Inquiry 12-202: Fishing vessel *Torea*,
collision with uncharted rock, Foveaux Strait, 24 August 2012

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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 12-202
Fishing vessel *Torea*, collision with uncharted rock, Foveaux Strait, 24 August 2012

Approved for publication: December 2013

Transport Accident Investigation Commission

About the Transport Accident Investigation Commission

The Transport Accident Investigation Commission (Commission) is 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, 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 1980 have been referenced as footnotes only. Other documents referred to during the Commission's inquiry that are publicly available are cited.

Photographs, diagrams, pictures

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

The *Torea* in Foveaux Strait

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Abbreviations

°	degree(s)
Commission	Transport Accident Investigation Commission
GPS	global positioning system

Glossary

forefoot	the lower extremity of the stem, usually curved, where it joins the keel. Generally regarded as part of the keel, the stem being said to rest upon it
foul ground	the seabed on or in which known dangers such as wrecks and other obstructions may cause a vessel's anchor or nets to become fouled
knot(s)	nautical mile(s) per hour
stem	the vertical heavy frame rising upwards from the forward end of the keel, to which it is scarphed or connected. The forward ends of the strakes are fastened to it

Data summary

Vehicle particulars

Name:	*Torea*
Type:	passenger/fishing (oyster) vessel
Class:	Maritime New Zealand
Limits:	inshore limits comprising: Foveaux Strait, Fiordland, and inside an area commencing at Puysegur Point, thence 235 degrees (°) to the New Zealand Territorial Limit, thence following the 12-mile Territorial Limit east and south around Stewart Island to a point 035°, 12 miles from Waipapa Point, thence to Waipapa Point
Classification:	New Zealand safe ship management
Length:	20.82 metres
Breadth:	2.3 metres
Gross tonnage:	45
Built:	Ship Builders Limited, Auckland, New Zealand, 1940
Propulsion:	one Gardener 8L3B diesel engine producing 171 kilowatts, driving a single fixed-pitch propeller
Service speed:	9 knots
Owner/operator:	Campbelltown Seafoods Limited
Port of registry:	Bluff
Minimum crew:	3

Date and time	24 August 2012 at about 12:30[1]
Location	Foveaux Strait
Persons involved	24 passengers, 3 crew
Injuries	nil
Damage	forefoot and stem of vessel crushed. Hull planking in way of the forecastle accommodation split. Extensive damage to vessel's interior and equipment due to water immersion

[1] Times in this report are in New Zealand Standard Time (co-ordinated universal time + 12 hours) and are expressed in the 24-hour mode.

1. Executive summary

1.1. On 24 August 2012, the passenger fishing charter vessel *Torea* was taking a group of passengers on a fishing charter in the Foveaux Strait area. There were 24 passengers and 3 crew members on board. The *Torea* was only permitted to carry 20 passengers. The skipper was unaware that he had more than 20 passengers on board.

1.2. While fishing for cod close to Seal Rocks in the area off Ruapuke Island, the *Torea* struck an uncharted rock as the skipper was increasing speed to move to another area.

1.3. The *Torea*'s hull was damaged in the collision and water began entering the main cabin. The skipper made a distress radio call, then deliberately beached the vessel on nearby Ruapuke Island to prevent it sinking.

1.4. The rescue response by nearby fishing vessels, the Bluff Coastguard and the Bluff Harbour pilot launch was rapid and well-co-ordinated. All passengers were taken off the *Torea* without injury.

1.5. The Transport Accident Investigation Commission (Commission) concluded that the collision with the rock was a risk associated with this type of fishing that had been reasonably mitigated by the skipper. In this case, however, the collision could possibly have been prevented had he remained at a slower speed until clear of the shallow area, which was known for the existence of uncharted rocks.

