QUEENSLAND COURTS

CORONERS COURT OF QUEENSLAND

FINDINGS OF INQUEST

CITATION:	**Inquest into the death of Michael Vincent Wills**
TITLE OF COURT:	Coroners Court
JURISDICTION:	Longreach
FILE NO(s):	COR 2014/1685
DELIVERED ON:	21 December 2018
DELIVERED AT:	Mackay
HEARING DATE(s):	20 November – 22 November 2018
FINDINGS OF:	Magistrate D J O'Connell, Coroner
CATCHWORDS:	CORONERS: Inquest – Aviation fatality – light helicopter in experimental class – failure inflight of rear stabilizer unit – excessive movement in bearing within tail rotor assembly – recommendations as to further investigation of two strikingly similar fatalities within Australia by aviation authorities
REPRESENTATION:	
Counsel Assisting:	Mr J M Aberdeen
All Tig Welding (Mr Clayton Young)	Mr P Cavanagh (instructed by Colin Biggers & Paisley)
Australian Transport & Safety Bureau	Mr Patrick Hornby
Family of Michael Wills	Ms Jodie Jarden (defacto spouse)

[1]. On 12 May 2014 Mr Wills was involved in a fatal helicopter crash. He was the sole occupant and pilot of the single seat helicopter. The crash was not witnessed. The reason for the crash was required to be established.

[2]. This inquest examines the circumstances of that incident and what is appropriate to prevent its repetition.

Tasks to be performed

[3]. My primary task under the *Coroners Act 2003* is to make findings as to who the deceased person is, how, when, where, and what, caused them to die[1]. In Mr Wills' case there is no real contest as to who, when, where, or what caused him to die. The real issues are directed to the how he came to die.

[4]. Accordingly the List of Issues for this Inquest are:-

1. The information required by section 45(2) of the *Coroners Act 2003*, namely: who, how, when, where, and what, caused Mr Wills' death,

2. What caused the person's death:
   a. pilot error;
   b. mechanical failure;
   c. maintenance, modifications and/or repairs; or
   d. design/manufacture issues?

3. Whether any further technical investigations should be undertaken addressing the possible cause, or causes, of any mechanical failure suspected to have contributed to this death?

[5]. The second task in any inquest is for the coroner to make comments on anything connected with the death investigated at an inquest that relate to public health or safety, the administration of justice, or ways to prevent deaths from happening in similar circumstances in the future[2].

[6]. The third task is that if I reasonably suspect a person has committed an offence[3], committed official misconduct[4], or contravened a person's professional or trade, standard or obligation[5], then I may refer that information to the appropriate disciplinary body for them to take any action they deem appropriate.

[7]. In these findings I address these three tasks in their usual order, section 45 Findings, section 46 Coroners Comments, and then section 48 Reporting Offences or Misconduct. I have used headings, for convenience only, for each of these in my findings.

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[1] Coroners Act 2003 s. 45(2)(a) – (e) inclusive
[2] ibid s.46(1)
[3] Ibid s.48(2)
[4] Ibid s.48(3)
[5] Ibid s.48(4)

Factual Background & Evidence

[8]. On 12 May 2014 Mr Wills was conducting aerial spotting[6], using a helicopter, for mustering cattle on a property roughly 43 kilometres northwest of Barcaldine in Central Queensland. At some time between 4:30 PM and 5.00 PM members of the mustering party became concerned when they had not heard from him for a period of time and he was not responding to attempted radio contact. They commenced searching in the direction he was last seen flying and at about 7:55 PM the helicopter was located, inverted, in a dry creek bed. Mr Wills had been fatally injured and the helicopter very substantially damaged. No fire had occurred. It appeared the helicopter had landed in an uncontrolled way with debris located over a significant area and along the path he had been flying. Accordingly it was considered to be a crash but the reason why the helicopter crashed, as it was unwitnessed, needed to be determined.

Initial Investigations into the incident:

[9]. The Queensland Police Service (QPS) immediately attended the scene, conducted preliminary investigations, took photographs and collected the wreckage for expert examination. Fortunately it was investigated[7] by the Australian Transport Safety Bureau (ATSB) who did an examination of the site and wreckage on 23rd –25th June 2014. The initial QPS investigatory steps were helpful and the ATSB report is thorough and detailed.

