QUEENSLAND COURTS

OFFICE OF THE STATE CORONER

FINDINGS OF INVESTIGATION

CITATION:	**Non-inquest findings into the death of Xia Dai**
TITLE OF COURT:	Coroner's Court
JURISDICTION:	Southport
FILE NO(s):	2009/1050
FINDINGS OF:	James McDougall, Southeastern Coroner
CATCHWORDS:	CORONERS: Investigation, scuba diving accident, inadequate advice and instruction regarding emergency ascent procedures, inadequate assessment of environmental conditions

Sequence of events

Ms Dai was a Chinese national who had recently arrived in Australia in February 2009 to study accounting at Charles Sturt University in New South Wales.

In March 2009 Ms Dai told her mother of plans to travel with a group of friends to the Gold Coast and go SCUBA diving. Ms Dai had learnt to swim at the age of four but had never swum in the ocean. Ms Dai advised her mother that she was initially reluctant to try SCUBA diving but that after speaking with the travel agent decided that she would.

On Saturday 11 April 2009 Ms Dai and her friends travelled from Sydney to the Gold Coast, arriving around lunchtime and checking into a holiday apartment.
On Wednesday 15 April 2009 the group travelled by minibus to the marina near Sea World to attend their pre-booked resort dive with Queensland Dive Company Pty Ltd (the Dive Company).

The resort dive program conducted by the Dive Company was a Professional Association of Diving Instructors (PADI) Discover SCUBA Diving course. PADI is an international recreational dive training organisation that, among other things, publishes standards for recreational diving.

Upon arrival at the marina the group of eight, none of whom had been SCUBA diving before, signed waivers and completed forms relating to the day's activities including providing details regarding previous diving experience. The group was then provided with wetsuits and fins and, after changing into these, boarded the Dive Company's vessel.

On the vessel were dive instructors Ms Yuri Bonning, Mr Matthew Wallace, Ms Jenny Palmer and Mr Luis Zurro. Ms Bonning, Mr Wallace and Ms Palmer had been employed by the Dive Company for six, four and two months respectively. Mr Zurro had been employed by the Dive Company for about four and a half years and was performing the role of 'lookout' that day.

Whilst travelling to the dive site, the group of first-time divers received verbal instructions from Mr Wallace regarding the use of the dive equipment. Mr Wallace stood in front of the group and demonstrated the use of the breathing gear and told the group that if the mouthpiece falls out to put it back in. Mr Wallace then showed the group how to use the goggles and how to clear them should they start filling with water. Mr Wallace also showed them a number of hand signals.

In his statement to police later, Mr Wallace remembered the briefing taking longer than usual, approximately ten minutes, because students had problems understanding the briefing and two of the students were translating for others in the group. Mr Wallace also stated the following:

- He did not give detailed instruction regarding use of the buoyancy control device (BCD) as the depth of the dive was not great and the BCD has limited use.
- He specifically instructs first-time divers not to touch the red button for inflation/deflation of the BCD unless they are on top of the water.
- He did not give any instructions regarding weight belts or to surface if there is an accident.
- He did instruct the divers that, if they become separated from their group, they are to stay exactly where they are and an instructor will find them.

Upon arrival at the dive site, near a small shoreline, the eight who were scuba diving were organised into two smaller groups of four. Ms Dai was placed in the group instructed by Ms Bonning. Ms Bonning assisted her group to put their dive gear on and instructed them to put their mouthpiece in and breathe. Ms Dai's mouthpiece appeared to be working at this time. Ms Bonning then put weight belts on all the students in her group.

Ms Dai's group then moved to the side of the boat and Ms Bonning helped them into the water. Once in the water, the group travelled towards the shore until they reached a point where they could stand with their heads above the water.

Ms Bonning instructed the group to put the mouthpiece in and place their faces in the water and breathe. Members of the group did this a number of times. Ms Bonning also instructed the group that for every metre they swam, they should equalise ear pressure.

The group was broken into pairs, with Ms Bonning instructing the group that when they go underwater, they are to follow her with two divers either side of her staying in a straight line. The group then went underwater and followed Ms Bonning along the bottom into the deeper water.

The other group of four divers, being led by Mr Wallace, swam side by side with arms interlocked while Mr Wallace swam in front but facing backwards or looking over his should to check on his group.

Ms Dai's group swam out to a big rock approximately 30 metres from where the dive vessel had stopped. Members of Ms Dai's group remember it being difficult to maintain a straight line with Ms Bonning as they swam due to the current and differing speeds of each diver in the group. Members also remember difficulties seeing each other at times due to poor visibility in the water.

Upon reaching the big rock, where the depth was approximately three metres, Ms Bonning checked that the group was okay using hand signals, with Ms Dai giving the signal that she was okay. This was the last time that anyone remembers seeing Ms Dai.

