FERRY SAFETY INVESTIGATION REPORT

ROCKS RHYTHM BOAT LOSS OF CONTROL

WHITE BAY, PORT JACKSON

10 January 2016
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ACRONYMS AND ABBREVIATIONS

AMSA          Australian Maritime Safety Authority
CSH           Cruise Sydney Harbour Cruises
DIP           Directly Involved Party
GPH           General Purpose Hand
MED III       Certificate of Competency as a Marine Engine Driver Grade 3
OTSI          Office of Transport Safety Investigations
MWD           Manoeuvring with difficulty
PANSW         Port Authority of NSW
RMS           NSW Roads and Maritime Services
RRB           Rocks Rhythm Boat
SMS           Safety Management System
VTS           Vessel Traffic Service
### GLOSSARY OF TERMS

<table>
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<th>Term</th>
<th>Definition</th>
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<td>Ferry</td>
<td>A vessel which seats more than 8 adult persons, and includes a vessel of any class prescribed by the regulations for the purposes of this definition.</td>
</tr>
<tr>
<td>Port</td>
<td>The left hand side of a vessel when looking forward from the stern. The side where a red light is exhibited at night.</td>
</tr>
<tr>
<td>Starboard</td>
<td>The right hand side of a vessel when looking forward from the stern. The side where a green light is exhibited at night.</td>
</tr>
<tr>
<td>Survey</td>
<td>Vessels in commercial use in Australia require a Certificate of Survey and Operation and must have regular survey inspections to ensure that they are compliant with the relevant National Standards.</td>
</tr>
<tr>
<td>Survey Class</td>
<td>The figure in a Survey Class designation identifies the type of vessel e.g., “1” identifies the vessel as passenger carrying. The letter defines the permitted area of operation: A = unlimited offshore operation; B = offshore operation to 200 nautical miles seaward off the coast; C = restricted offshore operations up to 30 nautical miles seaward off the coast; D = sheltered operations (partially smooth water operations); and E = sheltered waters (smooth water operations).</td>
</tr>
<tr>
<td>Vessel Traffic Service (VTS)</td>
<td>VTS is a marine traffic system, similar in concept to air traffic control, which uses information from radar, close circuit television, a vessel’s automatic identification system and VHF radio to provide active monitoring and navigational advice to vessels. It is “a service designed to improve the safety and efficiency of vessel traffic and to protect the environment. The service should have the capability to interact with the traffic and to respond to traffic situations developing in the VTS area.” (IMO Resolution A.857 (20))</td>
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EXECUTIVE SUMMARY

At approximately 1620 on 10 January 2016, the master of the charter ferry Rocks Rhythm Boat (RRB) radioed the Sydney Ports Authority NSW (PANSW), Vessel Traffic Service (VTS) requesting assistance. Both motors had ceased operating and the anchor failed to hold the ferry in position. The ferry was drifting towards rocks in White Bay with 102 passengers on board.

PANSW response vessel Manns Point and another vessel responded to the call for assistance. Manns Point towed the RRB to the nearby Exhibition Jetty in Johnstons Bay, where the passengers were safely disembarked.

The investigation determined that;

- fuel contaminates had built-up and blocked fuel filters and fuel lines, resulting in both motors failing,
- there was no evidence of an implemented planned maintenance system,
- the Safety Management System (SMS) failed to effectively assess risk, lacked robust operational procedures, and failed to provide for induction of crew or ongoing refresher training.

Since the incident, CSH has implemented a number of remedial actions. Additional to these remedial actions OTSI has made five recommendations to address systematic issues. For more details, refer to Part 4 Recommendations.
PART 1  FACTUAL INFORMATION

Incident

1.2 At approximately 1300 on 10 January 2016 and within 100 metres east of Fort Denison, the *Rocks Rhythm Boat* (*RRB*) suffered an engine failure. At approximately 1310 the *RRB* master reported to Sydney Ports Authority NSW (PANSW), Vessel Traffic Service (VTS) the failure of the starboard engine and that the vessel was difficult to navigate. VTS immediately broadcast a warning to other vessels informing them that *RRB* was Manoeuvring With Difficulty (MWD). The *RRB* master navigated the ferry to Athol Bay and attempted to rectify the problem.

1.3 At approximately 1440, unable to rectify the problem, the *RRB* master requested permission from VTS to navigate on the remaining port engine to White Bay to disembark passengers by water taxi transfer. VTS approved the request and broadcasts a warning to other vessels that the *RRB* was en route to White Bay, was MWD and to keep clear.

