



**Report to the Minister of Justice
and Attorney General
Public Fatality Inquiry**

Fatality Inquiries Act

WHEREAS a Public Inquiry was held at the Provincial Court Criminal, Calgary Courts Centre
in the City of Calgary, in the Province of Alberta,
(City, Town or Village) (Name of City, Town, Village)
on the 1,2,3 and 4th day of October, 2007, (and by adjournment
year
on the _____ day of _____, _____),
year
before Judith Shriar, a Provincial Court Judge,
into the death of Jeremy David James Paquette 33
(Name in Full) (Age)
of 71 Edendale Crescent N.W. Calgary, AB and the following findings were made:
(Residence)

Date and Time of Death: April 8, 2005 - Time of death unknown

Place: Rockyview General Hospital, Calgary, Alberta

Medical Cause of Death:

("cause of death" means the medical cause of death according to the International Statistical Classification of Diseases, Injuries and Causes of Death as last revised by the International Conference assembled for that purpose and published by the World Health Organization – The Fatality Inquiries Act, Section 1(d)).

Drowning

Manner of Death:

("manner of death" means the mode or method of death whether natural, homicidal, suicidal, accidental, unclassifiable or undeterminable – The Fatality Inquiries Act, Section 1(h)).

Accidental

Circumstances under which Death occurred:

1. At around 9:30 p.m. on April 4, 2005, Jeremy Paquette was engaged in prolonged underwater breath holding in the dive tank, part of the supervised public pool facility at the Talisman Centre located near downtown Calgary. After being submerged for a few minutes, a lifeguard became concerned and initiated a rescue. Mr. Paquette was lifted out of the pool unconscious and not breathing. Resuscitation techniques were undertaken and Emergency Medical Services were called to the scene. Mr. Paquette was taken via ambulance to the Rockyview Hospital. Hospital records reveal brain injury caused by lack of oxygen. Mr. Paquette died April 8, 2005. According to the certificate of the Medical Examiner, his death was accidental and caused by drowning.
2. The Talisman Centre is a public recreational facility also used by numerous organized sports groups, including many comprised of elite athletes. Its aquatic center has two sections. The original larger room contains a 50 meter pool, (the competition or “comp” pool), a shallow teaching pool, the dive tank (10 meters x 10 meters, and 15 meters deep) surrounded by boards of various heights, and a hot tub. The adjacent section, the newer part of the pool facility, also contains competition length pool and another hot tub. The floorplan of the pool facility was entered as Exhibit 2.
3. At any given time there are four or five lifeguards on duty. On the evening in question there were five. The lifeguard stations were identified specifically, with reference to the floor plan, but roughly speaking one lifeguard is posted at the south end of the comp pool with responsibility for guarding the teach pool and south end of the large comp pool. Another is located at the north end of the comp pool with responsibility for the north half of that pool and the dive tank. A third lifeguard station is located in, and responsible for, the “new” pool area, and finally there are either one or two guards on duty but not necessarily at the pool side, with roaming responsibilities including some maintenance, and communicating with customers. The specific areas under each lifeguard’s responsibility are also described in the Aquatics Procedures document at Tab 8 of Exhibit 1.
4. The guards rotate through each station for ½ hour shifts. All of the lifeguards on duty carry two way radios to communicate between themselves and with other Talisman Centre staff. In addition, various logbooks are maintained by aquatic center staff to record noteworthy matters occurring on shifts. Lifeguards are required to review the logbooks before the start of their shift.
5. All of the lifeguards at the Talisman aquatic center on duty April 4, 2005 testified to their qualifications include having completed required National Lifesaving Society courses, training in standard first aid, including cardio-pulmonary resuscitation (C.P.R) training and automatic external defibrillator (AED) training. Their qualifications were current and up to date. In addition to accreditation pursuant to National Lifesaving Society standards, all testified that the Talisman requires additional facility specific training before an individual can work there as a lifeguard.
6. The aquatics director at the Talisman as at April 4, 2005 was Ms. Mary Buchignani. She now lives in Europe and did not testify. Mr. Donald Graham McKerrell, the Talisman’s current aquatics director who assumed that position in February 2007, met with Ms. Buchignani in the summer of 2007 to discuss these matters. He testified that although his responsibilities as aquatic director are the same as Ms. Buchignani’s - recruitment, training, direct supervision

and some business planning - he thought his training program was somewhat different than hers. He said his role in training lifeguards is not simply actual hands on delivery, but that he attempts to look at training from a larger perspective, to ensure lifeguards get the right training, and to cover “any unknowns... as they creep in, try to be creative”. He explained that new lifeguards attend a 15 hour program described as “boot camp”, addressing policies, procedures and fitness.

