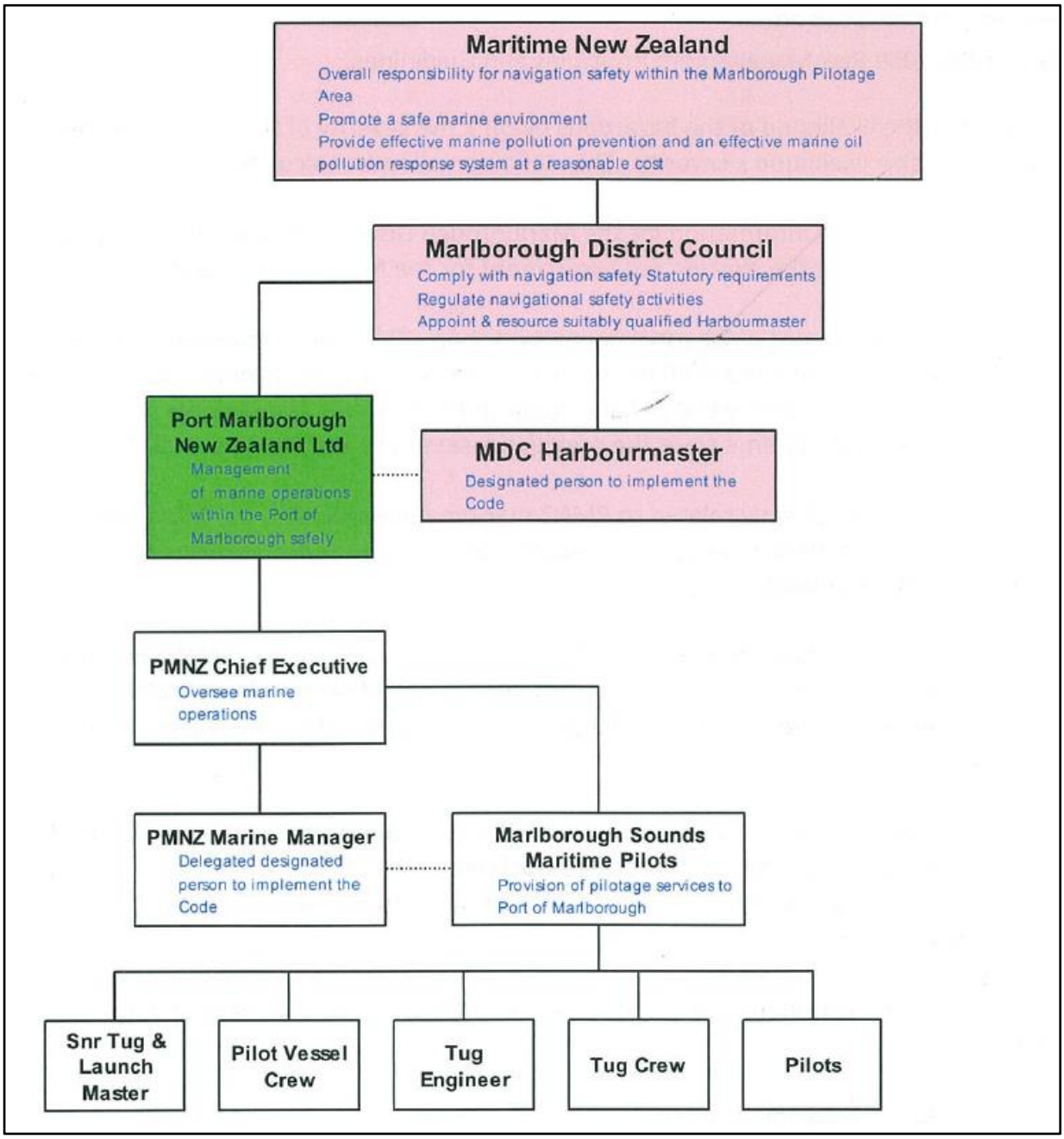

Figure 7
Flow chart showing relationship between Maritime New Zealand, Marlborough District Council and Port Marlborough

4. Analysis

4.1. Introduction

4.1.1. When a harbour pilot joins a ship's bridge team, the challenge they all have is to ensure that they integrate the specific local knowledge and ship-handling skills of the pilot with the crew's specific knowledge of the navigation equipment and manoeuvring characteristics of their ship. This challenge must be met in the often small (as in this case) window of opportunity between the pilot boarding the ship and the pilotage beginning.

4.1.2. For the harbour pilot and the ship's crew to work as one effective team, they all must share the same understanding of all factors likely to affect the ship in the pilotage waters ahead, often referred to as situational awareness, and all agree on a plan that takes all those factors into account. This did not happen in this case.

4.1.3. The following analysis discusses the events leading up to the accident, and also discusses three safety issues:

- the standard of bridge resource management on board the *Azamara Quest* did not meet the requirements of the company's safety management system, or the standards in the various International Maritime Organization publications
- Port Marlborough's port risk assessment and Marlborough District Council's harbour risk assessment could not be easily integrated, making it difficult to have one integrated risk assessment for the harbour
- the port company allowing its pilots to use transits made on the pilot launch count towards the requirements of Port Marlborough's Pilot Training and Proficiency Plan created a risk of pilots not being sufficiently current to pilot large ships through Tory Channel.

4.2. Analysis of the events leading up to the accident

4.2.1. When the pilot enquired about the handling characteristics of the ship, the master informed him that the ship was highly manoeuvrable and would "turn on a dime".

4.2.2. The master informed the pilot that a three-degree helm order would create a rate of turn of 10-15 degrees per minute. The pilot placed some emphasis on the master's statement that the ship would "turn on a dime". His understanding from the pilot/master information exchange was that the ship would turn easily and a three-degree helm order would be sufficient to start a "good" turn.

4.2.3. The pilot and master then discussed the passage plan. The pilot said that the tide was running strong and explained how the tide would carry the ship to starboard (right of the track near the entrance) and would then reverse and carry "just as strong" to port (left of the track) at the beginning of the turn.

4.2.4. The pilot also explained to the master that too much port helm in the turn would make the bow fall heavily to port due to the tidal push from the northeast, and cause the ship to be carried towards the rocks on the southern bank near Scraggy Point.

4.2.5. The master's understanding of this explanation was that the turn to port had to be delayed to factor in this additional tidal push from the northeast. However, the pilot did not intend to delay the turn. He intended to start the turn with a three-degree port rudder order just as Scraggy Point light came in to sight (see Figure 8). There was a misunderstanding between the pilot and the master as to the pilot's intended wheel-over position[14].

[14] The position on a chart when an order to a helmsman should be given to move the wheel to turn the rudder and begin the turn.

4.2.6. The master then briefed the staff captain on the pilot/master information exchange and explained his understanding of how they were going to negotiate the turn to port. The rest of the bridge team were not included in this conversation and essentially relied on what they overheard.

4.2.7. At about 0912 the first officer handed over the conduct of the ship to the pilot. The first officer was then reassigned as the officer in charge of electronic navigation and collision avoidance and was required to monitor the position of the ship and its progress in relation to the planned track.

4.2.8. The *Azamara Quest* entered Tory Channel at a speed of about 12 knots over ground. The tidal current from the stern was strong and the ship's speed over the ground increased as the ship entered the channel.

