OFFICE OF THE STATE CORONER

FINDINGS OF INQUEST

CITATION:	**Inquest into the death of Seongeun CHOI and Sang Won PARK**
TITLE OF COURT:	Coroner's Court
JURISDICTION:	Cairns
FILE NO(s):	2009/491 and 2009/489
DELIVERED ON:	24 November 2011
DELIVERED AT:	Cairns
HEARING DATE(s):	18/08/2010; 23/02/2011; 07/03/2011; 18 – 19/05/2011; 24/11/2011
FINDINGS OF:	Kevin Priestly, Coroner
CATCHWORDS:	CORONERS: Inquest Adventure tourism – white water rafting – Tully River – 8 person rafts – collision between rafts – diversion to hazardous route - capsize and entrapment with prolonged period of immersion – drowning – adequacy of safety risk management

REPRESENTATION:

Counsel Assisting:	Mr Dean Morzone
RnR Adventures Pty Ltd	Mr Peter Woodward

BACKGROUND

Seongeun Choi was 24 years of age and Sang Won Park was 20 years of age. Both were language students studying at Cairns College of English. About twice a month, the College arranges trips for students to participate in a variety of activities. In early February 2009, a white water rafting trip was arranged with RnR Adventures on the Tully River. Ms Choi and Mr Park were among the 27 students from the College that participated in this trip. The students were a mix of different nationalities.

RnR Adventures Pty Ltd is trustee for RnR Adventures Trust which trades as RnR White Water Rafting. RnR commenced operation in 1984, undertaking commercial white water rafting tours in Far North Queensland on the Tully River, North Johnson River, and Barron River. Mr Peter Woodward is a director of RnR Adventures Pty Ltd and senior manager responsible for rafting operations. He was granted leave to appear on behalf of RnR.

The Tully River catchment is situated west of the Cardwell Range. Part of that catchment flows into Koombooloomba Dam. It has a capacity of 180,000 megalitres. Water is released into the Tully River and flows 13 kilometres to the Tully Falls Weir, situated above the Tully Falls. Located about two kilometres below is Kareeya Hydro Electric Power Station owned by Stanwell Corporation. Stanwell has a commercial agreement with the white water rafting companies operating on the Tully River to release water at particular times for rafting.

On 14 February 2009 about 88 Meg of water was released. There was an additional component of surface water from recent heavy rains that increased the water level to about 92 Meg. The rafting trip starts at the top of the Tully Gorge Road adjacent to the Kareeya Power Station. There are a total of 16 points along the river where it may be accessed by tracks from Tully Gorge Road. The access points are marked by points on the side of the road as well as paint marks on the road adjacent to the access tracks.

RnR uses 10 person inflatable rafts on the Tully River. Each raft has a River Guide allocated to it. The rafts are normally used for 6-7 passengers plus the guide.

NARRATIVE

On the morning of 14 February 2009 the RnR bus collected Ms Choi and Mr Park, together with their colleagues from the College, and transferred them to Tully. During this bus trip, the participants were briefed about the activities of the day. A medical questionnaire and waiver was distributed for completion. Ms Choi and Mr Park completed the forms. Ms Choi reported on her form that she “cannot” swim, and Mr Park reported he was a “poor” swimmer. The forms were in English. Ms King, the Activity Coordinator from the College, accompanied the students. She stated that part of the planning for the trip included an offer to make available waivers in other languages, and that a flier was circulated to students prior to the trip telling them that if they wanted a waiver form in their language to contact her. No-one came to see her. Further, Ms King told all students on the bus to see her if they needed help in completing the forms. She reports that a few elementary and pre-intermediate students sought her assistance with some technical expressions. Neither Ms Choi nor Mr Park sought her assistance.

The bus arrived at Rafters Café in Tully at about 8.30 a.m. Participants disembarked and entered the café where safety and instructional videos were played in English and Japanese. The video is comprehensive and introduces the participants to most aspects of white water rafting. Participants are also given the opportunity to obtain some refreshments and to hire suitable footwear if they didn’t bring any with them.

Participants reboarded the buses. During the trip to the top of the river, River Guide Stuart Dearlove delivered a safety talk including how to adjust and fit their helmets, how to wear a cap underneath their helmet, how to adjust the straps on the life jacket, and how to close and lock the buckles. Mr Dearlove demonstrated how to put on the helmet and life jacket. He explained that they would be divided into groups and allocated to a guide who would then show them how to paddle a raft. He then ran through some important safety rules in detail, including keeping the T-grip on the paddle in your hand, what to do if you feel yourself falling out of the raft, and most importantly, to keep your feet up in the white water float position. He had explained at some length what the white water float position was and why it was used. Finally, he explained how a rafter who falls overboard might be retrieved back onto the raft, or alternatively, retrieved by a guide ashore with a rope. Mr Dearlove also ran through the procedure in the event of a flip over.

On reaching the top of the river, participants disembarked the buses. Each participant was provided with a safety helmet and life vest. Guides moved amongst participants ensuring that the helmet and life vest was appropriately adjusted and fitted. Participants were allocated to river guides and rafts. Ms Choi and Mr Park were amongst a group of seven participants allocated to Mr Dearlove.

At the top of the river Mr Dearlove introduced himself to the group. He allocated each rafter a position in the raft which they assumed. He checked their safety gear visually as they got into the raft. Mr Dearlove commenced a further safety talk covering topics such as how to hold their paddles, how to sit in the raft, how to keep themselves in the raft, the white water float position, how to hold on to the throw bag and rope coil, what happens if the raft flips, and some basic signals such as “okay” and “help, help, help”. During his talk, Mr Dearlove was positioned at the front of the raft with everyone facing him. As Mr Dearlove addressed each topic, he demonstrated each activity. He also demonstrated the various paddling techniques and responses to commands he might give. Mr Dearlove stated he was satisfied, through constantly surveying the facial expressions of the participants, they understood his briefing.

