

Memorandum

Our ref MSC 1546 - 2020
Your ref
Date 30 January 2020

To Compliance Brisbane

Copy to Manager Port Operations & Projects Gladstone

Subject Rockhampton Ski Gardens Incident 1 January 2020

1. INTRODUCTION – THE INCIDENT

On Wednesday January 1 2020 at approximately 1330hrs, a 6.4-meter Baysport cuddy cabin vessel bearing Queensland registration [redacted] was being operated by the owner [redacted] has used the boat ramp situated at an area known as the Barrage, which is the southernmost point of the Fitzroy River where the barrage allows fresh water into the salt water of the Fitzroy River Rockhampton to launch his vessel.

[redacted] had taken the vessel north west to the property of [redacted] NR [redacted] At this property, he has had a discussion with other adults present in regard to the carrying capacity of his vessel. An assumption was made that he could carry six children on the vessel, believing a child is classed as half a person, six children being three adults.

[redacted] then loaded the vessel with the six children and four adults including himself and proceeded. [redacted] has taken the persons north west along the river, whilst tubing and showing the occupants sections of the Fitzroy River up past an area known as the Ski gardens. This area is well known amongst locals as the area has a well-established ski club with an established club house and boat ramp.

[redacted] has driven past the clubhouse and has then turned and headed back towards the ski club area with a view of heading back to the Barrage. The vessel was travelling on the south western side of the river travelling approximately 60 meters from the bank. At some stage during the journey, [redacted] attention was drawn to one of the children and he has taken his eye off where he was going for a short time. One of the children has yelled 'watch where you're going'. [redacted] has realised he was heading towards the south western bank of the river and has taken evasive action by turning the vessel to port away from the bank. At this time, the vessel was travelling at 26knots approximately 15 meters from the south western bank of the river.

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has then turned the vessel to port to avoid a lump of weeds (most likely halcyon weed, which is predominant on the fresh water side of the barrage) and at this time, the vessel has veered sharply to starboard with [redacted] unable to control the vessels steering. The vessel has then driven into the bank at a speed of 26 knots at an angle causing the vessel to drive up the bank and into trees with a large tree trunk stopping the vessel from moving higher up the bank. Four persons and one child were injured in the accident, two were seriously injured.

2. PURPOSE OF THE INVESTIGATION

- To make recommendations to Compliance (if any) in regard to –
 - the use of the ship on 1 January 2020
 - the stability of the ship
 - the seaworthiness of the ship
 - safety equipment on board the ship
 - any possible act or omission of the owner/master of the ship Shane Maguire which may have contributed to the incident.
 - any breaches of marine safety legislation

3. PERSONS ON THE SHIP

(Master)

DOB - NR

Injuries: NR [redacted]

NR [redacted] (nee NR [redacted] passenger)

DOB - [redacted]

Injuries: NR [redacted]

NR [redacted] (Passenger)

DOB - NR [redacted]

Injuries: NR [redacted]

NR [redacted] (Passenger)

DOB - NR [redacted]

Injuries: NR [redacted]

NR [redacted] passenger)

DOB - NR [redacted]

Injuries: NR [redacted]

NR [redacted] passenger)

DOB - NR [redacted]

NR [redacted] Passenger)
DOB – NR [redacted]

4. DETAILS OF THE SHIP



The ship involved in the incident was a 2016 build 6.4-meter-long Baysport fiberglass cuddy cab vessel fitted with a 150 HP Yamaha four stroke engine. The vessel has an Australian Builders Plate attached showing the maximum number of persons to be on board at any one time is seven (7). The maximum horse power allowed for the vessel is 175hp.



In regard to the builder's plate, the maximum persons stated is seven (7). The weight of seven passengers with luggage is taken into account when following the standards used for number of passengers. Queensland does not accept a child is half an adult. This will be discussed further in a report submitted by MSQ naval architect Mark Deveraux.

The vessel was also fitted with an under floor plastic fuel tank which has a capacity of 175 litres. At the time of the incident, the vessel was carrying approximately 140 litres of fuel in this tank. The vessel was also carrying two 45 litre plastic fuel tanks, one was empty and the other was $\frac{3}{4}$ full.



It is believed that both the plastic fuel containers were sitting either side of the vessel at impact, not as seen in this photograph. Officers have been advised that the vessel is used for reef fishing on occasions and the two extra tanks stay on board the vessel.

5. DAMAGE TO VESSEL

The vessel has sustained substantial damage both to the bow and the interior of the vessel. The force of the vessel hitting the tree trunk has forced all persons to move forward, breaking both passenger seats off their mounts, the steering wheel has been buckled under the weight of A tree limb has bent back the bimini and broken the perspex windscreen with large shards of perspex found up to 12 meters away from the bow of the vessel.



Vessel insitue after incident



Front on view of vessel



Vessels bow resting on tree trunk



View to inside of cabin



Underfloor fuel tank



Hole in bow below water line



Damage to Perspex



View of bow from inside of cabin



Bow after being removed from tree



Close up of hole in the bow



Tree trunk vessel has hit



Engine after being trimmed out of mud

6. FITZROY RIVER ROCKHAMPTON

Rockhampton is situated 617 klms north of Brisbane. Rockhampton has the Fitzroy River traverse through the town and on the northern side of the new Bruce Highway Bridge a barrage has been built. This barrage separates the fresh water of the Fitzroy River from the salt water. Approximately 7.5 klms north west, is where the incident occurred.



The above image is the actual course taken by the vessel during the afternoon

The white line is the track the vessel took beginning at the barrage boat ramp, heading north west along the Fitzroy River. The area showing the wider white shading is where the vessel has been used by Maguire to tow tubes behind the vessel. The top left of the image shows where the vessel has turned to continue south west along the river back towards the barrage boat ramp. The break between the white lines when the vessel turned, is where the GPS has been turned off, or malfunctioned. The white spot shown where the incident site is, is where MSQ officers turned the GPS unit on, when they attended the site on 2 January 2020. The malfunctioning of the GPS unit will be discussed by [redacted] electronic technician, later in this memo.

7. WEATHER ON THE FITZROY RIVER ON THE DAY

Witnesses have stated that the Fitzroy River on the day of the incident was not rough and the wind did not affect the vessel on the water. A copy of the Bureau of Meteorology weather of Rockhampton on 1 January 2020 attached below.

Rockhampton, Queensland January 2020 Daily Weather Observations

Date	Day	Temps		Rain	Evap	Sun	Max wind gust				9 am			3 pm							
		Min	Max				Dir	Spd	Time	Temp	RH	Cld	Dir	Spd	MSLP	Temp	RH	Cld	Dir	Spd	MSLP
		°C	°C	mm	mm	hours	km/h	local	°C	%	gth	km/h	hPa	°C	%	gth	km/h	hPa			
1	We	23.3	35.0	0			E	31	11:42	29.0	60		E	13	1014.1	34.0	37	ESE	17	1011.3	
2	Th	24.0	35.1	0			ESE	31	13:44	30.6	51	7	ESE	15	1014.8	33.4	42	ESE	15	1012.2	
3	Fr	24.2	32.8	0			ENE	39	15:04	29.8	49	1	ESE	17	1014.9	30.9	38	ESE	20	1011.8	
4	Sa	22.2	33.3	0			NE	44	12:11	28.4	50	8	E	13	1015.3	31.9	28	E	20	1011.5	
5	Su	21.4	33.8	0			E	33	15:49	28.6	54	4	E	15	1015.4	32.1	36	2	E	17	1011.5
6	Mo	23.2	32.7	0			NE	41	14:33	29.3	49		E	17	1014.8	30.1	59	8	NE	20	1012.1
7	Tu	23.1	31.5	0			NE	35	13:14	25.7	79	8	NNE	19	1014.7	30.9	47		ENE	20	1011.2
8	We	22.3	34.5	2.4			SE	28	14:10	28.0	56		ESE	13	1015.3	33.3	33		ESE	17	1010.8
9	Th	22.9	33.3	0			E	33	11:45	29.3	56		ESE	13	1014.2	33.0	32		E	17	1011.3
10	Fr	23.2	33.4	0			NE	35	12:15	29.3	49	2	ESE	19	1013.7	31.8	40	1	ENE	20	1011.0
11	Sa	22.3	36.1	0			NNE	33	16:35	28.7	57		E	9	1011.7	34.8	37		ENE	13	1007.2
12	Su	25.3	34.3	0			SE	35	12:45	28.9	63	8	NW	4	1009.4	32.3	39	1	ENE	17	1007.0
13	Mo	24.1	33.5	0.4			E	48	11:19	27.7	64	8	ESE	19	1011.2	30.9	53	8	ENE	22	1008.9
14	Tu	23.3	34.9	0.2			ESE	33	07:42	28.2	58	2	ESE	17	1012.4	33.6	39		ENE	15	1008.2
15	We	24.5	35.3	0			ENE	35	15:37	29.3	59	2	ESE	13	1010.9	34.0	41		E	20	1006.3
16	Th	25.4	31.8	0			NW	30	18:28	29.7	60	8	ESE	7	1008.2	30.5	56	8	E	20	1004.3