1.4 At approximately 1540, the *RRB* arrives at White Bay and transferred 48 of the 150 passengers to a water taxi.

1.5 At 1617 the port engine also failed. The *RRB* master directed the crew to lower the anchor and the master subsequently advised VTS of the situation. The master then realised that the anchor was not holding in the prevailing east-north-east wind.

1.6 At approximately 1620 the master of the *RRB* radioed the VTS requesting assistance, as both propulsion engines were disabled, and the anchor had failed to hold. The ferry was drifting towards rocks in White Bay with 102 passengers on board.

1.7 PANSW response vessel, *Manns Point*, and another vessel responded to the ferry's call for assistance. At 1642 *Manns Point* begins towing the

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1 Starboard is the right-hand side of the vessel and port is the left-hand side of the vessel when facing towards the bow (front).

2 1617 captured in VTS records
disabled ferry to the nearby Exhibition Jetty in Johnstons Bay, where passengers safely disembarked and transferred to two water taxis.

1.8 There were no reported injuries and none of the vessels involved incurred any damage.

Vessel Information

1.9 RRB was built in 1984, is a 19.64 m aluminium catamaran charter ferry with a beam of 9.9 m and a draft of 1.25 m. The ferry was powered by two 96 kW Ford diesel engines which drive a conventional propulsion system. The ferry was in current Australian Marine Safety Authority (AMSA)\(^3\) survey.

1.10 A 37.5 kVA main generator powered by a Perkins diesel engine provided electrical supply for all the ferry’s operations. An emergency ancillary 14 kVA generator was also available for the electrical supply of the vessel’s essential systems in the case of the main generator failing while on a voyage.

1.11 Diesel fuel from a single 2000 litre tank, mounted amidships between the two-pontoon hulls, provided fuel for the engines and the fixed generators.

Figure 1 - Rocks Rhythm Boat

\(^3\) AMSA is a statutory authority and a Corporate Commonwealth Entity. AMSA was established under the Australian Maritime Safety Authority Act 1990 (the AMSA Act). It is a legislative requirement that a domestic commercial vessel in Australia have a current survey applicable for its intended operations. The Rocks Rhythm Boat was issued with a Class 1E survey (Passenger carrying in smooth water operations) and was certified to carry up to 168 passengers.
The survey specified a minimum safety crew\(^4\) of two, a Master class 5 and Marine Engine Driver class 3 (MED 3). If the master holds the appropriate engineering qualification then the engineer can be replaced with a General Purpose Hand (gph). An additional gph was required if the passenger numbers exceeded 150.

**Master and Crew**

The master held a current Certificate of Competency for vessels less than 24 metres, endorsed for sheltered waters, which was first obtained on 19 March 2015. The master also held a MED 3 Certificate for vessels less than 500 kW, first obtained on 16 September 2015. The master joined RRB as a casual/relief master on 3 October 2015. Prior to the incident on 10 January 2016, the master had been on board four times in that capacity.

At the time of the incident, the vessel was crewed by two qualified gphs and eight unqualified crew (a Cruise Director, Disc Jockey and catering staff).

**Incident Location**

The loss of control occurred in White Bay, situated to the west of Darling Harbour within Port Jackson (refer figure 2). The mean charted depth\(^5\) throughout the bay is 12 metres (chart datum LAT\(^6\)).

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\(^4\) Minimum safety crewing is the regulated minimum that a vessel can utilise to operate. The operator must conduct their own assessment as to what is an appropriate number of crew for individual operations.

\(^5\) The *mean charted depth* is the average vertical measurement of water from the ocean floor to a standard level.

\(^6\) The Lowest Astronomical Tide (LAT) is the lowest tide recorded which can be predicted under a combination of astronomical and average meteorological conditions, where lower tides can occur.
Environmental Conditions

1.16 At 1504, VTS reported wind strength as 16 knots\(^7\) from the north-east as measured at Fort Denison. At the time the second engine failed to operate, the master estimated the wind strength to be approximately 15 knots from the north-east with stronger gusts at times.

Management of Vessel

1.17 \(RRB\) was operated by Cruise Sydney Harbour (CSH), a private NSW registered business established in 2012. Initially, CSH operated charter ferry services on Port Jackson with two vessels, \(Katika\)^8 and \(Venture\)^8, and added the \(RRB\) on 1 July 2015.

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\(^7\) One knot = 1.852 kilometres per hour.