[10]. There was not found[8] any contribution from medical episode[9], inclement weather, encounter with an object[10] whilst in flight, engine failure[11], pilot inexperience[12], fatigue, lack of familiarity with this aircraft[13], pilot error, overloading[14], illegal or illicit substance[15], excessive weight[16], rather it appeared that a piece of the aircraft had failed whilst in flight. In very short summary the ATSB investigation found that a section of the tail rotor

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[6] 'spotting' is slightly different from mustering, and would not involve many dynamic movements on the aircraft as the pilot is in a fairly stable high position observing and directing those on the ground who are doing the mustering. Mr Scott Counsell's evidence made it clear that Mr Wills was spotting, not mustering and indeed these were 'fat cattle' and so were only being 'walked in'. Accordingly there was no aeronautically challenging flying, in fact quite the opposite, the cattle were trying to be kept as calm and in good, heavy, condition as possible for sale. This was also confirmed by Mr Addy who was assisting with the muster.

[7] The ATSB now investigates all fatal accidents involving powered amateur-built, experimental and warbird aircraft with a CASA VH-registration, as this aircraft had insignia VH-SWQ. The ATSB standard being brought to such investigations is appreciated.

[8] I dismiss these issues quickly so focus can be had to the real issues for the crash.

[9] the autopsy did not find any underlying medical illness which caused or contributed to the incident occurring

[10] For instance bird or vegetation such as a tree limb.

[11] whether due to engine failure or poor fuel quality

[12] Mr Wills was appropriately licensed

[13] Mr Wills regularly flew this helicopter

[14] There is mention of aftermarket metal baskets but the weight is not identified as a causal factor.

[15] The Toxicology screen was clear of any blood alcohol, medications, or illicit drugs.

[16] From the evidence it appears clear that the aircraft was well under its weight limits (and perhaps I should clarify weight is take-off weight as opposed to overloading such as carrying objects, splitting hairs perhaps, but it was issues separately addressed).

assembly, known as the rear stabiliser assembly, had failed mid-flight, separating from the aircraft, impacting the tail rotor, and causing the crash[17]. Evidence at the scene, and later inspections, confirmed this. The failure had occurred where the vertical sections of the fixed stabiliser fins of the assembly and the horizontal stabiliser fin, attaches to a conical mount which is then affixed to the tail boom[18].

[11]. It appeared to investigators that the original manufactured item had been welded on at least two occasions post-manufacture. Detailed microscopic examination of the stabiliser mount fracture revealed metal fatigue cracking that primarily followed near the welded portions of the tube junction. The fatigued crack had progressed around 40-50% of the tube's circumference[19] before it had failed catastrophically inflight.

[12]. In addition the testing showed the fracture path primarily followed near the welded portions of the tube junction. The welds themselves did not fail, rather the tubing simply fractured along the non-reinforced metal next to the welded sections, the path of least resistance so to speak. High magnification of the fracture surface showed evidence of clearly defined 'fatigue progression bands', and that evidence showed that this meant that the stresses occurred on occasions sequentially and progressively rather than being one acute incident. That is confirmation that continual or repeated excessive vibration led to the failure rather than say a single impact with an object such as the tail stabiliser striking a tree limb or bird.

Focus into the reason for the failure in-flight:

[13]. As I have outlined, a large number of possible causes for the aircraft crash were investigated and eliminated. After hearing the evidence it was very clear that what occurred, and I find, was that the rear stabiliser assembly failed whilst the helicopter was in flight, and specifically, the failure occurred at the junction of the conical mount and the three-way tubing[20] which connects to it to which the stabiliser fins are then mounted. The evidence was that there was no acute injury to the conical mount, rather MPI testing showed that it failed through repeated overstressing of the metal, which showed in the testing to have caused defined fatigue progression bands in the metal. Therefore, one single event to cause the stress in the metal could be eliminated, and it had fatigued through repeated incidences of being overstressed.

[14]. Overstressing can occur through operating the aircraft outside its safe envelope of aeronautical performance or can occur through its' use such as a hard landing, or components of the helicopter causing excessive vibration.

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[17] Once this occurred inflight the aircraft was uncontrollable.
[18] If I have poorly worded this technically there are photographs at Figure 9 of the ATSB report, exhibit D1, which shows the item I am referring to
[19] see exhibit D1 at page eleven (final paragraph)
[20] Which tubing was later tested by the ATSB and determined to be an alloy and not plain carbon steel, so it was of a suitable aviation style material.