The visibility that day was described as very poor, with divers recalling the water to be very murky and dirty with seaweed, sand and debris and visibility limited to between one and three metres. Divers also recalled the current being strong, with one diver in Ms Dai's group stating that at times he was unable to control the actions of his body. From the dive vessel Mr Zurro noticed a diver surface and splash in the water for a few seconds and then go under again, about 100 metres from the dive vessel. Mr Zurro alerted his colleagues and then grabbed fins and goggles and jumped into the water, swimming to the area where he last saw the diver and diving in the area several times looking for the diver. Whilst Mr Zurro was looking for the diver, the operator of the boat made contact with marine emergency services to advise that a diver was missing.

Meanwhile, Ms Dai's group finished the dive and swam together back to the shallow water where they surfaced. Upon surfacing Ms Bonning noticed that one of the group was missing. Mr Zurro then asked Ms Bonning if she had lost someone and Ms Bonning confirmed that she had.

Ms Bonning called out to people on the boat advising that a diver was missing, instructed the remainder of the group to stay where they were, and dived below to search for the missing diver. Mr Zurro, Mr Wallace and Ms Palmer assisted with the search.

Twenty to thirty minutes later a QPS vessel arrived and QPS officers joined in the search from the vessel.

At approximately 2:46pm Ms Dai was located by Mr Wallace and Ms Palmer, lying on her back on the sand at the bottom of the water not far from where the search had started. Mr Wallace and Ms Palmer released Ms Dai's weight belt and lifted her to the surface, inflating her BCD at the surface. Mr Wallace noticed that Ms Dai did not have a mouthpiece in, that her lips were light blue, and that she had a bit of blood in her mask, but otherwise did not observe any injuries. Mr Wallace checked Ms Dai for signs of breathing and provided two rescue breaths.

The QPS vessel then picked up Ms Dai from the water and a police officer commenced CPR, which was continued until the attendance of the QAS. Ms Dai was transported by the QAS to the Gold Coast Hospital, where she was declared deceased.

The operator of the Dive Company vessel estimated that, in total, Ms Dai had been missing for approximately 50 minutes.

Autopsy report

On 17 April 2009 an external and full internal post-mortem examination was performed by Forensic Pathologist, Dr Alex Olumbe. A number of toxicology and histology tests were also conducted.

Dr Olumbe found the cause of Ms Dai's death to be 'drowning due to or as a consequence of scuba diving'. Toxicology results showed no traces of alcohol or drugs (prescription or illicit).

Inquiries

Ms Dai's diving equipment was retrieved and later inspected and/or tested by QPS, WHSQ and Forensic Pathologist Dr Olumbe. These inspections and tests revealed the following:

- The gases in Ms Dai's air tanks were found to be within an acceptable range.
- A 30mm tear was located in Ms Dai's mouthpiece. At a depth of one metre, water was able to enter the mouthpiece. If the diver turned their head to the right, the flow of water into the mouthpiece increased, making it more difficult to breathe air through the mouthpiece.

QPS and WHSQ conducted a joint, formal interview with dive instructor Ms Bonning on the day of Ms Dai's death, 15 April 2009. At this interview Ms Bonning provided the following description of Ms Dai's disappearance:

> She made the divers swim shoulder to shoulder while she swam in front and looked back over her shoulder regularly to check on the group. At one stage Ms Dai fell behind to the point where she was only able to see Ms Dai's goggles. She checked that Ms Dai was okay using a hand signal and then signalled for her to rejoin the line. The group then swam on for another 40 seconds using the same method of supervision and when she checked on Ms Dai she was now gone.

Ms Bonning declined to participate in any further interviews after this time.

On 2 June 2009 the QPS Dive Squad conducted an experiment using a female person of similar height and weight to Ms Dai and of average fitness. The person was fitted with dive equipment identical to that used by Ms Dai and entered the water. The person sank very quickly and was unable to hold herself at the surface (achieve 'positive buoyancy') without inflating the BCD.

Expert opinions

Two experts reviewed the circumstances of Ms Dai's death and provided statements for the purpose of the coronial investigation:

1. Mr Glen Halter, a qualified and experienced scuba instructor, trainer and safety advisor within the recreational dive industry.
2. Mr Christopher Cox, Principal Advisor (Diving), Workplace Health and Safety Dive Unit, WHSQ, who has qualifications and experience in both recreational and occupational diving.

Both of these experts identified the following factors they believed may be relevant to Ms Dai's death:

- Inadequate advice and instruction regarding emergency ascent procedures including use of the BCD.
- Not ensuring Ms Dai was properly weighted for her dive.
- Inadequate assessment of environmental conditions at the dive site and the adjustment of the ratio of resort divers to instructors accordingly, taking into account the level of visibility and strength of the current.
- Use of a dive formation that did not allow continual supervision and control of each resort diver.

