QUEENSLAND COURTS

OFFICE OF THE STATE CORONER

FINDINGS OF INQUEST

CITATION:	**Inquest into the death of Barry Joseph USCINSKI**
TITLE OF COURT:	Coroner's Court
JURISDICTION:	Gympie
FILING NO:	2010/3639
DELIVERED ON:	29 December 2014
DELIVERED AT:	Maroochydore
HEARING DATES:	6 May 2014; 30 May 2014; 3 June 2014; 7 – 8 July 2014
FINDINGS OF:	Ms Maxine Baldwin, Coroner
CATCHWORDS:	Coroners: inquest, aircraft incident, replica Spitfire, RA-Aus, CASA, ATSB, Supermarine Aircraft Pty Ltd, weight / balance, dual battery
REPRESENTATION:	
Counsel Assisting:	Mr Peter De Waard (Office of the State Coroner)
Deceased's next of kin:	Mr Walter Sofronoff QC
Recreational Aviation Australia (RA-Aus):	Mr Spencer Ferrier (Ferrier Associates Lawyers)
Civil Aviation Safety Authority (CASA):	Ms Carol Swain (CASA)
Mr Michael O'Sullivan (Supermarine Pty Ltd):	Mr Mark Gregory (McCormick Lawyers)

Introduction

Dr Barry Uscinski was a 74 year old man who was a much loved, highly regarded, highly accomplished, and well respected gentleman. He had held a full-time research position at Cambridge University in England since the 1970s and he was involved in intense oceanographic research for both NATO and the European Union.

From all accounts, Dr Uscinski was an experienced pilot, having first obtained his Australian Civil Pilot's licence and UK civil pilot's licence in 1987 and 1988 respectively. A number of references and letters of endorsement were received by the Office of the State Coroner in relation to Dr Uscinski's flying ability. Many of these references were from fellow pilots who could detail his extensive experience and his accomplishments, in particular, his winning of top UK Tiger Moth aerobatic trophies.

A common thread throughout all of the academic and flying references was that Dr Uscinski was a meticulous and thorough person who planned everything to the tiniest detail, always preparing for the completely unpredictable. One reference spoke of his constant advice that it was vital to practice for any emergency, whether on board a research vessel or piloting an aircraft, to be able to react quickly and automatically.

Being a distinguished and highly regarded academic, Dr Uscinski was only in a position to travel to Australia once or twice a year for periods of one month at a time to indulge in his passion of flying in his 80% scale replica World War II Submarine Spitfire (Mk 26).

Dr Uscinski purchased the Mk 26 Spitfire kit from Supermarine Aircraft Pty Ltd in 2001, through its CEO, Mr Michael O'Sullivan. The aircraft was first registered by Mr O'Sullivan on 13 January 2004 with Recreational Aviation Australia (RA-Aus).

On 6 February 2009, an application for change of ownership of the aircraft was lodged with RA-Aus by Dr Uscinski. The transfer was authorised by RA-Aus on 20 April 2009.

On 13 May 2010, Dr Uscinski crashed the aircraft at the Watts Bridge Airfield after failing to get airborne during a takeoff. It was damaged and subsequently transported to Gympie Aircraft Maintenance, where it remained for some five months up until the date of the incident.

On 22 October 2010, the day of the fatal incident, Dr Uscinski travelled with his friends, Dr Walter Wood and his wife Mrs Beverly Wood, from their home in Brisbane to the Gympie Aerodrome, so that he could return the aircraft to Watts Bridge Airfield and conduct a post maintenance test flight. They were to later meet him at the Watts Bridge Airfield, where he intended on storing his aircraft in his hangar.

Dr Uscinski took off from the Gympie Aerodrome and conducted, as part of his test flight, a number of circuits of the airfield at high altitude. The aircraft attempted but then aborted a landing on the main runway, performing a further circuit. On the second approach, again it appeared that the aircraft was going to land but it subsequently collided with the terrain, killing Dr Uscinski on impact.

On the basis of the initial police investigation, I prepared draft chamber findings for this matter and consulted with Dr Uscinski's family, in contemplation of finalising this matter without an inquest. Dr Uscinski's family raised a number of concerns with the police investigation and requested an inquest. I subsequently conducted a further

coronial investigation to address those concerns. After considering the further information obtained, I too had concerns about the evidence given to the investigators, the registration of the aircraft with RA-Aus, and the level of cooperation between the investigating bodies. I therefore decided that it would be desirable to hold an inquest.

I wish to acknowledge the input of counsel assisting, Mr Peter De Waard, his summation of key aspects relating to this incident and his useful submissions, which I have largely adopted in these findings.

These are my inquest findings and comments in relation to the death of Dr Barry Uscinski. They will be distributed in accordance with the requirements of the *Coroners Act 2003* and posted on the web site of the Office of the State Coroner.

The scope of this inquest

My findings and comments address the following issues, which were established at a pre-inquest conference on 6 May 2014, namely:

(a) the identity of the deceased person, when, where and how he died and what caused his death;

(b) the adequacy of the maintenance, repairs, alterations and testing of the deceased's aircraft;

(c) the adequacy of the weight/balance and the best glide/stall speed information provided for the deceased's aircraft;

(d) the adequacy of relevant RA-Aus and Civil Aviation Safety Authority (CASA) policies and procedures;

(e) the adequacy of the Queensland Police Service's (QPS) security of the aircraft wreckage components; and

(f) whether any recommendations could be made to reduce the likelihood of deaths occurring in similar circumstances or otherwise to contribute to the public health and safety or the administration of justice.

It is important to note that an inquest is not a trial between opposing parties but an inquiry into a death. The scope of an inquest goes beyond merely establishing the medical cause of death.

The focus is on discovering what happened; not on ascribing guilt, attributing blame or apportioning liability. The purpose is to inform the family and the public of how the death occurred and, in appropriate cases, with a view to reducing the likelihood of similar deaths.

As a result, a coroner may make preventive recommendations concerning public health or safety, the administration of justice or ways to prevent deaths from happening in similar circumstances in the future.

A coroner must not include in their findings or any comments or recommendations, statements that a person is, or may, be guilty of an offence or is, or may, be civilly liable.

Proceedings in a coroner's court are not bound by the rules of evidence. That does not mean that any and every piece of information, however unreliable, will be admitted into evidence and acted upon. However, it does give a coroner greater scope to receive information that may not be admissible in other proceedings and to have regard to its origin or source when determining what weight should be given to the information.

A coroner must apply the civil standard of proof, namely the balance of probabilities. However, the more significant the issue to be determined, the more serious an allegation or the more inherently unlikely an occurrence, then the clearer and more persuasive the evidence needs to be for a coroner to be sufficiently satisfied it has been proven.

If, from information obtained at the inquest or during the coronial investigation, a coroner reasonably suspects a person has committed an offence, the coroner must give the information to the Director of Public Prosecutions in the case of an indictable offence and, in the case of any other offence, the relevant department. A coroner may also refer a matter to the Crime and Corruption Commission or a relevant disciplinary body.

Evidence obtained

Extensive evidence was gathered as part of the coronial investigation.

I received an autopsy report from Dr Nadine Forde and Dr Nathan Milne, dated 12 January 2011.

Written statements were initially obtained by the police investigator from:

(a) Mr Anthony Kerr, Managing Director of Gympie Air Maintenance, who had completed significant maintenance and repairs on Dr Uscinski's aircraft prior to his test flight;

(b) Mr Peter Raffels, a close friend of Dr Uscinski, who had arranged to meet him at the airfield;

(c) Mr Neil Callow, a resident who lived a short distance north of the Gympie Aerodrome;

(d) Mrs Fay Boyd, a resident of a rural property on which the aircraft crashed;

(e) Mr Francis Boyd, a resident of the rural property on which the aircraft crashed;

(f) Mr Michael O'Sullivan, the CEO of Supermarine Pty Ltd, who manufactured and constructed the majority of the aircraft;

(g) Mr John Walmsley, an RA-Aus Chief Flying Instructor, who provided flight training to Dr Uscinski, and

(h) Mr William Haynes, also an RA-Aus Chief Flying Instructor, who provided training to Dr Uscinski and assessed him for his last RA-Aus biennial flight review.

I also received a preliminary report from Mr Brett Soutter, who had conducted an investigation on behalf of RA-Aus.

As part of my further coronial investigation after receiving Dr Uscinski's family's letter of concerns, I obtained:

(a) Mr Christopher de Vere, an aviator who was at the Gympie Aerodrome on the day of the incident awaiting delivery of his aircraft;

(b) a final investigation report directly from Mr Soutter, after RA-Aus advised me that they did not intend on finalising their investigation;

(c) A private investigation report from Mr Mal Beard, a friend of Dr Uscinski who had been requested by Dr Uscinski's family to investigate the incident;

(d) written responses to a number of questions I asked the Queensland Police Service (QPS), RA-Aus, CASA, the Australian Transport Safety Bureau (ATSB), Mr O'Sullivan, and Mr Michael Poole (a former RA-Aus Operations Officer); and

(e) the full RA-Aus and CASA files in relation to Dr Uscinski, Mr O'Sullivan and the aircraft in question.

Finally, I received a number of references and submissions from colleagues, and fellow aviation enthusiasts of Dr Uscinski, namely:

(a) Mr Chris Newton (who knew Dr Uscinski through the Cambridge Flying Group (CFG) for 12 years);

(b) Mr D. Collyer (who knew Dr Uscinski for over 20 years through the CFG and helped convert him to the DH82A Tiger Moth);

(c) Mr David Lewis (who knew Dr Uscinski for five years, flying every Thursday at the CFG);

(d) Dr Mike Sheppard (who knew and flew with Dr Uscinski for many years at the CFG and elsewhere, through intensive Tiger Moth aerobatic training and competitions);

(e) Distinguished Professor Michael Buckingham (who knew Dr Uscinski for over 20 years as a work colleague and friend with a common interest in physics and flying);

(f) Dr Mark Spivack, Director of Studies, Centre for Mathematical Sciences, Cambridge University (who knew Dr Uscinski since he joined the university in 1984);

(g) Mr Joao Rodrigues (who knew Dr Uscinski for eight years as a Research Associate at the University of Cambridge); and

(h) Professor Terry Ewart, Professor Emeritus of Oceanography and Emeritus and Principal Physicist at the Applied Physics Laboratory of the University of Washington (who knew Dr Uscinski as a close friend and colleague since 1979).