4.2.9. The pilot intended to commence the turn when the light on Scraggy Point light came in to sight; this was about 0.60 nautical miles from the line of Wheki Rock. However, the voyage data recorder showed that the pilot gave a port helm order about 21 seconds after Scraggy Point light came in to sight, when the bridge was about 0.52 nautical miles from Wheki Rock. This meant that the ship had advanced about 210 metres past the point where the pilot intended to start the turn. The pilot thought he had started the turn at his intended wheel-over position; he stated that it was not credible that 21 seconds could have passed without his or the master noticing that the wheel-over position had been overreached, and questioned the accuracy of the data sourced from the voyage data recorder and bridge microphones.

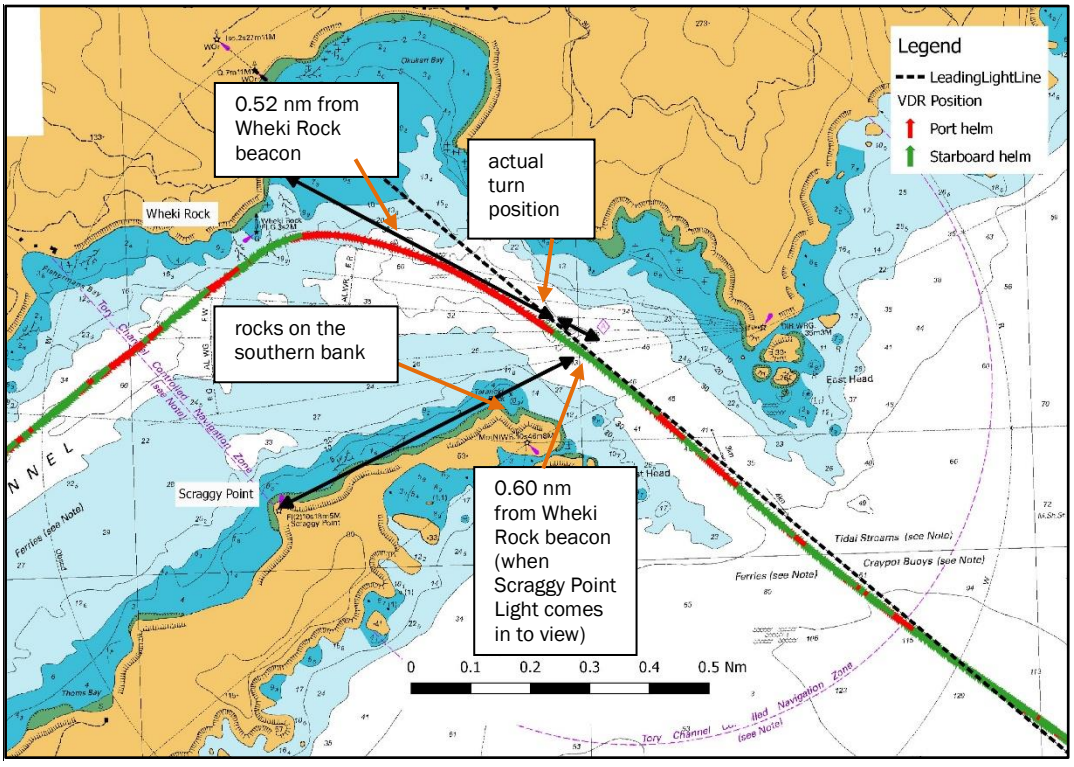

Figure 8
Delay in ordering the start of turn

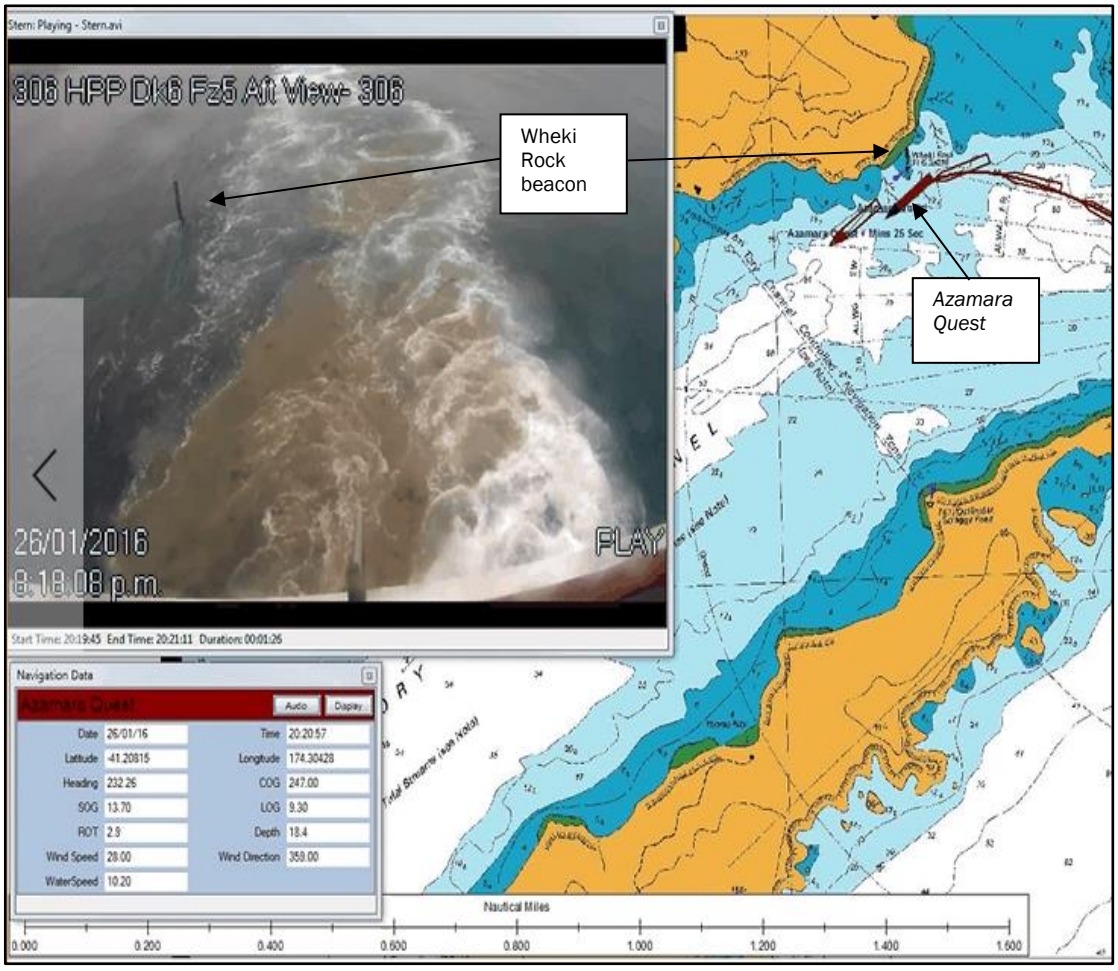

Figure 9
CCTV[15] footage of the seabed coming to the surface when the *Azamara Quest* made contact with Wheki Rock

4.2.10. The master did not challenge the delay in starting the turn because that was what he was expecting based on his understanding of the pilot/master information exchange.

4.2.11. The pilot ordered three degrees of port rudder, expecting that it would start a "good" turn. However, at the time the ship's heading was swinging slowly to starboard from a previous helm order and the ship was already 21 metres north of the intended track. At that point the ship's speed over ground had increased to 17.9 knots (see Figure 10).

[15] Closed-circuit television.

