

Accident Report

Fatality

Unnamed Jetboat

11 August 2005

Class A





Photograph 1
Unnamed Jetboat

REPORT NO.: 05 1212

VESSEL NAME: *UNNAMED JETBOAT*

Ship Type:	Recreational Jetboat
Built:	1998
Construction Material:	Alloy hull, Fibreglass top
Owner:	Mr Burrows
Accident Investigator:	Zoe Brangwin
Technical Expert:	Jeff Horne

SUMMARY

At 0930 hours on 11 August 2005, three friends embarked on a day's fishing on the Waimakariri River, Canterbury (See *Figure 1*). They launched the jet boat from the Waimakariri Gorge Bridge (See *Figure 2*) and headed upstream. They spent the day fishing in different spots along the banks of the river.

At about 1500 hours, Mr Robert Burrows dropped one of his friends (Friend One) off to fish, saying he would be back in 20 minutes. Mr Burrows and the other friend (Friend Two) then carried on down stream for about ½ km. As they headed downriver they became stuck in a narrow channel of water. They tried to get the boat out for about 20 minutes. Mr Burrows then pulled the boat up to the bank and Friend Two got out and walked to reduce the weight in the vessel. Mr Burrows continued trying to get the vessel down the river.

Soon after Friend Two saw the vessel stop but he could not see Mr Burrows. Friend Two walked down the riverbank towards the jet boat. When he arrived about 4-5 minutes after losing contact with Mr Burrows he saw that the vessel was sitting on the rocks and that Mr Burrows was lying face down in the water with the anchor/bow rope tangled around his legs. Friend Two dragged him up to the riverbank however he had no signs of life. He then called 111 on his cell phone.

At 1815 hours, the Westpac helicopter with Police and a paramedic arrived at the scene. Mr Burrows was pronounced deceased.

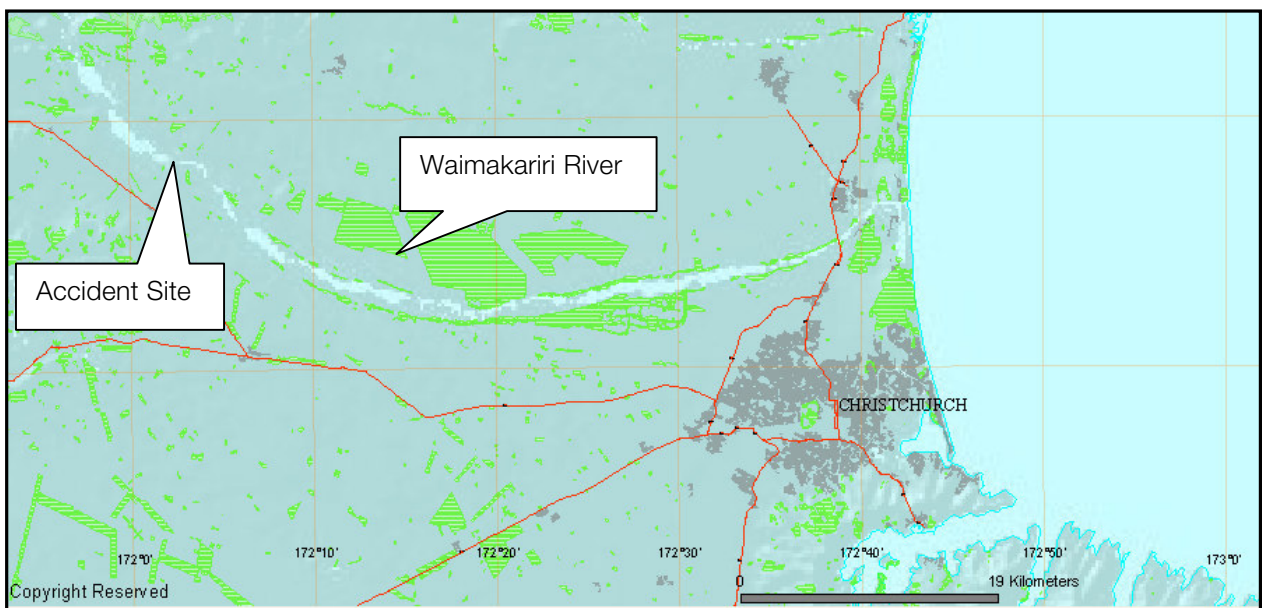


Figure 1
Extract from Land Information New Zealand Topo Online – The Waimakariri River shown in relation to Christchurch

NARRATIVE

Vessel Details

The jet boat involved in the accident was a 4.6 metre Hamilton 151A serial number 197. The vessel's hull was constructed of alloy with a glass reinforced plastic (GRP) deck. It had a Mercury sport jet engine and unit fitted. The vessel seated four. Mr Burrows purchased the hull and jet unit about seven years ago.

