



IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

Court Reference: COR 2016 2605

FINDING INTO DEATH WITHOUT INQUEST

Form 38 Rule 60(2)

Section 67 of the Coroners Act 2008

Findings of:	Caitlin English, Deputy State Coroner
Deceased:	Leonie Maree Hanson
Date of birth:	11 August 1975
Date of death:	10 June 2016
Cause of death:	1(a) Drowning
Place of death:	Mornington Pier, Mornington, Victoria

HER HONOUR:

Background

1. Leonie Maree Hanson was born on 11 August 1975. She was 40 years old when she died on 10 June 2016 from drowning.
2. Ms Hanson lived in Avalon with her partner, Michael Giles.
3. Ms Hanson was an experienced diving instructor and worked for Harbour Dive Australia at the time of her death. She obtained her Open Water Instructor qualification in mid-2015 and had undertaken more than 350 logged dives, including 36 dives at the Mornington Pier. She was described as a meticulous dive planner who always evaluated conditions before undertaking a dive.

The coronial investigation

4. Ms Hanson's death was reported to the Coroner as it fell within the definition of a reportable death in the *Coroners Act 2008* (the Act). Reportable deaths include deaths that are unexpected, unnatural or violent or result from accident or injury.
5. Coroners independently investigate reportable deaths to find, if possible, identity, medical cause of death and with some exceptions, surrounding circumstances. Surrounding circumstances are limited to events which are sufficiently proximate and causally related to the death. Coroners make findings on the balance of probabilities, not proof beyond reasonable doubt.¹
6. The law is clear that coroners establish facts; they do not cast blame, or determine criminal or civil liability.
7. Under the Act, coroners also have the important functions of helping to prevent deaths and promoting public health and safety and the administration of justice through the making of comments or recommendations in appropriate cases about any matter connected to the death under investigation.

¹ In the coronial jurisdiction facts must be established on the balance of probabilities subject to the principles enunciated in *Briginshaw v Briginshaw* (1938) 60 CLR 336. The effect of this and similar authorities is that coroners should not make adverse findings against, or comments about, individuals unless the evidence provides a comfortable level of satisfaction as to those matters taking into account the consequences of such findings or comments.

8. Coroner Rosemary Carlin initially had carriage of this investigation. Victoria Police assigned an officer to be the Coroner's Investigator for the investigation into Ms Hanson's death. The Coroner's Investigator investigated the matter on Coroner Carlin's behalf and submitted a coronial brief of evidence. Coroner Carlin also obtained an expert report from Dr John Lippmann.
9. After considering all the material obtained during the coronial investigation, Coroner Carlin determined that she had sufficient information to complete her task as coroner and that further investigation was not required.
10. In September 2019, Coroner Carlin was appointed to the County Court and I took over carriage of this matter for the purposes of finalising this finding.
11. Whilst I have reviewed all the material, I will only refer to that which is directly relevant to my findings or necessary for narrative clarity.

Identity of the deceased

12. Ms Hanson was visually identified by her partner, Michael Giles, on 14 June 2016. Identity was not in issue and required no further investigation.

Medical cause of death

13. On 15 June 2016, Dr Jia Wu, Forensic Pathology Registrar (supervised by Dr Sarah Parsons, Pathologist) at the Victorian Institute of Forensic Medicine, conducted an autopsy upon the body of Ms Hanson and reviewed a post mortem computed tomography (CT) scan.
14. The autopsy revealed minor blunt force injuries to the face, head, right hand, and both legs. The appearance of these injuries suggested that they were likely sustained during the peri-mortem period. There were no significant internal injuries to the major organs.
15. Dr Wu did not identify any significant natural disease that would have caused or contributed to the cause of death.
16. Drowning is a diagnosis based predominantly on the circumstantial evidence. There are no specific autopsy signs of drowning. Ms Hanson's post mortem examination revealed froth in the airways, hyperinflated lungs with pulmonary oedema, and pleural effusions. Although non-specific, these findings can be seen in drowning.

17. Toxicological analysis of post mortem specimens taken from Ms Hanson was negative for common drugs and poisons.
18. After reviewing toxicology results, Dr Hu completed a report, dated 11 November 2016, in which he formulated the cause of death as "*I(a) Drowning*". I accept Dr Wu's opinion as to the medical cause of death.

