

IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

Court Reference: COR 2006 0953

FINDING INTO DEATH WITH INQUEST

Form 37 Rule 60(1)

Section 67 of the Coroners Act 2008

Inquest into the Death of: SAMUEL HENDER

Delivered On:	5 June 2013
Delivered At:	Level 11, 222 Exhibition Street Melbourne 3000
Hearing Dates:	25, 26, 27 and 28 October 2010
Findings of:	JANE HENDTLASS, CORONER
Representation:	Mr J. Rule appeared on behalf of the Civil Aviation Safety Authority
Police Coronial Support Unit	Senior Constable Remo Antolini, assisting the Coroner

I, JANE HENDTLASS, Coroner having investigated the death of SAMUEL HENDER

AND having held an inquest in relation to this death on 25, 26, 27 and 28 October 2010
at MILDURA

find that the identity of the deceased was SAMUEL HENDER

born on 11 February 1996

and the death occurred 12 March 2006

at Block 3133, Riverside Avenue, Mildura 3500

from:

1 (a) INJURIES SUSTAINED IN AVIATION ACCIDENT

in the following circumstances:

1. Samuel Hender was 10 years old when he died. He lived at Old Diartmuk Road in Cardross with his parents, Jack and Mary Hender, and his sisters, Elizabeth, Jessica, Jemima and Naomi.
2. At about 8.14pm on 12 March 2006, Samuel died when Mr Hender's aircraft failed to land successfully at Mildura Aerodrome.
3. Mr Hender was first issued a single engine pilot's licence in Israel in 1994 and a multi-engine commercial pilot's licence from the United States was issued in 1995.
4. In 1999, the Civil Aviation Safety Authority ("CASA") issued Mr Hender with a Special Pilot (Aeroplane) Licence endorsed with a Visual Flight Rules rating and a Flight Radiotelephone Operator Licence in Australia.
5. Mr Hender's Special Pilot (Aeroplane) Licence was valid until 26 March 2006.
6. Mr Hender flew an aircraft that he had built from a Stoddard-Hamilton Glasair-SH2RG light aircraft kit. The Glasair-SH2RG light aircraft is designed as a high performance sport aerobatic type aircraft.

7. However, Mr Hender had fitted his aircraft with an Atkins Rotary 13B engine¹ and a Cessna 310 twin engine carburettor.
8. Mr Hender's aircraft had an easily recognisable sound. On 16 October 2001, Mr Hender was given permission to operate the aircraft without a noise certificate because the extent to which the aircraft exceeded the aircraft noise standards was not significant.
9. On 18 April 2002, CASA issued a Special Certificate of Airworthiness (Experimental) for Mr Hender's aircraft with registration mark VH-IDF.
10. Mr Hender's Special Certificate of Airworthiness carried a number of limitations on his use of the aircraft.
11. In particular:
 - the aircraft was approved for visual flight rules operation only;
 - no person could operate the aircraft other than to accomplish the flight test and operation outlined in the application;
 - all flights for the first 40 hours operation were to be within 50 nautical miles of Mildura Airport.
12. Mr Hender was also unable to carry passengers unless they were required for testing purposes. He was also required to display a placard which stated:

WARNING

THIS AIRCRAFT IS NOT REQUIRED TO COMPLY WITH SAFETY REGULATIONS FOR
STANDARD AIRCRAFT

YOU FLY IN THIS AIRCRAFT AT YOUR OWN RISK

13. Mildura Aerodrome is in uncontrolled or Class G Airspace. Therefore, Mr Hender was required to comply with Civil Aviation Rule 166 when he flew within 10 nautical miles of the aerodrome.

¹ This is a rebuilt 13B Mazda RX7 rotary engine.