Hamilton Marine in Christchurch built the hull and Wanaka Marine fitted out the boat. The hull is of a standard weight and construction, but when fitted with the Mercury Sport Jet it makes for a lighter overall weight of about 180-200 kgs compared to one fitted with a conventional V8. This makes for a great fishing boat and it enabled Mr Burrows to operate the boat in shallow water.

The jet boat's planing speed was about 60kph (kilometres per hour) with revolutions of about 3200 to 3500 rpm. The maximum revolutions were about 3900 rpm.

Safety Equipment

The following equipment was found onboard:

- Lifejackets
- Warm clothing – Jackets
- Fire Extinguisher
- First Aid Kit
- Bow rope and anchor
- Cellphone

Driver details

Mr Robert Burrows was aged 53 years. He had owned the jet boat for about seven years. Most of his experience of driving jet boats was on lakes and rivers. He had jet boated the Waimakariri river before. He was a member of Jet Boating New Zealand Inc. Mr Burrows was a keen fisherman and loved getting outdoors.

At the time of the accident he was wearing Neoprene chest high waders and a polar fleece top underneath. He was not wearing a lifejacket at the time of the accident. However this would not have had an impact on the outcome of his injuries.

The finding of the Post Mortem was as follows:

In the opinion of the Pathologist *"Death was due to crush injuries to the head and chest incurred in a jet boat mishap. The pattern of injury indicates that he has been trapped between the ground and the moving boat."*

He was in good health and was described by his friend as content.

The group did not take any alcohol with them on the fishing trip. Mr Burrows had not consumed any alcohol that day.

Waimakariri River

Section Four of the Waimakariri River - Woodstock to sea.

This section of the river is a Class One braided shingle river. This section of the river is the most heavily boated in New Zealand.

The river at the site of the accident was braided, shingle shallow and wide.

River Classification

- Class 1. Easy boating/suitable for beginners/family boating.
- Class 2. More advanced boating/comfortable after 1 season.
- Class 3. Difficult/adventure/skill required/families not recommended.
- Class 4. Unlikely to be boated/lack of flow/obstructions.

THE ACCIDENT

At approximately 1200 hours on Wednesday 10 August 2005, Friend One rang his long time friend Mr Burrows to arrange a fishing trip for the following day. Mr Burrows had another friend with him at the time (Friend Two). They had already planned to go fishing on the Waimakariri River the next day and so invited Friend One to join them. Friend One rang later that day to confirm the trip.

At 0930 hours on Thursday 11 August, the three men left Mr Burrows' house. They drove to the Waimakariri Gorge Bridge and then launched the jet boat (See *Figure 2*). During the day they made three stops up the river to fish. Each time they all got out of the jet boat and kept within eyesight of each other.

At about 1400 hours, the wind started to increase and Mr Burrows decided they would move back downstream (closer to the launching site). When they were approximately 10 minutes upstream from the launching site they found a good run of fish. Mr Burrows dropped off Friend One and said he would pick him up in 20 minutes.

Mr Burrows and Friend Two then carried on downstream. They carried on for about ½ km and then stopped on the south side of the river. As they headed downriver they became stuck in a narrow channel of water. They tried to get the boat out for about 20 minutes. Mr Burrows then pulled the boat up to the bank and Friend Two got out and walked to reduce the weight in the boat.

On commenting on the draft report Friend Two stated, *"After dropping Friend One at a likely fishing site late that afternoon, Rob (Mr Burrows) and I stopped just a couple hundred metres further down stream. We had hit bottom on a gravel bar as we were landing, and so on the way out decided to try a different route. It was an unfortunate choice, as the channel became even more shallow. It seems like we worked on moving the boat downstream for a long time...sometimes literally we could only move the boat a few inches at a time. I do not normally wear a watch and I was not wearing one that day, however I'm sure we were struggling with the boat for longer than 20 minutes."*

Friend Two felt that Mr Burrows was most likely feeling under pressure as a host to Friend Two and also having to get back to Friend One who was expecting them.