\(^8\) \(Katika\) ceased operations in 2010 after a series of collisions due to a control failure in Pyrmont Bay. The incident was investigated by OTSI and the report is available from OTSI’s website at www.otsi.nsw.gov.au
**Initial Inspection**

1.18 OTSI conducted an initial inspection of *RRB* on 5 February 2016 at Cabarita Marina in company with the owner’s representative. The inspection of the ferry also included on board records consisting of:

- vessel specific operating procedures (*RRB SMS*\(^9\)),
- vessel’s logbook,
- crew emergency drills performed, and
- maintenance records from 1 July 2015.

1.19 The investigation examined all of the above records and the vessel’s logbook and maintenance records were retained by OTSI.

1.20 The voice recordings of conversations between *RRB* and VTS on the Sydney Port marine call VHF channel 13\(^{11}\) were also obtained from VTS as part of the investigation.

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\(^9\) *Venture* ceased operation in 2015 when it sank at Cabarita. The incident was investigated by OTSI, the report is available from OTSI website at www.otsi.nsw.gov.au

\(^10\) In accordance with the requirements under the Marine Safety (Domestic Commercial Vessel) National Law Act 2012 (National Law).

\(^11\) Channel 13 VHF (156.6500 MHz) was the recognised Sydney Port operations radio channel.
PART 2 ANALYSIS

Figure 3 - Port Jackson map showing Athol Bay and the location of the loss of control.

Scope Ratio

2.1 When the vessel lost control, the RRB master ordered the crew to lower the anchor. The crew complied however; they failed to correctly note how much rope had been paid out. The chain and rope lacked markings to identify the length released.

2.2 The mean depth in White Bay was 12 metres. Typically, a scope ratio (chain length to depth of water) of at least 3:1\textsuperscript{12} would be required in calm conditions. With a strong prevailing wind, a scope ratio of 5:1 requiring 60 metres of anchor chain (rode) to be deployed.

Anchor rode length = (water depth under bow of the vessel) x (scope ratio)


**Figure 4 - Outline of scope ratio**

**Figure 5 - Comparison of recommended scope ratio and scope at time of incident.**
2.3 The crew advised the master that 37 to 46 metres of anchor chain had been deployed. The master said, “…the anchor initially caught, however it did not hold, and then felt like it was dragging through mud…”. In hindsight, the master believed “…when recovering the anchor that perhaps only 20 metres of chain had been set…” (equivalent to a 1.7:1 scope ratio).

Fuel Supply

2.4 The RRB’s twin main engines and generator were all diesel powered. A single stainless steel fuel tank of 2000 litres capacity was located between the two hulls and supplied diesel fuel to the two main engines and generator. The fuel tank was amidships below the main deck flooring. The fuel tank was not fitted with a sump or drain plug to facilitate drainage of contaminants from the tank.

2.5 Diesel fuel was distributed from the fuel tank, through primary in-line filters, and finally through a secondary fuel filter mounted in close proximity to the main engines’ fuel intake. Marine diesel fuel distribution systems typically supply more fuel than required by the engine’s high pressure fuel injection system and the surplus fuel is returned to the fuel tank via a low pressure return line. The process increases the returning fuel temperature and can increase the overall fuel tank temperature.

2.6 The increase in tank temperature can lead to water condensation, contributes to microbial contamination, biological fouling (algae), the build-up of contaminant solids, and ultimately, fuel degradation. A biological film can also be deposited on the interior tank walls and baffles.
2.7 Temperature changes throughout any given day and exposure to the atmosphere can cause condensation and water accumulation in a fuel storage tank.

2.8 Diesel fuel starts to deteriorate within 60-90 days after refining and environmental conditions can accelerate this process. As the fuel deteriorates, contaminates congregate to form solids. These contaminates can eventually clog fuel filters, fuel injectors and can cause an engine to become inefficient or stop operating.

2.9 Fuel contamination can lead to a loss of engine power and an increase in exhaust smoke. Fuel may become dark and hazy in appearance and leave fuel filters clogged and contaminated. Inspection of a fuel tank may reveal a build-up of contaminates on internal surfaces.
2.10 The recirculating nature of the fuel system potentially leads to the formation of larger and larger clusters of contaminates (solids). These solids can accumulate in fuel lines and filters, restrict (or block) fuel flow and can affect fuel combustion.

2.11 An examination of the RRB fuel and the tank on 1 February 2016 at Sydney City Marine showed the extent of the contamination. (See figures 7 & 8)

Figure 7- Contaminants in the interior of fuel tank.