1.6. The fact that the *Torea* was carrying 4 more than the maximum permissible number of passengers is a safety issue, even though the *Torea* was carrying sufficient lifesaving equipment for the additional passengers on board. The operator has since addressed this safety issue, so the Commission has made no new recommendations

1.7. The key lessons learnt from the inquiry into this occurrence were:

- skippers must know how many persons they have on board and ensure that the maximum permitted number of passengers is never exceeded

- it is risky operating small craft in shallow areas that have not been fully surveyed, so skippers must proceed with the utmost caution at minimal speed to avoid colliding with uncharted dangers.

2. Conduct of the inquiry

2.1. The Commission was notified by Maritime New Zealand on the afternoon of 24 August 2012 of an accident involving the fishing charter vessel *Torea* that had just occurred in Foveaux Strait.

2.2. The Commission opened an inquiry into the occurrence under section 13(1) of the Transport Accident Investigation Commission Act 1990, and appointed an investigator in charge.

2.3. Two investigators travelled to Invercargill on 24 August 2012. Over 3 days they interviewed the crew of the vessel, the owner and other persons involved with the rescue effort.

2.4. Information on the vessel was sourced from the vessel's owner and safe ship management company, and Maritime New Zealand. Information on the rescue effort was sourced from New Zealand Police.

2.5. An investigator returned to Invercargill on 6 September 2012 to carry out further interviews and to source more information on the vessel. One key witness, the passenger who had organised the charter group, could not be found.

2.6. On 20 November 2013 the Commission approved the circulation of a draft final report to 9 interested persons. A response was received from one interested person.