"When it finally seemed the channel was sufficiently deep Rob (Mr Burrows) chose to try it. I had the impression that he weighed this decision carefully, and that the decision was not born out of overconfidence, but essentially from his conscientious nature".

Mr Burrows then continued trying to get the vessel down the river leaving Friend Two behind. Later, Friend Two noticed the boat had stopped but there was no sign of Mr Burrows (See *Figure 3*). The vessel was estimated to be travelling at about 56-60 kph judging by the impact on the rocks.

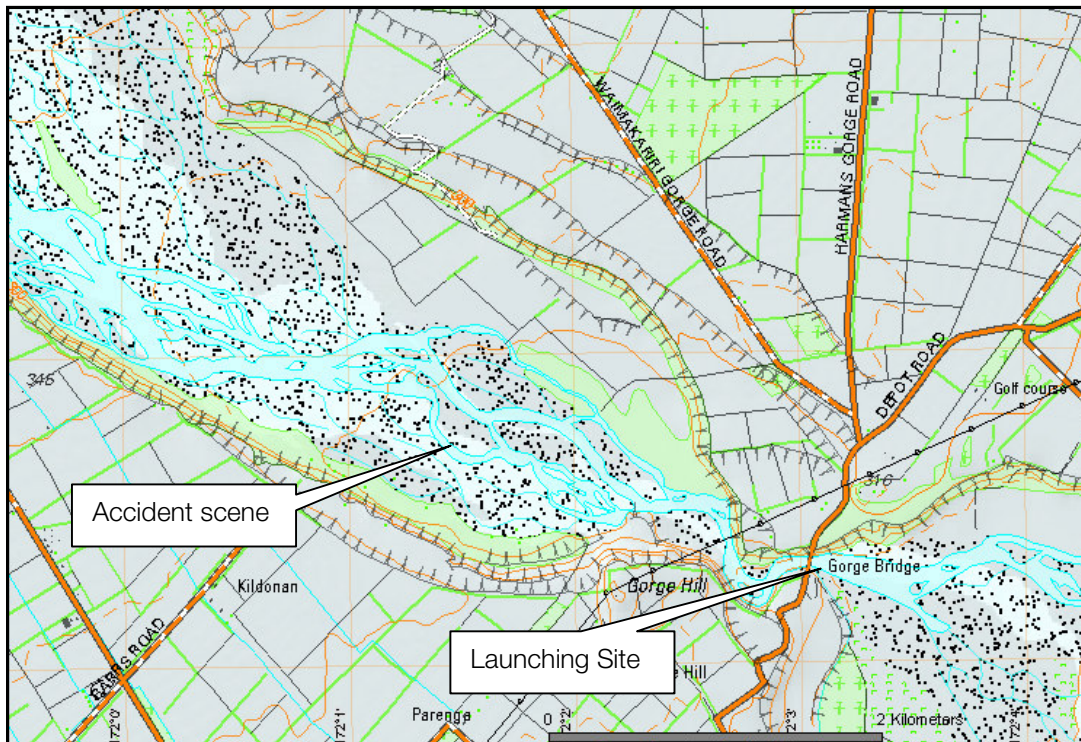


Figure 2

Extract from Land Information New Zealand Topo Online – Approximate position of accident. *The river braids shown above change regularly due to the nature of the river.*

Friend Two walked down the riverbank towards the jet boat. When he arrived, which would have been about 4-5 minutes after losing contact with Mr Burrows, he saw that the vessel was sitting on rocks and that Mr Burrows was lying face down in the water with the anchor/bow rope tangled around his legs. Friend Two dragged Mr Burrows up to the river bank, but was unable to find any signs of life. He then called 111 on his cell phone.

