OFFICE OF THE STATE CORONER

FINDINGS OF INQUEST

CITATION: **Inquest into the death of Ian ROBINSON**

TITLE OF COURT: Coroner's Court

JURISDICTION: Cairns

FILE NO(s): COR: 000003552071

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FINDINGS OF: Kevin Priestly, Coroner

CATCHWORDS: CORONERS: Inquest – Adventure tourism – white water rafting – Tully River – 8 person rafts – 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

Ian Robinson was 47 years of age and resided with his wife, Elizabeth Robinson at 4 Poplar Avenue, Lancashire. He was employed as a teacher at Merchant Taylor School in Crosby. Mr Robinson had a lengthy swimming background that included swimming at club level, water polo and a period as a lifeguard. He worked in the physical education department and was the master in charge of the rugby, swimming and athletics. He had led sport based student trips to France, South Africa, New Zealand and Canada. On this occasion, Mr Robertson was leading a group of students from his school on a rugby tour of Australia. There were 26 students and four teachers in the group.

As part of the final leg of the tour, a whitewater rafting trip to Tully was pre-booked from the United Kingdom with RnR Adventures.

RnR Adventures Pty Ltd is trustee for RnR Adventures Trust which trades as RnR Whitewater Rafting. RnR has been operating since 1984 and undertakes commercial rafting tours in Far North Queensland on the Tully River, North Johnstone River and Barron River. Mr Peter Woodward is a director and senior manager responsible for rafting operations.

The Tully River catchment includes Koombooloomba Dam in the Cardwell Range, which has a capacity of 180,000 megalitres. Water is released into the Tully River from Koombooloomba Dam and flows 13 kilometres to the Tully Falls Weir, situated above the Tully Falls. The Kareeya Hydro Electric Power Station, owned by Stanwell Corporation, is located 2kms below the falls. Stanwell has a commercial agreement with the whitewater rafting companies to release water for rafting. On 31 July 2007 at Wet n Moisty rapids there was 38MW of water, the minimum amount required for rafting.

The rafting trip begins at the top of Tully Gorge Road at Kareeya Power Station. The trip usually ends at 'Ski Ramp' track. There are 16 points along the river where it may be accessed by tracks from Tully Gorge Road. One of the purposes served is emergency evacuation. The access points are marked by posts on the side of the road and painted on the road adjacent to the tracks.

Narrative

At about 7am on 31 July, 2007, Mr Robinson and his group (a total of 28 persons) were collected from their accommodation at Cairns Colonial Club Resort and transported to Tully in an RnR coach.

During the bus trip, a river guide, Shawn Forster gave an introductory talk outlining the activities of the day and also distributed a combined medical questionnaire and liability waiver form for each participant to complete. Mr Robinson declared he was not suffering from any of the specified conditions and rated himself as an excellent swimmer. The introductory talk included safety information. I have reviewed the standard 'Bus Safety Talk' that was provided in July 2007. It includes a detailed explanation of the 'Man Overboard' procedures using a number of scenarios to demonstrate what to do and what not to do. Particular emphasis is given to the white water float position and the danger of foot entrapment with a warning to never attempt to stand up in the rapids. Some basic signals are explained, including the distress signal and 'I'm OK' signal.

The bus arrived at Rafters Cafe at Tully at about 8:40 AM. All passengers disembarked and entered the cafe where they were shown a safety video. The guides were on hand to answer any questions. I have viewed the video. It runs for about 25 minutes and is professionally produced, showing what rafters might expect to encounter on the trip. The safety messages about the 'Man Overboard' procedures and whitewater float position are repeated.

The group reboarded the buses and were taken to the top of the Tully River near the Power Station. Mr Forster was again in the same coach as Mr Robertson and his group. Mr Forster gave another safety presentation during this trip. I have reviewed the standard talk which the guides delivered in each of the buses. They were able to demonstrate to police that they were capable of repeating the lengthy safety talk in accordance with the company operating procedures without reference to extrinsic material. This is not surprising given the structure and logic of what is delivered. Amongst other things, more detail was provided about the correct fitting of safety equipment and what to do in the event of a flip over.