During the inquest proceedings, I heard oral evidence from:

(a) Mr Michael O'Sullivan, the CEO of Supermarine Pty Ltd, who manufactured and constructed the majority Dr Uscinski's aircraft;

(b) Mr Michael Poole, the Operations Manager of RA-Aus at the time of the incident;

(c) Ms Jill Bailey, the current Operations Manager of RA-AUS;

(d) Mr Lee Ungerman, Team Leader of the Self Administering Sport Aviation Section of CASA;

(e) Mr Brett Soutter, the RA-Aus aircraft incident investigator;

(f) Mr Anthony Kerr, owner of Gympie Aircraft Maintenance;

(g) Mr John Walmsley, RA-Aus Chief Flying Instructor; and

(h) Senior Constable Anthony Noble, the final police investigating officer.

Witness accounts of the fatal incident

On the day of the incident, on 22 October 2010, Mr Kerr and Mr Raffels observed that the weather was good for flying. Mr de Vere also observed this in his statement. Data obtained by RA-Aus investigators from a serviceable windsock located at the Gympie Aerodrome supported these observations. The cloud cover was very light and the wind was light and variable at approximately 5 – 8 knots, blowing from the SE to SW.

Mr Kerr stated that at about 3:30pm that afternoon, Dr Uscinski embarked on the first test flight on runway 14. He recalls that Dr Uscinski took off and everything seemed fine and sounded and looked really good. The engine seemed to be running well. Mr de Vere's and Mr Raffels' observations support this.

Mr Kerr stated that Dr Uscinski did about four circuits of the airfield and was fairly high. Mr Raffels approximates the height to have been around 1,000 feet. They both saw him raise and lower the undercarriage, to check that it was working. Both concurred that the engine sounded like it was running perfectly from the ground and was smooth, with no hint of any problems.

Both also concurred that after the high circuits were completed, they observed Dr Uscinski's aircraft descending into the circuit area, both thinking that he was intending to land.

However, they both stated that prior to turning left again into the final, Dr Uscinski drifted past the axis of the runway, moving to the west of this. As he turned left, he opened the throttle and raised the landing gear and went around again.

He then moved back into the downwind leg and they again thought he was intending to land. He made the left turn into the base leg and everything looked fine. However, he again appeared to overshoot and he flew too far west. They were of the opinion that Dr Uscinski made his circuit too tight and too slow for a Spitfire aircraft.

Dr Uscinski's aircraft was about to make his final left turn to line up with the runway. The approximate height at the time was 500 to 600 feet, the wings were observed to be level but the aircraft seemed to be travelling below the expected speed. Suddenly, a wing dropped from level flight to an almost vertical position followed by the nose, ultimately presenting a plan view of the aircraft to witnesses on the ground. The aircraft then began to rotate or spin while rapidly accelerating towards the ground. This mode of flight continued until the aircraft disappeared below the treetops.

Mr de Vere noted in his statement that Dr Uscinski's aircraft was following his Auster aircraft at a considerable distance apart and much lower. He did a mental calculation at the time that the extremely slow speed which his aircraft normally flies at, combined with the much faster speed that Dr Uscinski's aircraft would need to remain airborne, would have resulted in the Dr Uscinski's aircraft closing in significantly on his aircraft as it turned from base to final. He was of the opinion that Dr Uscinski was probably performing an 'S' shaped manoeuvre to give the Auster time to exit the runway, which is quite normal in the circumstances.

Mr Kerr and Mr Raffels stated that during all of this time, the engine sounded the same and they did not hear any engine note changes. This is not unexpected given that they were some distance from the base leg of the circuit, with the wind blowing the engine noise away from their location. Contrary to their observations, Mr de Vere stated that at the latter stages of the flight, the engine sounded extremely rough and not normally throttled back. He qualifies his observations by recognizing that he did not know if the sound made by Dr Uscinski's aircraft was normal for that type of engine, as he had no experience with that type of engine. He noted though that the engine did not sound anything like the smoothness of the same aircraft when it first took off.

This suggestion was supported by the residents who lived in the vicinity and heard the fatal crash. On the same day of the incident, police spoke with Mr Neil Callow, a resident who lived a short distance north of the Gympie Aerodrome. Mr Callow stated that he heard the aircraft sounding like it was labouring when he saw it spiralling to the ground. He believed, however, that the engine continued to run until impact.

Police also spoke with Mr Francis and Mrs Fay Boyd, residents of the rural property that the aircraft crashed on. They were indoors when they heard the aircraft 'splutter' before hearing a ground impact.

The pilot of Mr de Vere's Auster aircraft landed without incident. He advised Mr de Vere that he had not heard any calls from any other aircraft in the circuit. He gave his normal inbound calls some distance from the aerodrome, his joining down wind call, and turning finals call. He had not received a response from anyone and assumed that there was no other aircraft in the vicinity.

About RA-Aus

RA-Aus self administers ultralight recreational and light sport aircraft operations on behalf of the Commonwealth government's CASA under a Deed of Agreement. They oversee the operation of about 11,000 members and 3,400 aircraft. RA-Aus receives limited funding from CASA. The majority of its funds are raised through membership. RA-Aus is staffed on a professional and voluntary basis.

The 95 series of the *Civil Aviation Orders* provide exemptions from the *Civil Aviation Regulations 1988* to enable the operation of sport aviation activities under a recognised Recreational Aviation Administering Organisation, such as RA-Aus. Pilots

and registered owners of aircraft registered with RA-Aus are required to comply with the relevant Civil Aviation Orders and the RA-Aus Operations and Technical Manuals.

There are certain criteria that an aircraft must meet in order to be eligible for registration with RA-Aus, rather than going through the more expensive and regulated process of registering the aircraft with CASA. This inquest uncovered that the aircraft documentation submitted by Mr O'Sullivan to RA-Aus in relation to Dr Uscinski's aircraft were falsified by him, so that it appeared to RA-Aus that the aircraft was below the Maximum Take Off Weight threshold. It is unclear whether Dr Uscinski was aware of the true weight of his aircraft.

False information provided to RA-Aus by Mr O'Sullivan

Of particular importance in relation to this matter was the aircraft registration history.

The aircraft was professionally engineered and was an 80 percent scale replica of the original Supermarine Spitfire World War II aircraft. The kit was designed and marketed by Supermarine Aircraft Pty Ltd and Dr Uscinski purchased the Mk 26 Spitfire kit from Supermarine Pty Ltd through its CEO, Mr O'Sullivan, in 2001.

Mr O'Sullivan said that he developed the model for the aircraft, which had had some 20 previous kits, and had been designed and tested over a seven-year period. Dr Uscinski's aircraft was one of the first aircraft of that model that they had actually produced.

Mr O'Sullivan acknowledged that prior to Dr Uscinski's aircraft model being built, there had been some changes in scale and systems including a larger overall size and larger engine to provide improved performance.

The aircraft was powered by a 3.5 litre V6 liquid cooled modified Isuzu truck engine. This engine was basically a stock crate engine with no internal changers but with numerous external changes to accessories.

There can be no doubt that there were some inconsistencies and difficulties with Mr O'Sullivan's evidence in relation to the aircraft's history.

Mr O'Sullivan claimed that the aircraft had type approvals in a number of countries including the UK, Germany, France, Canada, South Africa and the United States. However, counsel assisting, Mr De Waard, noted in his submission that inquiries by CASA with the US authorities have confirmed that no approval exists with the US.

Mr O'Sullivan said that no approval was sought in Australia, as the legislation framework for recreational experimental aircraft did not require approval for the markets in which they were sold.

The aircraft was first registered by Mr O'Sullivan on 13 January 2004. Mr O'Sullivan explained that the aircraft was registered in his name rather than Dr Uscinski's name to allow him to conduct test flights so that he could ascertain if there were any issues with the aircraft and continue with it, as Dr Uscinski was rarely in Australia. Therein lies the first major issue to emerge from this inquest in that an analysis of the registration documentation for the aircraft identified that there were serious inaccuracies in the information provided to RA-Aus.

Civil Aviation Order 95.55 of 2006 and section 7.4.1 of the RA-AUS Technical Manual set out the criteria that an aircraft must meet to be registered with RA-AUS and be eligible for the exemptions to the Civil Aviation Regulations. This is of concern to persons who wish to be exempted from the strict guidelines of CASA but fly their aircraft as recreational pilots with RA-Aus.

At the time that the aircraft was first registered, the relevant RA-Aus requirements were that:

(a) the aircraft's maximum takeoff of weight (MTOW) was not to exceed 544kg;

(b) the aircraft's stall speed was not to exceed 45 knots; and

(c) the aircraft had to meet the 51 percent rule, that is, that the major portion of the aircraft had to be fabricated and assembled by a person who undertook the construction project.

Mr O'Sullivan submitted to RA-AUS an 'Aircraft Data Sheet', which he signed and dated 11 December 2003. He did this in order to register the aircraft and made declarations that:

(a) he was the builder and designer of the aircraft;

(b) the aircraft was completed and ready for weighing on 22 November 2003;

(c) the aircraft was weighed on 22 November 2003 (using bathroom scales under each wheel);

(d) the MTOW was 544kg;

(e) the empty weight was 401kg;

(f) the stall speed was 42 knots; and

(g) the air speeds were determined by extensive flight tests by an independent test pilot.

Mr O'Sullivan also submitted associated documentation, such as an 'Ultra Light Aircraft Condition Report', signed by a Level 2 Maintenance Authority Holder certifying an empty weight of 401kg. He submitted a 'Verification of Aircraft Weight' form, signed by him on 21 November 2003, declaring the maximum take off weight to be 544kg. This was signed by an authorised person on the same day, who declared that they witnessed the weighing of the aircraft and that it was in accordance with Mr O'Sullivan's declaration.

Some 18 months later on 26 May 2005, Mr O'Sullivan signed and submitted an 'Aircraft Flight Test Period Finalisation' form where he declared that the first flight was on 24 September 2004 and that the test period was completed in May 2005 after flying 37.5 hours. He again declared that the empty weight was 401kg and that the stall speed in landing was 45 knots.

