



# REDCLIFFE AERO CLUB

## AIRCHAT

No. 20 Spring 2019

**CELEBRATING 50 YEARS OF PROFESSIONAL AVIATION TRAINING  
CHARTER AND QUALITY AIRCRAFT HIRE**

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Front cover: AirVenture 2019 Oshkosh

# From the club president

Hello Members and Friends,

Welcome to the second edition of AirChat for the year.

One of the major events in the Club's calendar this year was to celebrate the Club's 50 years of flight training, a very big achievement. Thanks to a small group of volunteers, the club house and grounds were prepared for the event night. A lot of time was put into making the night a success, from fairy lights strung across the grounds, food trucks, a live music duet to a 9-ship patrol flight to the bay islands and back, landing just before last light.

Special thanks to the crew who were involved in the planning of the event which was led by Vice President Sam Keenan.

Another major event in July was the Club's hosting of our dear friends from Hong Kong. Again, we had approximately 30 Hong Kong club members visit with several of them achieving special goals like first solos. The Club looks forward to their return again next year. Thanks to all



the team for their hard work during this time to make the Hong Kong club members' time here such a big success.

Flyaways and monthly Club barbecues have been very popular over the winter months and we are working on flyaway destinations for the final few months of this year. If you have a suggestion for a fun flyaway destination, please let us know.

The Club keeps producing monthly achievers through both Diploma of Aviation students and club members undertaking the CASA Syllabus Training in RPL, PPL, CPL, MEIR, NVFR. I wish all students and club members moving into the next phase of their aviation career all the best.

Safe Landings to you all

Mike Cahill

President





## CEO update

Dear Members

In my last report I noted that we were preparing for an audit of our Registered Training Organisation (RTO). The ongoing approval to operate our RTO must be maintained and is a prerequisite for us to continue to be an approved VET Student Loans (VSL) provider. I can report that our RTO approval has been granted until 2<sup>nd</sup> July 2026. I'd like to acknowledge the tireless efforts of our RTO Co-ordinator Lauree Skene-Gordon leading our instructing team on matters of RTO compliance with the many acts, rules and standards for this successful outcome. The income stream provided by our diploma students through the VSL Program is vital to maintaining the financial sustainability of our Club.

To this end, our current challenge is to apply for VSL provider status beyond our current approval that ends on 31<sup>st</sup> December 2019. Lauree, Mal McAdam, Taylah Simmonds and I have been working on this application leading up to the 30<sup>th</sup> September deadline. Taylah is our new RTO Administration Trainee so when you see her around the Club, please make her feel welcome.

As reported by the President in this addition of AirChat we recently hosted the Hong Kong Flight Training Centre club members during the month of July. We have maintained this relationship for seven years and it is always a pleasure to have them visit us. Their excitement and enthusiasm for all things aviation is infectious and very refreshing. I'll let our Head of Operations give further details of the various achievements of these club members, however one incredible statistic was that in a two-week period 615 landings were completed. A truly outstanding effort of our instructors. We look forward to hosting the Hong Kong students again next year.

Another milestone achieved since my last report was the adoption of a new Club constitution on the 8<sup>th</sup> May at a Special General Meeting. This was a long-term project led by Directors Bryan Galvin and Mike Cahill. Thanks to their efforts we now have a modern and compliant constitution.

As always, I encourage you all to visit and make use of your Club's facilities, aircraft, and simulators and to participate in the flyaway and social program. I look forward to seeing you around the Club in the lead up to Christmas.

Best Regards,

Stephen White

CEO

Dear Members

This year your Club is celebrating its 50<sup>th</sup> year of continuous operation! I wonder how many other aeroclubs will get to reach their golden anniversary. I know of a few such as Royal Queensland Aero Club but not many.

While I haven't been here for all that time, it does make me think of my experiences over my 20-year association with the Club. Like many prospective pilots, I had an itch that had been tormenting me all my life. I came to the realisation that the only way to scratch it was to jump in and learn to fly, so began my search for a flying school that might suit my purpose. I tried a few schools and was most impressed by the level of professionalism and service I received from the staff at the Redcliffe Aero Club. Grant Waldron was my first instructor, and it is largely because of his efforts that at no time I felt the need to seek out an alternate school.

