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Mooney

Pilots Association

NEWSLETTER

Owen Crees achieves 400th Angel Flight in his Mooney Exec 21

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1. The Prez Sez

Hi Fellow Mooniacs

Planning for the Echuca Fly-In (6-9 September) is almost complete and John Smith is to be thanked for his efforts. Last I heard there were more than 20 guests registered. I know Alison (my wife) and I are really looking forward to it. If you're sitting on the fence wondering if you should go - just do it - you can thank me later. Registration details are on the website.

The next event on the AMPA calendar is the flagship Pilot Safety Program from October 11-13. This year it is being held in Jandakot WA and it is sure to be another success and help our members fly their aircraft better and more safely. If you insure your aircraft with the AMPA Insurance Scheme then you will also get premium reductions for attending the course. In addition, CASA have generously sponsored our course, and we are offering the flying component of the course at half price to entice people to attend - it so undeniably great value. Whether you have owned your Mooney for 2 months or 2 decades - you will get something out of this course whether you have done the PSP before or not - so please do consider registering. The course is filling fast now so don't delay. Should you wish to not BYO Mooney, you can even rent a J model from RACWA for the PSP. More info and registration details are on the website, or contact me directly.

The ATSB has recently released their report into the tragic fatal crash of Mooney VH-UDQ last July and it raises a few questions about the maintenance of ageing aircraft - I strongly suggest you give that a read (just google ATSB VH-UDQ). John Hillard has made some insightful comments about it in this newsletter.

The Mooney aircraft market seems to be quite buoyant - with numerous aircraft finding new owners in Australia this year; and values generally increasing. It seems that despite the calendar age of our planes, people still continue to discover what Mooney owners have always known – our Mooneys offer great performance and safety for purchase and operating costs that still represent great value.

We are continuing to communicate with the Mooney factory in Kerrville (which is still active supporting the global fleet) to resolve ongoing issues with the availability of critical spares for our aircraft, such as the infamous no back springs for Mooneys with electrical landing gear actuators, and other parts. We will keep you informed as that progresses.

Finally, if you're lucky enough to be making the pilgrimage to Oshkosh this year, all the best and safe travels.

Fly fast, and fly safely

Stuart Payne
President, AMPA

2. New Members

We welcome Toby Barry, who has been a pilot since 15. His Mooney M20C, registration VH-SKE has a home base at Scone. We look forward to seeing you Toby, at AMPA events (maybe Echuca in Sept?) and also sharing some Mooney stories and flying experiences.

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3. The AMPA PSP - coming soon, don't miss out!

The CASA supported AMPA Pilot Safety Program is coming soon. Come and join in! It might just save your life one of these days. No matter how much Mooney time you have, there's always more to learn. It won't cost you an arm and leg, unlike a certain brand X safety program. You'll be very well catered for, have a fantastic time, make some wonderful lasting friends with common interests, fly with the very best Mooney instructors at a never to be repeated price (courtesy of our friends at CASA) and come away a better Mooney pilot – guaranteed! Don't delay. Register on the website now. It's well worth the trip to Jandakot.

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4. Mooney Pilot Profile – Owen Crees

Dr Owen Crees, very well-known and respected in the Australian Mooney Community. Owen has served the AMPA Committee and Angel Flight in executive roles with distinction for several years. He tells us a little about himself and his Mooney here, having just gone past 400 Angel Flight Missions, an achievement very few aspire to. Using his Mooney, Owen has volunteered to help out hundreds of country folk doing it very tough through the triple whammy of illness, financial hardship and distance.

I learned to fly in Mackay in 1976, in a C172 with Pioneer Flight Centre. Over the next 20 years, I flew a variety of aircraft including C150, C177, C182, C206, C210, PA28, PA28R and BE35. Most of my flying was for social reasons, either visiting family in Townsville and Port Douglas, or with Mackay Aero Club. However, my job at Sugar Research Institute required me to travel frequently to various towns along the coast from far north Queensland to northern NSW so, occasionally, flying was also a great way to save travel time.

When we moved to Brisbane, I flew a BE35 for a while then joined Brisbane Flying Group and flew their AA5 Grumman Tigers until we moved to Adelaide where I flew a PA28R for a while until I bought VH-FAF in 2005. Since then, FAF has been repainted, had an engine replacement, a new panel and various instrument upgrades, and has done 2500 hours. I've done all but a handful of my Angel Flights in FAF over about 1,200 hours and 160,000 n.m. There have also been many memorable private trips to places as far afield as Port Douglas, Carmor Plains, Broome, Alice Springs, Tasmania as well as plenty of shorter trips around SA, NSW and Victoria.

I'm often asked about my most memorable Angel Flight but I can't really answer that question. Was it YCDU-YSWG with a terminally ill elderly passenger? Was it YPIR-YNBR with a young family escaping domestic violence, or YBHI-YPAD during covid lockdowns with a young man desperate to see his dying mother? They've all been memorable in some way and I feel immensely privileged to be about to share my passion for flying and for VH-FAF with people who are often so isolated that they would forgo essential medical treatment if not for Angel Flight.

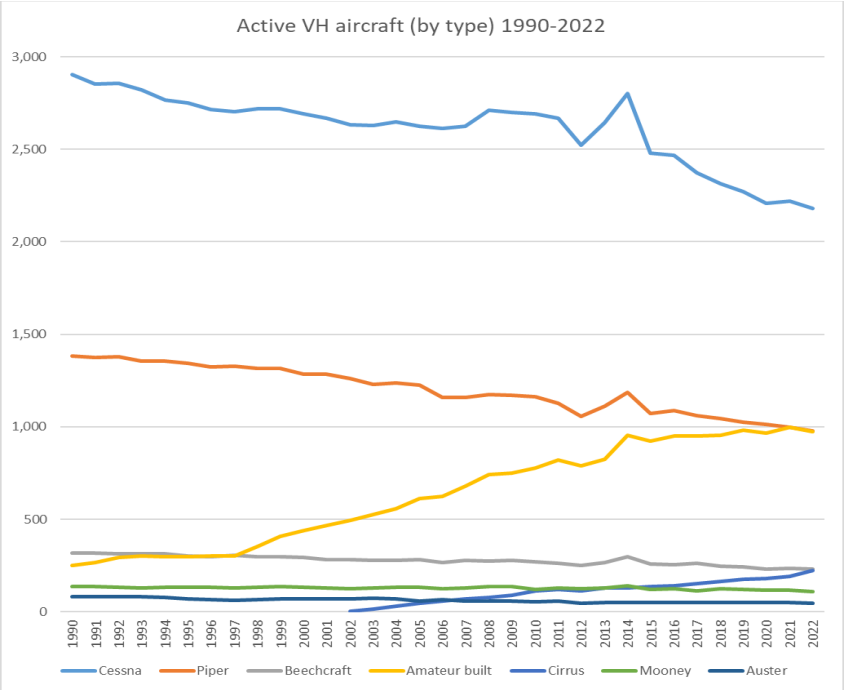
Owen's 400th mission from Lucindale to Adelaide

5. Mooney Fleet in Australia

Some great work here from John Hillard

Mooney Fleet in Australia – as at end 2022 - Update

Since 2018, the newsletter has included an annual update of the size and utilization of the Mooney fleet in Australia since 1980. This analysis is based on data from the Bureau of Infrastructure, Transport and Regional Economics (BITRE) who ask aircraft owners each year to report whether their aircraft are active and, if so, what hours and number of landings they have done. The data for 2022 are available and have now been included.

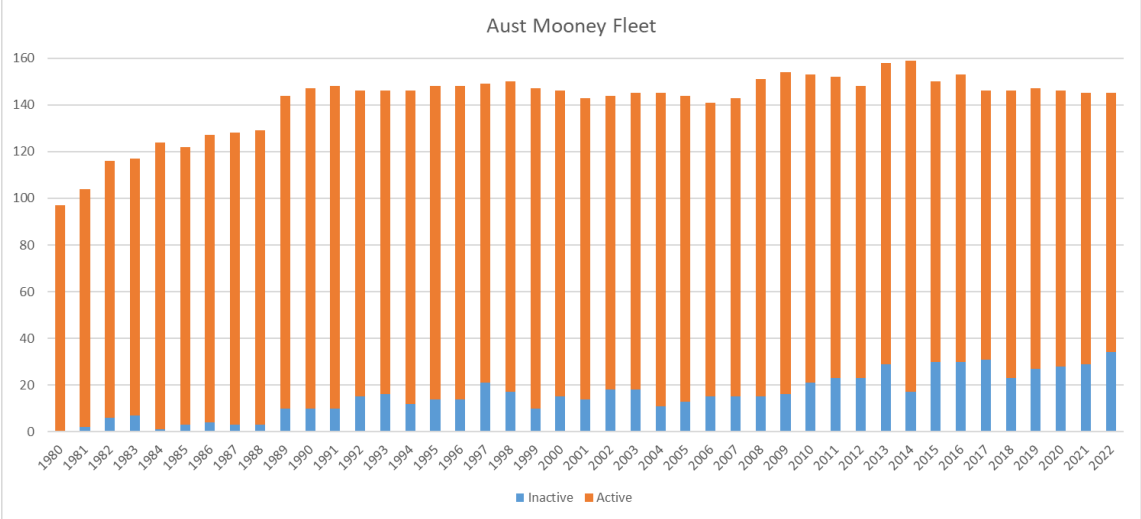


Total hours flown (airline and GA) rose 24% reflecting a partial recovery from the massive downturn in 2020 due to the COVID pandemic. Scheduled Air Transport aircraft flew just over a million hours in 2020 which was still about a third less than the 1.5 million flown in 2019. Hours flown by VH registered General Aviation aircraft increased just under 10% in 2020 vs 2019 which brought total hours back to about the same as 2019.