The purpose of the flight-testing regime, according to RA-AUS, is to record and assess the performance characteristics of the aircraft so that a Pilot Operating Handbook that meets the requirements of the RA-Aus Technical Manual, can be

produced. This Pilot Operating Handbook can then be used by pilots to ensure the correct speeds are utilised, including best glide speed and awareness of stall speeds in various configurations. Mr O'Sullivan said that he briefed Dr Uscinski about the aircraft generally around the time of sale, but no handbook was ever compiled. It is clear that RA-AUS do not check that a Pilot Operating Handbook has been prepared, or is in fact correct.

Almost four years later on 6 February 2009, Mr O'Sullivan signed a 'Notification of Aircraft Disposal' form indicating that he had now transferred the aircraft to Dr Uscinski. This was accompanied by an 'Application Form for a Change of Ownership', which was signed by Mr O'Sullivan on 6 April 2009. On that form, Mr O'Sullivan again declared that the maximum take off weight was 544kg; the aircraft empty weight was 403kg; and the stall speed in the landing configuration was 43 knots.

The 'Change of Ownership' forms were accompanied by an 'Aircraft Condition Report', which again listed the empty weight of the aircraft at 403kg, indicating that it had been weighed on 10 December 2003. This form was signed by Mr Anthony Kerr, from Gympie Air Maintenance in his capacity as an RA-Aus Level 2 Maintenance Authority Holder on 6 April 2009 as being complete, accurate and correct to the best of his knowledge.

The evidence given by Mr O'Sullivan highlighted a number of inaccuracies. Initially in his evidence, Mr O'Sullivan was adamant that the statements that he had made to RA-AUS regarding the weight of Dr Uscinski's aircraft were not false and that they were correct. He spent considerable time attempting to maintain his façade of honesty and integrity. However, when faced with the plethora of evidence against him, he admitted to lying and significantly understating the weight of the aircraft (by about 200kg). He indicated that the purpose of providing false information to RA-Aus about his aircraft was to sell his machines, and ensure that he operated at a profit without having to comply with CASA regulations.

Mr O'Sullivan then attempted to shift the blame to unnamed RA-Aus staff. He claimed that he was encouraged to make false statements about the weight of his company's aircraft by staff of RA-AUS but he could not actually verify or provide any information in relation to this allegation. He further claimed that he had been led to believe by staff of RA-Aus that the minimum weight thresholds were about to be increased and that the false information he was providing would not ultimately matter. He believed that RA-Aus staff had encouraged him to provide the false information so that his aircraft remained registered with them, rather than CASA, but could not point to any sensible reason why they would do this.

Mr O'Sullivan also admitted in oral evidence that when he declared to RA-AUS that the aircraft test flight period had been finalised after flying 37.5 hours, his declaration was false. The aircraft had actually only been test flown for about 20 hours (as confirmed by the aircraft logbook). It is unclear why this false declaration was made. It was suggested that the purpose of Mr O'Sullivan's false declaration to RA-AUS was to have the test flying restriction of a limited radius lifted to enable the aircraft to be flown to an Evans Head Fly-In for demonstration purposes.

Mr O'Sullivan presented as an evasive and unreliable witness. He consistently attempted to avoid the truth and changed his story regularly. He left me with no doubt that his credibility was in tatters and that he had knowingly falsified documents to achieve registration of his aircraft with RA-Aus, rather than the more stringent registration with CASA.

The second area of concern in relation to the registration of this aircraft was the extent that Mr O'Sullivan attempted to portray Dr Uscinski as an owner builder. The extent to which Dr Uscinski was involved in the building of his aircraft was relevant because his knowledge of the undercarriage and dual battery system and weight / balance of the aircraft were potentially linked to the cause of the incident.

Dr Uscinski was only able to come to Australia for up to a month at a time and Mr O'Sullivan claimed that he spent a month at a time at the Brisbane factory two or three times a year, building the aircraft with company assistance and under their supervision. Mr O'Sullivan's legal representative tendered photographs of Dr Uscinski with tools in his hand alongside the aircraft, as proof that Dr Uscinski had built the majority of the aircraft. However, all the photos really proved was that Dr Uscinski was posing alongside the aircraft for a photo opportunity. At best, they illustrated that he was present during some phases of the construction. The invoices obtained as part of the coronial investigation clearly showed that Dr Uscinski paid a substantial sum for Mr O'Sullivan to assemble the aircraft.

In my view, it would be highly unlikely that Dr Uscinski would pay such a substantial sum for Mr O'Sullivan to assemble his aircraft in circumstances where he would be assembling the majority of the aircraft himself. Mr O'Sullivan's story was simply not plausible. Further, Mr O'Sullivan's credibility was seriously undermined and the weight that could be placed on his evidence was seriously limited by his evasiveness and lack of forthright honesty in relation to these matters.

Aircraft incidents leading up to the fatal incident

Significant emphasis was placed by the police investigation and some witnesses on prior incidents that Dr Uscinski had been involved in whilst flying his replica Spitfire. These incidents were used by them to suggest that Dr Uscinski was an incompetent pilot (at least in relation to flying the replica Spitfire) and the crash that led to his death was due to pilot error. These incidents were also used by others to suggest that Dr Uscinski's replica Spitfire was not adequately constructed by Mr O'Sullivan. For this reason, I have considered these incidents in detail.

The coronial investigation identified six incidents of concern between 2004 and 2010, as follows:

(a) Mr O'Sullivan's 'wheels up' landing of Dr Uscinski's Spitfire during a test run at Watts Bridge airfield in September 2004;

(b) The tail-wheel assembly falling off while Dr Uscinski was taxiing the Spitfire at Watts Bridge airfield in May 2006;

(c) Dr Uscinski's pilot log book entry dated 11 April 2008, which indicates that he 'spun out of a steep turn and lost 550 feet';

(d) Dr Uscinski's 'wheels up' landing of the Spitfire when the undercarriage could not be lowered for landing in March 2009;

(e) An incident where the Spitfire hit a soft spot and ran off the runway while taxiing at Watts Bridge airfield in December 2009; and

(f) An incident where the Spitfire was damaged when it failed to become airborne during takeoff on 13 May 2010.

The first incident where Mr O'Sullivan conducted a 'wheels up' landing of the Spitfire during a test run in September 2004 was the first of three incidents involving the undercarriage failing to extend. It was never reported to RA-AUS as required. The existence of this incident was also inconsistent with Mr O'Sullivan's written statement where he stated that after performing about 50 to 60 hours of flying over the following couple of years, no issues arose in the aircraft.

Mr Raffels advised that the second incident involving the failure of the tail wheel mounting in May 2006 was as a result of metal fatigue due to a design fault and not to Dr Uscinski's mishandling of the aircraft. Dr Uscinski told him that whilst he was taxiing slowly at Watts Bridge airfield, the tail of the Spitfire dropped slightly and this was followed by a grinding noise. He promptly stopped and shut down the aircraft. On inspecting the tail, he saw that the forward tail spring attachment had torn away from its sheet metal mounting. The forward tail spring mounting was merely attached to the aluminium alloy skin and lacked the necessary reinforcement required to carry the heavy and vibrating loads imposed whilst taxiing over rough ground. Mr Raffels advised that they overcame this problem by fitting a chrome molybdenum alloy steel one inch side rectangular hollow section tube between the last two formers in the fuselage in order to carry the tail spring loads, without stressing the sheet metal skin. He stated that this has since been fitted to two replica Spitfires and has proved to be most effective. I accept Mr Raffle's explanation of this incident.

In relation to the third incident where Dr Uscinski supposedly spun out of a turn and lost 550 feet, Mr Raffels has advised that he remembers Dr Uscinski discussing this with him. He said that it occurred while Dr Uscinski was conducting upper air work to explore the handling characteristics of the Spitfire at 5,000 feet, not while he was flying a circuit. He says that the comment in Dr Uscinski's pilot log book merely shows that Dr Uscinski also conducted circuits during that sortie. I accept this explanation and note that this was nothing out of the ordinary.

Mr Raffels stated that the fourth incident where Dr Uscinski was forced to conduct a 'wheels up' landing at Watts Bridge airfield in March 2009 came about after he had taken off to conduct a circuit and when coming in to land, was unable to lower the landing gear. After repeated attempts and with dusk approaching, Dr Uscinski was faced with the decision of conducting a 'wheels up' landing. Mr Raffels stated that the landing was nicely carried out with minimal damage. Subsequently, adjustments were made to the aircraft which rectified the fault. He said that Dr Uscinski's handling of the incident reflected well on his flying skills. This explanation is corroborated by that which Mr Kerr from Gympie Air Maintenance was provided at the time by Dr Uscinski. I accept Mr Raffle's advice in relation to this incident.

Mr Raffels stated that the repairs (up until March 2009) were carried out by Supermarine Aircraft Pty Ltd. His understanding was that Mr O'Sullivan did not want the incidents between September 2004 and March 2009 reported to RA-Aus or elsewhere as that could have reflected badly on the aircraft they designed and manufactured. Mr O'Sullivan denied this in oral evidence. However, due to my observations of Mr O'Sullivan's willingness to be untruthful in his evidence to this court, I accept that Mr Raffle's suspicion may well be correct.

No relevant information was obtained in relation to the fifth incident.

Mr Kerr recalled Dr Uscinski's explanation for the sixth incident where the aircraft failed to get airborne during takeoff and crashed on 13 May 2010. Dr Uscinski informed him that the aircraft had porpoised along the runway and the landing gear

had collapsed and resulted in the propeller striking the ground. Dr Uscinski had advised him that he had trouble getting the tail up initially and thought the aircraft needed more weight in the tail to help it. I accept that there were likely weight / balance issues at the time that were affecting the Spitfire's handling. It was for this reason (as evidenced in e-mail exchanges between Dr Uscinski and Mr Kerr) that Dr Uscinski requested Mr Kerr to adjust the weight / balance of the aircraft during its repair.

Aircraft repairs prior to the fatal incident

Mr O'Sullivan's company appears to have assisted Dr Uscinski with maintenance and repair work on the aircraft up until March 2009. Mr O'Sullivan claimed in oral evidence that he had no knowledge of this and no records were able to be produced because this would have been informal assistance provided by members of his company.