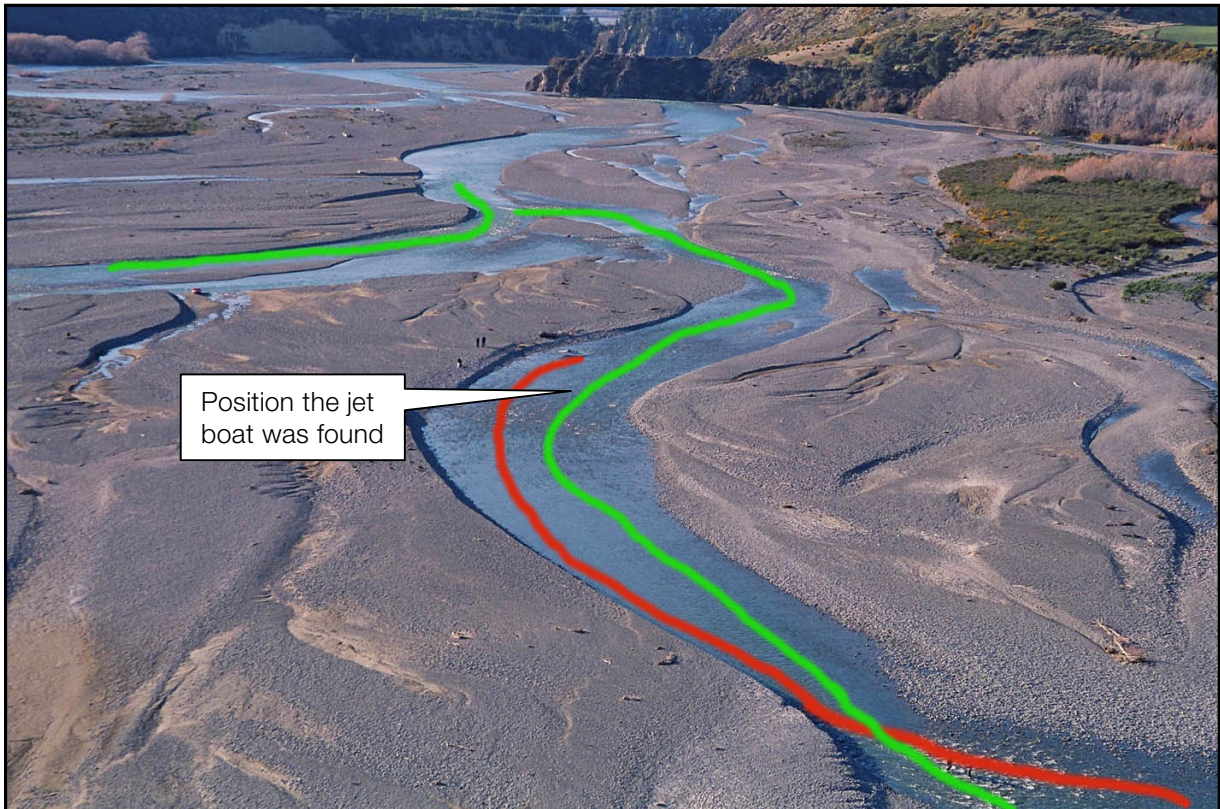


Figure 3

Waimakariri River – Accident Scene. The green lines indicate the line Mr Burrows should have followed. The red line indicates the actual line that he took.

At 1815 hours, the Westpac helicopter with Police and a paramedic arrived at the scene. Mr Burrows was pronounced deceased. The helicopter then travelled up river to find Friend One.

At 1930 hours, they helicopter returned to the Gorge Bridge with all persons onboard.

COMMENT & ANALYSIS

Evidence

On 12 August 2005, two Maritime New Zealand Accident Investigators and a Jet boating expert also employed by Maritime New Zealand, attended the scene with the Police at the Waimakariri River. The wreck of the jetboat was recovered from the river by the Police. It was then examined, photographed and the parts taken away for independent assessment by the jet boat expert.

The Rolleston Police carried out interviews of the persons involved. These Police transcripts were used in the compilation of this report.

