

Investigation report  
*Foveaux Express* and  
*Southern Express*  
close quarters situation  
**19 January 2010**





## **Maritime New Zealand**

Maritime New Zealand (MNZ) is a Crown entity appointed under Section 429 of the Maritime Transport Act 1994, with the responsibility to promote maritime safety, security and the protection of the marine environment.

Section 431 of the Maritime Transport Act sets out MNZ's functions. One of those functions is to investigate and review maritime transport accidents and incidents.

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## Glossary

CLM	Commercial Launchmaster
CPA	closest point of approach
EBL	electronic bearing lines
GPS	global positioning system
HSEA	Health and Safety in Employment Act 1992
ILM	Inshore Launchmaster
MNZ	Maritime New Zealand
MTA	Maritime Transport Act 1994
nm	nautical mile(s)
Part 22	Maritime Rule Part 22: Collision Prevention
RJL	Real Journeys Limited
SIEL	Stewart Island Experience Limited
SSM	safe ship management
STCW	Standards of Training, Certification and Watchkeeping Convention 1978
TAIC	Transport Accident Investigation Commission
VHF	very high frequency





## Executive summary

On 19 January 2010, the vessels **Foveaux Express** and **Southern Express**, operated by Stewart Island Experience Limited (SIEL), were involved in a close quarters incident. The vessels came within 30–50 metres of each other, and were both travelling at approximately 22 knots at the time of the incident.

SIEL is a fully owned subsidiary of Real Journeys Limited (RJL), and the vessels are operated under RJL's safe ship management (SSM) system. **Foveaux Express** and **Southern Express** provide ferry services across Foveaux Strait, between Bluff and Stewart Island.

The evidence shows that the close quarters incident was a result of the masters on board each vessel failing to properly apply the requirements of Maritime Rule Part 22: Collision Prevention, particularly Rules 22.8 (action to avoid collision) and 22.19 (conduct of vessels in restricted visibility).

Neither master was fully conversant with the rule requirements for navigating vessels in restricted visibility, despite having completed the company's training requirements. Ongoing training was carried out in an informal, non-structured manner, with no records showing what ongoing training had been completed, the content of that training or standards achieved. The training programme operated by the company did not provide any ongoing assurance that the masters of the vessels remained conversant with the collision prevention rules. Despite having no assurance that the masters' nautical knowledge remained current, the company routinely relied on masters' expertise to navigate the vessels across Foveaux Strait.

Differences were noted in the certificates of competency held by the masters of the vessels. The evidence shows that one certificate did not require completion of any formal radar training, yet both certificates entitled the holder to be employed as master onboard either vessel. In addition, both masters had held certificates for a number of years with no requirement to revalidate their certificates or complete any prescribed training to ensure their knowledge and skills remained at the required level. In light of this it is recommended that periodic assessment of the competency of certificate holders be included in the Qualifications and Operational Limits Review (QOL Review) currently being completed by Maritime New Zealand (MNZ).

The risk analysis process set down in the SSM manual was not completed for the SIEL operation. Had a risk analysis of the SIEL operation been completed, it is likely that the risk of collision between the two SIEL vessels operating reciprocal courses would have been identified as a hazard. Once identified as a hazard, procedures could have been adopted to minimise the risk presented by the vessels crossing in opposite directions. Any procedures put in place would have been a positive step in preventing the occurrence of the incident.

There were a number of inconsistencies between the routine operation of the vessels at SIEL and the requirements specified in the SSM manual. The SSM manual in operation at SIEL was the generic manual used in all other RJL vessel operations. The SSM manual should have been designed to provide a safety management system for the safe operation of the vessels to which it related. Because of the inconsistencies between routine operations and mandated procedures, the generic SSM manual used by RJL did not provide a safety management system that reflected the specific nature of SIEL operations. Had the SSM manual been tailored to fit SIEL operations, it is likely that measures would have been put in place to ensure the vessels maintained safe operating distances at all times.

The audits performed by RJL, as the SSM company, in accordance with Rules 21.13(8), (9) and (10) have not identified inconsistencies between routine operations conducted by SIEL and those prescribed in the SSM manual. Given that all vessels within RJL's SSM system operate on a generic manual, the inconsistencies should have been identified through the audit process by RJL as the SSM company. In addition, audits and inspections conducted by MNZ did not identify the non-conformities between the SSM manual procedures and routine vessel operations of SIEL.

As a result of the investigation, a number of recommendations have been identified, and these are contained at the end of this report.



## Factual information

1. The information used to compile this report was obtained from an analysis of the statements provided by the masters and crew of the vessels involved and the management of RJL and SIEL, documents provided by RJL, accounts provided by passengers on board the vessels at the time of the incident, and information held by MNZ.

## Vessels and company

2. On 19 January 2010, the vessels **Foveaux Express** and **Southern Express**, operated by SIEL, were involved in a close quarters incident with each other. The incident occurred during a scheduled ferry service while the vessels were travelling on a reciprocal course between Bluff and Halfmoon Bay, Stewart Island. The incident occurred in calm seas with little wind, with foggy patches reducing visibility at times from approximately 4 nautical miles to 100 metres.



Figure 1 **Foveaux Express**

3. **Foveaux Express** is a 21-metre aluminium catamaran, powered by two V12 VTU engines, each engine producing 1,000 horsepower. It is fitted with two radar sets, a VHF marine band radio and a cellphone. The radar fitout includes one dedicated JRC JMA-2253 Rastar Scan radar and one Furuno Navnet 1933C, combined chart plotter, radar and GPS, with a Furuno RDP-139 display unit using C-Map NT charting software. The normal operating speed for **Foveaux Express** is approximately 22 knots.



**Figure 2 Southern Express**

4. **Southern Express** is a 19-metre aluminium catamaran, which is also powered by two V12 VTU engines, each producing 1,000 horsepower. This vessel is also fitted with two radar sets, a VHF marine band radio and a cellphone. The radar fitout for this vessel includes one JRC JMA-2253 Raster Scan radar and one Furuno 1941 Mark II combined chart plotter, radar and GPS unit with a Furuno RDP 104 display using Navionics Gold V2 charting software. The normal operating speed for **Southern Express** is also approximately 22 knots.
5. SIEL is a wholly owned subsidiary of RJL, which oversees the management of SIEL through a branch manager located in Bluff. The operation of **Foveaux Express** and **Southern Express** are managed through RJL's SSM system. The system is administered by the SSM Manager located in Te Anau. RJL operates more than 20 vessels in various locations throughout Fiordland and the lower South Island, and the SIEL ferry operation forms only one aspect of RJL's wider operations.
6. In each area of operation, RJL has appointed a Senior Launchmaster to oversee the vessels' operation. According to the SSM system, the Senior Launchmasters are identified as training officers and safety inspectors, whose responsibilities are listed within the SSM manual. (These roles are discussed later, in the analysis section of this report.)
7. Although staff are employed by SIEL, all management responsibilities are assumed by RJL and overseen by a Divisional Manager located in Te Anau. An analysis has not been undertaken of the exact employment relationship of all SIEL staff, but all RJL management interviewed confirmed that RJL was responsible for the management of SIEL staff and that RJL controlled the operations conducted by SIEL.

## Ferry schedule

8. The ferries' scheduled departure times change throughout the year. From 26 December (Boxing Day) to 31 January the two ferries operate an opposing schedule for the two morning services between Bluff and Stewart Island. The first scheduled departure is 0800 hours from each end. The ferries then leave for their return journey at 0930. The transit time for each ferry in good conditions is approximately one hour.

Ferry	Departure location	Departure time	Arrival time
<i>Foveaux Express</i>	Halfmoon Bay	0800 hrs	0900 hrs
<i>Southern Express</i>	Bluff	0800 hrs	0900 hrs
<i>Foveaux Express</i>	Bluff	0930 hrs	1030 hrs
<i>Southern Express</i>	Halfmoon Bay	0930 hrs	1030 hrs
<i>Southern Express</i>	Bluff	1100 hrs	1200 hrs
<i>Foveaux Express</i>	Halfmoon Bay	1500 hrs	1600 hrs
<i>Foveaux Express</i>	Bluff	1630 hrs	1730 hrs
<i>Southern Express</i>	Halfmoon Bay	1830 hrs	1930 hrs

**Table 1** The ferry timetable operated between 26 December and 31 January

9. During the rest of the year, only one ferry transits Foveaux Strait at a time. Apart from the period between 26 December and 1 February, the ferries operate as follows between October and April:

Ferry	Departure location	Departure time	Arrival time
<i>Foveaux Express</i>	Halfmoon Bay	0800 hrs	0900 hrs
<i>Foveaux Express</i>	Bluff	0930 hrs	1130 hrs
<i>Southern Express</i>	Bluff	1100 hrs	1200 hrs
<i>Foveaux Express</i>	Halfmoon Bay	1530 hrs	1630 hrs
<i>Foveaux Express</i>	Bluff	1700 hrs	1800 hrs
<i>Southern Express</i>	Halfmoon Bay	1830 hrs	1930 hrs

**Table 2** Normal ferry departure times between October and April

10. From April to October, only one ferry is in operation for all ferry services from Bluff to Stewart Island. During the summer months, ***Southern Express*** is normally used for a sightseeing tour to Patterson's Inlet on Stewart Island, before carrying out a scheduled ferry service from Halfmoon Bay to Bluff at 1830 hours.

## Events of 19 January 2010

11. On the morning of 19 January 2010, both ferries departed on time for their respective scheduled 0800 services. **Foveaux Express** was departing from Stewart Island and **Southern Express** was departing from Bluff. The ferries were operating in conditions of reduced visibility, with patches of fog reducing visibility at times from approximately 4 nautical miles to 100 metres.
12. During this transit, two crew members recall the vessels coming to between a quarter of a nautical mile and 200 metres of each other. One crew member described the incident as being completely unnecessary and said that in clear conditions the vessels are usually miles apart.
13. Throughout the interview process, the incident on the 0800 journey appeared to raise some concerns with the crew of **Foveaux Express** because it appeared to them on radar that **Southern Express** kept heading towards them, despite their master taking action to increase the passing distance between the vessels. When questioned about this incident, the master of **Foveaux Express** did not raise any concerns but agreed that the vessels did come within approximately half a mile of each other. The distance between the vessels at the closest point of approach was approximated visually by the crew and not confirmed by radar. The master of **Foveaux Express** also confirmed that he took action to avoid the other vessel by tracking a lot further to starboard of the track he would normally take.
14. The vessels' masters did not discuss the incident. However, during a radio call between the vessels at the beginning of the next scheduled trip, the master of **Southern Express** asked the master of **Foveaux Express** whether he had seen him on the previous trip. The master of **Foveaux Express** confirmed that he had, and that was why he had been tracking to starboard at the time.
15. It was on the second (return) morning trip for both vessels, departing at 0930 hours, that the reported close quarters incident occurred. **Foveaux Express** was heading from Bluff to Stewart Island, and **Southern Express** was returning from Stewart Island to Bluff. There are different accounts about how the incident unfolded, with witnesses, crew and each master believing the actions taken by the master of the other vessel caused the incident. The incident occurred at the midpoint of the transit between Bluff and Stewart Island at about 1000 hours. The two accounts of the incident are provided below.

### Account from **Foveaux Express**

16. According to the master<sup>1</sup> and crew of **Foveaux Express**, the vessel was maintaining a course to the starboard side of the line marked on the chart plotter between Bluff and Halfmoon Bay, Stewart Island. The master was using one radar because there was a fault with the radar on the Furuno set. The master states that he picked up the radar contact of **Southern Express** at approximately 6 miles distant.
17. The master of **Foveaux Express** states that he knew the contact to be **Southern Express** because he heard its master provide his position to Bluff Fisherman's Radio as being just off Zero Rock. The master of **Foveaux Express** did not contact **Southern Express** directly to confirm this contact.
18. At the time of the incident, the two crew of **Foveaux Express** were in the galley of the vessel, making hot beverages or providing other hospitality services to passengers. The crew could not see the radar at the time, but could see the chart plotter with the vessel's position shown on a large screen at the centre front of the main cabin.

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<sup>1</sup> A diagram of the incident, as recalled by the master of **Foveaux Express**, is contained in Appendix 1.

19. The master states that he maintained a watch on the contact of ***Southern Express***, reducing the range of the radar as the contact drew closer. According to the master, the vessels were on course to pass port to port. However, in a written account of the incident made on 19 January, following the incident, the master of ***Foveaux Express*** stated that at 6 nautical miles it appeared as though a close quarters situation could develop, and ***Foveaux Express*** needed to move further to starboard.
20. As the vessels drew closer, the master of ***Foveaux Express*** reduced the radar range to its lowest setting, a quarter of a nautical mile. As the contact of ***Southern Express*** neared the closest quarter-mile range ring on the radar, the master noticed that the contact then appeared to cut across in front of ***Foveaux Express***, moving from the port to the starboard side. After a short time, the master of ***Foveaux Express*** then sighted ***Southern Express*** on a heading towards the starboard midships of ***Foveaux Express***, at approximately 100 metres distant.
21. Statements provided by passengers and the crew of ***Foveaux Express*** confirm the above account. One crew member stated that immediately prior to sighting ***Southern Express***, he observed the master switch on the spotlights mounted on ***Foveaux Express***'s mast and foredeck.
22. All those who provided statements confirm that immediately after it was initially sighted, ***Southern Express*** turned sharply to port, going astern of ***Foveaux Express***. The passing distance between the vessels varied between accounts, from 30 to 50 metres.
23. According to the master and crew of ***Foveaux Express***, the vessel encountered the wake of ***Southern Express*** immediately after it passed astern. The angle of the wake according to the master and crew indicated ***Southern Express*** had initially passed in front of ***Foveaux Express***.
24. After witnessing ***Southern Express*** pass in front of ***Foveaux Express*** by radar, the master of ***Foveaux Express*** stated that he held his course and speed because the risk of collision to starboard meant it was unsafe to make any alterations in course. Accordingly, once he had a visual sighting of ***Southern Express***, he felt the safest option was to continue on his course, believing that ***Southern Express*** would pass astern.
25. One of the crew on ***Foveaux Express*** stated that he felt ***Southern Express*** would have passed astern by the slightest of margins if its master had not turned earlier. He based this on the speed of ***Foveaux Express*** at the time of the incident and ***Southern Express***'s angle of approach.
26. The master of ***Foveaux Express*** confirmed that the vessel's speed was approximately 22 knots at the time of the incident. He estimated that ***Southern Express*** was travelling at about the same speed.
27. At the time of the incident, ***Foveaux Express*** was carrying 39 passengers and three crew members, including the master. According to one of the crew, none of the passengers on board ***Foveaux Express*** mentioned anything about the incident.