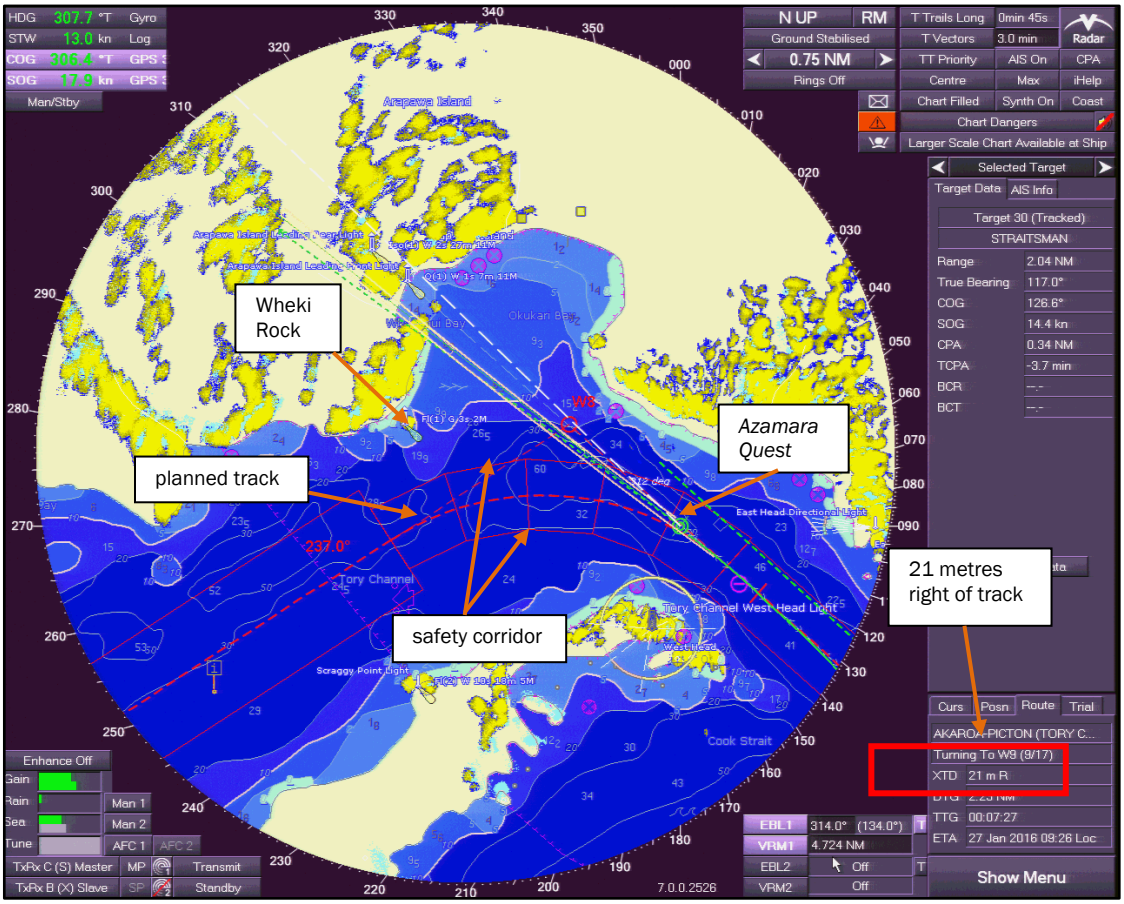

Figure 10
The *Azamara Quest* was 21 metres off track when the pilot ordered three degrees of port helm

4.2.12. The pilot soon realised that the ship was not turning to port as expected, so he ordered 5 degrees of port rudder followed by 10 degrees of port rudder in quick succession. The ship was now about 96 metres right of the intended track (see Figure 11).

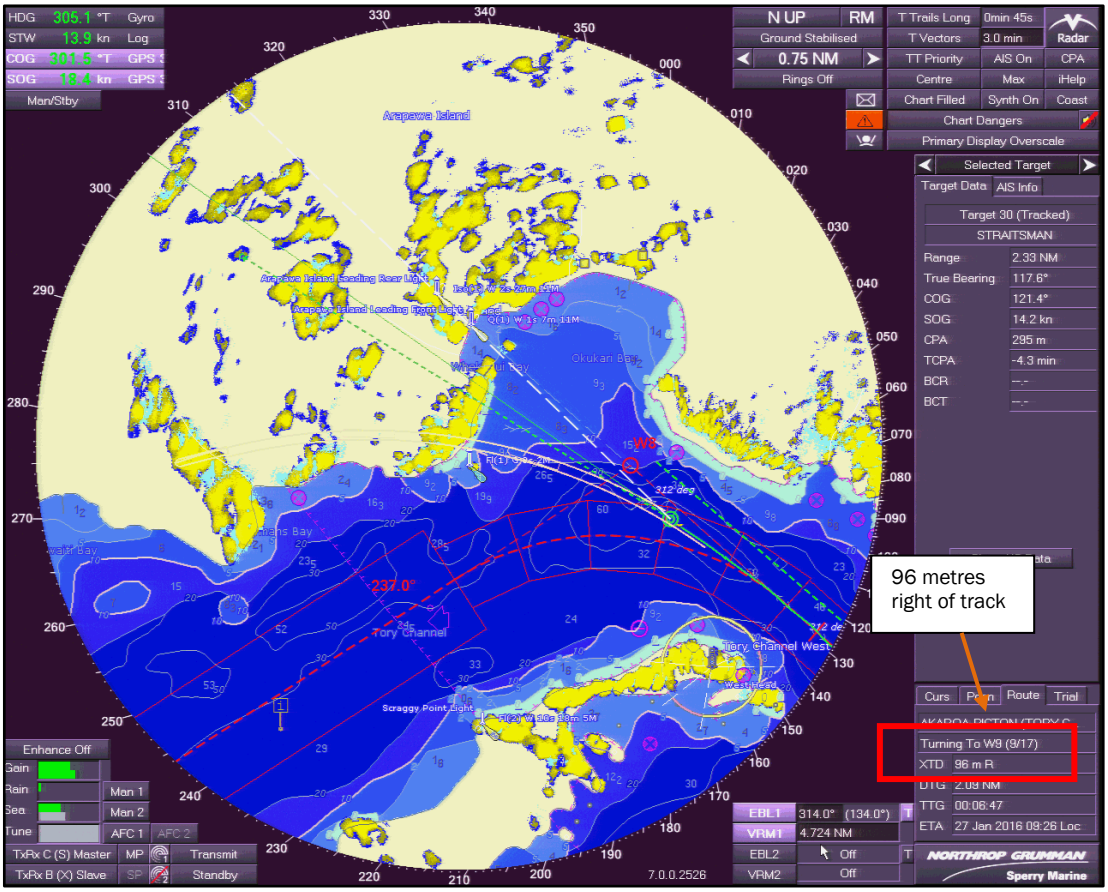

Figure 11
The *Azamara Quest* was 96 metres off track when the pilot ordered 10 degrees of helm

4.2.13. The *Azamara Quest*'s electronic chart display and information system (ECDIS) (with a radar overlay) had a ship predictor feature that displayed on the screen the predicted path of the ship and where the ship would be at a predefined time. The future path and position of the ship was calculated based on the ship's current position, its speed over the ground and its rate of turn, and was displayed on the screen ahead of the ship (see the white curved line and ship shape in Figure 11 and 12).

4.2.14. The staff captain noticed the predictor showing the ship passing over the land and became concerned that the ship would not clear Wheki Rock. He suggested to the master that they increase the rate of turn. The master reassured the staff captain that the cross currents were strong and would bring the ship back to the middle of the channel, reiterating what the pilot had explained during the pilot/master information exchange.