7. In addition to the training to become a lifeguard, there are required regular re-certifications including for CPR and for use of the AED. These are taught in-house by representatives of the manufacturer. Also monthly aquatic staff meetings are held to discuss current topics, with a safety training and review component at each meeting.
8. Ms. Nicole Madden, a lifeguard at the Talisman Centre, present but not on duty the evening of April 4, 2005, testified that the lifeguards who open the facility each morning must check the AED as part of their duties, including turning it on, ensuring the battery is functioning and the attachments in order.
9. Various Talisman aquatic center standards, procedures, rules and guidelines in effect as at April 2005 were entered under Tab 8 of the binder Exhibit 1. According to the Scanning Standards, a lifeguard undertakes to complete a scan of the pool and deck area in their section consistently every 20-30 seconds, and to rove in order to eliminate blind spots including areas next to pool walls. The Scanning Standards document states that it is “very difficult to maintain an effective scan on pool 1 when... at the dive tank”. Although pool 1 is not defined, I understand it to mean the north end of the comp pool. The Aquatic Procedures document also contained at Tab 8 of Exhibit 1 is to the same effect, encouraging walking patrols and using discretion to eliminate the possibility of reduced vision due to numerous causes including blind spots.
10. Testimony was heard from Mr. Lawrence Patterson, who for approximately 18 years has been the Technical Director for the National Lifesaving Society with the Alberta/Northwest Territories branch. His responsibilities include program design and training standards, and aquatic safety management which relates to facility safety standards. Mr. Patterson was the principal author of the Society’s document “Public Aquatic Facility Safety Standards”, entered at Tab 15 of Exhibit 1. In it, the Society describes itself as an expert authority in the field of aquatic safety and a leader in research and prevention of injury and drowning. The standards were published to assist pool owners and operators develop protocols for their facilities to protect customers and reduce legal and other risks.
11. Although there is no requirement that public pool facilities involve the Lifesaving Society in designing or monitoring safety standards, pool owners and operators are invited to contact the Society for assistance in understanding and implementing appropriate aquatic safety policies and procedures. Mr. Patterson testified regarding types of consultation available to public aquatic facilities ranging from very specific requests for information to more in depth assistance analyzing the facility’s safety needs to comprehensive audits of existing safety systems. While Mr. McKerrell expressed passing familiarity with the Lifesaving Society safety standards document, it appears that the Talisman Centre has direct experience with the services of the Lifesaving Society, who were consulted regarding developing a lifeguarding plan for the pools in the newer section of the aquatic center.
12. Mr. Patterson testified regarding appropriate scanning procedures, stating that although a

systemized approach is preferable, normally a lifeguard has discretion regarding what specific sort of system works best for them. He explained the role of memory for a lifeguard scanning a large space in a short time period, assisting in the systematic return of attention to, and continual assessment of, particular situations or persons.