Mr Dearlove untied the raft, took up his position at the rear, and started calling the commands introduced in the briefing. The raft moved out in the relative calm of the top pool where the crew practised the newly learnt commands.

There were a total of 13 rafts on the river that day.

Mr Dearlove states that he was satisfied with the responses of the crew after the practise session and they rafted the Practise Rapid without any difficulty. Again, in the relative calm of the pool above the rapid “Alarm Clock”, Mr Dearlove and crew practised more commands. Mr Dearlove taught the crew the response to commands “over left” and “over right”. Mr Dearlove’s raft was the second to descend Alarm Clock. At the bottom, he took an eddy out of the main flow and assumed a cover position. This means that Mr Dearlove positioned himself in a strategic location, ready to render immediate assistance with his throw line should a raft or rafters get into difficulty.

After the last raft had completed Alarm Clock, Mr Dearlove packed up his rescue gear and returned to his raft. Alarm Clock is a grade 4 rapid. The next rapid was “2-15”, a grade 3 rapid. The higher the number, the greater the degree of difficulty. Mr Dearlove passed a couple of rafts through the pool above 2-15 and was about the tenth raft to approach entry to the rapids.

Attachment A is a sketch plan prepared with the assistance of RnR for the purpose of these proceedings. The plan was referred to by witnesses during the course of proceedings to assist in clarifying aspects of what happened. It is acknowledged that it is only a plan and not to scale. It does not attempt to reflect the complexity of the dynamics involved. Nonetheless, it was very helpful when used in conjunction with photographs of the scene to

trace key movements. There is a grid overlay on the plan to assist in describing particular locations. I will adopt the language used by the river guides in explaining directions. The expressions “river left” and “river right” are used to denote direction from the perspective of a person facing downstream.

A number of rafts had already descended 2-15.

River Guide Shawn Forster had descended 2-15 and eddied out to right in the middle of the river to assume the cover position depicted on the plan at FG3. He pulled his raft up, partly on rocks to hold it in position.

The plan also depicts the positions of other river guides who had descended 2-15. At H 1-2 is depicted the rafts of river guides Mark McKay and Atsushi Karni. On the opposite side of the river, at FGH 5 and 6, are the rafts of River Guide Darren Nunn (also a River Medic), River Guide Marlo McGregor, and River Guide Andrew Loxton (also a River Medic). At row 3, there are circled numbers 1 through to 5 indicating the possible entry points to 2-15. It is accepted that entry points 1, 2 and 3, at this water level, tend to carry a raft to river right and are relatively safe. Entry points 4 and 5 tend to carry a raft to river left, towards and around the very large bolder situated at D5 and known as Sieve Rock. This route is very hazardous due to the presence of multiple sieves (locations where water is forced under large boulders resting on smaller boulders creating entrapment points).

Mr Dearlove’s raft entered 2-15 through chute 3 and broached sideways onto rock at BC3 and 4, stopping and facing river right. In his statement Mr Dearlove describes what followed in these terms:

> “...I was sitting there for a couple of seconds while I angled my boat to go river right. This rock is often used as a parking station to wait for the previous boats to get through. I angled the nose of the boat and started my crew paddling forward towards the right. I angled the boat out so the crew on the left-hand side of the boat could get their paddles in the water.
>
> All of the crew were pretty weak paddlers so I needed them all to be able to paddle.
>
> As the boat started to move forward another boat has come through channel 3 and bumped my boat back one metre. I tried to get my crew to paddle forward again, but that side of the rock the current was too strong for my crew to paddle against. I stopped them forward paddling. I spun the boat around rock X and as the boat has come around the rock I started the crew back paddling as I wanted to swing in around the back of rock X which would have brought the boat back river right into the normal area the rapid is run.
>
> As we’ve spun the back paddling went into a bit of confusion. One or two were forward paddling. The current was just too strong and we were swept down channel 5 towards rock M. I squared the nose up to rock M and called “get down”. The nose has gone up rock M, the tail of the boat has spun to follow channel 5. As the boat spun I called “over left”. There was too much current pushing the boat and it’s flipped left over right away from rock.”

The rock that the raft struck causing it to flip was Sieve Rock.

What followed was a dynamic situation involving many participants in activities occurring contemporaneously and sequentially.

Starting with Mr Dearlove’s perspective, he landed in the water and found footing allowing him to stand in waist-deep water. He lifted the raft to see if anyone was beneath. He pulled one person past him into the flowing water and away from Sieve Rock so they’d be flushed

down channel 5 and to the bottom pool. Mr Dearlove then saw another person, a male, holding onto the rope under the raft. He encouraged the male person to continue holding on and before he could do anything else, the water swept that male from under the raft and adjacent Sieve Rock. Mr Dearlove righted the raft and in so doing was swept from his feet and through channel 5.

Mr Dearlove started calling out, "Seven", so that other guides knew he had seven passengers to look out for. Mr Dearlove swam the raft to a beach downstream, pulled it up onto the beach, grabbed his rescue rope, and ran back upstream, calling "Seven".

