QUEENSLAND COURTS

OFFICE OF THE STATE CORONER

FINDINGS OF INQUEST

CITATION: **Inquests into the deaths of Ian Robinson, Natarsha Charlesworth, Georgina Hatzidimitriadis, Sang Won Park and Seongeun Choi.**

TITLE OF COURT: Coroner's Court

JURISDICTION: Cairns

FILE NO(s): 2007/102; 2007/109; 2008/304; 2009/489; 2009/491

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FINDINGS OF: Kevin Priestly, Coroner

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REPRESENTATION:

Counsel Assisting: Mr Dean Morzone

Introduction

It is important that the reader understand the statutory role of Coroner as well as the powers and limitations that affect how the Coroner performs that role.

A Coroner is required to make findings as to how a person died, when the person died, where the person died and what caused the person to die.

A coroner is precluded from including in his findings any statement or comment that a person is or may be guilty of an offence or civilly liable for something (s.45(5) and s.46(3)).

A coroner may, whenever appropriate, comment on anything connected with a death investigated at an inquest that relates to public health or safety and ways to prevent deaths from happening in similar circumstances in the future.

Inquests were convened into the following deaths:

- Ian Robinson;
- Natarsha Charlesworth;
- Georgina Hatzidimitriadis;
- Sang Won Park; and
- Seongeun Choi.

In the course of considering how each rafter died, I investigated and made findings about the surrounding circumstances and each raftering operator's management of safety. In addition, I made comments in the form of recommendations relevant to each operators approach to the safety risk management vis-à-vis the risk of entrapment.

An issue common to each inquest was the adequacy of the regulatory framework in establishing minimum safety standards for commercial rafting operators.

This issue was adjourned to a joint hearing. These are my findings and comments from that hearing.

I reviewed the history of deaths due to entrapment while white water rafting in North Queensland, with particular focus on the operator's approach to safety risk management at the time of the deaths; and any operator initiated changes to improve that approach in light of the deaths.

I then considered the regulatory context at the time of the death and any changes in light of those deaths. In other settings, in the absence of evidence of a continuing evolution on the part of operators to safety risk management, regulators have become more active in articulating expectations about the approach to, and level of, safety risk management expected of operators. This can take the form of education at one end of the spectrum, to publishing detailed regulatory standards at the other.

History of Rafting Deaths

There have been 8 deaths since 1999 associated with commercial white water rafting. There were 3 deaths before 2007, as follows:

- On 6 July 1999, Joseph Kwok-Leung Cheung aged 50 died on the Russell River;
- On 30 April 2001, John Wayne Curtis aged 32 died on the Tully River while working as a guide, supervising rafting on the Tully River; and
- On 30 August 2001, Wendy Morrison aged 41 died on the Tully River.

All the deaths were due to entrapment and drowning.

There was more information available to me about the death of Mr Cheung. The transcript of the findings at inquest (3 February 2000) is attached to the report of Mr Christopher Reeves (MSQ)[1]. Mr Cheung was a tourist participating in a trip on the Russell River with Foaming Fury using two person inflatable kayaks. There were 19 participants with two guides. While negotiating rapids known as the Roller Coaster, Mr Cheung's raft capsized. Mr Cheung was swept downstream until his leg became trapped underneath a rock. The guides were unable to free Mr Cheung and he drowned.

Interestingly, Coroner McIntyre noted the existence of a draft Code of Practice drawn up in 1994, revised in 1995 and under review again in 2000. He recommended the development of a uniform white water rafting standard.

Coroner McIntyre stated:

> *"The only recommendations I feel that I can make is that as referred to by Sergeant White and suggested by Mr Coxon. That is, a uniform white water rafting standard be formulated through consultation and wider spread research and then formally implemented by an organisation within the public sector, enforcement powers for policing the standard be incorporated as to ensure overall accountability and compliance by organisations partaking in the white water rafting industry."*

I will later return to the regulatory history.

For the sake of completeness, it is important that I note aspects of the findings about the five latest deaths that are relevant to the issue of regulatory standards.