The long-term trends for VH registered General Aviation aircraft continued on much the same trajectory as in previous years:

- The fleet size remained at about 9,000 aircraft but the number of active aircraft was about 6,500. 28.5% of the nominal fleet was inactive (i.e. did not fly any hours in 2022) compared with 27.6% in 2021.
- For most aircraft types, the size of the active fleet has been in a gradual decline. Compared with the average of 2006-10, the active Mooney fleet in 2022 has declined by about 14%, but the number of active Piper and Beechcraft aircraft has declined by 16% and Cessna aircraft by 18% respectively. The only types that grew in numbers were Cirrus and Amateur-built.
- The average age of the fleet (all types) increased from 38.5 to 39.0 years;
- The average GA aircraft flew 134 hours per annum in 2022 compared with 121 hours in 2021 and 133 hours in 2019; and
- Between 2015 and 2021, the fleet size has remained about the same but the uses have changed. Training and agriculture now account for 45% of all hours flown compared with 41%

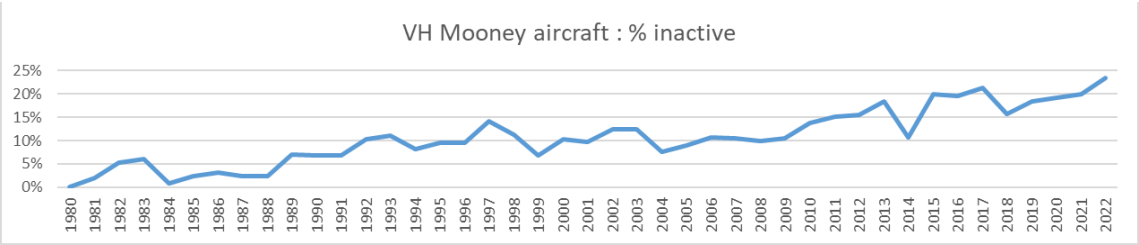
in 2015. Private and business aviation is now 25% of hours flown vs 30% in 2015. Training and agriculture's share of total GA activity is expected to continue as training activity ramps after the lifting of COVID restrictions. Training hours increased 17% and agriculture was up 6% in 2022 vs 2021.



The Mooney fleet in Australia has fluctuated between 145 and 155 aircraft since the 1990s. If you search the CASA Aircraft Register now, you'll get a total of 151 Mooney aircraft. This is more than the 145 aircraft that were reported to BITRE at the end of 2021. There reasons for this difference are:

- the BITRE survey has a response rate of about 75% so estimates are used where responses have not been received;
- BITRE adjust the fleet numbers immediately if a response is received from the survey indicating that an aircraft has been destroyed (e.g. the loss of VH-UDQ in 2022) or scrapped. But an aircraft that has been scrapped might remain in the Aircraft Register for a while until CASA have been able to confirm that the aircraft has been de-registered; and
- if BITRE are told that an owner died during the year and that the aircraft is to be sold, then BITRE will then delete that aircraft from the fleet given that many aircraft never fly again after their owners die. This does create some volatility in the fleet numbers because some of the aircraft that BITRE assume are "dead" will pop up again in the numbers again when transferred to a new owner.

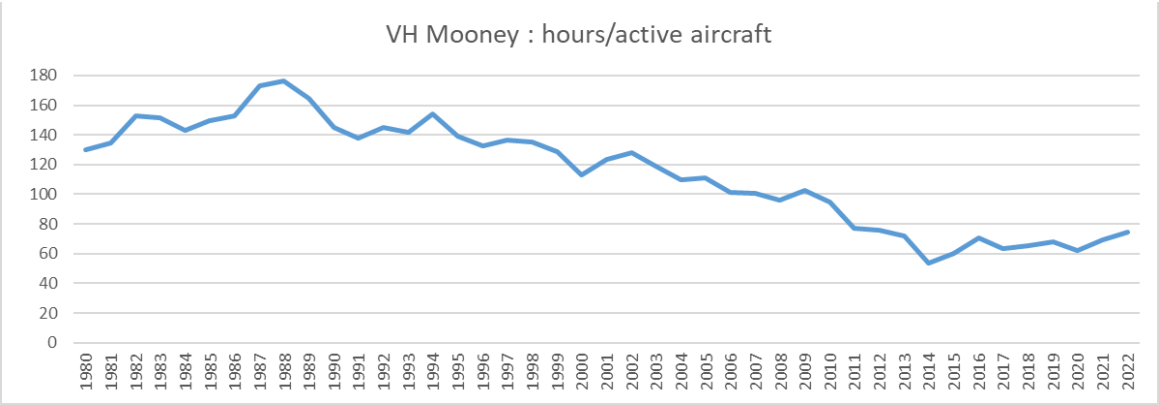
The BITRE survey is important in that it tells us how many of the Mooneys in Australia are actually active (i.e. recording flight hours within the year). In 2022, the number of <u>active</u> Mooney aircraft reduced by 5 aircraft to 111. The number of inactive aircraft has steadily increased over the years and has reached a new high at 23% of the Mooney fleet:



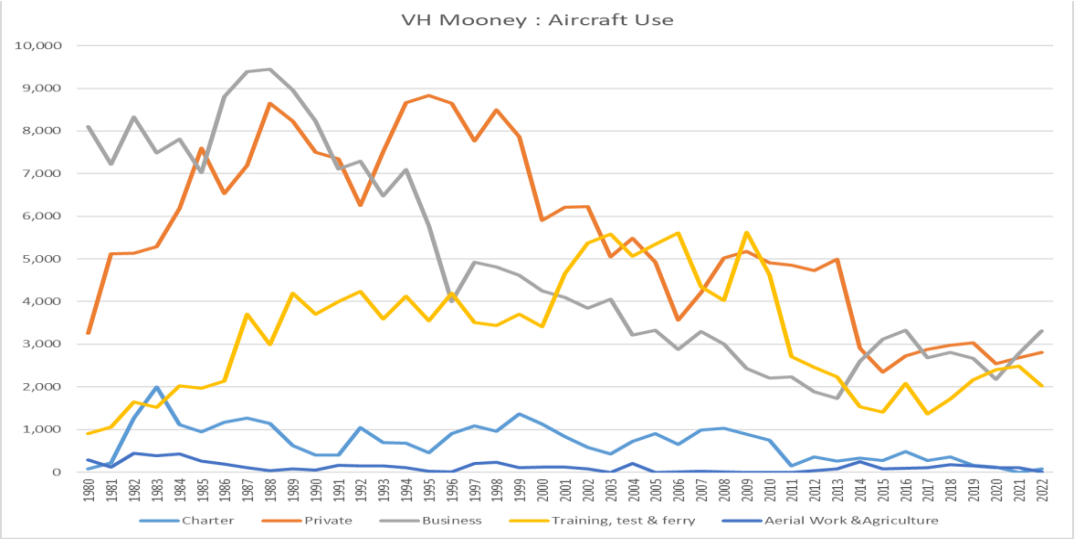
Some of these aircraft will have been inactive in any particular year while awaiting repairs or sale but many are unlikely to ever fly again due to their being past the point of economic repair.

The average age of the Mooney fleet in Australia is 42 years and, while the average age might change slightly as aircraft are imported and exported, the age of the fleet will inexorably increase. While we cannot be certain (as the data are not collected), it is likely that a higher proportion of older aircraft will be inactive than newer aircraft.

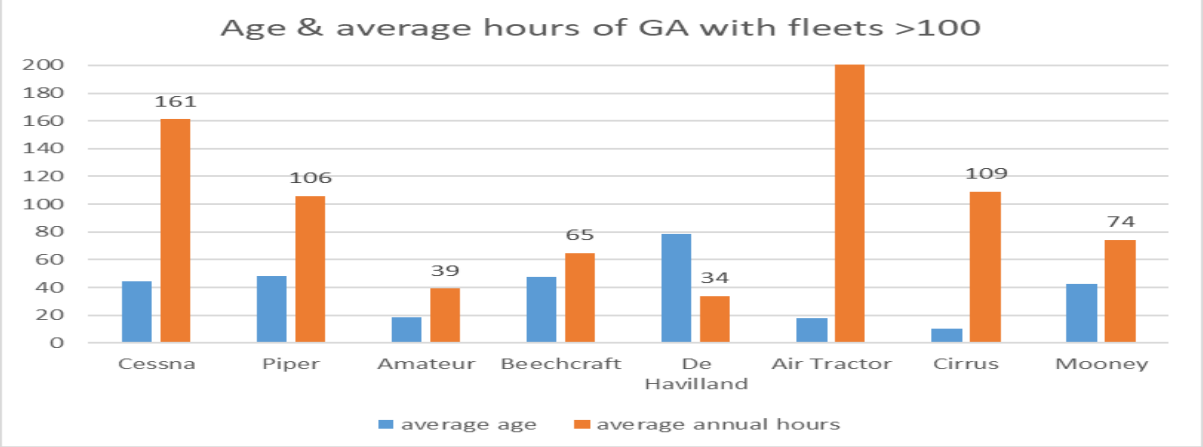
While 23% of the Mooney fleet was inactive in 2022, the proportion was higher for many other aircraft types: 42% of Maules, 50% of Victas, 53% of De Havillands and 60% of Austers were inactive in 2022.



The average hours per active Mooney increased to 74 hours in 2022 compared with 69 hours in 2021. The drop in 2014 to 54 hours appears to be a statistical aberration as there was an unexplained drop in the number of inactive aircraft in that year. The hours per active aircraft has averaged 66 hours for the past decade.



The reasons for the long-term decline in total hours flown is evident from the graph above. The main cause of the steady decline in hours flown has been reduced private and business use. Training (presumably largely attributable to the M20Js of the Royal Aero Club of WA) had accounted for a significant proportion of total hours throughout the period but has declined steeply in the past ten years. Total charter hours increased to 80 hours in 2022 after a steady decline for many years and, in 2021, there were zero hours recorded. Despite an increase in recent years, total training hours fell again in 2022 and amounted to only about 45% of the 1990-2010 average. Despite steep declines from their peaks in the 1990s, private and business use still accounts for about 75% of the hours flown in Australian Mooneys.



While the focus in this article has been on the Mooney aircraft fleet, there are some interesting trends for other types in Australia:

- The GA types with the highest annual hours are those that are used in agriculture (e.g. Air Tractor, Ayres, Pacific Aerospace), training (e.g. Cessna, Piper and Diamond) and air ambulance/charter (e.g. Pilatus).
- While Cessna and Piper aircraft comprise about half the total GA fleet, 27% of them were inactive in 2022. While private and business use of Cessna and Piper aircraft has been flat to declining, there has been a significant increase in their use for training in recent years. So, even though the active fleet is 10% smaller than in 2015, the average hours per active Cessna has increased from 135 in 2015 to 160 hours in 2022;
- Cirrus aircraft flew an average of 109 hours in 2022 and amateur built aircraft averaged only 39 hours which is surprisingly low given their average fleet ages of 10 and 18 years respectively;
- Beechcraft aircraft have similar uses to Mooney aircraft (predominantly private and business use but also some training and ambulance use) and averaged 65 hours per active aircraft in 2022. Also, 28% of the Beechcraft fleet are inactive compared with 23% of Mooneys;
- the Air Tractor and Ayres fleets averaged about 420 hours per active aircraft so almost exactly the same as 2021. The average hours per active aircraft have more than doubled between 2018 and 2021 due to a massive increase in fire suppression and agricultural work;
- Pilatus and Diamond aircraft that fly high annual hours in ambulance and training tasks respectively; and
- Many other common types (e.g. Stinson, Yakovlev, Auster, Victa, Yak, Nanchang, Aerostar, Fuji, Pitts) average only 10-30 hours per annum and other types that average even less.