2.7. On 16 December 2013 the Commission approved the publication of the final report.

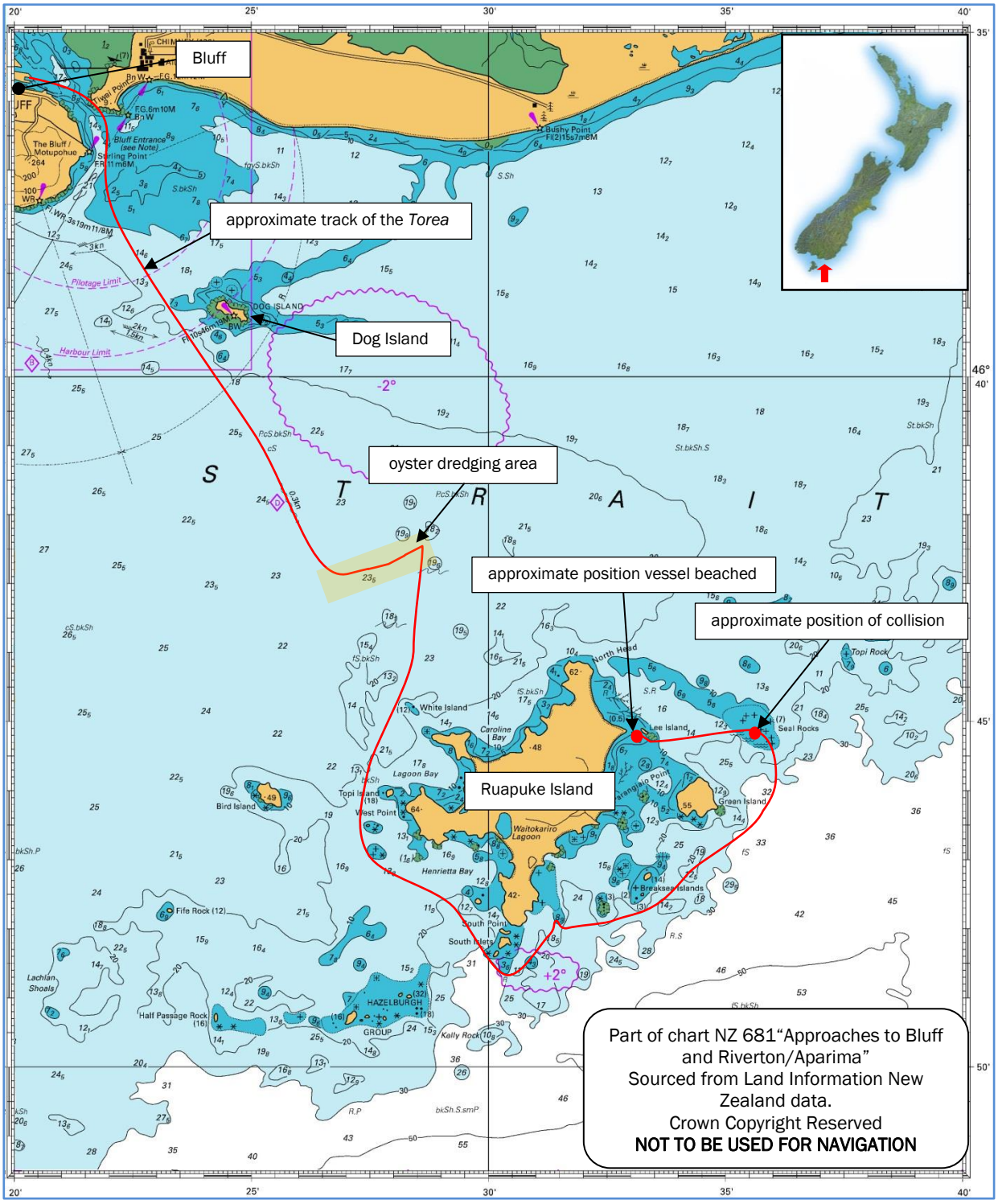

Figure 1
Chart of the general area showing the approximate track of the *Torea*

3. Factual information

3.1. Narrative

3.1.1. On 24 August 2012 at about 0600, the master and crew of the oyster dredging vessel *Torea* boarded the vessel at Island Harbour in Bluff and readied the vessel for a passenger fishing charter trip.

3.1.2. The passengers entered the wharf area via the main South Port New Zealand Limited security gate and congregated at the *Torea*. The trip organiser faxed the port security officer with a passenger list and the officer checked each passenger off against the list.

3.1.3. When the vessel had been prepared, the passengers boarded the vessel and the master gave a safety briefing before the lines were cast off.

3.1.4. The vessel left its berth at about 07:00 and proceeded through Bluff Harbour and into Foveaux Strait. While transiting Bluff Harbour the master tried contacting Bluff Fishermen's Radio to pass a trip report[2], but he was unable to make contact. The skipper asked one of the crew members to find out how many passengers were on board. The crew member asked the charter group organiser (trip leader). The trip leader said that there were 20 passengers. There were in fact 24, and the *Torea* was only surveyed to carry 20 passengers.

3.1.5. The *Torea* proceeded to between Ruapuke Island and Dog Island to dredge for oysters (see Figure 1). The *Torea* completed about 4 or 5 tows until all the charter passengers and crew had caught their quota.

3.1.6. The *Torea* then headed south to drift for cod off the south point of Ruapuke Island. Throughout the morning the master took the *Torea* up the east coast of Ruapuke Island, stopping several times to drift and fish for cod.

3.1.7. As the *Torea* approached Seal Rocks the master studied previous tracks recorded on the vessel's navigation computer. The master noted one area where he did not wish to go as he knew there were uncharted rocks in the vicinity. He then manoeuvred the *Torea* over foul ground[3] and allowed the vessel to drift with the tidal current while the passengers fished. Cod frequent the boundary between sandy and foul ground.

3.1.8. After completing 2 drifts the master decided that it was time to leave the Seal Rocks area, so he turned the *Torea* into the tide and was just increasing the engine speed when the *Torea* struck a rock.

3.1.9. The master went to check the engine room. As he came out of the engine room his 2 crew members advised that the forecastle cabin was filling up with water, so he went back into the engine room and activated the vessel's electric bilge pump.