4.2.15. At about 0919 an off-track alarm[16] flashed on the ECDIS, but this information was not brought to the attention of the master or the pilot. The alarm was a signal that the ship had departed the predefined safety corridor either side of the planned track (see Figure 10). The alarm appeared only as a visual indicator on the radar screen because its audio had been muted prior to the ship entering Tory Channel (see Figure 12). Muting alarms on an ECDIS is not considered industry good practice.

[16] An alarm that sounds when a ship departs its planned route by a predesignated distance.

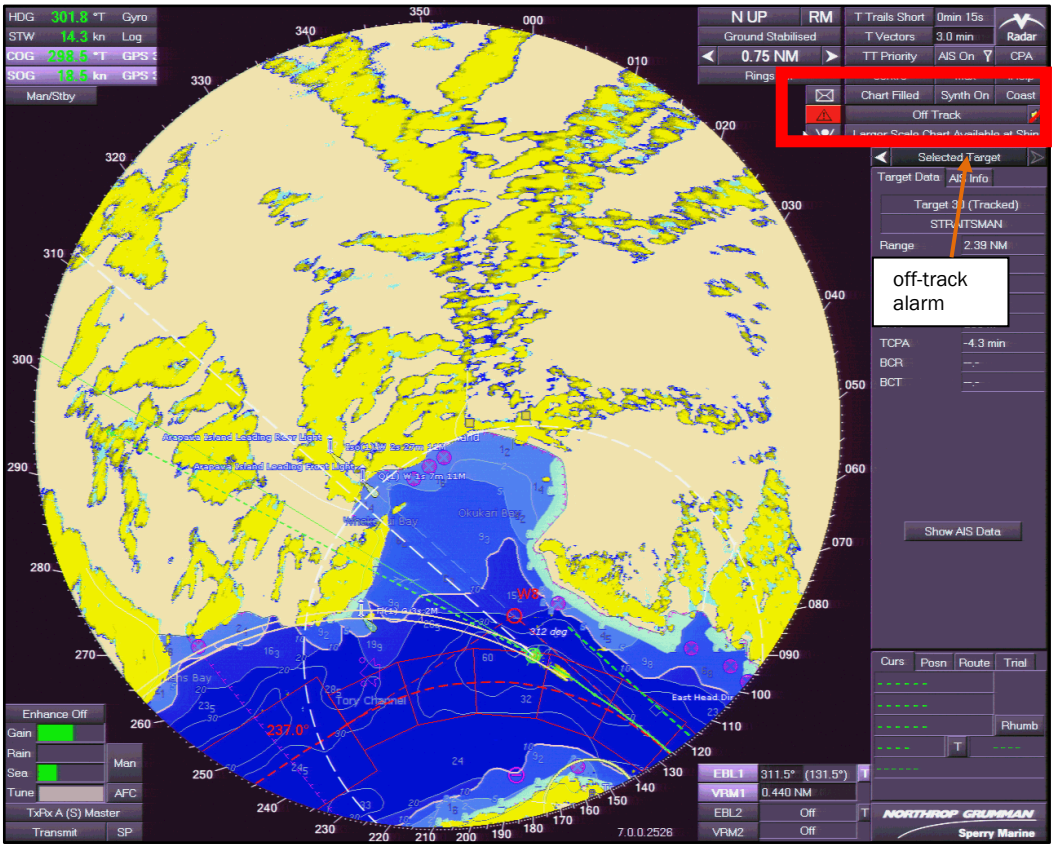

Figure 12
Off-track alarm triggered at about 0919

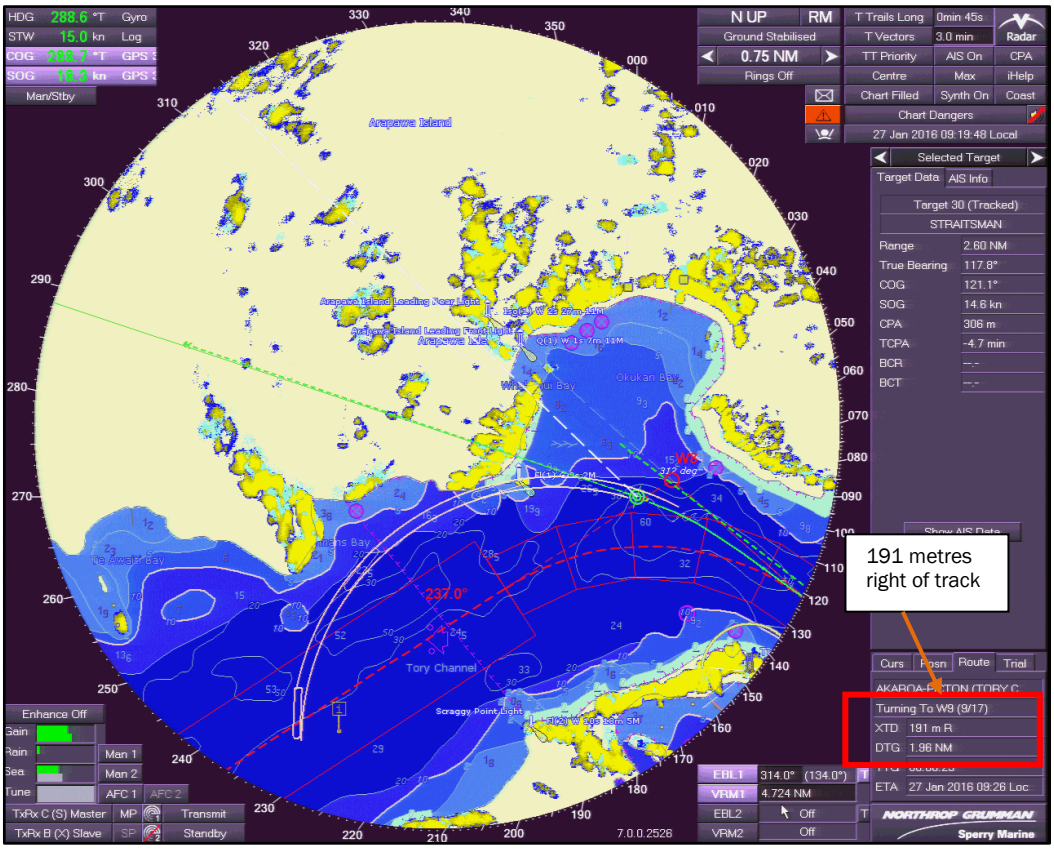

Figure 13
The *Azamara Quest* was 191 metres off track when the pilot ordered 20 degrees of helm

4.2.16. When the rudder angle was increased to 10 degrees to port, the *Azamara Quest* was 191 metres off track and the predicted path of the ship showed that it was going to pass over Wheki Rock. However, it was another 42 seconds before the rudder was increased to 20 degrees, shortly before the ship struck Wheki Rock (see Figure 13).

4.3. Navigation and bridge resource management

Safety issue: The standard of bridge resource management on board the Azamara Quest *did not meet the requirements of the company's safety management system, or the standards in the various International Maritime Organization publications.*

4.3.1. Bridge resource management was adopted in the early 1990s by the maritime industry as a safety and error management tool. It has since become an integral part of crew training and is included in the International Convention on Standards of Training, Certification and Watchkeeping developed by the International Maritime Organization.

4.3.2. Bridge resource management is described as the effective management and utilisation of all resources, human and technical, available to a bridge team to help ensure the safe completion of the ship's voyage. Some aspects of bridge resource management relevant to this accident are good closed-loop communication[17], participants sharing the same understanding of a planned passage, and maintaining situational awareness.