On 31 July 2007 Mr Ian Robinson (aged 47) died while participating in a white water rafting trip with RnR Adventures on the Tully River. As the raft was descending rapids known as 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. The standard safety cover positions at the top and bottom of the Wet n Moisty were of limited value as risk controls since neither guide was in a position to intervene before Mr Robinson was washed past the point where he became entrapped.

On 7 October 2007 Ms Natarsha Charlesworth (aged 22) died at Cairns Base Hospital due to cardio-respiratory arrest as a consequence of drowning. On 6 October 2007 Ms Charlesworth was participating in a white water rafting tour with Raging Thunder on the Tully River when the raft that she was crewing, flipped while descending 'The Theatre' rapids. She was washed downstream and became entrapped underwater. Ms Charlesworth was extricated after a prolonged period of immersion and CPR commenced. She was evacuated to Cairns Base Hospital where she later died. Again, the standard safety cover positions had

[1] Exh. 8

little opportunity to intervene and recover Ms Charlesworth before she and others were washed past known entrapment points.

On 30 July 2008 Mrs Georgina Hatzidimitriadis (aged 50) died on the Russell River near a location known as Golden Hole, Babinda due to drowning. She was participating in a sports-rafting tour conducted by Foaming Fury and was under the supervision of two river guides. Mrs Hatzidimitriadis was accompanied by her nephew Mr Eremeidis on a two person inflatable sports raft. During their descent of rapids known as Three Ways, the raft overturned. Mrs Hatzidimitriadis was washed downstream and became entrapped underwater. She remained immersed for a period of about 10 minutes before she was extricated. Group management and a limited understanding of English played significant roles in a cascading series of unplanned events that resulted in Mrs Hatzidimitriadis and Mr Eremeidis inadvertently entering the rapids via the wrong route and dangerous chute. While attempts were made to stop their entry, their limited understanding of English resulted in confused responses to the Guides urgent instructions.

On 14 February 2009 Mr Sang Won Park (aged 20) died 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 became entrapped underwater, beneath the rock that the raft struck. His body was unable to be extricated until the following day.

On 18 February 2009 Ms Seongeun Choi (aged 24) died 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 travelling in the same raft as Mr Park and similarly became entrapped. However, River Guides were able to locate and extricate her in a reasonably short period. She was transferred to Cairns Base Hospital but over the following days, her condition deteriorated and she died.

The basic issue of group management of rafts at entry to the rapids arose. The raft on which Mr Park and Ms Choi were travelling had entered the top of the rapids but became lodged; its side against a rock. While the crew attempted to free the raft by paddling and transfer of weight, another rafting entered the rapids, struck the stopped raft, dislodging and diverting it down a dangerous route where it capsized.

Key Lessons of the Current Inquests

Within the findings relating to each death subject to the current inquests, I identified opportunities for better safety risk management on the part of the operator.

I took a similar approach to the analysis of the circumstances surrounding each death. I applied basic risk management principles to review the adequacy of the available control measures relied upon by the operators to manage safety. The relevant hazard was identified as entrapment. The pre-conditions to entrapment as well as the variables relevant to those pre-conditions were identified. I then considered the available risk controls that might be used to intervene and influence the pre-conditions, their variables and ultimately the outcome. Through this process, I identified the following potential risk controls:

1. Suitability and serviceability of the raft (which may influence the prospect of flip over);
2. Suitability and serviceability of the Personal Floatation Device (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 entering and 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).

The last item includes group management, selection of routes and location of cover positions.

At each set of rapids, all risk controls have application. However, the outcome in terms of residual risk is different depending on the nature and extent of the potential for entrapment and the effectiveness of the risk controls.

The manuals of each of the operators do not demonstrate any formal application of a risk management process underpinning the current operating procedures, in particular, what risk controls are relied upon to manage entrapment. While it might be argued that it 'goes without saying', to my mind the first step in properly articulating a formal safety risk management process is identifying the hazard, listing the available risk controls and discussing the manner of implementation.