14. Civil Aviation Rule 166 also required Mr Hender to carry a radio capable of sending and receiving from the Mildura Common Traffic Advisory Frequency (CTAF). Mr Hender complied with this requirement. However, Mr Hender's radio was unable to communicate with Air Traffic Control in Melbourne or hear automatic weather transmissions.
15. Mr Hender's Special Certificate of Airworthiness for his aircraft expired in 2003 and was not renewed.
16. Further, evidence before me indicates that, in the two years before he died, Mr Hender had substantially modified his aircraft so that it would not necessarily have continued to meet the requirements for renewal of his Special Certificate of Airworthiness if he had made that application to CASA.
17. By Christmas 2005, Mr Hender had flown his aircraft about 40 hours and he used this achievement and resolution of his over-heating issues to justify his first long flight to visit his brother, Michael Hender, in Adelaide on or about 15 February 2006. He completed this trip without a hitch.
18. On 11 March 2012, Mr Hender fully fuelled his aircraft and tied it down on the Mildura Aerodrome ready to go to Broken Hill the next day. It is 137 nautical miles from Mildura to Broken Hill. The fuel would have allowed a full five hours flying time with take off and landing.
19. On 12 March 2006, Mr Hender took Samuel with him to fly to Broken Hill to visit a friend, Pim De-Lijster. It was Samuel's 10th birthday. No one had ever flown with Mr Hender in his aircraft before that day. Although she says she allowed Samuel to go, Mrs Hender also told the Court that she felt powerless to prevent the trip.
20. Mr Hender and Samuel left Mildura by 8.30am and the flight took about 50 minutes with the wind behind them.
21. At about 6.40pm Adelaide time or 7.10pm Mildura time, Mr Hender and Samuel left Broken Hill to fly home. Accordingly, Mr Hender expected that they would land at Mildura Aerodrome by 8.30pm.
22. Dr De-Lijster watched the aircraft leave Broken Hill and noticed that the aircraft was running very smoothly and there was nothing abnormal about the engine noise.

23. At about 7.30pm on 12 March 2006, the front of a severe weather change was approaching Mildura from the west at 25 knots. This had created gusty winds and a dust storm at the airport.
24. On 12 March 2006, sunset in Mildura was at 7.55pm local time. By then, the wind direction had changed from the north west to the south west associated with the passage of a surface trough through Mildura causing reduced visibility to 5500 metres. The cloud base was 140 feet. At about 8.00pm, the Bureau of Meteorology recorded that the mean air speed at Mildura Aerodrome was 19 knots gusting up to 30 knots.
25. The Qantas Link Dash 8-100 commercial aircraft undertakes routine afternoon flights between Melbourne and Mildura. This aircraft carried 36 passengers.²
26. At about 7.45pm on 12 March 2006, when he was 60-70 miles from Mildura, the pilot of the Dash 8, Steve Dawbin, notified other aircraft on the Mildura CTAF that he was preparing to land on runway 27 at Mildura Airport.³ Mr Hender heard this message and responded with questions about the approaching dust storm.
27. At 7.45pm, Rod Knight was also in his light aircraft approaching the Mildura Aerodrome. He expected to land about six minutes after the Dash 8.
28. Mr Knight told the Court that he could see the dust storm from about 25 to 30 miles out. He also heard the exchange between Mr Dawbin and Mr Hender and recognised Mr Hender's voice.
29. However, at 7.55pm, Mr Dawbin changed his plan. He notified the local area on Mildura CTAF that he was landing on the north/south runway 18 and landed his commercial flight successfully at Mildura aerodrome. Mr Dawbin told the Court he changed his runway because the gusting wind change to a southerly had hit the airport.
30. At about 8.00pm, Mr Dawbin left the airport. It was already dark enough to use the headlights on his car.

² It has been replaced by the Qantas Link Dash 8-400 with 74 seats.

³ Runway 27 is the longest runway at Mildura Airport and the easiest to manoeuvre from a Melbourne approach.