4.3.3. The objective of bridge resource management is to ensure that the best decisions are made and any errors or malfunction of equipment are identified and corrected before an incident can develop. In order to achieve this objective and navigate a ship safely, a shared understanding of the passage plan by the entire bridge team is critical.

4.3.4. The navigating officer plans the passage in advance, taking into account information sourced from port guides, sailing directions, and information provided by the local agents. However, the passage plan is seldom complete without the inclusion of local knowledge provided by the pilot. This information is usually discussed during the pilot/master information exchange just prior to the commencement of transit, as was the case on board the *Azamara Quest*.

4.3.5. The operator's navigation policy and procedures required a briefing to take place that involved all of the bridge team. It also required a formal exchange of operational information between the master, the bridge team and the pilot. However, although the first officer, second officer, helmsman and lookout were included in the initial internal briefing, they were not briefed on the pilot/master information exchange and how the pilot intended to execute the turn at the entrance to Tory Channel.

4.3.6. Figure 14 shows where the various members of the bridge team were standing during this exchange. The first officer was conducting the ship and was stationed on the port side of the instrument panel. The second officer was stationed near the chart table, while the staff captain was forward of the instrument panel. The helmsman and a lookout were also present on the bridge. Consequently, not all of the bridge team took part in the exchange.

[17] A technique used to avoid misunderstandings. When the sender gives a message, the receiver repeats this back. The sender then confirms the message, usually by using the word 'yes'. When the receiver incorrectly repeats the message back, the sender will say "negative", or something similar, and then repeat the correct message.

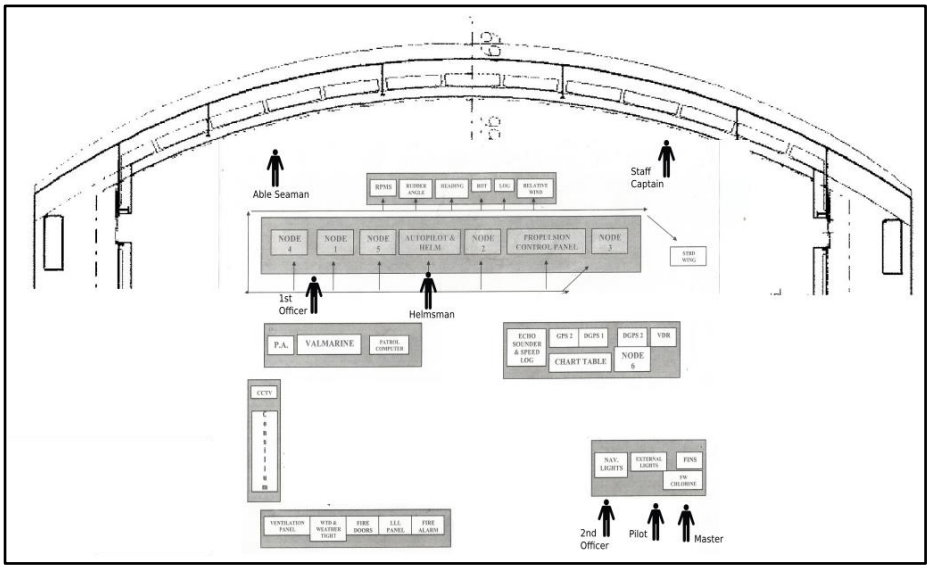

Figure 14
The location of the bridge crew during the pilot/master information exchange

4.3.7. The standard of communication among the bridge team was a departure from good bridge resource management practice and also represented a missed opportunity to ensure that everyone was sharing the same mental model of how the ship would transit Tory Channel.

4.3.8. To further complicate matters, the master and pilot had different understandings of how the flood tide would affect the ship during the turn, and neither of them clearly defined specific safety parameters, such as wheel-over positions and safety corridors, for the rest of the bridge team to use for monitoring. During the pilot/master exchange the master's comment that the ship would "turn on a dime" and that a three-degree helm order would give a 15-degree rate of turn was misinterpreted by the pilot as meaning the ship had a better turning ability than it actually did.

4.3.9. The *Azamara Quest*'s turning ability was more than adequate for it to make the turn into Tory Channel safely, and the ship very likely could have eventually achieved a rate of turn of 10-15 degrees per minute with only three degrees of rudder in the absence of any other factors influencing the rate of turn.

4.3.10. The concept of allowing a ship to depart from an intended track in the belief that other influences, such as tide in this case, would return the ship to that track carries a high risk when manoeuvring large ships in narrow waterways where margins for error are small. There is less risk involved when a ship is kept strictly to the intended track by increasing or decreasing its rate of turn in response to the influences of factors such as tide and wind. Also, this method leaves little room for doubt for other members of the bridge team tasked with monitoring the progress of the ship against the planned track in the turn.

4.3.11. The first officer who was in charge of navigational safety and collision avoidance was monitoring the ECDIS and radar units and was responsible for relaying any deviation from the planned track to the master, pilot and rest of the bridge team. There were numerous indicators available to the first officer and the rest of the bridge team to assist them in monitoring the ship along the planned track: the track predictor; the off-track alarm; and simply monitoring the ship's displayed position on the ECDIS and radar.

4.3.12. However, the bridge crew believed, based on what they had overheard during the pilot/master information exchange, that the tide would take effect and push the ship to port, even though the the electronic navigational equipment was indicating otherwise. Consequently, nobody challenged the master or the pilot when the ship left the safety corridor that had been set up either side of the intended track on the ECDIS.

4.3.13. The entire bridge team must have a shared understanding of the agreed passage plan if they are to monitor and challenge the pilot's actions effectively. This is an essential aspect of good bridge resource management, but it was not possible on board the *Azamara Quest* because no-one clearly understood the pilot's intentions or his explanation of the effect of the tidal stream. Therefore they could not challenge him when he did not start the turn at his intended wheel-over position or when the ship continued to deviate from the planned track.

4.3.14. The Commission has previously found poor bridge resource management under pilotage to be a factor contributing to accidents involving two other ships in New Zealand. The respective reports[18] made several recommendations aimed at improving the standard of pilotage and making the transition of the pilot into the ship's bridge team more seamless.

Findings

1 There was a delay in the *Azamara Quest* beginning the turn into Tory Channel as a result of there being no clear understanding among the whole bridge team of where the wheel-over point would be.

2 Even with the delay in beginning the turn, there was ample sea room for the *Azamara Quest* to complete the turn safely without grounding. However, the decisions of the bridge team did not result in a sufficient average rate of turn to prevent the ship striking Wheki Rock.

3 The pilot did not have sufficient time to appreciate fully the *Azamara Quest*'s manoeuvring characteristics before the ship was required to undertake one of the most difficult parts of the passage. This was very likely a factor contributing to the ship not attaining a sufficient rate of turn to avoid Wheki Rock.

4 The bridge team had no common (agreed) understanding of the plan for the ship to make the turn into Tory Channel because the details of how the turn would be made and the influence the tide would have on the ship during the turn had not been clearly communicated. Therefore, with no agreed plan, the task of monitoring the ship's progress through the turn was set up to fail.

5 The standard of bridge resource management on board the *Azamara Quest* once the harbour pilot joined the bridge team did not meet the standards required by the operator's safety management system, or those of the International Maritime Organization.

4.4. Pilot currency

Safety issue: The port company allowing its pilots to use transits made on the pilot launch count towards the requirements of Port Marlborough's Pilot Training and Proficiency Plan created a risk of pilots not being sufficiently current to pilot large ships through Tory Channel.