In the meantime, River Guide Jason Dean (who was guiding the raft that contacted Mr Dearlove's raft) had stopped his raft on a cluster of rocks to river right of the main chute. When he saw Mr Dearlove's raft flip, he raised the alarm with a single whistle blast. Mr Dean left his raft and swam to a rock just above the cover position at 2-15, climbed that rock and counted rafters from Mr Dearlove's raft. He signalled downstream how many were recovered. He recalls Mr Dearlove yelling, "Seven". River Guide Shawn Forster, in the cover position F3, saw five rafters swimming down towards him. He retrieved three with a throw rope. He also reported upstream that five rafters were sighted. It was immediately appreciated by Mr Forster and Mr Dean that two rafters were missing. River Guide Tom Jolley with a crew of six females was located at the top of 2-15 waiting the opportunity to enter the rapids. He saw Mr Dearlove's raft flip over and was monitoring the recovery of rafters. As soon as it became apparent that two were missing, he blew three blasts on his whistle and called for all available guides to come to him. He saw the need to establish a rescue platform in the vicinity of Sieve Rock as it was highly likely the missing persons were entrapped at that location. Mr Jolly decided to raft down to an eddy behind that large rock. He briefed his crew on what he planned to do and how it should be executed. Mr Jolly described the events in his statement in these terms:

> "We went down towards rock B with me yelling, "Back paddle hard". There was no reaction from the crew. They just saw the rock coming and froze. We hit rock B to the right of where Stu had hit. We hit the rock on the left side and the boat flipped right over left (away from the rock), the same way Stu had flipped."

Most of the rafters on board with Mr Jolly were thrown into the water and flushed to the right of Sieve Rock and out of harm's way. Mr Jolly was able to hold onto the raft to prevent it going downstream. There was a female rafter standing at the front of the raft, pinned by the water pressure against the raft. She said she was okay but couldn't move her leg. Another guide who arrived at the scene was able to assist this female to the safety of a nearby rock within the rapids with the aid of a throw line. Other guides on river left were able to assist Mr Jolly in securing a line to his raft and relocating it to a nearby eddy on river left. Mr Jolly righted the raft and jumped into it. With the assistance of the guides on shore, the raft was pulled upstream next to the large rock where the missing persons might be entrapped. Mr Jolly used a paddle to prod around the rock, feeling for a missing person. The current was very strong and the force of the water over a nearby drop frequently entered the raft, making the search very difficult.

After a few minutes, the protruding feet of Ms Choi were seen. Mr Jolly then saw the colour of her life jacket. He signalled for the guides on river left to pull the raft up a little bit higher so he could reach her. Every time the raft was pulled upstream, the force of the water dropping off a nearby ledge swamped the raft. Another guide in the raft was repositioned for increased stability. A second guide remained at the front with Mr Jolly. This arrangement reduced the amount of water swamping the raft. Mr Jolly made numerous attempts at grabbing Ms Choi's leg. On each attempt, the bow of the raft was pushed under water and Mr Jolly lost grip of her. When he finally managed to maintain hold of her ankle, Mr Jolly passed a line with two loops around her ankle. He went to the front of the raft and with the other guides, started pulling. On the first occasion, the loop slipped. A second line was secured around the same ankle. Mr Jolly and Mr Atushi together pulled and eventually Ms

Choi came free. She was immediately recovered into the raft. Her life jacket was removed and chest compressions started. Simultaneously the other guides relocated the raft downstream and into an eddy where Ms Choi was transferred ashore.

The narrative will follow the events relating to Ms Choi. I will later return in the relevant to Mr Park.

Ms Choi was again relocated to a more suitable platform for administering advanced first aid. River Medics Darren Nunn and Andrew Loxton took over resuscitation efforts. Mr Jolly and the other guides returned to the river and efforts to find Mr Park. When Mr Nunn first heard the whistle, he appreciated there was an emergency and immediately went to recover the oxygen and other first-aid equipment kept in the trip leader's and other medic's raft. Both rafts were below Double Waterfall. Having retrieved the kits he made his way up river left to the scene and arrived just after Ms Choi had been retrieved from the water. Mr Nunn participated in relocating Ms Choi to an area better suited for administering advanced first-aid. Together with Mr Loxton they rolled Ms Choi on her side to remove any fluids from her mouth and to obtain a clear airway. They then laid her on her back with Mr Nunn commencing CPR while Mr Loxton prepared the artificial airway. Mr Loxton inserted the artificial airway and then replaced Mr Nunn in performing CPR. Mr Nunn assumed responsibility for administering oxygen. With the assistance of Mr McGregor, Mr Nunn and Mr Loxton were able to maintain CPR until the paramedics from Queensland Ambulance Service arrived on the scene. Mr Choi showed signs of starting to breathe by herself and both her eyes were open. External assistance continued with breathing.

The incident report from Queensland Ambulance Service shows that the Triple Zero call was received at 10.52 a.m. and the first QAS unit was dispatched at 10.54 [sic] a.m. Arrangements for a helicopter evacuation appear to have been approved by 11.11 a.m. The first QAS crew arrived on scene about 11.30 and the QES helicopter arrived from Cairns at about 12.20 p.m. Ms Choi's condition was stabilised and she was medically evacuated via helicopter to Cairns Base Hospital. On investigation, a cerebral CT scan showed changes suggestive of diffuse cerebral ischemia and cervical spine scan showed no fractures or dislocations. Although initially breathing spontaneously, during admission she developed changes in keeping with severe ischemic damage to brain, heart, liver and kidney function. Ms Choi's condition continued to deteriorate and she died at 19 February 2009.

I return to the narrative, initially to deal with the aftermath of the flip of Mr Jolly's raft and then I turn to the events relevant to the search for and extrication of Mr Park.

It will be recalled that Mr Jolly was able to hold his raft in position near where he'd flipped over while most of his crew were flushed river right of Sieve Rock. It will also be recalled that one of his crew was retrieved by another guide to a nearby rock where she was safe for the moment. River guide Shawn Forster was at a cover position located midstream towards the bottom of the rapids. In addition to his seven crew originally onboard his raft, he had recovered crew from both Mr Dearlove's raft and Mr Jolly's raft. According to Mr Forster's statement, he had a total of 13 in his raft. While search efforts were under way for the missing rafters, Mr Forster remained with his raft and its now 13 crew.