Figure 8 - Contaminants in fuel sample
Maintenance and Servicing

2.12 The master/engineer had made entries in the ferry’s logbook that the necessary pre-departure checks had been carried out before the start of operations, with attention to fuel, water and oil levels for the engines and generators.

2.13 OTSI’s examination of the vessel’s service history indicated a pre-existing fuel quality problem;

- 25 July 2015, generator shut down and emitted thick exhaust smoke.
- 12 September 2015, problems with main generator.
- 1 December 2015, further problems with generator.
- 6 December 2015, generator shut down.
- 13 December 2015, both generators not working.
- 27 December 2015, port engine failed.
- 3 January 2016, port engine failed.
- 10 January 2016, port engine failed, later starboard engine failed, generators not working, (the subject incident of this investigation).
- 31 January 2016, port engine failed.

2.14 Following the incident on 13 December 2015, the continuing poor electrical power supply from the generator forced CSH to engage an electrical contractor to inspect the generator. The contractor attended, checked and adjusted the generator’s voltage regulator settings.

2.15 On 27 December 2015, CSH management engaged the maintenance services of Critical Marine Services (CMS) after the failure of the port engine. CMS attributed the engine shutdown to an algal blockage in the primary fuel filter that stopped the fuel flow to the priming fuel pump. CMS replaced all fuel filters and cleaned the fuel supply lines. CMS additionally recommended the cleaning of the fuel tank and treatment of the diesel in the tank.

2.16 CMS returned to the RRB following the failure of the port engine on 3 January 2016. On 6 January 2016, CMS removed all fuel supply and return
lines, and cleaned them using compressed air. The diesel fuel was removed from the tank and 'polished' through a process where fuel is passed through a series of centrifuges and filters to remove water and non-combustible contaminants. Following this maintenance, the engines operated normally, however the generator was running erratically. The problem was attributed to algae in the primary filter, and hence, the filter was replaced. The contractor advises CSH to install a superior performing 500 micron average model type fuel filter and to drain and clean the fuel tank.

**Post Incident Remedial Actions**

**2.17** Immediately following the loss of control incident, CMS found fuel lines and control valves blocked with contaminants. CMS conducted a service of both main engines and the generator. More effective fuel filters were fitted and further fuel ‘polishing’ took place.

**2.18** CMS instructed the crew on the monitoring and replacement of the new type of fuel filters.

**2.19** Between 16 and 29 January 2016, to rectify the electrical supply problems and continue operations, a 25 kVA portable generator was hired. The hired generator was installed on the aft section of the upper deck, starboard side. However, CSH did not notify AMSA or AMSA’s delegate RMS, of the placement of the hired generator on the upper deck.

**2.20** The hired generator had a mass of 860 kg (950 kg with fuel). This is equivalent to the approximate mass of 13 passengers. The placement of a large mass on the vessel may impact its stability. Following any significant changes to a vessel, AMSA requires a recalculation of the vessel stability to ensure vessel safety. This did not occur.

**2.21** Removal of the hired generator occurred on 29 January 2016.

**2.22** The work conducted appeared to rectify the fuel problem however, on 31 January 2016, the port engine failed again.

**2.23** On 1 February 2016, the contents of the fuel tank, 1400 litres of fuel was pumped from the RRB fuel tank into containers for cleaning by contractors at Sydney City Marine. The maintenance work consisted of tank cleaning
and the removal of approximately 50 litres of waste sludge from the tank. Additional work consisted of the installation of a new tank lid, fitting of a new fuel tank drain valve and plug, and the replacement of sealing gaskets. The treated fuel was returned to the tank.

Safety Management System (SMS)

2.24 The SMS was reviewed by OTSI on the 21 March 2016. The document addressed most elements required by Part E of the National Standards of Commercial Vessels (NSCV) and under the Marine Safety (Domestic Commercial Vessel) National Law Act 2012 (National Law) (Cwlth).

2.25 However, while the SMS contains evidence of procedural information tailored to the vessel’s operation, it was found to be generic in many respects. The SMS read more like an instructional manual on developing an SMS, rather than providing an operational guide to improve safety. For example, the anchoring procedure outlines what to do in general terms, rather than describes how the procedure was to be carried out, and who is responsible for doing so.

