

Accident Report

Aratere & Mako

Close Quarters

Tory Channel Leads on 19 July 2004

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Maritime Safety

MARITIME SAFETY AUTHORITY OF NEW ZEALAND
Kia Maanu Kia Ora



04 3521

CASUALTY DETAILS:

Date of Casualty: 19 July 2004

Time of Casualty: 0744 hours New Zealand Standard Time (NZST)

Casualty Type: Close Quarters

Casualty Location: Tory Channel Leads

Weather Forecast Area: Cook

Date MSA Notified: 19 July 2004

Date Investigation Started: 19 July 2004

Date Investigation Completed: 24 September 2004

Investigator: Ian Webb



VESSEL 1 DETAILS:

Ship Name: *Aratere*

Ship Category: Passenger Ferry

Registered Length (m): 137

Tonnage: 12 596

Official Number: 123845

Port of Registry: Wellington

Flag: New Zealand

Owners Name: Toll NZ Consolidated Limited

VESSEL 2 DETAILS:

Ship Name: *Mako*

Ship Category: Fishing

Registered Length (m): 23.24

Tonnage: 99.82

Official Number: 101145

Port of Registry: Motueka

Flag: New Zealand

Owners Name: McDonald & Brown Ltd



SUMMARY

At 0718 hours on 19 July 2004, the Third Officer of *Aratere* heard *Mako* transmit a ten minute call for transiting Tory Channel entrance outbound. At 0730 hours, the Third Officer transmitted a ten minute "all ships" broadcast on VHF channels 16 and 19, stating *Aratere* would enter Tory Channel at 0742 hours. At this point, the Master was called to the bridge, as is normal procedure for entering Tory Channel. When there was still no sign of *Mako* at 0731 hours, the Third Officer called her on VHF Channel 19. The Skipper of *Mako* replied, stating "I've given my 10 minute call and I'm coming out." *Mako* was eventually observed at 0735 hours, in the vicinity of Taranaki Rock, struggling against a strong flood tide. *Aratere* reduced speed and informed *Mako* that they were committed to the Leads and would pass port to port. At 0740 hours, the Master of *Aratere* arrived on the bridge. *Aratere* reduced speed further and subsequently passed *Mako*, port to port, at a distance of about 100 metres, at a time when East Head was abeam to starboard, at a distance of approximately 1.5 cables.

REPORT NO: 04 3521
VESSEL NAME(S): *ARATERE & MAKO*

1. KEY EVENTS

1.1 Evidence of *Aratere*

- 1.1.1 The Interisland Line Ltd, passenger ferry *Aratere* departed Wellington at 0600 hours NZST (New Zealand Standard Time), Monday 19 July 2004, on a scheduled sailing to Picton.
- 1.1.2 At 0718 hours, when the vessel was approaching Tory Channel entrance, the Third Officer heard the fishing vessel *Mako* transmit a 10-minute call on VHF channel 19, stating she would be transiting Tory Channel entrance, outward bound, in 10 minutes time. From this, the Third Officer understood that *Mako* would pass East Head at approximately 0728 hours.
- 1.1.3 The position of *Aratere* at 0718 hours, was 7.5 nautical miles to seaward of East Head, and slightly to the north of the leading line for Tory Channel entrance. She was steering a course of 303°(T) and making good a speed of 18.5 knots over the ground. Weather conditions consisted of a south-southeasterly wind of 20 knots with a combined sea and swell of 2-3 metres. The visibility was good.
- 1.1.4 At 0730 hours, when *Aratere* was 3.7 miles from East Head, and slightly to the north of the leading line for Tory Channel, the Third Officer transmitted a call on VHF channels 16 and 19, stating *Aratere* would pass East Head, inward bound, at 0742 hours. *Mako* was not in sight at this time. The Third Officer made a call for the Master to come to the bridge, as part of normal procedure for entering pilotage waters.
- 1.1.5 At 0731 hours, when *Mako* was still not visible in the channel entrance, the Third Officer called her on VHF channel 19, to establish her position. In response, the Skipper of *Mako* replied that he had given his 10-minute call and was coming out.
- 1.1.6 At 0735 hours, *Mako* and *Aratere* came into sight of each other. *Mako* could be seen struggling against the flood tide. At 0735 hours, *Aratere* was on the leading line for Tory Channel, and about 2.1 miles from East Head. The Third Officer reduced the power setting to approximately half ahead and made another call for the Master to come to the bridge.
- 1.1.7 At 0736 hours, the Third Officer called *Mako* again on VHF channel 19, advising that *Aratere* was committed to the entrance and that both vessels should pass port to port.