Circumstances in which the death occurred

19. On 4 June 2016, Ms Hanson commenced instructing an open water scuba diving course with four students. One of the students was Logan Saminathan, who had no previous diving experience but was a competent swimmer. On that day, Mr Saminathan completed an initial pool dive and was deemed fit to dive in the ocean.
20. The next day, Mr Saminathan failed to complete a dive at the Mornington Pier as he was unable to equalise his ears. He subsequently obtained a medical certificate of clearance and intended to undertake the remainder of the course on 11 June 2016.
21. On the morning of 10 June 2016, Ms Hanson took Mr Saminathan on a one-on-one dive at the Mornington Pier so that Mr Saminathan could complete the skills required to continue the course.
22. According to the Coroner's Investigator, Leading Senior Constable David Crane, the weather was cold, wet, and windy. The temperature was 14 degrees Celsius and winds gusted at 40 kilometres per hour. Waves in the area were at two metres. Due to the constructed breakwater on the pier, conditions on either side of the pier varied. On the seaside, the waves were high and constant. On the harbour side, the water was calm and is regularly used by divers as it offers protection from the sea. The area under the breakwater concrete barriers contained strong currents.
23. Ms Hanson and Mr Saminathan's dive was to be conducted from the harbour side and under the pier.
24. There were no other divers when Ms Hanson and Mr Saminathan commenced their dive at 10.14am. The 23-minute dive proceeded without incident and they thereafter surfaced for approximately 50 minutes. It is unknown whether they stayed in the water during this time or exited the water completely.

25. At approximately 11.30am, Ms Hanson and Mr Saminathan commenced a second dive. The events that transpired during the dive are unclear. What is clear is that Ms Hanson surfaced on the seaward side of the pier with Mr Saminathan, who was unconscious and had a white frothy substance in and around his mouth. It appears he was not wearing his mask.
26. Witnesses heard Ms Hanson cry for help and observed both divers on the water's surface. Emergency services were contacted, and a witness ran to find a boat to assist.
27. Due the conditions, Ms Hanson was unable recover Mr Saminathan to a metal ladder on the seaward side of the pier. A local business owner, Robert De Santis, descended the ladder and assisted in removing Mr Saminathan's diving gear and placing a life ring around him. However, Mr Saminathan slipped through the life ring with each turbulent wave and crashed into the pier. Mr De Santis and Ms Hanson were unable to maintain their grip and Mr Saminathan floated away from them.
28. Ms Hanson subsequently had difficulty holding onto the ladder. Mr De Santis also struggled to maintain his grip in the rough waters. Several witnesses described the ferocity of the waves washing over both Ms Hanson and Mr De Santis.
29. Mr De Santis told Ms Hanson to inflate her buoyancy control device (BCD) to keep afloat but she did not respond. Witnesses described seeing Mr De Santis trying to put Ms Hanson's regulator in her mouth, but she would not accept it. Mr De Santis was struggling to keep a hold of Ms Hanson as she was clearly exhausted and in shock. He managed to put a life ring around Ms Hanson, but the waves dislodged it from her body.
30. Ms Hanson kept taking on water and appears to have lost consciousness. Emergency services advised Mr De Santis to let her go to save his own life as the waves were causing him to crash into the pier. Mr De Santis reluctantly released his grip on Ms Hanson, and she fell below the water's surface.

Search and rescue

31. A small boat sourced from the Mornington Yacht Club was dispatched to assist with the rescue. As the boat rounded the end of the pier, its occupants observed Mr Saminathan floating on the surface, however they could not see Ms Hanson and the waves prevented the boat from approaching Mr De Santis on the ladder.

32. They retrieved Mr Saminathan and transferred him to the pier where emergency services were now waiting. A short time later, Mr Saminathan was pronounced deceased.
33. Victoria Police divers later retrieved Ms Hanson from the sea floor directly beneath the metal ladder.