At that time the club operated three Cessna 152s (BUE, BUQ & IVW) which were used for initial flight training, and two Cessna 172Ns (WLY & MSJ) for cross-country training. For more advanced training, we relied on cross hired aircraft such as a Piper Archer (FRF) and a Piper Arrow (NUS). For multi-engine training there was a Piper Twin Comanche (EDW). A few years later the management committee took the bold step of deciding to renew the fleet with the purchase of a new C172SP (RAQ), with SPP, SPQ & YRE soon following. The older C172s and C152s were sold on and other cross hires such as the C182s (TRE, SZC, PKA & NDP) came along for the design features and CPL training roles. Later the Club was able to add to the C182s with one of our own (ROC).

For a time, multi-engine training was passed to a Partenavia (IYC), although we briefly operated a Beechcraft Duchess and Piper Seminole. More recently the club jumped into multi-engine ownership with a C310 (JTV) being acquired for

## Chief pilot report



multi-engine training and charters. This proved a popular move and a second C310 (ULF) subsequently joined the fleet. The C310s turned out to be a good choice for our survey contracts, so we decided to purchase a Partenavia (VMV) for multi-engine training.

So, during my time here the Club has gone from five club owned aircraft in 1999 to eight, including three twins, in 2019. I think you would agree the Club has been going through a prosperous time and is well equipped to build on past successes.

On more recent events many of you may have noticed that we hosted the Hong Kong Flight Training Centre during July. This kicked off the financial year to a good start. Over the four weeks in July we hosted 23 students who flew 290 hours, resulting in four first solos and one Recreational Pilots Licence flight test passed. A total of 615 landings was recorded for the second group of 12 students alone. Certificates and wings were passed out to achievers at BBQ events at the conclusion of each group's period of flight training.

May the next 50 years be as good as the last 50.

Safe flying

Mal McAdam

Head of Operations / Chief Pilot

# Editorial

Dear Reader

Welcome to the Spring edition of AirChat. I've been fortunate to be able to use my PPL to fly round Australia quite a bit over the past couple of years and from my visits to other clubs I think we can safely say that we have one of the best facilities of any aero club in Australia. We also have a magnificent training area at our doorstep, with the Glasshouse Mountains region and Bribie Island being an amazing place to learn to fly. Couple that with the ability to train in various types of controlled and uncontrolled airspace nearby and use the wide range of instrument approach types at various airports and the sheer beauty of the coastline to the north and south and it really makes it the ideal place to fly. So given that it's such a great place to fly, it's also a great place to write about our aviation experiences so that we can share them with our fellow aviators and inspire them to get out into the wild blue yonder as well. That's what's happened again in this edition with a variety of different stories from a range of contributors.

As we continue to celebrate our Club's 50<sup>th</sup> year we've unearthed a couple more articles from Ron Ennis' collection of old AirChats. One is a report about a massive storm that hit the airport on Christmas Eve 1989 with towering cumulus to 73,000ft and the other about the Open Day in 1977. And Alan Betteridge, one of the Club's early members, has provided some historic photographs from the old days.

The annual Anzac Day dawn service and patrol is covered along with Club flyaways to Hervey Bay, Maryborough and Stanthorpe. Graham Pukallus describes his trip to the



World Balloon Championships near Cowra, NSW including a flight along Victor 1, the VFR corridor above the Sydney beaches. Mike Cahill describes his experience flying in Hawaii, while Alan and Suzanne Carlisle visited the Cunnamulla Fella Festival and had a great time out west as you will read.

Mike Cahill, Brett Silvester and I met at Oshkosh in July to attend the 50<sup>th</sup> annual meeting of the Experimental Aircraft Association. It's the world's largest gathering of general aviation aircraft and we each write of our own perspective of this multi-faceted gathering of aviation enthusiasts.

Curly's Corner gives us a heads up on what to consider when flying VFR to Kooralbyn for a quick game of golf while Bob Tait relates a story that demonstrates how human factors can have fatal consequences, explaining why so much effort is now put into training for multi crew environments.

Thanks to all who have contributed to this edition. Why not join them and send us your story for inclusion in the next AirChat?