[15]. Whilst there was evidence from one witness that Mr Wills was observed to have flown the helicopter at a speed which was considered above what that witness thought acceptable (70 knots –v- 35-40 knots) the manufacturer's performance specifications indicate that the aircraft was designed to accommodate a speed of 70 knots. This was the only occasion mentioned in evidence of the aircraft being possibly operated at too high a speed. Therefore, one occasion is not enough to create progression bands which occurred over time. There was also the suggestion, broadly stated in evidence, that the helicopter was not suited for the purposes to which Mr Wills put it, which is mustering as there can be many dynamic inputs made by the operator whilst flying which goes to the limits of the aircraft's performance. In addition it was suggested that it was operating in remote Central Queensland which is a harsh environment with high ambient temperatures and dust. There was no evidence to give any analysis of the actual logged work the helicopter performed in terms of, for instance, a certain percentage of it was helicopter mustering at a low altitude level with significant dynamic inputs by the pilot such as where the pilot themselves are mustering stock, rather, the evidence was that Mr Wills operated mainly as a spotter for mustering operations on the ground being conducted by stockmen on horses or motorbikes.

[16]. Mustering versus spotting for mustering may seem like splitting hairs to some, but the facts are, and the evidence bore out, particularly the evidence by Mr Counsell and Mr Addy, that spotting only was being conducted on this occasion and that involved the helicopter sitting high above the paddock at a set height (at about 300 vertical metres), and observing the livestock and persons on the ground conducting the mustering, and directing those persons on the ground as to where to go to guide the stock. That involves a lot of time simply hovering and slowly moving around. There is not repeated dynamic inputs, nor dramatic flying, by the pilot. Mr Counsel's evidence went even further to say that on this occasion these were 'fat cattle' being mustered for sale and so were only being walked in to ensure they kept their weight. Clearly, the mustering activities were conducted as placidly as possible. When the helicopter crashed it was last seen flying away 'normally' so there was not any dynamically challenging flying occurring at that time. The helicopter crashed less than 1 kilometre away from where it was last observed.

[17]. I should also add that there was no particular thermal wind activity, and none would have been expected being mid-May and late afternoon when the incident occurred, accordingly thermals or sudden wind gusts can be discounted as a causal factor.

[18]. Other evidence was that spotting was the main use Mr Wills undertook with the helicopter, as well as checking fence lines and simple transportation trips. Each of these are relatively straightforward, and if I may use the term "non-dynamic" flying.

[19]. There was the possibility that the stabiliser mount location, where it attached to the tail boom, may have been the source of vibration when it was

relocated[21] from 88mm to 115mm from the tail rotor gearbox. Whilst this was theoretically an issue Mr Carmody gave evidence that he has flown the aircraft in both configurations and it had no discernible effect on the aircraft whatsoever. I accept that evidence.

[20]. Another possible source of vibration to the aircraft can occur through, and after, a hard landing where the aircraft has been set down too quickly. The hard landing sends a vibration through the aircraft which can cause damage. The particular aircraft had in its landing gear certain metal inserts which were used as a visual marker to indicate a prior hard landing. There was not recorded in the aircraft's logbook any evidence that a hard landing had occurred yet there was found to be an insert which confirmed that a hard landing had in fact occurred at some time. Ms Jarden indicated that she was not aware that Mr Wills had ever experienced a hard landing and the prior owner specifically said that no hard landing occurred in the 25 operational hours that they had flown the helicopter before its sale to Mr Wills. Therefore the incidents of when the hard landing occurred could not be identified but clearly there was evidence, which I accept, that a hard landing had occurred at some time[22]. Accordingly, its contribution to the progressive metal fatigue could not be entirely eliminated, but again it would have been only one instance and not a repetitive occurrence.

[21]. Thirdly, it may be that certain components of the helicopter caused excessive vibration. There was some evidence that perhaps carburettor tuning and a support bracket could lead to the engine "running rough" and this induces vibration in the aircraft, which if I may use the term is a non-designed harmonic vibration (as there are certain vibrations which the aircraft is designed to withstand). I am satisfied on the evidence that this particular aircraft, particularly in view of my later findings detailed below, did not suffer from any carburettor issues which caused the excessive vibration. This is particularly supported by the fact that the helicopter had an after-market support added to a carburettor which persons indicated would have prevented or lessened the likelihood of this issue being of any significance. In addition, there was no documented work to the helicopter where the carburettor required re-tuning or the engine 'running rough' was ever noted.