Weather statistics 1 January 2020
Rockhampton north

8. LIFE JACKETS

On the day of the incident, officers were advised that lifejackets were worn by all the children on the vessel. The lifejackets were seized by police. The four adults on the vessel were not wearing life jackets. Upon attendance at the scene, five life jackets were located on the vessel. This would suggest that there were sufficient life jackets on the vessel for all those on board.



Investigators during their investigations found that the QPS had seized 6 life jackets, however, not all of the life jackets had been worn by all the children. It is unknown which child wore which lifejacket. In any case, the vessel being used was over 4.8 meters in length. The children would not have to wear life jackets on this vessel at the time of use.

9. MSQ SURVEY OF THE SHIP/QPS MECHANICAL INSPECTION

The vessel was seized by MSQ officers and guarded overnight by Queensland Police. On 2 January 2020, officers have retained a salvor to remove the vessel from its location.

When removed, the vessel was towed to the QBFP yard in Yeppoon and stored waiting for a QPS mechanic to examine the vessel and an MSQ naval architect to inspect the vessel for stability.

On Friday 10 January 2020, Mark Deveraux, a naval architect from MSQ has attended the QBFP yard and examined the vessel.

On Monday 13 January 2020, QPS police mechanic [redacted] has attended the QBFP yard and examined the vessel. [redacted] could not find any mechanical issue with the vessel. During the examination, [redacted] was unable to remove the cowling off the engine to download the engines computer recordings of its operation at the time of the incident. It is unknown how many RPM the engine was being operated at, at the time of the collision with the bank.

A copy of [redacted] statement is attached as Appendix A.

10. SPEED AND DISTANCE FROM THE BANK

At the time of the Incident, [redacted] has stated that the vessel was travelling at 45kph which is approximately 26 knots. [redacted] states in his first interview that he was travelling 15 meters from the bank and has then picked something up off the floor of the vessel the kids were playing with. While bending down, [redacted] states [redacted] said 'watch where you're going'. At this time, [redacted] has stated he was 10 meters from the bank travelling at the same speed (In his version to police and his version to MSCQ, he has not stated he slowed the vessel down). He then stated he drove for another 100 to 200 meters before moving to one side to avoid the weed. It was at this time, he states the steering wheel was ripped from his hands.

If the vessel was travelling at 26 knots for say 5 seconds, the vessel would travel in excess of 57 meters. This means [redacted] was travelling at approximately 11 meters per second. If [redacted] was travelling 10 meters from the bank at his last recollection, in a reaction time of 1 second, he would have hit the bank.

With the forces encountered as the vessel has hit the bank [redacted] could easily think the steering wheel was ripped from his hands. The steering wheel has been bent in such a way, the damage suggests that [redacted] has had hold of the steering wheel with both hands at the time of impact.



11. GPS AND DEPTH SOUNDER

The vessel was fitted with a Furuno depth sounder and Garmin GPS unit. Both units were seized by officers and forwarded to [redacted] an electronics expert. [redacted] has provided a detailed report on the workings of the units seized.



The Furuno depth sounder did not record any of the soundings on the day as it does not have a recording mechanism within its internal workings.

The Garmin GPS unit has recorded the day's travels on the water, however, did not record the last 200 meters of the vessel tracks before the incident occurred. It is unknown why the unit has not captured the last 200 meters of the vessels journey. However, the unit recorded the moment officers switched the unit on, when they attended the scene on 2 January 2020.

[redacted] report is attached in Appendix B.

12. WITNESSES

As stated, there were 10 persons on the vessel at the time of the incident, six of those being children. Officers have not obtained witness versions from any of the children.

Taped versions were taken from [redacted] NR [redacted] by MSQ Compliance officers. A short synopsis as follows:

[redacted] NR [redacted] said they did not see any visible obstruction in the river, nor did they form the belief [redacted] was operating the boat unsafely. [redacted] NR [redacted] said she is familiar with the river as she had grown up tubing and boating [redacted] NR [redacted] although her last boating trip prior to the incident was 15 years ago. She said it was well known that the river had a sharp drop off about 20 metres from the bank. She said [redacted] was operating well outside of this. Both persons said they did not hear someone yell the words 'watch where you're going'. Both said the impact was felt in the rear of the hull, but they were not aware of any sudden change in engine revs or direction. They couldn't offer an explanation as to how the incident occurred.

[redacted] NR [redacted] provided a taped version to police [redacted] NR [redacted] In this version, [redacted] NR [redacted] states [redacted] had [redacted] head down filling a water pistol for one of the

children at the time of the incident. MSQ officers re-interviewed [NR] on 6 February 2020 at [NR]. During this taped interview [NR] states that during the journey just before the collision, [NR] found herself leaning on the left side of [NR] and she could not understand why. Then she was sitting straight and then went forward into the cabin with trees and leaves going over the vessel.

On the afternoon of the incident, the [NR] has been launching their vessel in the river when approached by a channel 9 news cameraman who asked if they could transport him to the incident scene. They did this and provided versions to police which were later placed into a statement format. The statements provided did not assist the investigation. A short synopsis of the versions below:

[NR] Went to boat ramp at ski gardens Wednesday afternoon just before 5pm. Saw the police and new reporter there. Someone mentioned a boat accident up past the ski club, and the [NR] asked if we could take him to have a look.

My [NR] went way up the river.

My [NR] saw the boat far in to the bank/trees. We saw a female adult waving at us. My [NR] and I got off to assist and [NR] went to get help/show the ambulance where the accident was.

We asked everyone if they were ok and if they needed anything and then went to calm the kids down as they were crying.

The driver was still in the boat with cuts to his forehead, the female that waved us down was checking on everyone, and the other male adult was laying on his side in pain, with some cuts or punctures to his lower back.

I didn't see the [NR] at first, she was in the very front of the boat, once everyone starting calming down the female and driver helped [NR] out of the boat. Another private boat pulled up with some family members of the accident victims. [NR] came and checked on everyone to see if anyone was concussed etc

Helicopter hovered and let paramedics down, SES boats arrived and started administering assistance.

The female that waved us down said one minute they were going straight the next they were in the trees. The driver said thought they had struck something in the water that made them crash. The oldest child also said she thought they hit something in the water.

We stayed on site until about 7.50pm

[NR] When arriving at Rocky ski gardens was met by a Reporter saying that there was an accident at laurel banks could he get a lift, we drove up there about 25mins, came upon a boat wedged between trees in a very dense forest. Some people waving us down and others lying on ground. Motored in to see if all ok, dropped 3 people off to assist with first aid, drove to laurel banks ski gardens to wait for paramedics, then advised that they were not coming to laurel banks, went back to accident scene and dropped off reporter, motored out to middle of river with warning lights to pin point crash site.

[NR] We went to the ski gardens there was a cop car on the river bank and a win news van, the win news guy and had a radio and said there was an accident up the river. Asked if we were going up there and could he come. So we took him up the river, a

lady on the bank said she thought the crash was from a family further down the bank with a couple of gazebos set up. We went past the gazebos and didn't see anything. It seemed to be a long time before [NR] shouted that's the boat over there. I turned around and there was a lady in the gap of trees waving us down and shouting. Took the boat over, she sat down and we got off the boat and checked on the children, asked if the adults were ok. The driver of the boat was on the phone to 000 and was told to give the phone to someone else, he gave it to me to tell them what was going on how many people and if everyone was ok. She said she would get the paramedics there soon. The female that waved us down said she thought they hit something in the water. The only thing she remember was she was filling a water pistol and she turned and they hit a tree. They were all conscious and no-one could pinpoint what went wrong.