Mr Forster remained in the cover position to catch anybody that might be flushed out from Sieve Rock as well as keep an eye on the female rafter situated midstream on a rock. River Guide Jason Dean ultimately retrieved her from that rock. Mr Forster signalled to River Guide and Trip Leader Mark Mackay to come up and get his raft with 13 rafters so that he could assist with the search. Ultimately, Mr Forster was relieved by another river guide who assumed responsibility and took the 13 rafters safely ashore on river right. Mr Forster joined with others searching for Mr Park. Ms Choi had been extricated at that point in time.

It will be recalled that after Mr Jolly and Mr Dearlove had recovered Ms Choi ashore, they returned to searching for the second missing person. Mr Jolly, with assistance, dragged the

raft he had been using up the rocks to river left and put it in upstream of Sieve Rock. Lines were attached to the raft. Mr Dearlove and Mr Jolly entered the raft and were lowered by guides ashore into a position to river left of Sieve Rock. Mr Jolly, using his paddle, probed underwater. Mr Jolly felt something with his paddle and had Mr Dearlove move his hand down the base of the paddle to see if he could feel or grab the rafter. Mr Dearlove climbed out of the raft and with one hand on the safety line around the raft, reached down and under the rock with the other. Mr Jolly had hold of a strap on Mr Dearlove's life jacket to support and secure his position. Mr Dearlove reached and felt a life jacket. He grabbed hold of it and tried to pull it several ways in an attempt to dislodge the body. However, the body was wedged between two rocks, held in place by the force of the current. Mr Dearlove was unable to pull against that force. Mr Dearlove appreciated that the water was dropping, and after discussing the matter with Mr Jolly, they decided to wait until the water dropped further before making another attempt. Mr Dearlove was standing in the water beside the raft waiting for the water to drop further when Mr Jolly heard a rumble of a boulder moving. A split second later he saw Sieve Rock start to move. Mr Jolly immediately warned Mr Dearlove, grabbed him by the life jacket, and pulled him into the raft. Mr Dearlove felt the rock make contact with his elbow as it moved up to a metre upstream. Mr Jolly, Mr Dearlove, and the other guides on scene immediately appreciated that the direction of movement of the rock upstream meant the person immediately beneath it was now likely pinned by the rock as opposed to wedged by the current. There was increasing concern that the gradual lowering of the water levels might cause further movement of the rock and increased danger to rescuers.

The decision was made, given the substantial passage of time, the prolonged period of immersion and the heightened risk of danger to the rescuers, further efforts to extricate Mr Park be suspended. Queensland Fire and Rescue Service attended the scene and were ultimately able to extricate Mr Park but only on the following day, using specialist equipment to achieve a controlled lift of Sieve Rock and sufficient space for extrication. Mr Park was deceased.

POST-MORTEM FINDINGS – MS CHOI

On 20 February 2009 Dr Paull Botterill, Forensic Pathologist, conducted an autopsy including internal examination and concluded that Ms Choi died due to hypoxic brain damage due to drowning/immersion due to a river rafting accident.

Post-mortem examination showed brain swelling and softening, an excess of fluid in the lungs, probable serious infection at the bottom of both lungs, and healing grazes of the trunk and limbs. Clearly these findings are consistent with the reported manner of entrapment, a prolonged period of immersion, and the consequences thereof.

I have carefully reviewed the detail contained in the autopsy report and accept the findings and opinions of Dr Botterill including his finding as to the cause of death.

POST-MORTEM FINDINGS – MR PARK

On 17 February 2009 Dr Paull Botterill, Forensic Pathologist, conducted an autopsy including internal examination and concluded that Mr Park died due to drowning/immersion due to a rafting accident against a background of multiple injuries.

Dr Botterill reports that post-mortem examination showed severe crushing chest and abdominal injuries with severe trauma of the liver, bladder, and kidneys, near amputation of the left upper limb, bruising under the scalp and over the brain surface, extensive grazing over the skin surfaces, and probably lung bruising. Dr Botterill concluded that although many of the injuries appeared to be post-mortem, some changes were consistent with at least some peri-mortem injury. There were injuries associated with the displacement of the rock and subsequent crushing of the body.

The findings are consistent with the reported manner of entrapment, prolonged immersion and displacement of the rock when the water levels were lowering.

I have carefully reviewed the detail of the autopsy report and accept the findings and opinions of Dr Botterill including his ultimate opinion as to the cause of death.

Required Findings:

S.45 of the Coroners Act 2003 requires me to make findings at the conclusion of the investigation about the following matters:
(a) who the deceased person is;
(b) how the person died;
(c) when the person died;
(d) where the person died; and
(e) what caused the person to die.

While the evidence is sufficient to enable me to make findings about each of these matters, the matter as to 'how' Ms Choi and Mr Park died requires further consideration in the context of the operator's management of the risk of entrapment.

Approach to Reviewing Management of the Risk of Entrapment

I have already handed down my findings in the following matters:

- In the Inquest into the Death of Natasha Charlesworth – Ms Charlesworth died on 7 October 2007 after prolonged immersion following a rafting incident on the Tully River on 6 October 2007. She was participating in a tour with Raging Thunder.
- In the Inquest into the Death of Ian Robinson – Mr Robinson died on 31 July 2007 after prolonged immersion during a white water rafting incident on the Tully River. He was participating in a tour with RnR.
- In the Inquest into the Death of Georgina Hatzidimitriadis – Ms Hatzidimitriadis died on 30 July 2008 after prolonged immersion during a sports rafting incident on the Russell River. She was participating in a tour with Foaming Fury.