[22]. What was of great significance in the history of this helicopter was the continual requirement to rebalance (that is dynamically rebalance) the tail rotor blades. This was borne out not just in the aircraft's maintenance records but from the evidence of witnesses.

[23]. The maintenance records show that the aircraft required tail rotor rebalancing at the time of its construction 0-25 hours, 130 hours, 227 hours, 295 hours and up to the date of the crash where 351.4 hours is recorded. This means there is

[21] It was relocated this distance of 27mm to accommodate a possible change in engines for the Australian market to allow a forced induction engine (people variously described it as turbo-charging and super-charging, although they are actually quite different forms of forced engine induction).
[22] Whatever hard landing that occurred did not involve the tail boom or its components striking the ground as the rear stabiliser skeg (on the underside of the vertical stabiliser fins) was undamaged and had never been replaced.

a progressive *declining* incidence rate, expressed in hours of 105-130, 97, 68 and 56-60 hours. Therefore, there is clearly a declining rate of requirement for rebalancing and this is especially concerning when one licensed aircraft maintenance engineer (LAME) said that a competitor helicopter[23] routinely achieves 800 hours before requiring dynamic rebalancing.

[24]. In addition to this the tail rotor vibration and being out of balance was of such a concern to Mr Wills that he videoed what he thought was excessive 'play' in the tail rotor gearbox's output bearing (and rear stabiliser assembly). He forwarded this video to the Argentine manufacturer for comment. What is most concerning from this was that the particular tail rotor gearbox in his machine serial number 011 had just been replaced six days earlier with a brand new, un-used, tail rotor gearbox from machine serial number 026. This suggests to me that there was a significant design or manufacturing defect in the tail rotor gearboxes with excessive play in the output bearing. It also suggests that simple replacement of the tail rotor gearbox is not a solution if the bearing as manufactured can demonstrate the amount of play felt and demonstrated in the video after just six days.

[25]. What is the significance of this? It means that no matter what amount of dynamic balancing occurs the tail rotor is going to very quickly move out of balance and cause excessive vibration, vibration for which the machine is not designed to accept. Very likely, in fact I consider it to be beyond any doubt at all on the evidence I heard, was that the source of excessive vibration originated from the tail rotor gearbox at its output bearing, and this vibration has then been passed through to the stabiliser assembly which is not designed nor manufactured to accept this type or level of vibration. Consequently it failed through being progressively operated outside its parameters through excessive vibration.

[26]. The rear stabiliser conical mount is clearly of a concern in the nature of its design and manufacture. Concerning to me was that the failure of the conical mount occurred at a location on the joins which was necessarily hidden beneath the skin or shroud required for the aerodynamic performance of the rear stabiliser. That is the visual cracking was developing in an area which cannot be inspected through a visual walk-around. It requires disassembly of the stabiliser skin to see the mount inside. Even then, cracking can be minute and not visible to the naked eye.

[27]. Evidence was given that the first clue of a vibration issue and degradation through cracking of the mount is evident through 'rivet working'. Rivet working is the process where parts are moving against each other under stress and friction which causes a black or grey "powder" to emanate from rivet locations. What was evident from the scene photographs was that the rivets of this particular aircraft were replaced by thru-bolts and that there was no evidence whatsoever of any of the tell-tale black or grey powder on this rear stabiliser. In addition, the crash of the same model helicopter in Western Australia (VH-JEW) shows no evidence whatsoever of rivet working from its

[23] Robinson R22

rear stabiliser, which also has fitted thru-bolts (which appears in the photographs to have even been completely painted over, which may have "sealed" any rivet working powder inside the skin).

[28]. What is clear from this is that no simple walk-around by the pilot will detect the problem by any tell-tale powder. Clearly, the unit needs to be redesigned, whether through thicker metal or the use of oblique stabilisers from the tail boom circular mount up to the vertical fins (perhaps one-third or one-half of the way along their length), but the precise aeronautical engineering solution is beyond my expertise. In any event the foundation issue is first for a solution to eliminate the excessive vibration being generated from the tail rotor gearbox. First fix the tail rotor gearbox output bearing issue, then if applicable strengthen the stabiliser mount.

