

Accident Report
Entrapment Resulting in 1 Fatality
Kayak
19 August 2007
Class A





Photograph 1
Kayak

1. SUMMARY

- 1.1 A party of four kayakers were navigating a narrow gorge when they encountered a tree trunk in the river. The three in the lead were able to pass over the trunk but the fourth kayaker, Mr Stidham, had his kayak trapped against a trunk. His kayak was forced below water level and he drowned.

2. NARRATIVE

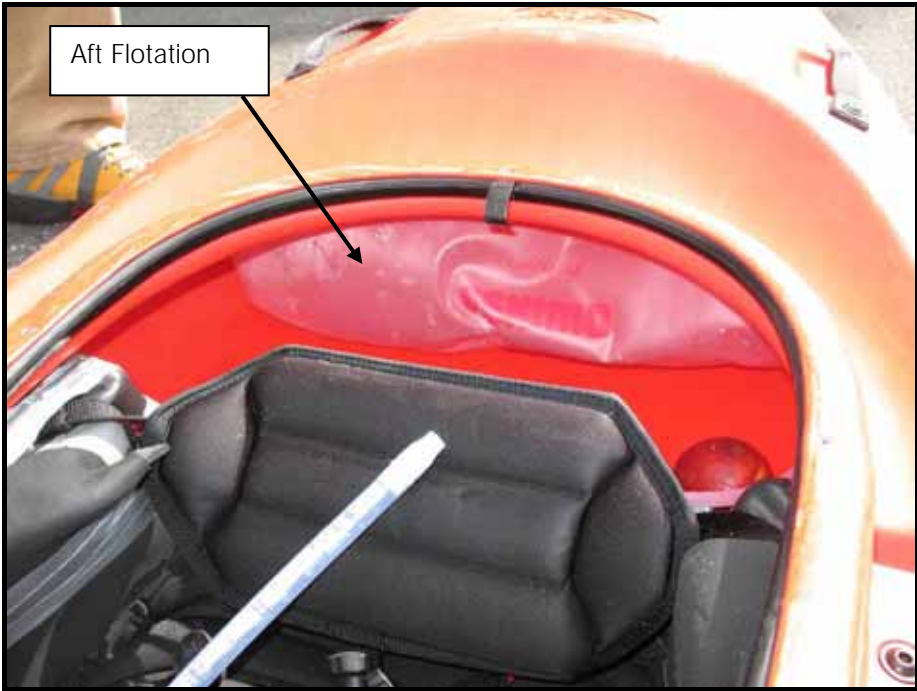
- 2.1.1 On 19 August 2007 at about 1100 hours a group of four kayakers entered the Kaituna River just below the control gates near Lake Rotoiti. They kayaked the upper part of river known as the Okere section and then walked to the Awesome Gorge section below the Troutpool Falls.
- 2.1.2 At approximately 1130 hours the kayakers entered the upper section of Awesome Gorge. The most experienced member of the group gave a safety briefing prior to the group departing. Before entering the gorge they agreed to keep approximately 20 metres between each other and be vigilant for trees that may have fallen in the river. They had spoken with kayakers two weeks before who had told them the river was free from obstructions.
- 2.1.3 After kayaking the first sections of the gorge the group changed positions a number of times. Approximately 300 metres above the accident scene they made a final stop to discuss how the trip was proceeding. They all agreed to keep together and be aware of any obstacles.
- 2.1.4 As the group rounded a bend in the river they encountered a tree trunk from a tree that had fallen from the forest above (*Photograph 6*). The group used hand signals to warn the kayaker behind of the obstacles. The first two kayakers were able to navigate safely over the trunk to the next calm area of river 200 metres downstream. The third kayaker stopped in an eddy below but out of sight of the tree trunk. When last seen by the third kayaker Mr Stidham's kayak was pointed downstream towards the right side of the river and approaching the tree trunk as if he was trying to pass to the right of it. The current at that section was flowing to the left side of the river bank.
- 2.1.5 The third kayaker observed a throw bag line wash past his position. He then joined the others and relayed his concerns for the safety of Mr Stidham.
- 2.1.6 On exiting the river two of the group ran up the river bank and attempted to get to the accident scene using ropes but were unable to do so due to thick bush and steep terrain. One of the group then hiked to a cellular phone coverage area and made an emergency call to the Police.
- 2.1.7 Two members of the group then hiked with their kayaks back above the gorge and kayaked the section of river again while the other waited at the end of the gorge in case the Mr Stidham came down. As they passed the tree trunks they observed his submerged kayak vertically wedged, bow down, trapped by tree trunks. One of them was able to stop just above the scene and climbed up on a ledge. He was unable to see if there was a body in the kayak. On leaving the scene he took his kayak across the trees and was temporarily pinned by a tree trunk but broke free and was able to continue down the gorge.
- 2.1.8 The surviving kayakers then returned to the starting point and assisted Police and other rescue personnel who had arrived at the river. At the request of rescue services Environment Bay of Plenty dropped the river level.
- 2.1.9 At approximately 1650 hours rescuers were able to reach the accident scene by raft and found the kayaker's body in his kayak pinned up against the tree trunks below the surface. With some difficulty they were able to extract the body and kayak just before darkness.