In all of my findings, no issue arose about the implementation of the first three types of risk control (points numbered 1, 2 and 3 above). The rafts and PFD's were suitable and appropriately designed and maintained. Participants demonstrated a reasonable level of understanding of the white-water float position. Most participants adopted the position when thrown into the white water, where it was possible to do so. However, the effectiveness of these risk controls will vary from rapid to rapid. These risk controls are generic and of universal application across all rapids. No thought is required about how each risk control might be used at each rapid.

There was no criticism, at a general level, of crew competency and guide competency. However, crew and guide competency should be considered in the specific context of particular rapids when considering the cumulative adequacy of all risk controls that are used. By this I mean that a generally adequate level of guide and crew competency might be sufficient for most rapids when applied in conjunction with other risk controls. However, there may be particular rapids where mix of risk controls used does not achieve an acceptable level of risk. On these occasions, the level of guide and crew competency may need to be relatively higher. This may mean a higher level of guide competency in the training of the guide for that particular rapid. It may also mean that if a crew demonstrates a low level of competency, it should portage the riskier sections.

In each case, I reviewed the operators approach to providing leadership and guidance about how safety is managed vis-à-vis the risk of entrapment as reflected in the operations manuals.

Each operator had a training program for guides that included minimum qualifications or initial training standards, a period of supervised induction to a particular river and recurrent training to ensure maintenance and enhancement of existing skills and knowledge. Each operator also had an operations manual that provided guidance, with varying degrees of detail, about navigating the river at different water levels and the possible locations of safety cover (a guide whose sole duty is to provide assistance to rafters in the water or otherwise having difficulty).

The general approach of all operators was to train guides to a specified level of competency and then rely on their skill and judgement to safely navigate the rafts through the rapids. Many guides gave evidence to the effect that the river was a dynamic body of water and the question of how best to navigate a particular section on a particular day was best left to the individual guide. The guides and operators preferred to maintain this approach and were

resistant to any notion of standard procedures for each set of rapids notwithstanding the fact that most guides could 'rattle off' (in evidence) standard approaches and routes to particular rapids that avoid known hazards. The high level of detail that the some guides were able to articulate in evidence stood in stark contrast to the dearth of material reflected in the operations manuals.

In the course of considering preventative recommendations, an opportunity was identified to apply a formal and documented risk management approach to the rafting of each set of rapids, to be incorporated into the operations manuals. There was little or no evidence to suggest that each rapid was formally risk assessed to:

1. Identify the location of potential entrapment points;
2. Assess the prospect of a flip over or other event that might result in a rafter or rafters entering the water;
3. Assess the prospect of rafters in the water passing near an entrapment point;
4. Assess the extent to which the placement of guides in available cover positions will mitigate the risk of entrapment; and
5. Consider the availability and mix of other risk controls that might be used.

A significant improvement in safety would be achieved if this approach was adopted.

There is no doubt that the current approach of the operators has evolved over many years. The preferred routes and location of cover positions is based on the wealth of experience that the senior guides have accumulated over daily trips over many years. Many of the senior guides have been in the industry for 10 to 20 years. They are among the most experienced in the world. However, it appeared to me that the introduction of a formal risk assessment approach would initiate a process of capturing the benefit of their knowledge and experience via a formal framework as well as the development of 'best practice' for each rapid. The operator might roll the benefits of this approach into a safety management system.

On review of the operations manuals, it was evident that little had changed over recent years about the approach and level of guidance given to guides about management of safety vis-à-vis particular rapids and the hazard of entrapment. Nowhere in the operations manuals is there any evidence of the formal application of the risk management processes and principles. The manuals merely embody 'the way we do it' approach with very little attention to detail about the mix of risk controls and strategies for their use at particular rapids.

During evidence at the joint hearing, Raging Thunder reported difficulty finding the necessary technical assistance to implement my recommendations while Foaming Fury was able to report good progress with implementing the recommendations. I detected a lingering concern on the part of some senior guides and managers that what was intended by my recommendations was the use of risk assessments to develop a prescriptive rule based approach to how rapids should be navigated and cover positions managed. Nothing could be further from the truth. This concern suggests a fundamental misunderstanding or lack of understanding about the current safety risk management practices common place in other commercial, recreational and industrial settings.