The witness statements and oral evidence of the rafters accompanying Mr Robinson, demonstrate a similar recollection about safety talks. I have not gone into detail about content of the safety talks as it will become evident from the circumstances of the flip over involving Mr Robinson, it is very doubtful there was any opportunity for the rafters being flushed down the rapids to give much thought to their situation and the information provided in the talks. It is apparent from reviewing the video of their movement down the rapid that their body position was more a product of the forces exerted on it in the rapids rather than a conscious choice.

On disembarking, the rafters were provided with life jackets, helmets and paddles. The river guides moved amongst the rafters, assisting with the fitting of helmets and jackets as well as checking that rafters were wearing appropriate footwear. The trip leader, Reece Goldsmith checked that all the rafters were correctly outfitted. Mr Robinson's group headed down the access track to the river. This group was divided into four groups of seven. Mr Robinson and six others were assigned to the raft 'Enigma' and their assigned guide was Calum Abbott. In the group with Mr Robinson and Mr Abbott were Michael Slemen (teacher), John Benbow (teacher), Simon Parkes (student), Joseph Ward (student), James Edis (student) and Samuel Roby (student).

Mr Abbott instructed his group on matters of general safety, paddle strokes and basic commands. The crew of the Enigma then boarded the raft and spent a period practising in calm water at the top pool the skills necessary to negotiate the rapids.

There were a total of 14 rafts that started the trip downstream. This flotilla was later separated into two groups of seven with a gap of about 200 metres.

Prior to 'Wet n Moisty', the crew on 'Enigma' successfully rafted many rapids including some of the more challenging. There is no evidence to suggest that the crew were experiencing any difficulty in paddling or complying with the instructions of Mr Abbott.

On approach to 'Wet n Moisty', 'Enigma' was the first raft of the first group of seven rafts to arrive. Mr Abbott took up the position as safety cover at the top. When the other six rafts had rafted the rapids, Mr Abbott was relieved by the guide from the first boat of the second group of rafts, Ms Zoe Bartlett.

Attached A is a sketch plan of 'Wet n Moisty' that was prepared for the purpose of the inquest. It is important to appreciate that most of the area between the rocks along the 'preferred line' was fast moving and turbulent whitewater.

There were two cover safety positions on this rapid. The first was at the top of the rapids where river guide Ms Bartlett was located. The second was at the bottom of the rapids where river guide Mr Slee Larcombe was located. Towards the bottom of the rapids on river right was a spot known as Videographers Rock where river guide and photographer Ms Raana Settington and videographer Mr Stephen Campbell were positioned. Image and video was shot of rafts passing-by for later sale to rafters. The water drops about 5m over 30m through this rapid. To river left is a cliff that is difficult to access along the bank. To river right, there are large granite boulders.

On entry to the rapid, 'Enigma' made contact with two rocks, causing it to rotate 180 degrees and continue downstream but backwards. Contact with these rocks slowed its entry into the rapids and an eddy behind the second rock drew the raft slightly river left of the main flow. However, the raft continued with some force and speed. The raft made contact with a third rock protruding from the water, simultaneously lifting one side of the raft and forcing the crew to the opposite side. The combined effect of the lifting force and shifting weight of the crew caused the raft to a flip over. The rafters fell into the water and were quickly flushed downstream towards the bottom. The flip over was captured on video and played in court. On reviewing the video of the flip over, the time elapsed from flip over to the raft reaching the bottom of the rapids was about 20 seconds.

At the bottom of the rapid, Mr Abbott quickly mounted and stood on the upturned raft. He saw the four of his crew holding the raft or in its immediate vicinity. Mr Abbott quickly looked to Ms Settington who signalled to him that Mr Larcombe had recovered two crew at his cover position. Appreciating that one was missing, Mr Abbott jumped into the water to see if Mr Robinson was under the raft. He was not there. Mr Abbott flipped the raft right side up.

During the same period, Ms Bartlett, from the cover position at the top of the rapids, relayed to others the signal that there was a flip over, left the top cover position, retrieved her safety equipment from her raft and ran down the rocks river right to join Ms Settington and Mr Larcombe.

