

Summary Report

Serious Harm Injury

Patea Explorer

21 September 2006



NARRATIVE

On Thursday 21 September at about 0745 New Zealand Standard Time (NZST), the Skipper and crewmember (Crew 1) boarded ***Patea Explorer***, which was berthed alongside the wharf at Deep Cove, Doubtful Sound, Fiordland.

It had been raining lightly and had cleared. There was a moderate breeze.

Once on board the vessel they made preparations for the day. They were expecting to carry out three trips; a one hour school trip at 0900 and then the normal two hour trips at 1130 and 1445.

The senior coach driver (Crew 2) was acting as second crew that day.



Photograph 1
Patea Explorer

At about 0845, the school children and their teachers boarded the vessel. At 0900, the crew made preparations to leave the wharf. The Skipper was on the bridge at the port helm position (See *Photograph 1*) whilst Crew 1 and Crew 2 were at the stern, readying the lines.

Using the stern intercom system, the Skipper gave the order to let go the aft lines. Crew 1 and 2 let go the aft spring and breast lines. Crew 2 let go the stern line and gave the ‘thumbs up’ to the Skipper on the bridge. Crew 1 then proceeded to the bow whilst Crew 2 finished tidying up the lines aft.

As the stern line was let go, the vessel’s stern swung out from the wharf. Crew 2 motioned to the Skipper to manoeuvre the vessel back alongside.

The Skipper manoeuvred the engines, which swung the stern back alongside the wharf.

The Skipper could see that Crew 1 was at the bow (See *Photograph 1*) and ready to let go the forward lines but he could not see all that was happening in this area due to his position at the port helm station on the bridge (See *Photograph 2*). As such, he could not see the bits where the forward lines were attached to the vessel or what Crew 1 was doing with them.

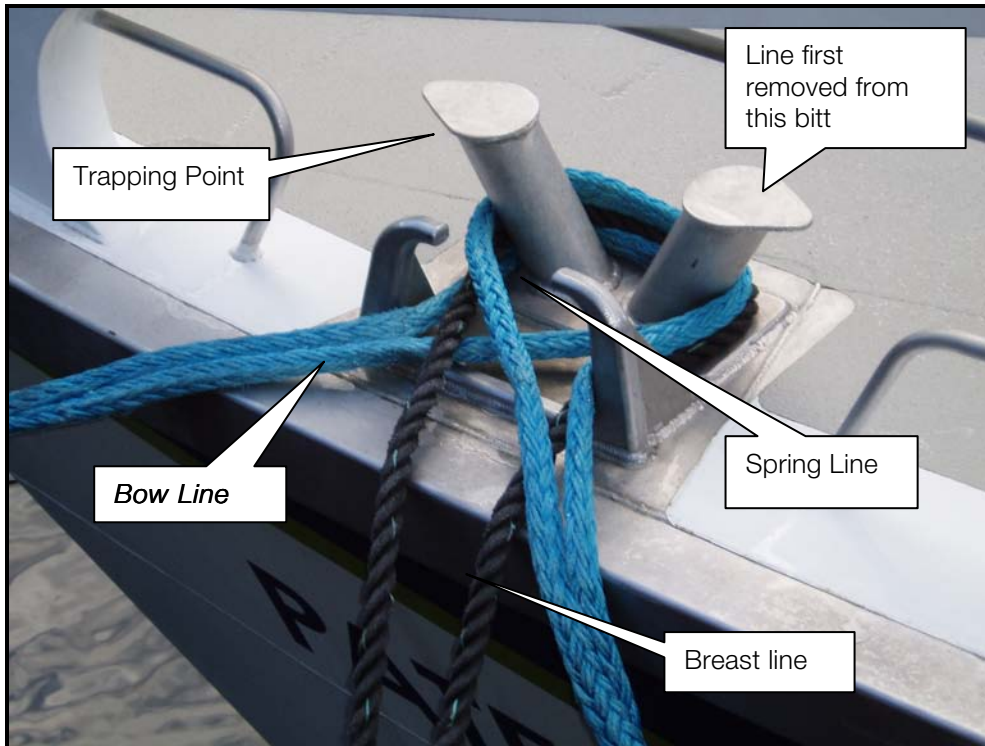


Photograph 2

View from port helm position on the bridge (leaning out the window)

The eyes of three mooring lines at the bow namely, the bow line, forward breast line and forward spring line were secured over the set of bitts located on the port side of the bow section (See *Photograph 3*).

The eye of the forward spring line, which overlaid the eyes of the bow and breast lines, was the first to be removed by Crew 1. Using her left hand, she removed the eye of the spring line from the after bitt first. When she was about to remove the eye from the forward bitt, there was a gust of wind and the line tightened suddenly. Crew 1 did not have time to drop the line or move her hand before she found her left fingers trapped between the forward bitt and the forward spring.