### **Account from *Southern Express***

28. According to the master<sup>2</sup>, crew and passengers, ***Southern Express*** was also maintaining a course to starboard of the line marked on the vessel's chart plotter, showing a direct course between Bluff and Halfmoon Bay, Stewart Island.

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<sup>2</sup> A diagram of the incident, as recalled by the master of ***Southern Express***, is contained in Appendix 2.

29. The master stated that he was maintaining a lookout using both of his radar. One radar unit was set at a range of 6 nautical miles and the other was set at a range of 4 nautical miles. The contact believed to be **Foveaux Express** was picked up at approximately 6 nautical miles and tracked on radar by the master of **Southern Express** until the contact was lost in the centre clutter of the radar plot. The master stated that the radar was reduced to a range of 2 nautical miles prior to losing the contact in the centre clutter. The radar range was not reduced below 2 nautical miles. The master explained that the centre clutter on the radar plot was caused by the vessel itself and the aerials located close to the radar antenna.
30. During the transit, the large monitor situated in the centre front of the main cabin was displaying the chart plotter and radar information for the benefit of the passengers. The passengers were able to assess what was unfolding by the information displayed on this screen. In the opinion of the master, several of the passengers were experienced sailors. One of these passengers (Passenger 1) also reported the incident to the local media after leaving the vessel in Bluff. In explanation for this action, the passenger stated that he wanted to make sure the incident was not covered up because it involved vessels from the same company. This passenger also stated that he had in excess of 50,000 nautical miles of seafaring experience sailing his own yacht around the world.
31. When the contact of **Foveaux Express** was approximately 1 nautical mile away, the master of **Southern Express** said to the crew member standing beside him that he was going to move out to starboard to open the passing distance. This change in the course is confirmed by the crew member and Passenger 1, who was watching the chart plotter at the front of the main cabin.
32. Both the master and Passenger 1 described the contact as travelling down the left side of the heading line on the radar plot. However, despite altering course to starboard, both the master and Passenger 1 were unable to recall whether the bearing of that contact changed relative to the heading line.
33. During the voyage, and prior to making the last alteration to starboard, the master stated that he had made four or five smaller alterations to starboard. The last alteration to starboard by **Southern Express**, according to the master, was made when the radar contact of **Foveaux Express** was approximately 1 nautical mile dead ahead, and shortly before the contact was lost in the centre clutter on the radar plot. The crew member standing beside the master confirms that he saw the contact on the heading line just prior to the master starting a turn to starboard.
34. Shortly after losing the contact on radar, the master, the crew member standing beside the master and Passenger 1 all state that they saw **Foveaux Express** emerge out of the fog approximately 100 metres away. All these people state that **Foveaux Express** was tracking ahead of **Southern Express**, from the port to starboard side.
35. On seeing **Foveaux Express**, the master of **Southern Express** then made a hard turn to port, going astern of **Foveaux Express** at a range of approximately 30–50 metres.
36. Immediately following the incident, Passenger 1 and the master of **Southern Express** had a brief exchange about reporting the incident. The master stated that he indicated to Passenger 1 that he would report the incident. This conversation is confirmed by the crew member who was standing beside the master.
37. Several passengers recounted the master of **Southern Express** speaking to the passengers on the public address system immediately after the incident. The remarks were to the effect that the master of **Foveaux Express** had not passed on the correct side, and that he was going to be in trouble for his actions. Statements provided by passengers all show that these remarks were repeated by the master before they left the vessel in Bluff.
38. At the time of the incident, the master of **Southern Express** estimated the vessel's speed at approximately 23 knots and carrying 44 passengers and three crew members, including the master.



## Passage planning and procedures

39. Both masters and all crew members interviewed confirm there are no procedures set down for the transit of the ferries between Bluff and Stewart Island. Essentially, the masters of the vessels are left to determine for themselves the most favourable course between the two points.
40. During interviews with senior management of RJL, it was noted that conditions in Foveaux Strait can change quickly, depending on the weather and tide conditions. For this reason, the masters choose courses for each transit that are the safest for the vessels and offer the greatest degree of passenger comfort.
41. Senior managers interviewed also confirmed that RJL had not undertaken an overall risk assessment of the SIEL operation.
42. On the day in question, the sea was described by the masters and crew as being 'glassy' or 'oily' in appearance, with very little wind. It was agreed by all interviewed that the conditions existing on the day were conducive to a direct line of travel between the islands for both vessels.
43. Both masters confirm that they held a brief conversation on VHF radio on departure from their respective ports. This conversation centred on a description of the weather conditions at their ports of departure. No other radio contact was made between the vessels at any other time during the transit.
44. The navigational equipment was not set to record the tracks of either vessel. This was confirmed through the analysis of information recovered from the units. The information obtained was of no assistance in determining the cause of the incident. It became evident from the interviews conducted that the equipment was not routinely set to record the vessels' tracks.
45. Both masters and all crew members interviewed confirmed that the vessels were not making the appropriate sound signals in accordance with Maritime Rule 22.35.

## Master and crew qualifications

46. The master of **Foveaux Express** holds an Inshore Launchmaster's (ILM) certificate of competency. One crew member also holds an ILM. The third crew member has no maritime qualification or maritime document.
47. The master of **Southern Express** holds a Commercial Launchmaster (CLM) certificate of competency. One of the crew members also holds a CLM. The third crew member does not have a formal maritime qualification or maritime document.
48. During interviews, the masters and crew were questioned about their understanding of the collision prevention rules for navigating in restricted visibility. Neither of the masters nor the crew members interviewed could recall the requirements of Maritime Rule 22.19.
49. Although not citing the appropriate rules, some practical considerations were mentioned. Employing a crew member to keep an additional lookout was cited by both masters and crew, as was turning to starboard for a vessel approaching head on, to be able to pass port side to. One crew member stated that the vessel should be able to be stopped in less than half the visual distance available at the time.
50. When asked about sound signals, the initial response was that the signal would not be heard by any person inside the main cabin of either vessel. One of the masters stated that the issue of sound signals had been discussed in the past, but no action had been taken as a result of those discussions.

51. Both masters and all crew members considered that the speed of the vessels, 22 knots and 23 knots respectively, was appropriate for the conditions existing at the time of the incident.

# Analysis

## Collision prevention

52. Maritime Rule Part 22: Collision Prevention (Part 22) applies to all vessels navigating in New Zealand waters. The incident involved New Zealand ships and was within the New Zealand territorial sea. Therefore, Part 22 applied at the time of the incident.
53. Given the accounts provided by both masters and all crew members, and subject to the points raised in paragraph 58 below, the lookouts maintained are considered appropriate in the conditions prevailing at the time of the incident. However, the action taken by the masters of both vessels, in light of the information available to them, did not meet the requirements of Maritime Rules 22.19 and 22.35.
54. Maritime Rule 22.19 is required to be applied by vessels not in sight of one another when navigating in or near an area of restricted visibility.<sup>3</sup> All of those on board the vessels confirm that the visibility varied between approximately 4 nautical miles and 100 metres. The incident occurred in a dense patch of fog that reduced visibility to 100–200 metres. Therefore, both masters were required to apply Maritime Rule 22.19.
55. In addition to Rule 22.19, the masters of the vessels are also required to apply the appropriate rules contained in subsection 1 of Part 22. These rules apply to the conduct of vessels in any visibility. The appropriate rules in subsection 1 that applied at the time of the incident include:
- 22.5 Lookout
  - 22.6 Safe speed
  - 22.7 Risk of collision
  - 22.8 Action to avoid collision<sup>4</sup>
56. The above rules do not work in isolation. Each rule must be applied in conjunction with the others, and compliance with each rule depends on compliance with the others. In addition, the rules must be applied in a dynamic environment, with different rules coming into operation as the situation changes.

## Lookout

57. Rule 22.5 requires a master to use all available means appropriate in the circumstances to maintain a proper lookout, to be able to make a full appraisal of the situation and risk of collision.
58. As discussed above, all available evidence indicates that a lookout was maintained on both vessels by radar. The radar contact of each vessel was picked up early and observed to the point of the close quarters incident. However, neither master plotted the approaching contact on the radar plot.

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<sup>3</sup> Maritime Rule 22.19(1).

<sup>4</sup> Rule 22.9 applies to vessels operating in narrow channels and Rule 22.10 applies to vessels operating in traffic schemes. The vessels were not operating in either environment at the time of the incident.

59. Rule 22.7 makes clear that scanty information should not be relied on when making decisions about the appropriate action to take in order to avoid a collision:

*The omission of a plot, and incomplete plot or a plot based on an insufficient number of observations, in short, the determination of the position of another vessel without finding her movement, might be termed as scanty information.*<sup>5</sup>

By not accurately determining the course of the other vessel by plotting the contacts observed on the radar plot, both masters' decisions were effectively based on assumptions about what the other vessel was doing. At best, an assumption can only be regarded as scanty information, and decisions based on this information would contravene Rule 22.7.

60. Both masters were adamant, when interviewed, that they had correctly identified the other vessel. However, the evidence shows that each master could only ever have been under an assumption that the vessel was the other ferry, until it was visually identified coming out of the fog during the close quarters incident. Both masters admit that they took no steps to contact the other vessel by radio, which was the only means each vessel had available to positively identify the other vessel.
61. Without positively identifying the other vessel, both masters were operating under the assumption that the other vessel was the vessel they expected it to be. Implicit in that assumption was the navigation characteristics of the assumed vessel, which include its manoeuvring and handling abilities and the abilities of the master and crew known to be on board, including any known navigational habits of the master. Had one of the vessels not been the vessel the master expected, it is possible that either of them could have steered their vessel into a situation in which they were unable to control the outcome.
62. By not using all of the available functions fitted on the radar to plot and determine the approaching vessel's course, and not using the radio to confirm the identity of the other vessel, the masters failed to make use of all available means in the circumstances, as required by Rule 22.5, to make a full appraisal of the situation and determine the risk of collision.

## Speed

63. Rule 22.6 requires masters to maintain a safe speed for their vessel, and sets the requirements for a safe speed:

*...so that proper and effective action to avoid a collision can be taken and the vessel can be stopped within a distance appropriate to the prevailing circumstances and conditions.*

This requirement is reiterated in Rule 22.19(2), which states:

*Every vessel must proceed at a safe speed adapted to the prevailing circumstances and conditions of restricted visibility.*

64. Furthermore, Rule 22.6 sets out the factors to be considered in determining a safe speed. There are considerations for all vessels, and a further set of considerations for vessels with operational radar. The first factor to be considered in Rule 22.6(1) is the state of visibility.<sup>6</sup>

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<sup>5</sup> Burger, W. (1983). *Radar Observer's Handbook for Merchant Navy Officers*. Glasgow: Brown, Son & Ferguson Ltd.

<sup>6</sup> An extract of the relevant rules from Maritime Rules Part 22: Collision Prevention is contained in Appendix 3.

65. From interviews with the master and crew of both vessels, the reduced visibility due to the presence of fog was the only factor listed in Rule 22.6 that presented any real threat to the safe navigation of either vessel. According to the master, each vessel had operational radar, and conditions allowed a very clear radar picture to be maintained throughout the transits. The accounts by both masters of the actions of the oncoming vessel confirm that a good radar picture was maintained on both vessels.
66. Both masters and crew stated that the speed of 22 or 23 knots was appropriate in the conditions existing at the time. When questioned further, it became clear that the speed of 22 or 23 knots is the vessels' normal operating speed in clear visibility conditions. During interviews, it became apparent that the vessels are generally operated at 22 knots unless the sea state would make travelling at this speed a risk to the safety and comfort of passengers.
67. On the day of the incident the sea was calm, and for this reason both masters felt comfortable transiting the strait at the normal operating speeds of 22 or 23 knots, despite the restricted visibility. The masters stated that the only other vessel in the area presenting a risk of collision was the opposing ferry.
68. Given the lack of vessel traffic in the area and the calm conditions on the day, a speed of 22 or 23 knots cannot be considered unsafe on its own. However, when the patchy visibility, which reduced visibility to less than 200 metres in places, is taken into account, coupled with a vessel approaching head on and travelling in excess of 20 knots, it is reasonable to expect that a reduction in speed would be necessary to comply with Rule 22.6, unless some other course of action is taken.
69. As the vessels converged and the intentions of the other vessel became unclear, neither master reduced their vessel's speed. The failure to reduce speed in the circumstances of this incident is considered a failure to comply with Rule 22.6, because neither vessel was in a position to stop within the distance available to avoid a collision, if that action was required.