Victoria Police investigation

34. Leading Senior Constable Crane noted that all of the diving equipment was inspected and tested and deemed to be fully functioning and operating within specifications. Minor faults were identified in Mr Saminathan's diving gear, which would not have contributed to his death.
35. Leading Senior Constable Crane stated that he believed the weather conditions on the day of the incident were too hazardous for recreational diving purposes. Given Mr Saminathan's level of skill and experience, it would have been more prudent for him to undertake the dives in calmer conditions.
36. The events that led to Mr Saminathan surfacing in an unconscious state remain unclear. Leading Senior Constable Crane stated that the water temperature was 12 degrees Celsius and the air temperature was 14 degrees Celsius. Mr Saminathan was wearing a seven-millimetre wet suit and may have been affected by the cold conditions when he surfaced after the first dive. It is unknown whether he remained in or out of the water during the 'rest' period. If he was exposed to the weather, he may have suffered mild hypothermia or otherwise become very cold, which may in turn have affected his decision-making abilities during the second dive in what appeared to be adverse conditions.
37. According to Leading Senior Constable Crane, both divers were wearing their scuba equipment and had clean air remaining in their cylinders when they surfaced. It is common practise that if a diver is experiencing difficulties and they want to surface, they remove their integrated weight pockets from their BCD and inflate it, which assists in keeping them afloat. Neither of these procedures were undertaken for either diver. However, he noted that when Ms Hanson's body was retrieved from the sea floor, there was an air hose in her equipment, which would normally be her dry suit inflator hose, that was not attached to anything. It is unclear when the detachment occurred and whether her ability to inflate her BCD or dry suit was impeded.

38. Leading Senior Constable Crane retrieved a length of yellow caving cord that had been tangled around Ms Hanson's body. He explained that divers use cord to assist with floating a surface marker buoy at depth. It can also be used for navigation in poor visibility. Leading Senior Constable Crane postulated that the cord could have unwound from the reel during the struggle and became entangled with people and equipment. If the cord had been connected to Mr Saminathan's equipment when it was removed, the extra weight would have affected Ms Hanson's ability to stay afloat as the cord was connected to her equipment.
39. Leading Senior Constable Crane concluded that Ms Hanson attempted to rescue Mr Saminathan but became exhausted due to the weather conditions. She also appeared to be in a state of shock as she did not respond to oral directions and failed to enact the safety procedures as per her training. During the time she was on the surface of the water, she was repeatedly submerged and ingested a large amount of sea water.

WorkSafe Investigation

40. WorkSafe inspectors attended the scene on the day of the incident and commenced an investigation.
41. Grant Lenard, Senior Inspector at WorkSafe, stated he spoke to John Warren, the owner of Nautical Training Australia Pty Ltd, on 17 June 2016. Mr Warren confirmed that the diving company abided by Scuba Schools International (SSI) standards. Standards included student and instructor ratios. The standards limited eight students to one teacher, but Mr Warren noted that the company actually limited their class sizes to four students to one teacher.
42. During their discussion regarding the conditions on the day of the incident, Mr Warren noted that he could not find any dive plan or assessment for Ms Hanson and Mr Saminathan's dive. It was usual practice to undertake a "dive brief" with the engagement of students in making the dive plan and site assessment. Part of the assessment would have involved a discussion between the instructor and student(s) about the hazards of the dive site.
43. Mr Lenard stated he was satisfied that the company's processes in place for course-based dives was sufficient and in accordance with industry standards.
44. WorkSafe did not commence a prosecution against any party in relation to the incident due to insufficient information. Nautical Training Australia Pty Ltd, operating as Harbour Dive

Australia, failed to comply with a notice under the *Occupational Health and Safety Act 2004* to provide documentation necessary for the investigation. The company was subsequently charged and convicted of failing to produce the requested documentation and fined \$20,000.

Expert opinion

45. Coroner Carlin obtained an expert report from Dr John Lippman, Chairman and Chief Executive Officer of Divers Alert Network (DAN) Asia-Pacific Foundations/ Australasian Diving Safety Foundation (ADSF), for advice regarding the circumstances leading to the deaths and whether they could have been prevented.

Diving equipment

46. In a similar vein to Leading Senior Constable Crane, Dr Lippman referred to Mr Saminathan's wet suit and noted that if he was exposed to the weather during the interval between the two dives, he could have become cold or mildly hypothermic. This may have affected his "*dexterity and mental comfort*" and "*subsequently lowered his threshold to panic during the following dive*".

Dive location

47. Dr Lippman noted that Mornington Pier has "*protective slabs*" on the seaward side, which provide shelter under most of the pier. There is an underwater gully between the pier and reef on the seaward side. Under prevailing conditions, there can be a strong surge from the waves crashing into, and reflecting off, the outside of the pier and sweeping along the gully.
48. There is a gap of approximately 1.5 metres between the sea floor and the bottom of the slabs, which means there can be a strong surge moving in and out through this gap.
49. Dr Lippman believed it was possible that an unprepared diver could be sucked through the gap by a surge.