While the focus here has been on VH registered aircraft, the decline in that fleet has to be seen in the context of the growing numbers of amateur built and RAAUS aircraft. The amateur built fleet grew from 138 (in 1980) to 974 (in 2022) and figures from RAAUS show that their (3 axis) recreational aircraft fleet has grown to about 3,300 aircraft. So, the decline in the number of GA aircraft has been more than offset by the increase in RAAUS and amateur built. This trend has almost certainly been driven by the increasing cost of maintaining a VH registered airplane and the lower training and maintenance costs of RAAUS and amateur aircraft. While some people in amateur/RAAUS are as safety conscious as anyone in GA, these aircraft do have much higher accident rates than VH aircraft. ATSB studies (2013 and 2020) show:

- "Amateur-built aircraft had an accident rate three times higher than comparable factory-built certified aircraft …The fatal and serious injury accident rate was over five times higher in amateur-built aircraft"

- Recreational aircraft have accident/fatal rates (per million flying hours) three to four times that of GA.

There is a Coronial Inquest in progress into the death of a pilot that took off from Mount Beauty (YMBT) in 2022. This inquest has opened up some serious questions about RAAUS' internal processes around the issuing of licenses and might well result in recommendations that will require some significant changes in the way that RAAUS (and maybe other self-regulating bodies) operate in future. If this results in a substantial increase in their membership fee (currently $325 per annum) then it will be interesting to see if this affects their future growth.

John Hillard, May 2024

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6. Are Mandatory Service Bulletins Mandatory?

John Hillard supplies the following from Joe Hertzler who is the CEO and co-founder of Avtrak Inc

The Age Old Question : Are mandatory service bulletins really mandatory?

Below we will talk about what a service bulletin is and what the rules say about them being mandatory in the eyes of the manufacturer as well as the eyes of the FAA. (and CASA - sort of Ed.) Let me start by making my personal position on this issue very clear. Compliance with mandatory service bulletins is one of the most important maintenance actions that an owner/operator can take to keep their aircraft in the safest and best possible condition. The manufacturer knows better than anyone else when special maintenance needs arise and the issuance of service bulletins is the chosen method for keeping us all informed. Not to mention what compliance with mandatory service bulletins can do for the resale value of the aircraft. My objective in this article is to help you understand the difference between the manufacturer's highest level of suggestive maintenance (mandatory service bulletins) and the regulations.

Service bulletin

"Service bulletin" is a term that is used in our industry to describe notices that are sent out by equipment manufacturers to keep those who use and maintain the equipment aware of changes, errors, findings, new ideas, etc. It is an effective way for manufacturers to get information out to the market quickly. I've heard "service bulletins" called many things; service letters, customer bulletins, change notices - the list goes on and on. Each manufacturer has established its unique naming convention as well as numbering methodology. For the purposes of this discussion let's just refer to them inclusively as service bulletins.

The evolution of the service bulletin has left us with a multitude of different types and different levels to hash through and try to make sense of. When the manufacturer attaches the term mandatory to a service bulletin, it's human nature to ask the question, "Are mandatory bulletins really mandatory?" Or "What is mandatory anyway?" and look to the regulations for the answer. The manufacturer can categorize a service bulletin as mandatory, but where in the regulations does it say that service bulletins issued by the manufacturer are mandatory? Well, it doesn't.

Airworthiness Directive

Somewhere along the line, the FAA decided that a bulletin that had been issued by a manufacturer to correct a serious enough condition that operators needed to comply with the service bulletin, needed a new designation. It issued an airworthiness directive. There is a provision in the Federal Aviation

Regulations (FARs) that makes every airworthiness directive a regulation, and thus compliance becomes an issue of aircraft airworthiness. The distinction between mandatory and non-mandatory service bulletins is determined on a case-by-case basis and decided only by the FAA. Issuance of an airworthiness directive is one way that a service bulletin can be required by regulation. New guidance material issued by the FAA explains a few other ways that a manufacturer's bulletin can become an airworthiness compliance requirement.

From the manufacturer's perspective, mandatory always means important, even critical at times, but the FAA will only mandate compliance and make it into to an airworthiness directive if deemed necessary. So, the manufacturers need a way to make the service bulletin a permanent part of their inspection and maintenance program. A few of them have simply added a blanket statement as a line item in the inspection program for their aircraft that called for compliance with all service information (there are several variations of this). That approach has created more discussion than compliance, I think. Most manufacturers tie warranty coverage to mandatory service bulletins. For a new aircraft that is usually enough incentive for the operator to comply with all mandatory bulletins, but what about the older aircraft?

Making it mandatory

There is a way, however, for a manufacturer to mandate a service bulletin for all affected aircraft. Requirements called out or referred to in the Type Certificate Data Sheet (TCDS) or within the airworthiness limitations section of the aircraft maintenance manual are, without exception, regulatory. If the manufacturer adds the bulletin's requirements to either that model's TCDS or to the aircraft airworthiness limitations section of its maintenance manual, they will, in effect, be mandating those requirements. However, getting the requirement into the TCDS or the airworthiness limitations requires FAA approval and is not near as easy for the manufacturer as issuing a service bulletin and labelling it "mandatory." Service bulletins are not regulatory just because the manufacturer says that they are mandatory.

Airworthiness limitations

Airworthiness limitations are not discussed nearly as much as airworthiness directives. A quick explanation is warranted here. When an aircraft manufacturer receives type certification for a particular aircraft model or models they are also required to identify, in cooperation with the FAA, specific items on the aircraft that must be inspected or replaced periodically in order to ensure safety of flight. These items are the airworthiness limitations. In the text of the TCDS, you will find reference to where the airworthiness limitations are listed. It is this "airworthiness limitations" listing that cannot be altered without FAA involvement and approval. ***In most cases the airworthiness limitations section of the maintenance manual is the only portion that is specifically FAA approved,*** usually ATA Chapter 4 or a separate document from the maintenance manual altogether. The manufacturer must also establish an "acceptable" inspection and maintenance program for the aircraft, usually found in ATA Chapter 5 of the aircraft maintenance manual. It is the portions of the maintenance manual that have not and in most cases do not, receive FAA approval that the manufacturer can make changes to without specific FAA approval.

Required by regulation

Service bulletin references added to the manufacturer recommended inspection program for the aircraft are not mandatory unless they are tied specifically to a regulation. If the manufacturer wants to add a new requirement to its inspection program it can use its manual revision system to implement changes to its inspection program within the maintenance manual itself.

So, basically mandatory bulletins are just not mandatory on their own account. They must be supported further by some sort of airworthiness measure established or approved by the FAA. For any action to be mandatory in nature it must have a legal purpose. The regulations are written by the FAA to ensure that the aviation community stays within the boundaries of the actual law. For a service

bulletin, or any requirement issued by the manufacturer for that matter, to be required for airworthiness compliance we must be able to trace it back to a regulation.

Joe Hertzler is the CEO and co-founder of Avtrak Inc., provider of the industry's first Internet-based and compliance-focused maintenance tracking service —Avtrak GlobalNet.

Australia - Mandatory or not?

Of nineteen people on a Mooney Maintenance Program, we had eight attendees who have the right to call themselves "Doctor" and two Professors. So, while there might have been a few moral shortcomings among those present, there was no lack of intellectual capability. It was therefore interesting that many attendees commented during the regulatory session was that it was "almost impossible for the typical owner/operator of an Australian aircraft to know what maintenance is, and is not, required under the regulations".

This question of what is, and what is not, required under the regulations is an art whose practitioners are the LAMEs who interpret for us poor owners what the regulations say and/or what CASA really mean. This makes some sense as it is ultimately the LAME who has to sign off the work and take the rap if anything goes wrong. However, as any aircraft owner knows, it does mean that there is often significant variation is what different LAMEs believe is actually required in relation to particular issues.

This sort of confusion is not restricted to Australia – many US owners appear not to have a clear idea of what is mandatory. The above article is a very clear statement of what is and is not mandatory under the US FAA regulations. While I understand much of what the article says is broadly correct under the Australian regime, it is not exactly the same. Despite various moves over the years to align the Australian regulations with those of the USA, CASA continue to devise uniquely Australian regulations that add a further layer of confusion to an already unclear situation. A good example is the question of what instrument checks are required for IFR aircraft – i.e. the CAO 100.5 issue. As a result, Australian owners may have to do regular checks of the pitot-static system and fuel tank gauges that are not mandated under the US regulations.

Our Australian Mooneys might only represent about 2% of the global fleet and yet we are required to maintain them to a different standard than the other 98% (largely in the USA). To what purpose? - you might well ask. Does it make Australian aircraft any safer than their US cousins? – so far as I am aware there is no demonstrable difference in maintenance related failures in Australian aircraft compared with US aircraft.

Being clear about what is legally required does not mean that we should ignore manufacturers' recommendations. There are all sorts of good reasons for maintaining your aircraft in accordance with manufacturer recommendations, but certain of them do require a degree of judgement by operators and their maintainers. Perhaps the best example is engines being permitted to continue operating "on condition" beyond the manufacturer's calendar and hourly limits – in the case of the IO-360 in my J model this is twelve years and 2000 hours. Fortunately, AD ENG/4 permits us to do this provided that the maintainer is satisfied from compressions, oil consumption, etc that the engine is sound.

So, please read the above article as general background rather than any specific guidance on what applies under the Australian regulations. This is a matter that we will continue to cover in future newsletters as there may be moves afoot in CASA to develop other "uniquely Australian" regulations that could have major cost implications for Australian owner/operators.

John Hillard, 9/6/2024

Case study:

Is it really simple (not)? Nope, when it gets down to it, the application of MSB's and AD's is sometimes actually quite ambiguous, expensive, not at all straightforward and, in some cases, arguably unnecessary.