I propose to take the same approach in this matter.

Leg entrapment is a well recognised hazard to which all participants are exposed during the course of whitewater rafting on the Tully River. There were a number of entrapment fatalities on the Tully River before this incident, in addition to the matters listed above.

There are two requirements for an entrapment.

Firstly, a flip over or other event that puts a rafter in the water while descending rapids. In the context of the present facts, the risk of flipover arises from the risk of collision between rafts and or diversion consequent upon a collision down a more hazardous route. There are a number of considerations relevant to the prospect of a flip over; including:

- The physical setting and dynamics of the rapids;
- The competency of the guide in navigating the rapid;
- The suitability and serviceability of the raft;
- The competency of the crew; and
- The degree of guidance given by the operator as to the safest manner of rafting the rapid.

Secondly, the rafter must be exposed to potential entrapment points before recovery from the water. There are a number of considerations relevant to this aspect, including:

- The physical setting and dynamics of the rapids;

- The number of rafters and degree of dispersal in the water across that setting;
- The existence of known or likely entrapment hazards;
- The prospect of rafters passing near to known or likely entrapment hazards before recovery; and
- The number and strategic location of guides (cover positions) able to immediately assist in recovering the rafters.

Of the specific considerations listed above, there are only a few which an operator may influence with a view to reducing the risk of entrapment. They are:

1. Suitability and serviceability of the raft (which may influence the prospect of flip over);
2. Suitability and serviceability of the PFD (which may influence the prospect of immersion and entrapment);
3. Use of the whitewater float position (which may influence the proximity of lower limbs to entrapment points);
4. Competency of the crew to raft the rapid (which may influence the prospect of flip over);
5. Competency of the guide in the manner of rafting the rapid (which may influence the prospect of flip over); and
6. Operator guidance as to safest manner of rafting the rapid including mitigation of the risk of collision (which may influence the prospect of flip over as well as prospect of entrapment depending on the location of entrapment points).

In the event that a rafter becomes entrapped, the goal becomes one of minimising harm.

It seems to me there are a number of components to harm minimisation. The first is recognition that the person is missing. The second is implementation of an effective search strategy. The third is the use of effective extrication techniques. The fourth is a capacity for immediate resuscitation and advanced medical assistance. Finally, there is medical evacuation to a hospital.

The narrative has addressed the details about the search and rescue response of the river guides and RnR as well as steps taken by way of first aid and evacuation in relation to Ms Choi. There was near immediate recognition that two persons were missing, the search started immediately at the most likely location of entrapment given the the flip over (Sieve Rock), the mode of the search was the best use of the available resources, the extrication efforts were highly commendable and the first aid administered and medical evacuation of Ms Choi was of a very high standard and timely (respectively).

Therefore, action taken to minimise harm was reasonable and appropriate. The subject does not require further consideration.

I return to the opportunities for risk control on the part of the operator.

THE RAFT

Mr Dearlove was guiding an orange ochre Hojo Dolphin rubber raft identified within RnR as DV8. The raft was specifically designed for white water rafting up to a category 5 rapid. The Tully River rapids are classified as category 4 rapids. The raft is designed for 10 persons although normally used by RnR for 7-8 persons. It is 4.4 metres long and 2 metres wide. The tube diameter is 50 centimetres with multiple air chambers and an air floor with auto-bailing capability. Police officers inspected DV8 at Tully Police Station shortly after the incident and found it in good order with no punctures, marks or other defects. The maintenance records were inspected and the raft was found to be maintained in a serviceable condition.

The design and serviceability of the raft did not contribute to the incident.

PERSONAL FLOTATION DEVICE

Ms Choi and Mr Park were found in their safety vests. Both vests were yellow in colour with buckles at the front securing adjustable horizontal straps. Each vest had labels identifying them as compliant with a specified Australian Standard. Police officers inspected the vests and reported that both appeared to be in good condition with no damage. Although the relevant Australian Standard AS1512 was amended in 2005 to enhance the high visibility colours, the vests used by RnR substantially complied with the current requirement. The Australian Standards do not specifically contemplate a particular type of vest as suitable for white water rafting. However, the type used by RnR was that favoured by most conducting white water rafting operations. It was most likely, amongst the types commonly used, to facilitate the white water float position.

I find that the vests used by Mr Park and Ms Choi were reasonable and appropriate for use in white water rafting. They were in good serviceable condition.

WHITE WATER FLOAT POSITION

During the course of numerous safety talks and demonstrations that the river guides delivered, there was considerable emphasis placed on the white water float position and warnings against attempting to stand in white water in the event that a rafter fell overboard. Although this is a necessary control measure, it is of an administrative nature and therefore, in the hierarchy of control measures, considered relatively weak. Further, in a situation where there is an entrapment almost immediately on a raft flipping, there is little or no opportunity to adopt the white water float position. This was likely the case for Ms Choi.

The situation for Mr Park is a little different. It appears from the evidence of Mr Dearlove that Mr Park was likely the person he briefly saw underneath the raft, evidently standing, before he lost his footing and was sucked underneath the rock. It was natural for Mr Park to attempt to stand in the circumstances in which he found himself.

While it appears that there was reasonable and appropriate education and training of rafters about the white water float position, the potential adoption of that position was an ineffective risk control measure in the circumstances of these deaths.

CREW COMPETENCY

The crews onboard the rafts of Mr Dearlove and Mr Dean were adequately prepared for rafting on the Tully River. Mr Dearlove had to work within the limitations of the crew's capability in attempting to dislodge himself from the rock at the entry to 2-15. Similarly, he had to work within the limitations of the crew's capability in attempting to retrieve the situation when his raft dislodged into chute 4. It would be unreasonable to expect training of crew to the level of competency required to carry out these manoeuvres.