Photograph 3
Mooring lines and bollards

By this stage, Crew 2 was at her side and standing by with the boat hook. His job was to catch the line once it was clear of the vessel in order to hang it on a retaining hook on the wharf.

As the vessel drifted back along side the wharf the tension came off the forward spring and Crew1 was able to release her fingers.

The Skipper, Crew 2 and a teacher administered first aid while they waited for the helicopter to arrive from Te Anau.

Crew 1 was airlifted by helicopter from Deep Cove to Te Anau. She was then transferred to Kew Hospital, Invercargill. Crew 1 sustained severe damage to two of her left hand fingers. The ring and middle finger were badly crushed, bone was exposed and there was nerve and tendon damage to the top part of the middle finger.

At Invercargill she underwent hand surgery. The top part of her middle finger was amputated due to the severe damage caused by the crushing. After she was discharged from hospital her finger became infected and she had to be re-admitted for a course of intra-venous antibiotics. She was given one month off work to recover from her injury.

Crew 1 returned to work in November 2006.

COMMENT & ANALYSIS

Crew

The Skipper holds a Coastal Launch Master Certificate (CLM), which was obtained in 1995. He has served on board the vessel since December 2005. He has worked for Real Journeys for 10 years.

Crew 1 had been on board **Patea Explorer** since December 2005. She was trained and qualified as a Real Journeys Advanced Deckhand (ADH). She was confident in her ability to handle the lines and was aware of the hazards involved. She was described by the company and her colleagues as a very competent Deckhand.

Crew 2 was the Senior Coach Driver and driver trainer for the Manapouri Division of Real Journeys. He was also qualified as a Real Journeys ADH. He has worked for Real Journeys for about eight years. On the day of the accident he was assisting as second crewmember. He had been trained to carry out this duty.

The Skipper and crew of **Patea Explorer** live at Deep Cove during their week on and then return to their homes on the week off.

Patea Explorer's Minimum Manning Certificate states that the vessel requires a Skipper (CLM) and two crew namely, an ADH and MEC6. The vessel was operating in accordance with this Certificate.

During the winter season, coach drivers act as second and third crew. They are trained and signed off as competent to carry out this position. They act as crew on the vessel on average 3-4 times per week in the winter months and 1-2 times per week during the summer when there are all ready two regular crew persons on the vessel.

Mooring arrangement

The shore end of the mooring lines, all of which have a fixed length, are left permanently secured to bollards on the wharf. The eye of each mooring line, is placed over bitts on the vessel, as shown in *Photograph 3*. When the mooring lines have been let go, they are looped over retaining hooks attached to the wharf (See *Photograph 4*).

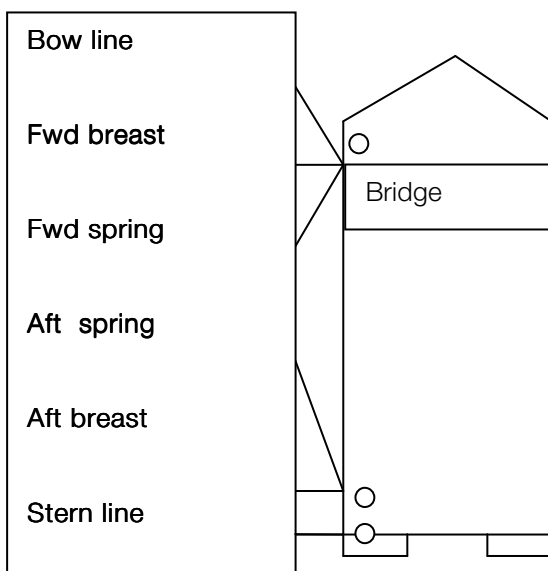


Diagram 1 – Mooring Arrangement



Photograph 4

Hazard identification

The hazard of line handling had been identified by Real Journeys in their hazard register.

Location or Task	Vessels berthing and placing of lines onto bollards
Significant Hazard	Impact Score: $7 \times 6 \times 0.5 = 21$
What industry standards apply?	
What relevant Real Journeys policies apply?	RJ SSM procedures RJ Code of Conduct
What special skills are needed to do this task/run this activity?	Skipper and Crew Clearance
Control	<p>Minimise</p> <p>Keep fingers clear of eyes in lines to avoid fingers becoming jammed.</p> <p>Watch for other pinch points between vessel and wharf beltings / handrails.</p> <p>Never let pax or untrained / un-cleared staff attend to lines when tying ships.</p> <p>Ensure all lines are clear of vessel before departing wharf.</p> <p>Take care when using boat hooks, to avoid hitting others with long handles. Do not leave boat hooks lying on decks.</p> <p>Watch for rope burn when securing long mooring/stern lines.</p> <p>Refer to Hazard #2.17 re back strain.</p>
Monitoring Required	Personal/Workplace
Review Required	Quarterly Safety Committee Review. Following injury incidents that occur despite controls. Following identification of trends associated with incident reports.
Other Comments	

Date Hazard Register last reviewed: _____

Manager's signature: _____



Detailed Hazard Management Plan

Hazard 17	Stained back/muscular strains if lifting incorrectly or object is too heavy/ pulling mooring lines.
Location or Task	Loading freight on and off ships and mooring ships.