Dr Uscinski utilised the services of Mr Kerr's company, Gympie Aircraft Maintenance, from March 2009 onwards.

Maintenance records indicate that Mr Kerr conducted repairs on Dr Uscinski's aircraft in March 2009, December 2009 and in the five month period prior to the fatal incident - between 13 May and 22 October 2010.

In the five month period prior to the fatal incident, Mr Kerr repaired the lower engine cowling and he replaced the engine, oil cooler, propeller, propeller speed reduction unit, spinner, landing gear legs and fairings. He also moved the batteries further back in the aircraft for weight and balance purposes.

Mr Kerr stated that the replacement engine was the same make as the one that was installed previously (an Isuzu V6 engine). No internal changes to the engine were performed. The bare crate engine was checked and fitted with the external accessories from the original aircraft engine, as they were all still found to be in good operational condition.

Mr Kerr stated that they performed extensive post repair tests on the aircraft including: gear retracting; engine run ups; function tests; and propeller cycling tests. All systems, including the propeller and engine, ran satisfactorily.

Importantly, Mr Kerr stated that during the repair work, they also did a weight and balance test of the aircraft. What is concerning to me is the way in which this was conducted. Mr Kerr said he contacted the aircraft manufacturer, Mr O'Sullivan, for weight and balance documentation and he was advised by Mr O'Sullivan that he had none. He said that Mr O'Sullivan advised him to move the batteries aft and adjust the ballast weight to achieve 8 - 10kg weight on the tail wheel, whilst the aircraft was in the flying position. He stated that this resulted in them moving the aircraft batteries back a little in the fuselage to assist with balance.

Mr Kerr said they only adjusted the battery positions and that there would have been no change to the wiring, other than a possible extension to the main positive power cable to allow the batteries to be moved further backward if there was insufficient slack on the cable. They moved the batteries back and added 3kg to the rear ballast under instructions from Mr O'Sullivan. They weighed the tail wheel and found that it had 8.5kgs on the tail after the adjustments. This is supported by maintenance worksheets obtained by the police from Mr Kerr after the incident.

Mr O'Sullivan could not recollect providing any advice to Mr Kerr, but I accept Mr Kerr's version of events. It is, however, concerning that Mr Kerr did not conduct a full weight and balance test and calculation of the aircraft. He was not aware that the aircraft was overweight to that which Mr O'Sullivan had been claiming. He accepted verbal advice over the phone from Mr O'Sullivan, without considering that Mr O'Sullivan had not had any direct involvement with that particular aircraft for some time, nor could he produce any paperwork to support his advice.

After all work was completed, Mr Kerr stated that the weight and balance of the aircraft was checked against information sheets that Dr Uscinski had e-mailed him from a source in the UK, and it was found to be in line with the specification. However, Mr Kerr was unable to produce that documentation. He said that he did not retain copies of the work he carried out on aircraft for more than 12 months, as the permanent record is held in the aircraft logbook. In oral evidence, Mr Kerr admitted to using the aircraft logbook while undertaking repairs to the aircraft immediately prior to the incident. Mr Kerr denied having the logbook in his possession after the incident. The aircraft logbook was never given to Dr Wood by Dr Uscinski or anyone else, nor was it able to be located in the Spitfire after the incident or on Dr Uscinski's person. The aircraft logbook was never found.

Mr Kerr stated that he and his company did not install the dual battery redundancy system in Dr Uscinski's aircraft. However, a maintenance invoice from Gympie Air Maintenance dated 26 March 2009 lists two batteries, amongst other things, on the list of repairs. This suggests to me that Gympie Air Maintenance at least replaced the batteries in question, although they may not have installed or configured the dual battery system.

It is puzzling to me though that Mr Kerr and his employees did not recognise in March 2009 or between May and October of 2010, that the dual battery system was inadequately installed and configured (as identified by Mr Soutter during his investigation, which is discussed later in these findings).

Dr Uscinski's flying qualifications and experience

At the time of the incident, Dr Uscinski was the holder of a current civil pilot's license, both in the United Kingdom and Australia. He obtained his Australian civil pilot's license in 1987 and his UK pilot's license in 1988. In addition, he obtained a recreational pilot's certificate with RA-Aus in 2005.

RA-Aus records confirm that Dr Uscinski had been deemed by them as medically fit at the time of the incident. His CASA Medical Certificate (Class 2) did not expire until 12 November 2011. Dr Uscinski had also completed a GA Aeroplane Flight Review on 28 September 2009, which meant that he was considered by RA-Aus as having maintained his currency in terms of the requirement to complete a Biennial Flight Review.

Dr Uscinski's pilot logbook indicates that he flew regularly up until the incident, having completed 34 hours of flying in the year prior to the incident. He also had considerable overall aviation experience. His pilot logbook records that his total flying hours were 1,164 hours. Of this flight time, he had 894.8 hours logged as 'pilot in command'.

The majority of flight time logged by Dr Uscinski was in a DH-82A Tiger Moth and Cessna 172 aircraft. But he also had experience flying a Russian Yak 52. Dr

Uscinski's total flying hours in the replica spitfire were 36.4 hours but in the two years prior to the incident, Dr Uscinski had only flown 2.7 hours in the replica Spitfire.

Dr Uscinski's flight training in Australia

It was important to drill down into the observations of Dr Uscinski's training instructors as part of this inquest. This is because some of these negative observations were used in the police investigation and by some witnesses to support a theory that the primary cause of the accident was due to Dr Uscinski's incompetence on the Spitfire and pilot error. This is a view that I do not accept.

Initial training with Mr O'Sullivan (2004/5)

Mr O'Sullivan is a senior flying instructor with RA-Aus and stated that he flew about 5 – 6 hours with Dr Uscinski when he first wanted to fly the Spitfire. However, Dr Uscinski's pilot logbook was meticulous in its detail and did not record such instruction, which indicates to me that Mr O'Sullivan's claim was false.

Mr O'Sullivan was very critical of Dr Uscinski's flying ability. He stated that he found that Dr Uscinski was very inconsistent in his flying and did not show any signs of improvement. He would be able to do a few circuits fine and then he would do some very poorly. He recalled on occasions when Dr Uscinski was flying, he would not respond to obvious incidents developing in flight. A common example was that he would encounter excessive sink on approach to landing, which could cause him to undershoot the airfield. Mr O'Sullivan said he would instruct Dr Uscinski to power on to decelerate the sink, but he would not and on occasions would argue with him and tell him he did not need to.

Mr O'Sullivan said he advised Dr Uscinski to obtain instruction from Mr John Walmsley, at Coominya (west of Brisbane). Mr Walmsley was an old acquaintance of Mr O'Sullivan's and he knew him to be a very competent instructor.

Counsel Assisting, Mr De Waard, submitted that Mr O'Sullivan's observations of Dr Uscinski's flying ability should be given limited weight due to: the period of time he says he flew with Dr Uscinski not being supported by Dr Uscinski's pilot logbook entries; the period of time which had elapsed since Mr O'Sullivan's observations and the incident; and Mr O'Sullivan's demonstrated willingness to lie for his own benefit. I concur with Mr De Waard's submissions, in particular, given my above observations of Mr O'Sullivan as an unreliable and less than truthful witness.

Training with Mr John Walmsley (2 May – 28 October 2005)

Similarly, the evidence provided by Mr John Walmsley, an RA-Aus Chief Flying Instructor (CFI) operating from Coominya, in a statement to police, raised some concerns about Dr Uscinski's flying competency.

Mr Walmsley stated that he has accrued 6,000 flying hours, including 60 hours of aerobatics training. He also has experience in and has obtained type ratings for a number of different aircraft within both general aviation and recreational aviation fields. He became an RA-Aus flying instructor in 2001 and has provided on average about 700 hours of flight training each year since that time.

Mr Walmsley said he provided a total of 25 hours of dual flight training to Dr Uscinski in his Light Wing GR912T nose wheel aircraft between 2 May and 28 October 2005. This was supported by training records, which he provided to police. He said the purpose of the training was for Dr Uscinski to get some experience in flying an

aircraft with a similar control feel as the Spitfire. The training was broken up over the period due to Dr Uscinski travelling to and from the UK.

Mr Walmsley said that Dr Uscinski had difficulty with adapting to the different feel of his aircraft and had trouble controlling the pitch. His perception was that because Dr Uscinski had a number of years of prior flying experience, he was very set in his ways, which made it difficult to teach him new skills.

He perceived on occasions that Dr Uscinski appeared to be nervous and unsure of himself, sometimes trembling at the control column. He recalled occasions where Dr Uscinski would grip the controls heavily when he was attempting to take over, and his opinion was that Dr Uscinski did not have the ability to deal well with stressful situations in the aircraft.

During their training, Mr Walmsley stated that he never developed enough confidence in Dr Uscinski to perform much in the way of emergency recovery procedures. After 25 hours of training, he was of the opinion that Dr Uscinski needed further training in order to obtain his RA-Aus pilot's certificate.

Mr Walmsley, however, also gave oral evidence at the inquest and again it became apparent that there were some inconsistencies in his evidence. Through his oral testimony it emerged that Mr Walmsley's main criticism of Dr Uscinski really only related to the approach and landing phase, which were irrelevant to the circumstances of the incident, which resulted in Dr Uscinski's death. It also became apparent that Mr Walmsley's training aircraft was not all that similar to the replica Spitfire Dr Uscinski ended up flying. He also conceded that the problems Dr Uscinski was having could have been attributed to a teacher / student compatibility issue, rather thand Dr Uscinski's incompetence.

In any event, Mr Walmsley's observations were five years prior to the fatal incident and it is important to note that only one and a half weeks after the conclusion of his training with Mr Walmsley. Dr Uscinski went on to pass his RA-Aus Pilot's Certificate test with another instructor with minimal fuss.

Whilst Mr Walmsley did not present as an unreliable or untruthful witness, in my view, his evidence was clouded by what appeared to be an earnest attempt to maintain that pilot issues and ability were major factors in this incident, which is not supported by the bank of evidence.

Training with Mr William Haynes (4 – 6 November 2005 and 25 October 2007)

Mr William Haynes, a RA-Aus CFI operating from the Caboolture Airfield, also provided police with a statement.