Technical Expert

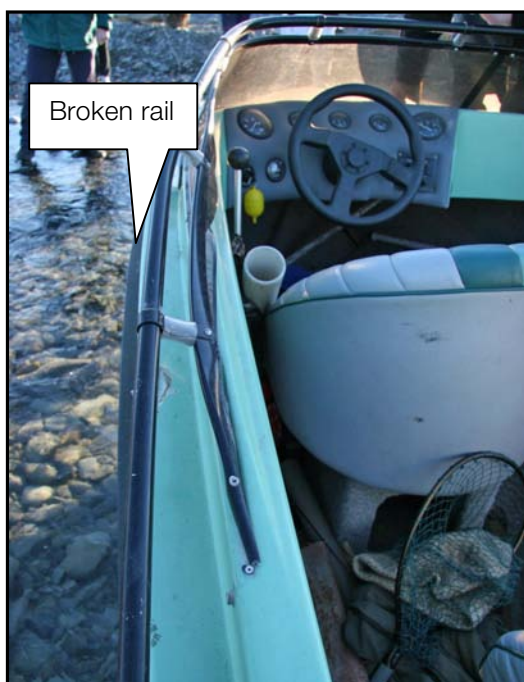
The Jet Boat expert was asked to summarise the technical side of the above accident. His findings were based on the following:

- Site inspection
- Vessel inspection
- Autopsy report
- Personal jet boating experience.

The following are pertinent extracts from his report.

Site Inspection

“The boat inspection at the scene showed high side impact with the windscreen and rail from inside the boat to the left side of the driving position (See Photograph 1), indicating Mr Burrows was driving in a standing position, the engine box and rear seat had been dislodged from their normal position and indicated a sudden forward motion stop.”



Photograph 1
Damaged side rail

“The marks on the hull are consistent with the markings on the rocks indicating to me that the boat had hit a rock hard and fast around the centre keel line approximately 1280mm from the bow (See Photograph 2), resulting in the boat being thrown into the air. This would have caused the forward motion damage to the engine box and rear seat. On landing, the marks on the rocks show the boat spun and this would have thrown Mr Burrows against the rail and most likely out of the boat (See Photographs 1 & 3). The last marks on the rocks indicate that the boat was not fast moving but bouncing and at this time the boat most likely ran over Mr Burrows who may have been thrown from the boat.”



Photograph 2

The red circle indicates the damage to the centre keel line approximately 1280mm from the bow.



Photograph 3

A stone with white paint from the hull of the jet boat

“The area of the river where the accident happened is a difficult section and many jet boaters find themselves stuck there if they stray from the main channel. The track the boat had taken to get to where it stopped was boatable, however the entrance to the channel up river was not a choice one would have made unless they were already experiencing difficulties. There were two opportunities to get back into the main channel earlier, which were not chosen. The track taken down river was not consistent with good navigating and as Figure 3 and 4 show, a lot of late decisions were made. Given that the boat was travelling down river it is harder to read the right track to take compared to boating up river and you need to be travelling at a faster speed down river to manoeuvre the boat, slowing at each pool to check the exit or track to take next. The evidence clearly shows this was not done.”

Inspection of the boat at Hamilton Marine.

- *None of the safety equipment on board had been used.*
- *The impacts had not affected the operation of the steering system.*
- *The accelerator cable and operation was checked at both ends. They were found to be operational.*
- *The fuel system including all lines, filters and taps were in good working condition.*
- *The battery isolator switch was still in the on position.*
- *The motor started and stopped normally.*
- *The boat was lifted and the hull and unit inspected.*
- *The hull had come into contact with many rocks over its life and had at least 9 fresh high-speed impact marks on I (See Photograph 4).*
- *The jet unit shaft and operation were correct.*



Photograph 4

Red circles indicate areas of the hull which have sustained recent damage

Conclusion

- *The boat had no obvious mechanical faults and when inspected was fit for purpose.*

Summary

- *Mr Burrows after boating a boatable channel, even though not in normal lines, was thrown from the boat at the last impact point and was then struck by his boat.*



Photograph 5

The yellow dots indicate the path taken by the jet boat before the vessel finally stopped. They yellow dots mark the rocks where paint from the hull was found.

The Vessel

The Maritime New Zealand investigation found that the vessel had no mechanical defects.

CWF Hamilton & Co Ltd., also inspected the vessel. Upon inspection they concluded that:

- *The Steering control is a Teleflex push pull cable system. There is no apparent damage to the steering system and it operates freely.*
- *The accelerator is a morse pedal and cable system which operates freely.*
- *The motor starts and runs with no apparent problems.*
- *“The general condition of the hull suggests that it has had substantial use in shallow and rocky rivers. Some damage to the port (left) side is obviously recent but the majority indicates prolonged hard use.”*

Weather & River Conditions

The weather on the afternoon of the accident was as follows. There was an east-northeast wind of about 15 knots. The air temperature was approximately 10 degrees Celsius. It was a dry day with no rain.