## Collision avoidance

70. Rules 22.7 and 22.8 work in tandem with each other and set out steps to be taken to detect and avoid vessels that present a risk of collision. Rule 22.7 requires a master to determine whether a risk of collision exists and, if it does, Rule 22.8 provides the measures that must be taken to avoid a collision.
71. As stated above, the collision prevention rules need to be applied as a situation develops. In addition to Rules 22.7 and 22.8, Rule 22.19 must also be applied in areas of restricted visibility. The following two paragraphs are the most relevant provisions of Rule 22.19 in complying with Rule 22.7 and 22.8 in the context of the incident:
- (4) *Every vessel must have due regard to the prevailing circumstances and conditions of restricted visibility when complying with subsection 1 of this section.*
  - (5) (a) *a vessel which detects by radar alone the presence of another vessel must determine whether a close quarters situation is developing and must determine if risk of collision exists. If so, it must take avoiding action in ample time.*
  - (b) *if such action consists of an alteration of course, the following must, as far as possible, be avoided:*
    - (i) *an alteration of course to port for a vessel forward of the beam, other than for a vessel being overtaken; and*
    - (ii) *an alteration of course towards a vessel abeam or abaft the beam.*

72. The statements from the masters show that visibility conditions were taken into account, as required by 22.19(4). Both masters were using radar, in addition to maintaining a visual lookout. Both extended the radar ranges to pick up what they believed to be the contact of the opposing ferry very early during the transit. Both stated that they recognised the contact of the opposing ferry at a range of approximately 6 nautical miles. In addition, the evidence shows that both masters maintained a watch on the oncoming radar contact.
73. Accordingly, both masters recognised the vessels were tracking on courses that would bring them close together. On recognising this, they should have acted in accordance with Rule 22.19(5)(a) above. Having assessed that a close quarters situation was developing, the master of each vessel then needed to make an alteration to starboard, in accordance with Rule 22.19(5)(b). In addition to complying with Rule 22.19(5), the alteration would also need to comply with Rule 22.8, which specifically advises against small adjustments of course or speed:
- (2) *Any alteration of course or speed or both to avoid collision must, if the circumstances of the case allow, be large enough to be readily apparent to another vessel observing visually or by radar. A succession of small alterations of course or speed or both should be avoided.*
74. If both masters had complied with the above requirements, an alteration to starboard would have been executed well before the vessels became engaged in the close quarters incident. The evidence shows that both masters had identified a contact by radar that presented a risk of collision from a range of 6 nautical miles. At this point, the masters were obliged to take action to avoid a close quarters situation.
75. The account provided by each master shows that each was intending to slowly move out to starboard. The master of **Southern Express** stated that he made approximately four or five small alterations to starboard prior to the incident. This practice should be avoided, as underlined in Rule 22.8 above. Had either master made a bold movement to starboard, in all probability the situation would have been avoided.
76. By not taking the required action both masters have failed to comply with the requirements of Maritime Rules 22.8 and 22.19.

## Causes

77. During the second transit for the morning of 19 January 2010, both masters were navigating using radar. The master of **Southern Express** was using both radar units fitted on board, one set on a range of 6 nautical miles and the other on a range of 4 nautical miles. The radar set to 4 nautical miles was the Furuno combined chart plotter, GPS and radar. This unit also repeats to the large screen fitted in the front centre of the main cabin. The unit was operating on a split screen, showing both the radar and chart plotter functions.



**Figure 3** Radar equipment fitted on board **Southern Express**

78. The master of **Foveaux Express** was using only one radar unit, the second set being used only in the chart plotter function because he believed a fault existed with its radar function. The radar sets fitted on both vessels are considered to be adequate to enable the vessels to complete a safe transit of Foveaux Strait in restricted visibility.



**Figure 4** Radar equipment fitted on board **Foveaux Express**

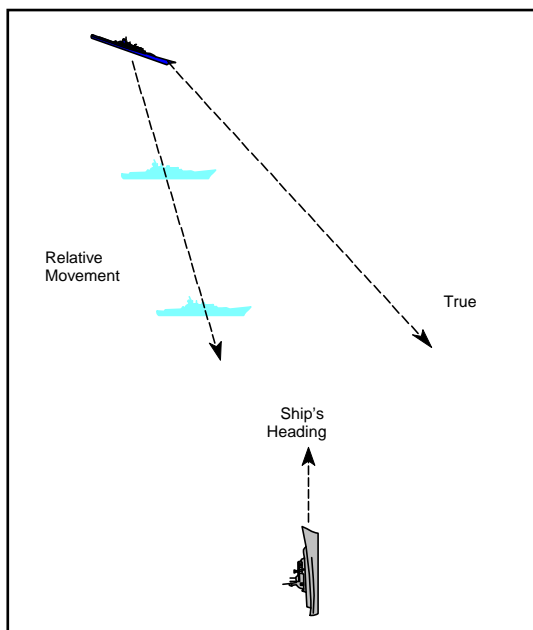
79. The evidence shows that both masters identified a target on a closing course 6 nautical miles ahead, with each vessel holding the other slightly to port of the heading line. All the radar units were operating in relative motion unstabilised,<sup>7</sup> head up display mode.
80. This means that the heading line remains pointing on zero, directly vertical to the centre position on the radar display. In this mode, the radar plot changes relative to the ship's change in direction. Any change in the ship's direction of travel will cause the plot to turn in an opposite direction to the change in the vessel's heading. This mode of display is very simple to interpret because the vessel's heading is always at the top of the screen. In this mode, it should have been readily apparent that a close quarters incident could develop for any contact maintaining a constant track near or on the heading line of the radar display.
81. The evidence of both masters confirms that each had considered the vessels were on course to pass close to each other. From the evidence, both masters were aware that the vessels were required to pass port to port, meaning each vessel would need to alter to starboard.
82. The north-bound vessel (**Southern Express**) made four or five small alterations to starboard, prior to making a substantial alteration to starboard a few seconds before sighting the south-bound vessel (**Foveaux Express**). The master of the south-bound vessel stated that he was moving the vessel slowly out to starboard as the vessel made its transit. As noted above, this practice is to be avoided, as prescribed in Rule 22.8. The effect of small alterations can be dangerous when observing by radar that is operating in relative motion with an unstabilised display. Burger explains this situation in *The Radar Observer's Handbook for Merchant Navy Officers* at page 273:

*The second reason for making substantial alterations is that errors in plotting and a wrong estimation of the direction of the relative motion line can easily take place especially when the display is un-stabilised. The observer may, for example, conclude that the other vessel is on a collision course or will be passing on her port side while, in fact, the other ship, if she maintains her course and speed will be passing on her starboard side. If, in this case, own ship makes a small alteration to starboard, then, instead of improving the situation, the nearest approach between the two vessels will become even smaller. If later on, own ship makes a second alteration to starboard, and perhaps even a third one, then this may lead to collision. This type of action whereby one ship makes a succession of small alterations of course has become known as The Cumulative Turn and the majority of collisions in fog have been caused by this type of action.*

<sup>7</sup> Unstabilised, for the vessel heading, means the vessel does not have a heading input from an external source such as a gyro-compass or magnetic transmitting compass.

*In many of these collision cases, while one ship carried out the cumulative turn, the other vessel maintained her course and speed, simply because she had not detected the effect of the turn on her display.*

83. In the absence of any electronic information, it appears as though both masters have effected a *cumulative turn*, as described above. Without first determining the heading of the approaching vessel by plotting its course, each master assumed that an alteration to starboard would increase the distance between the vessels at the closest point of approach. However, it is likely that one vessel would cross ahead of the other if each vessel maintained course and speed. Figure 5 shows how the relative heading, as observed by radar, can differ from a vessel's true heading.



**Figure 5** Illustration showing a vessel's relative heading versus its true heading

84. As a result of each master making alterations to starboard, both vessels have effectively turned towards each other, resulting in a near-collision situation. In doing so, each master failed to take action in accordance with Rules 22.8 and 22.19 once it was recognised that a close quarters situation could result. The failure to take early and substantial action was the most immediate failure leading to the incident.
85. Both masters tracked the other vessel from approximately 6 nautical miles ahead of their own vessel. One vessel was making 22 knots and the other approximately 23 knots, giving a closing speed of 45 knots. Each master had a distance of approximately 3 nautical miles to make a change in heading before the vessels would be at a serious risk of colliding.
86. At a closing speed of 45 knots, the distance of 3 nautical miles is covered in approximately four minutes. The speed at which the situation develops highlights the need for masters to take early and substantial action as soon as it becomes apparent that a close quarters situation is developing. The need to take early and substantial avoidance action is greater when vessels transit at higher speeds.
87. In addition to not applying Rules 22.8 and 22.19 correctly, neither master reduced speed once it became apparent that a close quarters situation was imminent or collision a real possibility. Rule 22.6 requires a safe speed to be adopted relative to the conditions prevailing at the time.



88. Immediately prior to the vessels coming out of the fog and into visual range of each other, ***Southern Express*** lost ***Foveaux Express*** in the centre clutter of the radar display. This means that from the time the contact was lost until the time ***Foveaux Express*** was sighted, the master of ***Southern Express*** was piloting blind at a speed of 23 knots. The evidence suggests that this time was limited to a few seconds.
89. Neither master reduced speed as the vessels drew closer together. When each master visually sighted the other vessel, it is estimated that they were separated by approximately 100–150 metres of water. At 45 knots, 150 metres is covered in approximately 3.3 seconds and 100 metres is covered in approximately 2.2 seconds.
90. These times show how quickly each master is required to react at the speeds operated at the time of the incident. Not only must their reactions be swift, but they must be correct and completed under extreme stress. It is considered unlikely that either master would have had time to recover to avoid a collision in the case of a vessel-handling error.
91. This analysis shows the seriousness of the incident, and how important it is for masters to reduce the speed of their vessels when approaching another vessel. The requirement for this becomes more important when operating in restricted visibility. By reducing speed, each master would have had more time to assess the situation, reducing the stress load involved. In the event that a collision does eventuate, a low-speed collision is likely to have less severe consequences. A collision at the speeds travelled on the day of the incident would most likely have resulted in the loss of one or both vessels.
92. The evidence shows that both masters failed to recognise the need to take action to pass the other vessel at a safe distance at the earliest opportunity. Furthermore, each master failed to lower their vessel's speed in order to reduce the risk of serious collision and allow more time to assess the situation. Maritime Rule Part 22 is clear on what is required from masters operating vessels in restricted visibility. It is paramount to safety that RJL and SIEL ensure the masters of the vessels involved in this incident are fully conversant with these rules.

### **Alteration to port**

93. The alteration to port by the master of ***Southern Express*** to pass astern of ***Foveaux Express*** is not considered to be a breach of Part 22, because the action taken is consistent with Rule 22.17(3), which requires the stand on vessel to take whatever action will best avoid a collision.

### **Chart plotters**

94. Every account has stated that each vessel was to the starboard of the track programmed on the chart plotter between Bluff and Halfmoon Bay. These plotters are fitted to provide passengers with trip information. The chart plotters are particular to each vessel, with the course line manually input on each unit. Because of this, it is possible that the line of one unit is not the same as the line on the other unit. This could mean that either vessel could be on the starboard side of the line on the plotter fitted on board, but not necessarily be on the opposite side of the line from the vessel transiting in the other direction. The accuracy of each plotter relative to the other was not examined during the investigation, but should be determined by the company as a result of this incident.
95. The chart plotters are not believed to have contributed to the accident, because the evidence shows that both masters were actively using radar to monitor the course of the oncoming vessel. There is no evidence to suggest the chart plotters were relied on for navigation during the transit. The evidence shows that the information provided by radar was sufficient for both masters to take the necessary action to avoid the close quarters situation.

## Training

### Qualifications

96. MNZ records show that the masters of the two vessels hold different qualifications. The master of **Foveaux Express** holds an ILM certificate of competency, while the master of **Southern Express** holds a CLM certificate of competency. Under Maritime Rule Part 31B, either certificate of competency is listed as being sufficient to permit the holder to be the master of either vessel.<sup>8</sup>
97. Discussions with MNZ certification staff show there are distinct differences between the two qualifications. Most relevant to this incident is that a candidate for an ILM is required to have passed a restricted radar course before being granted an ILM certificate of competency. The completion of a restricted radar course is not a prerequisite for the award of a CLM certificate<sup>9</sup>.
98. The company's internal training syllabus each master is required to complete prior to taking command of an RJL vessel includes a section on radar. The training records for both masters show that each had completed this training. However, regardless of the internal training requirements, it is possible there will be a knowledge disparity between masters who have completed a restricted radar operator's course and masters who have not.
99. The SSM Manager for RJL stated that the master of **Southern Express** had not completed any formal radar training, but had been trained in-house on how to use the equipment and was considered a competent operator. This view was confirmed by the Senior Launchmaster for SIEL.
100. Although considered competent by the management of RJL, the incident does show a difference between the masters as to how the equipment was operated. The master on **Foveaux Express** was reducing the radar range down as the oncoming vessel approached, ultimately to its lowest setting, and maintaining a good appreciation of the movement of the approaching vessel. Conversely, the master of **Southern Express** only reduced the radar range to 2 nautical miles. This resulted in the contact of **Foveaux Express** being lost in the centre clutter of the display and the master piloting blind until **Foveaux Express** was sighted emerging from the fog in front of him.
101. During interviews with both masters, it was evident that radar is a commonly used navigational aid. The masters' reliance on radar in restricted visibility is evident from their accounts during their interviews. In addition, the speed at which the vessels normally operate indicates that the masters piloting these vessels are required to maintain a high level of competency in operating all navigational equipment on board. However, it appears that this disparity in the masters' qualifications has not previously been brought to the attention of RJL or SIEL.
102. As noted above, the ILM and CLM certificates of competency are listed as equivalents in Maritime Rule 31B.5. As has also been noted above, this is not the case in respect of the qualifications' radar and radio components. The policy decision behind the recognition of the certificates as equivalent is not known. However, it would be prudent for MNZ to advise operators of this disparity so that appropriate training can be provided where necessary.
103. Both masters have held their certificates of competency for a number of years. Despite being actively engaged in the maritime industry whilst holding their certificates, neither master had been checked for current competency or required to provide evidence of their current proficiency. This raises the issue of the efficacy of ongoing seafarer competency once a certificate has been issued. There is currently no requirement for the holder of a non-STCW certificate of competency to revalidate their certificate or complete any ongoing

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<sup>8</sup> Maritime Rule 31B.5.