- 1.1.8** At 0737 hours, the Third Officer reduced the power setting to between slow and half ahead.
- 1.1.9** At 0738 hours, *Aratere* requested *Mako* to move further to the south.
- 1.1.10** At 0740 hours, the Master arrived on the bridge, 10 minutes after first being called. The delay was caused by a fault in the internal paging system. The Master considered that the Third Officer handled the situation correctly in his absence.
- 1.1.11** At 0744 hours, *Aratere* passed *Mako* approximately 100 metres on her port side, in a position approximately 1.5 cables east of East Head abeam. At this time, *Aratere* was on the leading line and her speed was 10 knots.
- 1.1.12** At 0745 hours, *Aratere* passed East Head to starboard and increased to full speed. The Master estimated the tidal stream in the entrance to be flooding at a rate of about 5 knots.
- 1.1.13** *Aratere* berthed at Picton at 0900 hours without further incident.

1.2 Evidence of *Mako*

- 1.2.1** The fishing vessel *Mako* had been at anchor in Jackson Bay, Arapawa Island, and was outward bound to the hoki fishing grounds in Cook Strait. Prior to departure, the Skipper checked the weather forecast, but did not check the tidal stream information for Tory Channel entrance.
- 1.2.2** At approximately 0718 hours, just after clearing Jackson Bay, the Skipper gave a ten-minute call on VHF channel 19, for approaching Tory Channel entrance, outward bound. Her speed over the ground at this time was about seven knots.
- 1.2.3** At the same time, the Skipper streamed the two paravanes on the port and starboard sides of the vessel respectively. These were to help make the boat steadier and safer to work, in the expected weather conditions in Cook Strait. However, the paravanes, once deployed, reduced the vessel's speed slightly and made her more sluggish to steer.
- 1.2.4** At about 0730 hours, East Head came into view. The Skipper observed that seas were not breaking on the islets and foreshore and consequently assumed that the weather conditions in the entrance were reasonable.
- 1.2.5** *Aratere* came into view at approximately 0735 hours, as *Mako* approached Taranaki Rock. The Skipper called *Aratere* on VHF Channel 19, but received no reply.

- 1.2.6** When *Mako* left the shelter of Tory Channel and turned round Taranaki Rock, into the eastern entrance, the Skipper was taken by surprise by the abrupt change in conditions. The combined effect of a strong adverse tidal stream, a southerly gale, rough seas and a three metre southerly swell made his vessel difficult to handle, and reduced her speed over the ground to between 3.5 - 4 knots. The Skipper estimated the tidal stream to be flooding at about 5 knots.
- 1.2.7** The Skipper had difficulty in turning *Mako* to starboard and she was swept much closer to the leading line than the Skipper intended. The close proximity of *Aratere* caused the Skipper significant concern.
- 1.2.8** Because of the difficulty in turning *Mako*, the Skipper considered carrying on to the north side of the channel and passing *Aratere* starboard to starboard. However, at 0736 hours, *Aratere* advised, over VHF channel 19, that the two vessels should pass port to port. *Mako* agreed to this action.
- 1.2.9** At approximately 0744 hours, *Mako* passed *Aratere*, at a distance of about 150 metres on her port side, in a position just clear of the eastern entrance to Tory Channel.

