



Rule 60(1)

IN THE CORONERS COURT

OF VICTORIA

AT MELBOURNE

Court Reference: COR 2016 0419
Linked Lead Cases: COR 2016 0416
COR 2016 0418
COR 2016 0442

FINDING INTO DEATH WITH INQUEST

Form 37 Rule 609(1)

Section 67 of the *Coroners Act 2008*

Inquest into the death of: IAN CHAMBERLAIN

Findings of: AUDREY JAMIESON, CORONER

Delivered On: 11 February 2020

Delivered At: Coroners Court of Victoria, 65 Kavanagh
Street, Southbank 3006

Hearing Dates: 11 February 2020

Counsel Assisting the Coroner: *King Taylor, Leading Senior Constable*

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I, AUDREY JAMIESON, Coroner having investigated the death of Ian Chamberlain
AND having held an Inquest in relation to this death on 11 February 2020
at the Coroners Court of Victoria
find that the identity of the deceased was Ian Chamberlain
born on 24 February 1950
and the death occurred on 29 January 2016
at the Bass Strait approximately 6.6 kilometres south-west of Point Lonsdale, Victoria 3225
from:

1 (a) **MULTIPLE INJURIES SUSTAINED IN A LIGHT PLANE INCIDENT**

In the following summary of circumstances:

At 12.03pm on 29 January 2016, Ian Chamberlain, Dianne Bradley, Donald Hateley, and Daniel Flinn left Moorabbin Airport in a Piper Aircraft Corporation PA-28 aircraft¹ registered VH-PXD (“PXD”). The group was flying from Moorabbin Airport to King Island, this trip had been planned by several members of the Royal Victorian Aero Club (RVAC).

At approximately 12.22pm, PXD flew over the town of Point Lonsdale, Victoria, and continued southward over the Bass Strait. The pilot conducted a series of left and right turns, including conducting a 180-degree northbound turn before turning back to travel south.

At approximately 12.27pm, PXD entered a rapid descent and impacted the water 6.6 kilometres south-west of Point Lonsdale. The four occupants of the aircraft died upon impact with the water.

BACKGROUND CIRCUMSTANCES

The following provides a brief overview of the deceased individuals’ personal history and relevant aviation qualifications or experience. This information is not intended to summarise their entire personal history nor qualifications.

¹ This type of aircraft is referred to as a “Piper Cherokee”.

Ian Chamberlain

Personal History

1. Mr Chamberlain was 65 years of age at the time of his death. He lived in Black Rock with his partner of 10 years, Dianne Bradley. Mr Chamberlain was previously married for almost 30 years; he and his former wife Laurel McCauley separated in 2005. They had two children: Matthew Chamberlain and Olivia Chamberlain. Mr Chamberlain was a mechanical engineer and a partner in a multinational engineering resource organisation, which he had managed since 1988. Mr Chamberlain worked full-time managing his business.
2. Mr Chamberlain had a history of myocardial ischaemia and had a stent placed in his right coronary artery in 2001.

Aviation Qualifications & Experience

3. In January 2003, Mr Chamberlain was cleared to hold a Class 2 medical certificate² by the Civil Aviation Safety Authority (CASA). To maintain his certificate, Mr Chamberlain had regular cardiac reviews with Interventional Cardiologist Dr George Proimos.
4. On 27 July 2004, Mr Chamberlain obtained his Restricted Pilot's Licence (RPL – his "Flight Crew Licence"). He completed his training at the Moorabbin Flight School. Mr Chamberlain was endorsed to fly single engine aeroplanes under a 5.7 tonne maximum take-off weight. Mr Chamberlain was permitted to fly under Visual Flight Rules (VFR). This meant that Mr Chamberlain had to navigate with reference to visual cues and be able to see the ground or water beneath the aircraft.³
5. On 22 December 2010, Mr Chamberlain had his final aviation medical examination. The medical examiner noted, *inter alia*, that Mr Chamberlain had:
 - a. 120 total flying hours, and
 - b. 30 flying hours in the preceding six months.

² Pilots and air traffic controllers must hold a current medical certificate to exercise the privileges of their licence. The Class 2 medical certificate standard applies to holders of a Recreational Pilot Licence, Private Pilot Licence and a Commercial Pilot (Balloon) Licence that want to exercise the full privileges of their licence.

³ Australian Government Civil Aviation Safety Authority, 'Rules of the Air', *Visual Flight Rules Guide* (webpage, 21 March 2019) < <https://vfrg.casa.gov.au/general/rules-of-the-air/vfr-navigation/>>.

6. On 6 January 2011, Mr Chamberlain was issued the Class 2 medical certificate which expired on 23 December 2011. He was not re-issued a medical certificate after that date.
7. On 18 December 2015, Mr Chamberlain underwent an “Exercise Stress Echocardiogram” at the Southland Medical Centre. On 12 January 2016, Dr Proimos compiled a report to state that Mr Chamberlain’s blood pressure was well controlled and that he considered him to be fit to continue flying.
8. At the time of his death, Mr Chamberlain was licenced to fly VFR but was prohibited from exercising that privilege due to his expired medical status.

Dianne Bradley

Personal History

9. Dianne Bradley was 63 years of age at the time of her death. She lived in Black Rock with her partner of 10 years, Ian Chamberlain. Ms Bradley had two children: Daniel Tempy and Benjamin Tempy. She worked as a sales assistant for a bottle recycling company and had done so for approximately 15 years. She was also a publisher and part-owner of a full-colour health magazine. Ms Bradley was of good health and maintained a very healthy lifestyle.

Aviation Qualifications & Experience

10. Ms Bradley had no aviation education and was not a licenced pilot.

Donald Hateley

Personal History

11. Mr Hateley was 68 years of age at the time of his death. He lived in Noble Park with his wife of almost 46 years, Bernadette Hateley. They had three daughters: Rebecca, Jaqueline and Elizabeth. Mr Hateley had been retired for almost two years; he had previously worked at a number of logistics organisations, predominantly as a truck driver. Mr Hateley was in good health and exercised regularly.

Aviation Qualifications & Experience

12. Mr Hateley began to learn to fly in the 1980s. On 18 February 1994, he obtained his Private Pilot's Licence (PPL). Mr Hateley completed his flight training at the Moorabbin Flight School. He met Mr Flinn at flight school, and they remained friends.
13. Mr Hateley had endorsements on a number of aircraft including an endorsement to fly the PXD aircraft. He was permitted to fly by VFR.
14. On 12 December 2014, Mr Hateley had his most recent aviation medical examination. The medical examiner noted, *inter alia*, that Mr Hateley had:
 - a. 694 total flying hours, and
 - b. 20 flying hours in the preceding six months.
15. On 7 May 2014, Mr Hateley completed an Aeroplane Flight Review (AFR).⁴
16. At the date of his death, Mr Hateley's Pilot's Log Book indicated that he had flown a total of 716.6 hours. He recorded that he had flown 11.5 of these hours in the previous six months.

Daniel Flinn

Personal History

17. Daniel Flinn was 55 years of age at the time of his death. He lived in Mordialloc. When he was a child, Mr Flinn immigrated to Australia from the United Kingdom with his family. Mr Flinn's mother Bettina Flinn and brother Tom Flinn lived in Australia. His sister Henrietta Flinn lived in France and he had spoken of potentially moving there in the future. Mr Flinn trained as a "Fitter and Tuner" with the Toyota group. Subsequently, he became a laboratory technician at another company, where he worked for approximately 17 years. Mr Flinn was in good health and exercised regularly.

Aviation Qualifications & Experience

18. Mr Flinn began to learn to fly in the 1990s. On 28 January 1998, Mr Flinn obtained his PPL. Mr Flinn completed a number of aircraft endorsements, including an endorsement to fly single engine aeroplanes under a 5.7 tonne maximum take-off weight. Mr Flinn

⁴ An AFR is a periodic test conducted to prevent the natural erosion of a pilot's skills, or to bring them back up to the requisite standard.

completed his flight training at the Moorabbin Flight School. He was permitted to fly under VFR.

19. On 10 October 2014, Mr Flinn had his final aviation medical examination. The medical examiner noted, *inter alia*, that Mr Flinn had:
 - a. 392 total flying hours, and
 - b. Seven flying hours in the preceding six months.
20. On 26 November 2014, Mr Flinn completed an AFR which was valid through to 30 November 2016.
21. At the time of his death, Mr Flinn's pilot's Log Book reflected the following flight hours:
 - a. 407.4 total flying hours, and
 - b. 5.6 hours in the preceding six months.
22. Mr Flinn had flown a total of 9.3 hours during the year preceding his death.

Piper Aircraft Corporation PA-28 Aircraft "PXD"

23. The Piper PA-28 Cherokee is a family of light aircraft built by Piper Aircraft and designed for flight training, air taxi and personal use. The PA-28 family of aircraft are all metal unpressurised, single engine piston powered aeroplanes, with low mounted wings and tricycle landing gear. The Piper PA-28 is approved for day or night VFR and Instrument Flight Rules (IFR) operations, when equipped in accordance with Federal Aviation Regulations.
24. They have a single door on the co-pilot side, which is entered by stepping on the wing.
25. PXD was first registered in Australia in 1968. The most recent registration was to Mr Chamberlain on 22 January 2009. Mr Chamberlain stored PXD at Tyabb Airport which was located approximately 39 kilometres from Moorabbin Airport.
26. Mr Chamberlain serviced his aircraft at "Interplane Maintenance" which was located in Bacchus Marsh. Interplane Maintenance is owned and managed by licenced Aircraft Maintenance Engineer Kieran Hickcox. Mr Hickcox was responsible for routine maintenance and servicing of PXD for approximately three years. The aircraft's most recent periodic service prior to the collision was on 28 October 2015.