2.26 There was no evidence of a documented risk assessment of the operational hazards identified in the SMS.

Emergency Training and Drills

2.27 CSH did not have an emergency response drill register indicating which crew had completed emergency drills. The ferry’s logbook recorded that only two drills had been undertaken, one on 5 July 2015, after the ownership change of CSH on 1 July 2015. The second drill, on 8 November 2015, which included a ‘man overboard’ procedure and a discussion on fire response.

RRB Logbook

2.28 Examination of the ferry’s logbook generally showed comprehensive entries recording the arrival and departure details, passenger numbers and crew. However, examination of the number of cruises undertaken compared with the logbook entries showed one passage had not been recorded and on
three occasions, the details of the crew, their positions and the passenger numbers were also not recorded.

2.29 The logbooks contained no provision for recording if a passenger safety briefing was given prior to the ferry’s departure on a cruise.

2.30 There was no CSH management involvement, or procedure in place, to inspect the logbooks to oversee if the masters were adequately recording cruise details.
PART 3 FINDINGS

3.1 The loss of control of RRB on 10 January 2016 was attributed to contaminated fuel that blocked the diesel fuel supply to both main engines and generators. The build-up of contaminants restricted fuel flow and eventually blocked the fuel filters, starving the engines of fuel and resulted in engine failure.

3.2 The issue associated with contaminated fuel was an inherited problem since the ferry was acquired on 1 July 2015. After the acquisition of the RRB ferry, CSH had not implemented a maintenance plan that provided for regular fuel quality testing and inspection of fuel tank condition. The maintenance plan did not provide a maintenance schedule for periodic or running hours’ service intervals of the fuel system.

3.3 Warning of fuel contamination was evident as early as 25 July 2015 when the generator shut down. The problems continued with the fuel supply until the loss of control on 10 January 2016.

3.4 Maintenance was reactive, only addressing the symptoms of the contamination by changing filters and polishing fuel (post incident). Contractors identified contaminants in the fuel tank, as early as 29 December 2015, although this was not adequately addressed.

Contributing Factors

Fuel Tank Design

3.5 The fuel tank design, lacking a fuel tank sump and drain plug inhibited the easy removal of fuel tank contaminates.

3.6 There was no pre-departure or other maintenance checks available to identify contamination within the fuel tank. Without regular drainage of water condensation and other contaminates from the fuel tank, the supply of fuel to the engines and generator for safe and continued operation was uncertain.
Other Safety Matters

Anchor Drills

3.7 The failure by the crew to properly anchor the vessel following the loss of control of the ferry is symptomatic of a lack of effective training. Proper vessel induction, in conjunction with ongoing refresher training, would most likely have identified (and provided opportunity to address) challenges (length of rode) with safely securing the vessel at anchor.

Anchor chain

3.8 Without markings on the anchor chain, the crew were unable to determine the length of chain released. This contributed to an insufficient length of chain being deployed for the 12 m depth. The anchor failed to hold and the disabled ferry continued to drift closer to a rocky lee\textsuperscript{13} shore.

Guardrails

3.9 During the investigation, OTSI observed that the upper deck safety rails of 850 mm height from the deck had bench seats 425 mm from the deck which were attached to safety rail. The benches had effectively reduced the height of the railing, increasing the likelihood of a person/child, falling overboard. \textit{RRB} had two passengers fall overboard from the upper deck in 2015.

\textsuperscript{13} Lee meaning down wind
3.10 The ferry was built in 1984 to meet the initial survey requirements of the *Uniform Shipping Code (USL Code)* in relation to guardrail height of 850 mm. The bench seats attached to the guardrails were added to the ferry after the initial survey at an unknown date. The addition of the benches effectively reduced the height of the guardrails to 425 mm, below the minimum allowable guardrail height.

3.11 In 2013, the *Marine Safety (Domestic Commercial Vessel) National Law Act 2012 (The National Law) (Cwth)* superseded the *USL Code* where the minimum required guardrail height was increased to 1 metre. An exemption was granted by the regulator to ferries built and surveyed prior to the introduction of the National Law, and hence, allowed the RRB rail height to remain at 850 mm.
PART 4 RECOMMENDATIONS

OTS makes the following recommendations in relation to matters identified in the course of this investigation:

**Cruise Sydney Harbour**

1. Develop and implement a robust maintenance procedure and schedule that ensures that diesel fuel tanks, fuel lines, and filters are inspected and cleaned at regular intervals.
2. Implement industry proven good-practice for anchoring vessels.
3. Install anchor chain markers to indicate the length of chain released and to indicate the amount of chain remaining in the chain locker.
4. Develop robust procedures for on board operations, clearly defining individual roles and responsibilities. Include degraded and emergency scenarios. Amend the SMS to reflect these changes.
5. Develop and introduce induction and ongoing refresher training to provide crew with the knowledge to respond effectively to both day to day and emergency scenarios.
6. CSH to review their current installation of upper deck seating attached to the guardrails against the current national marine standards.