A few years ago, Lycoming issued a series of Mandatory Service Bulletin's mandating crankshaft replacements in some later IO540 and other Lycoming engines. This was in response to a small number of accidents in aircraft fitted with higher powered TIO540's. The issue was not as simple as 'a crankshaft failed and the aircraft crashed'. Many technical complications were introduced concerning operating procedures and other matters. Things got technically and politically very complicated.

Lycoming identified a manufacturing/metallurgical defect in a few of their crankshafts and a several MSB's were issued ultimately instructing owners of most crankshafts manufactured after a certain date, to replace them and a list of engine numbers several pages long was published as an MSB. This had a major impact on the global industry. The MSB went far and wide and the "you know what" hit the fan. Although the probability of failure was very low, the consequences had been catastrophic in a small number of higher-powered aircraft powered by TIO540's. Therefore, an interpretation of the Lycoming Mandatory Service Bulletin was adopted by the FAA and made into an AD and CASA followed suit. That was where the problem started because the resulting AD was not approved by the manufacturer. The AD allowed some engines to run on for a limited time, and hence the AD was not identical to the MSB at all. But only the AD had legal force. The Lycoming lawyers were happy their derrieres were covered. Lycoming didn't approve the AD but clearly wrote down in the MSB what they wanted to happen, presumably to minimse their legal exposure.

Unless deemed 'emergency', AD's are subject to industry consultation and the resulting AD may be quite different to what the manufacturer intended. In this case, the AD stated that the crankshaft must be replaced at the manufactuer's calendar TBO or 12 years from new or since the last crankcase split and so many crankshafts condemned by Lycoming continued in service, without incident as far as we know.

At the time, Joe (not his real name) was importing a Lycoming IO540 powered restart C182 from the US. He thought he did all due diligence with particular reference to the crankshaft MSB and AD. Replacing a crankshaft is a particularly onerous and expensive exercise and most engine builders had massive backlogs of work due to the MSB. Lycoming did for a time offer a 'free' crankshaft and pay for labour but later as the potential extent of the problem emerged the labour reimbursement was withdrawn, as were the free replacement crankshafts later on. Of course, a crankshaft replacement is not just a matter of pulling one out and dropping another in. Many engines were deemed necessary for a full bulk strip or overhaul when they were stripped, despite how much time in service or calendar time completed. Hence most owners ended up with a 5 figure bill and months on the ground.

The engine serial number in the aircraft Joe purchased was not listed in the MSB and further not applicable by manufacturing date and so he thought he was pretty bulletproof. On certification in Australia the CASA delegate confirmed the AD was not applicable by date and signed off to that effect in the engine logbook. Therefore, Joe went off, happily flying the aircraft for several months and of course it was fine and never missed a beat. Joe also felt safe in the knowledge that there had been no crankshaft failures in the lower power IO540s, like those in newer 182's.

Ultimately Joe decided to sell the C182. A proposed buyer commissioned a rather pedantic LAME to do a prebuy inspection. They didn't accept the CASA log book sign offs of the AD and contacted Lycoming. Ultimately, although the engine serial number was not in the MSB or the AD, Lycoming came back with the news that the crankshaft MIGHT be affected and offered a free replacement without labour. It seemed like they weren't exactly sure of the affected batches and there may be some doubt about which crankshafts were affected. All Joe had to do was pay $20,000 for the engine to be removed, stripped and reassembled with the 'free' new crank, and wait about 6 months.

Joe wasn't overjoyed with that news which was particularly galling because the engine was less than 10 years old with a few hundred hours time in service from new and ran perfectly. Joe rang Lycoming. (Not the easiest firm to deal with.) Eventually someone answered the phone putting him through to a rather abrupt technical lady who knew all about the matter. She confirmed that Lycoming decreed that the crankshaft in Joe's engine had to be changed, although at that time his engine serial number

was not covered by either the MSB or the AD. Joe made the point that the engine number was exempt by date according to the AD. The lady came back unequivocally with 'We don't make ADs'. (Joe's engine now complied with the AD but not the MSB, which was subsequently allocated an 'A' suffix to include Joe's engine as a result of this case). The upshot was: 'if you decide to go with that AD, you're on your own buddy'. The lady was of the opinion that the MSB was 'mandatory' in every possible interpretation of the word, legal or otherwise.

There was quite a bit more toing and froing with the LAME and Lycoming that we won't bore you with. CASA sat on their hands and said whatever Lycoming and the FAA decide is fine. Meanwhile Joe found another buyer, who's LAME was quite happy with compliance with only the AD, allowing the engine to run for 2 more years before crankshaft replacement. The MSB was updated with a change of dates and serial numbers and the ultimately the AD followed suit. The buyer bought the plane and ran the engine up to 12 years as per the AD, still well below time in serviced TBO (which did NOT allow running on condition after 12 years as per AD/Eng/4). Joe ended up explaining the full story to the new buyer, throwing the new crank in the baggage compartment and taking a big financial hit, feeling an AD was likely unnecessary and he was probably just a victim of some very poor QA and traceability. Possibly many perfectly serviceable crankshafts have been replaced unnecessarily but who knows?.

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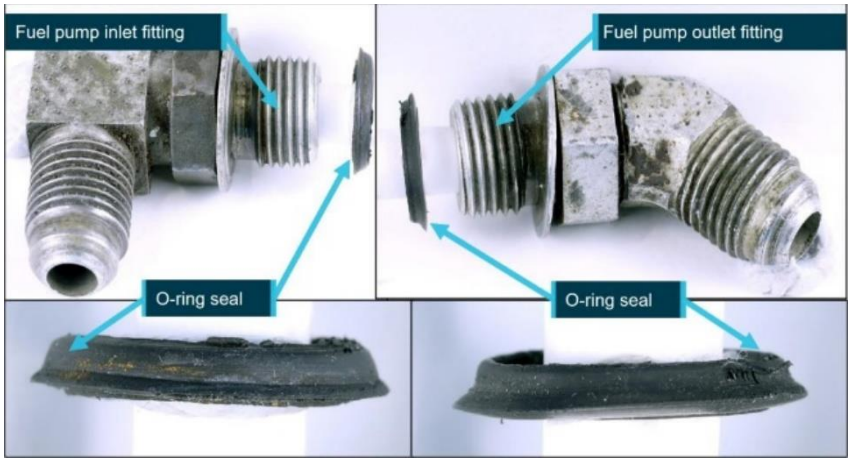
7. VH-UDQ Fatal Accident at Luskintyre



Fuel pump fittings and seals from UDQ Source ATSB

John Hillard, observes the following:

Most of you will be aware of the tragic accident on 17 October 2022 where the fire and crash landing of 1978 Mooney 20J VH-UDQ at Luskintyre resulted in a post-impact fire and the death some weeks later of the pilot. Many of us will know that aircraft as it spent many years online with the Royal Aero Club of WA (RACWA) before being sold about a decade ago. I flew it many times when we lived in Perth, both privately and as part of my CPL training. Like many of the RACWA aircraft it was well used at 19,128 hours total time but it seems that the age of the airframe had nothing to do with the reasons for this accident.

What is almost unique about this accident is that it is one of those rare cases where "pilot error" was not invoked as a contributing factor. There have been 11 fatal accidents involving Mooneys since 1970 and, in only one other case, has the failure of an engine accessory played a major role. That case was the fatal accident near Echuca of VH-KUE at night on 3 October 1997 where a failed vacuum pump is thought to have caused the pilot to lose control.

It is worth noting that, despite CASA's ageing aircraft crusade, there has never been a fatal accident in Australia (and very few overseas) where failure of an airframe component in a Mooney played a major role. The vast majority of fatal accidents (here and overseas) have been caused by failures of basic aircraft handling in landings and go-arounds, flight into terrain, hitting wires and other things attributable to poor judgement, inexperience and over-confidence. Those are the things that usually kill people and why our PSP focusses on these things.

As you'll read in the summary, ATSB think that the engine fire that caused the crash was caused by the failure of one lousy O-ring in the mechanical fuel pump. David Jardine (ex-RAAF Squadron Leader and 1,000 hour CPL) seems to have been faced with an engine fire in flight that escalated quickly and resulted in his having to do an emergency descent to Luskintyre which happened to be close by. There is no suggestion of anything that he could have done differently that might have led to a better outcome.

Not long before the crash, VH-UDQ had been refurbished with new paint and interior. The engine had also been replaced only 25 hours before the crash with an engine that had last been overhauled in May 1993 and had over 1,800 hours TIS on it.

Perhaps the greatest deficiency in the ATSB report is that it gives no further information about that engine. What had been its history in the 30 years since the overhaul? Had it been in regular use or had it been stored for an extended period? The report does not tell us. There has to be more to this story as why would anyone spend money on installing an engine (last overhauled in May 1993) with 1,806.3 hours Total Time when TBO is 2,000? Curious.

As many of you know, CASA were on a crusade some years back to abolish "on condition" for engines such that we would be required to overhaul (or, at least bulk strip) engines at the recommended TBO that is, in this case, 2,000 hours or 12 YEARS. Fortunately, that did not get anywhere but this might galvanise CASA into another attempt. I think that the question here is how you regulate for common sense. Overhauling engines at 12 years is too soon but 30 years is probably too long.

In the summary below, ATSB also note that there was nothing in the logbooks to document the re-paint and replacement of interior that had occurred in the recent past. Replacement of "Repairs to the upholstery or decorative furnishings of the interior of the cabin or cockpit" and "Replacement of seats, but only if the replacement does not involve disassembly of any part of the primary structure of the aircraft" is permitted under Schedule 8 of CAR 1988 but you are still required to use materials that are approved for the purpose and you have to record it in the aircraft logbooks. In this case there is no evidence that any flammability assessment was done by whoever did the interior replacement so it is not known whether this made the fire worse than it otherwise would have been.

So, what are the lessons for us from this tragic event:

- **If you are going to spend money on your airplane, spend on the things that really matter**. The owners of UDQ had spent serious money on nice paint and interior but had then installed a 30 year old engine. During my training at RACWA, I was always reassured by the fact that their Mooneys might have looked a bit daggy but the engine and airframe were always in good shape.
- **Treat your fuel system as though it will always try to kill you**. Many failures of engine or airframe will cause you to have to do an emergency landing but the really scary one is anything involved avgas being where it should not be. It is well worth making sure that your fuel hoses are in good condition and that any significant fuel leaks are fixed.
- **If particular engine or airframe components have not been opened up for many years, then think seriously about what are the implications of a failure and whether it might be worth inspecting and (if necessary) repairing at the next annual**.