Ms Settington, who had photographed ‘Enigma’ during the descent, quickly reviewed the images on the memory card to check on the number of rafters onboard. This only took a matter of seconds. She quickly realised that one person was missing and started to scan the rapids. She caught a glimpse of a hand at a location near the bottom of the rapids. Mr Campbell reported the same sighting. It was immediately apparent that one of the rafters was entrapped. Ms Settington reported the entrapment to Mr Larcombe and gave the emergency signal, three short whistle blasts, to alert the other guides.

Mr Larcombe attempted to swim the rapids to where the hand was seen. However, the rapids were too strong and took him downstream to the bottom pool. He directed his crew to get out of their raft and he started to prepare it for use as a rescue platform. On arrival at the scene of the entrapment, Ms Bartlett was told about the sighting and assisted Mr Larcombe to drag his raft upstream along the bank.

Four guides from the rafts that had already negotiated the rapids were on the beach about 100 metres downstream at ‘Luchspot’. On hearing of the emergency, they raced upstream along a path adjacent to the river and joined efforts to secure the raft in place as a rescue platform.

Senior Guide Paul Eames responded to the emergency, running downstream to river right and entered the water. He swam to the general location of the sighting from upstream and managed to locate himself within an eddy. Using a paddle, he started probing the rocks below, feeling for Mr Robinson.

In a very short period, a matter of a couple of minutes, guides had established a rescue platform in place using a raft suspended in position between ropes held by guides on each side of the bank. After assisting the raft into location, Mr Eames jumped in, joining Mr Larcombe and Ms Bartlett in the raft.

Attachment A shows the location of the entrapment and position of the raft that was used as a rescue platform. One of the most senior guides on the river, Mr Mainfredi, arrived at the rescue scene. He anchored one of the lines from which the raft was suspended to the terrain, freeing the guides who were previously holding it. He shimmied along a line suspending the raft, joining Ms Bartlett, Mr Larcombe and Mr Eames in the raft. Prodding the bottom with their paddles, they attempted to feel for Mr Robinson.

Mr Eames located Mr Robinson but after entering the water and attempting to extricate him, he was flushed downstream. Mr Eames quickly returned to a position at the rear of the raft, joining another guide Mr Jolly in the water. Mr Robinson’s arm was hauled out of the water and secured with a line. After about 5 or 6 heaves using the combined effort of the team, he was extricated and recovered to the raft. Ms Bartlett and Mr Mainfredi started CPR.

Simultaneously, the raft was swung like a pendulum and lowered downstream river right to the bank. Once on the bank, an oxy viva was brought to the scene and CPR was continued on firm ground.

Mr Goldsmith had telephoned the office of RnR to report the incident and initiate an emergency services response. A team of guides took turns in continuing CPR until ambulance officers arrived on scene.

The first 000 call was received at Cairns Communications Centre (Police) at 12.39pm from a Reservations Officer at RnR reporting an incident on the Tully River and requesting the water be shut off. The last of a series of calls was to QAS at 12.45. River Guide John McCrossin recalls looking at this watch when the guides began setting up the tether to secure the raft into position. It was 12.45pm. The still images captured by Ms Bartlett of the flip over are time stamped 12.26. The accuracy of this time stamp was not established.

An ambulance crew from Tully Station was tasked to attend the scene at 12.47pm and a police crew dispatched at 12.52pm. I note RnR initially made inquiries about the availability of the Emergency Services helicopter but it was on another mission north of Cairns and not available. The ambulance crew arrived on scene at 1.51pm. The scene was not readily accessible. The attending paramedics took over CPR and with the benefit of a defibrillator, determined that any further effort would be futile. Mr Robinson was pronounced deceased at about 2.04pm.

Police officers and Workplace Health and Safety inspectors attended the scene and conducted a joint investigation into the circumstances of the death. I am assisted in my findings by a report from each organisation.

On 1 August 2007 Dr Simon Birchley, Government Medical Officer, conducted an autopsy and concluded that Mr Robinson died due to drowning. His findings included fractured ribs as well as bruising and abrasions to the lateral aspect of the right ankle consistent with entrapment between rocks.