I note that the industry is relatively young (20-30 years) and most of the senior guides and managers have grown up in this industry. This may have limited their opportunity to experience safety risk management practices in other industrial, commercial or recreational settings.

In summary, the operators approach to safety risk management in relation to entrapment over the period of the subject deaths was and generally remains as follows:

- High reliance on the competency of the leaders and guides with training programs to achieve the requisite competency; and
- Provision of high quality rafting and safety equipment.

Again, in summary, I have recommended that the operators build on this approach with the operator providing greater guidance in the form of standard operating procedures developed through the application of a formal risk management process applied to each set of rapids with emphasis on achieving the best mix of risk control strategies.

Ultimately, I made recommendations in each death similar to the following arising from the death of Ms Charlesworth:

> ***I recommend that Raging Thunder 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.***

It appears from the lack of progress or natural evolution in recent years in adopting and implementing current approaches to safety management and the patchy implementation of my recommendations, self-regulation is not an option.

I next turn my mind to the regulatory framework that influences operators in their approach to safety management.

Regulatory Framework

Introduction

At the time of these deaths, there were two organisations with a government regulatory interest, Workplace Health and Safety Queensland (WHSQ, now Fair and Safe Work Queensland) and Maritime Safety Queensland (MSQ). In more recent years, Sport and Recreation Services within the Department of Communities has taken an interest in providing 'guidance' material. It recently facilitated the development of Adventure Activity Standards including the River Rafting Adventure Activity Standard (the Rafting Standard). The Rafting Standard provides voluntary minimum guidelines about safety management.

Although there was significant collaboration between the two principal regulators, the legislative background of each should be considered separately.

Workplace Health and Safety Queensland

Legislative Position at 2007

Historically, the primary focus of workplace health and safety regulators has been the health and safety of workers.

The Workplace Health and Safety Act 1995 applies a predominantly performance-based approach to the regulation of safety. Rather than prescribing what an employer must do to provide a safe workplace and system of work, the Act focuses on an outcome and provides flexibility to the employer as to how to achieve that outcome. The Act imposes, on a number of persons involved in conducting a business or undertaking, an obligation to ensure the workplace health and safety of workers. This general safety obligation extends to cover persons other than workers whose safety may be affected by the activity. Over the last decade, the government has made and amended specific regulations and codes of practice under the Workplace Health and Safety Act to address the risks arising from recreational diving and snorkelling carried out by persons conducting a business or undertaking. By this means, recreational diving and snorkelling operators are provided with guidance about how to meet the general safety obligations. I will return to the codes of practice applicable to recreational diving and snorkelling later as an example of the nature and level of the guidance provided.

There are a wide range of high risk commercial recreational activities that are covered by the Act. However, in the absence of a specific regulation or code of practice about how to manage particular risks, the onus is on the operator to discharge the general safety obligation by adopting and following any way to discharge the obligation; and taking reasonable precautions and exercising proper diligence to ensure the obligation is discharged (section 27).

There are no specific regulations or a code of practice about managing white water rafting risks. Therefore, the discharge of the general safety obligation is reliant on the operator taking reasonable precautions and exercising proper diligence. How does one assess what precautions are reasonable and whether an operator has exercised due diligence?

The Risk Management Code of Practice 2007 provides that the risk management process is required under the Workplace Health and Safety Act 1995 (s.27A) and must be used to achieve workplace health and safety. It further states that this code provides a framework for other codes of practice in managing risks under the Workplace Health and Safety Act. Finally, in section 2.1 under paragraph number 4 the Code provides that in the event of no regulation or ministerial notice, Code of Practice or guidance material about a particular hazard or risk, the risk must be assessed using the risk management process.

The Code then sets out in detail the risk management process. However, in broad terms, that process is as follows (per section 2):

1. identify hazards, based on experience, recorded data and other information;
2. assess the associated risks by making an evaluation of the level of risks to the health and safety of workers, based on the consequences and likelihood of harm;
3. select control measures from the hierarchy of control (e.g. eliminate, substitute, isolate or engineer out the risks, or reduce them through administrative measures or personal protective equipment) by selecting the highest order control method possible and then proceeding down the list in order;
4. implement or apply the selected control measure(s) in the workplace; and
5. monitor the control measures to ensure that they are working correctly to control the risks and that no other risks have been introduced.