QUALIFICATIONS AND TRAINING - MR DEARLOVE

Mr Dearlove completed a certificate in outdoor education in New Zealand in 2005. In November of that year he began work with an outdoor adventure company rafting on grade 2 and grade 3 rapids. He continued working summers in New Zealand. Mr Dearlove then worked for periods of RnR Adventures, April to September of 2006, May to September of 2007, and April to November of 2008.

As a member of the New Zealand Rafting Association from the end of 2005, Mr Dearlove was required to attend a three-day workshop every two years. The workshop included wilderness first-aid and swift water rescue to grade 3-5 standard rapids. Mr Dearlove holds an International Rafting Federation grade 4/5 Trip Leader qualification. On each occasion

that Mr Dearlove returned from New Zealand, he was required to complete a familiarisation trip with a senior guide to ensure that he had maintained his skills and familiarity with the Tully River.

I find that Mr Dearlove was appropriately qualified and experienced to be undertaking commercial white water rafting trips on the Tully River.

QUALIFICATIONS AND TRAINING – JASON DEAN

Mr Dean completed his initial white water rafting training in 2002 with RnR and has worked seasonally for both RnR and Raging Thunder on the Tully River. He holds senior first-aid and CPR certificates. At the time of this incident, Mr Dean had restarted with RnR in October 2008 as an intermediate level guide. He then completed two familiarisation trips down the Tully River under the supervision of a senior guide to ensure both the proficiency as a rafter and familiarisation with the river. Mr Dean keeps a log book of commercial trips on the Tully River and at the time of the incident, he had logged about 560 trips.

I find that Mr Dean was appropriately qualified and experienced to be guiding white water rafting trips on the Tully River.

OPERATOR GUIDANCE

The sequence of events that culminated in the entrapment of Mr Park and Ms Choi was initiated when Mr Dean's raft came into contact with Mr Dearlove's raft near entry to the 2-15 rapids. As a result, Mr Dearlove's raft was diverted down a hazardous route which Mr Dearlove was unable to avoid. The circumstances of the contact between the two rafts need to be explored in more detail.

Earlier in these findings, Mr Dearlove's version of events about how the rafts came into contact was outlined. He described entering chute 3 and stalling sideways against a rock facing river right. He described sitting there for a couple of seconds while he attempted to angle his boat "to go river right". He also described how the rock was often used as a "parking station" to wait for rafts to complete the descent. He then described the raft of Mr Dean coming through channel 3 and bumping his boat.

In his evidence at inquest Mr Dearlove accepted the proposition that he was taken by surprise by the actions of Mr Dean. When asked about his understanding of river etiquette in such situations he stated that, "You don't cut across the path of another raft, and that if a raft becomes stuck on a rock and about to get off, you wait until they're through".

There was no-one directing traffic at the top of the rapids.

Mr Dean provided a statement to investigators from Workplace Health and Safety Queensland on 19 February 2009. Mr Dean was unable to be located at the time of the inquest. I have not had the benefit of his clarification of relevant matters.

At paragraph 21 of his statement, Mr Dean says:

> "Stuart's raft was stalled on the rock I was coming through. My very front left-hand corner nudged his very front right-hand corner. I yelled to Stew, 'Watch the bump', to ensure he was aware. From there my raft turned directly right to start the line down the 2-15 rapid..."

Later in his statement Mr Dean stated:

> "I was in the main flow of water. I thought I had right of way. Generally speaking, as per operational procedures, if you are in main flow and another raft is stalled and there is clear path through you have right of way.
>
> Generally we are taught to have three boat lengths between you to have enough time to change.
>
> Generally at 2-15 there is no signal given, there is only room for one raft to run the rapid at one time."

During his evidence at inquest, River Guide Rodney Bullard, referred to boats parking at separate entrances to the rapids, "So we have smooth transitions of boats moving into it". (1-78-35)

He stated it was very easy to park, and that by parking he meant, "Wedging up between two rocks in a very calm part of the rapid". Mr Bullard said that once a boat is clear of the entrance and has dropped down into the rapid, the next boat can drop in.

When River Guide Naoya Okita was asked during evidence about how you organise the order of boats going through the rapid, he responded (to the effect) that it was one by one depending on who arrived first. When asked whether there was anyone directing traffic, he responded (to the effect) that if two or three boats arrived together at the same time the guides would talk or signal each other deciding on the order of entry into the rapid. He also appeared to indicate that the present day mode of operation at this rapid involved a person directing traffic.

River Guide Atushi Kani gave evidence during the inquest. In response to the question about how the rafts enter the rapid, Mr Kani stated that it was a matter of commonsense. If somebody's already entering into the rapid then the next raft just has to wait. Then once it's clear, the next raft could go. Mr Kani stated, "Sometimes we might end up with two rafts entering at one time, but basically we try not to do that thing and we just go one by one".

River Guide Marlo McGregor was asked similar questions about the order of entry into rapids. He acknowledged that the paths down chutes 1, 2 and 3 did converge and that there was a risk of collision unless there was some order of entry. He referred to their training which taught them to maintain some reasonable spacing before entering the rapid and that a guide didn't enter a rapid until his passage was clear. However, Mr McGregor stated,

> "If you're stuck on a rock and you're jammed on a rock on purpose you can park up and let someone move in and go before you. So there was a kind of a bit of spacing before entering the rapid, maybe we talked about that, I think, just so that the boats don't get too clogged up and – yeah, it was kind of determined that you gave the signal and you went through, I suppose, but not – not – yeah".