- **If you are having work done on one component, think about whether it makes sense for your LAME to take a look at other components that are accessible.**
- **Replacement of interiors in aircraft must be done with approved materials**. Think about whether, in the event of a fire, you would want to be sharing the cabin with materials that are more flammable than they should be.
- **Review the "Engine Fire – on ground" and "Engine Fire – in flight" procedures in your manual and practice them the next time you go flying**. I have them written on the back of my checklist as I would not want to be fumbling around for the POH at a time like that.

ATSB don't talk about it but I think that there is also a question about what materials should be used for O-rings in fuel system components and how they should be monitored. Many years ago, I heard about using flourosilicone (blue) O-rings in my fuel caps rather than nitrile (black) ones. The blue rings last far longer than nitrile and this means that you don't have to pull them apart as often to replace. They cost more but it is nothing compared with the labour to pull the caps apart to replace them. If I ever have cause to replace any fuel system components then I'm going to ask the LAME whether we can use flourosilicone rings.

The ATSB report should say more about the history of the engine in VH-UDQ. That engine had accumulated only 27.4 hours since being installed in the aircraft about 12 months before. What was the history of that engine, who installed it and was the work done in accordance with the regulations? Was it properly documented? Was the O-ring disturbed during engine replacement and, if so, refitted properly? There are no answers to any of these questions in the ATSB report nor is there any indication that CASA will be considering any further action.

Instead, there is a risk that CASA will again embark upon another crusade on flimsy evidence to try to force those that do follow the regulations to do something that has zero net safety benefit - i.e. overhaul engines at 12 years time-in-service. CASA want to do what they know how to do (i.e. develop more regulations) rather than do what needs to be done (i.e. enforce the regulations that already exist).

John Hillard, 7 June 2024

ATSB Executive summary

<u>What happened</u>

On 17 October 2022, at about 1345 local the pilot of a Mooney Aircraft Corporation M20J aircraft, registered VH-UDQ, departed Maitland Airport, NSW for a local flight. The pilot flew to Cessnock Airport, NSW and completed an orbit, then continued to Luskintyre airfield, NSW. When overhead Luskintyre airfield, the pilot broadcast their intent to track to Maitland Airport.

Witnesses near Luskintyre airfield reported observing the aircraft in what appeared to be descending to land. They further reported that smoke and flames were seen trailing the aircraft. At about 1359 VH-UDQ collided with terrain about 330 metres short of runway 30 with witnesses describing an explosion and accompanying fireball.

The aircraft was destroyed by an intense post-impact fire. The pilot survived the collision but eventually succumbed to injuries sustained during the accident.

What the ATSB found

The ATSB determined that an O-ring seal fitted to the engine-driven fuel pump outlet fitting remained in service until it became age-affected and failed to provide an effective seal. The escaping fuel from the age-affected O-ring seal ignited and created an engine compartment fire. In response to the fire, the pilot initiated an emergency descent towards the runway but subsequently landed in a field resulting in the aircraft impacting trees. That led to a break-up of the aircraft and a severe post-impact fire that consumed the aircraft.

The ATSB also established that the aircraft had been recently refurbished. The refurbishment included repainting the aircraft and replacing interior furnishings with alternate materials. Neither the refurbishment activity nor details of the flammability assessment of the substituted materials, were recorded in the aircraft log books. The effect this refurbishment had on the in-flight fire, or the survivability of the pilot could not be determined.

What has been done as a result

In response to this accident, the Civil Aviation Safety Authority proposed to review Airworthiness Bulletins AWB 02-001 relating to on-condition maintenance, and AWB 85-004 regarding aircraft piston engine calendar time overhaul and most likely update them. The review would serve to highlight that 'on-condition' was not a 'fit and forget' approach to preventative maintenance.

The ATSB has issued safety advisory notice SAN AO-2022-049-001 in conjunction with this investigation report. The SAN draws attention to the proactive replacement of O-ring seals fitted to engines and engine components, should inspection of aircraft records indicate they have been in service for a significant period.

Safety message

Piston engines, and the components necessary for their operation, installed in aircraft operating in the private or airwork category are permitted to remain in service beyond their recommended calendar time overhaul interval. As O-ring seals fitted to such engines are susceptible to deterioration due to age, being aware of their accumulated time-in-service may initiate replacement action before they fail.

Maintaining an aircraft's internal appearance may require the introduction of alternate materials when original products may no longer be available. Aircraft owners are encouraged to document aircraft refurbishment action in the aircraft logbook and to include details of materials if substituted, and their suitability for use in aircraft interiors.

Editor notes:

We should be conscious that although this is described as a Mooney accident, it could equally have occurred in any aircraft of which there are many with similar engines and fuel systems and the ATSB report is right to draw attention to the general issue. However, we know little about what happened to this Mooney and its maintenance subsequent to its disposal by RACWA. It seems to be an extraordinarily high time airframe that was possibly beyond economic operation in commercial work.

With regard to when to strip and overhaul our engines, there is an argument that stripping and overhauling a properly operated engine that is running perfectly and has good parameters is more likely to result in higher probability of failure due to 'infant mortality' than allowing it to run on beyond calendar TBO. If, as John suggests, there could be an agenda to mandate manufacturer overhaul limits, even in Part 91 operations, then the regulator must consider this issue.

One question the ATSB might have asked is whether the probably good engine from ex RACWA UDQ may have been swapped for the very high time 30 years since overhaul one with the one from UDQ going elsewhere, but the report does not address this and so we just don't know the justification for the swap, which may or may not be relevant to the investigation.

Editor Recollection

The UDQ conclusions took me back well over 40 years to when I was a keen young lad starting to learn to fly in the early eighties. There was a very old scruffy looking Vickers Varsity parked at the airfield. It was built as an RAF crew trainer in 1952 and had two massive Bristol Hercules engines. As a somewhat green trainee, I had no idea it could actually fly as I walked past it many times seemingly rotting away, wondering how on earth it got there, how long it had been there and no idea that it would fly away one day.

It was actually maintained by a very dedicated and enthusiastic preservation group. They got it a permit to fly. It wasn't really all that old and it had flown relatively recently in RAF service. One weekend they all jumped in and went off to display it at an airshow. After flying to a nearby airport for fuel, they had difficulty starting the left engine, which was misfiring and smoking and generally misbehaving. Eventually they persuaded themselves it was fine, explaining the problem with rational explanations about priming, mixture, mags etc. Then the right engine was reluctant to a lesser extent.

On the way the pilot reported some issues with the right engine - and then the left engine stopped. They turned back but couldn't maintain altitude and they elected to force land, which didn't go well, hitting power lines, resulting in 11 dead and two very seriously injured. I knew some of them from the club bar. The human cost of these accidents is hard to fathom.

This accident was caused by failure of a cracked fuel pump diaphragm in the left engine. The report referred to RAF maintenance procedures to take special precautions on fuel systems and other flexible components and seals, especially if the engines were in storage, emphasising the need to make sure the fuel system was maintained primed to avoid those components becoming brittle and cracking.

The aircraft was barely 30 years old at the time of the accident and was acquired by the group in the mid 70's when the RAF disposed of the Varsity fleet. No doubt flexible fuel system seal materials have improved since then but the time between disposal and civil operation was comparatively short, although probably ample for those flexible seal components to deteriorate. The plane had been in outside storage in the damp, cold UK winters, although it did move into a hangar elsewhere before it flew on the fateful day.

Those big engines burnt a lot of avgas and the aircraft flew little after disposal. It seems probable that flexible seals and components probably deteriorated during that time. A similar issue may well have been a relevant consideration in the UDQ accident, but the ATSB report did not address the circumstances of where the used engine had been or what attention it had received.

It was also interesting that the crew found plenty of rational explanations that had nothing to do with failing flexible seals for both engines misbehaving.

Confirmation bias: We think of all sorts of things that make sense to us but we're just confirming the wrong conclusion and go flying anyway. Perhaps the lesson learned here is that we need to be much more conscious that there might be possible causes of deteriorating systems, especially after long periods of non-use, rather than latching onto 'obvious' conclusions. Maybe sound practice of Threat and Error Management prior to flight could help.us become conscious of other possibilities.

In researching the article on 'why buy a Mooney', we came across a superb 45 year old M20J with under 2000 hours total on engine and airframe. All completely untouched and a real time capsule. Paint was near perfect, engine ran faultlessly… but the fuel systems seals? Who knows. Possibly its all fine, but…

Victor Rimkus offered the following on Mooneyspace

Although the below accident resulted in a fatality in Australia, I thought I should post the details here for the information of all Mooney owners, particularly J or M owners to check with your mechanic as to the condition of the O-ring seal of the engine driven fuel pump outlet fitting.

Particularly those whose engines and fuel systems that have not been overhauled for many years or aircraft that have lived outside for many years resulting in O-ring deterioration.

Yes, this humble O-ring can cause an in-flight catastrophe if allowed to deteriorate to the point of leakage.

Today, I received an email Safety Advisory Notice link from the ATSB regarding the crash of a M20J on 17 October 2022 at Luskintyre NSW. During flight, a fire started in the engine compartment resulting in the pilot attempting to land at the airfield. He could not make the airfield and landed in a field just 300 metres from the runway, colliding with trees resulting in a catastrophic fire. Sadly, the pilot died from his injuries 10 weeks later.

Upon receipt of the email, I immediately called my mechanic who advised that he checks this O-ring for condition and leaks using pressure from the electric fuel pump at every annual.

Please ensure your mechanic does the same.

The Safety Advisory Notice link - https://www.atsb.gov.au/publications/safety-advisory-notice/2024/condition-replacing-o-ring-seals-age-catches

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8. Mooney Pilot Profile – John Hillard

John Hillard is one of AMPA's most longstanding and highly respected members. He has served the Association and the Committee with great distinction. He makes an enormous contribution to the internationally acclaimed AMPA Pilot Safety Program among many other achievements and is one of the most knowledgeable Mooney resources we have in Mooney flying, regulatory and technical matters. We thank you John and hope AMPA can rely on your outstanding support for many years to come. John has some very interesting stories to tell, including an exciting Pacific ferry flight in his Mooney. Highly recommended reading!