When we first arrived on scene, there was 2 adults outside of the boat, and the driver and [NR] in the boat and they didn't want to move her. 6 kids on the bank. One of the men was laying on the bank and he [NR] After a boat came past to drop off people they lifted [NR] outside the boat. The rescue crews came, I sat with the kids to calm them, then I sat with the first lady we saw. We stayed on scene for about 3-4 hrs.

[NR] Went down to the river to have a mad ski, there was a big commotion, saw coppers and news reporter, some girl on banks said there was boating accident. News guy was looking for a way to get there so we told him he could come with us. Cruising down the river in our boat we went a fair way up. We were looking out on the water for a boat, we come around the corner and it was near sunset so hard to see, I saw this big white thing. I thought it was a water tank, then I saw the numbers and motor and yelled out to [NR] (driving the boat) and the new reporter that it was the boat. We pulled up on the bank and yelled out to see if they were ok. They said they were. [NR] and I got off to assist. Tried to calm everyone down and help where we could. [NR] went back to get other boats and signal where we were. Other family members arrived in another boat. We stayed there until paramedics and sees had taken everyone away.

There were no witnesses identified who actually saw the incident occur.

13. INTERVIEW WITH [REDACTED]

Officers conducted an Electronic Record of Interview with [REDACTED] at the Rockhampton Department of Transport Offices on 13 January 2020. The interview had with [REDACTED] was self-serving and did not present any new evidence, however he did contradict a version he provided to police on 1 January 2020. The version provided to police was on tape and he states at 32 seconds in:

"Was about 15 meters off the bank and was um anywhere from 6 to 10 meters deep and the kids were playing around with some stuff and got dropped so I picked it up and [NR] is like Uhh I need to watch where I am going but I was still probably 10 meters away from the bank. So I cruised along for probably a hundred or two hundred meters more and like there was a floating weed and debris in the river so I just moved out a bit and as I straightened up I didn't feel anything hit the hull but the steering wheel just got ripped out of my hands and like it was something I obviously hit the motor and the skeg ripped out of my hands and headed towards the bank and I turned to straighten up and I never got a chance to back off and that's about as much as I can remember then".

During [REDACTED] record of interview with MSQ officers, his version changed to [NR] advising him to watch where he was going sometime before the incident. Not 200 meters

before the incident. _____ stated he could not remember anything after the steering wheel was ripped from his hands during his interview with MSQ officers.

During the interview with _____ has stated he thought he could carry six (6) children as he believed each child was determined to be half an adult. When asked where he got this information from, _____ stated he looked on the internet and found out the answer. When asked to find the internet section, Maguire has produced a section from the South Australian boat capacity website which states a child under 12yrs can be counted as half an adult when it comes to carrying capacity of a vessel. **See below:**

Carrying children

Children under 12 years old can be counted as half an adult when adding up the number of people on board. For example, a boat with a capacity of four adults could safely carry three adults and two children under the age of 12. Children up to twelve months of age do not need to be included when determining capacity.

Department of Planning, Transport and Infrastructure: South Australia (SA)

In this instance, _____ was carrying 6 children under 12yrs of age. When using the South Australian legislation, six children would work out as using the half an adult analogy equalling three adults. Along with the four adults equals seven persons which is the carrying capacity of the vessel. _____ has mistakenly used the SA legislation to determine the carrying capacity of the vessel.

However, in Queensland, carrying in excess of the vessel's person capacity is not an offence.

14. KNOWN FACTS

1. The vessel was a 2016 Baysport cuddy cab, Queensland registered recreational vessel expiring 23 March 2020.
2. The vessel had an Australian Builder's Plate (ABP) fitted that recommended a seven (7) passenger carrying capacity.
3. The vessel's ABP stated the vessel could be powered by an engine up to 175hp. The vessel was powered by a 150hp engine.
4. It is not disputed that the operator of the vessel at the time was _____.
5. The vessel was fitted with hydraulic steering which was operational at the time of the incident (QPS report).
6. The vessel was carrying ten persons at the time of the incident. Four adults and six children.
7. The vessel was carrying enough life jackets for all on board. All six children were believed to be wearing lifejackets at the time of the incident.
8. The weather on the day was fine and sunny, no rain or excessive wind.
9. The vessel was fitted with two forward seats and a cushioned area port and starboard side of the vessel bow section. There had been seats fitted to the starboard rear,

however, had removed these and they were not in place at the time of the incident.

10. Five persons were standing at the rear of the vessel, three were sitting in the bow section, two were sitting on the seats fitted forward.
11. The vessel was travelling at approximately 26 knots at the time of the incident, travelling in a south westerly direction, approximately 10 meters from the western bank of the Fitzroy River. The vessel was travelling at approximately 11 meters per second.
12. The river is known to have chunks of weed (halcyon) spread intermittently throughout the river. (Some of this weed was observed in the river by MSQ officers when attending the incident scene).
13. The vessel has hit the shoreline at 26 knots and has followed the shore line before hitting a tree that had fallen across the bank into the water.
14. The GPS unit on board the vessel has turned off, 200 meters before the point of impact. There is no apparent reason why. Therefore, the last 200 meters of voyage was not recorded on the GPS unit (See report).
15. The vessel was carrying approximately 140 litres of fuel in the under-floor fuel tank, and approximately 45 litres of fuel in a plastic fuel container.

15. POSSIBLE CAUSES

There are several factors that could be attributed to this incident –

1. The speed and direction of the vessel at the time of impact. The vessel was travelling at 26 knots covering approximately 11 meters per second. With the vessel travelling at that speed so close to the bank, any margin of error was down to 1 second of judgement for corrections before the vessel hit the bank (should the vessel veer off course for any reason, travelling at 10 meters off the bank at 11 meters per second, does not provide much time for to take evasive action).
2. The number of persons on the vessel at the time of the incident and how they were seated.
3. The distraction of the operator of the vessel by children, at or near the time of the incident causing the operator to take his eyes off the direction of travel.
4. The amount of time was distracted. It is unknown how much time was distracted, as he states he cannot remember what has occurred.

16. MATTERS NOT EFFECTING THE INCIDENT

Matters found that did not contribute to the incident:

1. The ship was fitted with all the required safety equipment for a vessel travelling in smooth waters (Fitzroy River).
2. The ship had the required current recreational registration with the Department of Transport and Main Roads, Queensland which had an expiry date of 23 June 2020.

3. held the required current Recreational Marine Driver Licence issued by the Department of Transport and Main Roads, Queensland on 21 January 2022.
4. The weather was fine with good visibility and little to no wind. Conditions on the water were calm.
5. No evidence of alcohol consumption by any person on board.
6. There were no other ships operating in the area.
7. had no previous Queensland marine offence history.

17. LEGISLATION

The *Transport Operations (Marine Safety) Act 1994* has a number of provisions relevant to the incident –

Division 3 Interpretation and basic concepts

10 Meaning of *ship*

- (1) A **ship** is any kind of boat or other vessel used, or intended to be used, in navigation by water or for any other purpose on water.
- (2) Without limiting subsection (1), a **ship** includes a boat or other vessel—
 - (a) whatever its size; and
 - (b) however it is propelled or moved; and
 - (c) whether it is on land or in water.

10A Meaning of *Queensland regulated ship*

- A **Queensland regulated ship** is—
- (a) a recreational ship; or
 - (b) an other Queensland regulated ship.

10B Meaning of *recreational ship*

- (1) A **recreational ship** is—
 - (a) a ship used only for private recreation; or
 - (b) a tender to a ship mentioned in paragraph (a).
- (2) A regulation may prescribe circumstances in which a ship may be taken to be used only for private recreation.

Part 4 General safety obligations

Division 1 General safety obligations for Queensland regulated ships

39A Application of div 1

This division applies only to Queensland regulated ships.