27. Mr Hickcox stated that Mr Hateley always accompanied Mr Chamberlain to Interplane Maintenance. He said that Mr Hateley was always Pilot in Command (PIC) as he held a PPL and Mr Chamberlain held an RPL.⁵
28. Mr Hateley often flew PXD with Mr Chamberlain, including acting as a quasi 'chauffeur'.⁶ Mr Chamberlain allowed Mr Hateley to fly PXD if he paid for his own fuel. Mrs Hateley believed that her husband began flying PXD with Mr Chamberlain in approximately 2010.⁷

King Island Trip

29. Mr Hateley, Mr Chamberlain and Mr Flinn knew each other through their aviation activities. They were part of a broader group of friends who were pilots, many of whom were members of the RVAC at Moorabbin Airport. These friends planned a trip to the Festival of King Island (FOKI), a three-day annual event occurring during the last weekend of January. The group of pilots who intended to attend the FOKI in 2016 were:
 - a. Ian Chamberlain;
 - b. Donald Hateley;
 - c. Daniel Flinn;
 - d. Steve Antunovic;
 - e. Jack Blutman, and
 - f. Greg Snell.
30. Jack Blutman stated that they individually organised their methods of travel and accommodation and that a few of the pilots were bringing their partners or friends. Mr Blutman said that the trip '*wasn't organised through the (Royal Vic Aero) club... it was just a group going over*'.⁸
31. Mrs Hateley stated that the occupants of PXD had originally intended to fly to King Island on Saturday 30 January 2016, but the weather forecast had been too poor.

⁵ Coronial Brief, *Statement of Kieran Hickcox*, dated 23 May 2016 p 134.

⁶ Coronial Brief, *Statement of Rebecca Gallagher*, dated 17 March 2016 p 116.

⁷ Coronial Brief, *Statement of Bernadette Hateley*, dated 9 May 2016 p 123.

⁸ Coronial Brief, *Statement of Jack Blutman*, dated 10 May 2016 p 70.

Consequently, the group planned to leave on Friday 29 January 2016. However, Mrs Hateley stated that this departure date was also weather dependent.⁹

SURROUNDING CIRCUMSTANCES

32. On 12 December 2015, Mr Hateley and Mr Chamberlain flew PXD from Tyabb Airport to Interplane Maintenance in Bacchus Marsh, as Mr Hickox was to install some new parts onto the aircraft. According to Mr Hateley's Log Book, he was the PIC of this flight. During this attendance, Mr Chamberlain told Mr Hickox that he was planning to take PXD to King Island with a group of friends at the end of January 2016.
33. On 27 January 2016, Mr Hickcox released PXD from maintenance as the new parts on the aircraft had been installed.
34. On 28 January 2016, Mr Chamberlain and Mr Hateley went to Bacchus Marsh in Mr Snell's aircraft, registration VH-SRF ("SRF"). They had been unable to go earlier, as there had been heavy rain in Bacchus Marsh.¹⁰ Mr Snell regularly assisted Mr Chamberlain with transport to retrieve his aircraft from maintenance. Mr Chamberlain discussed the details of the aircraft maintenance with Mr Hickcox before he and Mr Hateley returned to Moorabbin Airport in PXD. Mr Hateley's Pilot Log Book indicates that he was PIC of this flight. The two friends went to the RVAC and to drink a beer together.
35. At approximately 4.00pm, Mr Flinn spoke to his employer Tony Balchan at their workplace about the intended trip to King Island. Mr Flinn told Mr Balchan that the weather conditions were '*not looking good for the trip*'.¹¹ Mr Balchan indicated that Mr Flinn always seemed fastidious about weather conditions and pre-flight checks. He was surprised that Mr Flinn was still determined to go on to King Island, as Mr Flinn would usually cancel his trips when the weather was poor. Mr Flinn asked Mr Balchan if he could take early leave from work the following day, in order to accommodate his journey. Mr Balchan commented that it was highly unusual for Mr Flinn to ask at such late notice.

⁹ Coronial Brief, *Statement of Bernadette Hateley*, dated 9 May 2016 p 123.

¹⁰ Coronial Brief, *Statement of Bernadette Hateley*, dated 9 May 2016 p 125.

¹¹ Coronial Brief, *Statement of Tony Balchan*, dated 19 July 2016 p 54.

36. At 6.43pm, Mr Hateley telephoned the King Island Aerodrome Weather Information Service (AWIS).
37. At approximately 8.00pm, Mr Flinn spoke on the telephone with his brother, predominantly to discuss who would visit their mother on Sunday. Tom Flinn stated, '*the weather doesn't look too flash*',¹² to which Mr Flinn replied, '*yeah, I might not go*'.¹³ Mr Flinn did not indicate who would pilot the aircraft and they did not discuss the trip further.
38. During the evening of 28 January 2016, Mr Chamberlain went to the Sandringham Men's Club for dinner with a few friends, including Mr Snell. He returned home at around 9.00pm; Ms Bradley had spent the evening at home. During that evening, Ms Bradley had spoken with her son Daniel Tempy on the telephone. She told him that she and Mr Chamberlain were going to King Island for a blues festival and a horse racing meeting. Daniel Tempy stated that his mother was not sure if they would leave the following day, due to the weather. She also stated that they would return Sunday or Monday, weather permitting.¹⁴ Mr Hateley also returned to his home and had dinner with his wife. Mr Flinn spent the evening at his mother's nursing home in Carrum Downs, celebrating her birthday.
39. At 6.33am on 29 January 2016, Mr Hateley contacted the King Island AWIS once more. At 8.23am, Mr Hateley contacted the Bureau of Meteorology (BOM) for a meteorological briefing.¹⁵ Subsequently, Mr Chamberlain made five weather forecast related calls:
- a. 9.22am Moorabbin AWIS;
 - b. 9.27am King Island AWIS;
 - c. 10.18am Moorabbin AWIS;
 - d. 10.20am King Island AWIS, and
 - e. 11.16am Moorabbin AWIS.

¹² Coronial Brief, *Statement of Tom Flinn*, dated 20 July 2016 p 107.

¹³ Ibid.

¹⁴ Coronial Brief, *Statement of Daniel Tempy*, dated 12 March 2016 p 226.

¹⁵ Weather radar data derived from Bureau of Meteorology radar sites.

40. At a time between 8.30am and 10.00am, Mr Flinn approached Mr Balchan and asked if he could leave work immediately: *'we've got an opportunity to go now, is it ok if I go now?'*¹⁶ Mr Balchan stated that he asked about the weather and Mr Flinn stated, *'the weather is still not that good'*.¹⁷
41. At approximately 10.20am, CCTV footage shows Mr Flinn entering an aviation supply store at Moorabbin Airport where he purchased four life jackets. Approximately 20 minutes later, Mr Hateley entered the same store and purchased a water bottle and visual navigation chart.
42. At approximately 11.00am, Mr Blutman entered the RVAC carpark and saw Mr Flinn and Mr Hateley. He stated that they had a brief conversation about the departure to King Island. Mr Blutman recalled that Mr Hateley was organising fuel for PXD. Mr Blutman organised his own fuel and then commenced pre-flight checks of the aircraft that he intended to fly (VH-BSV). Mr Blutman said that, as he commenced pre-flight checks, he could see PXD parked on the grass at the front of the Royal Vic Aero Club. Mr Blutman saw Mr Hateley and Mr Flinn standing on the wing of the aircraft and he waved to them. Mr Blutman stated that he believed Ms Bradley and Mr Chamberlain were already inside PXD.
43. Air Traffic Control (ATC) at Moorabbin Airport recorded the following information, *inter alia*, from aircraft headed to King Island on 29 January 2016:
- a. **11.38am** VH-SRF [pilot Greg Snell] cleared for take-off;
 - b. **12.03pm** VH-PXD [pilot Unknown] cleared for take-off;
 - i. Prior to being cleared for take-off, PXD made the standard radio calls to initiate take-off. Mrs Hateley has identified the voice making the radio calls as her husband.
 - ii. Mr Blutman stated that he was also confident the radio-calls were made by Mr Hateley. He stated that this *'doesn't really mean anything as either pilot (of the dual control aircraft) can make the transmission calls'*.¹⁸

¹⁶ Coronial Brief, *Statement of Tony Balchan*, dated 19 July 2016 p 54.

¹⁷ Ibid.

¹⁸ Coronial Brief, *Statement of Jack Blutman*, dated 10 May 2016 p 73.

- iii. The ATSB noted that Mr Hateley did not request clearance for “Special VFR” nor did the ATC prompt that request.
- iv. At 12.03pm, Moorabbin Airport ATC indicated to PXD that they tried to make radio contact at approximately midday but were unsuccessful.
- v. At 12.05pm, the AirServices Australia radar depicted PXD departing Moorabbin Airport and following the coastline toward the Port Phillip Bay entrance.
- c. **12.08pm** VH-PXD provided a cloud report for Carrum Downs;
- d. **12.13pm** VH-SRF returned to Moorabbin Airport due to weather conditions (cleared to land 12.16pm);
 - i. In his statement, Mr Snell said that the cloud was extremely heavy and there was a big band of cloud over the Bellarine Peninsula. In light of the poor weather conditions, he determined to return to Moorabbin Airport.
- e. **12.28pm** VH-BSV [pilot Jack Blutman] cleared for take-off;
 - i. Mr Blutman stated that, as he flew, he could see that meteorological conditions became very poor at Mud Island; the cloud was extremely thick but there was only a small amount of rain. At that point, he considered whether to return to Moorabbin Airport or to seek an alternate route. Mr Blutman decided to attempt to land at a private airstrip in Portarlington, given the severe deterioration of the weather. However, as he reached Swan Bay, Mr Blutman saw that the weather was clear past Queenscliff and that the rain cell was moving south-easterly. He determined that it would be appropriate to continue the journey to King Island by moving around the poor weather.
- f. **12.47pm** VH-SGE [pilot Steve Antunovic] cleared for take-off;
 - i. Mr Antunovic stated that the cloud base near the heads of Port Phillip Bay was at a low altitude and that he descended from 1300 feet¹⁹ to fly below it. Mr Antunovic believed that he descended to approximately 750 feet when flying in the vicinity of Portsea.
- g. **1.08pm** VH-TOT [King Island Airlines – IFR] cleared for take-off;

¹⁹ A reference to altitude is made by indicating feet above sea level.