I learned to fly in 1995 with the Royal Aero Club of WA (RACWA) and my instructor was Melinda Weeks, wife of the CFI Roger Weeks. I'd always been keen to learn but this was the first time that I'd had the time and the money to do it. RACWA was a great place to learn as they had more than 50 aircraft (8 of which were M20J Mooneys) and there was a very high standard of training under Roger's direction. I followed the usual path and trained first on C152 Aerobats before moving on to C172 and later Mooneys. I still fly the Mooney the way that I was taught by Melinda and Roger as it works.

During the four years that I spent in Perth, I completed PPL and then Night and Instrument Ratings. Perth was a great place to learn as the weather is nowhere near as nice as the locals make out. It is hot in summer with lots of low level turbulence and the downdrafts over the escarpment can be pretty fierce. At one stage, at night in a Mooney at full power and pointed toward the stars … but going down at 2000' per minute … fortunately, it spat us out before the ground rose up to smite us. And there is also wind – lots of it. At one stage, we slowed down a C152 to the point where it was flying happily while going backwards over the ground. Rottnest Island is also a great place to learn that the absolute limit for crosswind component in a 20J – at 25 knots XW you are looking at the runway through the side window. My wife Rosemary also did ten hours training with Roger but stopped when he threatened to send her solo.

After our time in Perth, I got a contract to work in Kuwait and we moved there about 1999. At that time, there was no private flying in Kuwait I went to Fujairah to convert to an UAE license. There was a small training college there with late model C172s and, because the aircraft were UAE registered, we had the right to fly to any of the local airports. Mostly this was to Sharjah and Ras al Khaimah but we also went twice into Dubai International. Standard procedure was 110 knots down final with an immediate turn on the first exit as there was a 747 right behind you!

My job in Kuwait was undemanding and, as I had plenty of spare time, I studied CPL theory and sat the exams on return visits to Australia before heading to Perth for a few weeks to complete the CPL practical training. I then took a contract with Qatar Petroleum and moved to Doha in 2002 to a much more interesting job. Doha was a wonderful place to live as, at that time, it was still small enough to live centrally and drive anywhere in a half hour. Best of all, it had the Qatar Aeronautical College where I could hire recent model Piper Archers (with aircon). I did my check ride with the helicopter pilot that flew a fully armed attack helicopter overhead the Emir's car whenever he drove around the country – he had a "license to kill" if anyone tried to attack the car. He briefed me about where I could and could not fly in Qatar – the "secret" US airbase at Al Udeid was off limits as was anywhere close to the Saudi border – "… automatically launched SAMs" he said, and I still don't know whether he was kidding or not. But, at that stage, it was still OK to do sightseeing flights over Ras Laffan which is the world's largest complex of LNG plant, storage and port facilities.

There was only the one airport and that was the old Doha International (OTBD) with its 15,000' runway. I would often fly early in the morning as the tower would not give us a taxi clearance if the temperature was above 38 degrees C. That limit was due to the engine being prone to overheat on the 15-20 minute taxi to the far end of the runway and the temperature sometimes reached that limit at 0500. We shared the airport with Qatar Airways (at that time they had only about 20 aircraft), other international carriers, the US Air Force base with C17s and the Qatari Air Force Mirages. At one stage, I was taxiing when the tower cleared the Mirage that had just landed to "follow the Cherokee" and the A320 taxiing for take-off was then cleared to follow the Mirage. I wish I could have got a photo.

Early on, OTBD was not very busy and I could fly night circuits while only having to do an occasional orbit to allow for an incoming aircraft. It got progressively busier as Qatar Airways increased the size of their fleet and, shortly before we left in 2005, I had to orbit for a full hour watching a steady stream of incoming landing lights before the tower could arrange a slot for me. There was always something interesting happening like the morning I was told that there was no flying that day – due to cruise missiles having just passed overhead Qatar that an US warship had fired toward Afghanistan and neglected to tell anyone.

A friend and I also did trips out of Doha to Fujairah and Bahrain. These were a bit of an undertaking as you had to park in a bay at the terminal and go to the terminal to have your outward clearance stamped. The Tower would ask whether we required pushback but we declined as we could easily just do an 180 degree turn within the bay. One had to be in uniform with all the regalia and, because we were operating crew, customs and immigration would just wave us through.

My job in Qatar involved regular trips to the UK as well as the USA. I had already obtained my FAA pilot certificate before 9/11 so I was able to travel to Houston a couple of days early and spend the time flying Grumman Tigers out of Hobby Airport. That was the time that CASA were busy creating the ASIC but there was no such nonsense there. Despite Hobby being a major airport, access involved nothing more than pressing the buzzer on the gate and being let in.

As our time in Qatar neared its end, I decided that I could now afford to buy an airplane and maintain it. Initially I looked at buying a new Cirrus SR20 or SR22 and did test flights in them in Oxford (UK) and in Brisbane. The UK dealer was very honest in addressing my sense that they just did not fly as well as a Mooney. He explained that they were "build to a price" and so had a Hershey Bar wing (where every rib is the same). The complex wing in the Mooney (with every rib being different) is just too expensive to build. But the consequence is that the low speed handing of the Cirrus can never be as good as that of the Mooney. When I said that I was weighing up whether to buy a Cirrus or a Mooney, two of the very experienced pilots that were demonstrating the Cirrus to me replied "I know what I'd buy" – i.e. the Mooney. That persuaded me to buy a Mooney but I didn't want one of the older ones that were on the market in Australia.

Being a methodical chap, I had a list of what features I wanted and I saw a 1995 M20J that was being brokered by the Mooney company as the seller was buying a new Ovation. It had everything on my list and more. At that stage it was ten years old and had 1,300 hours but with a 100 hour factory remanufactured engine and 3 blade prop. So, I visited Seattle, flew in N923DH and the deal was done.

By that time, I'd already decided to return to Australia so decided to investigate whether I could fly the airplane to Australia myself rather than employ a ferry pilot. I took advice from Bill Cox who, as well as being a columnist with Plane & Pilot, had flown out most of the Mooneys that arrived in Australia in the 1990s so he knew the route well. He referred me to another ferry pilot based at North Las Vegas who had fitted tanks and HF radio to all the Mooneys that Bill ferried. FAA rules did not allow rubber bladders so the seats were removed and replaced with three custom made aluminium tanks (two behind and one beside the pilot seat. The seat cushions slotted in behind the aft tank and so the only thing that need to be shipped was the plastic rear seat pan.

When we packed up in Qatar, Rosemary flew east direct to Australia and I went west to Las Vegas. During my time in Qatar, I'd continued doing the ATPL subjects and doing the theory exams on my return visits. The 9-11 attacks had happened only a few years before so were fresh in people's minds. While on the final leg to Las Vegas, it occurred to me that I was travelling on a one-way ticket to the USA, had a passport full of Middle Eastern, Iranian and Syrian stamps and that I had in my bag a section of the flight manual for the Airbus A300. This might not look good given my purpose for travelling to the USA was to collect a light aircraft. The US immigration officer leafed through my passport and asked what I'd been doing in Iran. When I said that I was just a tourist, he said that he'd lived in Saudi for a while and that it was somewhere he'd hoped to visit – before stamping my passport and handing it back.

The fitting of the tanks and HF radio had not even started despite the arrangement that it was to be done before I arrived. So that was the first delay, with it taking the best part of two weeks to have them installed and signed off. I flew from Las Vegas to Santa Maria on the California Coast intending to overnight there before heading to Kona, Hawaii the next day. March in California should have been perfect weather but weather moved in from the north with solid cloud, driving rain and low freezing levels. After a week there, I finally got away and found that the plane handled exactly as expected when loaded to its ferry fuel capacity of 220 gallons (830 liters). Santa Maria was the preferred departure point as it required only a shallow turn to take up heading out over the Pacific. It took an awfully long time to get off the runway, climbed very slowly and could not get above 6000' initially. In cruise, it would only TAS at about 135 knots despite everything being pushed to the firewall. But, after burning fuel out of the aft tank, the plane gradually levelled out and flew at its normal TAS of 154 knots.

Flight time to Kona in Hawaii (PHKO) was 14.3 hours and the time passed quickly with a busy routine of fuel tank changes, re-calculations and position reports before landing just after dark. The route after that was Kiritimati Atoll (PLCH) – Pago Pago (NSTU) - Port Vila (NVVV) - Brisbane (YBBN) – Mount Beauty (YMBT). Each leg to Brisbane was 8-9 hours and the weather was pretty ordinary with tropical cloud along much of the route and instrument approaches in most places. Setting out from Kiritimati Atoll, there was no on-route forecast available as very few aircraft visit. The forecasters don't know what the weather is at lower levels as the satellites can only see the cloud tops. Often there was no alternative but to fly into towering cumulus and put up with the turbulence as it was not feasible to avoid them.

But, all the way to Kiritimati Atoll, I could still talk to San Francisco Radio on the HF. After I'd not heard anything on the radio for an hour, I called them for a radio check and had a chap with a Californian drawl reply "Don't worry, it just gets pretty quiet in that area". Other than one commercial flight that delivered three passengers, mine was the only aircraft to visit PLCH that week. Later on, I was talking on the HF radio to Fiji, then Auckland and finally Brisbane.

I spent a night and day at each waypoint and I really should have allowed more time as it would have been interesting to fly around the outer islands of these groups. But you have to stick to some sort of schedule in order to arrange landing permits for your onward destinations. Arriving at Brisbane was an anticlimax as the Customs Staff at Brisbane were the most unpleasant and difficult officials that I met on the whole route. After two days there arranging a customs agent to "import" the aircraft, and paying 10% of the value as GST, I finally flew the last leg to Mount Beauty.

I kept N923DH on the US register for the first two years and then paid a lot of money for paperwork to switch to the Australian register as VH-VDH. 24-3368 was 11 years old when I bought her and had

1,300 hours and she is now 29 years old and has 3,460 hours. During that time, I have replaced the engine (with the two magneto version) and the prop (with an MT composite) and spent an inordinate amount of money on replacing almost all of the original King avionics and autopilot with Garmin and Avidyne as well as adding other stuff like a traffic system. The paint is original except that I've had the wings and forward fuselage sprayed in recent years. She

I first met Russell and Robyn Kelly at a PSP in Perth in the late 1990s so I experienced how the early PSPs were run by Russell, Don Rowling and John Chesbrough. I served on the Board of AMPA then as Secretary and President of AMPA for quite a few years before getting involved in organising PSPs and Maintenance Programs. I think that I've organised eight PSPs and Maintenance Programs (although we had to cancel three of them due to COVID and weather) and about 4-5 fly ins.