3.1.10. One of the crew members went to the wheelhouse top and prepared the vessel's life-rafts and dinghy for deployment. The other crew member started issuing the passengers with lifejackets. There were sufficient lifejackets for all of the passengers and crew.

3.1.11. At about 1225 the master headed the vessel towards a beach on Ruapuke Island and engaged the automatic pilot. He then made a distress call on very-high-frequency marine radio channel 16. When Maritime Radio responded to his call he gave his position and a total of 23 persons on board. Maritime Radio passed on the details to Rescue Coordination Centre New Zealand, which co-ordinated the emergency response. One of the passengers had made a 111 call to the Police. The Police also passed on details to the Rescue Coordination Centre.

[2] Notice of the intentional trip and number of people on board.
[3] The seabed on or in which known dangers such as wrecks and other obstructions may cause a vessel's anchor or nets to become fouled.

3.1.12. When the vessel was about halfway between Seal Rocks and the beach, the master returned to the engine room and found that the electric bilge pump was not working. He then set up the engine-driven deck wash pump to draw from the bilge.

3.1.13. The *Torea* grounded as it approached the beach. By that time seawater had almost filled the forecastle cabin, and had begun flooding the engine room through holes near the top of the bulkhead that separated the 2 compartments.

3.1.14. As the *Torea* grounded the crew members launched the vessel's dinghy and one of them started ferrying passengers ashore.

3.1.15. At about 13:00 a fishing vessel arrived alongside, followed shortly after by the Bluff Coastguard vessel and the Bluff Harbour pilot vessel. The passengers were initially transferred to the Bluff Coastguard vessel, then to the Bluff Harbour pilot vessel, which transported them back to Bluff, arriving there at about 1430.

3.1.16. The *Torea* was salvaged over the next few days, with the vessel returning to Bluff under tow on 29 August 2012.

3.2. Vessel information and manning

3.2.1. The *Torea* was classed as a restricted limit passenger/fishing vessel, and had been built in Auckland in 1940 by Shipbuilders Limited. The present owners had owned and operated the vessel for about 20 years.

3.2.2. The *Torea*'s hull was constructed of wooden planks on steel frames. Over the course of the vessel's life the superstructure and internal fittings had been upgraded and modified to make it suitable for the carriage of passengers as well as its oyster-dredging function.

3.2.3. The *Torea* was originally steam powered, but at some time in its life had been converted to an 8-cylinder in-line Gardener 8L3B diesel engine that produced 171 kilowatts, driving a single fixed-pitch propeller through a reduction gearbox. It had a service speed of about 9 knots.

3.2.4. The *Torea* had been fitted with the following navigational and communication equipment at the time of its most recent survey:

- 2 very-high-frequency radio transceivers
- one single side-band radio transceiver
- one radar
- one emergency position indicating radio beacon
- one echo sounder
- one standard magnetic compass
- one autopilot
- 3 global positioning system (GPS) receivers
    - one Furuno colour GPS receiver and chart plotter
    - one Koden stand-alone GPS
    - one Olex chart plotter with seabed mapping running on a computer.

3.2.5. The master had been involved in the maritime industry both in New Zealand and abroad for the majority of his working life. He had been involved with maintaining the hull of the *Torea* since 2000 and had been master on the vessel since 2005. The master held a New Zealand Coastal Master's certificate of competency with a Home Trade endorsement, which was valid until 30 April 2013. The master also held a New Zealand Second Class Diesel Trawler Engineer's certificate of competency.

3.2.6. One of the deckhands had been involved in the maritime industry for the majority of his working life. He had just completed the oyster season on board the *Torea* and had carried on to complete the fishing charter trips. He held a New Zealand Commercial Launchmaster's certificate of competency.

3.2.7. The second deckhand had also been involved throughout his working life in the maritime industry. He did not hold any formal maritime qualification.