40 [not applicable]

41 General safety obligation of ship owners and masters about condition of ships

- (1) The owner and master of a ship must not operate the ship unless the ship is safe. Maximum penalty—500 penalty units or imprisonment for 1 year.

(2) However, if the contravention of subsection (1) causes a marine incident involving the death of, or grievous bodily harm to, a person, the owner and master commit an indictable offence and are liable to a maximum penalty of 5,000 penalty units or imprisonment for 2 years.

(3) For the purposes of this section, a ship is safe if it is seaworthy, and is appropriately equipped and crewed, to meet the ordinary perils of the voyage on which the ship is proceeding or about to proceed.

42 Relationship between regulatory provisions and general safety obligations for competent persons and ship owners and masters

(1) In this section—

general safety provision means section 40 or 41.

regulatory provision means a provision of a regulation or standard about the condition, equipping or crewing of ships.

(2) This section applies if—

(a) it is claimed in a proceeding that a person contravened a general safety provision because of the condition of a ship or its equipping or crewing (the **safety issue**); and

(b) a regulatory provision provided a way of dealing with the safety issue to achieve safety.

(3) If it is proved that the safety issue was not dealt with in the way provided by the regulatory provision, the general safety provision is taken to have been contravened unless the court is satisfied that—

(a) to satisfy compliance with the general safety provision, it was reasonable for the person to rely on a survey report issued by a competent person, other than the person, that was in force for the ship and covered the safety issue (completely or partly); or

(b) the general safety provision was complied with, despite noncompliance with the regulatory provision.

(4) In deciding whether the general safety provision had been complied with despite noncompliance with the regulatory provision, the court must have regard to the objectives of this Act.

43 General safety obligation on persons involved with operation of ship:

(1) A person involved with a ship's operation (including the owner, master and crew members) must not cause the ship to be operated unsafely.

Maximum penalty—500 penalty units or imprisonment for 1 year.

(2) Without limiting subsection (1), a person causes a ship to be operated unsafely if the person causes the ship to be operated in a way that—

(a) causes a marine incident; or

(b) contravenes—

(i) a condition of the ship's registration under this Act that is about safety; or

(ii) a provision of a regulation that is declared by a regulation to be a provision to which this section applies.

(3) However, if the contravention of subsection (1) causes the death of, or grievous bodily harm to, a person, the owner, master, crew member or other person commits an indictable offence and is liable to a maximum penalty of 5,000 penalty units or imprisonment for 2 years.

(4) A person does not contravene this section because of subsection (2)(a) if the only basis for holding that a marine incident has been caused is lawful damage to, or danger of lawful damage to, property of which the person is the sole owner.

(5) This section does not apply to a ship's pilot.

Note—

See section 45 for the obligation on pilots of ships.

(6) In this section—

lawful damage means damage that is not unlawful under the Criminal Code, section 469.

18. DISCUSSION

Maritime Safety Queensland investigators have conducted a thorough investigation of the incident, focusing on –

- the design and stability of the vessel
- the safety equipment on board the vessel
- the number of persons on board the vessel
- speed and distance from the bank before the incident occurred
- witnesses to the incident (passengers)
- the actions of the master of the vessel, Shane Maguire
- the cause of the incident

The design and stability of the vessel:

In regard to the stability and build of the vessel, MSQ naval architect Mark Devereaux found the vessel to conform with the ABP and observed the build to be satisfactory. Devereaux did not find any irregularities with the vessel. The QPS mechanic found the vessel to be mechanically sound with the steering and engine controls in working order.

The safety equipment on board the vessel:

The vessel was seaworthy and had all the required safety equipment on board for use in smooth waters.

The number of persons on board the vessel:

The vessel's ABP recommended the vessel could carry seven persons, however, the vessel was carrying ten persons. There is no substantive legislation for breaching the ABP in Queensland legislation.

The vessel was fitted with seating positions for two persons, with a covered (cuddy cab) area situated at the bow of the vessel. This area allows for two persons to lay down comfortably if required or could be used to seat other passengers. A further two seats were fitted to the transom of the vessel, however, they were removed by _____ before the vessel was used on the day of the incident. There is no substantive legislation covering vessels in Queensland for operating without sufficient seating arrangements for the amount of passengers on board.

Speed and distance from the bank before the incident occurred:

The vessel was travelling at 26 knots (not contested) and was travelling between 10 to 15 meters (not contested) from the shore line while travelling south west in the Fitzroy River.

There is no substantive offence for travelling above 6 knots and less than 30 meters from the shoreline.

There is no speed limit associated to the area where the vessel was travelling in the Fitzroy River.

Witnesses to the incident:

Investigators were unable to locate any witnesses to the event who actually saw who observed the incident. The witnesses identified were those that appeared on the scene after the incident. The actual passenger witnesses on board, provided self-serving statements and did not provide investigators with any evidence to suggest [redacted] had operated the vessel other than in a competent manner before the incident occurred. No witness identified a cause to the incident.

Actions of the master of the vessel, :

The master of the vessel at the time of the incident [redacted] has operated the vessel within the parameters of the vessel's capabilities and within the relevant legislation as is required in Queensland waters before the incident occurred. There is no contention to this fact.

The evidence suggests that [redacted] has at some unknown time before the incident, been distracted by something which has caused him to bend down thereby taking his attention away from operating the vessel safely. [redacted] himself admits the vessel was between 10 to 15 meters away from the bank of the river at the time he was distracted (starboard side).

Witness ^{NR} [redacted] states in her interview that she remembers leaning into the left side of [redacted] not really understanding why she was doing this. She believes [redacted] was also bent over. ^{NR} [redacted] then states she was upright again and then describes leaves and branches began falling before she went forward into the cabin of the vessel to an abrupt stop.

It is unknown how much time [redacted] has been bending down, as [redacted] cannot recall the details of the incident. At any case the speed the vessel was travelling at, 26 knots, or approximately 11 meters a second shows the vessels speed across the water was a factor in this incident. The time between [redacted] bending down and the time it took for [redacted] to stand back up and continue driving has been undetermined. However, using the speed calculations, if [redacted] was only 10 to 15 meters away from the bank, at some stage before the incident, an inattention moment of two seconds would see the vessel travel at least 22 meters, which is more than enough distance travelled to hit the bank if the vessel had been forced to starboard for some reason.

[redacted] has stated he hit something that has forced the steering wheel from his hands. The evidence suggests that [redacted] has had both hands on the steering wheel at the time of the incident. The steering wheel damage indicates that [redacted] would have had both hands on the steering wheel at the time. Investigations suggest that the reason [redacted] felt the steering wheel being ripped from his hands was because the vessel had hit the bank and the engine could not be turned as it was pressed against the bank at the time of the incident.

In regard to this incident, the question to be asked is, has [redacted] operated the vessel 'unsafely', and is there enough evidence to prove this?

As stated within this report, breaching the ABP is not offence in Queensland, travelling within 30m of a bank at a speed greater than 6 knots in a vessel (as opposed to a PWC) is not an offence in Queensland.

In regard to the vessel being operated unsafely, this becomes a subjective view which can be interpreted in several ways. Was [redacted] operating a vessel at 26 knots 10 to 15m from a bank unsafe? In this instance, it would be prudent to say no. Was it still safe when [redacted] bent down thereby taking his attention away from the operating of the vessel for an unknown amount of time? This depends on the person interpreting the evidence presented.

Did this short span of inattention cause a marine incident? Most likely yes, according to sec 43(1)(2)(a) of the Act. See highlighted sections below.

43 General safety obligation on persons involved with operation of ship:

(1) A person involved with a ship's operation (including the owner, master and crew members) must not cause the ship to be operated unsafely.

Maximum penalty—500 penalty units or imprisonment for 1 year.

(2) Without limiting subsection (1), a person causes a ship to be operated unsafely if the person causes the ship to be operated in a way that—

(a) causes a marine incident; or

(b) contravenes—

(i) a condition of the ship's registration under this Act that is about safety; or

(ii) a provision of a regulation that is declared by a regulation to be a provision to which this section applies.

(3) However, if the contravention of subsection (1) causes the death of, or grievous bodily harm to, a person, the owner, master, crew member or other person commits an indictable offence and is liable to a maximum penalty of 5,000 penalty units or imprisonment for 2 years.