Before I retired in 2010, we lived in Adelaide and Brisbane and used VDH to travel to our holiday home in Mount Beauty. In that time, she has travelled to almost every part of Australia and made one trip to New Zealand. When CASA decided to change the requirements for issue of an ATPL to include a flight test in something line a Kingair, I decided to get a twin endorsement in a Seneca and to get my night hours up to 100 hours so that the ATPL could be issued before those new requirements applied. So, I have an ATPL but have never earned a cent from flying!

These days, VDH is mostly used to travel up and down to Essendon when we have things to do in Melbourne and I use her to visit other states for walking trips (e.g. Great SW Walk in Victoria, Bibbulmun Track in WA, Larapinta/Jatbula in NT and Carnarvon Gorge & Hinchinbrook/Kgari in Queensland). I've done more than 50 Angel flights and they now account for about half my flying. Otherwise, she sits in her hangar in Mount Beauty on Andrew Kotzur's wonderful "DiscSaver" jacks. Btw, if you are not using a set to extend the life of your gear discs and tyres, then you have rocks in your head!.

I have no desire to own any other aircraft than the one that I have and I'm hoping someone sells an STC for a diesel or unleaded petrol engine to replace the avgas burner. I fear that leaded avgas will cease to be available before very long and there is still much uncertainty about an unleaded replacement. I'm now 70 years old and hoping that I'll remain sharp enough to fly IFR for another decade. If I'm still breathing at that stage, then I'll do a permanent downgrade to VFR and will fly around the mountains on sunny days for as long as I can.

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9. Australia's National Air Navigation Plan 2024–27

Department of Infrastructure, Transport, Regional Development, Communications and the Arts (better known as the Dept. of Cars, Roads And Propaganda – CRAP) are inviting comment on this document.

While you would be forgiven for never having heard of it, it is an important document from our point of view. It is primarily focussed on airline operations and full of acronyms and ICAOspeak, but it does give us some warning of changes that are on the horizon. I've extracted a few quotes from it and commented on what it might mean for us.

Page	*Quote*	*Comments*
20	**Short Term** • Implement SBAS approaches.	LPVs are separately referred to as "Long Term" so it is not clear what they mean. Maybe just SBAS rather that ground based augmentation at capital city airports.
20	• Maximise the use of electronic surveillance of traffic by airspace users and air navigation service providers to increase situational awareness and facilitate traffic management	Hard to know what this means. Maybe a program to subsidise install of TCAS along the lines of what was done with ADBB?
21	• Consider new separation standards, that may use new technologies such as UAT and ADS-L, for uncrewed and AAM aircraft	UAT and ADS-L are hardly "new technology" as they have been in use for decades. UAT is the other ADBS frequency in the USA since 2001 and ADS-L is the system mostly used by gliders. They are cheaper than the ADSB-out (1090MHz) system that we have … so maybe well suited to drones. I don't think our Traffic Awareness Systems (TAS) will detect them so there may be cost implications if we have to upgrade.
20	**Medium Term** • Space-based VHF and ADS-B.	Hard to know what their time horizon is but Airservices are now looking at using satellites rather than ground stations to handle VHF communication and ADS-B. This will almost certainly means having to replace transponders and radios but it should mean complete coverage and scrapping the HF radio.
21	**Long Term** • Approaches with Vertical Guidance for all Australian Instrument Flight Rule runways	Disappointing that this does not appear in the short/medium term priorities. So, even if we have Southpan SBAS in 2028 we may not have the LPV approaches to use it.
24	**Aeronautical meteorological services** The Bureau has commenced the transition from traditional deterministic text-based meteorological products to SWIM meteorological information services, through the conversion of existing products into the new ICAO Meteorological Information Exchange Model IWXXM form and projects to deliver probabilistic information.	Be nice if they told us what to expect as the outcome from this process. Looks like another change in the format of met forecasts.
30	**Space-based augmentation, surveillance and communications** … The program will give Australians instant access to real-time location data that is accurate to within 3-5 cm in areas with mobile phone coverage and 10 cm everywhere else on land and sea, versus 5-10 m currently. SouthPAN will be … interoperable with avionics used for the United States Wide Area Augmentation System and European Geostationary Navigation Overlay Service. SouthPAN … safety-of-life certified SouthPAN services planned in 2028.	Nice to have confirmation that Southpan should be compatible with our existing GPS avionics. But a firmware upgrade will certainly be required and we'll have to wait and see whether some manufacturers (i.e. Garmin) will charge to unlock the capability.

Ed: Forgive my negativity on this one but we're now well over a decade behind our US counterparts. Don't get me wrong, I'd love to fly coupled RNP 3D approaches but I seem to have got by without them so far and it now looks like we might start to implement things by 2028, so I think I might just forget about them. If we really imagine this will work with our Garmin gear in 2028 without a hitch, we're probably in cuckoo land. The software and hardware glitches some of us had in simply adding ADS-B to Garmin equipment were just comical, when we could stop crying. The above 'update' really isn't encouraging at all and IMO it's disgraceful and woefully unacceptable.

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10. A few YouTube links

- The magnificent Monospars as flown by Peggy Kelman from UK to Australia in 1936 Magnificent Monospar - The World's First Light Twin (youtube.com)
- The sugarbird lady - a tribute The Sugarbird Lady. Sister, Patsy Millett, remembers (youtube.com)
- The Mooney Service Bulletin on tube corrosion Mooney Corrosion (youtube.com)
- The $8000 Mooney Part 2 The Story of an $8,000 Mooney PART 2! (youtube.com)

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11. From the Mooney Flyer

Welcome to the latest Edition of The Mooney Flyer!

Go to https://TheMooneyFlyer.com to download and read your PDF and/or FlipBook version.

In This Edition:

- Mooney Flyer Fly-In to Paso Robles by Phil Corman
- Special Issuance Medical & the Long Road Back by Don Kaye
- A Quick Flight Review by Jim Price
- Engine Replacement On Your Terms, Not Life's Terms by Richard Brown
- When You're Hot, You're Hot by Jerry Proctor
- Flying and the A.S.R.S. by Mario Jimenez
- That's a Bit of a Stretch! By Don Peterson
- Let the Games Begin – Update 4 by Terry Carraway
- Quiz by Jim Price

Plus Ask The Top Gun, Have You Heard, Product Review, Upcoming Mooney Events, Mooney CFIs around the Country, and more.

Fly Fast, Fly Safe
Phil & Jim

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12. Disc Savers

Replacing the delightfully simple suspension discs on our Mooneys has become a very expensive exercise for reasons best known to suppliers of them. Fortunately, we don't have to do it very often

but there is an inexpensive way to extend their life even further. These ‘disc savers’ are an Australian invention and come highly recommended.

There has been quite a bit of discussion recently about the availability and cost of spares. This included discussion about the large increase in cost of the rubber donuts that are critical to the suspension of our Mooney landing gear. If we were able to extend the life of the donuts, there would be considerable savings to our operating costs. Replacing donuts is typically a $5,000 exercise.

If we say that the average Mooney does about 50 cycles and 100 hrs per year, this means that the time might be allocated like this;

100 hours flying - no weight on donuts

100 hours taxying, takeoff, landing – weight on donuts

10 days, 240 hours parked up away from home base – weight on donuts

The balance, 8,320 hours parked up in home base hanger – weight on donuts

This means that for 95% of the time, there is an opportunity to relieve the stress on the rubber donuts. Logic would suggest that if the stress on the rubber donuts was relieved by jacking the aircraft which hangered, the life of the donuts should be at least doubled.

There are Mooney owners, including in Australia, who have proper aircraft jacks to jack their plane up when hangered. However, these jacks are heavy and can be costly. It is somewhat time consuming to fit the lifting points and then screw up the jack. There are significant risks involved in jacking an aircraft on conventional jacks and it is questionable whether it is legal for an owner to do it. A few Mooney pilots were discussing this, and an idea was born.

The Mooney Wheel Jack has evolved as various protoypes were trailed, including a fully self-contained lever system, however the simplest and most ergonomic solution turned out to be a simple frame which lifts via pin which is inserted in the main suspension torque tube. It lifts the wheel by approximately 60mm which is enough to allow the tyre to just clear the floor. Lifting is via a small, hydraulic automotive jack. When the height is reached, the jack is pinned to hold in place.

Lifting is an easy operation requiring only small amount of force and much safer than the protypelever system which could “run-away” if the operator was not careful when lowering. The jacks are generally suitable for any stable, hard surface (concrete, compacted road base, bitumen).

The jacks have been designed by an engineer and been tested/reviewed by several Mooney pilots and a Mooney LAME. You will need to decide for yourself on the legality of doing it but the risks raising the aircraft by only a very small amount with the torque tubes (rather than the wing jacking points) is negligible.

The jack is suitable for both mains and the nosewheel. Discussions are ongoing, however it is thought that the main wheels are probably more important given they are more compressed and there is less weight on the nose wheel.

The jacks will shortly be available for purchase via a commercial website. They will be sold on behalf of AMPA with profits going to our association. They will retail for $160 each including GST per unit (2 required for main gear wheels).

The hydraulic jack is not supplied. Any jack with minimum 1,000kg capacity which can lower to 200mm or less, and raise to 270mm or more, will do the job. These can typically be bought from Repco or Supercheap for around $50 to $70.

Andrew adds the following:

- What I would add is that since I have been using them on our Long Body, we have not detected any sag on the discs.
- I am in a pretty good routine and it takes me about 4 minutes to jack he plane once I park it in hanger.
- John's recent post suggests that changing out the rubber disc will cost around $3,000 in parts and probably around $2,000 in labour. So, if the jacks extend the life of disks by 50% then it works out to be a saving of $1,700 plus down time for plane.

They can be purchased at https://store.kotzur.com/products/mooney-shock-disc-savers

And, I would be happy to bring any that people might order along to Echuca.

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13. Peggy Kelman OBE

Some of us may have seen the thread on the AMPA forum relating to our much missed member John Kelman. In addition to that Jane Errey started a very interesting discussion about John's Mother, Peggy Kelman, who was a pioneering Australian aviator from the 1930's onwards. Peggy and her husband Colin went to and were married in the UK, deciding to fly themselves home to Australia (with John as it turned out Peggy was pregnant) to Australia. This was quite a brave thing to do. Their choice of aircraft was fascinating, which was a Monospar ST4, with two 85HP engines. It would take something special for that trip back then.