4.4.1. Maritime Rules Part 90: Pilotage required the *Azamara Quest* to carry a licensed Grade A (unrestricted) pilot to transit Tory Channel.

4.4.2. The Director of Maritime New Zealand specifies the minimum number of transits a pilot must make within a defined period of time in order to remain current for a pilotage area. For Port Marlborough this was 10 transits (five inwards and five outwards) of Tory Channel in any 12-month period in order to remain current. At least two inward and two outward of those transits were required to be made during the hours of darkness. These requirements were reflected in the Pilot Training and Proficiency Plan, which was approved by Maritime New

[18] Report MO-2016-204, Grounding of bulk carrier *Molly Manx* in Dunedin; Report MO-2017-202, Passenger vessel *L'Austral*, Grounding, Milford Sound.

Zealand. Complying with the Pilot Training and Proficiency Plan was therefore the mechanism by which the port company and the pilot would comply with Maritime Rules Part 90.

4.4.3. The Pilot Training and Proficiency Plan allowed some flexibility for the fact that pilots could have difficulty maintaining currency for Tory Channel due to the low number of ships requiring pilotage for Tory Channel. The plan stated:

> It is recognised that maintaining currency for Tory Channel is difficult due to low piloted ship numbers. Provided a pilot has carried out an aggregate of 26 transits of Northern Entrance and Tory Channel areas as a pilot in the preceding 12 months, recent experience requirements for Tory Channel can be met by substituting any combination of the following options (in order of priority) to make up for any shortfall in the required 10 qualifying transits:
>
> 1. Transits carried out by a pilot who is also a PEC [pilot exemption certificate] holder acting as master in command of a vessel greater than 100m in length.
>
> 2. Transits carried out by a pilot conning a vessel greater than 100m in length under the supervision of a PEC holder in command.
>
> 3. A maximum of two transits on the RNZN [Royal New Zealand Navy] simulator model of Tory Channel and Queen Charlotte Sound.
>
> 4. A maximum of six transits conning a Sealords fishing vessel exceeding 500GT under the supervision of a PEC holder in command, or the MSMP [Marlborough Sounds Marine Pilots] harbour tug *Maungatea*.

4.4.4. The Pilot Training and Proficiency Plan also said that the port company "recognises that transits carried out on vessels over 100m in length are beneficial and are therefore preferred over using the simulator or tug to make up any shortfall in qualifying transits".

4.4.5. However, for the purpose of maintaining pilot currency under the Pilot Training and Proficiency Plan, Port Marlborough permitted inward and outward transits of Tory Channel made in pilot boats[19] as qualifying transits. These transits were made by pilots on the way to and from ships that they had piloted or were about to pilot. The plan also allowed two transits undertaken in a ship simulator to count towards currency.

4.4.6. The pilot had significant previous experience piloting ships in and out of Tory Channel. He also had significant recent experience manoeuvring large ships in areas other than Tory Channel. However, in the previous 12 months the *Azamara Quest*'s pilot had conducted two inward transits and one outward transit piloting commercial ships. He had conducted four transits in a ship simulator, of which only two could be counted for the purpose of maintaining currency. This meant that he and the port company were relying on five transits in a pilot boat to maintain the currency required by the Pilot Training and Proficiency Plan.

4.4.7. Although not explicitly stated in the Pilot Training and Proficiency Plan, in the Commission's view the plan envisaged that the majority of the qualifying transits would be made on large ships. This is evidenced by the acceptance of other types of transit, with priority given to the pilot having some form of control or oversight of larger vessels (greater than 100 metres in length) down to smaller vessels, and with the lowest priority given to transits on port company tugs.

4.4.8. The port company pilot launch was smaller than a tug. For the purpose of maintaining Grade A pilot currency, a pilot being taken out to a ship in a small pilot launch should not have been considered equivalent to the difficulty and responsibility involved in piloting a large cruise ship through Tory Channel. This is particularly relevant when considering that Port Marlborough's primary control measure for managing the risk of a cruise ship grounding was to provide a licensed pilot who met the currency and training requirements specified in the Pilot Training and Proficiency Plan.

[19] Small launches 14.6 metres in length.

4.4.9. The harbourmaster did not monitor the currency of pilots and had limited visibility of their compliance with the Pilot Training and Proficiency Plan, as there was no statutory requirement to do so. However, the acting harbourmaster agreed that, had he been aware that the pilot boat transits were being counted for proficiency, the pilot would not have been permitted to act as pilot for the *Azamara Quest* through Tory Channel.

4.4.10. Monitoring pilot currency was a statutory requirement that needed to be fulfilled by Maritime New Zealand. However, both Port Marlborough and the harbourmaster had a responsibility to ensure that pilots complied with the Pilot Training and Proficiency Plan, because it was the mechanism for ensuring compliance with Maritime Rules Part 90: Pilotage.

4.4.11. The requirements of Maritime Rules Part 90 through the port company's Pilot Training and Proficiency Plan were an absolute minimum in the interests of maritime safety. Pilotage providers would normally look to exceed minimum requirements in order to reduce the risk of pilot currency contributing to accidents. It is the Commission's view that in this case not even the minimum standard would have been met if the pilot and port company had relied on five transits on the port company pilot launch to maintain currency.

4.4.12. Since the accident Port Marlborough has reviewed its Pilot Training and Proficiency Plan, taking into consideration the Commission's urgent recommendation MO-2016-202, and amended it to clarify that qualifying transits for the purpose of pilot currency are ships over 500 gross tonnes for Queen Charlotte Sound and 350 gross tonnes for Tory Channel.

Finding

6 The port company and pilot had to rely on the pilot making five transits of Tory Channel using the port company pilot launch in order to maintain currency with the Pilot Training and Proficiency Plan, which in the Commission's view did not meet the intent of the plan.

4.5. Port and harbour risk assessment and risk mitigation

Safety issue: Port Marlborough's port risk assessment and Marlborough District Council's harbour risk assessment could not be easily integrated, making it difficult to have one integrated risk assessment for the harbour.

4.5.1. Marlborough District Council's harbour risk assessment had originally been developed in 2005 and had been reviewed a number of times, the latest in 2015. That risk assessment had been carried out using risk assessment software .

4.5.2. In December 2014 Port Marlborough had completed a port risk assessment and implemented a revised safety management system. However, the risk assessment had not been carried out using the same risk assessment platform as Marlborough District Council's and therefore had different risk scoring and thresholds from Marlborough District Council's harbour risk assessment. This meant that there were difficulties in integrating Port Marlborough's risk assessment with the wider harbour risk assessment, particularly for risks that were common to both organisations. Maritime New Zealand had made an observation on the lack of integration of risk assessments in an audit conducted in 2015.

4.5.3. The success of harbour safety management relies on a high level of collaboration between the port operator and the district council at the local level. Risks identified at the port operator level need to be considered in a wider harbour risk context and incorporated into the harbour risk assessment, especially if the risks affect the overall safety of the harbour. The New Zealand Port and Harbour Marine safety Code required the harbourmaster to co-ordinate this integration of risk assessments.

4.5.4. Marlborough District Council's harbourmaster and Port Marlborough were aware of the different methodologies and had initiated several discussions to resolve the issue. The harbourmaster had also attempted to engage Port Marlborough in identifying the common marine risks that needed to be included in the overall harbour risk assessment, from a harbour safety perspective. However, no significant progress had been made at the time of the accident.