(4) A person does not contravene this section because of subsection (2)(a) if the only basis for holding that a marine incident has been caused is lawful damage to, or danger of lawful damage to, property of which the person is the sole owner.

(5) This section does not apply to a ship's pilot.

Note—

See section 45 for the obligation on pilots of ships.

(6) In this section—

lawful damage means damage that is not unlawful under the Criminal Code, section 469.

In regard to covering the element of 'unsafe' as there is no definition of the terms safe or unsafe within Queensland Maritime legislation or *Queensland Criminal Code 1899*, use of the ordinary dictionary meaning is taken to be used. The ordinary dictionary meaning for safe found in the Australian Pocket Dictionary fourth edition page 956 describes safe as "**free of danger or injury**". The Australian Pocket Oxford Dictionary, fourth edition on page 1195 offers the meaning of unsafe as, "**not safe**".

However, witnesses on the vessel did not at any stage describe any unsafe act, or any unsafe operation of the vessel by Maguire. Up until [redacted] has had his attention taken from the operation of the vessel, there was no act or omission that would suggest operation of the vessel was unsafe.

Reports from the QPS mechanic and the MSQ naval architect do not provide any issues with the sea worthiness of the vessel. The QPS mechanic was unable to remove the cowling from the engine. As such, the mechanic was unable to upload the last recordings off the engine management system. The information may have assisted investigators in regard to the RPM's the engine was operating at the time of the incident.

the electronics technician found no abnormalities with the GPS equipment found/seized from the vessel. also could not determine why the GPS unit did not record the last 200 meters of the vessels journey before the incident occurred. This last 200 meters (if recorded) would have assisted the investigators understanding of the incident, providing course and vessel speed at the time of impact.

Cause of the incident:

It would appear that was travelling in a south westerly direction on the Fitzroy River Rockhampton in the area known as the 'Ski Gardens'. Witnesses on the vessel state that was travelling in the middle of the river at all times. This appears to be correct according to tracks uploaded from the vessels GPS equipment fitted, however, the last 200 meters of the vessels track was not recorded, for unknown reasons.

During this period of 200 meters, there are undisputed facts that the vessel was travelling at 26 knots (admissions), the vessel was travelling between 10 to 15 meters from the bank on the starboard side of the vessel (admissions). was distracted by one of the children of the vessel and he has bent down to pick something up (admission). At this time NR has found herself leaning against left side not understanding the reason why (NR version). NR then states she straightened up, then saw tree branches and leaves coming onto the boat then she was forced forward into the cuddy cabin section of the vessel. states he has no recollection of what occurred after the vessel has avoided weeds in the river.

19. OFFENCES COMMITTED

No offences have been detected under Queensland Maritime legislation. Media attention was evident on the day and weeks after the event, with comments mainly on the number of persons on board the vessel (see discussion below).

The vessels APB stated the vessel could carry seven (7) persons. However, should a master carry more than seven persons, the master does not commit an offence under QLD legislation. Breaching the ABP recommendations could be used as a mitigating circumstance should it be proved that breaching the ABP caused or contributed to the incident. Officers would then rely on the interpretation of Part 4 General safety obligations Division 1 General safety obligations for Queensland regulated ships.

20. CONCLUSION/RECOMMENDATION

Part Refuse Sch.4 Part 3 s.6



Under RTI Act - TMR

Appendices:

- A QPS mechanic
- B // report

Leon I McKenzie
MO 3
MSQ Gladstone



QUEENSLAND POLICE SERVICE
STATEMENT OF WITNESS



QP 0125
01/06
Δ15

Occurrence #: _____

Statement no.: _____ Date: **13/01/2020**

Statement of

Name of witness: _____

Date of birth: Age: Occupation: **Marine Technician**

Police officer taking statement

Name: **SELF,**

Rank: _____ Reg. no.: _____

Region/Command/Division: _____ Station: _____

Statement:

- I am a qualified Marine Mechanic attached to the Marine Technical Section of the Queensland Water Police. I have 34 years of experience in, outboard and inboard petrol and diesel marine engine maintenance, diagnostics and engine repairs as well as general engine maintenance. I hold certificates of trade and certificates of achievement from marine manufacturers of marine engines and components.
- On January 13th, 2020 I performed a mechanical inspection for Roderick Walmsley from Maritime Safety Queensland of a boat and motor at the Marine Operations Base, Rosslyn Bay Marina, John Howes Drive, Rosslyn Bay
- The vessel was a 6.4m Baysport fibreglass half cabin. The Hull Identification Number: AU- _____ was obtained from the plate affixed to the boat. The registration number was displayed on both sides of the hull at the stern. The hull was White with a blue stripe and a white deck. There were Bennett trim tabs mounted to the stern. There was no Depth Sounder or GPS in the boat at the time of inspection.

(Witness's signature)

(Justice of the Peace (Qual.)/
Commissioner for Declarations's signature)

(Signature of police officer
preparing statement)

CONTINUED STATEMENT OF:

4. The vessel had two grey and blue bucket seats on seat boxes and rear lounge for the driver and passengers. I saw the Driver's seat had been torn from the floor where they were previously screwed as is normal with this type of construction.

5. There was extensive damage to the bow of the boat. The damage was a squared off hole to what I expect from being hit or hitting a solid object. The damage was back to the collision bulkhead and had been covered by a piece of vinyl and wooden blocks screwed to the hull, I expect this was to keep the hull from taking water. The dash has been cracked almost off and the windscreen on the drivers side has been smashed. The batteries have come loose from their mounting point and most of the wiring and switch panels have been ripped out.

6. The boat had a Yamaha 150 horsepower four-cylinder Four stroke engine bolted to the transom, this is normal for this type of boat. The Model number was F150XB and the serial number was 63P X 1167916 I obtained the numbers from the serial number decal on the engine mounting bracket. I saw there was impact damage to the leading edge of the skeg consistent with hitting something.

7. The safety lanyard was not in the safety switch at the time of inspection.

8. I checked the operation of the gears and throttles, this was done by the standard Yamaha control box and forward, neutral and reverse were able to be selected without any obstruction. I checked the throttle operation, and all was working as per the manufactures specifications without any obstructions and returned to idle position.

(Witness's signature)

(Justice of the Peace (Qual.)/
Commissioner for Declarations's signature)

(Signature of police officer
preparing statement)

CONTINUED STATEMENT OF:

9. I saw the propeller fitted was a Lexor stainless steel 17” pitch. The propeller was in good condition.

10. Steering was through a Sea star Hydraulic system, I checked the operation of the steering and it had full movement from full left (port) to full right (starboard) this operated easily and smoothly. I checked the fluid level of the steering helm unit and this was full. The steering wheel had been bent forward on both sides almost to the dash. The steering operates by a pump (helm) pushing fluid to either side of the piston in the steering ram that is mounted to the front of the engine.

11. At the time of the inspection I could find no defects with this vessel that could have contributed to an accident.

Justices Act 1886

I acknowledge by virtue of section 110A(6C)(c) of the *Justices Act 1886* that:

- (1) This written statement by me dated 13/01/2020 and contained in the pages numbered 1 to 3 is true to the best of my knowledge and belief; and
- (2) I make this statement knowing that, if it were admitted as evidence, I may be liable to prosecution for stating in it anything that I know is false.

.....Signature

Signed atthis.....day of.....20....

(Witness’s signature)

(Justice of the Peace (Qual.)/
Commissioner for Declarations’s signature)

(Signature of police officer
preparing statement)

OATHS ACT 1867 (DECLARATION)

I, _____, do solemnly and sincerely declare that:

- (1) This written statement by me dated **13/01/2020** and contained in pages numbered 1 to 4 is true to the best of my knowledge and belief; and
- (2) I make this statement knowing that if it were admitted as evidence, I may be liable to prosecution for stating in it anything I know to be false.

and I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the *Oaths Act 1867*.

.....Signature

Taken and declared before me at place

this.....day of20....