2. KEY CONDITIONS

2.1 Details of Master of *Aratere*

- 2.1.1 The Master of *Aratere*, Mr Graham Shepherd, holds an Australian Class I Master's Certificate of Competency obtained in 1993. He completed a Bridge Resource Management Course in 2000.
- 2.1.2 He has spent 31 years at sea, including 9 years on the Cook Strait ferry service. He was promoted to Chief Officer with The Interisland Line Limited in 2001, and has been acting as relief Master since July 2003. At the time of the incident he had completed three roster periods in command.

2.2 Details of Third Officer of *Aratere*

- 2.2.1 The Third Officer of *Aratere*, Mr Sarath Ganhewa, holds a New Zealand Foreign-Going Masters Certificate of Competency issued in 2000. He completed a Bridge Resource Management Course in 2004.
- 2.2.2 He has 35 years sea experience including 24 years in the Sri Lankan Navy. He has seven years experience with The Interisland Line Limited, including four years on *Aratere*.

2.3 Ownership, Particulars and Survey Status of *Aratere*

- 2.3.1 *Aratere* is a roll on/roll off passenger/freight ferry owned by Toll NZ Consolidated Limited and operated by The Interisland Line Limited. She has the following main particulars:

- **Length Overall** 150 metres
- **Registered Breadth** 20.27 metres
- **Gross Tonnage** 12 596
- **Year of Build** 1998
- **Port of Registry** Wellington
- **Service Speed** 19.5 knots (4 engines), 18.5 knots (3 engines)
- **Engines** 4 x Wartsila medium speed diesel generator sets, each developing 3 600 kW at 750 RPM. These deliver electrical power to a motor on each of two shafts.
- **Propellers** 2 x four-bladed fixed pitch
- **Rudders** Twin high-lift hinged

- **Bow Thrusters** Twin, 1 000 kW each
- **Navigation Aids** 3 x Gyro

Norcontrol integrated ship control system, incorporating ARPA (Automatic Radar Plotting Aid), ECDIS (Electronic Chart Display Information System), GPS (Global Positioning System) and AIS (Automatic Identification System).

2.3.2 *Aratere* is classed with Det Norske Veritas and held valid certification.

2.4 Details of Skipper of *Mako*

2.4.1 The Skipper of *Mako*, Mr Andrew Ivory, holds a Coastal Master Certificate of Competency, obtained in 1995, and a Second Class Diesel Trawler Engineer Certificate of Competency, obtained in 1996.

2.4.2 He has spent 20 years in the fishing industry, the last four years being in command. At the time of this incident, he had been Skipper of *Mako* for 18 months.

2.5 Ownership, Particulars and Survey Status of *Mako*

2.5.1 *Mako*, registered in Nelson, is a glass reinforced plastic single screw fishing vessel, owned by McDonald and Brown Limited, of Upper Moutere. She has the following main particulars:

- **Length Overall** 23.24 metres
- **Registered Breadth** 6.70 metres
- **Gross Tonnage** 99.82
- **Year of Build** 1978
- **Registered Port** Nelson
- **Engine Power** 272 kW
- **Sea Speed** 8 knots

2.5.2 *Mako* is entered in the Safe Ship Management (SSM) system of Survey Nelson. She holds a valid SSM Certificate, issued on 9 January 2003, due to expire on 28 January 2006. She is fit to ply as a fishing vessel in offshore restricted limits, within 100 miles of the coastline of New Zealand, including Stewart Island and the Chatham Islands.

2.6 Weather and Tidal Data

2.6.1 The predicted times and height of tide at Picton on the morning of 19 July 2004 were as follows:

Low Water	0345 hours	0.2 metres
High Water	1017 hours	1.2 metres

2.6.2 The range of the tide was 1 metre. Spring tides occurred on 23 July with a range of 1.2 metres. Neap tides occurred on 14 July with a range of 0.7 metres.

2.6.3 The Tory Channel tidal stream tables, indicate the flood tide running from 0335 hours to 0948 hours on 19 July. This incident occurred approximately one hour after the forecast maximum rate, and a little over the mid point between neap and spring tides.