I have carefully reviewed the findings and opinions of Dr Birchley. His findings are entirely consistent with foot entrapment and efforts to revive Mr Robinson. I accept his conclusion as to the cause of death of Mr Robinson.

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' Mr Robinson died requires further consideration in the context of the operator's management of the risk of entrapment.

My Approach to Reviewing Management of the Risk of Entrapment

I have already handed down my findings in the matter of an inquest into the death of Natasha Charlesworth who died on 7 October 2007 after prolonged immersion following a rafting incident on the Tully River on 6 October 2007. I propose to take the same approach to this issue.

Leg entrapment is a well recognised hazard to which all participants are exposed during the course of whitewater rafting on the Tully River. There have been a number of entrapment fatalities on the Tully River before and after this incident.

There are two requirements for an entrapment.

Firstly, a flip over or other event that puts a rafter in the water while descending rapids. There are a number of considerations relevant to the prospect of a flip over; including

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

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

- The physical setting and dynamics of the rapids;
- The number and degree of dispersal of rafters 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 from the point of flip over and before recovery;
- The number and strategic location of guides (cover positions) able to immediately assist in recovering the rafters.

There are opportunities for risk controls to intervene and influence some of these variables. For example, a reduction in the prospect of a flip over will reduce the risk of entrapment. Earlier recovery of a rafter from rapids before passing over known or likely entrapment hazards will reduce a rafter's exposure to entrapment.

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. Operator guidance as to safest manner of rafting the rapid (which may influence the prospect of flip over as well as prospect of entrapment depending on the location of entrapment points);
6. Competency of the guide in the manner of rafting the rapid (which may influence the prospect of flip over);
7. The system of cover provided at the rapid (which may influence the prospect of entrapment).

I will address points one to four separately.

Although the operator must accept the physical setting and hydrology of a particular set of rapids, a careful risk assessment should inform and underpin the safest manner of rafting a set of rapids and the placement of cover. The guides are then trained to follow the procedures that are developed from this process, supplementing them with their individual skill and judgement where necessary. Therefore, points 5, 6 and 7 will be addressed together under the heading Operator Guidance.

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.

I address the matters relevant to harm minimisation now.

Mr Robinson was detected missing within about thirty seconds. Within another relatively short period, his likely location was identified when his hand was momentarily seen. There is no basis for any criticism of the search strategy used to find his final location. When located, the efforts of the guides in extricating Mr Robinson demonstrated great skill and team work. The immediate resuscitation efforts and continuation of those efforts until QAS arrived on scene again demonstrated a high level of proficiency and team work.

Therefore, I find that the response of the guides to the entrapment of Mr Robinson in locating, extricating and administering first aid was reasonable and of a high standard.

Consideration of the Risk Controls Relevant to Entrapment

<u>The Raft</u>

The raft Enigma was a model 'Dolphin' raft manufactured in hypalon (a synthetic rubber) by Hojo Rubber. It was designed as a 10 person raft, measuring 4.4m long and 2m wide. The raft was inspected by police and appeared in good condition with no puncture marks or any apparent defects. The raft appeared to comply with the relevant Australian Standards. RnR was able to produce reasonably detailed maintenance records showing what work was done to it.

I find that the design and serviceability of the raft was adequate and did not contribute to the incident.

<u>Competency of the Guide</u>

Mr Calum Abbott was 26 years of age and had 5 years rafting experience. His initial training was with RnR in 2002. He held formal qualifications as a Senior Guide Level 4/5, Swiftwater Rescue Technician 1 and a current Senior First Aid Certificate. Mr Abbott had completed over 200 trips on the Tully River between February 2006 and July 2007.

Mr Abbott had participated in company training days in the preceding 12 months.

During evidence, there was no criticism of the way Mr Abbott controlled the entry of the raft into Wet n Moisty, notwithstanding the fact that it made contact with the rocks on entry which contributed to its movement river left and heavy contact with the rock that caused the flip over.

Another river guide had a similar experience on entering that rapid on the day. The raft guided by Mr Stuart Dearlove contacted a rock on entry and turned backwards. However, he was able to return his raft to the bow forward position as well as avoid the rock that flipped Enigma. No inference should be drawn about the comparative skill of the guides from this fact. It was clear from the evidence of guides during the hearing that there are a great many variables involved and the situations faced by each guide were different.