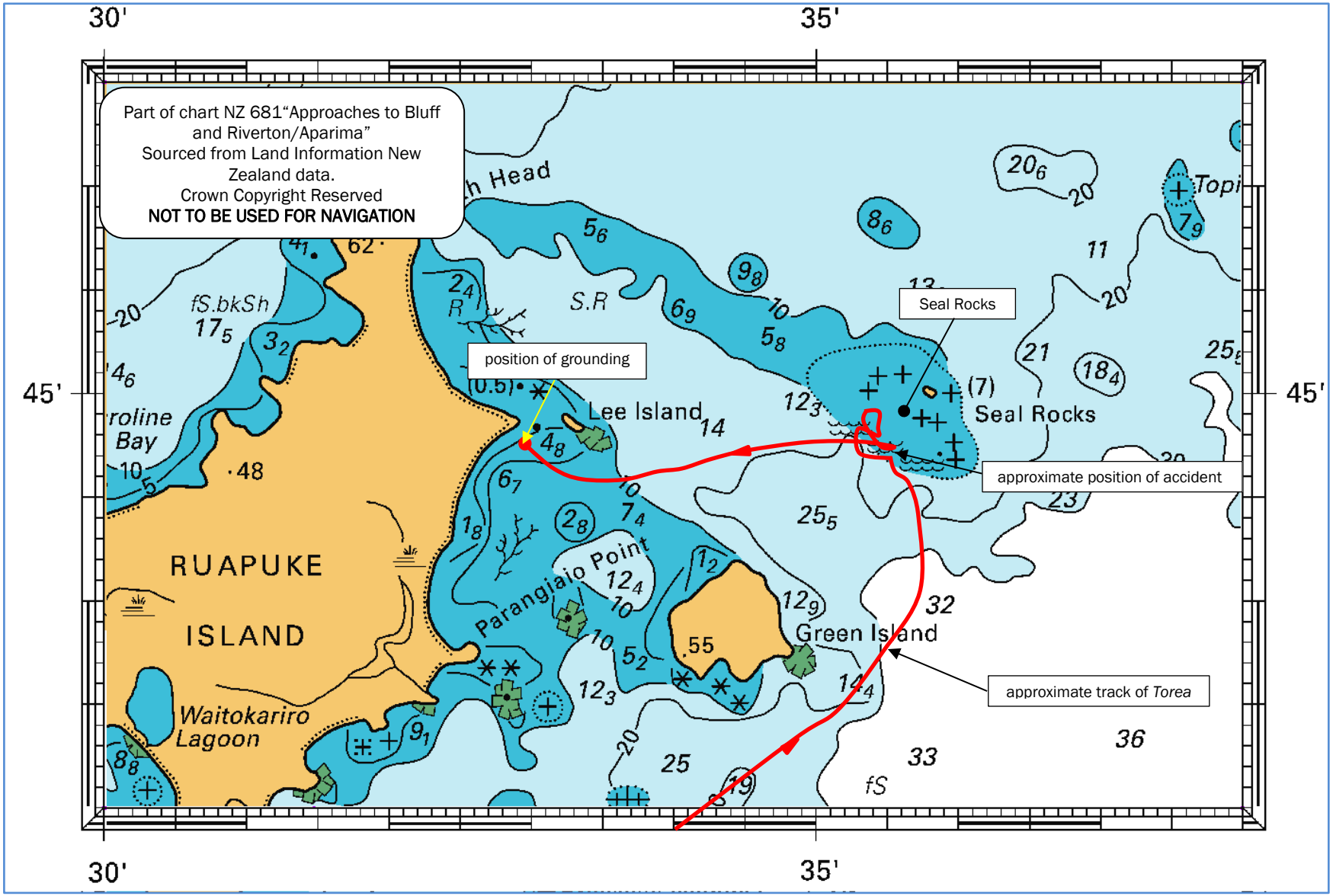

Figure 2
Chart showing the *Torea*'s track to the east of Ruapuke Island

Figure 3
The *Torea* aground and partially submerged off Ruapuke Island

Figure 4
Damage sustained to the port side of the underwater hull of the *Torea*

4. Analysis

4.1. Introduction

4.1.1. The wind was blowing from the north to northwest at about 20 knots. The skies were overcast and the visibility good. Where the *Torea* was drift fishing it was sheltered from the sea by the shallow reef of Seal Rocks. The weather conditions were therefore suitable for the trip.