2.2 The Kayak

2.2.1 The kayak was a 2.45 metre Eskimo, Salto model (*Photograph 1*). It was constructed of blow moulded polyethylene and manufactured in Germany. It was a dedicated “creeker” kayak designed for tight manoeuvring in creeks and going down waterfalls. It weighed 18 kilos and when new has a retail value of \$2100.00. It had flotation in the bow and stern (*Photographs 2 & 3*). Damage on the housing coaming was observed. This is likely to have been caused by the water pressure forcing it against the tree trunks (*Photograph 4*).



Photograph 2
Forward Flotation Bag



Photograph 3
Aft flotation bag



Photograph 4
Damage

2.3 The Kayakers

- 2.3.1 All four members of the group were highly experienced recreational kayakers. Two were locals who had many years experience on the river. The two others were citizens of The United States of America. They were in New Zealand for the express purpose of kayaking. They were living locally and had kayaked Awesome Gorge and other rivers in the district. Mr Stidham was aged 23. He had been kayaking for six years and had kayaked the gorge approximately 15 times.

2.4 The Kaituna River

- 2.4.1 The Kaituna is a popular kayaking river in the Rotorua district. It drains Lake Rotoiti. Entry to the top section of river is from a car park close to the control gates at the start of the river. The river is divided in to four sections. The top section below the control gate is locally known as the Okere section. The second is Awesome Gorge, accessed from the trout pools below Troutpool Falls. Below are the Gnarly and Smokey Gorge sections. On the day of the accident the group chose not to kayak Troutpool Falls due to the high river level caused by heavy rain on Thursday evening. The river was running at a relatively high level. The three control gates were at a setting of 900 (the range is 0 – 1500). The NIWA recording station below Troutpool Falls indicated 34 to 35 cubic metres of water per second were being released when the accident happened.
- 2.4.2 Heavy rain had fallen with 105 mm recorded for the two previous days. One of the group had previously kayaked Awesome Gorge at the 1200 level. The Awesome Gorge section is considered by those interviewed to be a 3-4 grade river, under the international grading system. (The highest navigable grade is grade 5) The gorge has a number of tight bends in sections that prevent kayakers from seeing logs well in advance.
- 2.4.3 Due to the difficult terrain and winding nature of the river it is not practicable to scout all sections of the gorge. The group were aware that it was a hazardous stretch and of the danger of trees creating obstacles in the river. Before reaching the accident scene the group had passed under a tree that was suspended over the river (*Photograph 5 – Showing a section of the gorge above where the accident occurred*).