**Roads and Maritime Services**

7. RMS to monitor the implementation of the above recommendations.
8. RMS to consider the above recommendations when conducting audits of similar operators.
## APPENDICES

### Appendix 1: Sequence of Events and Radio Communications.

The following sequence of operation of the RRB and events occurring on 10 January 2016 is itemised below;

<table>
<thead>
<tr>
<th>Time</th>
<th>Action</th>
<th>Radio Communication with VTS</th>
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<tbody>
<tr>
<td>07:00</td>
<td>Crew on board engine room checks complete</td>
<td></td>
</tr>
<tr>
<td>08:00</td>
<td>Depart Cabarita Marina</td>
<td></td>
</tr>
<tr>
<td>11:45</td>
<td>King St. Wharf pick up 150 passengers</td>
<td></td>
</tr>
<tr>
<td>13:10</td>
<td><em>RRB</em> advises VTS lost starboard engine in Athol Bay, Manoeuvring with Difficulty (MWD)</td>
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<tr>
<td>13:12</td>
<td>VTS broadcast to All Ships including information <em>RRB MWD</em> in Athol Bay</td>
<td></td>
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<tr>
<td>14:13</td>
<td>Mechanic boards RRB in Athol Bay</td>
<td><em>RRB</em> advises VTS that <em>RRB</em> has mechanic on board</td>
</tr>
<tr>
<td>14:44</td>
<td><em>RRB</em> advises VTS still operating on port engine with 150 passengers on board. <em>RRB</em> requests permission from VTS to travel to White Bay to effect Water Taxi transfer of passengers – permission granted</td>
<td></td>
</tr>
<tr>
<td>14:47</td>
<td>VTS broadcast all ships <em>RRB MWD</em> included in broadcast</td>
<td></td>
</tr>
<tr>
<td>15:04</td>
<td>VTS broadcast advises <em>RRB</em> approaching Harbour Bridge towards White Bay MWD</td>
<td></td>
</tr>
<tr>
<td>16:22</td>
<td><em>RRB</em> advises VTS that <em>RRB</em> has also lost operation</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Event Description</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>----------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>16:28</td>
<td>RRB advises VTS anchor not holding drifting towards rocks.</td>
<td></td>
</tr>
<tr>
<td>16:31</td>
<td>RRB advises VTS deployed “40 – 50 yards” (37 – 46 metres) of anchor chain – not holding – drifting parallel to Exhibition Jetty concrete bollards “100 yards” (91 metres) away.</td>
<td></td>
</tr>
<tr>
<td>16:32</td>
<td>VTS advises RRB. PA vessel <em>Manns Point</em> departed on way to assist</td>
<td></td>
</tr>
<tr>
<td>16:43</td>
<td><em>Manns Point</em> secures tow to RRB. RRB is towed to Exhibition wharf</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Passenger transfer by Water Taxi complete</td>
<td></td>
</tr>
<tr>
<td>22:15</td>
<td>RRB returns to Cabarita under escort with a mechanic on board</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 2: Sources, Submissions, and Acknowledgements

Sources of Information

- Cruise Sydney Harbour Cruises
- Maritime Services Board of NSW Stability and Survey
- Roads and Maritime Services

References

- Chart AUS 200, AUS 2002
- *Passenger Transport Act 1990* (NSW)
- *Uniform Shipping Laws 2009*
- *National Standards for Commercial Vessels Part E*

Submissions

The Chief Investigator forwarded a copy of the Draft Report to the Directly Involved Parties (DIPs) to provide them with the opportunity to contribute to the compilation of the Final Report by verifying the factual information, scrutinising the analysis, findings and recommendations, and to submit recommendations for amendments to the Draft Report that they believed would enhance the accuracy, logic, integrity and resilience of the Investigation Report. The following DIPs were invited to make submissions on the Draft Report:

- Cruise Sydney Harbour Cruises
- Roads and Maritime Services
- Transport for NSW

Written responses were received from all DIPs. The Chief Investigator considered all representations made by DIPs and responded to the author of each of the submissions advising which of their recommended amendments would be incorporated in the Final Report, and those that would not. Where any recommended amendment was excluded, the reasons for doing so were explained.