- h. **1.52pm** VH-SRF [Pilot Greg Snell – IFR] queries PXD departure time;
- i. **1.54pm** VH-SRF provided PXD departure time, and
- j. **1.57pm** VH-SRF cleared for take-off.

IMMEDIATE SURROUNDING CIRCUMSTANCES

44. At approximately 12.26pm, Reece Diery and Bradley Martin were fishing in a boat off the coast between Barwon Heads and Point Lonsdale. The weather was overcast and raining. Mr Martin stated that '*(v)isability was still poor with a very low cloud base.*'²⁰ The two heard the sound of an engine and the sound dissipated prior to becoming louder once more. A short time later, Mr Diery observed a small aircraft emerge from the cloud in a nose down position pitched at a 45-degree angle. He stated that the plane sounded as though it was accelerating, and the front right-hand wing of the aircraft was faced downward, toward the water. Mr Diery said, '*(i)t didn't look like they were making an emergency landing on the water*'.²¹ Mr Martin concurred that the aircraft sounded as though it was accelerating with the engine revving prior to contacting the water. The collision occurred approximately 300 metres from the boat.
45. At 12.28pm, Mr Diery contacted emergency services to request the attendance of water police. Mr Diery explained that a small aircraft had entered the water and provided his coordinates. At 12.45pm, Mr Diery placed a further call to emergency services to state that they had approached the aircraft and believed the occupants to be deceased.

JURISDICTION

46. Mr Chamberlain's death was a reportable death under section 4 of the *Coroners Act 2008* (Vic) ('the Act'), because it occurred in Victoria, and was considered unexpected, unnatural or to have resulted, directly or indirectly, from an accident or injury.

PURPOSE OF THE CORONIAL INVESTIGATION

47. The Coroners Court of Victoria is an inquisitorial jurisdiction.²² The purpose of a coronial investigation is to independently investigate a reportable death to ascertain, if

²⁰ Coronial Brief, *Statement of Bradley Martin*, dated 29 January 2016 p 86.

²¹ Coronial Brief, *Statement of Reece Diery*, dated 29 January 2016 p 167.

²² Section 89(4) Coroners Act 2008.

possible, the identity of the deceased person, the cause of death and the circumstances in which death occurred.²³ The cause of death refers to the medical cause of death, incorporating where possible the mode or mechanism of death. For coronial purposes, the circumstances in which death occurred refers to the context or background and surrounding circumstances but is confined to those circumstances sufficiently proximate and causally relevant to the death and not merely all circumstances which might form part of a narrative culminating in death.²⁴

48. The broader purpose of coronial investigations is to contribute to the reduction of the number of preventable deaths through the findings of the investigation and the making of recommendations by Coroners, generally referred to as the "prevention role".²⁵ Coroners are also empowered to report to the Attorney-General on a death; to comment on any matter connected with the death they have investigated, including matters of public health or safety and the administration of justice; and to make recommendations to any Minister or public statutory authority on any matter connected with the death, including public health or safety or the administration of justice.²⁶ These are effectively the vehicles by which the prevention role may be advanced.²⁷
49. It is not the Coroner's role to determine criminal or civil liability arising from the death under investigation. Nor is it the Coroner's role to determine disciplinary matters.
50. Section 52(1) of the Act provides that a coroner may hold an inquest into any death that the coroner is investigating. I used my discretion under this provision to hold a Summary Inquest into the deaths of Daniel Flinn, Dianne Bradley, Ian Chamberlain and Donald Hateley.

²³ Section 67(1) of the *Coroners Act 2008*.

²⁴ See for example *Harmsworth v The State Coroner* [1989] VR 989; *Clancy v West* (Unreported 17/08/1994, Supreme Court of Victoria, Harper J).

²⁵ The "prevention" role is explicitly articulated in the Preamble and Purposes of the Act.

²⁶ See sections 72(1), 67(3) and 72(2) of the Act regarding reports, comments and recommendations respectively.

²⁷ See also sections 73(1) and 72(5) of the Act which requires publication of Coronial Findings, comments and recommendations and responses respectively; section 72(3) and (4) which oblige the recipient of a Coronial recommendation to respond within three months, specifying a statement of action which has or will be taken in relation to the recommendation.

STANDARD OF PROOF

51. All coronial findings must be made based on proof of relevant facts on the balance of probabilities. In determining whether a matter is proven to that standard, I should give effect to the principles enunciated in *Briginshaw v Briginshaw*.²⁸ These principles state that in deciding whether a matter is proven on the balance of probabilities, in considering the weight of the evidence, I should bear in mind:

- the nature and consequence of the facts to be proved;
- the seriousness of any allegations made;
- the inherent unlikelihood of the occurrence alleged;
- the gravity of the consequences flowing from an adverse finding; and
- if the allegation involves conduct of a criminal nature, weight must be given to the presumption of innocence, and the court should not be satisfied by inexact proofs, indefinite testimony or indirect inferences.

52. The effect of the authorities is that Coroners should not make adverse findings against or comments about individuals, unless the evidence provides a comfortable level of satisfaction that they caused or contributed to the death.

INVESTIGATIONS PRECEDING THE INQUEST

Identity

53. Forensic practitioners at the Victorian Institute of Forensic Medicine (VIFM) completed dental record comparison and DNA comparison to identify the remains of Ian Chamberlain.
54. On 5 February 2016, I completed a Form 8 *Determination by Coroner of Identity of Deceased* that Ian Chamberlain was identified by the consistency and cogency of the available evidence.
55. The identity of Ian Chamberlain was not in dispute and required no further investigation.

²⁸(1938) 60 CLR 336.

Medical Cause of Death

Post-mortem examination

56. Dr Gregory Ross Young (Dr Young), Forensic Pathologist at the VIFM performed an autopsy upon the body of Ian Chamberlain and reviewed related materials including a post-mortem computed tomography (CT) scan and the Victoria Police Report of Death for the Coroner, Form 83. Dr Young reported that the autopsy revealed extensive trauma to the body. He noted that, in terms of natural disease, the autopsy showed a patent stent in the right coronary artery of the heart. Dr Young stated that this was unlikely to have caused or contributed to the death. There was no other significant pathology.
57. Dr Young stated that it was not possible to determine the occupants' positions in the aircraft at the time it impacted the water.

Toxicology

58. Toxicological analysis of post-mortem blood did not detect ethanol,²⁹ common drugs, poisons, carboxyhaemoglobin³⁰ nor hydrogen cyanide.³¹

Forensic pathology opinion

59. Dr Young formulated the medical cause of Ian Chamberlain's death as multiple injuries sustained in a light plane incident.

Australian Transport Safety Bureau Investigation

60. The ATSB is an independent Commonwealth Government statutory agency governed by a commission. The ATSB's functions include: independent investigation of transport accidents and other safety occurrences; safety data recording, analysis and research; fostering safety awareness, knowledge and action. The ATSB performs its functions in accordance with the provisions of the *Transport Safety Investigation Act 2003* (Cth) and Regulations and, where applicable, relevant international agreements.
61. The ATSB³² coordinated with Victoria Police to investigate the collision of PXD with water.

²⁹ Alcohol.

³⁰ A substance formed in red blood cells when carbon monoxide is inhaled.

³¹ A colourless, extremely poisonous chemical compound that may be found in the bodies of victims of fire.

62. On 9 March 2016, the ATSB released a preliminary report outlining the circumstances of the incident. On 28 June 2017, the ATSB completed a final report entitled *Loss of control and collision with water involving Piper Aircraft Corp PA-28-235, VH-PXD* (the ATSB “Final Report”).³³
63. The ATSB studied a number of data sources to ascertain PXD’s movements on 29 January 2016, including recorded data from an electronic flight bag (EFB)³⁴ and ATC radar information. The ATSB detailed, *inter alia*, the following manoeuvres in its Final Report:
- a. 12.19 pm commenced a descent from 1300 feet;
 - b. 12.24.00 pm at 500 feet and commenced a 180 degree turn;
 - c. 12.24.43 pm climbed to 800 feet and commenced another turn back toward previous heading;
 - d. 12.25.03 pm climbs to 1000 feet;
 - e. 12.26.08 pm descends to 800 feet, and
 - f. 12.27.03 pm at 500 feet with a 2000feet/min rate of descent.
64. The ATSB inspected the wreckage of PXD and did not find any evidence of a fault in the aircraft which may have caused or contributed to the collision.
65. In the “Safety Analysis” section of the Final Report,³⁵ the ATSB considered, *inter alia*: the PXD occupants’ decision to depart Moorabbin Airport, PXD flying into areas of low visibility, and the potential of spatial disorientation as a causative factor in the collision with water.³⁶
66. The ATSB concluded that the inherent challenges of assessing low visibility conditions, particularly without instrument flying ability, likely influenced the PXD occupants’ decision to continue to fly toward low areas of cloud. The ATSB surmised that it was

³² The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory Agency. Part of the ATSB’s function is to conduct independent investigation of transport accidents.