<sup>9</sup> RJL's comments about radar training are attached at Appendix 5.

training. CLM or ILM certificates are valid in perpetuity without the holder having to show that they remain competent to exercise the privileges of those certificates.

104. MNZ is currently carrying out a review of seafarer qualifications. In light of the above and the findings of this incident it is recommended that revalidation of certificates of competency by the periodic assessment of seafarer competency is included in that review.

### Ongoing training

105. All masters operating vessels for RJL are required to complete the company's in-house training. This training covers a broad range of topics, including the vessel's operation, equipment and shipboard procedures. The training programme is contained in RJL's SSM manual, which is a generic manual for use across all RJL vessel operations. According to records provided by RJL, the master of **Foveaux Express** completed this training on 14 July 2005 and the master of **Southern Express** completed it on 21 July 2006.
106. For this incident, the two most relevant sections of the training requirements are highlighted below:

#### **4: Radar**

- *Correct procedures for start up and shut down*
- *Fuse location*
- *Hazards*
- *Interpretation of image*
- **Collision regulations**
- **Knowledge of Section III – conduct of vessels in restricted visibility**

#### **30: Craft – OVER 20 KNOTS**

- **Collision regulations re restricted visibility**
- *Principle of speed x time = distance*
- *Watchkeeping requirements*
- *RADAR*
- **Sound signals**
- *Navigation lights*

107. Despite having completed the in-house training, both masters were vague about the requirements of Part 22 regarding the operation of vessels in restricted visibility. The first consideration noted by both masters was the need to reduce speed. However, only one master provided context around changing speed, by referring to stopping within the available visual range.<sup>10</sup>
108. It became apparent from further questioning that neither master was fully aware of the requirements for assessing a safe speed, as set down in Part 22. In addition, although noting that speed was one of the considerations, neither master adjusted their vessel's speed in response to the prevailing conditions. Neither master expressed an understanding of the factors that must be considered in assessing a safe speed, in accordance with Rule 22.6.
109. During interviews, the management of RJL explained that there is not a lot of direct ongoing training for masters, and what training is provided is carried out on an informal basis. No system of review is set down, with the Senior Launchmaster for each operation free to determine how and when reviews of the masters are carried out. The Senior Launchmaster is also a working master in their own area of operation, and reviews are

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<sup>10</sup> RJL's comments regarding paragraphs 102—105 are attached at Appendix 5.

carried out around their scheduled work commitments. If an issue is identified by staff, then the Senior Launchmaster and Branch Manager work to address any issues raised.

110. All RJL operations are overseen in this informal manner, which RJL management considers appropriate. However, it is apparent from each master's response that they were not adequately aware of the rule requirements for operating in restricted visibility. Based on the available evidence, the current review system does not appear to be effective in ensuring that the masters maintain the knowledge needed for operating in restricted visibility.
111. The occurrence of fog was regarded by SIEL and RJL management as a reasonably uncommon occurrence. For this reason, masters may become unfamiliar or out of practice with navigation in restricted visibility. In light of this incident, it is reasonable to expect that steps are taken to identify areas where masters may require refresher training and to ensure that appropriate ongoing training is provided. In addition, a programme to ensure the knowledge is actually applied, supplementary to the ongoing training, would help prevent a similar incident in the future.
112. The evidence shows that the masters did not operate the equipment or carry out their duties to the expected standard. It is important to note that the Health and Safety in Employment Act 1992 (HSEA)<sup>11</sup> requires employers to provide suitable training and supervision for their employees. The records provided by RJL show that training was provided for both masters in 2005 and 2006 respectively. The obligation to provide training and supervision is ongoing. The onus is on RJL and SIEL to ensure that appropriate ongoing training is carried out regularly, to ensure their obligations under the HSEA are met. Records of any training carried out would help RJL and SIEL show that these obligations are being met.
113. Both masters have held their ILM and CLM certificates for a number of years. Currently there are no revalidation requirements prescribed by maritime rules for the holders of ILM or CLM certificates. This means that a holder of an ILM or CLM certificate could continue to operate indefinitely without the need to show that they remain competent to hold the qualification. MNZ is currently completing a Qualifications and Operational Limits Review (QOL Review). It is recommended that as part of that review that revalidation be considered for all non-STCW qualifications issued in New Zealand.

## Vessel procedures

### Navigational watch

114. The SSM manual contains general procedures for maintaining a navigational watch. These procedures are headed with the notation:
- (This section relates mainly to multi day vessels and coastal delivery voyages; however it should be noted that any personnel involved with watch keeping are required to be familiar with, and maintain these standards while underway)*
115. There are no specific procedures set down for the composition of a navigational watch for vessels operating in restricted visibility. In addition, if the above notation is adhered to, the requirements are not strictly applicable to the masters and crew of the vessels operating for SIEL. Both masters and all crew interviewed stated that there were no procedures set down for vessels operating the ferry service between Bluff and Stewart Island.
116. RJL management who were interviewed stated that, except for Milford Sound, there were no specific navigation procedures in place for any RJL vessel operations. It was up to the

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<sup>11</sup> Health and Safety in Employment Act 1992, Section 13.

master of each vessel to choose the most desirable route, in terms of passenger comfort and vessel safety, depending on the prevailing conditions.<sup>12</sup>

117. On the day of the incident, the SIEL operation was presented with a change in operating conditions. The evidence shows that neither the masters nor SIEL management made any changes in the operation of the vessels in response to the conditions. The masters operated the vessels as they normally did and at the usual speed.
118. Both masters commented that using one of the crew as an additional lookout was a step that could be employed in conditions of restricted visibility. However, neither appointed a crew member to this position. The master of **Foveaux Express** had considered it, but thought it pointless because the lookout would not be able to see the radar screen fitted to the right of his position at the helm. A crew member on **Southern Express** stated that he placed himself into the lookout position.
119. During interviews, neither master mentioned using their vessel's compass to determine the vessel's heading. Both relied on the radar to determine what the other vessel was doing. Without cross-referencing the radar picture with the vessel's actual heading, neither master would have had an accurate understanding of the heading and movement of their own vessel. The radar picture was only providing information relative to each vessel, meaning that it would have been difficult in the low-visibility conditions for each master to determine whether any movement by a contact on the display was caused by the other vessel moving, or because of the movement of their own vessel. There were no procedures to provide for cross-checking of heading and position information against the information presented on the radar display. Any basic procedures would have assisted each master to gain a more complete appreciation of the situation unfolding around them.
120. The absence of basic procedures to confirm position and heading in restricted visibility is considered to have contributed to the incident. Basic procedures setting out the minimum separation distance, maximum speed and passage planning requirements would help ensure the vessels are not operated along opposing courses in restricted visibility in the future.

## Passage planning

121. Paragraph 4.2.8 of the SSM manual sets out the requirements for voyage planning as follows:

### **4.2.8 Voyage Planning**

#### *General*

*Every voyage must be planned prior to commencement.*

*The master shall consider the following points prior to departure for the intended voyage:*

1. *Ship's seaworthiness for intended voyage;*
2. *Safety equipment;*
3. *Food supply;*
4. *Water capacity;*
5. *Fuel capacity;*
6. *Weather visual and forecast;*
7. *Manning;*

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<sup>12</sup> RJL's comments are attached at Appendix 5.

8. *Voyage plan lodged;*
  9. *Passenger and crew numbers recorded in Ship's Deck Log and ashore;*
  10. *Where relevant, up to date charts and nautical publications, veering area of proposed voyage are on board.*
122. It is important to keep in mind that these provisions are contained in the general SSM manual provided to all RJL vessel operations. Therefore, it is assumed that some of the requirements would be more important to some operations than to others. The requirements should be modified to suit an operation's particular needs.
  123. For example, in the case of the SIEL ferry services, **Foveaux Express** and **Southern Express** would be checked for safety equipment and seaworthiness prior to starting operations each day, rather than repeating these checks prior to each trip across the strait. Similarly, food supply, water capacity and fuel capacity would be less important checks for each voyage, assuming that the vessels are provisioned for an entire day's operation.
  124. Point 8 of the voyage planning requirements is particularly important for each operation. It requires a voyage plan to be lodged. Given that the SIEL vessels do not operate under a standard passage plan, or predetermined courses for north-bound or south-bound services, it is reasonable to assume that the masters would lodge their intended course prior to departure.
  125. Both masters stated that this was not the case. Neither master customarily lodged a passage plan prior to departure. Both masters and all crew interviewed stated that the vessels were normally miles apart during transits. However, neither master nor the crew could explain why this occurred, other than stating that it was normal practice.
  126. When asked, RJL management explained that the masters were the experts in navigating the vessels across the strait. They should know the collision prevention rules and what to do to complete each transit safely. In addition, it was considered by RJL management that the variable conditions of the Foveaux Strait make it difficult to implement a standard passage plan or transit corridors for the vessels.
  127. There were no processes in place for RJL or SIEL to assure themselves that the knowledge held by the masters was sufficient to ensure a safe passage in the conditions that existed on the day. The only training records retained by RJL were the initial assessment forms completed in 2005 and 2006. The available evidence shows that the assumption that the masters maintained the required level of knowledge relating to navigation in restricted visibility was ill founded.
  128. The lack of the most basic steps to notify each master of the other's intentions is considered to be an additional factor that contributed to the close quarters incident. The variable conditions in the Foveaux Strait described by all those interviewed would not prohibit a simple passage plan procedure from being implemented. In addition, both masters agreed that a simple procedure designed to keep the vessels a minimum distance apart would be a positive step.
  129. Some of the basic steps that could be considered by RJL are:
    - a) minimum separation distances in all conditions (easily set up and assessed on radar)
    - b) passage plan notifications or pre-passage discussions between masters (each master informing the other of their intended course prior to departure or prior to reaching a particular waypoint)
    - c) flexible north- and south-bound corridors that can be adapted to suit particular weather, tide and visibility conditions

- d) communication plans that require masters to make contact and discuss passing intentions prior to passing the other vessel.
130. Measures b) and d) would have required the masters of *Foveaux Express* and *Southern Express* to have communicated their intentions to each other before reaching the point of collision during transit. Any of the above processes would have required the masters to maintain a safe passing distance throughout their transit. Without a passage planning process, RJL and SIEL are relying solely on the masters' expertise. However, the system currently in place does not provide SIEL or RJL with any certainty that the masters remain at the required level of expertise.
131. STCW 95<sup>13</sup> sets out the four key elements that should be included in a passage plan: appraisal, planning, execution and monitoring. The advice provided by STCW 95 is flexible enough to be adapted to any application, and should be used by RJL and SIEL in the development of passage plans.<sup>14</sup> The elements are briefly outlined below:
- Appraisal:** The process where all the relevant information to benefit the further three stages of the passage plan is gathered.
- Planning:** The operation of actually constructing the 'plan' must cover all waters through which the vessel will transit and the total period from berth to berth. This must include charted course lines, with the lines to be marked in three-figure notation, giving the intended direction of the vessel's track. One of the main functions of the plan is to highlight the danger areas where the ships should not go, so they remain in safe, navigable waters.
- Execution:** The execution of any passage plan is formulating the tactics that are intended to carry the plan into action. Consideration should be given to the reliability of the vessel's equipment (specifically its navigation equipment), its condition and limitations, and its degree of accuracy and reliability. The level of expertise of the ship's personnel and whether they are familiar with the equipment should also be considered.
- Monitoring:** When the three stages above are completed, monitoring the passage plan is of fundamental importance. This is achieved by monitoring the vessel's movement from the moment it leaves its berth until it arrives at the destination berth.
132. Any basic passage planning procedure would have assisted the masters during transit and been an easy process to apply and monitor.
133. The inclusion of the navigational watchkeeping requirements in the SSM manual meets the requirements set down in Maritime Rule 31B.18(a). However, the note modifying the application to multi-day voyages limits the application to vessels operated by SIEL. Clarification by RJL on the navigational watchkeeping requirements for SIEL vessels would help avoid similar incidents in the future.<sup>15</sup>

<sup>13</sup> The Standards of Training, Certification and Watchkeeping Convention 1978 (STCW), as amended, sets qualification standards for masters, officers and watch personnel on seagoing merchant ships.

<sup>14</sup> Vessels operated by RJL and SIEL are not required to comply with STCW 95 requirements, but the information it contains is considered relevant and valuable to the present discussion.

<sup>15</sup> RJL's comments regarding paragraphs 119—131 are attached at Appendix 5.