In summary, the two experts were of the opinion that these factors increased the risk of Ms Dai becoming separated from the instructor and adversely impacted on her ability to successfully ascend in an emergency and achieve positive buoyancy once she had reached the surface.

Enforcement and regulatory responses to incident

QPS charged Ms Bonning with manslaughter, alleging that she had failed in her duty of care to Ms Dai by not providing appropriate instruction and supervision and not conducting a proper risk assessment of the environmental conditions and the group's abilities.

QPS was not able to establish whether Ms Bonning failed to identify the fault in Ms Dai's mouthpiece. However, QPS considered that this fault could have been overcome with appropriate instruction, supervision and risk assessment and was therefore not a significant factor in Ms Dai's death.

QPS did not proceed with charges in relation to the other dive instructors as it considered *'the negligence's committed by these persons did not meet the required threshold to commence proceedings'.*

The committal hearing (completed on 6 May 2011) resulted in a decision by the magistrate that there was not sufficient evidence to put Ms Bonning on trial and she was discharged. The basis of this decision may be summarised as follows:

- In relation to allegations concerning the equipment worn by the deceased and the instructions she received prior to the dive, it could not be established on the evidence that Ms Bonning had undertaken to perform those acts and had therefore incurred a duty under section 288 or 290 of the Criminal Code (duties relating to the preservation of human life), let alone a failure to perform that duty.
- In relation the allegation that Ms Dai was not appropriately supervised during the dive, there is evidence that Ms Bonning did undertake to supervise Ms Dai and the other three divers within her group once they were in the water and under her control, and therefore did incur a duty under section 290 of the Criminal Code.

- As to whether Ms Bonning failed in her duty to properly supervise Ms Dai in the water, the magistrate noted that *'it was not a case where she abandoned the deceased, it was a case where she checked to make sure she was okay and after a fairly short period of time found that the deceased was not there'.*
- The magistrate considered that this evidence was not sufficient to satisfy the requisite standard for criminal negligence, a concept that *'involves a departure from reasonable standards of care that is serious enough for the State to intervene and punish the person because he or she has behaved with so little regard for the safety of others, that the person deserves to be punished as a criminal'* (R v BBD (2006) QCA 441, as per McKenzie J at para 16).
- The magistrate also noted that a jury 'would have severe problems being satisfied that this tragedy did not happen because of the faulty mouthpiece', an issue relevant to the extent to which Ms Bonning could be held liable for Ms Dai's death, given it could not be established who was responsible for checking Ms Dai's equipment on that day. However, in relation to the condition of the mouthpiece at the relevant time, the magistrate also made the observation that Ms Dai had been able to use the mouthpiece safely for some time during the dive and that 'no-one can say when that hole appeared but it is reasonably clear that when she was swimming earlier in the day, that hole was not there'.

WHSQ commenced prosecution action in relation to the Dive Company however this was later discontinued due to the unavailability of material witnesses (a number of whom are Chinese nationals who have left the jurisdiction and are therefore not compellable or persuadable to attend trial)

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Following Ms Dai's death, WHSQ issued prohibition and improvement notices to the Dive Company regarding supervision of resort divers and maintenance of regulator mouthpieces. WHSQ has also conducted a number of general audits of the company since the incident and as recently as 2013 (as per WHSQ's advice dated 25 September 2013).

Safety improvements since Ms Dai's death

The following is a summary of changes and initiatives for improving safety within the recreational diving industry in Queensland since Ms Dai's death in 2009:

- Establishment of a specialist 'Dive Unit' within WHSQ, operating from Cairns and providing regulatory and advisory services for workplace health and safety in the dive industry across Queensland;
- Introduction of the *Safety in Recreational Water Activities Act 2011* and Regulation together with the Recreational Diving, *Recreational Technical Diving and Snorkelling Code of Practice 2011*, resulting in the establishment of industry-wide minimum standards for resort diving in Queensland including in relation to competency of dive instructors, instruction and in-

water supervision of resort divers, instruction and advice to non-English speaking resort divers and provision and maintenance of appropriate dive equipment;
- Provision of a range of advisory material on the WHSQ website for recreational dive operators, including a series of instruction sheets in various languages to assist operators to comply with the Code of Practice requirements for instruction of non-English speaking persons; and
- Release by the Professional Association of Diving Instructors (PADI), with whom the Dive Company was affiliated, of a Discover Scuba Diving Flip Chart in Chinese (which was not available at the time of Ms Dai's death).