Photograph 5 (*courtesy of Andy Uhl, New Zealand Recreational Canoeing Association*)
Showing a section of the gorge above where the accident occurred

2.5 Accident Scene

- 2.5.1 On 29 August a raft with Police, Maritime New Zealand and New Zealand Recreational Canoeing Association (NZRCA) members examined the accident scene. The river level was approximately 1 metre lower than at the time of the accident. *Photograph 6* shows the tree trunks in the same position as described by the three surviving kayakers. The tree trunk on the left side of the river had been in place for some time. The trunk on the right was recent. The underwater section of the right hand trunk was angled downstream and held the kayak under the surface. The other kayakers travelled through the 'V' section (*Photograph 6*).



Photograph 6
Accident Scene

3. COMMENT & ANALYSIS

3.1 Comment

- 3.1.1 The intersecting tree trunks were positioned in the river on angles that caused the kayak not only to become trapped but also forced below the surface by the hydraulic pressure exerted on the hull. The pressure against the hull would have been such that Mr Stidham would have been unable to escape from the cockpit as his body would have been trapped between one of the tree trunks and the kayak.
- 3.1.2 River kayaking is one of a number of aquatic adventure sports that are gaining popularity in New Zealand. The sport carries with it an element of risk that to many participants is part of the attraction. All the survivors were aware of the risks associated with the Awesome Gorge section of the river. It is likely that Mr Stidham, given his previous trips on the river and experience in the sport, was equally aware of the risks involved.
- 3.1.3 NZRCA has website with a safety bulletin to advise kayakers of hazards that may be encountered many of the rivers kayaked in New Zealand. At the time of the accident there was section on the Kaituna River encouraging kayakers to talk to locals to determine if the section of the river was safe to kayak.
- 3.1.4 The trees were first visible to the kayakers at a distance of approximately five metres. A quick decision was required as to which track was required to avoid them. One of the kayakers commented that as he passed over the logs it was necessary to keep his bow high.
- 3.1.5 The following equipment was worn or carried by all members of the group:
- Helmet
 - Rescue lifejacket
 - Throw rope
 - Whistle
 - Knife
 - Karabiners
 - Dry top and paddling clothing
 - Spray skirt
 - Spare paddle (carried by one of the group)

4. CONCLUSIONS

- 4.1 River kayaking is a sport that carries with it inherent risks.
- 4.2 Blockages in narrow sections of rivers such as the Kaituna are foreseeable and part of the risk element of the sport.
- 4.3 All members of the group including the Mr Stidham were aware of the risks involved.
- 4.4 All members of the group were wearing appropriate safety equipment.
- 4.5 The group was lead by a highly experienced river kayaker.
- 4.6 An appropriate safety brief was made before departure.
- 4.7 The Kaituna River was not running at a dangerous level given the experience of the group.
- 4.8 Given the nature of the terrain and the fast flowing river the three survivors could not have taken further action to assist Mr Stidham.

5. RECOMMENDATIONS

- 5.1 It is recommended that Environment Bay of Plenty review the safety signage at the Kaituna river and consider placing a sign at the entry point warning of dangers likely to be encountered and advising kayakers to seek out local knowledge.
- 5.2 It is recommended that a summary of this report be placed in the Maritime New Zealand publication Lookout! with reference to the NZRCA website that has a safety bulletin advising kayakers of hazards that may be encountered on many of the rivers kayaked in New Zealand.

6. ACTION TAKEN

- 6.1 Maritime New Zealand has discussed with Environment Bay of Plenty the placement of a sign on the Kaituna River to warn kayakers of the hazards likely to be encountered on the river.

VESSEL INFORMATION

Ship Type:	River Kayak
Flag:	New Zealand
Built:	Germany
Construction Material:	Polyethylene
Length Overall (m):	2.45
Maximum Breadth:	64 cm
Gross Tonnage:	18 kilos
Maritime Investigator:	Ian Howden