## Company procedures

134. The RJL SSM system was reviewed as part of the investigation into the incident. A review of the system was considered necessary because of the responses to some questions by RJL management and SIEL employees. It became apparent during interviews that:
- there were no procedures for the passage of the SIEL vessels between Bluff and Stewart Island
  - a risk analysis had not been carried out for the SIEL operation, particularly when the vessels were operating on a reciprocal timetable
  - little information was available about the manoeuvring characteristics of the vessels involved in the incident, including maximum permitted operating limits and emergency stopping distances.
135. The responses to the questions involving the above points were considered as indicating possible gaps in the procedures currently in place for the operation of RJL vessels. The SSM system was reviewed in terms of its application to the vessels operated by SIEL. However, it is possible that the points raised may apply to the wider RJL operations.
136. RJL operates its own SSM system, as approved by the Director of MNZ pursuant to Section 2 of Maritime Rule Part 21. Unlike other ship operators, RJL provides its own SSM system for the ships it operates. RJL does not provide SSM services for ships operated outside its control.
137. As explained by RJL management, the SSM system is set out in the SSM manual. The manual is a generic form that is provided for all RJL operations (including SIEL). The manual contains all the requirements set out in Appendix 6 of Maritime Rule Part 21. Supplementary to the generic manual are procedures particular to each vessel. For the vessels operated by SIEL, these consist of a series of flowcharts covering a number of shipboard operations, as detailed below:
- *GENERAL PROCEDURES:*
    - *Anchor winch operation*
    - *Bilge pump operation*
    - *Drain voids*
    - *Bunkering procedure*
  - *FIRE AND EMERGENCY PLANS*
    - *Abandon ship*
    - *Collision*
    - *Grounding*
    - *Fire fighting*
    - *Person overboard*
    - *Pollution control*
138. The general procedures for all ships are contained in section 4 of the SSM manual. In addition to the navigational watchkeeping procedures discussed above, the general procedures include:
- accident and incident reporting
  - voyage planning
  - assessment of weather and sea conditions
  - communications
  - procedures for audits and surveys (inspections)
  - wildlife interaction



- risk analysis and assessment
  - engineering watch
  - testing and checking of equipment and machinery.
139. The responsibilities assigned to individual people or positions are contained in section 3 of the generic SSM manual. Section 3 sets out the basic function of the SSM system and defines individual roles, assigning these roles to individuals within the RJL organisation. In addition, this section contains instructions for the administration and management of the SSM system itself.
140. Section 1 of the manual outlines the company structure. Section 2 contains RJL's company policies, including its drug and alcohol, safety and employment policies. Section 5 comprises a number of appendices containing definitions and prescribed forms and records.
141. Provided with the SSM manual was a document titled "Real Journeys Training Documentation to be used by Vessel Masters when Training New Masters". This documentation was also reviewed in terms of the training provided for the responsibilities assigned in the SSM manual.
142. The review of the SSM manual shows that it meets the requirements of Maritime Rule Part 21 for the system contained in the manual. Nevertheless, the analysis identified several issues, which are discussed in the following paragraphs.

## Risk analysis

143. Section 4.3.14 of the SSM manual contains the risk assessment and management procedures. The procedure is described as a "practical mathematical risk assessment method to determine the risk factor for any given activity".
144. The method used to derive a risk assessment score is obtained by multiplying assigned scores for each of the following three safety characteristics:
- *Consequence:* the severity of the consequences which might result
  - *Exposure:* the time for which the participant is exposed to risk
  - *Probability:* the likelihood that an accident will result.
145. Scores are assigned within each safety characteristic according to the severity of the consequence, exposure time and accident probability. The more serious the consequence, the higher the score will be. The risk score is then used to identify the appropriate remedial action. A score over 400 will require the action to be abandoned or severely modified. A score under 20 is considered acceptable.
146. RJL management advised during interviews that a risk assessment of the SIEL operation had not been completed. Although specified in the SSM manual, the evidence shows that the process had not been implemented for the ferry operations between Bluff and Stewart Island. Had an assessment been carried out, it is probable that the possibility of collision between the two vessels operating reciprocal courses would have been identified as a risk to the operation, especially in conditions of restricted visibility. Once identified, steps could have been implemented to mitigate the risk of collision.
147. Section 4.3.14(5) of the SSM manual sets out procedures for minimising the risks presented by operating in adverse weather. It appears from reading the procedures that they apply to operations at Milford Sound only. However, if this is not the case, then a clear statement to that effect will clarify the application of the procedures for all other operations conducted by RJL.

148. Both masters stated during interviews that they were solely responsible for determining the appropriateness of sailing or remaining in port in inclement weather. This was confirmed by RJL management.
149. Section 4.2.10 of the SSM manual sets out the requirements for assessing weather conditions. This section only states that weather must be assessed, and where information can be obtained. There are no limits specified for ceasing operations, nor are there any assessment criteria to guide decision making.
150. Adverse weather can present a significant hazard to crew and passengers on board any vessel. As mentioned previously, there is little information available to the company about the maximum permitted operating limits for the vessels. No maximum permitted operating limits are prescribed on the fit for purpose certificates for either **Southern Express** or **Foveaux Express**. However, operating parameters should be easily identifiable from experience in operating the vessels, and be specified for them.<sup>16</sup>

## SSM system

151. The SSM manual is generic to allow it to be implemented across all of the RJL operations, including SIEL. However, the manual is not modified to suit the specific operations of individual vessel operations. Because of the general nature of the document, the application of particular procedures to specific vessels is unclear.
152. An example of this is the voyage planning procedures in section 4.2.8. How these apply to short sea voyages across Foveaux Strait is not specified. The masters stated during interviews that, despite procedural requirements, the lodging of voyage plans is not routinely done. If this is not a normal process for the ships transiting Foveaux Strait, then this requirement would not be expected to appear in the SSM manual for these vessels.
153. Accordingly, the assessment of weather and sea conditions does not specify the location, permitted operating conditions or other requirements that would be expected in an SSM manual for a ship operating in a specific location.
154. Although providing comprehensive detail of the SSM system operated by RJL, the general nature of the document means that it lacks the location- or operation-specific information for individual RJL operations. Each of RJL's operations brings with it a set of individual requirements, and these should be specified in that vessel's SSM manual. These individual requirements should provide clear procedures for how the general instructions are implemented for that particular operation. Given the nature of the incident, a review of the current SSM manual is recommended.

## Roles and responsibilities

155. During the investigation some inconsistencies were found with the responsibilities assigned to individual positions within the SSM system. The inconsistencies involved similar or the same responsibilities being assigned to several individual positions. This could potentially result in a lack of clarity over who is ultimately responsible for ensuring certain objectives are fulfilled. It is possible that, in practice, the roles do not conflict, but this is not clear from the responsibilities specified for the positions as set out in the manual.
156. An example of this is the responsibility for training of seafarers. The responsibilities are expressed as follows:

Paragraphs 3.5.5 (functions of the Master of a ship):

*The Master shall ensure that all crew members are suitably trained in safety and environmental matters, for the function they perform;*

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<sup>16</sup> RJL's comments regarding paragraphs 149—151 are attached at Appendix 5.

Paragraph 3.5.9 (functions of the Safety Manager):

*Be responsible for ensuring all crewmembers are suitably trained in safety and environmental matters for the function they perform*

Paragraph 3.5.10 (functions of the Training Officers):

*Be responsible for ensuring the safety and environmental training of all company employed seafarers in their Branch*

157. The above three responsibilities are very similar and appear to overlap significantly. The explanation provided by RJL management indicated that the company has taken up the responsibility for ensuring vessel masters and crews are appropriately trained. It is reasonable to assume that the above three roles all have particular responsibilities for the training of staff. However, the provisions as expressed in the SSM manual do not specify the scope of responsibility for each role, or how responsibility is shared.<sup>17</sup>
158. RJL management explained that the surveying of its vessels was completed by an independent third party. This was to provide an independent verification to ensure the vessels remained fit for purpose. Nevertheless, a surveyor function is defined within the SSM manual. The SSM manual should reflect the actual functioning of the system. The information should be amended when and where necessary, to reflect changes that have occurred in the operation of the system over time.
159. The headers contained in the manual indicate that the latest amendment was made on 5 January 2010. Despite that, a legislative change in 1998 has not been reflected in the manual.<sup>18</sup>
160. Paragraphs 3.5.3 (responsibilities for Owners of Ships) and 3.5.5 (responsibilities of a Master) refer to sections in the Maritime Transport Act 1994 (MTA) that were repealed on 2 February 1998 and replaced by maritime rules. It is recommended that these sections be updated to reflect the 1998 changes.

## **Audits**

161. As an approved SSM company, RJL is subject to an annual audit by MNZ. The purpose of the annual audit is to verify that RJL's SSM system and procedures, and audits and inspections carried out by SSM auditors and surveyors, comply with the requirements of Maritime Rule Part 21.
162. A review of recent audits was completed as part of the review of the RJL SSM system. Two audits conducted in 2007 and the annual audits for 2008 and 2009 were reviewed. These audits found the RJL system was fully compliant with Rule Part 21, and individual operations observed were found to be fully compliant with all SSM policies and procedures. Two of these audits involved observations of SIEL operations.
163. Because the focus of the audit is to determine whether the system complies with Rule Part 21, it is unlikely that most of the issues raised during the course of the investigation would have previously been identified. However, legislative amendments made in 1998 should have been readily apparent and RJL advised of the need to update the relevant sections in the SSM manual. With audits carried out on an annual basis, 11 audits of RJL's SSM system have been completed without the issue being identified.
164. In addition, the lodging of a passage plan is required, as set out in section 4.2.8 of the SSM manual. As stated by the masters of the vessels involved in this incident, passage plans are not filed as part of their operational routine. If the operation of SIEL vessels had been assessed against the procedures set down in the SSM manual, it is more likely that this

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<sup>17</sup> RJL's comments are attached at Appendix 5.

<sup>18</sup> RJL's comments are attached at Appendix 5.

discrepancy would have become apparent. However, the MNZ audit is conducted against Rule Part 21, which appears to check compliance of the system against the generic rule requirements, rather than compliance with the specific SSM system under which the vessel operates.

165. As the SSM company, RJL is responsible under Rules 21.13(8), (9) and (10) for carrying out periodic audits and inspections of ships within its SSM system. The issues identified above should have been identified by RJL during its audit process. Given that all vessels within RJL's SSM system operate on a generic manual, non-compliances with the procedures in the manual should have been readily apparent during the audit process.
166. In light of the matters identified above, and that the evidence shows that some of the systems set down in the RJL SSM manual are not followed by SIEL operations, RJL should consider how such issues can be better identified and amend procedures accordingly.<sup>19</sup>
167. MNZ is currently developing a new operator safety system, the Maritime Operator Safety System (MOSS), through the development of the new Maritime Rule Parts 19 and 44, to replace the current SSM system. It is recommended that the above findings be noted in the development of MOSS and consideration given as to how issues noted above may best be identified through the MNZ audit and inspection process.

## Previous incident

168. On 20 November 2005, another RJL vessel, **Milford Sovereign**, was involved in an incident that was investigated by the Transport Accident Investigation Commission (TAIC). As a result of that investigation, a number of recommendations were made to RJL. Of particular relevance to this incident are these recommendations:<sup>20</sup>
- 020/07 Specify maximum operating parameters for each of the vessels operating in Milford Sound, or put in place guidelines and procedures to assist masters to decide on the maximum safe operating weather conditions.*
- 022/07 Conduct a risk assessment of vessel operations in adverse weather conditions and put in place procedures and guidelines to minimise the risks inherent in such operations. Guidance should include, but not be limited to, clearing distances off the shore and other vessels, areas of operation, ship board organisation and how best to handle the vessel in the prevailing conditions.*
169. Given the statements by RJL management and the masters of the SIEL vessels, it appears the above recommendations have only been implemented for operations at Milford Sound. More importantly, recommendation 022/07 shows that RJL has been aware of the lack of risk assessments for its vessel operations since 2005. Given the points raised in the preceding sections, and in light of the present incident, it is reasonable to expect RJL to carry out risk assessments for all vessel operations.
170. In addition, although recommendation 020/07 refers specifically to operations at Milford Sound, RJL should have been alerted to the fact that no maximum operating parameters were specified for any of the vessels operated by them.

## Post-incident action by company

171. Following the incident, RJL and SIEL carried out an internal investigation to determine the cause of the incident and identify steps to prevent a recurrence. As a result of that investigation, the following procedures were implemented on 20 January 2010:
- *Skippers will broadcast on channel "61" their intentions of travel e.g. the port they are leaving from, heading to and the intended course.*

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<sup>19</sup> RJL's comments are attached at Appendix 5.

<sup>20</sup> Transport Accident Investigation Commission report 05-212.

- *Skippers will make radio contact with each other prior to the halfway mark indicated on vessels' GPS during periods when ferries are operating opposing schedules.*

172. In addition, the internal investigation recommended the following actions:

- *That the fog horns on both vessels be automated to sound at not more than two minute intervals when switched to do so (**completed**).*
- *That the masters (or wider) involved, undergo further assessment and/or training in operating during poor visibility.*
- *Correct and monitor 'complacency' through clear written procedures and cross checks.*
- *To review whether there should be a set course in place for foggy conditions, noting that when there is fog, the sea is normally calm, therefore the vessels don't need to tack (this will be discussed with skippers by the Senior Launchmaster).*

173. RJJ have advised that the additional following actions have been carried out:

- RJJ has instigated and carried out master refresher training for masters in Canterbury, Fiordland and Stewart Island.
- A 'Master Competency Assessment' form has been developed for use in an annual reassessment of masters' competencies.<sup>21</sup>
- A copy of the Collision Regulations has been placed on each vessel in the fleet.
- SIEL voyage plans are now being lodged by radio and require the masters to communicate with the bases and each other.
- Fog horns have been automated.
- A separation procedure is in place to ensure that ferries operating on reciprocal courses in restricted visibility remain at least a nautical mile apart.<sup>22</sup>
- A sign warning of ferry activity in Foveaux Strait has been erected at the Bluff boat launching ramp, which indicates there are ferries operating in the Strait, advises vessels to monitor VHF 61 and gives a contact number for ferry schedules.<sup>23</sup>

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<sup>21</sup> For example, refer to Appendix 5.

<sup>22</sup> For procedure, see Appendix 5.

<sup>23</sup> For procedure, see Appendix 5.