At about 1400 hours, Mr Burrows stated to his friends *“the wind was getting up and that it might not be pleasant on the way home.”*

The Police described the river, on arrival at the scene, as *“low and clear, nil wind.”*

The stage height at the Waimakariri River Gorge Bridge was 1.4 metres on both the day of the accident and the day after during the accident scene investigation. This height is considered a normal stage height for the Waimakariri River.

The position of the sun should not have affected Mr Burrows’s vision while boating downstream.

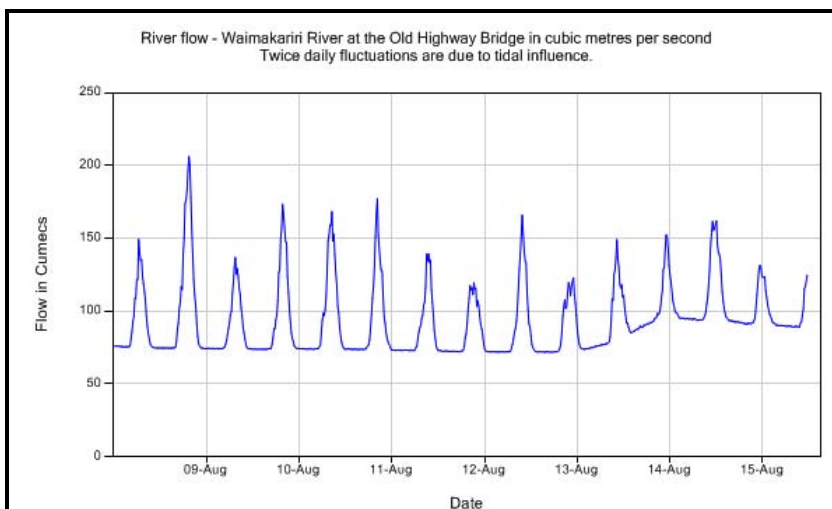


Figure 4
River Flow at the Old Highway Bridge – Waimakariri River

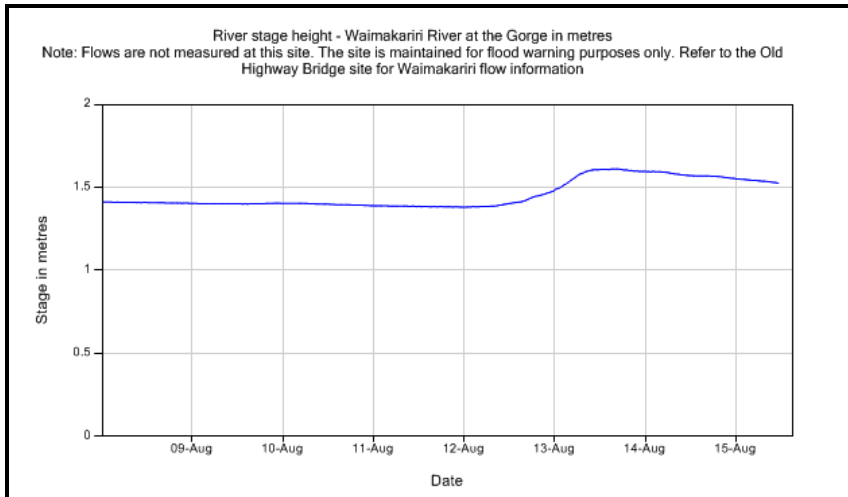


Figure 5
River Stage Height – Waimakariri River Gorge Bridge

CONCLUSIONS

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

Mr Burrows while boating a navigable channel, though not in normal lines, was thrown from the boat at the last impact point and was then struck by his boat from behind.

Contributing factors include:

- Mr Burrows took a side channel to the main channel.
- Impact with large boulders during the last 30 metres prior to the vessel coming to rest.
- A difficult, shallow, braided river.
- The speed the jet boat was travelling at about 50-60 kph. The high speed of the jet boat left little time to assess the situation and make appropriate decisions regarding the best line to follow.

SAFETY RECOMMENDATIONS

1. It is recommended that this report be disseminated to the New Zealand Jet Boating association for inclusion on their website and in their publication.
2. It is recommended that this report be included in the Maritime New Zealand Safety booklet, Lookout!.