Witness

Justice of the Peace /

Commissioner for Declarations

Other (Please State)

Released under RTI Act, TMR

Marine Incident – Ski Gardens Rockhampton

1 January 2020

**An analysis of the data retrieved from the navigational instruments
on board the vessel,
conducted on behalf of Mr Leon McKenzie
of MSQ Gladstone.**

Technical report assessed and prepared by

Manager

Electrotech Australia Pty Ltd

Gladstone Branch Office.



Electrotech
AUSTRALIA

Qualifications of the author

Marine Electronics Service Engineer currently employed by Electrotech Australia Pty Ltd.

Marine Radio and Voyage Data Recorder surveyor and inspector.

GMDSS General Operators Certificate.

Electronics Technician (Communications) Certificate – RMIT

Various industry certificates for marine equipment accreditation including ECDIS and ECS.

Over 40 years marine electronics experience.

Contents

Page 1 - Cover

Page 2 - Qualifications of the author and Contents

Pages 3 and 4 - Disclaimers

Page 5 - Equipment received from MSQ

Page 9 - Condition of the equipment as received

Pages 10 through 15 - Analysis of extracted data

Page 16 - Conclusion

Disclaimers

Equipment manufacturer

When powered up the GPS Echo Map navigator clearly displays a warning message as below.



The operator manual also shows many warnings and caution notices regarding the proper use of the product for safe navigation. Some of these are reproduced below.

Navigating to a Point on the Chart

⚠ CAUTION

The Auto Guidance feature is based on electronic chart information. That data does not ensure obstacle and bottom clearance. Carefully compare the course to all visual sightings, and avoid any land, shallow water, or other obstacles that may be in your path.

When using Go To, a direct course and a corrected course may pass over land or shallow water. Use visual sightings, and steer to avoid land, shallow water, and other dangerous objects.

⚠ CAUTION

The Auto Guidance feature is based on electronic chart information. That data does not ensure obstacle and bottom clearance. Carefully compare the course to all visual sightings, and avoid any land, shallow water, or other obstacles that may be in your path.

⚠ CAUTION

If your vessel has an autopilot system, a dedicated autopilot control display must be installed at each steering helm in order to disable the autopilot system.

The Auto Guidance feature is based on electronic chart information. That data does not ensure obstacle and bottom clearance. Carefully compare the course to all visual sightings, and avoid any land, shallow water, or other obstacles that may be in your path.

Setting the FrontVü Depth Alarm

⚠ WARNING

The FrontVü depth alarm is a tool for situational awareness only, and may not prevent groundings in all circumstances. It is the obligation of the vessel operator to ensure safe operation of the vessel.

⚠ CAUTION

The ability to effectively avoid running aground with FrontVü sonar decreases as your speed rises above 8 knots.

.....

All route and navigation lines displayed on the chartplotter are only intended to provide general route guidance or to identify proper channels, and are not intended to be precisely followed. Always defer to the nav aids and conditions on the water when navigating to avoid groundings or hazards that could result in vessel damage, personal injury, or death.

Electrotech Australia Pty Ltd

This investigative report is based on extracted data from the Garmin Echo Map 75DV instrument as received from MSQ.

The report is by no means a comprehensive and exhaustive body of work. It is merely a look at the available data in order to help understand how the incident might have occurred.

The author or any associated company takes no responsibility whatsoever for any litigation arising from the use of this information. I have not been made aware of nor accept any responsibility in writing this report.

The opinions expressed in this report are those of the author based on professional experience and are not to be misconstrued as expressing views on behalf of Electrotech Australia Pty Ltd by whom the author is employed.

Equipment received from MSQ

Garmin Echo Map 75DV, serial number 4LP000238.



Diagram 1 - Front view



Diagram 2 - Back view with connector panel removed.

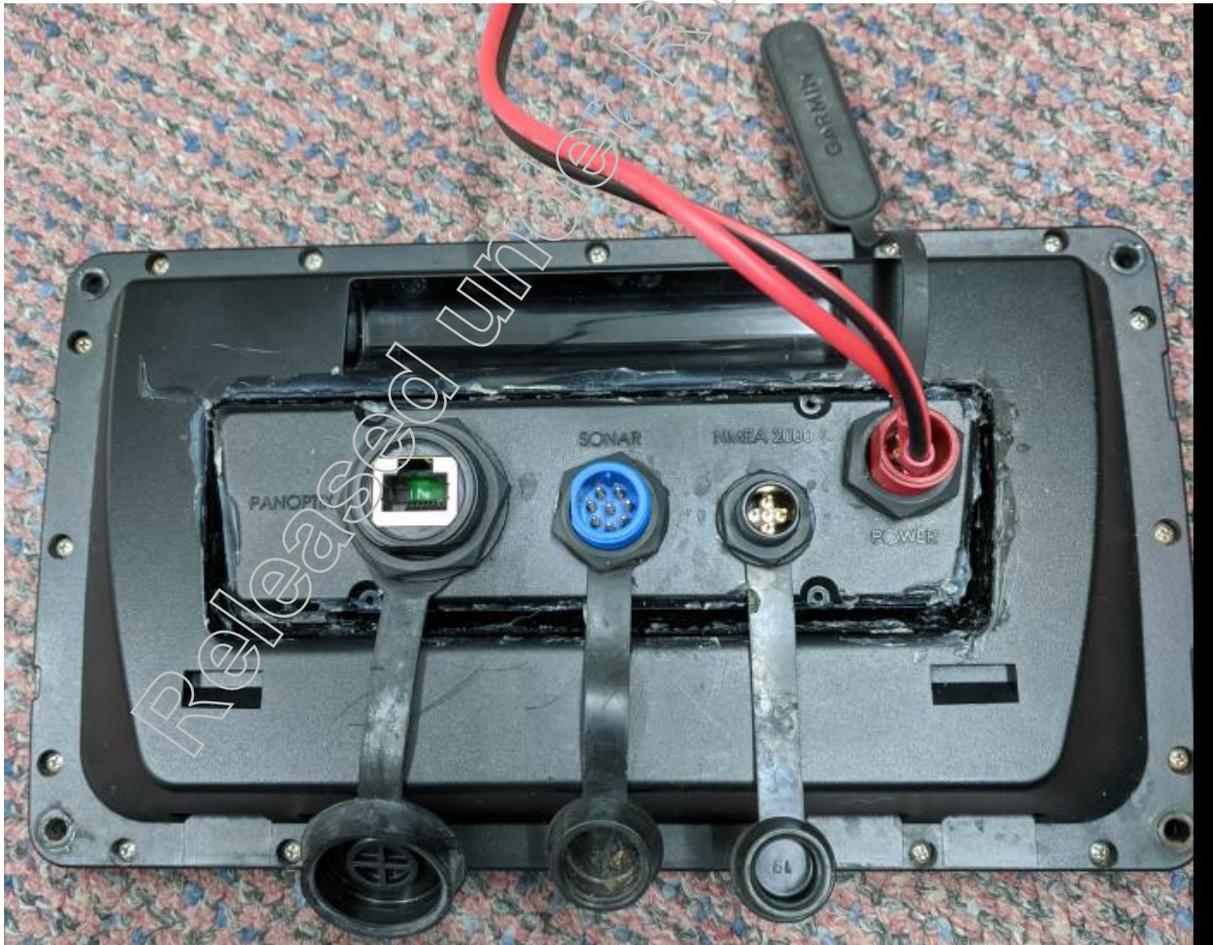


Diagram 3 - Back view with connector panel attached.