To what extent does the risk management process identified in this Code provide operators and regulators with guidance as to what is expected in the management of the hazard of entrapment? As will become apparent in the context my discussion about the new the Rafting Standard, the answer to that question is 'very little'. In short, the operators assert that their approach to safety management prior to, and following, these deaths was based on the application of this risk management process. However, the risk controls and their application are applied at a broad, undocumented level; and not specific to each set of rapids as I have suggested should be the case.

Mr Chris Coxon from WHSQ reported that WHSQ relied on other standards when determining what constitutes reasonable precautions and the exercise of due diligence. He referred to the following:

- Maritime Rules Part 81 – Commercial Rafting Operations – Maritime New Zealand; and
- Commercial River Rafting Act and Safety Regulations from Canada.

Monitoring and Intervention to 2007

WHSQ has been active in monitoring white rafting operations prior to these deaths. Inspectors and investigators were involved in the earlier deaths as well as enforcement action against one of the operators following one death. WHSQ also undertook its own major investigations into the deaths that are the subject of these inquests.

However, Mr Coxon reports that although WHSQ had a broad range of expert staff as well as training in investigative processes, there are no inspectors with technical capability and expertise in white water rafting. Mr Coxon reported that there was considerable expertise within the white water rafting industry and that WHSQ has sought to use this experience to assist in its investigations. Mr Coxon acknowledged that such assistance was subject to any conflict of interest.

I also note that those with the requisite expertise and are not employed by any of the operators, have usually had a long history of consulting to the operators and providing other services to them. There capacity to assist WHSQ will always be limited to commercial considerations.

During evidence, WHSQ inspectors conceded that their investigation was largely a case of establishing what happened and checking the events for compliance against the operators own procedures. It was reportedly difficult and particularly challenging, without the necessary expertise, to question the intrinsic adequacy of the procedures.

Legislative Developments

During the last few years, an attempt was made to harmonise workplace health and safety laws throughout Australia. A model Work Health and Safety Act was developed by the States

in cooperation with the Commonwealth with the intention that all jurisdictions would enact the model Act and Regulations by 1 January, 2012. Queensland implemented the model Work Health and Safety Act through its enactment and repeal of the Workplace Health and Safety Act. The new Work Health and Safety Act came into effect on 1 January 2012. However, in the process of considering which work health and safety laws should be harmonised, a majority of jurisdictions decided that the model would not include specific regulations or codes of practice for recreational diving and snorkelling. Consequently, the Queensland Government decided to introduce legislation to maintain a regulatory involvement in recreational water activities such as snorkelling and diving.

The Safety in Recreational Water Activities Act 2011 was passed and took effect from 1 January, 2012. The main purpose of the act is to ensure the health and safety of the people to whom commercial recreational water activities are provided. The Act places a duty of care on persons conducting a business or undertaking providing recreational water activities to ensure, so far as is reasonably practicable, that the health and safety of persons for whom the activities are provided are not put at risk by the provision of the recreational water activity.

The Codes of Practice created under the Workplace Health and Safety Act 1995 (now repealed) relating to diving and snorkelling now take effect under this Act.

Commercial white water rafting activity is an activity to which the new Work Health and Safety Act applies.

WHSQ is of the view that the existing Rafting Standard provides operators with specific guidance on river rafting and the standard must be considered in the overall scheme of duties of care held under the new Work Health and Safety Act as well in the Safety in Recreational Water Activities Act.

However, an issue arises about the efficacy of the standards in the Rafting Standard in its application to commercial rafting operations and to the risk of entrapment in particular. I will address this issue in the course of reviewing the content of the Rafting Standard later in these findings.

In conclusion, the new Work Health and Safety Act continues the approach of imposing general safety obligations on organisations such as commercial white water rafting operators but it does not address the lack of guidance given to such operators about how to discharge their general safety obligations, particularly with respect to entrapment. The extent to which reliance might be placed on the Rafting Standard as a measure of reasonable precaution and due diligence is yet to be tested. In any event, that Standard does descend to the level of detail about the approach to managing that risk as reflected in my recommendations.