Therefore, although Mr McGregor understood the rule to be that you should always wait until the rapid is clear before you go down, it appears there was a competing consideration for keeping things moving so that if a rafter was stuck on a rock or had parked on a rock, others might move through. This might be the situation that confronted Mr Dean. He saw the opportunity and thought that he had the space to enter the rapid through chute 3 without making contact with Mr Dearlove's raft. Clearly, he did not consider the potential consequences of contact with Mr Dearloves raft; in particular, the possibility that Mr Dearlove's raft might tip him down chute 4 exposing him to the serious hazards associated with Sieve Rock.

I have reviewed the documented operational procedures of RnR as well as the training manual. The only guidance provided to river guides about the risk of collision is broad statements like 'be aware of the boat immediately in front of and behind you' and 'observe

river etiquette'. At the time of this incident, there was no recommended route through 2-15 published in the operational procedures. Further, 2-15 was not a rapid that required clearance from the Trip Leader prior to entry.

Clearly, RnR has relied on 'river etiquette' to manage the movement of rafts about each other, near and in rapids. The serious weakness in this approach is demonstrated by the different understandings of guides about what is the river etiquette in specific situations.

I find the risk controls used by RnR in respect of collisions between rafts were weak.

Ultimate Findings

1. Sang Won Park died on 14 February 2009 at "2-15" rapids on the Tully River due to drowning/immersion due to a rafting accident against a background of multiple injuries. He was participating in a white water rafting trip with RnR Adventures. While the raft was descending 2-15, it was struck by another raft, diverting it onto a more hazardous route. It ultimately struck a rock and flipped. Mr Park was became entrapped underwater, beneath the rock that the raft struck. His body was unable to extricated until the following day.

2. Seongeun Choi died on 19 February 2009 at Cairns Base Hospital due to hypoxic brain damage due to drowning/immersion due to a rafting accident on 14 February 2009 on the Tully River. She was participating in a white water rafting trip with RnR Adventures. While the raft was descending "2-15" rapids, it was struck by another raft, diverting it onto a more hazardous route. It ultimately struck a rock and flipped. Ms Choi was became entrapped underwater, beneath the rock that the raft struck. River Guides were able to locate and extricate Ms Choi. First aid was administered. She was transferred to Cairns Base Hospital but over the following days, her condition deteriorated and she died.

3. The efforts of the River Guides in locating, extricating and administering first aid to Ms Choi were reasonable and demonstrated a high level of technical expertise. The efforts of the River Guides in locating and attempting to extricate Mr Park were reasonable and demonstrated a high level of technical expertise.

Preventative Recommendations

Section 46 (2) of the Coroners Act empowers a Coroner, whenever appropriate, to comment on any thing connected with a death investigated at an inquest that relates to public health and safety as well as ways to prevent death from happening in similar circumstances in the future.

Before offering my comments, there are a number of important matters that must be acknowledged.

Firstly, every participant in white water rafting is interested in the thrill of rafting. That thrill comes from the perception of risk. The challenge for adventure tourism operators is to maximise the *perception* of risk within the boundaries of what most tourists are willing to take while minimising the *actual* risk.

Secondly, the whitewater rafting started as a recreational pursuit and has developed into a major commercial venture. Its collective approach to the management of safety has progressed markedly over that period. Some of the early participants are now Senior Guides with over 20 years experience. They are highly skilled and have a wealth of experience on this and other rivers. Most appear to have travelled with their career in pursuit of experience.

Thirdly, the operators and guides are dealing with the vagaries of nature that is susceptible to change without much notice and this presents a challenge to planning and about prospective opportunities for improvement.

I return to the opportunities for intervention and risk control available to RnR.

To my mind, the risk of collision between rafts within rapids must present an increased risk of flipover and, consequently, of entrapment. Therefore, the risk of collisions must be mitigated. It is evident that collisions can occur when rafts inadvertently converge after near simultaneous entry through different entry points within the same rapids, or where one raft grounds or stalls unexpectedly midway through a rapid when another raft has entered the rapid. The magnitude of this risk will vary depending on the physical setting and dynamics of each rapid. There are a number of obvious risk controls available. A guide acting as traffic control at the top of the rapid is one possibility. That guide might also enforce safety rules such as keeping the entry clear of rafts that attempt to park while waiting for the opportunity to enter. At 2-15 rapid, there is clearly a greater need for care on entering chute 3. However, if there is a risk of broaching and stalling on the rock similar to what happened to Mr Dearlove, perhaps the risk of inadvertent entry to chute 4 dictated that chute 3 not be used. These are matters that should be the subject of a documented risk assessment and mitigating control measures, prepared on a rapid by rapid basis.

In the matter of an Inquest into the Death of Ian Robinson, I considered the opportunities for improvement in RnR's management of white water rafting safety in a similar context. I mapped out conceptually how RnR might take a pro-active approach to management of safety and provide guidance to River Guides about how to safely navigate rapids based on documented risk assessments. I concluded that inquest with the following recommendation:

> *I recommend that RnR review its operational procedures by conducting formal risk assessments of each set of rapids, identifying all hazards, selecting control measures appropriate to the unique attributes of each set of rapids that mitigates the risk to a defined acceptable level, and then periodically reviewing the control measures for their effectiveness. The hazards, risks and workings of the control measures should be shown as an overlay on current maps of the rapids. Explanatory notes about relevant strategies should accompany the maps. Safety critical strategies should be highlighted. These documented procedures should be incorporated into training and auditing programs.*

Similar recommendations were made in the other rafting inquests listed earlier in these findings.

The circumstances of the death of Ms Choi and Mr Park add weight to the need for a comprehensive identification of all hazards and selection of appropriate control measures. The risk of collision between rafts is one such hazard. Although it was the initiator in a sequence of events that led to these deaths, it is but one example of many other possible sequences of events that can lead to serious injury or death.