31. Mr Knight heard Mr Dawbin say he was landing on runway 18 and interpreted this to mean that weather conditions had changed on the ground. He used the automatic weather service to check the weather conditions and decided to also use runway 18. He then broadcast this intention to land on runway 18 at Mildura Airport on the Mildura CTAF.
32. Neither Mr Dawbin nor Mr Knight heard any further radio transmissions from Mr Hender. Therefore, I am unable to say whether Mr Hender heard them broadcast that they intended to land on runway 18 at Mildura Aerodrome.
33. However, I am confident that Mr Hender did not make any radio announcements on Mildura CTAF between 7.45pm and 8.05pm when he was approaching Mildura Aerodrome.
34. At about 8.05pm, Mr Knight completed a difficult landing on runway 18 in very gusty conditions.
35. As he was leaving his aircraft, Mr Knight became aware of Mr Hender's aircraft when he heard the engine open up to full throttle. He looked up and saw Mr Hender's aircraft was about 50 feet off the ground travelling about half way down the flight line for runway 27 when he appeared to have aborted his landing. By then it seemed quite dark away from the lights of the aerodrome.
36. By 8.05pm, Mr Knight's radio was turned off so I am unable to say whether Mr Hender made any radio broadcasts on CTAF indicating that he intended to land on runway 27 and/or he was aborting this landing attempt.
37. However, evidence from several witnesses who observed Mr Hender's approach to Mildura Aerodrome and flight path after his aborted landing attempt suggests that Mr Hender was unable to land on runway 27 because of a tail wind. Therefore, he decided to abort his landing and approach runway 18.
38. Accordingly, he attempted to gain height and execute a 180 degree turn to line up for a landing into the wind.
39. At 8.14pm, as Mr Hender's aircraft was still banking heavily to the right, it flew over a big tree with its engine running at maximum power, it lost altitude and crashed into the roof of a shed and drying rack in Riverside Avenue. The aircraft then caught fire.

40. Samuel Hender's body was found in the wreckage of his father's aircraft. He was identified by matching with DNA from his mother, Mary Hender.
41. Autopsy determined the cause of Samuel Hender's death was injuries received in aviation accident. The forensic pathologist who performed the autopsy found he had sustained lung injuries as a result of the impact.
42. The presence of bone marrow embolus, carbonaceous material in a bronchus and the finding of petroleum products in lung fluid suggest that Samuel was alive for at least a short time after impact. However, the period of post impact survival would not have been more than a few minutes duration based on the negative carbon monoxide and hydrogen cyanide levels
43. Accordingly, I find that Samuel Hender died from injuries received in an aviation accident.
44. Therefore this finding will comment and make recommendations intended to reduce the risk of passengers in amateur-built experimental aircraft dying in the circumstances that Samuel died.

COMMENTS

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

1. Samuel Hender was 10 years old when he died from injuries received in an aviation accident near Mildura Aerodrome on 12 March 2006.
2. Samuel was a passenger in his father's amateur-built experimental aircraft which failed to land successfully at Mildura Aerodrome.
3. Mr Hender's Special (Aeroplane) Pilot licence was endorsed to allow him to fly under Visual Flight Rules.
4. Endorsement for Visual Flight Rules prohibits flying when visibility is less than eight kilometres or after last light which begins when the sun is six degrees below the visible horizon or visibility is less than eight miles. Phenomena such as dust storms, weather, cloud or hills to the west may bring the onset of last light at an earlier time.

5. Further, pilots are trained to prepare a flight plan which takes into account any limitations imposed on their Special (Aeroplane) Pilot licence.
6. The circumstances surrounding this incident in which Mr Hender and Samuel died on 12 March 2006 have been discussed at length in my Finding of the investigation of Mr Hender's death.⁴
7. These circumstances include:
 - Mr Hender constructed his aircraft using a carburettor that was known to be subject to stall in steep climbs and banks;
 - Mr Hender was not aware that his Certificate of Airworthiness (Experimental) had expired until 6 February 2006;
 - Mr Hender failed to disclose to Mr Funnell or Mrs Hender that his Certificate of Airworthiness (Experimental) had expired;
 - Mr Hender misled Mrs Hender about the current conditions and status of his Special (Aeroplane) Pilot licence and the Certificate of Airworthiness (Experimental) for his aircraft including his inability to carry passengers;
 - Mr Hender took Samuel with him when he flew his aircraft from Mildura to Broken Hill to visit a friend on 12 March 2006;
 - Mr Hender knew or should have known that, even if the weather remained perfect, he and Samuel were likely to arrive at Mildura Aerodrome unacceptably close to last light;
 - Mr Hender's aircraft approached Mildura Aerodrome during an unexpected and earlier than predicted change in the weather conditions with gusty southerly winds and dust;
 - Mildura Aerodrome is a public non-towered aerodrome in uncontrolled or Class G Airspace;

⁴ This Finding should be read in conjunction with the Finding of the death of Jack Hender (Case No 950/06).