Possible scenario

50. There is no evidence as to what happened under the water to cause Mr Saminathan to ascend in an unresponsive state. It appears he surfaced without his mask. Dr Lippman speculated that as Mr Saminathan was an inexperienced diver, he may have panicked underwater. Dr Lippman noted that this is not uncommon, especially in adverse conditions or when a

diver has to flood and/or remove their mask (which is a test normally conducted on the first and/or second open water dive). Indeed, panic is more likely when the mask is removed in very cold water as it can cause the diver to gasp and create an involuntary apnoea (and occasional cardiac arrhythmia). Alternatively, Mr Saminathan may have removed his mask while panicking from another cause, or it became unintentionally displaced during such an event.

51. It is unclear how Mr Saminathan and Ms Hanson ended up on the seaward side of the pier. Dr Lippman believed it was unlikely that Ms Hanson intended to take such an inexperienced student into rough water. He therefore postulated that given the strong surge, it was possible that Mr Saminathan was dragged under the barrier and into the rough water by the surge. If this had occurred, it would not be surprising for Mr Saminathan to panic.
52. Dr Lippman noted it was unclear why Ms Hanson did not ditch her weights and inflate her BCD or dry suit during the rescue or breathe through her regulator, which would have reduced water aspiration. Sadly, Dr Lippman explained that she would have likely survived had she activated usual emergency procedures. However, he noted that Ms Hanson may have been shocked into inaction by the shear stress of the situation.

Safety measures for instructors and students

53. SSI requires recreational certification agencies to conduct training in accordance with ISO 24801 Standards, in this case especially ISO 24801-2, which deals with entry-level scuba programs. ISO 24801-2 lists a number of requirements, including:
 - (a) the qualifications of the instructor in order to conduct such training (which Ms Hanson met);
 - (b) the pre-requisites a student must satisfy before being taken into open water. These include theory, skills training in a pool, health, and other administrative requirements (which Mr Saminathan appears to have met);
 - (c) a student to instructor ratio of 8:1 (which was clearly met on the day); and
 - (d) the skills to be demonstrated during the open water dives.

54. ISO 24803 outlines the requirements for the general conduct of diving operations, including:
- (a) a risk assessment conducted before each dive, which includes assessing water movement, depth, visibility, entry and exit methods, suitability of the site for planned activities, and emergency action plan; and
 - (b) emergency equipment and procedures, which includes casualty recovery, resuscitation, and evacuation.
55. Ms Hanson would have likely completed a risk assessment but does not appear to have completed a written risk assessment. Dr Lippman noted that there is no requirement for the risk assessment to be written – it would often be impractical to do this at a dive site. He believed it was appropriate that a general written risk assessment for regular diving sites be made available by the operator to provide guidance to dive leaders. Harbour Dive Australia did have such a plan for Mornington Pier.
56. While it appears that many of the ISO standards were met, Dr Lippman was of the view that Ms Hanson failed to properly assess the risk posed by the prevailing conditions. The wind was strong, and the sea was rough on the seaward side of the pier. It appears to have been relatively calm on the harbour side, but the conditions underneath the pier were potentially hazardous for a diver who may stray too near the barriers on the seaward side. He therefore concluded that the conditions were not safe for an open water training dive.
57. In addition, Dr Lippman did not believe emergency procedures were sufficiently thought out. If the incident had occurred on the sheltered side of the pier, it may have been considerably easier to recover Mr Saminathan via the low landing in sheltered water and perform resuscitation if appropriate. However, it would have still been difficult to quickly and efficiently land an unconscious diver onto the jetty without a prepared and practised plan and appropriate equipment. This should have been part of the emergency plan and risk assessment for the dive site.
58. The SSI Standards require diving service providers to have a written emergency plan for accidents for each location where training is conducted. While Harbour Dive Australia did have an emergency plan for Mornington Pier, the plan did not include advice about removing an unconscious diver from the water at the pier. Dr Lippman noted that this type of rescue is often very challenging and far more difficult than expected.

59. The SSI Standards also state that instructors have an obligation to cancel or modify open water scuba training dives when environmental conditions, a student's physical or mental condition or equipment difficulties make it advisable. Dr Lippman believed Ms Hanson breached this standard given the unsuitable conditions on the day of the incident.