³³ Coronial Brief, Exhibit 98 - *ATSB Final Report*, dated 28 June 2017 p 1000.

³⁴ An electronic storage and display system designed to replace traditional paper product in the cockpit.

³⁵ Coronial Brief, Exhibit 98 - *ATSB Final Report*, dated 28 June 2017 p 1000 T.

³⁶ Spatial disorientation is the inability to determine one’s position, location and motion relevant to their environment

likely the pilot of PXD experienced a loss of visual cues and became spatially disoriented after entering an area of low rain, cloud and reduced visibility; this led to a loss of control of the aircraft and impact with the water.³⁷

67. The ATSB were unable to determine who was piloting the aircraft at the time of the incident.

Conduct of my Investigation

68. The investigation and the preparation of the Coronial Brief was undertaken by Senior Constable (SC)³⁸ Paula Wicks on my behalf. SC Wicks provided a very detailed Brief, including an excellent summary, which greatly informed the first part of my investigation.

Family Concerns

69. The Coronial Brief contained statements from each of the deceased persons' family members. The combined flight experience of the three licenced pilots, and all four occupants' willingness to cancel previous flights due to poor weather was mentioned throughout the family statements.
70. Mr Hateley's daughter Rebecca Gallagher commented that weather forecasting and reports may only convey limited information. She queried the utility of a system whereby pilots who had actively experienced conditions they considered dangerous could provide feedback to other pilots. She suggested that perhaps pilots could relay information to ATC so that the information could be relayed for '*real time consideration*' of the foreseeable risk.³⁹

Moorabbin Airport Site Visit

71. On 17 May 2017, I attended Moorabbin Airport accompanied by a Police Coronial Support Unit (PCSU) member Leading Senior Constable (LSC) King Taylor and Coroners Court Solicitor Rebecca Cohen. The visit was conducted with the intention to

³⁷ Coronial Brief, Exhibit 98 - *ATSB Final Report*, dated 28 June 2017 p 1000 X.

³⁸ Paula Wicks has since been promoted to Detective Senior Constable.

³⁹ Coronial Brief, *Statement of Rebecca Gallagher*, dated 17 March 2016 p 116.

better inform my understanding of general aviation and the specific events leading up to the crash of PXD on 29 January 2016.

72. I spoke with Chief Executive Officer of Moorabbin Airport Corporation Mr Paul Ferguson. Mr Ferguson provided general information and I was shown key locations around the airport. In relation to specific concerns and queries, I was provided contact details for General Counsel of AirServices Australia Leah Kennedy. Mr Ferguson also suggested I could contact Freedom of Information (FOI) at CASA.

Civil Aviation Safety Authority Statement

73. CASA is a government body that regulates Australian civil aviation safety. CASA licences pilots, registers aircraft, oversees and promotes safety. CASA works together with the Department of Infrastructure, Transport, Regional Development and Communications (DITRDC) and Airservices Australia. CASA is governed by a board appointed by the Minister of the DITRDC.⁴⁰
74. On 26 May 2017, CASA Acting Manager of Government and International Relations Steve Neal provided a statement in response to my request for clarification on pilot licensing requirements. Mr Neal stated that the aviation regulatory framework does not require all pilots to be “instrument rated”.⁴¹ VFR and IFR proficiency requires different training and practices; VFR are simpler than IFR and require significantly less training and practice.
75. Mr Neal explained that VFR provides a greater level of freedom for pilots; they are not required to: file a flight plan, communicate with ATC unless flying within certain types of relatively busy airspace, or follow predefined routes or flight procedures. Additionally, VFR flights are limited to Visual Meteorological Conditions (VMC) which are ‘*typically calm, clear conditions*’.⁴² Mr Neal stated that, consequently, many pilots choose to never pursue an instrument rating.

⁴⁰ For further information please see: Australian Government Civil Aviation Safety Authority, ‘About Us’, *CASA Website* (webpage, 4 February 2020) < <https://www.casa.gov.au/about-us>>.

⁴¹ Licenced to fly IFR.

⁴² Coronial File, *CASA Initial Submissions*, dated 26 May 2017, p 2.

76. Mr Neal informed me that if operation of an aircraft is not safe because '*visual cues outside the aircraft are obscured by weather or darkness*',⁴³ IFR must be used. IFR permit an aircraft to operate in Instrument Meteorological Conditions (IMC), which is essentially any weather condition less than VMC but in which aircraft can still operate safely. The aircraft must be equipped and type-certified for instrument flight, and the related navigational equipment must have been inspected or tested within a specific period of time prior to the instrument flight. Many small or recreational aircraft do not meet these equipment requirements.
77. Mr Neal described the various extended obstacles and challenges that a pilot flying IFR must be prepared to face, including hazardous weather conditions, air traffic and emergency situations when the ground and horizon are not visible. He stated that manoeuvring an aircraft in flight solely by reference to flight instruments is more challenging than using external visual cues. Moreover, he stated that pilots flying IFR must meet additional physiological and human performance standards and an instrument rated pilot needs to complete extensive training to achieve the same. Mr Neal stated that checks for ongoing proficiency is more critical to IFR as skill levels can deteriorate. CASA regulations specify recent experience requirements for instrument rated pilots to ensure they practice the skills necessary to conduct an instrument approach and consequently a flight under IFR safely.
78. Mr Neal opined that the weather conditions in Australia are relatively benign. He stated that the weather conditions do not require aircraft to be operated under IFR '*for a significant number of days*'⁴⁴ and they can be safely operated under VFR.

AirServices Australia Statement

79. On 21 July 2017, I requested that AirServices Australia respond to a series of questions. On 10 August 2017, I received AirServices' response from that agency's General Counsel Leah Kennedy.

⁴³ Coronial File, *CASA Initial Submissions*, dated 26 May 2017, p 2.

⁴⁴ *Ibid.*

- a. Did the pilot of this flight submit a VFR 'flight notification' or flight plan? If not, was one created over the air, with ATC?

AirServices stated that no flight plan was submitted by PXD and, as the pilot was operating under VFR outside controlled airspace, there was no requirement that they submit one. As PXD's flight was over-water, I was informed that the pilot was required to submit a SARTIME (Search and Rescue Time) notification to Air Traffic Services (ATS) or to leave a Flight Note⁴⁵ with a responsible person. AirServices stated that they have no capacity to identify when a pilot elects to leave a flight note with a responsible person.

- b. Was a SARTIME notification lodged with air traffic control?

AirServices had no record of a SARTIME notification lodged by PXD; their records are deleted after 12 months. They noted that there was no record of PXD submitting or cancelling a SARTIME by high frequency radio.

The AirServices Melbourne Centre ("ML") showed that:

- PXD was not being provided an ATC service by ML at the time of the accident as it was outside controlled airspace at the time of the collision. AirServices stated that this was because the aircraft was off the coast of Victoria, where the base of controlled airspace is Flight Level 180.⁴⁶
- At 0140 UCT,⁴⁷ the Joint Rescue Coordination Centre (JRCC)⁴⁸ requested that all aircraft in the ML area monitor the distress frequency 121.5. This was the first indication to ML that an aircraft may be in distress.

⁴⁵ A flight note is a form left with a responsible person to initiate search and rescue operations where an aircraft does not arrive at its intended destination within a set time frame.

⁴⁶ Flight Level 180 or FL180 is 18000 feet above sea level.

⁴⁷ Coordinated Universal Time (or UTC) is the primary time standard by which the world regulates clocks and time. It is within about 1 second of mean solar time at 0° longitude and is not adjusted for daylight saving time. In some countries, the term Greenwich Mean Time is used.

⁴⁸ JRCC Australia has been operating since 1997 when the SAR functions of AirServices Australia and Australian Maritime Safety Authority merged into a single agency.

- At 0207 UTC, police aircraft (POLAIR) reported to ML that there were possibly two bodies in the water. ML relayed that information to the JRCC immediately.
- At 0215 UTC, POLAIR and the Victorian Water Police advised ML that they were at the site of the aircraft collision with water, that there was debris and four confirmed deceased. The ML relayed this information directly to the JRCC.

c. Did the pilot seek clearance for take-off?

AirServices confirmed the information contained in the ATSB Report, that the pilot of PXD requested clearance for take-off. Additionally, AirServices reiterated the ATSB's comment that the pilot did not seek clearance for "Special VFR" and further stated that the request was not prompted by the ATC.⁴⁹

d. Did ATC establish the identity of the pilot of this flight?

AirServices informed me that the ATC is not required to establish the identity of pilots and did not do so in this instance.

e. Does ATC confirm with the pilot that he/she has done pre-flight checks? ie: relating to weather?

AirServices stated that ATC does not confirm pre-flight checks.⁵⁰

f. Was ATC contacted by the pilot regarding the flight path or problems with the weather, after take-off?

AirServices stated that the pilot reported to Moorabbin ATC that the cloud base over Carrum was 800 – 900 feet. They explained that this report was for information purposes and was not to express any difficulty or problem with the weather. The pilot did not contact ATC at any other time during the flight.

⁴⁹ Manual of Air Traffic Services 9.2.7.1 – Special VFR Clearance Condition.

⁵⁰ Aeronautical Information Package En Route (AIP ENR) 1.10 Paragraph 1.1.

- g. Is any contact between ATC and the pilot recorded? If so, can this material be provided to the Court?

AirServices provided all recordings of radio transmissions between PXD and Moorabbin ATC. These recordings formed part of the coronial brief.