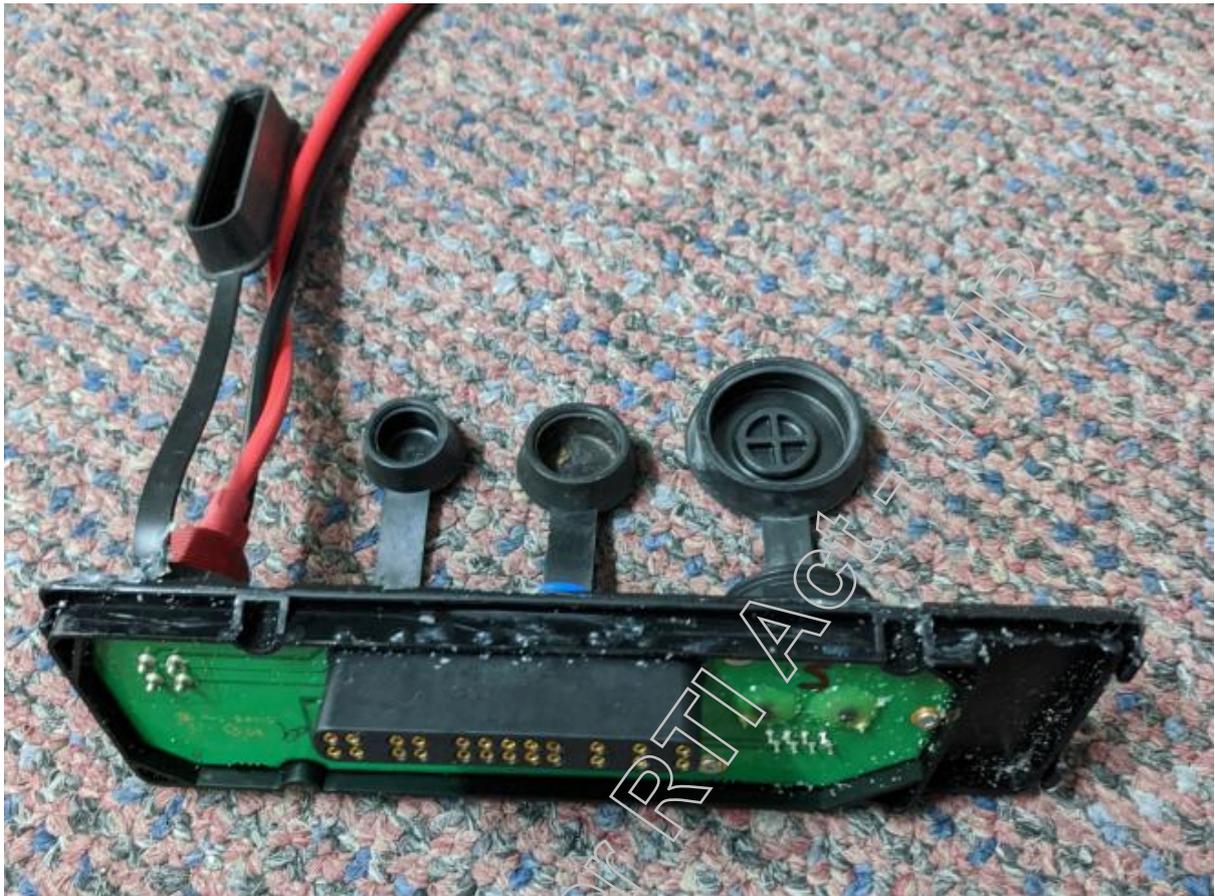


Diagram 4 - Connector panel shown on its own.

Furuno Echosounder Model FCV-588, serial number 1000-3410-7060.



Diagram 5 - Front view



Diagram 6 - Back view

Condition of the equipment as received.

Garmin Echo Map 75DV, serial number 4LP000238.

Initial inspection showed the connector panel on the back is siliconed in place onto the rear of the navigator. It would appear that this connector panel is not from this machine as the dimensions and fitment method is totally different. No mechanical attachment is possible hence the effort to use silicone to hold it in place. The silicone had to be removed in order to gain access to the connector underneath and the serial number of the unit.

Set up for test purposes on the workbench. Power up and confirm normal operation.

Of primary importance at this stage was to extract and save any data that was contained in the unit which was duly accomplished and set aside for later analysis.

The unit is running firmware version V3.00 and GPS software V511.2, the Garmin ID is 3920921914. Built in map AUS/NZ Marine detail G2 V2015.5 V17.00 is installed. The unit has a micro SD card slot with no card fitted.

Furuno Echosounder Model FCV-588, serial number 1000-3410-7060.

The unit was inspected and noted to be in a good condition.

Set up on the workbench and power up. General operational checks carried out and confirmed satisfactory normal operation.

Although the unit has the capability to export depth information via its NMEA connection this functionality has not been enabled or turned on. Internal recording of depth or any other information for that matter is not available. For this reason there was no useable information obtained from this instrument at all.

Analysis of extracted data.

The extracted data was analysed using the Garmin Home Port application as well as Google Earth Pro.

As mentioned earlier there was no useable data available from the Furuno echosounder so the analysis presented here is based on the data extracted from the Garmin Echo Map 75DV navigator.

The installed marine charts AUS/NZ Marine detail G2 V2015.5 V17.00 have no detail whatsoever where the incident occurred so the extracted data was imported into Google Earth Pro in order to make a presentable depiction of the vessel's movements.

The extracted data was all retrieved from the device's active track memory. The active track recording is running at all times while the unit is switched on. It can be saved separately for later use but it is

important to understand that while the device is in use the active track records automatically and continuously all pertinent data independent of operator intervention.

On the day of the incident 1/1/2020, active log 011 recorded the vessel's movements from the time of launching at the ramp, then several ski runs and through to where the recording ends upriver.



Diagram 7 - Active log 011 showing the vessel track for 1/1/2020.



Diagram 8

Diagram 8 shows at Point A launching at 12:41:24 on 1/1/20.

Point B alongside the bank probably picking up passengers at 12:46:12 1/1/20.



Diagram 9

Diagram 9 shows the vessel doing several ski runs.

At Point C the time was 12:55:30 1/1/20.

At Point D the time was 16:11:34 1/1/20.

Approximately 3.25 hrs spent here prior to heading upriver.