13. Mr. Patterson also described the difficulty of actually seeing what is going on beneath the surface of the water even in optimal visibility conditions. Because of distortions naturally occurring even in calm water, interpreting a customer's underwater activity is a challenge for lifeguards. This gives rise to the need for the exercise of judgment by lifeguards in monitoring their sections and in deciding whether to intervene to check on a customer's welfare. Appropriate intervention might range from making eye contact or a hand wave, to tapping a customer with a reaching pole, to actually entering the water to check. Reliance on a lifeguard's discretion is required. In the preface to the Talisman Centre Aquatic Rules, also included at Tab 8 of Exhibit 1, reference is made to the need for discretion in assessing situations, noting that there are many variables which must be considered.
14. The Lifesaving Society safety standards document recommends uniforms for lifeguards as a safety feature which allows lifeguards to be quickly identified by users of the facility. Talisman Centre lifeguard uniforms, worn over a bathing suit, include a T-shirt, shorts and appropriate footwear. Mr. Patterson explained that in a rescue situation, depending on the circumstances such as the depth of the anticipated rescue, removing one's clothes may or may not be required.
15. The evening of April 4, 2005, there were five guards on duty in the Talisman aquatic center. Ms. Jennifer Brake testified that she guarded the dive tank and north comp pool section between 8:00 and 8:30 p.m. She recalled seeing Mr. Paquette wearing fins and a snorkeling mask, and swimming lengths along the wall of the dive tank, holding his breath the whole time. She said he took periodic rests in the corner to catch his breath and repeated the exercise. She said he was a couple of meters below the surface but not at the bottom. Her testimony was that she had never seen him sit in the bottom corner of the pool. Though she had seen him before doing this sort of activity, she had never spoken to him.
16. Another lifeguard on duty at the dive tank earlier that evening, Ms. Rhonda Stirler, also testified that she saw Mr. Paquette swimming lengths of the dive tank holding his breath but that she did not consider it to be anything very unusual. She had seen him on previous occasions engaged in similar activity. She had never spoken to him. Ms. Stirler said she had seen other patrons undertaking similar underwater breath holding but she had never discussed the activity with any of them.
17. Mr. Ian Shoults guarded that section between 8:30 and 9:00 p.m. He had only a vague recollection of seeing Mr. Paquette in the dive tank that evening and had no recollection of seeing him there at any previous time. He did not consider the underwater length swimming to be anything out of the ordinary.
18. Mr. Dave Thrun replaced Mr. Shoults to start his half hour shift in that section at 9:00 p.m. He said he noticed Mr. Paquette from the beginning of his shift, but that no other previous lifeguard brought him to his attention. He said he had seen him before doing similar breath holding activity either in the teach pool or in the dive tank. He had never spoken to him.

19. Mr. Thrun said he paid as much attention to Mr. Paquette as he could. He recalled that Mr. Paquette came out of the water to sit on the edge of the pool deck sometimes. Mr. Thrun said he went over to check on him a couple of times because he was in a part of the dive tank that was difficult to see. He said he made eye contact “to make sure... he was okay”. He said Mr. Paquette waved at him to acknowledge the attention. In his written statement, Mr. Thrun said that in his second to last check, he waved at Mr. Paquette who was looking up.
20. Mr. Quinn Olsen, the lifeguard scheduled to begin his shift at the dive tank section at 9:30 p.m., said Mr. Thrun radioed him to advise that there was a customer using the dive tank to practice breath holding. He recalled telling Mr. Thrun to keep an eye on him. He understood that Mr. Thrun contacted him both in anticipation of Mr. Olsen taking over, and also to inquire what Mr. Olsen thought of the situation.
21. Toward the end of his shift, near 9:30, Mr. Thrun checked on Mr. Paquette again. He was facing up toward the top of the pool and appeared to Mr. Thrun as though he was holding himself against the wall. Right around then, Mr. Thrun was approached by Ms. Courtney Kachur, aquatic training co-ordinator, who was looking to see if he could teach swimming later that week. She observed Mr. Thrun looking over the edge of the dive tank, and as she got closer she saw Mr. Paquette apparently seated at the bottom of the dive tank, legs apart, wearing flippers and a mask.. She testified she had never seen Mr. Paquette before nor had she ever seen anyone engaged in that type of deep water breath holding.
22. She asked how long he had been down. Mr. Thrun replied, explaining he had been watching him and that he had been doing this for a while. Ms. Kachur insisted that he enter the pool and check on Mr. Paquette. He complied immediately, handed over his radio, removed his clothes, and dove in.
23. Numerous witnesses testified as to what happened next and the testimony was largely consistent. Mr. Thrun reached the surface holding on to Mr. Paquette, who was removed from the water with the assistance of two other lifeguards, Ian Shoults and Quinn Olsen. He was not breathing and had no discernable pulse. Ms. Kachur advised all Talisman staff of the situation via radio. A major alarm, a type of siren, was sounded, requiring all of the lifeguards to clear patrons from their sections and to attend at the scene. Cynthia Watson, a Talisman Centre manager, on duty as facility supervisor that night, directed Ms. Stirlor to get the AED, which was stored in the first aid room located toward the south end of comp pool. The lifeguards rushed to the edge of the dive tank. CPR was commenced and EMS was called. Most of the activity was recorded on the aquatic center surveillance cameras and the relevant recordings were entered as Exhibit 3.
24. Mr. Shoults, Mr. Olsen and Ms. Madden started doing CPR chest compressions and mouth to mouth resuscitation. They confirmed that there was no airway obstruction. After a few moments someone provided them with a mask to assist in the resuscitation. The mask is used both for hygiene and to help maximize air entry by creating a tighter seal than might be available by mouth to mouth contact. There was some evidence that the mask retrieved from the first aid kit could not be fully or properly assembled.
25. There was much testimony regarding the defibrillator. All of the lifeguards were trained in its use and had experience with its application in simulated emergency scenarios as part of their training and annual re-certification process. Only one of the lifeguards had actual experience in applying the AED in an actual emergency.