Direction Hearing

80. On 17 August 2017, I directed that all interested parties be notified of a Directions Hearing in this matter and formal notice was sent to family members, AirServices and CASA. The notice indicated that I intended to finalise this matter by way of a Summary Inquest. However, I had outstanding concerns pertaining to AirServices Australia's apparent lack of clarity about the identity of the pilot of PXD and lack of knowledge of that aircraft's flight path.
81. On 23 August 2017, CASA responded to the notice indicating that they did not intend to attend the Directions Hearing as the matters under consideration did '*not appear to be matters of significant interest for CASA, or issues in respect of which CASA could be of any material assistance to her Honour*'.⁵¹ CASA requested to be notified if I formed the view that I may be materially assisted by submissions or receipt of other evidence in the future.
82. On 29 August 2017, a Directions Hearing was held. AirServices Australia⁵² were represented at the Directions Hearing and some family members attended the public gallery. LSC King Taylor of PCSU appeared to assist me at this Hearing. LSC Taylor provided a summary of the known circumstances of the incident and the investigation thus far, including my outstanding concerns, as listed in the Directions Hearing notice.
83. During the course of the Directions Hearing, I confirmed that, at this stage, I had determined to finalise the matter by way of a Summary Inquest. I specified that Australia's primary aircraft crash investigator, the ATSB, had done a significant investigation and on the basis of the ATSB Final Report, and further correspondence with CASA as well as AirServices Australia, I had determined that there was no

⁵¹ Coronial File, *Email of Joe Rule*, Manager of Litigation and Enforcement at CASA, dated 23 August 2017.

⁵² AirServices Australia is a government-owned organisation responsible for Australia's airspace management, aeronautical information, aviation communications, radio navigation aids, and aviation rescue fire-fighting services.

probative value in taking the matter to a full Inquest and calling witnesses. Furthermore, I indicated that the available evidence as to who was piloting PXD was not definitive and it appeared unlikely that hearing oral evidence would provide any greater clarity.

84. At this stage, the focus of my investigation related to systemic issues pertaining to prevention and general public health and safety:
 - a. The identity of the occupants of PXD were unknown at the time of the incident on January 2016;
 - b. The pilot was unidentified;
 - c. A pilot accredited to fly VFR may not have the skills to revert to IFR when conditions deteriorated to IMC, and
 - d. ATC did not have capacity to provide updated weather information to outbound aircraft.
85. AirServices informed me that the third point was probably more an issue of regulation and therefore more appropriately directed to CASA. I directed AirServices to provide any written submissions in relation to my other concerns within 14 days.
86. At the conclusion of the Hearing, I queried whether any attending family members wished to address me, especially on the point of finalising this matter by way of a Summary Inquest. Mr Chamberlain's brother-in-law Raymond Macleod addressed me from the public gallery. He did not raise any issues in relation to finalising the matter with a Summary Inquest. Mr Macleod agreed with my concerns and confirmed that his own family had thought about these issues subsequent to the deaths of the four occupants of PXD. Mr Macleod reiterated his family's frustration that the pilot of the aircraft remained unidentified.

AirServices Australia Submissions

87. On 12 September 2017, I received submissions from Russell Kennedy lawyers on behalf of AirServices.

88. AirServices provided an overview of the functions of two of the primary bodies associated with civil aviation⁵³ in Australia. AirServices are an air navigation service provider to the aviation industry and that their functions are set out by the *Airservices Act 1995* (Cth). AirServices responsibilities include Australia's airspace management, aeronautical information, aviation communications, radio navigation aids, and aviation rescue fire-fighting services. Their functions are distinct from CASA, the function of which is to conduct the safety regulation of civil air operations in Australia and Australian aircraft overseas. CASA's functions are set out in, *inter alia*, the *Civil Aviation Act 1988* (Cth). CASA is also required to provide safety education and training programmes and to cooperate with the ATSB.
89. AirServices stated that the ATC was unaware of the identity of the pilot as that issue fell outside the scope of their obligations and functions. AirServices explained that they conducted no type of auditing measures in relation to pilots. The service only operates to aid any pilot of an aircraft in relevant airspace, if requested by that pilot. Further, AirServices stated that identifying information would be provided by radio transmission and could not be verified at the time of receipt.
90. AirServices expanded upon its previous statement in relation to verification of PXD's flight path. The agency clarified that the PXD pilot did not submit a flight plan and therefore they had no knowledge of the intended flight path. AirServices reiterated that there was no requirement to submit a flight plan for its flight to King Island because PXD was operating under VFR for only a short duration in Class D (controlled) airspace and for the remainder of the flight in Class G (uncontrolled) airspace. In submissions dated 10 August 2017, AirServices indicated that PXD may have left a flight note or SARTIME but it was not possible to identify which was chosen. However, in their following statement, they clarified that PXD was required to submit a flight notification for the portion of the flight in Class D airspace and that this was done by radio.
91. In Australia, ATCs actively monitor and manage the flight paths of aircraft flying in Class A, C and D airspace of airspace to prevent collisions between aircraft. AirServices informed me that the majority of light aircraft operate within uncontrolled

⁵³ Civil aviation is commercial and private aviation that is not military related.

Class G airspace, where pilots are often not visible to ATC, but they must still follow relevant flight rules. In Class G airspace pilots flying IFR are provided a Flight Information Service⁵⁴ and Traffic Information Service; as AirServices has previously stated, these are available upon request to pilots flying VFR and these services were not accessed by the occupants of PXD.

92. AirServices reiterated that a pilot is required to submit a SARTIME or leave a Flight note with a responsible person for VFR flights that occur partially over-water.⁵⁵ AirServices informed me that SARTIME is an abbreviation for 'time search action required'. A SARTIME is the time nominated by a pilot for the initiation of search and rescue action if a report has not been received by the nominated unit. A Flight Note is '*details of the route and timing of a proposed flight provided by the PIC of an aircraft, which is other than notification submitted to Airservices Australia, and which is required to be left with a person who could be expected to notify appropriate authorities in the event that the flight becomes overdue.*'⁵⁶ AirServices stated that a SARTIME or Flight Note is purely to assist in search and rescue operations and that it does not create an opportunity to refuse or allow planned air travel. Furthermore, the agency stated that the existence of a Flight Note or SARTIME does not give rise to a responsibility for ATCs to verify that the flight paths of VFR flights are free of potentially adverse weather conditions.
93. AirServices supported CASA's submissions dated 26 May 2017. Subject to the general qualification that the regulation of civil aviation falls to CASA and not AirServices, the latter agency made some observations in relation to IFR and VFR ratings. AirServices stated that VFR flight is premised on the avoidance of risk. VFR flights are required by law to maintain certain vertical and horizontal distances from cloud cover. They stated that special VFR mandates reduced distance requirements but that PXD did not request clearance for special VFR in this instance.

⁵⁴ ATC's provision of advice and information such as meteorological conditions and changes to conditions of aerodromes and associated facilities.

⁵⁵ AIP ENR 1.10, 2.11.

⁵⁶ AIP General (GEN) 2.1-11.

94. AirServices commented that the regulations in relation to pilot responsibilities in deteriorated VMC are extremely clear. They stated that the distance requirements of VFR are sufficient to allow consideration of alternative routes and returning to point of origin and on days where weather is likely to be volatile or where the risk of not being able to maintain the mandated distances from cloud, flights that rely on VFR should not embark.
95. Regulation 174(1) of the *Civil Aviation Regulations 1988* (Cth) provides that flight visibility shall be determined by the PIC from the cockpit of the aircraft while in flight. AirServices submitted that this regulation recognises the fact that radar and satellite information have their limitations and conditions are best assessed by the pilot during flight. AirServices also submitted that the regulation recognises that the assessment of meteorological conditions is an ongoing and real-time issue as weather conditions can change over time.
96. AirServices stated that pilots flying VFR should contact the ATC if the aircraft becomes enveloped by clouds. ATC emergency response support includes, *inter alia*: advising the pilot to keep wings level, speed constant and to trust the instruments (which can minimise the risk of spatial disorientation). The ATC can advise the lowest safe altitude, provide navigation assistance and/or arrange for an IFR flight to intercept the VFR flight and guide it safely back to an airport for landing. ATC can also provide pilots with meteorological information during flight. AirServices stated that the responsibility for initiating this emergency response support remains with the pilot.
97. AirServices reiterated that weather in Australia is generally predictable and stable. They stated that a VFR pilot complying with the rules is not likely to encounter a situation that requires them to suddenly switch to IFR flight.
98. AirServices submitted that civil aviation regulation is analogous to regulation of motor vehicle travel; compliance checks are not conducted each time an individual operates the vehicle. In civil aviation, CASA carry out various, perfunctory checks to enforce compliance. Additionally, unexpected or unusual behaviour may attract attention.