Mr Haynes stated that he could no longer recall much about Dr Uscinski or his specific flying abilities, but he had noted in his logbook records, which were provided to me, that he performed just under two hours of flying with Dr Uscinski in his Piper Cub from 4 to 6 November 2005. He stated that the purpose of the training was to enable Dr Uscinski to convert to an RA-Aus pilot's certificate from a General Aviation (GA) pilot's license. This would ensure that RA-Aus would automatically give him the endorsements he previously held on his GA license, including a 'Tail Wheel Endorsement', which is required to fly a Spitfire.

Mr Haynes considered the two hours of flying training that he provided to Dr Uscinski to be in excess of what would normally be required to convert to an RA-Aus pilot's certificate. He said that this indicated to him that Dr Uscinski probably required more training than average, before he was confident to sign off on his pilot's certificate.

Mr Haynes was not called as a witness to provide oral evidence due to his lack of recollection. However, I concur with Mr De Waard's submission in that it would seem that the two hours consisted of one hour of instruction and one hour of the mandatory solo flight and thus this does not seem excessive in the circumstances.

Dr Uscinski also completed 0.4 hours flying with My Haynes again on 25 October 2007 for his Biennial Flight Review (BFR). It is an RA-Aus requirement that a BFR is completed every two years in order to maintain an RA-Aus pilot's certificate. Mr Haynes did not recall any adverse issues from the flight test and said that he would not have issued a BFR approval to Dr Uscinski if he had not been competent where required.

Therefore, nothing arose in my view from the evidence of Mr Walmsley to suggest that there were any issues in relation to Dr Uscinski obtaining his RA-AUS pilot certification or his ability to fly the aircraft under consideration.

Mr O'Sullivan's observations of Dr Uscinski's flying in 2009

Mr O'Sullivan also gave evidence that he saw Dr Uscinski in early to mid 2009 landing on one occasion at the Watts Bridge airfield and noticing that he came in what he considered "very slow". He says he was concerned because Dr Uscinski virtually stalled the aircraft onto the ground from about 10 feet. He said he spoke to Dr Uscinski later that day and relayed his concerns about him flying too slowly. He remembers Dr Uscinski did not take the comments well, and seemed to be agitated by him suggesting he change his flying style to suit the aircraft. As an instructor, he said he was concerned because Dr Uscinski did not seem to be able to judge distances and speeds in unfamiliar locations. He did not see Dr Uscinski from that point on.

In oral evidence, Mr O'Sullivan admitted that his observation of Dr Uscinski was a matter of perception and that what he observed could very well have been the usual process involved in landing the aircraft.

Mr O'Sullivan also admitted to not reporting his concerns about Dr Uscinski's flying to RA-Aus, even though as an RA-Aus member and Senior Instructor he had a duty to do so.

Mr De Waard submitted that if Mr O'Sullivan was really so concerned about Dr Uscinski's flying safety, he would have reported the incident to RA-Aus at the time. He submitted that it was more likely that Mr O'Sullivan has exaggerated his observations to support a picture that Dr Uscinski was an incompetent pilot, for his own personal reasons. Mr O'Sullivan has demonstrated a willingness to be dishonest and his observations are not supported by the weight of the evidence.

Given my observations of Mr O'Sullivan's credibility and his motivation for some of his evidence, I agree that little weight should be placed on this incident, especially given the other evidence provided to me by fellow aviators and colleagues of Dr Uscinski.

Of more serious concern was the information that Mr O'Sullivan had previously given to the police investigation in regards to Dr Uscinski and his ability as a pilot. This clearly resulted in the police report confirming that pilot error was the principle cause of the incident. I find that Mr O'Sullivan's evidence was in fact untrue and highly suggestive of a deliberate ploy to divert the cause of the accident to pilot error, so as to not have an investigation, which would reveal the issues regarding his own conduct, which have arisen in this inquest.

Observations of Dr Uscinski by fellow aviators and colleagues

As I detailed in the introductory section of these findings, a number of references and letters were received by me during the course of the coronial investigation.

The observations by Dr Uscinski's non-aviation colleagues and friends paint a picture of someone with international recognition and respect in his field of expertise, great intelligence, attention to detail, and a focus on safety. Amongst other things, Dr Uscinski was a respected international physicist and mathematician; he spoke a half a dozen languages, played classical music on the violin, and was a prize-winning essayist.

However, the observations of Dr Uscinski's fellow aviators and colleagues are of greater relevance to this inquest. Their observations of Dr Uscinski were at complete odds to that of Mr O'Sullivan and Mr Walmsley. They have highlighted that Dr Uscinski:

(a) had a distinguished and long running record as a pilot and an excellent reputation professionally and personally;

(b) was a skillful and meticulous pilot in his approach to flying in all respects and at all times;

(c) was conscientious in maintaining the highest standards as a pilot in everything from: health to general airmanship; awareness of states of aircraft maintenance; rigorous pre-flight and in-flight checks; and a thorough and disciplined approach to aerobatics;

(d) was a cautious pilot who always took time to enlighten less experienced pilots on all issues affecting flight safety;

(e) was trained by one of the most experienced flight instructors in the UK, Mr Bill Ison, the CFI at the CFG. He had overseen Dr Uscinski's flying for over 20 years. Mr Ison passed away shortly after Dr Uscinski. Whilst he encouraged pilots to progress, he rarely praised. However, by all accounts, he held Dr Uscinski in the highest regard and confidence in his flying abilities. Mr Ison was awarded the Pike Trophy by the Guild of Air Pilots and Air Navigators in 2004: 'awarded to an individual who has made an outstanding contribution to the maintenance of high standards of civil flying instruction and safety';

(f) was a pilot who won many competitions and top UK Tiger Moth aerobatic trophies, which required a modicum of skill and airmanship which exceeded those of the average pilot; and

(g) was not arrogant, rarely talked about his achievements and was a good listener.

Mr Collyer, a Tiger Moth pilot, commented that although the Tiger Moth is lacking in power and systems, it requires a high level of piloting and airmanship skills to fly. He stated that Dr Uscinski addressed the Tiger Moth's shortcomings by seeking instruction in other aircraft including the Yak 52, in which he flew some advanced aerobatics, which included inverted spinning. He also maintained his instrument flying skills by flying with instructors in modern suitably equipped aircraft.

Mr Buckingham recounted a flying experience with Dr Uscinski in April 2000 where Dr Uscinski took the controls for most of the flight in his single engine, propeller driven Tobago TB10. He said that although unfamiliar with the aircraft, Dr Uscinski was cool, calm and professional, and flew with precision. He held altitude and headings effortlessly, he intercepted course to radio beacons smoothly and accurately and his handling of controls was masterly. He found that Dr Uscinski was a levelheaded pilot, extremely intelligent in his flying and extraordinarily quick to adapt to a new aircraft.

Mr Buckingham was of the view that Dr Uscinski was not the run-of-the-mill flying student, and this may have been the reason why there were some concerns among his Australian instructors that he was 'difficult to teach'. He stated that his quick-silver intellect may have been the root cause of the training issues, since conventional teaching techniques, as commonly used in the flying community (such as learning by rote, or use of mnemonics), almost certainly would not have worked with Dr Uscinski. He would need to figure everything out personally, to gain a thorough understanding of all the issues pertaining to flying the Spitfire. In so doing, he would probably try to reconcile the new information he was acquiring on the Spitfire with his experience of flying in general, which may well have baffled his instructors.

Dr Sheppard doubts that the peculiarities of the Spitfire were intrinsically more challenging than those of the other aircraft flown by Dr Uscinski in the past.

Mr Raffels, who is also a replica Supermarine Spitfire pilot, says he has found the aircraft to be a very 'well mannered' aircraft. He stated that the Yak 52, which Dr Uscinski piloted for the purposes of aerobatics, would have been much more unforgiving.

The above evidence of many fellow aviators and colleagues suggests strongly that in fact Dr Uscinski was a skilful and meticulous pilot who was extremely cautious and safety conscious and clearly trained in a variety of aircraft including Tiger Moths, and the Yak 52, which by all accounts was a far more difficult aircraft and one in which Dr Uscinski piloted for the purpose of aerobatics.

Dr Uscinski's health and frame of mind

Given Dr Uscinski's age, it was important to consider whether there were any relevant health issues, which may have contributed to the incident.

There was no suggestion in the autopsy report of any relevant health issues, although this could not be ruled out due to the trauma suffered.

Just prior to the incident, Dr Uscinski had traveled to Australia, as was regularly his custom, and stayed with his friends Dr Walter Wood and Mrs Beverley Wood in Brisbane. They drove him to Watts Bridge Airfield on 21 October and then to Gympie on 22 October 2010. They provided statements to the police dated 4 January 2011 and Dr Wood himself provided an addendum statement to police on 5 August 2012.

Dr Wood is a medical doctor and he reported that in his opinion, Dr Uscinski's health and frame of mind at the time was perfect. He said this was reflected in his appetite, his propensity to tell jokes, his laughter and his talking of his ongoing research project, as well as the future plans with his wife and family.

He said he was aware of Dr Uscinski's medical health status and that there were no relevant problems.

It is unlikely, in Dr Wood's opinion, that Dr Uscinski was tired on the day of the crash because Dr Wood did the driving from Kenmore to Watts Bridge and from Watts Bridge to Gympie. He also stated that Dr Uscinski was a person who had a high level of energy but had an ability to relax and sleep without medication.

I accept that it is unlikely that Dr Uscinski would have been suffering from any relevant health issues at the time, that could have contributed to the incident.

Autopsy results

An external and full internal autopsy was performed on 26 October 2010. Associated histology and toxicology testing was also conducted. The autopsy report was completed by the Anatomical Pathology Registrar, Dr Nadine Forde, and a Forensic Pathologist, Dr Nathan Milne on 12 January 2011.

The autopsy found that Dr Uscinski's death occurred due to the severity of the injuries he sustained in the aircraft accident. A small amount of hemorrhaging was noted to be associated with many of his injuries. The lack of extensive hemorrhaging into the tissues was found to be indicative that Dr Uscinski's death occurred almost immediately at the time of the crash. There was no evidence to indicate that native disease caused him to collapse or lose consciousness prior to the accident, although this could not be entirely excluded due to trauma.