- Mr Hender's radio could receive and transmit communications through Mildura CTAF but was not required to and could not communicate with Air Traffic Control in Melbourne or hear automatic current weather transmissions issued from Mildura Aerodrome;
 - Mr Hender failed to continually monitor the Mildura CTAF radio frequency during his approach to Mildura Aerodrome;
 - Mr Hender approached Mildura Aerodrome to land on the north/south runway in adverse wind conditions; and
 - Mr Hender aborted his attempted landing on the north/south runway and entering a steep climb and right hand bank which seems to have caused his aircraft to stall and crash.
8. Fuel issues may also have contributed to failure of Mr Hender's aircraft at 8.14pm on 12 March 2006.
 9. On 18 April 2002, the Civil Aviation Safety Authority ("CASA") had issued a Certificate of Airworthiness (Experimental) for Mr Hender's aircraft.
 10. This Certificate of Airworthiness (Experimental) specifically prevented Mr Hender from carrying passengers in his aircraft except as required for testing purposes.
 11. On 12 March 2006, Mr Hender was aware that the Certificate of Airworthiness (Experimental) for his aircraft had expired. He was or ought to have been also aware that he could not fly without obtaining a further Certificate of Airworthiness (Experimental) and, accordingly, that he could not carry passengers in his aircraft.
 12. Mr Coyne is monitor of the CASA policy aspects of the operation and certification of experimental aircraft.
 13. Mr Coyne told the Court that the requirement to have a sign denying liability in an experimental aircraft is required in the initial certification of the aircraft because that is part of the requirements for the certificate of air-worthiness. However, it is not relevant within phase one of the certification process because no passengers are allowed except for testing purposes.

14. Mr Coyne also acknowledged that Mr Hender could have been misled by the requirement to have the sign in his cockpit to believing that he could carry passengers at their own risk after he had completed the initial 40 hours flying.
15. I have no doubt that Samuel was willing to go on the trip to Broken Hill with his father. Mrs Hender told the Court:

“I do not know what came over me to allow Samuel to go with Jack to Broken Hill. I will not forgive myself for allowing this to happen. It was Sam’s tenth birthday and the flight was sort of his present. He was always talking about flying and it had almost engulfed him. He was so looking forward to the flight. He begged me not to forbid him to fly.... Samuel was so excited he did not have time to give me a kiss and that was so unlike him”
16. Further, Mr Hender had told his wife that CASA had approved his taking of passengers and flying more than 50 km from Mildura. Although Mrs Hender allowed Samuel to go to Broken Hill, she believed she had no capacity to deny him.
17. However, even if Mr Hender believed he could carry passengers at their own risk, this acceptance of risk cannot apply to third parties who are not yet competent to assess or consent to the risks associated with flying in an amateur-built experimental aircraft.
18. In circumstances where the passenger is a child, that child is unable to give personal consent.
19. Therefore, although I hesitate to impose further conditions of the use of amateur-built and experimental aircraft because of the influence this restraint may have on their development, I have formed the view that children should be prohibited from riding in these aircraft until they reach the age of, say 16 years old, when they can personally consent to accepting the associated risks. **Recommendations 1 & 2.**

RECOMMENDATIONS:

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

I recommend that:

1. The Commonwealth Parliament of Australia amend Part III of the *Civil Aviation Act 1988* to prohibit all passengers under 17 years of age from travelling in amateur-built experimental

aircraft.

2. The Civil Aviation Safety Authority prohibit carriage of all passengers under 17 years of age in aircraft which are issued with Certificates of Airworthiness (Experimental).

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

Mrs Mary Hender

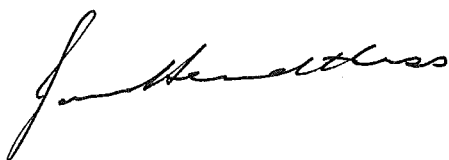
Interested Parties

Attorney General Commonwealth of Victoria

Australian Transport Safety Bureau

The Civil Aviation Safety Authority

Signature:



DR JANE HENDTLASS

CORONER

Date: **5 June 2013**