There was no evidence to suggest poor control of the raft on the part of Mr Abbott.

I find that he was appropriately qualified and experienced to guide Enigma.

Competency of the Crew

A relevant consideration is the competency of the crew in paddling the raft and responding to the commands of Mr Abbott. I can conceive of situations where crew may not respond appropriately to commands of the guide and contribute to a flip over. There is no evidence to suggest that the crew contributed to the manner of entry and contact with the rocks. Further, the evidence of those on board Enigma and the guides on other rafts in its immediate vicinity support the view that the crew performed well together. I also had the opportunity to review still images and video leading up to the flip over. Again, the crew did not appear to be experiencing any difficulty prior to the flip over. Therefore, it is unnecessary for me to consider the adequacy of the instruction provided earlier in the day. It appeared to demonstrably serve its purpose.

I find that the competency of the crew did not contribute to the raft contacting the rocks on entry to the rapid and the following flip over.

Personal Floatation Device

The safety vest that Mr Robinson wore was manufactured in March 2006 and was an R 110 L - XL model Personal Floatation Device (PFD). It was yellow in colour and had three horizontal straps (blue in colour) which buckle at the front via a latch clip. The vest is secured by a zip and buckles which allow for all sizes via adjustment of the horizontal straps. It had a label describing the vest as suitable for persons of body mass 60kg above. It also featured an Australian Standard AS1512 label inside. The PFD was in good condition with no signs of damage. It also appeared to be acceptable for use in whitewater rafting. Although the police report considered a number of possibilities to enhance the safety of the PFD such as leg straps, such matters require technical expertise and consideration beyond that available to me.

I find that the PFD that Mr Robinson wore was of an appropriate design, in good serviceable condition and correctly fitted.

White Water Float Position

During the safety talks and instructional sessions on the river, the rafters were explained and demonstrated the white water float position. The rafters also practised the position in the river. On reviewing the video showing the rafters from Enigma being washed down the rapids, there was little opportunity to adopt the white water float position. They were essentially pushed about by the forces of the whitewater, remaining mostly on the surface due to the buoyancy offered by the PFD's.

I find that although the rafters were adequately instructed in the use of the white water float position, the force of the whitewater afforded very limited opportunity to adopt that position.

Operator Guidance – Manner of Rafting Wet n Moisty and Providing Cover

The Operational Procedures do not provide any guidance as to the safest manner of rafting Wet n Moisty. R n R relies on the requirement that a guide hold formal qualifications at a level sufficient to guide on the Tully River as well as its induction/familiarisation program as the means by which Senior Guides impart essential knowledge about the safest routes through rapids and the underlying

reasoning. The same induction program is used to impart knowledge about the cover system at each set of rapids. The Operational Procedures do provide guidance about where and when particular cover locations are to be used (extracted below). The December 2008 version of the Operational Procedures applicable to this rapid is expressed in similar terms.

WET AND MOISTY

At all water levels:

Boat 1 To eddy out above rapid at '*Table Rock*' and act as cover and traffic director.
DO NOT USE THIS BOAT AS A ROCK TO RUN INTO AND STOP.
OBSERVE RIVER ETIQUETTE.

Boat 2 Runs rapid and eddies out river right at bottom to cover. This guide must be out of their boat standing on or near photographers rock, safety rope in hand.

Whatever the formal qualifications and experience of guides starting with RnR, an induction program must be completed. This involves a number of trips down the Tully River until they are assessed by a Senior Guide as competent. The induction process contemplates about two weeks experience or 15 trips (longer if needed) before an inductee might be considered ready for a 'shotgun' test where the inductee takes full responsibility for a raft and is assessed under the critical eye of a Senior Guide.

There is a checklist of criteria against which the guide is assessed. The checklist is contained in a document described as River Guide Assessment. The criteria are expressed in general terms. For example, under the heading 'River Skills/Knowledge' appears criteria like 'Guiding skills', 'Recognition of hazards associated with this river', 'Crew control' and 'Flip and recovery'. The criteria do not descend into any greater detail.