We hear very little of the Monospar these days but they were 'mono' for obvious reasons. The wing structural design was very advanced for the time, allowing a single wing configuration, unlike competing biplanes like the Dehavilland Dragon. Consequently, for the time, the Monospar was faster, had good range and carried some load on less power. Ideal if you were planning a big trip half way around the world! There were a fewl Monospars in Australia at the time and they were proving very effective in air taxi and early airline operations.

The choice of the Monospar ST4 must have been like choosing the Mooney of the day; fast, efficient, good range and ability to carry some load. I guess it wasn't surprising then that John became such a Mooney aficionado and a great member of our Association. The Kelmans whilst principally farmers in Queensland went on with their aviation interests. Colin passed away but John and Peg continued to develop their aviation passion building an airtaxi business and entering various competitions. The Monospar they flew from Croydon, UK to Australia was G ABVN. It seems quite sad that G ABVN was never registered in Australia. The ST4 was the first of its type in the country and resulting red tape meant it was not pressed into flying service even during WW2. Here is a little more information about its life and times, supplied by Don Furlonger, of Brisbane Aviation Historical Society.

GAL ST.4 Monospar c/n ST4/2 G-ABVN

1932	Built by General Aircraft Ltd at Croydon as first production ST.4. 2 x 85hp Pobjoy R engines.
Aug 1932	Registered **G-ABVN** Portsmouth, Southsea and Isle of Wight Aviation Ltd, Portsmouth
19 Aug 1932	CofA issued
Dec 1933	Change of ownership: B. Lewis & Co Ltd, Heston
4 Dec 1936	Change of ownership: Colin D. Kelman, 48 Gloucester Place, London W1
	Colin Dalrymple Kelman managed pastoral property *Malaraway* at Moree, NSW and later owned *Glenbervie* at Julia Creek Queenland. He had met Mary "Peggy" Kelman (nee McKillop) at Moree when she was flying a Moth on a barnstorming tour with Nancy Bird. When she sailed to live in England, he followed and they were married in London. They purchased the Monospar to fly home to Australia.
18 Dec 1936	G-ABVN departed Heston on a holiday flight to Australia flown by Mr. & Mrs. Kelman
11 Jan 1937	Reached Darwin
15 Jan 1937	Reached Moree NSW. Flown for a short time on its current British CofA
	G-ABVN reportedly soon sold due to a slump in wool prices
	Not registered in Australia. Reasons unknown but the fact it was the only ST.4 model imported would have required DCA first-of-type certification with the owner to supply construction and performance documentation from the manufacturer.
1938	G-ABVN was in a hangar at Mascot Aerodrome, Sydney
	Remained in the hangar during WWII when the military took over the airfield. A report says it was used by RAAF as an instructional airframe
23 June 1945	Letter to DCA from Mr. R.E.Turner, Sydney: he intends to purchase G-ABVN stored at Mascot. He says it is in very good condition, missing only seats, some instruments and compass. He has the log books and enquires if there are any known problems with the aircraft. No further correspondence in the DCA file.
21 Nov 1946	Struck-off British Register
1954	G-ABVN derelict at Bankstown Aerodrome, Sydney, fuselage without wings
	The Kelmans went on to own numerous aircraft at Julia Creek from Tiger Moth, Auster and Proctor to Beech 17 and Cessna 182. After Colin's death in the late 1950s, Peg Kelman and their son John set up Central Highlands Air Taxi Service at Emerald Qld. She was later awarded an OBE for services to aviation.

The Aussie Monospars are remembered here

GEOFF GOODALL'S AVIATION HISTORY SITE

goodall.com.au

Here is Jane's post from the forum:

This article was sent to me from the Australian Dictionary of Biography and I thought it might be of interest to people who remember John.

Margaret Mary (Peggy) Kelman (1909–1998) by Catherine Hobson This article was published online in 2024.

Margaret Mary Kelman (1909–1998), aviatrix, was born on 6 April 1909 at Glasgow, Scotland, only child of Irish-born William Richard McKillop, grocer, restaurant owner, and politician, and his second wife Rose, née Dalton, of a wealthy Irish-Australian pastoralist family. When Peggy (or Peg as she was also known) was four months old, her father died after a short illness, and her mother returned to the Dalton family estate, Duntryleague, at Orange, New South Wales. She was educated at the Convent of the Sacred Heart, Rose Bay, Sydney (1916–24), and later in England and France while overseas with her mother (1925–28). As a girl she was fascinated by aeroplanes, and in 1927 she attended the Schneider Trophy air race at Venice, Italy, where she had her first flight, in a flying boat. She later remembered the experience as the moment when she set her heart on aviation.

After McKillop turned twenty-one, she had flying lessons with the Royal Aero Club of New South Wales at Mascot, Sydney. Notwithstanding some family opposition, by early 1935 she had obtained her private and commercial pilot's licences, and was being described as 'one of the State's foremost girl fliers' (Newcastle Sun 1934, 2). She had also met the aviatrix Nancy Bird, six years her junior, who had recently purchased a Gypsy Moth, famously used by Lady Chaytor to fly from England to Australia in 1932. Bird had the aircraft reconditioned and offered McKillop a job as navigator and co-pilot on a barnstorming tour of western New South Wales. Over three months in early 1935, and again in August–October, the women—dubbed Big Bird (McKillop) and Little Bird, the former on account of her height and oversized flying gear—toured the State, attending country shows and race meetings, and giving joy flights to local residents.

In April 1936 McKillop and her mother sailed for London, where Peggy flew with the London Aeroplane Club and trained to convert her Australian commercial licence to the English equivalent. She was followed by Colin Dalrymple Kelman, a New South Wales grazier and aviator from Bellata, near Moree, whom she had met while barnstorming. They married at St James's Roman Catholic Church, Marylebone, London, on 5 November 1936, and after a honeymoon in Scotland, purchased a twin-engined Monospar to return to Bellata. They flew without a radio or weather forecasts and relied on

a school atlas and Shell airstrip maps to navigate. En route, the newlyweds discovered Kelman was expecting her first child, and she later claimed to be the first pilot to fly from England to Australia while pregnant.

At home in Australia the Kelmans ran sheep stations and raised five children; first at Bellata, and after World War II at Glenbervie station, a large property near Julia Creek, Queensland. Drought and the difficulties of farming during the war years, especially with Colin serving in the Citizen Military Forces (1942–44), led to their move north. Glenbervie had its own aerodrome and in the 1950s they owned a series of aeroplanes to fly for fun, shopping, and social visits. When Colin died in 1964, Kelman moved to Brisbane, where she was co-owner and co-director of Central Highlands Air Taxi (1967–72) with her son John.

During the 1960s and 1970s Kelman continued to embark on flying tours and compete in air races such as the Papua New Guinea Independence Air Race (1975) and the Warana Air Race, Brisbane, which she helped to establish in 1968 (1968, 1972). She was State (1965–70) and Federal president (1974–77) of the Australian Women Pilots' Association (AWPA), and a member of the Queensland working group of the Guild of Air Pilots and Air Navigators (1983–98). After joining the Ninety-Nines, the international women pilots' association, in 1958, she was an inaugural member (1959) and governor of the Australian section. Later in life, she completed several overseas flights, including to Antarctica and Europe, before giving up flying in 1994. Some of her other hobbies included reading, swimming, gardening, and sailing. She died on 23 December 1998 at Buderim, Queensland, and was buried with her husband in the Buderim Crematorium and Memorial Gardens. Predeceased by her daughter Jane in 1979, she was survived by her four other children: John, Bill, Mary, and Susan.

Vivacious and charming, with short blonde hair, Kelman was a devout Catholic and gracious hostess, who had a lifelong appetite for adventure. She was widely admired for her sense of humour and her skills as a pilot, especially her ability to navigate without a flight plan and her level-headedness in the air. 'One flew entirely by feel,' she explained (Kelman 1962, 9). For her service to aviation in Queensland and the promotion of women in aviation, she was awarded the AWPA's Nancy Bird Trophy (1969) and appointed OBE (1978). The Royal Queensland Aero Club also named her pilot of the year for 1971, and in 1985 the AWPA made her a life member. The Maroochy Aero Club, where she was a life member and patron (1976–98), named the ladies' toilet Peg's Palace in recognition of her advocacy for women's amenities. In 2023 one of four Sydney Metro-Western Sydney Airport tunnel boring machines was similarly named Peggy.

Research edited by Emily Gallagher

Select Bibliography

- Dennis, Val. Obituary. Airnews, no. 192 (March 1999): 2–3
- Kelman, Peggy. 'Fly-past.' Australian Women Pilots' Association Newsletter, no. 44 (March 1962): 9–11
- Newcastle Sun. 'A Girl Pilot's Visit.' 3 November 1934, 2
- Sydney Morning Herald. 'Nomads of the Air.' 14 March 1935, 12
- Tulk, Rhonda. Obituary. Sydney Morning Herald, 23 January 1999, 16
- Walton, John. Eulogy given at P. Kelman's funeral. Unpublished manuscript, 1998. Copy held on ADB file
- Walton, John. Personal communication

Additional Resources

Trove search

Flies Home for Wings, Sun (Sydney), 27 March 1932, p. 2

Nomads of the Air, Sydney Morning Herald, 14 March 1935, p. 12

Pioneer Flight in the 'Outback', Sydney Morning Herald, 13 June 1935, p. 24

Related Entries in NCB Sites

view family tree

Dalton, James (grandfather)

Walton, Nancy-Bird (friend)

Citation details

Catherine Hobson, 'Kelman, Margaret Mary (Peggy) (1909–1998)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, https://adb.anu.edu.au/biography/kelman-margaret-mary-peggy-33171/text41383, published online 2024, accessed online 16 July 2024.

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14. AMPA Calendar

Echuca Fly-In (6-9 September)

Echuca! Mooney flyin: Don't miss this one! Our next Flyaway is to Echuca on the Murray River in Victoria from Friday 6th to Monday 9th of September 2024. A great itinerary has been planned, so don't miss out. Details and registration forms are on the website.

The flagship Pilot Safety Program - from October 11-13. Details and registration forms are on the website.

Also:

- HARS TARMAC WEEKENDS TBA Shellharbour
- AUSTRALIAN AIR RACE SEP24 date t.b.a.
- Pacific Airshow Gold Coast, 16-18 August 2024
- Warbirds Downunder Temora 19-20 October 2024,
- Showcase Temora 7 September 2024

Please let me know if you know of any events you think should be in the newsletter. Ed. jrus2233@gmail.com