Toxicology results reported on 25 November 2010 confirmed that there was no alcohol or drugs in Dr Uscinski's system.

Dr Forde and Dr Milne determined that the cause of death was multiple injuries as a consequence of a light aircraft accident.

Investigations

A number of investigations were carried out subsequent to the incident, most notably by QPS, RA-Aus, and the ATSB.

QPS' investigation

The initial Queensland Police investigation was carried out by Senior Constable Judd Van Den Brenk from the Gympie Police Station. He submitted a Form 1 police report to the Coroner dated 24 October 2010.

Senior Constable Van Den Brenk later resigned from the police force and the investigation was handed over to Senior Constable Anthony Noble from the Forensic Crash Unit in Nambour. Senior Constable Noble submitted a comprehensive Supplementary Coronial Report dated 23 September 2011 and provided continued assistance during the course of the further coronial investigation.

Senior Constable Noble made the following key findings in his supplementary investigation report:

(a) The aircraft lost control most likely due to the failure of the pilot to maintain adequate air speed to complete the desired manoeuvre, resulting in a loss of control, which resulted in a stall and spin with insufficient height to recover Continued controlled flight would likely have been possible if the aircraft was flown in a manner to keep sufficient energy to maintain adequate airspeed and an adequate margin of safety;

(b) Witness information and post impact examination of the aircraft by police and RA-Aus investigators showed that the engine was not operating with power at the time the aircraft impacted the ground;

(c) The loss of engine power is a possible contributory factor to the loss of control, however it could not be determined if the engine failed prior to, or after loss of control;

(d) The reasons for the steep (90 degree) turn could not be determined;

(e) Airframe damage indicated that the aircraft impacted the ground at a lower angle than the 80 degrees vertical spin seen by witnesses prior to the aircraft going out of sight behind terrain. This suggested that the aircraft may have been recovering to a flatter altitude just prior to impact but was most likely still in an aerodynamically stalled condition;

(f) The aircraft had been properly repaired and ground tested prior to the initial post repair test flight;

(g) The aircraft was structurally sound at the time if took off from Gympie Aerodrome a short time prior to the crash;

(h) All aircraft control systems appeared to be fully operational prior to the crash;

(i) Dr Uscinski had extensive flight experience including aerobatic training, but it is noted that the majority was in DH-82A Tiger-Moth and Cessna 172 aircraft, which have significantly different flying characteristics to the Spitfire. Insufficient recent flight experience in higher performance aircraft such as the Spitfire is likely to have been a significant factor leading to the incident;

(j) Dr Uscinski had been previously observed flying with inadequate airspeed by Mr O'Sullivan and had been warned about the inherent dangers;

(k) Dr Uscinski had been involved in several previous incidents on take off and landing of this aircraft, which had resulted in the aircraft being damaged. These incidents appear to be consistent with 'pilot error'; and

(l) Dr Uscincki's log book indicates that he previously had a similar loss of control in this aircraft on 11 April 2008 where the Logbook entry reads 'spun out of steep turn. Lost 550ft'.

Unfortunately, the police investigation report was somewhat deficient in that Senior Constable Noble did not have access to the statement from Mr de Vere regarding his observations of the fatal flight, nor did he have the statements from Dr Uscinski's

fellow aviators whose evidence would contradict the claims made by Mr O'Sullivan and others.

Senior Constable Noble also did not have access to the RA-Aus preliminary and final investigation report. In fact, the final RA-Aus report was never actually compiled despite being requested by the Coroner. Finally, he did not have the ATSB report regarding their analysis of the engine management system.

To be clear, no criticism of Senior Constable Noble is intended here. He conducted a thorough investigation based on the information available to him at the time. However, the further information obtained as part of the ongoing coronial investigation significantly changed the focus of the inquest.

RA-Aus' investigation

CASA does not mandate that RA-Aus conduct investigations of incidents involving RA-Aus members or RA-Aus registered aircraft but they generally do so, in order to learn from incidents to improve safety for all of their members. CASA's position to date has been that it is a matter, from a resourcing perspective, for RA-Aus to determine what level of assistance it is prepared to provide to police in the context of incident investigations.

In this case, an RA-Aus investigative team consisting of a lead investigator, Mr Brett Soutter; a second investigator, Mr Allan Jensen; and an assistant, Mr Zane Tully were appointed by RA-Aus to investigate the incident. They attended the incident site and conducted various inspections of the aircraft wreckage.

Although Mr Soutter provided a copy of his preliminary investigation report to RA-Aus and explained that he required further information such as the ATSB report to conclude his report, RA-Aus did not take any further action to facilitate this. The current Operations Manager of RA-Aus, Ms Jill Bailey, suggested that this was a result of a change over of management staff and a lack of follow up processes in place. However, subsequent provision of an e-mail exchanges between the then RA-Aus Operations Manager, Mr Zane Tully, and Mr Mal Beard suggest that the RA-Aus investigation was not finalised because it was thought that the police were happy with the preliminary report and had not requested a further report. This was clarified in the further submission of RA-Aus dated 28 July 2014.

At best, this reflects a lack of communication and follow up. At worst, it reflects a preparedness to hope the issues of the aircraft's registration would not become a concern and the police findings might result in an end to the investigation. I am inclined to accept Ms Bailey's explanation that this matter slipped through the cracks due to the change in Operation Managers and that this matter was not deliberately covered up. Although Mr Tully was not called as a witness, I accept his explanation that following the conversation with the police officer who indicated nothing further was required, the matter was probably archived.

During my further coronial investigation, RA-Aus were provided with all additional material obtained and were requested by me to finalise their report but they were unable to do so. RA-Aus advised that they agreed with Senior Constable Noble's conclusions that the incident most likely resulted from the failure of the pilot to maintain adequate airspeed and therefore control of the aircraft, with a possible contributing factor of engine failure and the aircraft operating over the maximum permissible take-off weight. RA-Aus were of the view that the aircraft would still have been controllable even in the event of an engine failure and this is a simulated

exercise all pilots are recommended to regularly practice. RA-Aus were of the view that Dr Uscinski lacked recency and currency in the aircraft type, and demonstrated possible misunderstanding of the requirements for operation of an aircraft with the performance characteristics of the replica Spitfire.

On 6 November 2010, the then RA-Aus Operations Manager, Mr Michael Poole, attended the weighing of a Mk 26 Spitfire VH-registered aircraft (similar to Dr Uscinski's aircraft) at Gympie Aircraft Maintenance. The aircraft was weighed at the request of Mr Soutter, as part of his RA-AUS investigation. Mr Poole observed that the aircraft was approximately 200kg in excess of the previously reported weights of aircraft with similar engine and airframe combinations registered with RA-Aus.

As a result, RA-Aus suspended the registrations of all Supermarine replica Spitfire aircraft until further weight verification could be received. At the time of the inquest, RA-Aus advised that the owners of those aircraft had chosen not to apply to re-register their aircraft with RA-Aus.

The RA-Aus Operations Manager had also recommended that a person who acted as the 'Level 4 Maintenance Authority' in relation to a number of those aircraft should have action taken against them. That person did not renew their membership with RA-Aus, so no action was taken. No investigation was conducted into Mr O'Sullivan by RA-Aus, nor was any action taken against him. At the time of the inquest, Mr O'Sullivan was still an overseas RA-Aus member.

It concerns me that whilst RA-Aus advised me that they had conducted a review of procedures for aircraft initial registration and transfer and that they had enacted revisions to their procedures, they were unable to provide any supporting evidence in writing or in oral evidence at the inquest as to what specifically had changed.

ATSB's investigation

On 17 November 2010, RA-Aus requested technical assistance from the ATSB for the recovery of data from an EMS module recovered from Dr Uscinski's aircraft at the incident site. The ATSB initiated an investigation under the *Transport Safety Investigation Act 2003* (Cth).

Due to the damage to the EMS and the lack of configuration information, the recovery involved extracting the data from the electronic memory components and, using example data provided by the EMS manufacturer, converting the binary extracted data into engineering units. The ATSB advised that they provided the full converted data set and tabular data of the scaled parameters to RA-Aus and the report that they produced.

In their report, ATSB investigators made the following observations and reached the following conclusions in relation to the EMS data recovered:

(a) 3,119 seconds of data was recovered;

(b) 36 parameters were recorded;

(c) No time or date parameters were recorded;

(d) No parameter names were recorded in the data;

(e) The likely values of revolutions per minute (RPM), manifold pressure and throttle position were determined during the analysis;

(f) On the basis of the above engine parameters it appears as though only one flight was recorded in the data; and

(g) The recorded flight was 16 minutes, 44 seconds long.

The ATSB noted that the flight data ended with an abrupt reduction in throttle with a corresponding reduction in RPM and Manifold pressure. Due to the lack of data from previous flights, it was not possible to determine if this was in line with normal operation for the given phase of the flight.

Although the ATSB has a high level of confidence in the attribution of these parameters, they have recommended that the unverified data be confirmed with the engine tuner or against previous logs from the aircraft if attainable during the investigation.

The ATSB noted that the complete decoding / detection / deciphering of the parameters was outside the scope of their assistance to the RA Aus investigation, so it was not performed.

Mr Beard's investigation

Mr Beard was a friend of Dr Uscinski and investigated the accident on behalf of the family of Dr Uscinski. Mr Beard was provided with a copy of Senior Constable Noble's Supplementary Coronial Report and was also granted access to the aircraft wreckage for examination purposes.

Mr Beard stated that although he has worked in the aviation industry since 1975, he acknowledged that he was not an expert. Nonetheless, he has experience building and rebuilding light aircraft as well as with maintenance and repair of a fleet of aircraft used by his previous aerial spray business. He has also been previously employed as an aircraft engineer and holds a flight instructor rating and pilot's certificate.

Mr Beard produced an investigation report in two parts dated 31 July 2012. He highlighted, what he considered to be a number of incorrect conclusions in the police investigation report.

Mr Beard concluded that there are two likely scenarios which caused the loss of control followed by the stall / spin incident.

Scenario One

Mr Beard was of the opinion that the first possible scenario was that Dr Uscinski experienced an electrical system failure due to low voltage (from failure of the 12 volt alternator followed by the resulting reduction in the power available from the 12 volt batteries).