[29]. There was information contained in the ATSB report, and appropriately so, that Mr Wills did not hold the appropriate licence to conduct commercial operations, low level flying, or use this particular aircraft for commercial operations. I appreciate, without making any finding whatsoever, that if there was any such breach these matters do not impact on the fact that there is an inherent problem in the manufacture of the tail rotor gearbox and rear stabiliser assembly of this model helicopter. These inherent issues could still emerge even if the helicopter is only used for the proverbial 'Sunday drive to church'.

[30]. There is one matter I must highlight because it causes me significant concern. The evidence was that there may be nine to ten, or a maximum of twelve of these aircraft imported into Australia. Two of these have crashed in disturbingly similar circumstances where the rear stabiliser has simply fallen off in flight causing a collision with terrain. The inquest was told that some 40 such aircraft have been manufactured and sold world-wide. That means that 5% of all these aircraft have crashed with the same problem, and approximately 17-20% of all Australian sold helicopters have crashed. Whilst it is considered an experimental aircraft I am concerned that there does not appear to have been any action yet taken by CASA (and in making this statement I leave aside entirely the ATSB which have taken an admirably active role in investigating and notifying owners of these aircraft). Perhaps there is good reason they have not, but no reason nor explanation was made aware to me.

[31]. To my mind clearly CASA needs to take an active look at the circumstances of this accident to consider what action is necessary to protect those users who are out there flying these aircraft right now. One observation I also make is that neither the Argentine manufacturer of this model helicopter, nor its' present Australian distributor, participated in an active role[24] in the inquest despite contact with them and notification of the hearing.

[24] Indeed they took a position of no involvement whatsoever

List of Inquest Issues Answers

Coroners Act s. 45(2): 'Findings'

[32]. Dealing with the list of issues for this inquest the answers are as follows:-

[33]. Issue 1. My primary task is the information required by section 45(2) of the *Coroners Act 2003*, namely:

a. Who the deceased person is - Michael Vincent Wills[25],
b. How the person died – Mr Wills died when the rear stabiliser assembly's conical mount failed whilst in-flight and the aircraft then collided with terrain,
c. When the person died – 12 May 2014 [26],
d. Where the person died – Hulton Station, Landsborough Highway, Barcaldine[27], and
e. what caused the person to die – Multiple injuries, due to a helicopter crash[28]

[34]. Issue 2. Primarily the crash occurred due to the particular design and manufacture of the parts[29] which failed in flight. Why it failed appears to be through excessive and repeated vibration which caused the component to suffer 'metal fatigue'[30]. It had been an ongoing issue as evidenced by the repairs made though welding (and re-welding) that had occurred. The videos taken by Mr Kelly show the issue well.

[35]. Issue 3. It is clearly desirable that further investigations are carried out to determine a solution for the issues with the tail rotor gearbox output bearing and rear stabiliser conical mount. Perhaps an altered design of gearbox is required or sealed bearing if dust is an issue? Maybe bracing struts are required for the stabiliser or thicker grade aviation material for its construction? There may be some relatively simple solution but with five percent[31] of these aircraft crashing due to the same issue there is a problem even if the numbers are not great. The manufacturer of the aircraft is based in Argentina, South America, and so well outside the jurisdiction of Australia, but clearly CASA can consider the investigation findings by the ATSB to determine what safety measures are required of this aircraft in its' design and manufacture for its continued suitability for use in Australia. They may also

[25] See exhibit A1 QPS Form 1
[26] See exhibit A2 Life Extinct Form
[27] See exhibit A2 Life Extinct Form
[28] See exhibit A3, Form 3 Autopsy Certificate
[29] The rear stabiliser's conical mount failure was caused by excessive, prolonged, exposure to excessive vibration from the output bearing of the tail rotor gearbox although the possible initial contribution from a single hard landing cannot be entirely excluded.
[30] I use this term loosely
[31] Evidence of the ATSB investigator was that two of these aircraft have crashed in Australia and investigations show it is the same part which failed. There have been only 40 of these aircraft manufactured (or should I say supplied as a kit for assembly). 2/40 = 5%, which is an extraordinary (in my opinion) failure rate, and this is just on the two incidents within Australia we are aware of. I was advised there are another 8-9, possibly 12, owners in Australia, so the issue remains.

consider whether this model aircraft should be grounded until a solution is found? That is a decision for that regulatory safety authority. No doubt other overseas aviation regulatory bodies and the manufacturer will have a keen interest in the actions taken.