Commentary

60. Dr Lippman advised that dive leaders and dive professionals of all levels need to be careful when assessing the suitability of a site under prevailing conditions for divers under their care. This is especially important when dealing with a highly inexperienced diver. The dive leader must consider the worst possible scenario and plan accordingly to err on the side of caution. A plan to remove an unconscious diver from the water is often overlooked or not properly addressed. This should be considered for every site and a strategy considered. Special equipment may be required. Where a site is in common use, a formal plan should be devised and practised by the dive professionals involved.

Conclusion

61. The precise circumstances that caused Mr Saminathan to come to the surface unconscious and without his mask with Ms Hanson have not been able to be ascertained. However, it is apparent the adverse conditions and absence of an emergency plan played a role in this tragic outcome for Ms Hanson and Mr Saminathan. It appears that Ms Hanson has drowned after being overcome by exhaustion in adverse weather conditions and her efforts to keep Mr Saminathan and then herself afloat.
62. In his report, Dr Lippman pointed out that during a visit to several piers on the Mornington Peninsula, he noticed an absence of lifebuoys, which alarmed him. Although a lifebuoy did not particularly assist Ms Hanson and Mr Saminathan due to the extreme conditions, this also concerned me. I therefore requested Leading Senior Constable Crane to ascertain whether there are lifebuoys currently located on Mornington Pier and other piers along the Mornington Peninsula. On 20 March 2020, Leading Senior Constable Crane tasked a Water Police vessel and crew to attend every pier/jetty/wharf from Sorrento to Frankston along the Mornington Peninsula. This area included the Mornington Pier. He subsequently reported that no pier/jetty/wharf contained a life buoy/ring along this stretch of coastline.

63. I therefore considered making a recommendation that that Parks Victoria ensure life saving devices are provided at the Mornington Pier and other piers along the Mornington Peninsula where dive schools frequently operate. I sought advice from Parks Victoria regarding this proposed recommendation.
64. On 14 May 2020, Parks Victoria informed me that their organisation has periodically considered the provision of lifesaving devices on piers and jetties. However, the successful use of life buoys is contingent on several factors, which, to date, Parks Victoria has considered too variable to ensure their use. These include:
- (a) that the lifebuoy must be present and intact and not missing due to vandalism or theft. On this issue, Victoria Parks noted that lifebuoys are provided along the city reaches of the Yarra River. These lifebuoys are frequently stolen or vandalised, which makes access to them in an emergency unreliable. Drownings continue to occur in this area;
 - (b) a person must be present and capable of deploying the device;
 - (c) the person in the water must be capable of using the device; and
 - (d) weather conditions must be suitable for the use of the device.
65. The installation of lifebuoys is therefore not part of their risk mitigation plan. Those reasons are understandable, and I note that a lifebuoy in this case did not save lives. In the present case, a nearby device was used but it is clear that Mr Saminathan and Ms Hanson were unable to effectively use the it and the weather conditions were clearly unsuitable.
66. I therefore do not make a formal recommendation, pursuant to section 72(2) of the Act, regarding the installation of lifebuoys at the Morning Pier and other piers along the Mornington Peninsula where dive schools frequently operate. However, I strongly, but informally, recommend that Parks Victoria consider trialling the provision of lifebuoys at those piers for a period of three years and assess the availability and usefulness of the devices at the end of that period.
67. I commend the bystanders who attempted to assist Mr Saminathan and Ms Hanson, especially Robert De Santis for his heroic actions.

Findings

Pursuant to section 67(1) of the *Coroners Act 2008* I find as follows:

- (a) the identity of the deceased was Leonie Maree Hanson, born 11 August 1975;
- (b) Ms Hanson died on 10 June 2016 at Mornington Pier, Mornington, Victoria, from drowning; and
- (c) the death occurred in the circumstances described above.

Pursuant to section 73(1) of the *Coroners Act 2008*, I order that this finding be published on the internet.

I convey my sincere condolences to Ms Hanson's family.

I direct that a copy of this finding be provided to the following:

Michael Giles, Senior Next of Kin

Dr John Lippman, Divers Alert Network Asia-Pacific

WorkSafe Victoria (care of Wisewould Mahony)

Scuba Divers Federation of Victoria

Dive Industry of Victoria Association Inc

Parks Victoria

Leading Senior Constable David Crane, Coroner's Investigator, Victoria Police

Signature:



Caitlin English
Deputy State Coroner

Date: *29 May 2020*