Mr Beard was of the opinion that the first scenario was supported by the fact that Battery No 2 was located inverted in the rear fuselage, with the exposed terminals in contact with the aluminium metal belly skin, with no sign of electrical arching. It was also supported by the fact that the aircraft did not explode on impact.

Mr Beard was of the opinion that the likely consequences of an electrical power system failure were:

(a) Poor or no radio communications;

(b) the flap extension system being slow to extend and retract;

(c) the retractable undercarriage extension system becoming slow to extend and retract, and would not fully extend the undercarriage to enable the Gear Down Locks to be applied;

(d) loss of the ability to control the engine rpm via the electrical controlled propeller (which could explain why the aircraft was heard to be labouring, but with what appeared to be little or no thrust);

(e) breakdown of the fuel supply system, which would cease supplying sufficient fuel to the individual fuel injector pumps leading to fuel starvation, rough running and ultimate engine failure; and

(f) breakdown of the low voltage supply to the electrical control system, which would result in poor engine performance and ultimate engine failure. (After an alternator failure, the aircraft must rely on the main battery to supply the power that is required for continued safe flight).

Mr Beard noted that the duration of the batteries was only 20 minutes and the engine could not run without sufficient 12-volt power.

Scenario Two

Mr Beard was of the opinion that the second possible scenario was that the left undercarriage failed to correctly lock into position for landing. This would have meant that Dr Uscinski would have to slow the aircraft down to the final approach speed to reduce wind forces acting on the undercarriage; disable the electrical circuit to the undercarriage by popping the circuit breaker; open and pull the cover on the Emergency Gear Extension Activation Cable (gravity drop system), and release the undercarriage locking handle. Following this, if the undercarriage leg did not go into the full down position, Dr Uscinski would have had to apply positive and negative 'G' forces and rock the aircraft from side to side to move the gear leg into the correct position to facilitate the locking pin being fully inserted.

Mr Beard was of the opinion that Dr Uscinski may have been performing this procedure, which resulted in the recently relocated Battery No 2 in the rear fuselage becoming dislodged. This would have broken the Elevator Control Linkage, leading to an immediate loss of pitch control of the aircraft.

Whilst Mr Beard's report was useful for the purposes of discussion with other witnesses, he was not an expert. There was some evidence supporting his theories but no clear indication, on the balance of probabilities, what the root cause of the incident was.

Mr Soutter's investigation

Mr Soutter was the original RA-Aus investigator and he was requested by me to finalise his earlier report. He did so on a voluntary basis and not without criticism from RA-Aus. For that, I am grateful for his assistance. Mr Soutter also provided oral evidence at the inquest.

Mr Soutter had the appropriate formal training, qualifications and experience to conduct his investigation.

Mr Soutter concluded in his final investigation report dated 26 May 2014 that there was a succession of events, which led to the aircraft crash.

Primary causes

Mr Soutter noted that from the time of manufacture, the aircraft was overweight for the RA-Aus category it was assigned to. He said this would have resulted in a situation, which required the aircraft to be flown at speeds other than those prescribed in the aircraft's Flight Manual. It also resulted in a less stringent tracking of both its empty weight and its MTOW and most likely accounts for why there were no 'actual weight and balance records' available through its service life. However, it is still a requirement within RA-Aus to monitor and/or carry out a weight and balance after any major repairs or alterations.

Mr Soutter said that in addition to the weight issue, was the balance issue. With reference to the Flight Manual, this aircraft would have had adverse handling characteristics with 8.1kg of tail ballast and a battery which had been moved aft of its original position. Dr Uscinski would have found it very difficult to control the aircraft in pitch and direction as a result, particularly at approach speeds. When it is taken into account he would have been deliberately flying slower as a result of the tasks at hand, then the weight and balance issues would have been a major contributing factor to the loss of control of the aircraft.

Mr Soutter observed that the dual battery system on Dr Uscinski's aircraft was not a true double redundancy system and would have been inherently vulnerable to long periods of inactivity and/or poor earthing techniques. He believed that the earthing point plus the inline bolt and nut connection would have compromised the ability for this system to function fully. He was of the opinion that the series of ground tests and the final flight test worked the system to a point of depletion where either the main battery relay disengaged or the Motec Unit line voltage dropped below 10.5 volts and the engine stopped. Namely, at the end of the second base leg.

Mr Soutter said this would have been preceded by the undercarriage electrical actuators (being the big power items) not having the power to fully extend the main gear when asked to and therefore requiring an emergency undercarriage extension, which he believed was possibly being performed by Dr Uscinski in the first circuit and if not then, definitely in the second. Mr Soutter was of the opinion that the electrical issue was second to the weight and balance issues because as an event by itself, the pilot would still have stood a chance to fly the aircraft.

Secondary causes

Mr Soutter was of the opinion that a secondary cause of the incident was the complicated undercarriage system, which required a number of steps to complete as well as the period between Dr Uscinski's flights on type and the additional pressures of flight-testing the aircraft.

Mr Soutter concluded that Dr Uscinski was attempting to land the aircraft on the first approach and regardless of why, there was a go-round initiated; he was then tasked with two major issues to resolve during the second circuit - an overly complicated emergency undercarriage extension plus a rough running engine.

He was of the opinion that in preparation for the second landing, his engine failed on the base leg as a result of a final loss of electrical power. This caused a total loss of whatever engine thrust was available and the subsequent loss of speed. This additional loss of speed allowed the weight and balance issues to become the dominant factors causing the eventual loss of control. Despite at least one input, possible two, being made by Dr Uscinski to recover the aircraft, the available height was insufficient to do so.

Again though, Mr Soutter's investigation could not point to any clear evidence to support a definite finding in relation to the crash.

CASA's investigation of Mr O'Sullivan

It was discovered during my further coronial investigation that during November 2012, CASA had conducted an audit of aircraft entered on the RA-Aus aircraft register. Their audit revealed anomalies in the documentation relating to a factory built Cessna 150H aircraft that had been registered in Mr O'Sullivan's name in 2009. CASA commenced an investigation.

In January 2013, RA-Aus cancelled the registration of Mr O'Sullivan's Cessna 150H aircraft.

CASA concluded its investigation on 16 December 2013 and communicated their findings to Mr O'Sullivan (but not to RA-Aus).

CASA alleged that Mr O'Sullivan breached s 136.1 of the *Commonwealth Criminal Code Act 1995* by knowingly making false statements to RA-Aus in support of an application for registration of an aircraft in purported compliance with a law of the Commonwealth (i.e. CAO 95.55) by declaring the weight of the aircraft and a number of other important details to RA-Aus, in a series of documents he submitted to them in 2009. Relevantly, a large discrepancy of 100 plus kgs was found between the aircraft weight he reported to RA-Aus in 2009 and the weight measured by an approved weighing authority in December 2012.

CASA did not accept the explanations offered by Mr O'Sullivan, such as:

(a) that the weight he reported to RA-Aus was the weight shown on the bathroom scales he used to weigh the aircraft; and

(b) that he registered the aircraft according to advice given to him by RA-Aus and that there was an expectation by RA-Aus, and throughout the Australian flying community, that new regulations would allow aircraft up to 760 Kg to be registered with RA-Aus.

CASA also alleged that Mr O'Sullivan breached section 20AB(2) of the *Civil Aviation Act 1988* by performing maintenance (painting) on the aircraft when he was not licensed to do so.

CASA formed the view that Mr O'Sullivan's conduct was clearly aimed at circumventing the requirements of CAO 95.55 and the RA-Aus rules pertaining to the building and registration of amateur built aircraft.

Whilst it was within CASA's power to refer the matter to the Commonwealth Director of Public Prosecutions, they decided not to do so in view of the time that elapsed

since the alleged offences took place, and because Mr O'Sullivan was not currently a resident in Australia.

CASA decided to hold a record of Mr O'Sullivan's conduct on file, and to take his past conduct into consideration should he return to Australia in the future and make any application to CASA for a civil aviation licence, permission or authorisation.

I note that the previous excuses Mr O'Sullivan provided to CASA in relation to false information he provided to RA-Aus concerning a different aircraft were similar to the excuses he provided during this inquest in relation to Dr Uscinski's aircraft. Neither were believable.

I concur with Mr De Waard's summary of the position. It is regrettable that neither CASA nor RA-Aus investigated the anomalies or sought to further investigate the matters. CASA has since advised that there would be no point in me referring this matter to them or the Commonwealth DPP for consideration, because they are now time expired from commencing a prosecution.

RA-Aus noted in their submissions at the conclusion of the inquest that they have now commenced a process of requiring Mr O'Sullivan to show cause why he should not be removed as a member of the association on the basis that he has brought the organisation into disrepute.

Findings on the issues

The adequacy of the maintenance, repairs, alterations and testing of the deceased's aircraft

Following Dr Uscinski's request, a lead ballast weight was added to the tail of the aircraft and the second battery was relocated to the rear of the aircraft by Mr Kerr. Mr Kerr said that he did so after seeking and receiving guidance from Mr O'Sullivan. Mr O'Sullivan could not recall providing such guidance.

I believe Mr Kerr that he received guidance from Mr O'Sullivan but an over-reliance on this guidance was foolish in the circumstances given that Mr O'Sullivan had not been specifically involved with Dr Uscinski's aircraft for some time. Dr Uscinski's appreciation of the true weight and balance of his aircraft may also have been affected by the false documentation Mr O'Sullivan had submitted. A full weight / balance should have been carried out by Mr Kerr.

It is not possible for me to make a finding as to whether these changes to the configuration of Dr Uscinski's aircraft were adequate. However, there can be little doubt that such changes, even if appropriately made, would have impacted on the handling of Dr Uscinski's aircraft and he would have been experiencing this for the first time during the flight that resulted in his death.

The adequacy of the weight/balance and best glide/stall speed information provided for the deceased's aircraft

Given the evidence ultimately given by Mr O'Sullivan that he provided false weight information to RA-Aus (and Dr Uscinski) in relation to the aircraft, and the importance of such information, I find that this was clearly inadequate.