2.6.4 Chart NZ6154 - Tory Channel Entrance and Picton Harbour, shows a maximum flood tidal stream of seven knots in Tory Channel eastern entrance.

2.6.5 The marine weather forecast for sea area Cook, issued at 0442 hours on 19 July and valid until midnight on 19 July is set out below:

“COOK

GALE WARNING IN FORCE

Southerly 40 knots, easing to 30 knots this afternoon and to 20 knots tonight. Very rough sea easing. Southerly swell 3 metres, easing.

Fair visibility in a few showers clearing this afternoon.

OUTLOOK FOLLOWING 12 HOURS: Southerly 10 knots.”

2.6.6 The Master of *Mako* was aware of this forecast when he left Jackson Bay to transit Tory Channel.

3. CONTRIBUTING FACTORS

N.B. These are not listed in order of importance.

- 3.1** The failure of the Skipper of *Mako* to heed the weather forecast sufficiently and have regard to the likely effect this would have on the speed of his vessel, when determining the timing of giving the ten minute notice call for passing East Head.
- 3.2** The failure of the Skipper of *Mako* to ascertain the tidal data and have regard to the likely effect this would have on the speed of his vessel, when determining the timing of giving the ten minute call for passing East Head.
- 3.3** The decision of the Skipper of *Mako* to stream the vessel's two paravanes, before clearing the eastern entrance to Tory Channel, which reduced the vessel's speed and made her more sluggish to steer and difficult to handle.
- 3.4** The adverse weather conditions and tidal stream.

4. CAUSE

Human Factor

- | | | |
|--|--|---|
| <input checked="" type="checkbox"/> Failure to comply with regulations | <input type="checkbox"/> Drugs & Alcohol | <input type="checkbox"/> Overloading |
| <input type="checkbox"/> Failure to obtain ships position or course | <input type="checkbox"/> Fatigue | <input type="checkbox"/> Physiological |
| <input type="checkbox"/> Improper watchkeeping or lookout | <input type="checkbox"/> Lack of knowledge | <input checked="" type="checkbox"/> Ship Handling |
| <input type="checkbox"/> Misconduct/Negligence | <input checked="" type="checkbox"/> Error of judgement | <input type="checkbox"/> Other . . . |

Environmental Factor

- | | | | |
|---|---|------------------------------------|--|
| <input checked="" type="checkbox"/> Adverse weather | <input type="checkbox"/> Debris | <input type="checkbox"/> Ice | <input type="checkbox"/> Navigation hazard |
| <input checked="" type="checkbox"/> Adverse current | <input type="checkbox"/> Submerged object | <input type="checkbox"/> Lightning | <input type="checkbox"/> Other . . . |

Technical Factor

- | | | |
|---|---|---|
| <input type="checkbox"/> Structural failure | <input type="checkbox"/> Wear & tear | <input type="checkbox"/> Steering failure |
| <input type="checkbox"/> Mechanical failure | <input type="checkbox"/> Improper welding | <input type="checkbox"/> Inadequate firefighting/lifesaving |
| <input type="checkbox"/> Electrical failure | <input type="checkbox"/> Inadequate maintenance | <input type="checkbox"/> Insufficient fuel |
| <input type="checkbox"/> Corrosion | <input type="checkbox"/> Inadequate stability | <input type="checkbox"/> Other . . . |

- 4.1** A close quarters incident at Tory Channel eastern entrance occurred because the adverse tidal flow and weather conditions resulted in a temporary partial loss of control of *Mako* by her Skipper.
- 4.2** The adverse current and poor initial assessment by the Skipper, also resulted in *Mako's* ETA at East Head, at the time of the ten-minute call, being 13 minutes in error.