## Findings

174. The evidence shows the close quarters incident was a result of the masters on board each vessel failing to properly apply the requirements of Maritime Rule Part 22: Collision Prevention, particularly Rules 22.8 and 22.19.
175. Neither master was fully conversant with the rule requirements for navigating vessels in restricted visibility, despite having completed the company's training requirements. The training programme operated by the company did not provide the company with any assurance that the masters of the vessels remained conversant with the collision prevention rules.
176. The masters of the vessels held different qualifications. Although these qualifications are specified as equivalents in Maritime Rule Part 31B, there are significant differences in the requirements for the award of each certificate. The absence of any radar instruction for one certificate meant this master relied on the training provided by the company. The evidence shows that the master who did not receive any formal radar training failed to reduce the range as the vessels drew closer together. The failure meant the master was piloting the vessel blind for a few seconds prior to the vessels visually sighting each other. There were no processes in place to identify the disparity between the qualifications, despite having to operate essentially the same equipment.
177. The training process adopted by RJJ is informal, with few records maintained once initial training is completed. Because of this, there is no objective basis on which the company could rely on the expertise of the masters. Despite having no assurance that the masters' nautical knowledge remained current, the company routinely relied on their expertise to navigate the vessels across Foveaux Strait.
178. The risk analysis process set down in the SSM manual was not followed or completed for the SIEL operation. Had a risk analysis of the SIEL operation been completed, it is likely that the reciprocal timetabling issue would have been identified as a possible hazard. Once identified as a hazard, procedures could have been adopted to minimise the risk presented by the vessels crossing in opposite directions. Any procedures put in place would have been a positive step in preventing the incident occurring.
179. The audits performed by RJJ, as the SSM company, in accordance with Rules 21.13(8), (9) and (10) have not identified inconsistencies between routine operations conducted by SIEL and those prescribed in the SSM manual. Given that all vessels within RJJ's SSM system operate on a generic manual, the inconsistencies should have been identified through the audit process by RJJ as the SSM company. Audits and inspections carried out by MNZ did not identify these inconsistencies.
180. Current projects being completed by MNZ (namely the QOL Review and the implementation of the new operator safety system, MOSS, through the development of Maritime Rules Parts 19 and 44) should address the issues of ongoing seafarer competency and regulatory oversight of operators against their approved safety system.

## Recommendations<sup>24</sup>

181. As a result of the above findings, it is recommended that RJL, as an operator:
- a) reviews the training process provided to masters and crew of SIEL vessels to ensure that nautical knowledge is at the required level appropriate to the individuals' responsibilities
  - b) develops and implements procedures to ensure the qualifications held by masters are sufficient to enable them to make proper use of all equipment fitted on board SIEL vessels and, where appropriate, ensures masters receive formal training in areas where necessary
  - c) carries out a review of the masters involved in the close quarters incident and ensures steps are taken to ensure they are fully conversant with the requirements of Maritime Rule Part 22
  - d) implements processes to ensure all training is delivered at regular intervals and records of all training delivered are maintained
  - e) implements a programme supplementary to the training programme to ensure the training is applied to the operation of the vessels
  - f) noting comments made in paragraph 129, develops and implements procedures to ensure SIEL vessels maintain at least minimum separation distances during all transits of Foveaux Strait taking into account the accuracy of the GPS chart plotters fitted onboard both vessels
  - g) ensures its risk analysis process is reviewed, with a view to aligning this process with the requirements of the HSEA
  - h) specifies maximum operating limits and weather criteria in the SSM manual, to guide masters in making decisions about the operation of SIEL vessels
  - i) identifies vessel-handling characteristics and uses them to guide the development of procedures for operating limits and procedures for transits of all SIEL vessels. This must include limitations of navigation equipment fitted on board.
182. As a result of the above findings, it is recommended that RJL, as an SSM company:
- a) reviews the SSM manual to clarify the assigned roles and responsibilities in light of the comments noted in this report
  - b) revises the manuals for individual vessels to specify how the general provisions of the current SSM manual are to be implemented for individual vessel operations
  - c) ensures the generic SSM manual is updated to replace repealed MTA provisions with the relevant maritime rules
  - d) ensures a risk analysis is completed by every RJL operation where such analysis has not been completed
  - e) reviews the current SSM audit system to ensure that all vessels are operating in accordance with the procedures prescribed in each vessel's SSM manual, taking into account recommendations a) through d) above.

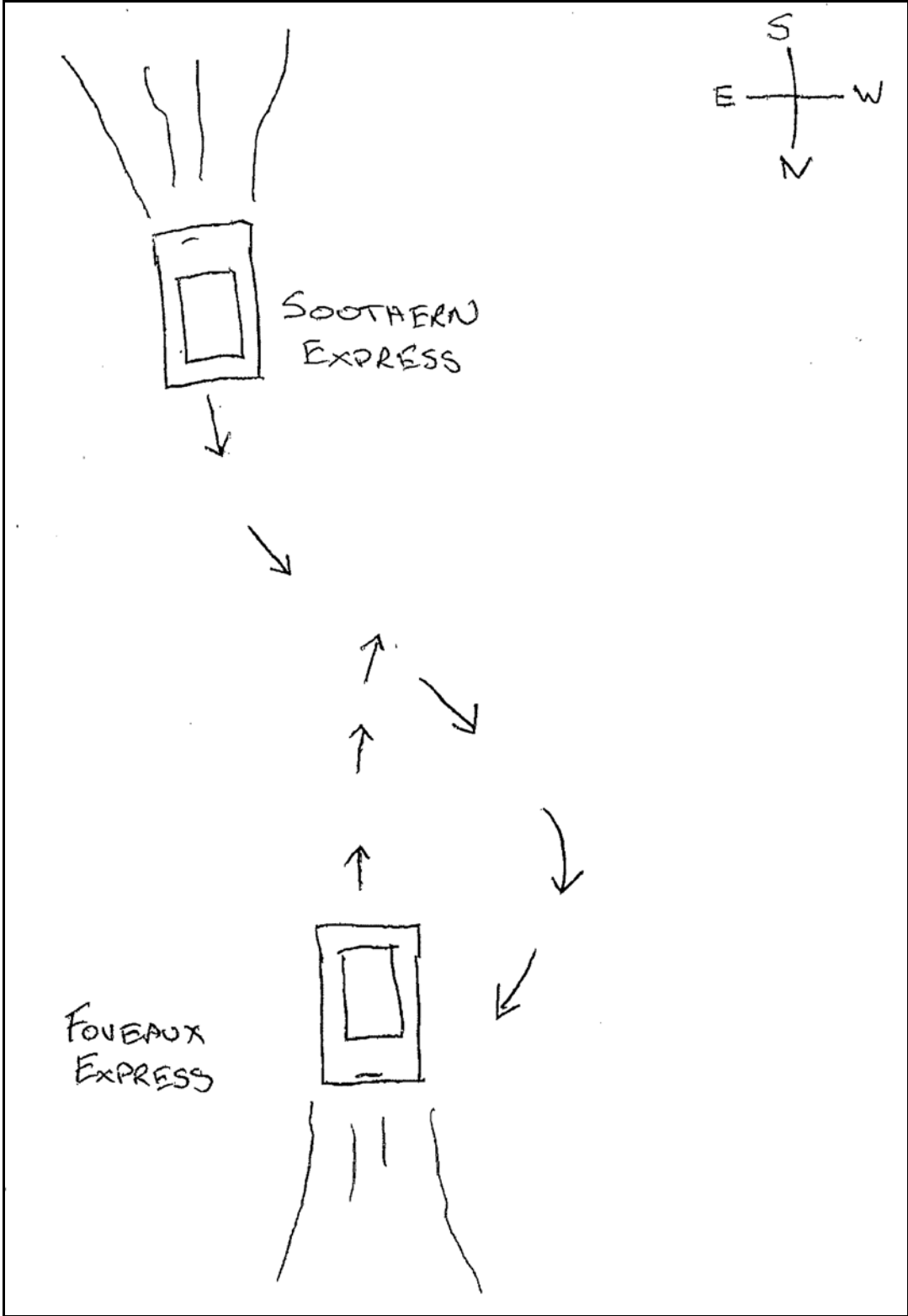
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<sup>24</sup> RJL's comments regarding the recommendations are contained at Appendix 5.

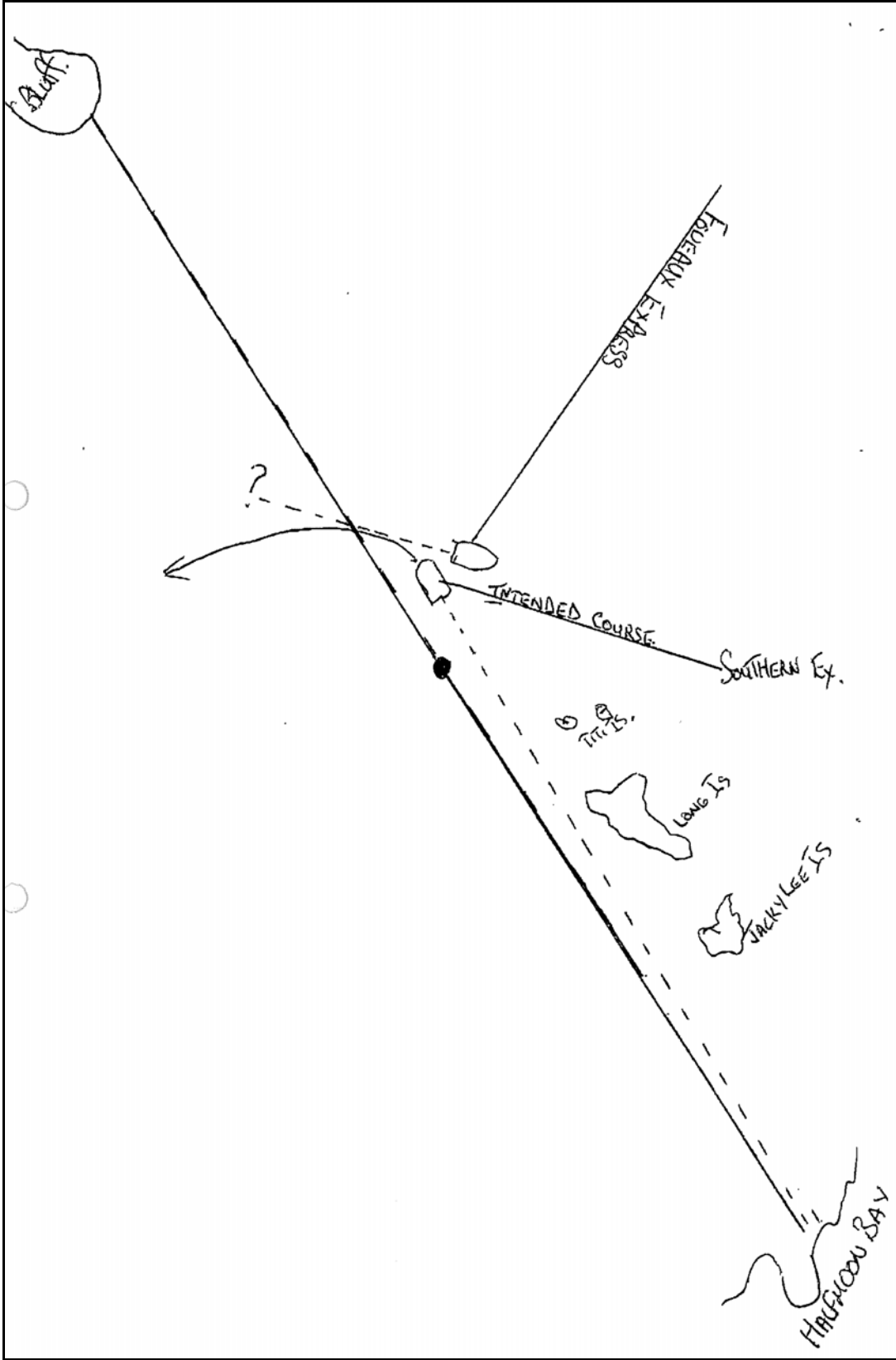
183. As a result of these findings, it is recommended that Maritime New Zealand:
- a) includes the issues raised in this report of ongoing seafarer competency and regulatory oversight of operators against their approved operating system in the QOL Review and development of Rule Part 19 MOSS respectively
  - b) provides assistance to RJL, to ensure the above recommendations are implemented and it complies with the requirements of the MTA and HSEA
  - c) takes appropriate steps to ensure the masters involved are competent to hold their current certificates of competency
  - d) takes steps to raise industry awareness of the disparity between the ILM and CLM certificates of competency, notwithstanding the equivalency tables listed in Maritime Rule Part 31B
  - e) ensures vessel operating parameters are clearly defined on fit for purpose certificates for all vessels.



**Appendix 1: Diagram provided by master of *Foveaux Express***



Appendix 2: Diagram provided by master of *Southern Express*



## Appendix 3: Maritime Rule Part 22 – Extracts

### 22.5 Look-out

Every vessel must at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions, so as to make a full appraisal of the situation and the risk of collision.

### 22.6 Safe speed

Every vessel must at all times proceed at a safe speed so that proper and effective action to avoid a collision can be taken and the vessel can be stopped within a distance appropriate to the prevailing circumstances and conditions.

In determining a safe speed, the following factors must be among those taken into account—

- (1) For all vessels –
  - (a) the state of visibility;
  - (b) the traffic density, including concentrations of fishing vessels or any other vessels;
  - (c) the manoeuvrability of the vessel, with special reference to stopping distance and turning ability in the prevailing conditions;
  - (d) at night, the presence of background light such as from shore lights or from the back scatter of the vessel's own lights;
  - (e) the state of wind, sea, and current, and the proximity of navigational hazards;
  - (f) the draught in relation to the available depth of water.
- (2) Additionally, for vessels with operational radar –
  - (a) the characteristics, efficiency, and limitations of the radar equipment;
  - (b) any constraints imposed by the radar range scale in use;
  - (c) the effect on radar detection of the sea state, weather, and other sources of interference;
  - (d) the possibility that small vessels, ice, and other floating objects may not be detected by radar at an adequate range;
  - (e) the number, location, and movement of vessels detected by radar;
  - (f) the more exact assessment of the visibility that may be possible when radar is used to determine the range of vessels or other objects in the vicinity.

### 22.7 Risk of collision

- (1) Every vessel must use all available means appropriate to the prevailing circumstances and conditions to determine if the risk of collision exists. If there is any doubt, such risk must be considered to exist.
- (2) Proper use must be made of radar equipment, if fitted and operational, including long-range scanning to obtain early warning of the risk of collision and radar plotting or equivalent systematic observation of detected objects.
- (3) Assumptions must not be made on the basis of scanty information, especially scanty radar information.