Expert Evidence

99. I determined that I required an independent expert opinion to better my understanding of the surrounding circumstances of the deaths of the occupants of PXD. Specifically, I wished to better my understanding of the technical decision-making capacity of the three pilots aboard that aircraft and to determine whether there was an opportunity to decrease the incidence of risk to occupants of aircraft flying under VFR and the general public, through pertinent recommendations. My assistant LSC Taylor of PCSU and Solicitor Hayley Challender assisted me to identify an appropriate expert.
100. The Court appointed expert was Chief Pilot (CP) and Chief Flying Instructor (CFI) at CAE Oxford Aviation Academy Australia Janet Martin. Ms Martin had over 25 years' experience in the flight training industry and was a CASA approved Testing Officer / Flight Examiner for both visual and instrument ratings.
101. The Court provided Ms Martin with: an accepted factual matrix adopted from the ATSB report, the ATSB Report, AirServices' statement dated 10 August 2017, ATC audio files, a Transcript of the Directions Hearing dated 29 August 2017, email correspondence with CASA, AirServices' submissions dated 12 September 2017 and a list of my key concerns:
- a. Pilots with a licence to fly VFR have limited IFR training;
There is no regulatory requirement that AirServices...
 - b. Identify the PIC of VFR flights;
 - c. Receive a full "Flight Plan" that would entail the flight route for VFR Flights.
102. Guidance was provided to Ms Martin that the scope of her report would essentially be to review the issues outlined above and provide advice as to whether any recommendations to relevant regulators may alleviate my concerns. Ms Martin was invited to address any matters she thought relevant and to use the following information as a guide for initiating the report.
103. Ms Martin was informed that I wished to explore potential recommendations to increase instrument flight training. I was particularly interested in Ms Martin's opinion on increasing instrument flight recency requirements pursuant to the Civil Aviation Safety Regulation 61.525 and Part 61 of the *Manual of Standards*

Volume 2 section 4 - 2.5. I asked Ms Martin to inform me if the following would be reasonable recommendations in terms of practicality and in terms of improving public health and safety:

- A recommendation to the regulator to identify the PIC of VFR Flights;
- A recommendation to the regulator to require a full 'Flight Plan' for VFR Flights that travel over ocean.

104. I noted that Moorabbin Airport's inbound and outbound ATC communications are recorded, which seemed to present an opportunity to record the nominated Pilot In Command, even if that information could not be verified at the time of recording.⁵⁷

105. Ms Martin supplied a report on 11 July 2018.

106. Ms Martin delineated the limited IFR training and instrument flight recency requirements for VFR pilots. She stated that PPL holders⁵⁸ undergo two hours of IFR training to fly the aircraft solely by reference to the flight instruments, a technique used where visual reference to the outside horizon is reduced or lost. PPL IFR training is only intended to provide, basic instrument flying ability. It is not designed to provide the pilot skills required to complete a flight under IFR and is unlikely to provide the pilot sufficient skill to manage or maintain any level of continuous flight in IMC. Ms Martin commented that continuing a VFR flight in reduced visibility and/or into cloud is not the same as planning and conducting an IFR flight (which requires an instrument rating with a minimum of 40 hours IFR training). She said that maintaining aircraft control and managing flight when entering IMC requires advanced IFR skills and the planning and execution of an instrument flight is significantly different to VFR flight.

107. Ms Martin stated that extensive training is required for Instrument Rated pilots to gain the knowledge and practical skills required to maintain control in IMC. Ms Martin

⁵⁷ Coronial File, *Expert Information Package*, dated 2 May 2018.

⁵⁸ A PPL or Private Pilot's Licence was held by Mr Flinn and Mr Hateley. Mr Chamberlain held a Restricted Pilot's Licence or RPL.

advised me that increased IFR training and recency requirements would be unlikely to raise a PPL Pilot's skill to allow safe flight in IMC. She commented that the entire 40 hours of Command Instrument Rating and subsequent IFR recency requirements are usually only just sufficient to do so. She qualified this statement by saying that this was a subjective opinion based on 23 years of flight-testing Command Instrument Rating candidates.

108. Ms Martin described "spatial disorientation" and the effect of entering cloud when conducting a VFR flight and provided an excerpt from the Flight Safety Australia, entitled "178 Seconds to Live".⁵⁹ The excerpt indicated that spatial orientation is based on visual input (80 percent) and inner ear and proprioceptive⁶⁰ system (20 percent). The excerpt explained that flight is an unnatural environment, but it is usually easy to orient yourself in VFR flight by visual reference to the horizon outside the aircraft. Steady flight produces 1 gravitational force equivalent ("g-force") which is the same amount of force experienced by a person standing on the earth's surface. The article noted that even steep turns which may create 2 g-force would not pose a problem to a pilot's spatial orientation if they maintain a visual on the horizon outside the aircraft. However, when the horizon is not visible, 80 percent of the brain's required input for orientation is lost. Additionally, if the flight attitude⁶¹ changes or a manoeuvre results in forces greater than 1 g-force a person's sense of balance will be altered. Spatial illusions and disorientation are created when the fluid of the inner ear responds to acceleration, deceleration, and flight attitude. Therefore, it is very easy to enter into a gradual turn once you have lost sight of the horizon outside the aircraft.
109. Ms Martin helpfully supplied photographs and video footage of reduced visibility conditions and IMC outside an aircraft, as well as a hyperlink to other resource materials demonstrating the effects of spatial disorientation.

⁵⁹ Paul Cummins & Staff Writers, '178 Seconds to Live' (2006) 10(1) *Flight Safety Australia* 26.

⁶⁰ Proprioception is the process by which the body can vary muscle contraction in immediate response to incoming information regarding external forces, by utilizing stretch receptors in the muscles to keep track of the joint position in the body. The article excerpt describes this system as the feel of "the seat of your pants".

⁶¹ Flight attitude is generally understood to be orientation of the aircraft in space.

110. Ms Martin informed me that a significant factor in VFR flights into IMC is hazy or reduced visibility conditions. She advised that these conditions can make it almost impossible to distinguish between reduced visibility conditions (such as light rain) and IMC (such as thick cloud). Ms Martin informed me that reduced visibility conditions are common where there is low cloud over ocean. She stated that reduced visibility conditions may prevent a pilot from identifying IMC ahead; for example, a VFR pilot flying in rain may not distinguish that there is lower cloud ahead, leading them to fly into that cloud. Ms Martin informed me that this scenario seemed to match the prevailing conditions of PXD's flight on 29 January 2016. Conversely, she stated that a VFR pilot who is flying in good visibility conditions can view cloud and terrain ahead and may more easily determine not to continue or how to avoid entering cloud during the course of their flight.
111. Ms Martin explained that command decision-making by the pilot is one of the most important factors in incidents where a VFR flights has entered IMC. She stated that VFR pilots must make considered decisions to not depart, and/or to turn back in a timely manner if weather conditions are deteriorating or unsuitable. She stated that these are skills and attitudes which need to be taught and developed, particularly when flying with passengers to an event, as the pilot may feel under pressure to depart and/or continue.
112. Ms Martin stated that there are numerous studies and articles regarding weather-related decision-making behaviours exhibited by VFR pilots when faced with adverse weather. She provided a further excerpt from the Flight Safety Australia article⁶² which stated that 76 percent of VFR into IMC accidents involve a fatality according to American research. The excerpt also indicated that despite the known risks, VFR pilots still make the decision to fly into IMC. The safety of the flight is ultimately attributed to *'preparation, alternate plans and timely decision-making. And decisions have to be constantly reassessed based on the current situation looking and planning ahead is essential.'*⁶³

⁶² Paul Cummins & Staff Writers, '178 Seconds to Live' (2006) 10(1) *Flight Safety Australia* 26.

⁶³ *Ibid*, p 31.

113. The article stated that US Federal Aviation Administration research found that three or more of the following in-flight weather changes was sufficient for an experienced pilot to implement an alternate route plan or to return to their departure point:

- a. *Lowering cloud base.*
- b. *Rising terrain.*
- c. *Darkening clouds.*
- d. *Increasing cloud cover.*
- e. *Reducing visibility.*
- f. *Rain showers.*
- g. *Changes in wind direction and speed.*⁶⁴

114. Ms Martin commented that Command Decision-Making generally improved with increased experience, (accumulated flight time). She stated that holding a PPL for a long period of time does not necessarily equate to accumulated experience. Ms Martin said that IFR training provided as a part of the Command Instrument Rating not only prepares the pilot to safely and accurately fly the aircraft in cloud, but also how to appropriately plan a flight. She informed me that an IFR Flight is a carefully planned procedure which involves multitudinous considerations involving flight by reference to instruments. Conversely, VFR flight mandates that the pilot remain at either 1000 feet or 500 feet, and clear of cloud (dependent upon the altitude) at all times. She stated that this requirement is well known to VFR pilots.

115. Ms Martin concluded her report by stating that a VFR pilot is far less equipped to cope with spatial illusions and possible disorientation than IFR pilots when inadvertently entering IMC; they have significantly less training in the eye hand manipulative skills required to accurately fly the aircraft in cloud. Ms Martin informed me that an unplanned transition from VFR to IFR flight is a complex process, even for experienced instrument rated pilots.⁶⁵ She opined that a small amount of additional IFR

⁶⁴ Paul Cummins & Staff Writers, '178 Seconds to Live' (2006) 10(1) *Flight Safety Australia* 26, 31.

⁶⁵ "Instrument rated" pilots have completed their IFR training.

training and recency for VFR pilots may contribute to their ability to recover from inadvertent entry into IMC. However, she commented that it may also create false confidence leading to more risk-taking behaviour. Ms Martin reiterated that, for the VFR PPL pilot, avoiding IMC through thorough preparation, alternate plans and timely decision-making is essential. She concluded that these practices must be supported by learning and practicing sound weather-related decision-making.

116. Ms Martin did not respond to all of the questions that were posed in the Expert Information Package; although she had responded thoroughly to the issue of training requirements for VFR pilots, she had not addressed the issue of pilot identification nor flight planning. After it became evident that Ms Martin would not respond to any Court correspondence, I considered that it would be efficacious and appropriate to request the remaining information from CASA.