5. OPINIONS & RECOMMENDATIONS

- 5.1** It is the opinion of the Investigator, that the Third Officer and Master of *Aratere* observed all requirements of Maritime Rule Part 22 - Collision Prevention, and the Marlborough District Council Navigation Bylaws 2002.
- 5.2** The Third Officer displayed appropriate caution in reducing speed. This action prevented a close quarters situation occurring within the confines of the entrance, at a time when *Mako* was in difficulty.
- 5.3** A fault in *Aratere's* internal paging system resulted in a ten-minute delay between the time the Third Officer first called the Master to the bridge and the time the Master actually arrived. Although this incident was not an emergency situation, such a delay would be unacceptable in an emergency.
- 5.4** In the light of **5.3** above, it is recommended that The Interisland Line Limited review critically, the written procedures on all vessels of their fleet for calling the master to the bridge, both generally and in an emergency. The Interisland Line Limited responded to the effect that they have critically reviewed their procedure for calling the Master to the bridge and are happy that the system that has worked well for decades now is adequate. They are, however, investigating replacing the current paper system used on board with one that has an answer back feature. This will allow the watch to know instantly whether the message has been received and, if not, take other measures to contact the Master.
- 5.5** The Skipper of *Mako* observed the Marlborough District Council Navigation Bylaw 3.3 (iii) in broadcasting a 10-minute call prior to entering the Tory Channel Entrance controlled Navigation Zone.
- 5.6** When the speed of *Mako* was severely reduced by the flood tide the Skipper did not amend his ETA at East Head. The current Bylaws do not require him to do so.
- 5.7** The Skipper of *Mako* did not observe Bylaw 3.3 (xii), which requires ships of less than 500 gross tonnes not to impede the passage of ships of 500 gross tonnes or more. This failure was a result of the Skipper being taken by surprise by the combined effects of weather and tidal stream on the handling characteristics of his vessel.
- 5.8** It should be noted that the Bylaws do not prohibit *Mako* from transiting the Tory Channel Entrance Controlled Navigation Zone at the same time as *Aratere*; only to avoid impeding her navigation.

- 5.9** The Skipper of *Mako* checked the weather forecast prior to sailing but did not check the tidal stream predictions for Tory Channel entrance. This was a significant failure, prior to navigating a low powered and relatively slow vessel in the strong tidal stream experienced in the entrance, and particularly in the prevailing strong southerly weather conditions. It is therefore recommended that the owners of the vessel, to whom a copy of this report is to be sent, instruct the Skipper, in clear and unequivocal terms, that he must always consult the tide tables and weather forecast before transiting Tory Channel and make appropriate allowances, when determining the likely speed of the vessel, for the assessment of when the ten minute call should be given. It is further recommended that the vessel's SSM manual should include a written operating instruction to that effect. It is also recommended that a copy of this report be sent to the vessel's SSM company, Survey Nelson, requesting that within two months of the publication of the final report into this incident, a surveyor from that company attend on board the vessel to audit the SSM manual and check that it includes the above written instruction and is being complied with by the Skipper.
- 5.10** The Skipper of *Mako* streamed the two paravanes before approaching the entrance. This act would be regarded as normal practice but the paravanes adversely affected the handling characteristics of the vessel and exacerbated the difficulty experienced in turning to starboard in the entrance. The Skipper did not take into account the effect the paravanes would have on the handling of the vessel, coupled with the effects of tidal stream and weather. It is recommended therefore, that the owners of the vessel instruct the Skipper, in clear and unequivocal terms, that the deployment of this equipment is not to be carried out until the vessel is well clear of the eastern entrance to Tory Channel. It is further recommended that the vessel's SSM manual should include a written operating instruction to that effect and be drawn to the attention of all ship's crew. It is also recommended that the vessel's SSM manual be audited by a surveyor from Survey Nelson, within two months of the publication of the final report into this incident, to check that the above instruction has been included and is being complied with by the Skipper and crew.
- 5.11** A similar close quarters incident in Tory Channel entrance occurred on 9th July 2004. Many of the opinions and recommendations expressed in the report of that incident are pertinent to this report. They are reproduced in *Appendix V*, which should be read in conjunction with this report.