Philip Arthur  
airchateditor@redcliffeaeroclub.com.au

# Glossary

Following requests from some readers who are not so familiar with aviation jargon here's a basic glossary:

ATPL – Airline Transport Pilot Licence

CASA – Civil Aviation Safety Authority

CHT – Cylinder Head Temperature

CPL – Commercial Pilot Licence

CTAF – Common Traffic Advisory Frequency

EGT – Exhaust Gas Temperature

GNSS – Global Navigation Satellite System (commonly referred to as GPS)

IFR – Instrument Flight Rules

kt – knots, nautical miles per hour

LOP – Lean of Peak (engine management)

LSA – Lowest Safe Altitude

MEIR – Multi Engine Instrument Rating

NVFR – Night Visual Flight Rules (Rating)

PPL – Private Pilot Licence

RNAV – Area navigation

ROP – Rich of Peak (engine management)

RPL – Restricted Pilot Licence

RPM – Revs Per Minute

RTO – Registered Training Organisation

RWY – Runway

TAS—True Air Speed

VFR – Visual Flight Rules

VSL – VET Student Loans

# Recent achievers

Congratulations to all our students who recently completed a milestone in their training at RAC. The whole club wishes you all well for your future endeavours in aviation.

*Jimmy Duong*

*Jakeb Thorogood*



## **First Solo**

- Eric Chiu
- Damien Chung
- Matthew Gwyer
- Dylan Hardie
- Nick Ng
- Miguel Pengel
- Alex Wong



*Andrew Clegg*

## **Restricted Pilot Licence**

- Jeremy Brooks
- Jimmy Duong
- Michael Gillott
- Bimal Gurung
- Hesham Saleem Abdul Kader
- Peter Somerfield
- Jakeb Thorogood



*Peter Somerfield*

*Jeremy Brooks*



## **Private Pilot Licence**

- Dominic Cheung
- Nathan Lees
- Eugene McMahon
- Declan O'Donnell
- Harrison Potts
- William Read
- Michael Scott
- Stefan van der Linde



*Nathan Lees*

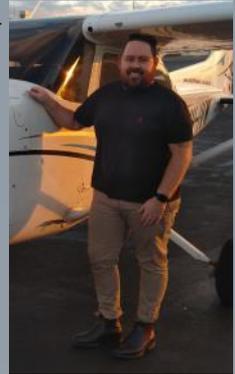


*Miguel Pengel*

*Dylan Hardie*



*Matt Gwyer*



*Lucas Gozzard*

*Michael Gillot*



**Commercial Pilot Licence**

- Andrew Clegg
- Lucas Gozzard
- Mark Hansen
- Bryce O'Brien



**Multi Engine Aircraft Instrument Rating**

- Michaela Allison
- Lucas Gozzard



*Mark Hansen*

*Eugene McMahon*



*William Read*



*Stefan van der Linde*



*Declan O'Donnell*

# Hong Kong students

These students from the Hong Kong Flight Training Centre all achieved their first solos while they were with us in July.

**Damien Chung** Instructors at redcliffe aero club are truly amazing, without the help of these guys, I definitely would not have done my solo in just 10 hours of flight training.

Special thanks to Joe for sending me on my first solo.

And thanks to VH-RAQ VH-IVW VH-SPP VH-YRE

Looking forward to flying again at redcliffe



Eric Chiu



**Alex Wong** It is my honour to get the training here. I really do appreciate all the instructors efforts. Special thanks to JM who has been suffered from my hard landings the most out of all the instructors.



"Aspect Aimpoint Airspeed" "Look to the end of runway"

I will remember all those lessons. Gonna miss flying with you all.

# Upcoming events

Our flyaways continue to be great fun and a great way to meet like minded aviation fanatics. Recently we've been to Maryborough and Chinchilla and we've got a whole lot more events planned for the clear days ahead. Keep yourself informed as to what's coming up by joining our Flyaways Facebook group and tell us where you'd like to go. Click on the link below:

<https://www.facebook.com/67groups/678739008989427>



*Maryborough*

And don't forget our happy hour and barbecue at the Club from 5:30pm on every first Friday of the month.

Best steaks in South East Queensland!