CASA Response to Potential Recommendations

117. On 3 July 2019, Special Counsel Anthony Carter of the Litigation, Investigations and Enforcement at CASA provided a response to my request for information on behalf of the regulator. Mr Carter stated that, while both proposed recommendations are technically feasible, their implementation would entail significant administrative and practical burdens for no readily discernible improvement in public health and safety. Mr Carter provided detailed reasons for this opinion.
118. Mr Carter stated the intended purpose for a recommendation to identify the PIC in radio transmissions for VFR flights was not clear. However, he assumed I envisaged that the information would be recorded on a monitored and recorded radio frequency at the beginning of a flight. Mr Carter noted that a PIC of civilian flight is not required to identify themselves by name in a radio transmission at any time during a flight.
119. Mr Carter informed me that accepted, internationally recognised practice is for the PIC to use recognised aviation terminology when making necessary radio transmissions. The radio transmissions are made referencing the aircraft registration details and using Aviation English as regulated by the International Civil Aviation Organization (ICAO). The calls are also typically made over a public radio frequency shared with other

airspace users and ATC. Mr Carter stated that requiring identification of a PIC by name could create difficulties in terms of current transmission protocols, the clarity and pronunciation of names, extended transmission times, the possible need to resort to spelling out names using the aviation alphabet, and the need for read backs due to congestion or interference.

120. Mr Carter queried the additional burden on pilots to identify themselves as a potential invasion of privacy as, he informed me, any broadcast would be made publicly and also potentially recorded for future reference.
121. Mr Carter queried the safety benefits of a recommendation that PICs be identified prior to flight. He stated that there was no indication that identification of the PIC during the flight would have had any effect upon the course of events leading to PXD's impact with water, nor would it assist in identifying who had actual control of the aircraft during the relevant period. However, he subsequently stated that the overall responsibility for the safety of a flight rests with the PIC pursuant to regulation 233 of the *Civil Aviation Regulations 1988* (CAR).
122. Mr Carter stated that it was not clear how identification of the PIC would assist search and rescue functions, as the recommendation presupposes that recording of a PIC's name was made, accessible and that sufficient information is available to pursue further enquiries. He said that current systems already facilitate search and rescue functions in the case of aviation accidents, including the Australian Civil Aircraft Register which provides publicly available information associated with all Australian registered aircraft. This information includes the nominated registered owner, registered operator, manufacturer, model and serial number of the aircraft. Mr Carter informed me that CASA works co-operatively with the Australian Maritime Safety Authority to provide current personal contact details in relation to pilots.⁶⁶ Mr Carter concluded this point by stating that pilots are encouraged to use the available free services to provide information about flights, including lodging a SARTIME, flight notification form or

⁶⁶ This information is provided in accordance with regulation 201.016 of the Civil Aviation Safety Regulations 1998 (CASR) in connection with search and rescue operations and/or air traffic services.

flight note. Mr Carter commented that a flight notification form includes the name and contact details of the PIC.

123. Mr Carter addressed the potential recommendation that CASA require a full Flight Plan to be lodged for all VFR flights that travel over ocean with reference to current practice. He stated that, in the case of a VFR flight over water, the Aeronautical Information Publication (AIP) En Route Supplement Australia at 1.10 already requires the PIC to submit a SARTIME flight notification to Airservices or leave a flight note with a responsible person. CAR 24 states that CASA may specify that flight plans for certain classes of flight are required to be submitted to air traffic control, in the interests of safety. Mr Carter informed me that the requirement must be published by notice in the AIP. Failure to submit a flight plan in such cases constitutes an offence of strict liability. Mr Carter explained that the AIP is required to be published by Airservices in accordance with regulation 14 of the *Air Services Regulations 2019* (ASR). The AIP must include aeronautical information required under the civil aviation legislation, any other Commonwealth law and the Chicago Convention.⁶⁷ While the AIP is not a legislative instrument,⁶⁸ it is the authoritative source for the quality and integrity of data and information used in air navigation. Mr Carter stated that a pilot who fails to comply with a requirement of the AIP may be liable to administrative and enforcement action as a consequence.

124. Mr Carter provided a sample SARTIME notification using a Domestic Flight Notification Form (DFNF) and a Flight Note were attached for reference. Both forms require identification of the PIC as well as the flight sectors/route and other relevant safety information concerning the aircraft equipment. Mr Carter opined that my reference to a “full flight plan” was generally consistent with the contents of both the DFNF and Flight Note. He stated that the major distinction between these documents was that the responsible person holding the Flight Note must contact the Rescue Coordination Centre - Australia if the aircraft has not arrived at its destination by the listed cancellation time.

⁶⁷ *The Convention on International Civil Aviation*, 52 States, signed 7 December 1944, Doc 7300, entered into force 4 April 1947) aka the “Chicago Convention”.

⁶⁸ *Air Services Regulations 2019* (Cth) regulation 14(6).

125. Mr Carter informed me that CASA and Airservices provide a variety of resources for pilots on their websites in relation to flight planning and lodging SARTIME notifications. He helpfully supplied a sample of that material as an attachment to his statement on behalf of CASA. The attachments included: "SARTIME frequently asked questions" (published by Airservices), Pilot Responsibilities, Pre-flight Briefing and Notification and Flights over Water (published by CASA). Mr Carter stated that CASA also provided regular briefings and safety articles reinforcing the use of SARTIME notifications and he provided a copy of a CASA Briefing from the Director of Aviation Safety dated 26 June 2019. Mr Carter also supplied an article⁶⁹ which stated that 30% of search and rescue incidents in 2018 were triggered by a failure to cancel a SARTIME and report a safe arrival.
126. Mr Carter stated that, from a regulatory perspective, CASA considered mandating a full Flight Plan for VFR flights over water unnecessary given the current requirement to lodge a SARTIME or leave a Flight Note. On behalf of CASA, Mr Carter submitted that such a recommendation would be unlikely to improve public health and safety outcomes over the current requirements. Additionally, Mr Carter commented that these requirements also provide for the PIC to be identified by the SARTIME or Flight Note. Mr Carter further submitted that ongoing education and provision of suitable resources for pilots is likely to be more effective in the longer term.

SUMMARY INQUEST

127. As indicated at the Directions Hearing dated 29 August 2017, I determined that the investigations into the deaths of Donald Hateley, Ian Chamberlain, Dianne Bradley and Daniel Flinn could be appropriately finalised without a full Inquest and that I would hand-down my Findings at the conclusion of a Summary Inquest. Interested Parties were provided with a formal hearing notice dated 8 January 2020.

⁶⁹ AMSA, 'SARTIME and SARWATCHES - the cost of forgetting to cancel' *Flight Safety Australia* (Webpage, 16 May 2019) <<https://www.flightsafetyaustralia.com/2019/05/cancelling-sartimes-and-sarwatches/>>.

COMMENTS

Pursuant to section 67(3) of the Coroners Act 2008, I make the following comments connected with the death:

1. In the early stages of my investigation, I determined that the immediate surrounding circumstances of PXD's collision with water were accurately portrayed in the Australian Transport Safety Bureau's Final Report, in so far as they could be known. I also identified specific concerns in relation to perceived systemic concerns in civil aviation that were relevant to the circumstances of the incident. At the Directions Hearing in August 2017, it was evident that my concerns were shared by family members of the occupants of PXD on 29 January 2016. However, this investigation has been delayed due, in part, to a lack of cooperation by the Court appointed expert. I wish to apologise to the family members of Donald Hateley, Ian Chamberlain, Dianne Bradley and Daniel Flinn for this delay. Additionally, this investigation has been protracted due to the technical nature of civil aviation and the correspondingly specialised nature of civil aviation regulations. I wish to thank the Australian Transport Safety Bureau, AirServices Australia and the Civil Aviation Safety Authority for their assistance to me in my investigation.
2. Prior to addressing the broader issues, I will reiterate that it remains impossible to definitively determine the designated Pilot In Command of PXD on 29 January 2016. Mr Snell believed that Mr Hateley and Mr Chamberlain sat in the front of the aircraft, as PXD belonged to Mr Chamberlain and Mr Hateley was "too big" to sit in the back. Mr Blutman stated that he saw Mr Hateley and Mr Flinn standing on the wing of the aircraft and he therefore believed Ms Bradley and Mr Chamberlain were already seated inside. Mr Hateley has been identified as the individual making the radio transmissions to request clearance for take-off. This indicates that he was sitting in one of the two front seats. However, as indicated by fellow pilots and the Civil Aviation Safety Authority, this is not indicative of who was Pilot In Command of the dual control aircraft, nor the precise position of each individual. It is reasonable to state that Dianne Bradley would not have been Pilot In Command of the aircraft.
3. My preliminary concern in this investigation was that the Pilot In Command was unable to be identified. In their submissions, AirServices confirmed that there was no

regulatory requirement to identify the Pilot in Command. The Civil Aviation Safety Authority refuted the reasonableness and practicality of creating such a requirement, stating that the recommendation would impose significant practical burdens for little benefit. Conversely, family members of the deceased individuals have indicated that simply *knowing* this information may have increased their peace of mind. Desiring a clear picture of events leading to a loved one's death is a reasonable expectation. Additionally, the Pilot In Command is responsible for flight safety, pursuant to the regulations.⁷⁰ Therefore, documenting the designated Pilot In Command may be crucial to legal issues that can arise subsequent to a fatal civil aviation incident.