Essentially, the new guide must meet the subjective standards of a senior guide before qualifying to guide on the Tully.

Ultimate Findings

1. Ian Robinson died on 31 July 2007 at Wet n Moisty rapids on the Tully River due to drowning. He was participating in a white water rafting trip with RnR Adventures. While the raft was descending Wet n Moisty, it struck a rock and flipped. Mr Robinson was washed downstream and became entrapped underwater. After a prolonged period of immersion, he was extricated and advance first aid measures started. Paramedics attended the scene and pronounced Mr Robinson deceased.
2. The response of the guides in locating, extricating and administering first aid to Mr Robinson, was reasonable and of a high standard.
3. The design and serviceability of the raft was adequate and did not contribute to the incident.
4. The proficiency of the other rafters did not contribute to the raft contacting the rocks on entry to the rapid or the flip over.
5. Mr Abbott was appropriately qualified and experienced to guide Enigma.
6. The PFD that Mr Robinson wore was of an appropriate design, in good serviceable condition and correctly fitted.

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.

My following comments and observations of an introductory and conceptual nature are similar to those made in the matter of an inquest into the death of Natasha Charlesworth.

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.

In light of these matters, my comments are based on opportunities for improvement and should not be interpreted as deficiencies in the operator's management of safety.

I return to the three of the considerations listed earlier as opportunities for intervention and risk control available to an operator, namely:

- Operator guidance as to safest manner of rafting the rapid, which may influence the prospect of flip over as well as prospect of entrapment depending on the location of entrapment points;
- Competency of the guide in the manner of rafting the rapid, which may influence the prospect of flip over;
- The system of cover provided at the rapid which may influence the prospect of entrapment.

I also return to my observation that a careful risk assessment should inform and underpin the safest manner of rafting a set of rapids and the placement of cover. I then noted that guides can be trained to follow the procedures that are developed from that process, supplemented by individual skill and judgement of guides where departure might be necessary.

I am of the view that there exists an opportunity to apply a formal and documented risk management approach to rafting of specific rapids. This is best illustrated by a conceptual outline of a process that might be used and refined by an operator with contributions from senior guides.

The first stage is the process of hazard identification which should identify all potential sieves and like dangers to rafters. Unlike other rivers, the guides on the Tully River have the opportunity to walk and survey the river when the water is shut off after rafting operations are concluded for the day. A number of guides gave evidence about how advantageous a walk through was in identifying hazardous locations that they would endeavour to avoid when rafting. The hazard identification and relevant hydrology should be documented by way of mapping with explanatory notes to assist in training guides and demonstrating the application of the following steps.

The second stage is considering the potential locations for flip overs and the prospect of flip over at those locations. It would be relatively easy to capture data about each of these aspects. There is probably a reasonably good body of information based on the experience of the senior guides about flip over locations and rates.

The third stage is the likely path of the rafters in the event of a flip over at a particular location and the prospect of them passing near entrapment points.

The fourth stage is to consider the opportunity to place cover at locations that might mitigate the prospect of rafters passing near entrapment points. If a particular location is notorious for dislodging a rafter or two during a rough section of rapids and a single cover might be able to retrieve them before they likely pass known entrapment points, the level of risk will be substantially mitigated, perhaps to an acceptable level.

The fifth stage is to consider, in the absence of adequate cover (i.e. mitigation of risk to a definable and acceptable level), alternative strategies that might achieve the same outcome. For example, guide and crew competency might play a greater role. If there are rapids where the opportunity for cover to retrieve rafters before they pass entrapment points is limited due to the terrain (for example, Wet n Moisty), a higher level of skill and knowledge might be required of the guide. This feeds back into the induction/familiarisation program. Such rapids are earmarked as requiring a higher level of technical proficiency. The particular skills required can be identified and the inductee assessed against those skills and the level of proficiency attainted. Further, crew competency should be taken into

consideration. If a guide has a crew that is performing poorly and a particular rapid is assessed as requiring a high level of skill on the part of the guide together with moderate level of skill on the part of the crew, failure of the crew to achieve that level may result in the crew portaging that set of rapids.