All members, family and friends welcome.

Check the Club website or Facebook page for details.



*The monthly Friday evening BBQ is a great way to end the week*

# Curly's corner

by Phil Ware

*A life member of the Club with a long and illustrious career in the RAAF and Air Traffic Control, Phil (Curly) Ware is always keen to share his knowledge and experience to demystify ATC for the rest of us.*

Being a “mad keen golfer” as well as flyer a brilliant idea occurred to me one day at golf. Why not combine these two activities into a day out? A plan to play golf at Kooralbyn was hatched and with two professionals from the Redcliffe Golf Club, Chris and Hannah, the date was set and we looked forward to our big day out.

A thought occurred to me: “Wouldn't I look stupid if I got there, with the dignitaries on board, and couldn't find the aerodrome – it seemed a good idea to go and do a “recce” the week before. So I set off with my “frequent flyer” friend down the light aircraft lane, crossed the Ipswich Motorway at Goodna and tracked to Bromelton, thence Kooralbyn, taking note of all the land marks, especially Lake Wyaralong, which is huge. We turned right at Bromelton over the edge of the lake, and tracked into Kooralbyn, landed, had a coffee and returned to Redcliffe.

The following week, with Chris and Hannah on board, the same flight was repeated in VH-IVW, and went like clockwork.

For the Private Pilots who don't fly often my considerations regarding the flight were as follows:

**Flight Plan:** Drew up the track on the VTC and VNC (love that VNC) and planned to track crossing the power lines at Lake Samsonvale, turn left tracking 150 to abeam the TV Towers, then via Goodna and Bromelton to Kooralbyn. Avoided Greenbank Restricted Area R633A (Army Firing SFC - 2000ft) and checked whether R633B was active (2000 - 3500ft) before overflying R633.



Rule 1: Ensure you don't get shot down by “friendly fire”

Rule 2: Always obey Rule 1”

**Weight and Balance:** With two passengers, myself and the golf clubs we were in balance with 160 litres available to take us up to our MTOW of 1156 kg, and leaving us 110 litres of fuel when landing back at Redcliffe. The golf clubs were stowed and secured, so there would be no movement in turbulence.

**Air Services:** When the flight plan was completed it was submitted to Air Services who, once we were airborne on departure, issued us with a transponder code. We were told “Clearance Not Available, Remain Clear Of Charlie), which means clearance not available *Right Now* – but maybe later. On the way back from Kooralbyn to Redcliffe we were given a clearance “Planned Route, Three Thousand Five Hundred” – so up in class Charlie which was good, as we did not have to be at 1500 ft in the strong southerlies coming past the TV Towers.

**Communications:** We started on Redcliffe CTAF 127.15, changing to Brisbane Centre 125.7 until the TV Towers, then Archerfield TWR 123.6 where they passed us traffic information, then Brisbane Centre 119.5 when leaving the vicinity of Archerfield airspace. Approaching Kooralbyn, we changed to the YKBN CTAF 126.65 and were soon in contact with a high performance twin leaving Kooralbyn. We were able to arrange separation, then it was a right circuit onto Runway 12, to comply with noise abatement procedures, at a circuit height 1300 ft, with field elevation 300 ft.

From Kooralbyn after golf, ATC gave us our code on 119.5, and we asked for a clearance, which was received as mentioned previously.

**Winds:** The wind for the day was 180M at 20 kt, so with a TAS of 110 kt, we had a groundspeed southbound of 90 kt, 40 minutes for the southbound leg, and 29 minutes home in the afternoon.

**Oz Runways & the iPad:** Being a VFR flight, primary navigation was by VFR standard methods – but it was good to have not only the map display on the G1000 in IVW, but OzRunways on the iPad. It was reassuring and a useful aid to help keep us well clear of Amberley Airspace and the Control Area steps as we climbed to 2500 ft out of Redcliffe, maintaining A015 until crossing the powerlines at Lake Samsonvale.



**Kooralbyn Golf Course:** At Kooralbyn, the golf pro came out to meet the aircraft and took us to the pro shop and we were given the red carpet treatment with everyone being pleased to see us, and pleased that the airstrip was being used once more. Landing fees were waived, and we had coffee at one of the local shops close by.