Date last amended: 17 February 2006
Author: S Naughton
WSMP - 3.2

FINDINGS

Crew 1 did not have time to let go the line in time to prevent her fingers from being trapped

Crew 1 was positive that the wind caught the vessel and pushed the bow off the wharf causing the lines to suddenly tighten.

The Skipper stated that the vessel was vulnerable to the effects of the wind.

There was no radio communication between the bridge and crew working at the forward end of the vessel.

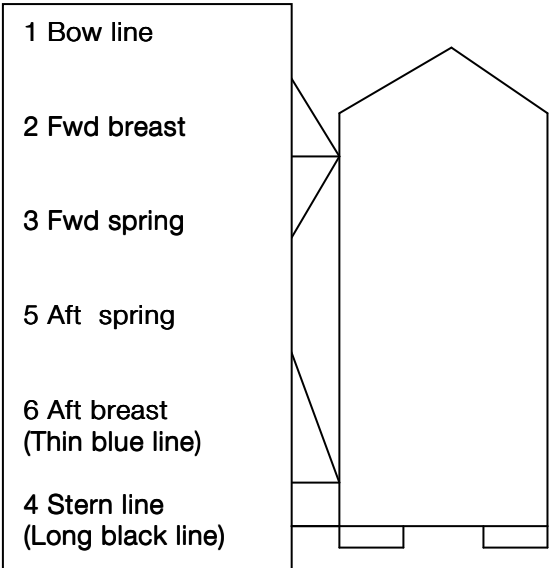
Skippers need to maintain positive control of the vessel when letting go, berthing and manoeuvring.

The Skipper has limited vision of the port waist and bow mooring area from both the port and starboard helm positions on the bridge.

ACTION TAKEN

Real Journeys are currently reassessing the mooring arrangements of *Patea Explorer*. They have approached Incat Crowther in Australia, the builders of the vessel, to prepare drawings for the modification of the mooring bits at the stern and the fitment of a single Samson post at the bow on the outside of the coaming about a metre above the deck to allow easier and safer mooring/unmooring.

In the meantime the mooring procedures for this vessel have been re-assessed and the new procedure is as follows:



All work areas are to be cordoned off when crew are working with the lines.

Mooring

Forward

- Bow line first
- Breast line second
- Forward spring third. Thumbs up and acknowledgment from Skipper

Stern

- Black stern line on aft bollard first
- Spring line on through scupper, verbal communication over Aiphone to Skipper “Spring on”
- Blue spliced line on bollard
- Thin blue line on bollard on top of spring.
- All gates shut
- Visual thumbs up to Skipper and receive acknowledgement

Unmooring to leave Berth

Stern

- All clear from Skipper to proceed (visual)
- Thin blue line off
- Blue spliced line off
- Spring off – verbal communication to Skipper via Aiphone “Spring off”
- Black stern line off aft bollard
- Gates shut, visual signal to and acknowledgement from Skipper
- Both crew move to bow
- **VISUAL SIGNAL FROM SKIPPER TO PROCEED WITH BOW LINES**
- Spring off first
- Breast line off
- Bow line off
- Visual signal to and acknowledgement from Skipper
- Barriers down

SAFETY RECOMMENDATIONS

It is recommended that Real Journeys:

1. Employ a second fulltime crewmember on *Patea Explorer*.
2. Establish radio communications between the bridge and bow.
3. Ensure Skippers have positive control of the vessel and crew at all times while mooring and unmooring.

SAFETY RECOMMENDATIONS IMPLEMENTED BY REAL JOURNEYS

- Patea Explorer now carries a second full-time crew person during the summer season and a qualified second crew at all times during the winter.
- Radio communications between the bridge and the bow have been established in the form of hand held radios.
- Positive control has been established through tightened procedures, visual and radio communications.

● VESSEL DETAILS

Ship Name:	<i>Patea Explorer</i>
Ship Type:	Passenger Vessel
Certified Operating Limit:	Inshore/ Enclosed
Port of Registry:	Invercargill
Flag:	New Zealand
Built:	2005
Length Overall (m):	31.01
Maximum Breadth:	9
Gross Tonnage:	396
Registered Owner:	Real Journeys Limited
Ship Operator/Manager:	Real Journeys Limited
SSM Company:	Fordland Travel Limited
Accident Investigator:	Zoe Brangwin