Maritime Safety Queensland

Legislative Position 2007

Maritime Safety Queensland (MSQ) within the Department of Transport and Main Roads is responsible for administration of Transport Operations (Maritime Safety) Act 1994 (TOMSA), Transport Operations (Maritime Safety) Regulation 2004 and associated Standards. TOMSA establishes a regulatory framework and standards applicable to ships and their operations. Rafts are considered ‘ships’ within the meaning of TOMSA. There are a number of mechanisms used under TOMSA to ensure maritime safety, including:

- Requiring certain persons to be licensed or accredited;
- Requiring certain ships to be registered;
- Holding owners and masters of ship responsible for ensuring safe operation of ships;
- Requiring ships to carry prescribed safety equipment.

Some of the mechanisms are not applicable to rafting. Rafts are not required to be registered nor are guides required to be licensed. However, TOMSA does take effect to impose general safety obligations on owners and masters of vessels like white water rafts to ensure they are safe, fit for the purpose for which they are intended, properly equipped and operated safely[2]. Another mechanism used by MSQ as an opportunity to oversee commercial rafting operations is the requirement that commercial operators give notice to the Regional Harbour Master or General Manager of the plan to start business[3]. There is also an obligation on MSQ to investigate a marine incident, meaning in its application to rafting, death or grievous bodily harm to a person caused by ships' operations. There is an obligation on operators to report any such incident.

Monitoring and Intervention to 2007

In his report[4], Mr Christopher Reeves, Director Executive Services and Compliance, MSQ, stated that the issue of interpretation and enforcement of the general safety obligation requiring safe operation was problematic. Although the conditions of the rafts and qualifications of the guides may be beyond reproach, the variable factors associated with the environment as well as 'thrill' of the trip made it difficult to determine what is safe or an acceptable level of risk. Mr Reeves reports that these factors posed considerable difficulty in monitoring and enforcing general safety obligations.

MSQ was asked to report to me on how the regulatory framework supports inspections and interventions peculiar to the risk of entrapment prior to and following the deaths under investigation. Mr Reeves reported the absence of 'industry specific' standards meant there was nothing to support inspections and compliance interventions peculiar to that risk.

MSQ Developments - Compliance Guideline

In 2009, MSQ took the initiative to develop a Compliance Guideline for White Water Rafting Operators requiring operators to provide a Safety Operational Plan. It was a requirement that the Plan include a Risk Assessment identifying all hazards, assess and prioritise the risks, decide on appropriate control measures and monitor the implementation of those control measures. MSQ introduced this requirement as a means of it being satisfied that the operator was discharging its general safety obligations. Much of the detail of the Compliance Guideline is the same as the Rafting Standard (to be discussed later). MSQ acknowledges that fact in its letter to each operator noting its intention to monitor the discharge of the general safety obligation against this guideline.

The Compliance Guideline was reviewed to identify those matters that might be relevant to entrapment. It addressed the following:

- Fitness to participate;
- Ratios of guides to participants;
- Emergency response;
- Responsibilities and competencies of Operators, Leaders and Guides;
- Raft and safety equipment standards.

However, most of these aspects are generic, non-contentious and simple to implement.

It is interesting to note the nature and extent of the responsibility imposed on the operator. Section 4.2 provides that an operator must ensure that the leader and guides have the necessary experience and skills, and they fulfil their responsibilities. Section 4.3 then sets out the responsibilities of the leader in considerable detail. It starts with the duty to ensure safe

[2] By application of ss. 41 and 43
[3] S.146 TOMSA
[4] Exh 8

operations (not expressed as a direct responsibility of the operator). The first listed responsibility is to work within policies, procedures and SOP's of organisational stakeholders and land/water managers. It is not clear whether the expression 'organisational stakeholders' was intended to include the 'operator'. The very clear emphasis is on reliance on the Leader and Guides to manage safety with little or no obligation of the operator other than to submit a Safety Operational Plan.