This was an interesting little Nav, with lots to consider at the planning stage. It was also a very pleasant flight, with familiar features never too far away, in a very comfortable aeroplane that didn't cost a great deal of \$\$\$'s. A good day had by all – especially on the 17th fairway, where the green is on the other side of a lake from the tee. I was lucky to hit the ball across the lake, and not into the water, as per normal.

Happy and Safe Flying

Curly



# Club's 50<sup>th</sup> anniversary

## 13<sup>th</sup> July 2019







## From the archives

AirChat has been in print for decades. Club Life Member Ron Ennis has a stash of old editions going back to the 1970s. Here's a couple of stories plucked out of editions from 1977 and 1989.



### FLIGHT LEVEL 730

Christmas eve 1989 came as quite a surprise to a lot of us.

What appeared a normal afternoon thunderstorm on December 24 by 3 p.m. ranged as being an abnormally large problem. By 4 p.m. Towering No. CBs had passed Archerfield leaving a DC3 some 300 yds from its tie down point & a trail of damaged light aircraft in its path. From here at Redcliffe a spectacular show of forked lightning could be seen over Brisbane. Brisbane was about to close and the severe met warning indicated storm lines extending 30 miles east of Brisbane and 60 miles west travelling at 30 knots with tops to

55,000 ft. Tornadoes were indicated and 3 could be seen as water spouts crossing the bay toward Redcliffe. At this time damage was sustained by TLs the Tangalooma float plane, a Navajo & Mitsu at Brisbane Airport. Swirling squall cloud and green skies approached Redcliffe. Brisbane's amended forecast was now tops to 68,000 foot. As the rage of this storm passed and tore roofs from houses at Clontarf and Newport waterways.

At our aerodrome the roof was lifted from our hangar and the sides exploded as IVW, BUE, BUQ, UFU and MSJ rattled to-

gether causing each other damage. Hangar doors badly damaged FRF as they too gave into the rage. Bills Winjeel and Chris's new twin came together and sadly AYA was rolled to its back. This possibly happened about the same time as our tower crashed to the ground and the pergola roof was torn from its fixtures.

By 5.30 p.m. it was time to clean up. Redcliffe fire brigade was in attendance as 2 flight centre Cessna 172's were doused then tied down minus their nose wheels. Overnight all that could be done with our aircraft in the hangars was to hope they would stay. Keith assessed the situation and decided that flying debris and lack of safe tie down spaces away from damaged aircraft meant they were better off where they were. At the same time he decided we would have 2 aeroplanes flying within 2 days (the only flyable aircraft in our fleet) This was in fact the case and currently with the help of a few outside cross hire aircraft - we're full steam ahead again.

The final report - this storm reached 73,000 feet. Instruments will now be placed at Redcliffe Aerodrome by severe weather secn to monitor any future storms.

# Open Day

This was held on Sunday, 20th November, and was very well attended by prospective future members and interested public.

Unfortunately the training films were scrubbed after Roger Harrison blew out two expensive projector bulbs trying to cope with a hired generator (Oh the joy when we eventually get the power on!).

There were many helpers on the day so we won't try a list in case we leave someone out. The workers got tremendous satisfaction from the day's efforts and we conducted masses of Try-A-Flys and signed up quite a few new members as you will see later.

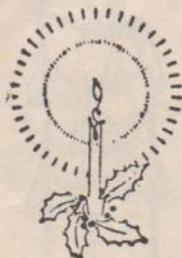
Those deserving of **Extra Special Mention** are those people who provided the extremely expensive aircraft (and let's never forget that ALL a/c are extremely expensive), without which we would never have had an open day!

Peter Hanlon & Don Burns – Cherokee Lance  
Ansett General Aviation – Cherokee Archer II  
Adams Aviation – Mooney  
Redcliffe Flying Services – Piper Super Cub  
Ivan Brown – Auster  
Thanks a tremendous amount fellas!

The Club also had a/c on display throughout the day, and we therefore had a good range from basic trainer to highly sophisticated singles.

The comps which were held in conjunction were great to watch, because they included balloon bursting and flour bombing, both of which take place directly out from the Clubhouse. Streamer cutting was also included. Ron Ennis finished up the winner, although this time he didn't bomb the judges so he must be slipping a bit.