26. The testimony was that Ms. Stirler ran to get the defibrillator as soon as it was understood it may be required. In accordance with protocols for the use of the AED, the lifeguards ensured Mr. Paquette was away from the water and that he was dry. There were several questions regarding the inability to locate the razor that is generally stored with the defibrillator. The evidence was that the preferred practice is to shave the victim's chest hair, if any, prior to application of the so called "paddles" or pads which are affixed with an adhesive directly to the person's chest. The evidence was clear, however, that the purpose of the shaving is to help ensure that chest hair is not singed in the process of applying the electrical shock and to otherwise minimize the discomfort of the victim. There was no suggestion that failure to shave the chest in any way impeded or interfered with the function of the AED.
27. An AED is used on persons who for whatever reason have no pulse. The idea is to apply electric shock to the victim's chest, hopefully triggering resumption of pulse. Unlike more sophisticated defibrillation devices used by EMS professionals, the Talisman Centre's AED, typical of AEDs used in public facilities, will only recommend application of electric shock in limited circumstances depending on the cardiac rhythm detected by the machine.
28. The witnesses explained that the initial AED analysis resulted in a "shock not recommended" signal. CPR was continued before use of the AED was attempted a second time. Again the recommendation was not to shock. CPR was continued until EMS paramedics arrived.
29. In total three trained, experienced paramedics responded to the call and attended at the Talisman Centre. The first to arrive was Grant Alexander Therrien, who had been working in the downtown area providing paramedic services known as "Advanced Life Support" in a single person vehicle. He estimated he responded within five minutes of receiving the call from dispatch. The nearest ambulance, referred to in testimony as Medic 11, arrived a few minutes later manned by Michael Brent Thorkelson and Valerie Anne Hopwood. They were all familiar with the facility and were able to quickly gain access to the building and then to the pool area.
30. Mr. Therrien undertook an initial assessment of Mr. Paquette's condition. He described Mr. Paquette as being in cardiac arrest, without a pulse and not breathing. He attached his advanced life support equipment, described as a Lifepack 12, to the paddles affixed by the lifeguards. Although paramedics are trained to make their own decisions about whether or not to shock depending on the cardiac rhythm detected, the paramedics agreed that shock was not recommended for Mr. Paquette. To more fully assess his heart function an electro-cardiogram was performed. The data gathered by the Lifepack 12 can be recorded and stored in the device which accompanies the patient to the hospital. The recorded information can be accessed to assist in provision of appropriate medical treatment.
31. Although Mr. Paquette presented without a pulse, the Lifepack 12 detected a very slow cardiac rhythm, which Mr. Therrien interpreted as pulseless electrical activity. He described trying to electronically pace the detected slow rhythm, into a faster heart beat. There was no response to his initial efforts.
32. Some of the paramedics' records relating to this call were entered at Tabs 4 and 5 of Exhibit 1, and others as Exhibit 4. The paramedics' records show that starting at around 21:41, several doses of epinephrine and atrophine were administered to stimulate heart function. Mr. Paquette was intubated to get air directly into his lungs. According to the records, pulse

resumed at approximately 21:45. He was transported via ambulance to the Rockyview Hospital, arriving at approximately 21:54. He was not breathing independently and had not regained consciousness. Mr. Paquette died in hospital four days later.