4.5.5. A lack of integration of risk assessments was evident at the time of the *Azamara Quest* accident. Port Marlborough's risk assessment identified cruise ship groundings as a possible risk and relied on a licensed pilot with specialist local knowledge, training and currency to manage the safety risks presented by cruise ships calling at the port of Picton. However, this risk was not incorporated into the overall harbour risk assessment, which only identified the risk of ferry grounding and relied on the standard operating procedures followed by the Cook Strait ferry operators as a means of managing the risk of collisions and groundings.

4.5.6. The Cook Strait ferries transit Tory Channel daily with pilot-exempt masters and crew who are very familiar with their ships and the local environment. However, masters and crews on cruise ships are less familiar with Tory Channel and rely on licensed, trained and current pilots to provide local knowledge and assist them to navigate their ships safely.

4.5.7. A fully integrated harbour risk assessment could have assisted Port Marlborough and Marlborough District Council to have a greater appreciation of the need to ensure that pilots, as the primary mitigators of risk of cruise ship groundings and collisions in Tory Channel, remained current and met the expectations of Maritime Rules Part 90.

4.5.8. Since the accident Port Marlborough and Marlborough District Council's harbourmaster have taken a number of steps to integrate the two risk assessments. They have initiated a review of their respective risk assessments using the same software platform with a view to working together on one integrated risk assessment.

4.5.9. Port Marlborough has also invested in documentation control software to build a marine safety management system based on controlled and structured information. The harbourmaster has access to the port's safety management system and will receive a monthly report on the currency and training of all pilots operating within the Marlborough pilotage district.

Finding

7 At the time of the accident, Port Marlborough New Zealand and Marlborough District Council did not have a fully integrated harbour risk assessment, which meant the two entities did not collectively have a good appreciation of all the risks associated with cruise ships navigating Tory Channel.

5. Findings

5.1. There was a delay in the *Azamara Quest* beginning the turn into Tory Channel because there was no clear understanding among the whole bridge team of where the wheel-over point would be.

5.2. Even with the delay in beginning the turn, there was ample sea room for the Azamara Quest to complete the turn safely without grounding. However, the decisions of the bridge team did not result in a sufficient average rate of turn to prevent the ship striking Wheki Rock.

5.3. The pilot did not have sufficient time to appreciate fully the Azamara Quest's manoeuvring characteristics before the ship was required to undertake one of the most difficult parts of the passage. This was very likely a factor contributing to the ship not attaining a sufficient rate of turn to avoid Wheki Rock.

5.4. The bridge team had no common (agreed) understanding of the plan for the ship to make the turn into Tory Channel because the details of how the turn would be made and the influence the tide would have on the ship during the turn had not been clearly communicated. Therefore, with no agreed plan, the task of monitoring the ship's progress through the turn was set up to fail.

5.5. The standard of bridge resource management on board the *Azamara Quest* once the harbour pilot joined the bridge team did not meet the standards required by the operator's safety management system, or those of the International Maritime Organization.

5.6. The port company and pilot had to rely on the pilot making five transits of Tory Channel using the port company pilot launch in order to maintain currency with the Pilot Training and Proficiency Plan, which in the Commission's view did not meet the intent of the plan.

5.7. At the time of the accident, Port Marlborough New Zealand and Marlborough District Council did not have a fully integrated harbour risk assessment, which meant the two entities did not collectively have a good appreciation of all the risks associated with cruise ships navigating Tory Channel.

6. Safety issues

6.1. The standard of bridge resource management on board the *Azamara Quest* did not meet the requirements of the company's safety management system, or the standards in the various International Maritime Organization publications.

6.2. The port company allowing its pilots to use transits made on the pilot launch count towards the requirements of Port Marlborough's Pilot Training and Proficiency Plan created a risk of pilots not being sufficiently current to pilot large ships through Tory Channel.

6.3. Port Marlborough's port risk assessment and Marlborough District Council's harbour risk assessment could not be easily integrated, making it difficult to have one integrated risk assessment for the harbour.

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7. Safety actions

7.1. General

7.1.1. The Commission classifies safety actions by two types:

(a) safety actions taken by the regulator or an operator to address safety issues identified by the Commission during an inquiry that would otherwise result in the Commission issuing a recommendation

(b) safety actions taken by the regulator or an operator to address other safety issues that would not normally result in the Commission issuing a recommendation.

7.2. Safety actions addressing safety issues identified during an inquiry

7.2.1. Since the accident the following safety actions have been taken by Port Marlborough:

- Port Marlborough has reviewed its Pilot Training and Proficiency Plan (the Plan) taking into consideration Urgent Recommendation MO-2016-202 issued by the Commission.
- The Plan now clarifies 'qualifying transits' for the purpose of pilot currency as ships over 500 GT for Queen Charlotte Sound and 350 GT for Tory Channel in alignment with the Commission's view of the intent of Maritime Rules Part 90: Pilotage. The Plan has been submitted to MNZ [Maritime New Zealand] and Port Marlborough is awaiting feedback from MNZ.
- Port Marlborough has been working with Harbourmaster on ways to address the problematic interface between the two risk assessments prior to the *Azamara* incident.
- The Harbourmaster has been reviewing the Harbour Risk Assessment in conjunction with a marine risk consultant.
- The Harbour Risk Assessment review has yet to be completed and this has been seen as an opportunity for both parties to work together on one integrated risk assessment (with risks clearly attributed to each respectively). The Harbourmaster has approached a marine risk consultant to this effect and we are working constructively together towards this end.
- The Harbourmaster is in the process of writing an MoU [memorandum of understanding] to document this approach for the future.
- One of the key facets that has enabled the Port to improve on the proactive management of pilotage services is the establishment of robust systems.
- The Port has invested in a software platform, Mango, which has essentially become the basis of the Port's SMS [safety management system], allowing it to build a marine safety management system based on controlled and structured information.
- The Port's SMS is now fully integrated across the marine team, with each member having the ability to raise Corrective Action Reports which are methods of reporting safety observations, improvements and recommendations.
- Source documents are tracked and the system provides 'one source of truth' for procedures, protocols, training records and policies.
- The Harbourmaster has access to the Port SMS and has been invited to audit the system. The next stage is to provide the Harbourmaster with remote log-in access; this will be completed shortly.
- The introduction of Mango has also facilitated improvements to monthly reporting. Pilot currency and training records are now easily accessible and are reported on a monthly basis to senior management, the Port's Board of Directors and the Harbourmaster.

7.2.2. Since the accident the following safety actions have been taken by Marlborough District Council:

- The harbour master has asked a marine risk consultant to put together a proposal to carry out a risk assessment of the operational risks that relate to the provision of pilotage services.
- Where specific risk assessments are undertaken to assess a particular ship and/or transit PMNZ [Port Marlborough] and Marlborough District Council will follow a predefined and agreed process following the MNZ guidelines on Risk Assessment.
- Revision of the Marlborough District Council Harbour Risk Assessment (underway).
- Revision of the Marlborough Navigation Safety Bylaw (underway).
- Revocation of all Harbourmaster directions and issuance of a new Harbourmaster directions to address shipping risk in Marlborough (must complete before end of June).
- Revision of the Pilot Exemption Training Plan (underway).
- Full review of the Marlborough District Council Maritime SMS so as to capture all of the above changes (aim to complete this year).

8. Recommendations

8.1. General

8.1.1. The Transport Accident Investigation Commission may issue, or give notice of, recommendations to any person or organisation that it considers the most appropriate to address the identified safety issues, depending on whether these safety issues are applicable to a single operator only or to the wider transport sector. In this case, recommendations have been issued to the Chief Executive of Marlborough District Council and the Director of Maritime New Zealand, with notice of recommendation one to the Director of Maritime New Zealand and recommendation two to the Chief Executive of Port Marlborough for their information.