- (4) In determining if the risk of collision exists, the following considerations must be among those taken into account –
  - (a) Such risk must be considered to exist if the compass bearing of an approaching vessel does not appreciably change; and
  - (b) Such risk may sometimes exist even when an appreciable bearing change is evident, particularly when approaching a very large vessel or a tow or when approaching a vessel at close range.

#### **22.8 Action to avoid collision**

- (1) Any action to avoid collision must be taken in accordance with the requirements of this Section and, if the circumstances allow, be positive, made in ample time and with due regard to the observance of good seafaring practice.
- (2) Any alteration of course or speed or both to avoid collision must, if the circumstances of the case allow, be large enough to be readily apparent to another vessel observing visually or by radar. A succession of small alterations of course or speed or both should be avoided.
- (3) If there is sufficient sea-room, alteration of course alone may be the most effective action to avoid a close quarters situation provided that –
  - (a) It is made in good time; and
  - (b) it is substantial; and
  - (c) it does not result in another close quarters situation.
- (4) Action taken to avoid collision with another vessel must be such as to result in passing at a safe distance. The effectiveness of the action must be carefully checked until the other vessel is finally past and clear.
- (5) If necessary, to avoid collision or to allow more time to assess the situation, a vessel must slacken its speed or take all way off by stopping or reversing its means of propulsion.
- (6)
  - (a) A vessel that, by any rules in this Part, is obliged not to impede the passage or safe passage of another vessel must, when required, take early action to allow sufficient sea-room for the safe passage of the other vessel.
  - (b) A vessel that is required not to impede the passage or safe passage of another vessel is not relieved of this obligation if approaching the other vessel so as to involve risk of collision. It must, when taking action, have full regard to the action which may be required of itself and the other vessel by this section of Part 22.

#### **22.19 Conduct of vessels in restricted visibility**

- (1) This subsection applies to vessels not in sight of one another when navigating in or near an area of restricted visibility.
- (2) Every vessel must proceed at a safe speed adapted to the prevailing circumstances and conditions of restricted visibility.
- (3) A power-driven vessel must have its engines ready for immediate manoeuvre.
- (4) Every vessel must have due regard to the prevailing circumstances and conditions of restricted visibility when complying with subsection 1 of this section.

- (5) (a) A vessel which detects by radar alone the presence of another vessel must determine whether a close quarters situation is developing and must determine if risk of collision exists. If so, it must take avoiding action in ample time.
- (b) If such action consists of an alteration of course, the following must, as far as possible, be avoided:
  - (i) an alteration of course to port for a vessel forward of the beam, other than for a vessel being overtaken; and
  - (ii) an alteration of course towards a vessel abeam or abaft the beam.
- (6) Except where it has been determined that there is no risk of collision, every vessel that–
  - (a) hears the fog signal of another vessel apparently forward of its beam; or
  - (b) cannot avoid a close quarters situation with another vessel forward of its beam, must –
  - (c) reduce its speed to the minimum at which it can be kept on its course; and
  - (d) if necessary, take all way off; and
  - (e) in any event navigate with extreme caution until the danger of collision is over.

#### **22.35 Sound signals in restricted visibility**

In or near an area of restricted visibility, by day and by night, the following signals must be used:

- (a) subject to Rule 22.35(b) –
  - (i) power-driven vessel making way through the water must sound one prolonged blast at intervals of not more than 2 minutes

# **Appendix 4: International Maritime Organisation Resolution A.893(21)**

## **INTERNATIONAL MARITIME ORGANIZATION**

### **RESOLUTION A.893(21)**

**adopted on 25 November 1999**

#### **GUIDELINES FOR VOYAGE PLANNING**

**(Link: STCW Code section AVIII/2, part 2)**

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety and the prevention and control of marine pollution from ships,

RECALLING ALSO section AVIII/2, Part 2 (Voyage planning) of the Seafarers' Training, Certification and Watchkeeping Code,

RECALLING FURTHER the essential requirements contained in the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers and the International Convention for the Safety of Life at Sea concerning voyage planning, including those relating to officers and crew, ship borne equipment, and safety management systems,

RECOGNIZING the essential importance for safety of life at sea, safety of navigation and protection of the marine environment of a well planned voyage, and therefore the need to update the 1978 Guidance on voyage planning issued as SN/Circ.92,

NOTING the request of the Assembly in resolution A.790(19) that the Maritime Safety Committee consider the issue of voyage planning in conjunction with its review of the Code for the Safe Carriage of Irradiated Nuclear Fuel, Plutonium and High Level Radioactive Wastes in Flasks on Board Ships (INF Code), and the Committee's decision that consideration of the issue of voyage planning should not be restricted to vessels carrying materials subject to the INF Code but should apply to all ships engaged on international voyages,

HAVING CONSIDERED the recommendation made by the Sub Committee on Safety of Navigation at its forty fifth session:

1. ADOPTS the Guidelines for voyage planning set out in the Annex to the present resolution;
2. INVITES Governments to bring the annexed Guidelines to the attention of masters of vessels flying their countries' flag, ship owners, ship operators, shipping companies, maritime pilots, training institutions and all other parties concerned, for information and action as appropriate;
3. REQUESTS the Maritime Safety Committee to keep the said Guidelines under review and to amend them as appropriate.

#### **ANNEX**

##### **DRAFT GUIDELINES FOR VOYAGE PLANNING**

###### **1 Objectives**

1.1 The development of a plan for voyage or passage, as well as the close and continuous monitoring of the vessel's progress and position during the execution of such a plan, are of essential importance for safety of life at sea, safety and efficiency of navigation and protection of the marine environment.

1.2 The need for voyage and passage planning applies to all vessels. There are several factors that may impede the safe navigation of all vessels and additional factors that may impede the navigation of large vessels or vessels carrying hazardous cargoes. These factors will need to be taken into account in the preparation of the plan and in the subsequent monitoring of the execution of the plan.

1.3 Voyage and passage planning includes appraisal, i.e. gathering all information relevant to the contemplated voyage or passage; detailed planning of the whole voyage or passage from berth to berth, including those areas necessitating the presence of a pilot; execution of the plan; and the monitoring of the progress of the vessel in the implementation of the plan. These components of voyage/passage planning are analysed below.

## **2 Appraisal**

2.1 All information relevant to the contemplated voyage or passage should be considered. The following items should be taken into account in voyage and passage planning:

- .1 the condition and state of the vessel, its stability, and its equipment; any operational limitations; its permissible draught at sea in fairways and in ports; its manoeuvring data, including any restrictions;
- .2 any special characteristics of the cargo (especially if hazardous), and its distribution, stowage and securing on board the vessel;
- .3 the provision of a competent and well rested crew to undertake the voyage or passage;
- .4 requirements for up to date certificates and documents concerning the vessel, its equipment, crew, passengers or cargo;
- .5 appropriate scale, accurate and up to date charts to be used for the intended voyage or passage, as well as any relevant permanent or temporary notices to mariners and existing radio navigational warnings;
- .6 accurate and up to date sailing directions, lists of lights and lists of radio aids to navigation; and
- .7 any relevant up to date additional information, including:
  - .1 mariners' routing guides and passage planning charts, published by competent authorities;
  - .2 current and tidal atlases and tide tables;
  - .3 climatological, hydrographical, and oceanographic data as well as other appropriate meteorological information;
  - .4 availability of services for weather routing (such as that contained in Volume D of the World Meteorological Organization's Publication No. 9);
  - .5 existing ships' routing and reporting systems, vessel traffic services, and marine environmental protection measures;
  - .6 volume of traffic likely to be encountered throughout the voyage or passage;
  - .7 if a pilot is to be used, information relating to pilotage and embarkation and disembarkation including the exchange of information between master and pilot;
  - .8 available port information, including information pertaining to the availability of shore based emergency response arrangements and equipment; and
  - .9 any additional items pertinent to the type of the vessel or its cargo, the particular areas the vessel will traverse, and the type of voyage or passage to be undertaken.

2.2 On the basis of the above information, an overall appraisal of the intended voyage or passage should be made. This appraisal should provide a clear indication of all areas of danger; those areas where it will be possible to navigate safely, including any existing routing or reporting systems and vessel traffic services; and any areas where marine environmental protection considerations apply.

### 3 Planning

3.1 On the basis of the fullest possible appraisal, a detailed voyage or passage plan should be prepared which should cover the entire voyage or passage from berth to berth, including those areas where the services of a pilot will be used.

3.2 The detailed voyage or passage plan should include the following factors:

.1 the plotting of the intended route or track of the voyage or passage on appropriate scale charts: the true direction of the planned route or track should be indicated, as well as all areas of danger, existing ships' routing and reporting systems, vessel traffic services, and any areas where marine environmental protection considerations apply;

.2 the main elements to ensure safety of life at sea, safety and efficiency of navigation, and protection of the marine environment during the intended voyage or passage; such elements should include, but not be limited to:

.1 safe speed, having regard to the proximity of navigational hazards along the intended route or track, the manoeuvring characteristics of the vessel and its draught in relation to the available water depth;

.2 necessary speed alterations en route, e.g., where there may be limitations because of night passage, tidal restrictions, or allowance for the increase of draught due to squat and heel effect when turning;

.3 minimum clearance required under the keel in critical areas with restricted water depth;

.4 positions where a change in machinery status is required;

.5 course alteration points, taking into account the vessel's turning circle at the planned speed and any expected effect of tidal streams and currents;

.6 the method and frequency of position fixing, including primary and secondary options, and the indication of areas where accuracy of position fixing is critical and where maximum reliability must be obtained;

.7 use of ships' routing and reporting systems and vessel traffic services;

.8 considerations relating to the protection of the marine environment; and

.9 contingency plans for alternative action to place the vessel in deep water or proceed to a port of refuge or safe anchorage in the event of any emergency necessitating abandonment of the plan, taking into account existing shore based emergency response arrangements and equipment and the nature of the cargo and of the emergency itself.

3.3 The details of the voyage or passage plan should be clearly marked and recorded, as appropriate, on charts and in a voyage plan notebook or computer disk.

3.4 Each voyage or passage plan as well as the details of the plan, should be approved by the ships' master prior to the commencement of the voyage or passage.



## **4 Execution**

4.1 Having finalized the voyage or passage plan, as soon as time of departure and estimated time of arrival can be determined with reasonable accuracy, the voyage or passage should be executed in accordance with the plan or any changes made thereto.

4.2 Factors which should be taken into account when executing the plan, or deciding on any departure there from include:

- .1 the reliability and condition of the vessel's navigational equipment;
- .2 estimated times of arrival at critical points for tide heights and flow;
- .3 meteorological conditions, (particularly in areas known to be affected by frequent periods of low visibility) as well as weather routing information;
- .4 daytime versus night time passing of danger points, and any effect this may have on position fixing accuracy; and
- .5 traffic conditions, especially at navigational focal points.

4.3 It is important for the master to consider whether any particular circumstance, such as the forecast of restricted visibility in an area where position fixing by visual means at a critical point is an essential feature of the voyage or passage plan, introduces an unacceptable hazard to the safe conduct of the passage; and thus whether that section of the passage should be attempted under the conditions prevailing or likely to prevail. The master should also consider at which specific points of the voyage or passage there may be a need to utilize additional deck or engine room personnel.

## **5 Monitoring**

5.1 The plan should be available at all times on the bridge to allow officers of the navigational watch immediate access and reference to the details of the plan.

5.2 The progress of the vessel in accordance with the voyage and passage plan should be closely and continuously monitored. Any changes made to the plan should be made consistent with these Guidelines and clearly marked and recorded.

## Appendix 5: Response from Real Journeys Limited



13<sup>th</sup> September 2010

### **Investigation Report Close-quarters Foveaux Express v Southern Express**

Dear Sir,

Real Journeys Limited wishes to offer the following comments regarding the Foveaux ferry close-quarters incident on the 19<sup>th</sup> January 2010.

Real Journeys has always considered safety of paramount importance and takes its obligations very seriously. This incident has presented an opportunity for improvement and the Maritime NZ recommendations will be carried out, although many of them were actioned immediately following the incident.

#### **Training**

Initial training within the company is extensive and recorded although it is accepted that on-going assessment has not been recorded well.

#### **Section 97**

With regard to master's competency, we have traditionally relied on the fact that Real Journeys Masters all hold an appropriate Maritime New Zealand Certificate of Competency. We have used Equivalency Table in Maritime Rule Part 31B to ensure that Master's Certificates of Competency are acceptable for the area of operation.

This indicated an acceptable level of competency and a risk analysis of the operation would not necessarily have highlighted the risk of vessels operating on reciprocal courses as this is covered in the Maritime Rule Part 22 Collision Prevention.

#### **Section 102 – 105**

When the Masters involved completed their initial training four and five years ago respectively, the training forms used related more to the physical operation of the radar itself, rather than the Maritime rules and in particular, collision avoidance. This has since been rectified.

## **Navigational Watch**

### **Section 112**

Under the Navigational Watchkeeping section in the SSM Manual there are 26 points for the master to consider, some relating to overnight and coastal voyages, some simply applying to the safe operation of any vessel. The composition of a Navigational watch on a vessel with a master and one or two crew, which is typical of a number of the smaller Real Journeys vessels, is not complicated and therefore not detailed in the Procedures Manual.

The statement preceding the Navigational Watch requirements in the Manual states clearly that any person involved with watch keeping is required to be familiar with and maintain these standards while underway. In no way does that statement imply exclusion of SIE vessels as stated in the report.

There are references in the report pointing to the generic manual and procedures – We operate a ‘Safe Ship Management System’ and have a generic manual as stated, but other parts of the system involve Vessel Specific Training Manuals, Safety Equipment lists, Vessel Procedures, Hazard Registers, Compliance Certificates and some branch specific procedures for Over due vessels etc, all of which are part of the ‘System’ but not in ‘The Manual’ as such. In this case the two ferries are sister ships operating in the same area under the same conditions as well as using the same procedures for emergencies so their paperwork is therefore the same.