The Workplace Health and Safety Report (at p.31 of 1445) notes that RnR has taken remedial action by way of instructing guides to only enter 2-15 rapid from river right, to enter 2-15 rapid one boat at a time, and to wait for an all clear signal from the boat in front before continuing down 2-15 rapid.

It is also reported that RnR has reviewed it's policies and procedures, addressing the meaning of river etiquette through the use of a definition that includes 'wait your turn to enter rapids' and 'not to pull out of an eddy into the path of another rapid'.

I cannot comment on the adequacy of these steps as there was no expert evidence before me on this subject. However, I have serious reservations about the strength and

comprehensiveness of these control measures. At the very least, they are an attempt to address the risks that eventuated in this instance, but without a comprehensive identification of all hazards and selection of control appropriate control measures, other hazards may remain unaddressed.

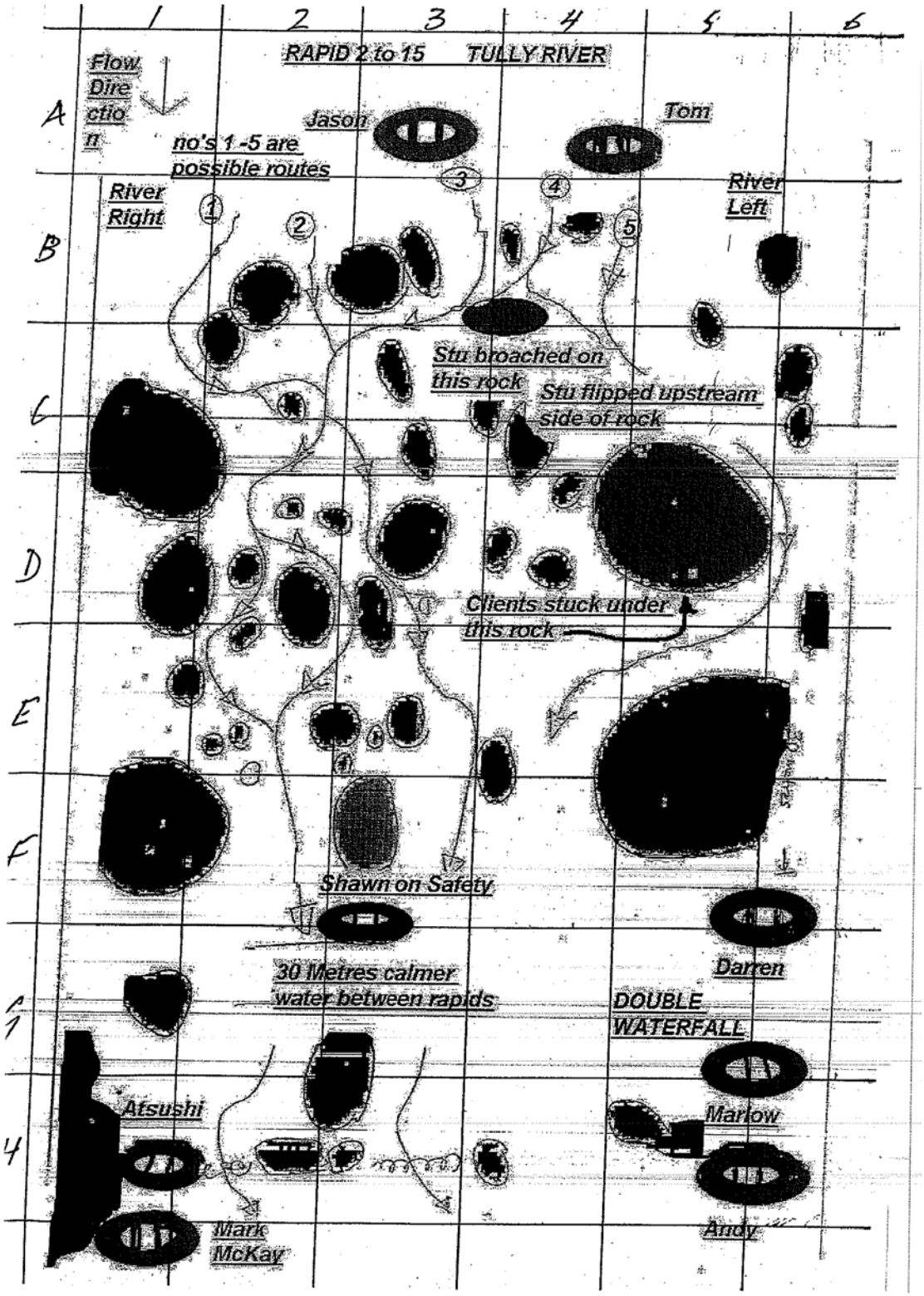
I make the following recommendation:

> ***In the course of implementing my earlier recommendation, RnR include within its formal risk assessment of each set of rapids, the prospect of collision between rafts and with rocks as an potential initiator of a flip - as a hazard, assess the risk of such an event, and select control measures that will mitigate that risk to a defined acceptable level. The other attributes of my earlier recommendation also apply.***

In light of my concerns about the nature and level of the response by RnR to this incident by way of review of its policies and procedures, I strongly suggest that RnR obtain external assistance with the risk management process.

The other operators should consider these findings and recommendations in implementing similar recommendations arising from those inquests.

Attachment A



Attachment B

Photograph depicting Sieve Rock under which Ms Choi and Mr Park became entrapped. The water level had lowered substantially and efforts were continuing in an attempt to recover Mr Park. The flow of water beneath Sieve Rock is apparent.