4. I note the entirety of the Civil Aviation Safety Authority's responses and I accept that the agency has limited resources as a government authority. Nevertheless, as a Coroner investigating the deaths of four people due to an aircraft impacting the water, I remain extremely concerned that not one government agency is able to definitively inform me who was flying the aircraft. The Civil Aviation Safety Authority informed me that relevant search and rescue documentation already require designation of the Pilot in Command. However, the Flight Note search and rescue document is left with a "responsible person". This seems antiquated and fraught when compared to providing the SARTIME directly to AirServices where it is stored for twelve months. The fact that there is no way to determine whether the occupants of PXD completed a Flight Note at all demonstrates that it lacks rigour as a regulatory tool. It seems to me that this presents an opportunity to implement a standard requirement that would ensure the Pilot In Command can be identified in fatal incidents, without the practical implications of doing so by radio transmission. A pertinent recommendation will follow.
5. My second systemic concern was that pilots with a Private Pilots Licence and who are licenced to fly by Visual Flight Rules have very limited capacity to revert to Instrument Flight Rules in emergency situations. On this point, I informed myself that pilots flying with a Private Pilot's Licence under Visual Flight Rules do have some limited Instrument Flight Rules Training. I accept the advice contained within the expert report produced by Janet Martin, that converting from Visual Flight Rules to Instrument Flight Rules in emergency situations is an extremely complex thing to achieve. Implicitly, I

⁷⁰ *Civil Aviation Regulations 1988* (Cth) r 233.

have also learnt that Instrument Flight Rules flight is not as simple as “switching on the autopilot” and that thorough planning is an important part of the exercise. Although Ms Martin only supported the contention with anecdotal evidence, I accept that the 40 hours of Command Instrument Rating and subsequent Instrument Flight Rules recency requirements are the bare minimum of what is required to garner the requisite knowledge, skills and experience to safely complete an Instrument Flight Rules flight. However, I am not proposing a recommendation that all Private Pilot’s Licence holders be trained to be capable of safe Instrument Flight Rules flight or safe flight in Instrument Meteorological Conditions. The proposed recommendation is to increase the extant requirements. I consider that, if some measure of Instrument Flight Rules training and recency requirement is imposed there must be an existing rationale for that requirement. This suggests further education and training may increase safety levels where deteriorating conditions require an emergency response to fly according to instruments rather than by sight.

6. I have considered Ms Martin’s comment in relation to some Private Pilot’s Licence candidates potentially garnering false confidence from further training. Although there may be some truth to this opinion, there is a risk that a person undertaking any type of training will consider their skills to be greater than they are in reality. Pilots flying Visual Flight Rules are informed of the dangers of spatial disorientation and yet continue to fly into Instrument Meteorological Conditions. This indicates that further training may be necessary to promote public health and safety. Additionally, it suggests that more time to sufficiently comprehend the dangers of inadvertent entry into Instrument Meteorological Conditions may be beneficial. A pertinent recommendation will follow.
7. My third systemic concern related to the fact that Air Traffic Control did not receive nor record the intended flight plans of departing Visual Flight Rules flights. AirServices confirmed that there was no regulatory requirement to do so. The Civil Aviation Safety Authority explained that flights over water were already required to submit a SARTIME to AirServices or leave a Flight Note with a responsible person. The regulator informed me that, in some instances, they may specify certain classes of flight required to submit Flight Plans, which I understand are a separate and distinct document from a SARTIME or Flight Note. I accept the Civil Aviation Safety

Authority's advice that these documents contain what would colloquially be considered "flight plans" to the extent that the intended route of the aircraft is delineated. On that basis, my concerns existed due to a misapprehension of the nature and names of search and rescue documents and I am satisfied that no further investigation nor any recommendation is required.

8. I note that family members queried why Air Traffic Control was unable to relay to PXD that other aircraft had returned to Moorabbin Airport due to poor weather. AirServices provided a detailed explanation of their role in civil aviation and this did not include such a service. However, it is apparent that there were numerous other weather-related information services available to PXD that were unused. I also note that the PXD occupants did not attempt to communicate with any other aircraft directly during the course of the flight. PXD was capable of radio communication during the flight, evidenced by the Carrum Downs cloud report, and the Australian Transport Safety Bureau found no fault in the aircraft upon inspection of the wreckage.
9. In communication with the Court, Donald Hateley's daughter Rebecca Gallagher raised concerns in relation to the fact that PXD did not request special Visual Flight Rules clearance at take-off and that this request remained unprompted by Air Traffic Control. This was also outlined in the Australian Transport Safety Bureau's Final Report. AirServices informed me that "Special Visual Flight Rules" mandates reduced distance requirements from cloud during Visual Flight Rules flight in controlled airspace. Consequently, the lack of request by Mr Hateley during radio transmission for clearance to take-off and the fact that the Air Traffic Control did not prompt that request, are very unlikely to have had any bearing on the ultimate outcome of the flight. Additionally, there is no requirement that the Air Traffic Control prompts such a request.
10. The consistency and cogency of the available evidence identifies that all of the occupants of PXD on 29 January 2016 were aware that the weather conditions were tenuous for the purposes of their flight. The weight of the evidence also suggests that the three licenced pilots aboard PXD were aware that conditions were not ideal for Visual Flight Rules flight prior to and at the time of their departure from Moorabbin Airport. The evidence also demonstrates that all three licenced pilots partook in the process of readying for departure.

RECOMMENDATIONS

Pursuant to section 72(2) of the Coroners Act 2008, I make the following recommendation(s) connected with the death:

1. I recommend that the Civil Aviation Safety Authority mandates the use of a SARTIME for all Visual Flight Rules flights over water.
2. I recommend that the Civil Aviation Safety Authority increase Instrument Flight Rule training and recency requirements for Private Pilot Licence candidates and holders, for the purpose of, but not necessarily limited to, further education for candidates on the fatal dangers of inadvertent entry into Instrument Meteorological Conditions.

FINDINGS

1. I find that the identity of the deceased is IAN CHAMBERLAIN born 24 February 1950 and whose death occurred on 29 January 2016 at the Bass Strait approximately 6.6 kilometres south-west of Point Lonsdale, Victoria.
2. I further find that the death of Ian Chamberlain occurred at the same time as Dianne Bradley, Donald Hateley and Daniel Flinn when aircraft VH-PXD crashed into water.
3. I find that the deaths of Ian Chamberlain, Dianne Bradley Donald Hateley, and Daniel Flinn occurred in the context of flying to an event at King Island, Tasmania.
4. I find that the three licenced pilots aboard VH-PXD were aware that weather conditions were not ideal for Visual Flight Rules flight prior to, and, at the time of departing Moorabbin Airport. I find that there was an element of collectiveness in the decision-making process by the three pilots aboard VH-PXD on 29 January 2016.
5. I find that it is not possible to definitively determine the precise seating arrangements of the occupants of VH-PXD.
6. AND I find that it is not possible to identify the Pilot in Command, nor the pilot in control, of VH-PXD at the time of the collision with water on 29 January 2016.

7. And although a definitive finding on the cause of the collision cannot be made, I find that it is likely the unknown pilot in control of VH-PXD suffered spatial disorientation and that the effects of this phenomena were a likely causative factor in the impact of the aircraft with water.
8. I find that the decision of the Pilot In Command to continue the flight, despite deteriorating weather conditions breaching minimum requirements for Visual Meteorological Conditions, directly led to VH-PXD's impact with water.
9. I accept and adopt the cause of death ascribed by Dr Gregory Young and I find that Ian Chamberlain died from multiple injuries sustained in a light plane incident.

To enable compliance with section 73(1) of the Coroners Act 2008 (Vic), I direct that the Findings will be published on the internet.

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

Matthew Chamberlain

The Australian Transport Safety Bureau

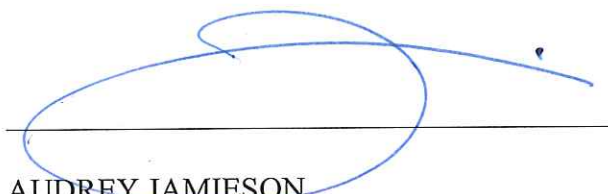
Benjamin Lloyd of Russell Kennedy Lawyers of behalf of AirServices Australia

The Civil Aviation Safety Authority

Janet Martin of CAE Oxford Aviation Academy

Detective Senior Constable Paula Wicks

Signature:



AUDREY JAMIESON

CORONER

11 February 2020



GLOSSARY & ACRONYMS

AFR	Aeroplane Flight Review
AIP	Aeronautical Information Publication
ASR	<i>Air Services Regulations 2019 (Cth)</i>
ATC	Air Traffic Control
ATS	Air Traffic Services
ATSB	Australian Transport Safety Bureau
AWIS	King Island Aerodrome Weather Information Service
BOM	Bureau Of Meteorology
CAR	<i>Civil Aviation Regulations 1988 (Cth)</i>
CASA	Civil Aviation Safety Authority
CFI	Chief Flying Instructor
CLASS A	Controlled Airspace <i>High-Level En Route</i>
CLASS C	Controlled Airspace <i>Surrounding Major Airports</i>
CLASS D	Controlled Airspace <i>Surrounding General Aviation And Regional Airports</i>
CLASS E	Controlled Airspace <i>Mid-Level En Route</i>
CLASS G	Uncontrolled Airspace
CP	Chief Pilot
CT SCAN	Computed Tomography Scan
DFNF	Domestic Flight Notification Form
DITRDC	Department Of Infrastructure, Transport, Regional Development And Communications
FOI	Freedom Of Information

FOKI	Festival Of King Island
ICAO	International Civil Aviation Organisation
IFR	Instrument Flight Rules
IMC	Instrument Meteorological Conditions
JRCC	Joint Rescue Coordination Centre
LSC	Leading Senior Constable
ML	Airservices Melbourne Centre
PCSU	Police Coronial Support Unit
PIC	Pilot In Command
POLAIR	Victoria Police Air Wing
PPL	Private Pilots Licence
RPL	Restricted Pilots Licence
RVAC	Royal Victorian Aero Club
SARTIME	Search And Rescue Time
SC	Senior Constable
VFR	Visual Flight Rules
VH-BSV	Aircraft Flown By Jack Blutman
VH-PXD	Aircraft Flown By Deceased
VH-SRF	Aircraft Flown By Greg Snell
VIFM	Victorian Institute Of Forensic Medicine
VMC	Visual Meteorological Conditions