Coroners Act s. 46: 'Coroners Comments' (Recommendations)

[36]. This incident does provide the opportunity to recommend important improvements aimed at reducing the risk to users of this particular model of Cicare`.

[37]. To my mind there appears to be a clear issue with the fitness for use of the tail rotor gearbox output bearing and rear stabiliser as they are presently manufactured. It is, indeed in my mind, certain that excessive vibration from the gearbox on its' output side is causing the failure of the stabiliser which presents as cracks[32] around the join at the conical (or horizontal) mount section. Clearly the manufacturer should redesign the tail rotor gearbox to eliminate the movement which develops from very little use and the stabiliser component for greater practical durability through either oblique bracing struts supporting the vertical fins, high heat treatment of the tube and its welds, or perhaps heavier gauge materials[33]. None of these options are expensive nor difficult processes. The high heat treatment (termed 'Normalisation" seems very straight forward and could be implemented almost immediately). Perhaps the component only has a certain number of hours of useful life before it should be replaced? This is beyond my expertise, but clearly there is an ongoing issue for the experts at the ATSB to monitor and CASA to determine the most suitable way to enforce[34] a safer aircraft.

[38]. Accordingly I make Recommendations in this regard but I do point out that I consider there does not need to be any wholesale change to this aircraft in its use, simply a better awareness of the tail stabiliser issue, and a practical, cost-effective, solution. These types of aircraft are essential equipment for undertaking activities on large rural properties and accordingly should always be available for such. This model merely has a component issue which needs prompt addressing, not wholesale changes to the use of such helicopters.

[39]. It was apparent at this inquest that the tail stabiliser assembly developed cracking despite its re-welding so that is not a solution as the cracks then developed around the welds, some may say simply taking the path of least resistance. Accordingly it is desirable that if any metal fatigue cracking is detected in the tail stabiliser assembly that the item is only replaced. I note that the item is manufactured as a complete unit, and it is simply a "bolt-on/bolt-

[32] Sometimes not visible, but likely present due to 'working rivets' where fine black powder appears to bleed from rivet locations, indicating excessive friction and movement is occurring. The ATSB's letter to owners (see exhibit D1 at page 23) diagrammatically explaining this is commendable.
[33] These are merely suggestions for investigation given by an admittedly aviation layman Coroner
[34] I appreciate it is an Experimental Category aircraft, and so far lesser restrictions and rules apply, but in the instance of this model Cicare` there clearly is an issue that needs prompt correcting.

off" unit, so it is not overly difficult to replace[35], and only a manufacturers original equipment part (hopefully modified in future) should be used.

[40]. The suspected deficiency of its design or manufacture needs to be well broadcast again[36] to users of this particular model Cicare` helicopter. Perhaps the CASA should investigate whether this particular model aircraft should be grounded until a solution found? That is for them to decide.

[41]. Due to the precise solution not yet being known I will refer the matter back to the ATSB for further investigation of this incident together with the one in WA to see what similarities present, and then solutions which are practical and cost effective. I will also refer the issue to CASA as to what action they consider necessary as to date there appears, from the evidence at the inquest, little which has been done by them so far. Accordingly I will make a Recommendation to refer the matter for further investigation and as to determine possible solutions to the ATSB, with an additional referral to CASA for any necessary regulatory action.

[42]. About twelve of these aircraft were delivered in Australia, and forty world-wide, so there are many persons presently flying with the existing deficiency and at risk of a repeat fatal accident.

Coroners Act s. 48: 'Reporting Offences or Misconduct'

[43]. The Coroners Act section 48 imposes an obligation to report offences or misconduct.

[44]. It was not suggested, nor recommended, to me by any party at the inquest that any further person or entity should be referred for investigation of an indictable or other offence. Accordingly I make no such referrals under section 48.

Magistrate O'Connell
Central Coroner
Longreach
21 December 2018

[35] Particularly as due to the nature or category of the aircraft the owner can do certain work themselves
[36] I say 'again' as notification occurred already by authorities (see exhibit D1 which details letters sent to Australian registered owners of these aircraft), but there is certainly no harm in re-broadcasting to pilots again, especially as time has passed and no solution has yet been found.