## **Passage Planning**

### **Section 119 - 131**

The report makes reference to the requirements for voyage planning which although focussed on extended voyages, also cover regular comparatively short trips.

In this instance, the ferries work a very regular timetable following very regular routes except in rougher conditions in which case the masters seamanship decisions are aimed at a safe, comfortable ride and his route does not necessary follow a standard compass course. The Masters plans will often change once the vessel leaves the sheltered waters of Oban or behind Bluff Hill, so it has not been traditionally expected of them to ‘lodge a plan prior to departure’ when it is accepted they will be travelling to their destination port by the shortest route which is safe and comfortable.

The route will vary depending on wave size, shape, direction, wind and tide and the Master may change his approach to these factors several times during a one hour trip between Bluff and Stewart Island.

The factors to be taken into consideration are recorded in the log book daily although the Master will assess them per voyage.

A basic voyage plan is currently (post incident) being lodged at departure and the Masters communicating by radio mid crossing.

## **Risk Analysis**

### **Section 141 – 144**

The Risk Analysis section in the manual has been audited by both Maritime NZ and Telarc, and considered acceptable for the past 12 years. It is accepted that some of the terminology has changed although the intent remains the same. Where the analysis would indicate that that an action needs to be ‘modified’, the process of eliminate, isolate or minimise would be logically followed.

### **145 - 147.**

In this instance, it is accepted that had the risk of two masters not following the Maritime Rules at the same time been recognised, procedures requiring observation of a separation scheme may have been in place and review of the Masters skills would have been actioned to minimise the risk (although a company procedure using a separation scheme does not apply to other vessels, only the Maritime Rules do). The statement in the report that monitoring the health of the employee as a consequence of minimising this risk as required by HSEA and referred to in 145, seems somewhat removed from reality. We seek some clarification on how to apply the HSEA in respect of monitoring the health of an employee around the hazard of a collision.

### **149-152**

Our Masters are aware that Real Journeys is reluctant to take the decision making process from them.

As recommended, we will work with the Masters to record maximum operating parameters for each of the vessels in the fleet although the logic is somewhat flawed. A four metre roll can be quite comfortable travelling (depending on the size, design, power and profile of the vessel) provided there is not much wind. The velocity of the wind, direction and shape of the waves and tidal flow are all influences that the Master must be allowed to assess as in spite of the Employers obligations under the HSEA, under the Maritime Transport Act Section 19 (a) and (b) the Master has the responsibility for the safe operation of the ship. It will be difficult to come up with a set of parameters that cover every aspect of sea conditions and remove the risk of one master judging the height, size and shape of a wave differently to another as to be of any value simply stating that vessels ‘must not operate in waves of more than four metres’ will be of little use. If a master is at sea and conditions deteriorate beyond the parameters, should the procedure dictate that he must heave to, turn around or continue to operate in conditions beyond the given parameters? Or should he be allowed to make that decision without any potential pressure from shore based management.

Section 4.2.10 of the SSM Manual refers to the requirement to assess weather and sea conditions. As stated in the report, the issue of sea state is not relevant to this incident.

## **Roles and Responsibilities**

158. The training roles have traditionally overlapped. For the sake of compliance the roles are defined, but the Manual clearly shows that the Senior Launchmaster in each Division has dual roles as both Training and Safety Officer.

‘The Master shall ensure that all crew members are trained for the function they perform’ i.e. it is the Masters responsibility to ensure that the Station Bill or Muster List has suitably trained people filling the required positions. If the Master doesn’t have suitably trained people on board then the vessel doesn’t sail until the situation is corrected.

160.As stated in the report, Real Journeys has always used MNZ Recognised Surveyors but maintain independence by not employing our own ‘approved’ surveyors. The Surveyor function is defined in the SSM system so anyone involved knows what to expect from the Surveyor, not to tell the surveyor what to do.

### **Audits**

166 - 168 All other Branches within Real Journeys contact their office with passenger numbers at the start of a cruise, in most cases at the front desk before departure on a regular trip on a regular route several times a day. Most of the one way destinations (as opposed to scenic type excursions which return to their original departure point) give an ETA and passenger numbers to their office when on the return leg from an unmanned wharf. It is accepted that the SIE operation is different to our other excursions in that there is a manned office expecting their arrival at each end of the Foveaux Strait crossing. However, a procedure is now in place requiring the masters to broadcast their numbers and intent.

### **Health and Safety in Employment Act 1992**

Section 15 of the Act, as stated in the report, places a duty on the Employer – (although we at Real Journeys are proud of our safety record, our training processes and the high standards and skills of our employees), we missed the requirement to ensure through training, that our Masters remembered and applied the Collision regulations. We have thoroughly trained Masters and crew members in almost every aspect of the job they carry out, but haven’t in the past, trained them on what they should do in Restricted Visibility as it was considered part of the Qualification.

### **Post – Incident action**

Since the incident, the following actions have been carried out:

- Real Journeys and Black Cat have instigated and carried out Master refresher training for Masters in Canterbury, Fiordland and Stewart Island. Refer MNZ.
- A ‘Master Competency Assessment’ form has been developed for use in an annual reassessment of Masters competencies - see appendix 1
- A copy of the Collision Regulations has been placed on each vessel in the fleet
- SIE Voyage Plans are now being lodged by radio and require the Masters to communicate with the bases and each other. – see appendix 2
- Fog horns have been automated.

- A separation procedure is in place to ensure that ferries operating on reciprocal courses in restricted visibility remain at least a nautical mile apart – copy attached in appendix 2
- A sign warning of Ferry activity in the Strait has been erected at the Bluff boat launching ramp which indicates there are ferries operating in the Strait, that they monitor VHF 61 and gives a contact number for ferry schedules – see appendix 3

## **Recommendations**

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- a) the review of training process provided to Masters will be driven by the Masters Competency Assessment
- b) Currently a new employees Certificate of Competency is verified with MNZ and its application checked by use of the Tables in Maritime Rule 31B. We will now overlook the equivalency given in the Rule and assess the MNZ requirements to obtain the Certificate against our requirements for the position.
- c) Accepted
- d) Accepted. The appropriate assessment paperwork is already in place and the Company has invested in a database system called the ‘Vault’ which will be used to flag training requirements.
- e) Audits of the vessel operations will be more extensive and more regular. The ‘audit checklist’ is under review.
- f) Procedures to ensure minimum separation are all ready in place for Foveaux Strait and under construction for other areas. A draft has been produced for Lake Manapouri. Other operators on Manapouri will be approached for ‘buy in’ to our procedures on the lakes as without them agreeing we are all still relying on the Collision Regulations to reduce the risk of collision and therefore are no further ahead.
- g) Accepted
- h) As stated in our comments under Risk Analysis, we will work to ensure that *useful* guidelines are in place.
- i) Vessel handling characteristics will, by default, guide the process to develop procedures for operating limits. It will be confirmed that Navigational Aids are used correctly and appropriately and their limitations are recognised.

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- a) Accepted
- b) Accepted given that in most cases there are a number of vessels in each Branch and Branch specific procedures will suffice.
- c) Accepted
- d) Risk assessments of all Maritime operations will be carried out or reviewed.
- e) Audit procedure and checklist all ready under review.

We also commit to working with MNZ on the recommendations 193 a) to f) to ensure where possible that what can be learnt from this near miss is applied across the maritime industry. As a member of the Marine Transport Association we are able to be instrumental in assisting this to happen.  
We trust you find our comments acceptable and constructive.

*(Signature block removed by MNZ)*

Appendix 1

**REAL JOURNEYS**

<b>COMPETENT MASTER ASSESSMENT</b>
------------------------------------

NAME:.....ASSESSMENT DATE: .....

VESSEL: .....

BRANCH:.....

ASSESSOR:..... POSITION HELD.....

1. MEDICAL CERTIFICATE CURRENT.....YES / NO..... DATE ISSUED .....
2. MASTERS CERTIFICATE ... .. DATE ISSUED.....
3. SEWAGE IMMUNISATION PROGRAMME CURRENT..... YES / NO

**ADDITIONAL TRAINING COMPLETED**

1. LIQUOR LICENCE MANAGERS CERTIFICATE..... YES / NO
2. FIRST AID CERTIFICATE CURRENT..... YES / NO

	TOPICS		COMPETENT yes / no	COMMENTS
1	Daily Checks			
2	Vessel prep			
3	Electrical Systems     12V 24V 240V 440V			
4	On-shore power supply and CB's			
5	Basic Communication Equipment 1. Cellphone 2. SSB 3. VHF  (Radio procedures and channels)			
6	Pyrotechnics – location, use, expiry			
7	Air Conditioning			
8	PA system incl IPOD, DVD, CD safety brief			



	<b>TOPICS</b>		<b>COMPETENT yes / no</b>	<b>COMMENTS</b>
9	Navigational hazards in operational area			
10	Engines – restart after a stall			
11	Bilge System			
12	Fire Hoses, Portable Extinguishers			
13	The Location and Operation of Fire Alarms, engine room smothering and vents, remote fuel shut-offs			
14	Fire fighting procedures			
15	<u>Life Saving Equipment</u> - Life Rings - Rafts – correct securing arrangements - Jackets - Boat Hook - Heaving Line - Torch (es)			
16	Procedures for machinery failure: e.g. shaft locks, gearbox reqs when dragging, circuit changeover in event of emergency.			
17	Bunkering procedures and requirements			
18	Maintenance systems and Service intervals			
19	Defects and Systems – Branch Procedures			
20	First Aid Equipment			
21	Man Overboard Drill Procedures			
22	Steering and Emergency Arrangements			
23	Passenger control in Emergency			
24	Crew training skills – attitude and ability			
25	Precautions for use of Sewage Handling Equipment			
26	Vessel handling			

	TOPICS		COMPETENT yes / no	COMMENTS
28	Cleaning Duties			
29	Accurate Commentary and Vessel Route			
30	Compass Courses			
31	Weekly checks – regular and recorded			
32	Understanding of Local Body By-Laws & Codes of Practice where applicable			
33	Accident and Incident Reporting requirements			
34	Specific Vessel Manning and Operational Limits			
35	Understanding of obligations under Safe Ship Management.			
36	Understanding of obligations under the Maritime Transport Act			
37	Understanding of obligations under the Health and Safety in Employment Act			
38	<b><u>Navigation Equipment</u></b> Radar operation..... GPS operation..... Sounder operation.....			
39	1. Understanding of Part 22 Collision Regulations  2. Section 22.19 - Conduct in Restricted Visibility		..... .....	..... .....

<b>Overall Assessment</b>	<b>Competent</b>	<b>Not Competent</b>
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## **Stewart Island Experience**

### Communication plan for all Stewart Experience Island Vessels

1. After all passengers are accounted for and the vessel has been cleared from the office of departure, the skipper will call "Terminal Bluff" on VHF channel 61 and give the following details:
  - Port of destination
  - Intended course to destination and ETA
  - Number of passengers and crew on board including skipper

The office will acknowledge information received by stating "received over" and will log all information in a log book kept at the shore base radio at all times.

2. If the vessels destination is Stewart Island the skipper will radio "Terminal Bluff" on arrival, thus indicating that you've arrived safe and sound, this will be acknowledged by "Terminal Bluff" and time logged.
3. If vessels destination is Bluff, office will keep a visual and log time of arrival.
4. If vessel has not arrived at port of destination after five minutes of ETA the Bluff office will contact vessel to ensure all is well. If no contact is made the office ***MUST*** contact **Branch Manager** or **Senior Launch Master** immediately, while continuing to establish contact with the vessel.
5. The above procedure will be in place for the "Patterson Inlet Cruise" and the "Under water Explorer" with the exception that all radio calls and the shore based log will be held at Half-moon bay wharf office, call sign "Terminal Island" also on channel 61.
6. In times of restricted visibility both vessels will make contact with each other at least two nautical miles away from center mark on GPS unit and discuss course for passing each other giving not less one nautical mile of space between vessels.

At all times International Maritime Collision regulations apply and must be adhered to.

All skippers and office supervisors will sign this document in acknowledgement of understanding and acceptance of this procedure.

{ **Attachments:** Communication Plan.doc

Hi [Name removed],

Attached is the draft communication that was developed after the fog incident. All skippers read and signed this, and you have a copy on file in Te Anau.

Subsequently, this was reviewed at the local health and safety committee level (after further discussions with all skippers) and approved as appropriate with no additions or alterations until the end of the season ending 30<sup>th</sup> April 2010.

This document (and the following sailing plan) will be again reviewed as part of the training week process before the commencement of the new season. Note that there is no opposing ferry schedule until 26<sup>th</sup> December 2010. However, there is still the standing requirement that the departing ferry radio with the Bluff Terminal with departure time, expected arrival time, crew and passenger numbers and expected course (at this stage pretty much straight line Bluff to HMB or a more easterly course to the east of Womens Island and Jacky Lee island. This is recorded in the radio logbook maintained in the Bluff terminal. Therefore, although we do not file a voyage plan prior to sailing, we record a voyage plan once we have a handle on the conditions. Also, when we are on opposing voyage, we as part of the procedure call each other to positively identify each other and discuss the passing plan.

During the training week we will be discussing sailing through the islands in times of restricted visibility. The current working procedure to back up the radi calls is that both skippers head to starboard of a straight line between Bluff and HMB so that there is a clearance – then the two skippers on duty contact each other to determine the passing distance of not less than 1 nautical mile.

As part of our new product (to be launched for 1<sup>st</sup> November), the ferry heading south to HMB will be going east past Womens Island and Jacky Lee while the ferry heading North to Bluff will be passing to the west of the North Islands. This will be the standard sailing plan. Any deviations from this will be advised to the Bluff terminal as part of the Radio call.

Anything else you require, call me on [number removed] and I will get back to you asap.

[name removed]

Appendix 3