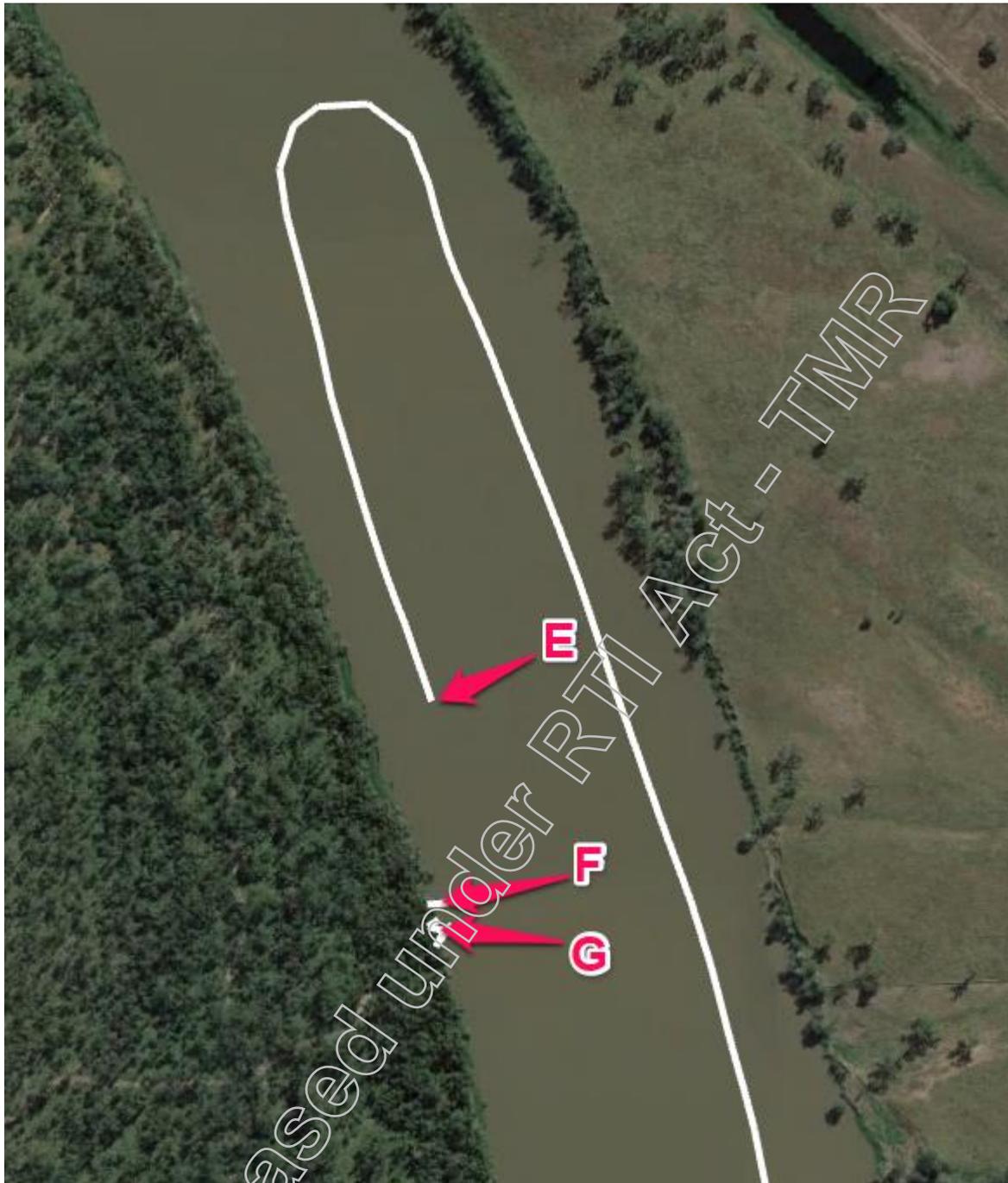


Diagram 10

Diagram 10 shows the vessel travelling upriver then turning around and proceeding downriver. At Point E the recording stops and there is no further data for 1/1/2020. The time at Point E is 16:23:45 and the position is S23 18.769 E150 26.995.

Points F and G show the vessel position alongside the riverbank when the Garmin navigator is next powered up on 2/1/20 presumably by the investigators.

Point F recording was saved as active log 012 and is shown below in Diagram 11.

Ind...	Leg Distance	Leg Time	Leg Speed	Leg Course	Time	Position	Temperature
1	67 ft	0:00:25	1.6 kt	265.5° true	2/01/2020 10:45:19 AM	S23 18.871 E150 27.005	27.0 °C
2					2/01/2020 10:45:44 AM	S23 18.872 E150 26.993	27.0 °C

Diagram 11

Point G recording was saved as active log 013 is shown below in Diagram 12.

Ind...	Leg Distance	Leg Time	Leg Speed	Leg Course	Time	Position	Temperature
1	38 ft	0:00:19	1.2 kt	235.7° true	2/01/2020 10:47:00 AM	S23 18.880 E150 27.000	27.1 °C
2	49 ft	0:00:49	0.6 kt	106.2° true	2/01/2020 10:47:19 AM	S23 18.883 E150 26.994	27.1 °C
3	54 ft	0:03:21	0.2 kt	205.6° true	2/01/2020 10:48:08 AM	S23 18.885 E150 27.002	27.1 °C
4	86 ft	0:01:01	0.8 kt	34.9° true	2/01/2020 10:51:29 AM	S23 18.893 E150 26.996	27.1 °C
5	44 ft	0:01:21	0.3 kt	218.8° true	2/01/2020 10:52:30 AM	S23 18.882 E150 27.007	27.1 °C
6					2/01/2020 10:53:51 AM	S23 18.888 E150 27.002	27.2 °C

Diagram 12

The vessel is stationary in both instances and there is a markedly greater positional accuracy anomaly caused by dithering.

Diagram 13 shows the extracted data from just prior to the turn to where the data abruptly stops at Point E.

Index	Depth	Leg Distance	Leg Time	Leg Speed	Leg Course	Time	Position	Temperature
2142	7.5 m	90 ft	0:00:02	27 kt	336.1° true	1/01/2020 4:22:41 PM	S23 18.562 E150 27.015	28.9 °C
2143	7.4 m	32 ft	0:00:01	19 kt	337.8° true	1/01/2020 4:22:43 PM	S23 18.549 E150 27.008	28.8 °C
2144	6.8 m	48 ft	0:00:01	28 kt	339.7° true	1/01/2020 4:22:44 PM	S23 18.544 E150 27.006	28.8 °C
2145	7.3 m	134 ft	0:00:03	26 kt	343.2° true	1/01/2020 4:22:45 PM	S23 18.537 E150 27.003	28.7 °C
2146	6.8 m	63 ft	0:00:02	19 kt	345.6° true	1/01/2020 4:22:48 PM	S23 18.516 E150 26.996	28.6 °C
2147	7.1 m	39 ft	0:00:01	23 kt	345.7° true	1/01/2020 4:22:50 PM	S23 18.506 E150 26.993	28.6 °C
2148	6.8 m	163 ft	0:00:04	24 kt	338.7° true	1/01/2020 4:22:51 PM	S23 18.499 E150 26.992	28.6 °C
2149	7.0 m	169 ft	0:00:04	25 kt	308.1° true	1/01/2020 4:22:55 PM	S23 18.474 E150 26.981	28.6 °C
2150	7.1 m	157 ft	0:00:04	23 kt	266.9° true	1/01/2020 4:22:59 PM	S23 18.457 E150 26.957	28.5 °C
2151	7.3 m	97 ft	0:00:02	29 kt	231.8° true	1/01/2020 4:23:03 PM	S23 18.459 E150 26.929	28.5 °C
2152	6.5 m	147 ft	0:00:04	22 kt	197.4° true	1/01/2020 4:23:05 PM	S23 18.469 E150 26.916	28.5 °C
2153	6.1 m	156 ft	0:00:03	31 kt	171.0° true	1/01/2020 4:23:09 PM	S23 18.492 E150 26.908	28.5 °C
2154	5.3 m	200 ft	0:00:04	30 kt	164.7° true	1/01/2020 4:23:12 PM	S23 18.517 E150 26.912	28.6 °C
2155	4.5 m	140 ft	0:00:03	28 kt	165.1° true	1/01/2020 4:23:16 PM	S23 18.549 E150 26.922	28.7 °C
2156	4.3 m	80 ft	0:00:01	48 kt	166.0° true	1/01/2020 4:23:19 PM	S23 18.571 E150 26.928	28.7 °C
2157	3.9 m	178 ft	0:00:04	26 kt	167.9° true	1/01/2020 4:23:20 PM	S23 18.584 E150 26.931	28.7 °C
2158	4.5 m	353 ft	0:00:07	30 kt	163.2° true	1/01/2020 4:23:24 PM	S23 18.612 E150 26.938	28.7 °C
2159	4.0 m	29 ft	0:00:01	17 kt	162.4° true	1/01/2020 4:23:31 PM	S23 18.668 E150 26.956	28.9 °C
2160	4.6 m	164 ft	0:00:03	32 kt	161.9° true	1/01/2020 4:23:32 PM	S23 18.672 E150 26.958	29.0 °C
2161	4.0 m	104 ft	0:00:02	31 kt	159.9° true	1/01/2020 4:23:35 PM	S23 18.698 E150 26.967	29.1 °C
2162	4.3 m	47 ft	0:00:01	28 kt	158.9° true	1/01/2020 4:23:37 PM	S23 18.714 E150 26.973	29.2 °C
2163	3.8 m	47 ft	0:00:01	28 kt	158.3° true	1/01/2020 4:23:38 PM	S23 18.721 E150 26.977	29.2 °C
2164	4.2 m	261 ft	0:00:06	26 kt	160.7° true	1/01/2020 4:23:39 PM	S23 18.728 E150 26.980	29.3 °C
2165	4.3 m					1/01/2020 4:23:45 PM	S23 18.769 E150 26.995	29.4 °C

Diagram 13

We can see from the above that approaching Point E the vessel is maintaining a steady course of approximately 159-160 degrees and a steady speed of around 26 knots. We can also see the depth recording. The river is approximately 300m wide here and the vessel is about 60m from the nearest bank. The distance between where the recording stops at Point E and Points F & G where the vessel came to rest at the riverbank is approximately 200 meters.

Conclusion

I have conducted numerous tests in the workshop to verify the normal operation of the Garmin navigator and also to check the recording stop times of the active track log with respect to the power off times of the instrument.

The Garmin navigator proved to be fully operational with no faults evident. Also the active track log in all cases continued to record data right up to within 1-2 seconds of the power off time of the device.

I have not been able to find a technical reason why the recording stops at Index 2165 or Point E on 1/1/20. I can only surmise that it possibly lost its supply of power. Unfortunately it did not record the most crucial part of the voyage.

Investigation concluded.

Gladstone

31 January 2020