33. No witness could say how long Mr. Paquette must not have been breathing. Nothing in the evidence revealed how long he was underwater before the rescue was effected.
34. As of April 2005, there was no specific policy at the Talisman regarding practicing breath holding. One was drafted and adopted May 10, 2005 after Mr. Paquette's death. A copy was entered under Tab 10 of Exhibit 1. Mr. McKerrall confirmed that the policy arose from Mr. Paquette's death and also from an article referred to on the face of the policy. The article, entitled "Dying for Air", apparently appeared in the February 2005 edition of International Aquatics magazine and was written by one Tom Griffiths, Director and Aquatic Safety Officer for Athletics at Penn State University and founder of the Aquatic Research Group.
35. The Talisman's policy prohibits prolonged breath holding, repetitive breath holding and prolonged underwater swimming, unless for specified sports training in certain circumstances and then only under the direct supervision of a lifeguard and a coach. The breath holding policy also restricts the use of weighted items in the pool, except for the purposes of lifeguard training.
36. Mr. Patterson was questioned in detail about prolonged underwater breath holding. He explained that for at least 30 years lifeguard training has included information relating to the dangers of blackouts caused by hyperventilation. However, in recent years underwater breath holding has evolved into a competitive sport regulated by an organized governing body, distinct events, and scheduled tournaments. He discussed a television show he watched during the summer of 2007 regarding one such event which he described as very well managed from a safety perspective but which nevertheless resulted in two competitors suffering shallow water blackouts.
37. Shallow water blackout is defined in the Talisman policy as "occurring when lower levels of carbon dioxide combine with diminished levels of oxygen in the blood stream. Swimmers move through hypoxia (which is reduced oxygen) to a near absence of oxygen leading to unconsciousness and near drowning".
38. Mr. Patterson's explanation was similar. He explained that normally an elevated CO₂ level triggers the breath reflex. A person preparing to hold their breath for a prolonged period will often hyperventilate in advance in order to reduce their CO₂ level. In the ordinary course, a slightly reduced CO₂ level can assist a person in sustaining breath control for longer than normal. However, excessive and repeated hyperventilation can result in extremely depleted CO₂ levels, catastrophically disabling the breath reflex. As the person's breath oxygen level is consumed, they risk blacking out, and ultimately, drowning.
39. Mr. Patterson explained that the Lifesaving Society has not yet formulated a specific policy recommendation about prolonged breath holding. Although the Society has received some informal inquiries regarding the practice from aquatic center operators, nobody has sought more detailed advice on the issue. In conclusion, Mr. Patterson acknowledged that the time has come for more proactive steps to be taken by the Society, to undertake a more comprehensive review of the research and other information and to develop a clear position regarding this increasingly popular, but potentially life threatening, activity.

Recommendations for the prevention of similar deaths:

1. Lifeguards must be well trained in regarding all aspects of aquatic safety including lifesaving techniques, and first aid. Acknowledge the importance of communication between lifeguards and with patrons as a component of maintaining safety. Sharing of information should be encouraged to help minimize risks.
2. Aquatic facility operators and managers must be vigilant regarding new activities and changing risk environment. This may involve encouraging communication and feedback from and between front line workers, including lifeguards, swimming instructors and coaches, via communication devices such as logbooks and face to face meetings.
3. On another level they must be diligent regarding sharing and acquiring information regarding new developments with and from other operators and experts in the field. In addition, they should work to keep up to date with journals and literature in the area. Learning about challenges faced by similar facilities and keeping abreast of current research will help facility operators anticipate new issues and plan appropriate responses.
4. Pool facility must regularly review and update their policies to ensure they meet the needs of the facility and that there are required procedures in place to ensure their efficient implementation.
5. Pool facilities should be equipped with up to date AED's and well stocked first aid kits. Systems must be in place and adhered to, to ensure equipment is functioning properly and that supplies are replenished as necessary.

DATED January 22, 2008 ,

at the City of Calgary , Alberta.

Judith Shriar
A Judge of the Provincial Court of Alberta