One of the requirements of the Safety Operational Plan is a documented and site specific, risk assessment plan that includes identification of specific hazards and the procedure for management of hazards (s.2.1.1). The Activity Plan within the Safety Operational Plan at the planning stage must address features relevant to an area, including:

- Area and route selection (description of intended route);
- Area specific information;
- Availability and suitability of maps;
- Terrain and water characteristics (eg grade, technical difficulty) and associated implications and hazards (see Appendix 2 of AAS for River Rafting, Australian White Water Rafting Rapid Grading System); and
- Seasonal factors.

Section 2.3 outlines the requirements of the risk assessment plan, including the application of a risk assessment process similar to that described in the Risk Management Code of Practice 2007.

During 2009, 2010 and 2011, MSQ conducted audits of white water rafting operators in North Queensland against the Compliance Guideline. I have reviewed the documentation associated with each audit to gain an understanding of the effectiveness of the criteria used.

Again, the operators each pointed to existing operations manuals as evidence of compliance with risk management requirements as well as requirements for an Activity Plan. Operators relied on the grading of each rapid against the Australian White Water Rafting Grading System as evidence of a risk assessment. That system grades rapids from 1 to 6 where 1 represents small to regular waves presenting no difficulty; to 6 which represents violent and nearly impossible to negotiate conditions presenting definite risk to life.

The concept of 'site specific hazard identification' and 'risk management' was applied by the regulator and operator in a manner that meant:

- The mere grading of a rapid pursuant to the Grading System was adequate;
- The degree of guidance given by an operator in the manual about route selection was adequate; and
- The level of identification and articulation of risk controls used was the same that applied at the time of the subject deaths and was considered satisfactory.

Overall, the audits found no significant shortcomings or opportunities for improvement.

While I consider the audit process was highly commendable and the best that the regulators could achieve given the dearth of regulatory and technical support, there was and remains a major opportunity to improve safety by requiring the operators to descend to the level of detailed risk assessment and strategizing recommended in my findings.

Whitewater Rafting Standard

As to past attempts to create a regulatory framework specific to white water rafting, Mr Reeves from MSQ referred to the 1994 development of the Qld Whitewater Code of Practice for Commercial Operations and the 1995 development of a Draft Standard Whitewater Commercial Operations – Qld. He reported, "It is understood that due to other priorities these initiatives proved fruitless". He also reported that in 1999 the Department placed advertisements in the press seeking submissions from the public on the proposal to create

draft Operational Procedures for Commercial White Water Rafting Operations. He concluded, “It is my understanding that this proposal did not receive sufficient government support to proceed.” According to Mr Reeves, the introduction of a standard remained dormant until August 2005 when the State Government established the Adventure Activities Inter-Departmental Committee. This was the start of a process that ultimately resulted in the development of the Adventure Activity Standard for River Rafting released on 26 February 2010.

I have reviewed the draft 1994 Code of Practice and draft 1995 Standard. Both adopt a rule based approach to operational safety, rather than a risk management approach. There are rules about minimum safety equipment, serviceable rafts, and minimum qualifications. The rules required a training manual and operations manual but did not give any guidance about how much detail should be included in each. The approach may have been progressive at its time but is clearly outdated. It is interesting to note that the concepts used in the standards are carried over into the Rafting Standard. The single greatest risk to life is entrapment but a huge volume of material is taken up in the standards with ‘rules’ without addressing the principal factors relevant to this particular hazard.

Before considering the content of the Rafting Standard, it is important to acknowledge and commend the effort of Sports and Recreation in the Department of Communities in facilitating its development. The Standard will be of great assistance to many organisations about how to safely conduct white water rafting activities. However, there is a marked difference between what regulators might expect of small or volunteer groups such as Scouts or schools who occasionally participate in white water rafting; and what might be expected of major commercial operators that raft the same river every day.

I note the Rafting Standard acknowledges it was developed through the skill and experience of a working group that included representatives from each of Foaming Fury, Raging Thunder and RnR.