The outcome of this process should be a map showing:

- preferred paths through the rapids that minimise the risk of flip over's or persons overboard;
- locations where there exists a risk of flip over and accompanying notes setting out strategies for mitigating that possibility;
- the likely paths of rafters in the event of flip over;
- the location of known entrapment points;
- the locations of cover positions;
- accompanying notes that discuss alternative strategies for mitigating risk to an acceptable level and identifying factors such as poor crew work that might heighten risk beyond an acceptable level.

How might this process reduce the risk of entrapment in similar situations to that involving Mr Robinson?

There is no evidence before me as to whether or not Wet n Moisty was formally assessed by RnR for potential entrapment points. Although witnesses report that there are entrapment points throughout the river, it was conceded that some places are more notorious. Clearly, this incident has demonstrated that entrapment points existed at the bottom of Wet n Moisty. Are there other entrapment points?

I have no doubt that guides all have varying degrees of capability in identifying hazards on the river and taking steps to mitigate that risk. However, it should not be a matter of individual experience or encounter.

There is no evidence to demonstrate how the location of the cover positions at Wet n Moisty was determined. Again, I have no doubt that very senior and experienced guides decided on their locations, possibly a number of years ago. However, the factors taken into consideration are not documented or readily apparent.

A proactive consideration of the basic risk management process to Wet n Moisty might result in the following conclusions:

- There exist entrapment points at the bottom of Wet n Moisty.
- There are only two cover positions possible due to the nature of the terrain, one cover at the top and one cover at the bottom.
- There is a risk of a contact with the rocks on entry to the rapid. If caught in the eddy and carried river left, significant contact and flip over is possible with another rock. Deviation from midstream seems to result in a significant escalation of the risk of flip over. There are more rocks to make contact with.
- In the event of a flip over, the only cover position to retrieve a rafter is at the bottom and only after the rafter has passed over the entrapment points.
- The nature of the rapids is such that a PFD and the white water float position will not sufficiently mitigate the prospect of entrapment of themselves.
- The only risk control left is reduction of the risk of flip over with greater guidance from the operator about how to raft the rapids (drawing on the collective wisdom or corporate knowledge of its senior guides) and greater technical competency of the guide in following and supplementing that guidance.
- Crew competency may heighten or reduce the risk of flip over and depending on how marginal the level of risk is on the day, the individual guide will have to make this judgement.

At the moment, this approach is not reflected in the operational documents. There is no way of knowing, in the absence of documented procedures of the type that I am suggesting, whether the criticality of the guides entry to Wet n Moisty was fully appreciated for its potential to influence the risk of entrapment. The capture and documentation of this information using the concept outlined above can then form the basis of training programs and periodic performance reviews of the competency of guides. It also creates a documented base level of understanding which can be reviewed and modified in light of new experiences. Basic internal investigation of flip over's as a 'non- conformity' within the system would present the opportunity to extract lessons to be learnt and facilitate a review of the

documented procedures, challenging or confirming their merits. Periodic auditing would also be facilitated by documented standards.

The present approach of minimal operator guidance places a heavy reliance on the judgement of the individual guides and misses the opportunity to cumulatively capture and build a body of corporate technical knowledge. The industry has grown sufficiently, whatever the economic climate, to develop and implement a more mature and systemic approach to safety risk management.