As already discussed, Mr O'Sullivan was an evasive and unreliable witness although ultimately he admitted that he had deliberately given false information so that his

aircraft could be registered with RA-Aus. This was in his view preferable to avoid the additional expense and processes involved in registering the aircraft with CASA and its associated requirements.

It also does not appear that Dr Uscinski was provided with any aircraft balance documentation by Mr O'Sullivan at any time. The evidence certainly indicated that Dr Uscinski was concerned about the weight / balance information due to prior incidents and he was attempting to verify it by other means.

It is noted Mr O'Sullivan claimed he verbally briefed Dr Uscinski about the aircraft generally at the time of sale, but no Pilot Operators Handbook was ever compiled. The Pilot Operators Handbook should have outlined the best glide and stall speed for the aircraft, given its weight and balance. I find that Mr O'Sullivan's failure to provide this information to Dr Uscinski was inadequate and may have left Dr Uscinski at a considerable disadvantage.

Given the lack of accurate weight and balance information provided to Dr Uscinski by Mr O'Sullivan and the absence of a Pilot Operators Handbook, it is possible that Dr Uscinski miscalculated the best glide and stall speed in reliance of false information. If such a miscalculation occurred, this would have impacted on his decisions during the test flight and may well have contributed to the incident.

I find this possibility, however, to be unlikely given Dr Uscinski's experience and his ability to alter his handling of the aircraft to suit the situation in the event that the aircraft was not performing as expected.

The adequacy of relevant policies and procedures adopted by Recreational Aviation Australia and Civil Aviation Safety Authority

The exact cause of the incident and the subsequent death of Dr Uscinski cannot be established and no direct link between the false documentation and false registration of the aircraft could be established for this incident. Nonetheless, this does not detract from the fact that all pilots must be able to rely on the information provided and there must be adequate policies to ensure that pilots have access to the correct information in a readily available format.

CASA effectively contracts out the registration and oversight of certain recreational aircraft to RA-Aus. The difficulty in this is that RA-Aus is predominantly a volunteer organisation and has limited funding. RA-Aus therefore does not have the resources to verify information provided by those seeking to register aircraft with them. They have always relied on the integrity of members to provide them with accurate and correct information regarding the specifications of their aircraft. With the exception of Mr O'Sullivan and certain members who endorsed his falsifications, RA-Aus claims that they have not previously had a problem. But if they do not check, how would they know?

Given the ever present possibility of rogue operators, and the falsification of records uncovered during this inquest which occurred over a long period of time and involved more than one person, I find that the policies and procedures currently in place in relation to checking the accuracy of aircraft documentation submitted to RA-Aus to be inadequate.

The adequacy of the Queensland Police Service's security of the aircraft wreckage components

I find that QPS did not adequately secure the batteries and lead ballast weight from the wreckage. The second battery, and for some time, the lead ballast weight were missing. Whilst the lead ballast weight was located a short time prior to the inquest, the second battery of the dual battery system has never located. The adequacy of the dual battery configuration and placement was an important consideration in the coronial investigation. The loss of this evidence undermined my ability to make findings with a greater level of certainty.

Findings required by s. 45

I make the following findings pursuant to s. 45(2) of the *Coroners Act 2003*:

Identity of the deceased – The deceased person was Dr Barry Joseph Uscinski.

How he died – Dr Uscinski died from multiple injuries after crashing his 80% replica World War II Supermarine Spit Fire (Mk 26) aircraft. The impact occurred on private property, approximately 1km from the Gympie Aerodrome main runway on 22 October 2010.

The incident occurred during a test flight of the aircraft after it had been subjected to five months of maintenance after an earlier runway incident.

It is unlikely that the root cause of this incident will ever be known. However, it is clear that the primary undercarriage system failed, the engine was running rough, and then the engine stopped in flight.

The incident does not appear to have been caused by pilot error. Dr Uscinski was a highly competent and experienced pilot.

The incident occurred in circumstances where significant changes to the aircraft's weight and balance had been made prior to the incident by the aircraft engineer without knowledge of the true weight of the aircraft. The manufacturer had also falsified the aircraft weight documentation. The aircraft engineer sought guidance from the manufacturer prior to altering the aircraft's weight and balance and relied on his guidance despite the manufacturer not having had any specific involvement with the aircraft for some time and despite not being provided any formal documentation to support his advice. The changes to the aircraft's weight and balance, even if it was within the acceptable limits, is likely to have had an affect on the handling of the aircraft at low speed.

The dual battery system in the aircraft was also inadequately installed because it was earthed to the thin skin of the aircraft. The batteries had not been configured correctly as a true double redundancy system and they had not been used for extended

periods in the five months prior to the incident. It is unknown who installed the dual battery system. These inadequacies may have caused the primary undercarriage retraction system to fail and may have caused the engine to run roughly and eventually stop.

Although Dr Uscinski was a highly competent and experienced pilot, no one could have reasonably recovered the aircraft at such a low altitude in the circumstances.

Place of death – Dr Uscinski died at 261 Lagoon Pocket Road, Gympie, Queensland, Australia.

Date of death – Dr Uscinski died on 22 October 2010.

Cause of death – Dr Uscinski died from multiple injuries as a result of an aircraft crash.

Recommendations

Section 46 provides that I may comment on anything connected with a death that relates to public health or safety, the administration of justice or ways to prevent deaths from happening in similar circumstances in the future.

I make the following recommendations.

RA-Aus

It is vital that if RA-Aus is to continue in their current role with limited resources, they must rely on the integrity and honesty of those seeking to have registration under its auspices. There must therefore be a clear deterrent to anybody who intends to circumventthe systems of safety by wrongly registering an aircraft. As such, I recommend that RA-Aus take the strongest possible action they can against Mr O'Sullivan and they should consider terminating his membership and cancelling all certificates and endorsements currently in his possession.

I also recommend that within their limited resources, RA-Aus implement a more effective screening and auditing system to randomly check information such as weight calculations and other information provided for registration.

RA-Aus provides a valuable service to police and coroners by investigating recreational aircraft acidents involving their members and aircraft registered with them, when the ATSB chooses not to investigate. Unfortunately, this coronial investigation was affected by RA-Aus' failure to finalise their investigation into this matter. I therefore recommend that better procedural processes be established by management to ensure that all investigations are finalised within a timely manner in the future.

Also, an allegation arose in this inquest of RA-Aus altering an investigator's report into a different matter. RA-Aus submitted, and it is accepted, that their investigators are contracted by them to provide them the information to furnish an organisational report. Management consults with investigators to amend their findings where they do not align with RA-Aus' view. In order to uphold the public's confidence into the future, it is recommended that such consultation between RA-Aus as an organisation and their investigators be recorded and transparent. Where agreement is not

reached, consideration should be given by RA-Aus to finalising a report and annexing the investigator's report, including areas where there are distinguishing aspects.

CASA

It is clear that CASA had investigated Mr O'Sullivan prior to the inquest in relation to his provision of false information for other aircraft, but there appears to have been little communication with RA-Aus. It is recommended that CASA review its policies and procedures to ensure that any adverse findings, or indeed any issues arising from CASA investigations relating to pilots who are also members of recreational aviation associations, are communicated with those associations. This will highlight for those associations any potential issues and enable them to assess any safety implications for their association. It will then place them in a position of having constructive knowledge of events and circumstances to enable them to take appropriate action if required.

Also, whilst it is accepted that there are limited resources, it is recommended that CASA review its delegation to RA-Aus in terms of what is expected of them in screening and auditing aircraft documentation, which is submitted by its members. Random audits by RA-Aus would be appropriate to assist in the deterrence aspect, but further funding needs to be provided for this purpose, or CASA should consider undertaking such audits itself.

Queensland Police Service

The process for investigation of aircraft incidents and the ad hoc manner that other organisations provide reports to QPS make the system burdensome and time consuming. It is recognised that a lack of training and lack of knowledge of aircraft will tend to lead the QPS to rely heavily on external investigations such as investigations carried out by RA-Aus.

In this case, RA-Aus was assisting police with their investigation, but custody of the wreckage and primacy over the coronial investigation belonged with QPS. However, QPS had no oversight or control over the testing of the GPS and engine control unit being carried out by RA-Aus (through the ATSB). Nor did QPS seem to realise that RA-Aus was not going to finalise their investigation (based on an understanding that QPS required nothing further from them). To avoid these miscommunications into the future and to ensure that QPS has overall control of coronial investigations into aviation incidents, it is recommended that QPS revise its procedures to ensure that any testing or expert reports by such external organisations are arranged by the QPS. It is also recommended that QPS ensure that if an external organisation is assisting them with their investigation, that they are requested to finalise their report for the Coroner within a reasonable time frame. A police investigation report should aim to consolidate all of the external investigation reports and the outcome of their own enquiries for the Coroner.

Also, it is vitally important that all evidence from aircraft wreckage is adequately secured by the QPS for the purposes of the coronial investigation. It is recommended that procedures at the Gympie Police Station be reviewed so that all relevant components of an aircraft wreckage are collected, catalogued, registered and safely secured from the site of the incident, through the transport process, to the holding yard until finalisation of the matter.

Supermarine Aircraft Pty Ltd

Clearly there are significant issues in regards to Supermarine Aircraft Pty Ltd and the registration of their aircraft with RA-Aus. Mr O'Sullivan eventually admitted that he falsified key aircraft documentation. It is therefore recommended that Mr O'Sullivan:

(a) reviews and corrects any inaccurate aircraft documentation provided to Aviation Associations and all individuals in respect of its aircraft.

Due to Mr Soutter's observations in his investigation report, it is also recommended that Mr O'Sullivan:

(a) reviews the undercarriage system for his company's replica Spitfires to ascertain whether a more simplified system could be implemented; and

(b) reviews the design of the electrical system to ensure that there is a true double redundancy system and a true battery isolation control system with better in-cock pit indications for both battery status and battery supply.

Finally, to the family and friends of Dr Uscinski, I offer my deepest condolences and apologies that this matter has taken so long to finalise. Nonetheless, the extensive investigations have served to explain, as best as possible in the circumstances, the death of Dr Uscinski. This inquest has also served to highlight areas of concern, to facilitate recommendations to avoid similar fatalities in the future.

I close this inquest.

Maxine Baldwin
Coroner
Maroochydore
29 December 2014