Expert Reference Group recommendations

In August 2011 the Queensland Government commissioned a detailed review of recreational diving safety in Queensland, to be undertaken by a *'Recreational Dive and Snorkelling Industry Reference Group'* consisting of leading industry stakeholders and experts and informed by written submissions, evidence gathered at public forums, advice provided by officers of the Department of Justice and Attorney-General and research conducted by the Reference Group's secretariat.

Whilst the trigger incident for the establishment of the Reference Group involved a snorkeler who was left behind by a charter vessel off Cairns, the Reference Group's terms of reference covered all aspects of recreational diving and snorkelling safety including resort dives. In fact, one of the three key issues identified by the Reference Group for particular consideration as part of its review was *'Resort Diver Separation from Instructors'.*

In relation to this issue, the Reference Group noted evidence that resort diver fatalities generally involve separation of the resort diver from their supervising dive instructor and usually occur when dives are conducted at the maximum ratio of divers to instructors and in poor environmental conditions (specifically, when there is strong current and poor visibility).

As a result, the Reference Group recommended that the Regulation be amended to reduce the maximum ratio of resort divers to dive instructors from four-to-one to two-to-one, but allowing this ratio to be increased to four-to-one if a competent person undertakes a documented risk assessment and reasonably believes, having regard to environmental conditions and the abilities, fitness and confidence levels of divers, it is safe in all the circumstances to do so. The Reference Group also recommended that the Code of Practice be amended to include more detailed information about how to conduct and document a resort diver ratio risk assessment, and how to assess environmental conditions and resort diver abilities, fitness and confidence levels.

In 2012 the recommendations of the Reference Group were considered by the Queensland Government and further industry consultation was undertaken by the Attorney-General's office. As a result, whilst a number of the Reference Group's

recommendations were endorsed and resulted in amendments to the Regulation and Code of Practice, the recommendations regarding resort diving were not endorsed.

Conclusions

It is natural to want to assume that someone must have, in some way, failed to meet a duty towards Ms Dai, a beginner diver with no previous dive experience who placed herself in the hands of a professional recreational diving organisation and trusted them to keep her safe. Of course a high standard of care is required in such circumstances. However, recreational diving is not without risks. Whilst the recreational diving industry and those operating within it must do everything they reasonably can to mitigate these risks, it is also inherent that individuals undertaking recreational diving activities accept a level of risk when doing so, just as with any other risk-based recreational activities.
It is not possible, on the available evidence, to know or make findings as to the particular difficulties Ms Dai experienced during her dive on 15 April 2009 and how these difficulties resulted in her death. When Ms Dai was last seen, she appeared to be okay. Investigations following her death have not been able to shed any light as to what happened to Ms Dai after that time, other than that she died as a result of drowning.

There is speculation as to the factors that may have contributed to Ms Dai's death. She may have gotten into difficulties because she did not understand the instructions she was given, or because she wasn't given instructions about how to make an emergency ascent, or because her diving equipment was faulty or inappropriately weighted. Ms Dai's death may have been prevented if she had been supervised in a different way whilst under the water. However we will never know which, if any, of these factors actually played a material part in her death.

More general observations may be made as to actions and omissions of the Dive Company and its employees that may have fallen short of relevant safety standards at the time. However, there is insufficient evidence to establish that these standards were not in fact met. The statements gathered from all those involved were not able to clearly establish the extent to which instructions were given and equipment was checked, and which individuals undertook these tasks.

The incident was thoroughly and professionally investigated by QPS and WHSQ with each agency giving due consideration to the extent to which individuals and/or the Dive Company may have been responsible for Ms Dai's death. The decision by WHSQ to discontinue a prosecution action against the Dive Company due to the unavailability of key witnesses appears sound, particularly in light of the outcome of the committal proceeding involving its employee and the comments of the magistrate as to the paucity of the available evidence.

It has now been some considerable time since Ms Dai's death in 2009. Key independent witnesses are no longer available and, even if they were, are unlikely to be able to provide any further or better evidence as to the events of that day. In the meantime, significant changes have occurred within the recreational dive industry.

Queensland now has a comprehensive legislative and regulatory scheme for enhancing the safety of people like Ms Dai, including minimum standards and extensive advisory materials regarding appropriate instruction and supervision of resort divers

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However, I would recommend the Queensland Government reconsider its decision not to endorse the recommendation of the Reference Group to lower the ratio of resort divers to dive instructors. This, it seems to me, would have the obvious effect of avoiding the situation which arose in this case and make it more likely that a novice diver in trouble would be observed sooner and timely assistance given.

Formal findings pursuant to section 45

I find that Xia Dai died on 15 April 2009 at about 2.45pm. She died at the Broadwater near Wavebreak Island Southport. She died after encountering difficulties while participating in a 'resort dive' with her friends under the supervision of employees of Dive Company. The cause of death was drowning whilst SCUBA diving.

James McDougall
Southeastern Coroner
Southport
12 December 2014