8.1.2. In the interests of transport safety, it is important that these recommendations are implemented without delay to help prevent similar accidents or incidents occurring in the future.

8.2. Recommendation one

8.2.1. **On 2 August 2016 the Commission recommended that before allowing cruise ships to use Tory Channel in future, the Chief Executive of Marlborough District Council review its harbour risk assessment for the safe navigation of ships through Tory Channel, and in doing so consider the safe navigation of cruise ships through Tory Channel as a separate risk. The new risk assessment should consider, but not be limited to, the following factors:**

- **the limited number of piloted ships using Tory Channel make it difficult for harbour pilots to maintain currency**
- **cruise ship crews will not be familiar with Tory Channel**
- **harbour pilots will not necessarily be familiar with the manoeuvring characteristics and the navigation equipment of ships they are piloting**
- **there is only a short time available before transiting Tory Channel for a pilot and a ship's crew to form a cohesive bridge team**
- **as well as the Tory Channel entrance itself, the remainder of Tory Channel is narrow, with significant Cook Strait passenger-ferry traffic. In order to help mitigate the risk of collisions between ships under pilotage and passenger ferries, pilots' passage plans would need to be aligned with those of the passenger ferries. (016/16)**

On 9 August 2016, Marlborough District Council replied:

> The Council notes the content of the finalised recommendation but wishes to ensure that the terminology used is fully understood by all parties. In this context, the Council wishes to clarify its understanding of the difference between risk/hazard and control of these to ensure that the Commission has the same understanding.
>
> It is the Council's belief that the risks/hazards associated with transits through Tory Channel Entrance as well as the passage through the Channel are already clearly identified and, although not ship specific, the outcome of the risk/hazard realisation will result in a range of consequences irrespective of the ship type. It is the level of the consequences that drive the associated risk control measures. The Council agrees that the generic controls already identified do not specifically address cruise ships transiting this area and that this is a shortcoming of the existing risk assessment that will be addressed but the risks/hazards are already documented.
>
> The Commission will also be aware that a number of cruise ship specific draft control measures were identified immediately post the *Azamara Quest* incident and these were forwarded to the Commission's investigation team.
>
> The Commission will have noted that each of these control measures has an associated implementation date and the Council wishes to be satisfied that these dates and control measures are realistically achievable and the costs not

at a level that is disproportionate to anticipated traffic volumes. The key to resumption of any cruise ship transit through Tory Channel is the implementation of the identified control measures and until these are in place, transits are permitted through Harbour master Direction.

On 18 August 2016, Marlborough District Council further replied:

> Further to the Commission's recommendations, a number of control measures specific to cruise ships transiting Tory Channel have now finalised and a copy is attached for your information.
>
> The Commission will note that each control measure has an associated implementation timeframe and unless these are achieved for the 'critical' and 'significant' controls, cruise ship transits of Tory Channel may not be able to resume.
>
> I trust that these measures adequately address the Commission's safety recommendations.

8.3. Notice given to Director of Maritime New Zealand

8.3.1. On 2 August 2016 the Commission gave notice to the Director of Maritime New Zealand that the Commission has recommended that before allowing cruise ships to use Tory Channel in future, the Chief Executive of Marlborough District Council review its harbour risk assessment for the safe navigation of ships through Tory Channel, and in doing so consider the safe navigation of cruise ships through Tory Channel as a separate risk. The new risk assessment should consider, but not be limited to, the following:

- the limited number of piloted ships using Tory Channel make it difficult for harbour pilots to maintain currency
- cruise ship crews will not be familiar with Tory Channel
- harbour pilots will not necessarily be familiar with the manoeuvring characteristics and the navigation equipment of ships they are piloting
- there is only a short time available before transiting Tory Channel for a pilot and a ship's crew to form a cohesive bridge team
- as well as the Tory Channel entrance itself, the remainder of Tory Channel is narrow, with significant Cook Strait passenger-ferry traffic. In order to help mitigate the risk of collisions between ships under pilotage and passenger ferries, pilots' passage plans would need to be aligned with those of the passenger ferries. (016/16)

8.4. Recommendation two

8.4.1. The Pilot Training and Proficiency Plan is ambiguous in its wording on whether transits made in pilot boats can be counted as inward or outward pilotage. Notwithstanding any ambiguity, the Commission is questioning the appropriateness, for the purpose of maintaining Grade A pilot currency, of likening a pilot being driven out to a ship in a small pilot launch with the difficulty and responsibility involved in piloting a large cruise ship through Tory Channel.

8.4.2. **On 2 August 2016 the Commission recommended that the Director of Maritime New Zealand review Port Marlborough's Port Safety Management System and ensure that it has appropriate procedures in place to meet the requirements of its Pilot Training and Proficiency Plan and that the plan meets the intent of Maritime Rules Part 90: Pilotage. (017/16)**

On 18 August 2016, Maritime New Zealand replied:

> The Director of Maritime NZ accepts the recommendation. Maritime NZ is working with Marlborough District Council to ensure clarity in relation to pilot currency. Maritime NZ does not believe that situations of this type currently exist in other pilotage areas around New Zealand but it will ensure that the TAIC recommendations are circulated to other regional councils.

8.5. Notice given to Chief Executive of Port Marlborough

8.5.1. On 2 August 2016 the Commission recommended that the Director of Maritime New Zealand review Port Marlborough's Port Safety Management System and ensure that it has appropriate procedures in place to meet the requirements of its Pilot Training and Proficiency Plan and that the plan meets the intent of Maritime Rules Part 90: Pilotage. (017/16)

9. Key lesson

9.1. Safe navigation in pilotage waters is a shared task of the bridge team and the pilot. This accident highlights the importance of a comprehensive pilot/master exchange of information and ensuring it is communicated to the rest of the bridge team.

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MO-2016-203	Bulk log carrier Mount Hikurangi, Crew fatality, during cargo securing operation, 27 February 2016
MO-2014-203	Fatal injury, Purse seine fishing vessel, *Captain M. J. Souza*, 24 August 2014
MO-2015-202	Containership *Madinah*, loss of person overboard, Lyttelton Harbour entrance, 2 July 2015
MO-2016-202	Urgent recommendation: Cruise ship *Azamara Quest*, contact with Wheki Rock, Tory Channel, 27 January 2016
MO-2011-202	Roll-on-roll-off passenger ferry *Monte Stello*, contact with rock, Tory Channel, Marlborough Sounds, 4 May 2011
MO-2014-201	*Dream Weaver*, flooding due to structural failure of the hull, Hauraki Gulf, 23 February 2014
MO-2010-206	Coastal container ship *Spirit of Resolution*, grounding on Manukau Bar, Auckland, 18 September 2010
MO-2014-202	Lifting sling failure on freefall lifeboat, general cargo ship *Da Dan Xia*, Wellington, 14 April 2014
11-204	Container ship MV *Rena* grounding, on Astrolabe Reef, 5 October 2011
13-201	Accommodation fire on board the log-carrier, *Taokas Wisdom*, Nelson, 11 July 2013
13-202	Bulk carrier, *IDAS Bulker*, pilotage incident Napier, Hawke's Bay, 8 August 2013
12-202	Fishing vessel *Torea*, collision with uncharted rock, Foveaux Strait, 24 August 2012
09-210	Bulk carrier, *Taharoa Express*, cargo shift, Port Taharoa, 16 December 2009
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