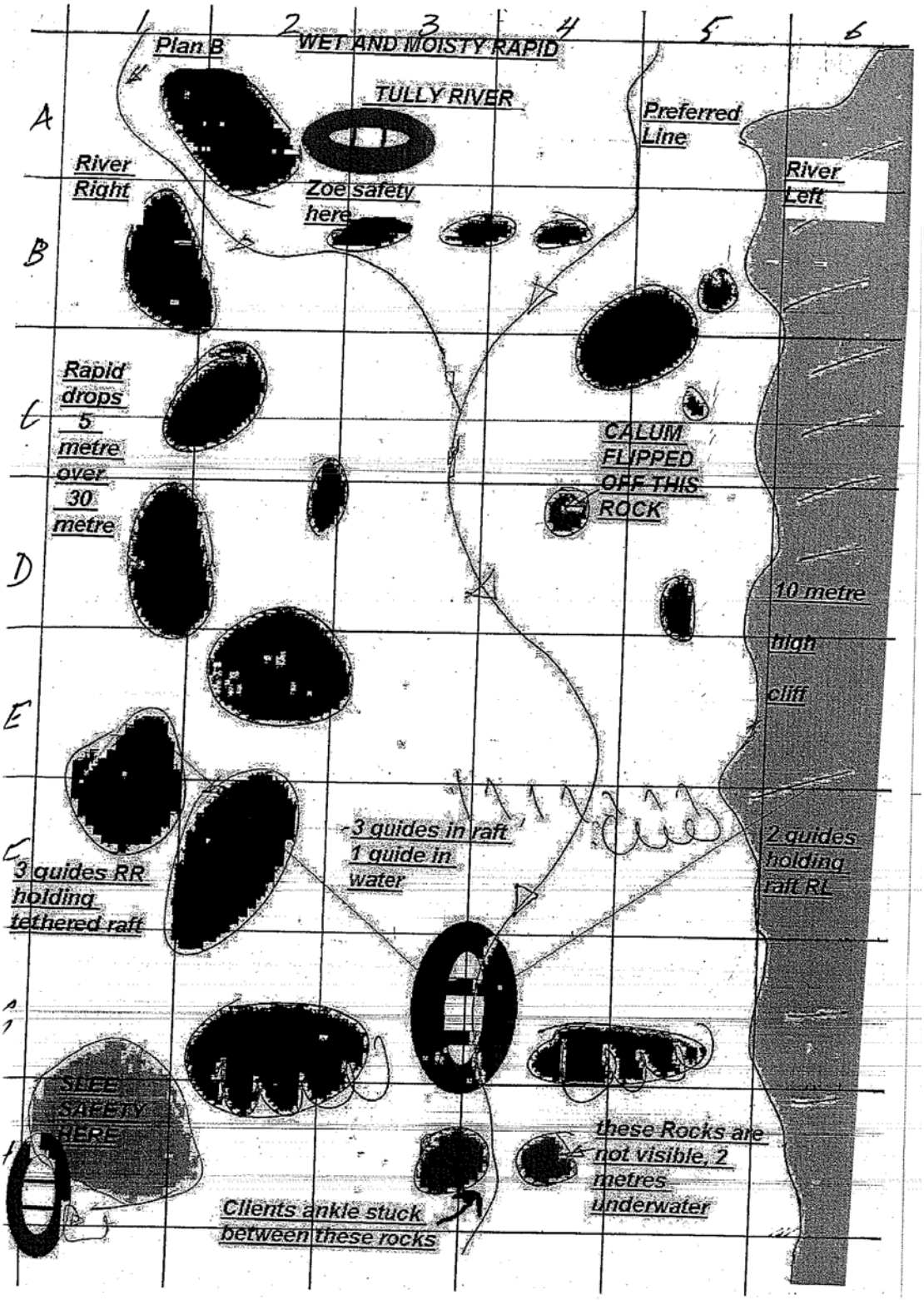
My recommendations for improvement are conceptual only. To progress them, commercial operators like RnR where most of the expertise rests, will need the assistance of persons with structural and process expertise in safety risk management to facilitate the development of safe operating procedures. With time, the senior guides will gain the necessary expertise and continue the development process.

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.

This is the third inquest in a series of four inquests dealing with five deaths (two deaths occurred in the same rafting incident) during whitewater rafting in North Queensland. I directed that the hearings proceed separately for the purpose of determining the circumstances of each incident and the operator's management of the risk of entrapment. I directed that a joint hearing be convened on conclusion of the separate hearings to address the common issue of adequacy of current standards and regulations.

Therefore, in this matter, I defer considering recommendations relating to the adequacy of current standards and regulations of the whitewater rafting industry pending delivery of findings from the other hearings and the convening of the joint hearing.

Attachment A



Attachment B

Photograph showing the raft Enigma negotiating the rapids ‘Wet n Moisty’ while backwards moments before the flip over. Mr Robinson is positioned directly in front of the guide (black helmet and T shirt). Image taken from Videographers Rock.