4.1.2. The crew held the appropriate qualifications to operate the *Torea* on commercial passenger fishing charters.

4.1.3. The *Torea* had a current survey and carried more than the correct lifesaving equipment for its operation. There was no malfunction of the machinery installation or navigation equipment on the day.

4.1.4. After the *Torea* struck the rock and began flooding, the actions of the crew in resolving the situation were well thought out and co-ordinated. The response from emergency services was rapid and followed good search and rescue procedures. The result was that all passengers and crew were rescued without injury.

4.1.5. The following analysis describes the circumstances that led to the *Torea* running aground. Also discussed is the one key safety issue arising out of this accident – the *Torea* was carrying more passengers than it was permitted to carry.

4.2. What happened

4.2.1. The *Torea*'s skipper was targeting blue cod species for his passengers. The blue cod's habitat is on rocky bottoms[4] close to reefs and the coast and out to about 150 metres' depth. Fishing for blue cod often involves manoeuvring close to rocks and rocky outcrops at slow speed. One of the risks with this type of operation is incurring what is usually slow speed bumps and scrapes on rocks, particularly when navigating around areas such as Seal Rocks, where the accuracy of underwater charting surveys is limited.

4.2.2. There are a number of measures a skipper can take to reduce the risk of this type of operation, and the skipper was using most of these. He was aware from his previous experience that uncharted rocks existed in the area. He:

- studied the largest-scale chart of the area
- studied the computerised chart plotter with his previous tracks and depths of water available to estimate where it was safe to navigate
- usually operated at slow speed (or drifted)
- had his crew keeping a lookout for shallow water near the bow of the vessel.

4.2.3. Before the master took the *Torea* over the foul ground he consulted his computerised navigation system, which showed all his previous tracks in the area. This navigation system was interfaced with the echo sounder and plotted the depth of water under the vessel for each saved track. Therefore, the navigation system built up a map of the seabed over which the vessel had previously travelled.

4.2.4. He determined from his previous tracks where he knew uncharted rocks existed. At the end of his second drift, where he was positioned between 2 previous successful tracks, the master put the throttle forward and turned to the east into what he believed to be clear water. One of the crew members had just started telling the master that the water depth was reducing when the *Torea* collided with the rock. In this case the collision could possibly have been avoided, or the damage minimised, had the skipper kept the *Torea*'s speed to a minimum until he was sure he was clear of the rocky area.

[4] (Te Ara - the Encyclopaedia of New Zealand, 2009)

4.3. Passenger numbers

Safety issue – There were 24 passengers on board the Torea when it was only certified to carry 20 passengers.

4.3.1. The trip leader had arranged several similar charters before and because of this the master assumed that the leader was aware of the maximum 20-person limit. There was a set fee for the charter, so the cost per person reduced as the size of the group increased, up to a maximum of 20.

4.3.2. On 23 August the trip leader had faxed a list of the names to the port security officer. There were 24 names on the list. The master said that he had not seen the list. He said he had assumed that the copy faxed to the gatehouse at South Port New Zealand had 20 passengers on it.

4.3.3. When the passengers arrived on the wharf, they were allowed to board without any of the crew checking how many there were.

4.3.4. The skipper asked the deckhand to find out how many passengers were on board after the *Torea* had departed the wharf, so that he could make his trip report to Bluff Fishermen's Radio. Even at that point the deckhand did not make a physical count. He said that he asked the trip leader, and said that the trip leader told him there were 20.