There are a number of references throughout the Rafting Standard to helping providers (operators) develop standard operating procedures through application of the risk management process. However, when it comes to assigning roles and responsibilities, it is the Leader that is required to accept responsibility for the planning, preparation and conduct of the activity. It is only in a sub-heading under ‘Leader’ does there appear a reference to ‘Responsibilities of the provider’. As described earlier when reviewing the MSQ Compliance Guideline based on the draft of this document, the responsibility of the provider is limited to employing suitably experienced and skilled leaders and guides; and ensuring they fulfil their responsibilities. A few other matters incidental to these responsibilities are addressed. However, most importantly, notwithstanding numerous references to operating procedures and standard operating procedures, the provider is not assigned any responsibility for ensuring the development and implementation of standard operating procedures relevant to safety.

It gets worse. In Section 5.2, it is recommended that the Leader’s responsibilities include ‘working within the policies, procedures and activity standard operating procedures (SOPs) of the organisational stakeholders and land/water managers’. Again, it is not clear what is contemplated by this provision. Does it assume the Leader is conducting the activity under the umbrella of an organisation, for example, scouts or a school? If so, why is there no mention of the obligation of that organisation to provide appropriate ‘SOP’s’? It would seem pointless to require a leader to accept responsibility to implement something that is not itself the subject of an obligation for development.

There is striking similarity about the minimalist approach taken in the Rafting Standard in assigning most responsibility for operational safety to the trip leader and guides as that taken by each of the commercial white water rafting operators.

Again, the reference to site specific hazards and the requirement that they be documented is accompanied by a reference to risk management principles and guidelines but no guidance is given about the degree of detail in their application.

A very good reflection of how operators interpret and apply the requirement for the application of risk management principles to white water rafting appears in what is described in the Rafting Standard as an 'exemplar' risk management template in Appendix 3. The table format shows five columns, named Hazard, Risk, Risk Assessment, Control Measure and Evaluation/Comments.

How is the hazard of entrapment treated in this exemplar template?

Swimming in white water	Foot/ body entrapment	Prob L Mag H	Brief participants and provide with information to read	
	Injury from impact with rocks/ objects in water	Prob M Mag H	All participants to sign Waiver of Liability to ensure they are aware of inherent risks	
			All participants to wear buoyancy vests correctly at all times (checked by guides)	
	Emotional distress		All participants to wear helmets correctly while on river (checked by guides)	
		Prob M Mag M	Participants instructed not to intentionally enter the water	
	Drowning	Prob L Mag H	Train participants to hold onto ropes if they fall out of rafts and guides will rescue them	
			...	
			...	
			...	

The identification of an activity (swimming in white water) and grouping of potential consequences (of which leg entrapment is but one) has resulted in a grouping of control measures. This approach accentuates the existing tendency of the operators to consider control measures of universal application without descending to a consideration of their site specific application and effectiveness. This failure was common to circumstances surrounding all the subject deaths. Further, each of these control measures is relatively weak within the hierarchy of control measures. They also focus on the participants. Other than the wearing of lifejackets, these control measures do not include those identified in the course of evidence from guides and managers; and detailed in my findings. There is no strategizing about the mix of what control measures will achieve an acceptable level of safety in relation to the entrapment at particular locations.

This is not an approach that I can commend in light of what the key lessons were in these inquests.

Comments

Each of the investigators, inspectors and managers from MSQ and WHSQ gave evidence or reported on the benefit of a Code of Practice to support their monitoring and interventions including enforcement if necessary. I am persuaded that there is a need for a Code of Practice the following reasons:

1. There is history of rafting deaths due to entrapment;
2. There exists the opportunity for significant improvement in the approach of the operators to safety management specific to entrapment as detailed in my findings relevant to each death;
3. The present standards do not support the opportunities for improvement identified in my findings and there is doubt about the legal enforceability of voluntary standards like the Rafting Standard.;
4. A change in the operators approach to management of safety specific to entrapment requires the support of a Code of Practice.

By way of comment pursuant to section 46 of the Coroners Act 2003, I make the following recommendation:

A Code of Practice be developed for commercial white water rafting operations under the Safety in Recreational Water Activities Act 2011. The Code of Practice be developed in consultation with the operators but as a minimum, it require the development of safe operational procedures specific to each set of rapids by conducting formal risk assessments 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 periodic review 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 as well as in text. 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.