4.3.5. The Commission was not able to contact the trip leader and speak with him following the accident. He did not respond to any attempts to contact him. It is difficult to comprehend that the trip leader did not know how many passengers he had arranged for the trip. Nevertheless, it was the skipper's responsibility to ensure that his vessel was carrying no more than the permissible number of passengers. Fortunately in this case, the *Torea* had 25 passenger lifejackets on board, 5 more than were required. This meant that every person on board was handed and donned a lifejacket. The weather conditions were good and the nature of the emergency allowed the first-response team to rescue all of the passengers and crew without injury.

4.3.6. However, if the *Torea* had had only the required number of lifejackets on board, not all of the passengers would have had lifejackets in the event of them having to enter the water.

4.3.7. It is a serious safety issue when skippers of commercial vessels are not aware that their vessels are carrying more than the maximum permitted number of persons. A vessel's fit-for-purpose certificate (its maritime document) is issued on the basis of the vessel's safety management system, which takes into consideration more than just the available life-saving equipment. It considers other factors, such as the type of vessel, its operating limits, and the crew-to-passenger ratio to name a few.

4.3.8. Additionally, should a catastrophic event occur, the search and rescue response will not know how many people are involved. Valuable time can be lost trying to reconcile how many were on board against how many have been rescued. Delays in retrieving people from the water can result in serious injury or death.

4.3.9. The operator has since changed its procedures to address this safety issue, so the Commission has not made any recommendations. (See section 6 for details)

5. Findings

5.1. The *Torea*'s hull was breached when it struck an uncharted rock while the vessel was routinely manoeuvring close to rocks in search of its targeted fish species.

5.2. There was no technical or mechanical failure that contributed to the accident.

5.3. The *Torea* was appropriately crewed, surveyed and fit for its intended purpose.

5.4. The *Torea* was carrying 4 more passengers than was permitted by its safe ship management maritime document. The company procedures were not robust enough to ensure that the maximum permitted number of passengers was not exceeded.

5.5. The skipper's and crew's initial response after the *Torea* struck the rock was rapid and well co-ordinated, as was the first response by those involved in the search and rescue plan.

6. Safety actions

General

6.1. The Commission classifies safety actions by 2 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; and

(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.

Safety actions addressing safety issues identified during an inquiry

Safety issue – the master was unaware of the actual number of passengers who had boarded his vessel and as a consequence allowed his vessel to carry more passengers than the vessel was certified to carry.

6.2. Campbelltown Seafoods Limited advised the Commission that since the accident it had changed the procedures for the booking and use of the *Torea* for fishing charters at the end of the oyster season. The owner further advised that these procedures were being incorporated into the vessel's safe ship management system.

6.3. Campbelltown Seafoods advised that:

- all bookings for the charter of the vessel had to be made through Campbelltown Seafoods' office manager
- the person responsible for organising the charter must fax or email, on the appropriate form which only allows for a maximum of 20 passengers, a completed form at least one day prior to the charter
- the form must list the actual names of the passengers and the name and contact telephone number of the organiser
- the form will be handed to the port security office and access to the wharf will only be granted to those named on the form, who must also have photo identification
- the Campbelltown Seafoods office manager will be responsible for checking the passengers against the charter form onto the vessel and advising the master of the number of passengers on board the vessel before departure.

7. Recommendations

General

7.1. The 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.

7.2. 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.

Recommendations

7.3. None identified.

8. Key lessons

8.1. Skippers must know how many persons they have on board and ensure that the maximum permitted number of passengers is not exceeded.

8.2. It is risky operating small craft in shallow areas that have not been fully surveyed, so skippers must proceed with the utmost caution at minimal speed to avoid colliding with uncharted dangers.

9. Citations

Te Ara - the Encyclopedia of New Zealand. (23 April 2009). *Cod, Blue.* Retrieved 7 August 2013, from Te Ara – the Encyclopedia of New Zealand: http://www.TeAra.govt.nz/en/1966/cod-blue.

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