Many thanks to all those who helped to make the day the success that it was. To those who didn't come – TOUGH – you missed out on a really great AERO CLUB day!



# ANZAC Day dawn patrol

by Philip Arthur

One of the highlights of the Club calendar, the annual Anzac Day dawn service and patrol commemorates the landing at Gallipoli in 1915. It involves a memorial service at the clubhouse in the predawn darkness, followed by departure at first light of a number of aircraft in company for a flight up the coast to Noosa Heads and back. This year we assembled at the club at 4:30am to preflight. The participating aircraft and pilots were:

MSF - SR22 - Philip Arthur/Mark Roberts Thomson

XTE - RV10 - Ashley Miller

BAY - C172RG - James Ritchie/Fran Spielmann

YRE - C172 - Lucas Gozzard

IVW - C172 - Ryan Darby

LZA - C172 - Norm Casey

RAQ - C172 - Phil Ware

BUQ - C152 - Anthony Sturges

At 5:10 the group was called to order. A welcome by Club Secretary Mark Roberts-Thomson was followed by an address by life member Phil Ware and the laying of a wreath at the base of the flag. Phil recited the Ode and the Last Post was played, followed by one minute's silence. The flag was raised to full mast as Reveille was played and the ceremony concluded with the National Anthem.

After the ceremony Mark gave a pilot briefing with clear instructions on order of departure and how to maintain separation, using simplified radio calls at specific waypoints to let each other know where we were. We boarded our aircraft and started our engines just before first light at 5:45. There was a light westerly blowing so it was an easy taxi out to RWY25. The aircraft departed at one minute intervals, tracking at 500ft over water up the coast to Noosa Heads at 115 knots.



It was magical flying at low level on such a clear morning with the sun rising in the east and observing the various activities on the beach. Things seem so close at 500ft. A large group of people was assembled on the beach at Maroochydoore for their dawn service. With the sunny coast tower not yet open we flew straight past the airport and Coolum and at Noosa Heads began a left climbing turn to 1000ft over the bay. The left turn helped us avoid being blinded by the rising sun as we turned. Once at 1000ft we headed south and flew over a number of the following aircraft that were tracking up the coast below us. As we approached the sunny coast airport a Jetstar plane taxied and lined up for departure to the south. Mark advised the pilot that we were about to pass, remaining over water at 1000ft and were being followed by seven other aircraft, all travelling at 115 knots. We expected the jet to depart ahead of us but the pilot informed us that they would wait for us all to pass. Each of the following aircraft also made a call as they approached and one of our number suggested that there should be no problem from an ATC point of view if the jet were to take off right then and there as they would clear us no problem (no prizes for guessing who that was). Nevertheless, the jet remained on the ground until we had all flown past.



and on rounding the southern tip of the island we commenced a climb to 1500ft for the arrival into the circuit at Redcliffe. There was still a light westerly wind blowing so we overflew and joined mid field crosswind and downwind for RWY 25.

Back on the ground we parked the aircraft and assembled back at the clubhouse for a hearty breakfast of bacon and eggs, sausages, toast and hash browns, while comparing our impressions of the morning's flight and discussing plans for future flyaways.

It was a fantastic way to start the day and pay homage to our fallen. I thoroughly recommend that all members take part in future.

We all followed the east coast of Bribie at 1000ft



*Ashley Miller on  
final in XTE*

# Hervey Bay flyaway

by Anthony Pitt

Sunday 14<sup>th</sup> April the forecast was for coastal showers but an otherwise fine day. Enough fuel for holding or an alternate was required, but the cloud bases were reasonable and there was plenty of blue sky overhead, offering the promise of a fun day's flying.

The prize was lunch at Salt Café overlooking the pristine waters of Hervey Bay and the Urangan Pier, 110 nautical miles north of Redcliffe. Five aircraft and 13 of us set out for another Redcliffe Aero Club adventure. My 10 year old son Charlie helped me prep TOL at Caboolture and we departed just after nine for the short hop to Redcliffe to meet the group. Sam, Mike and Ryan were topping off fuel and preflighting their respective aircraft and, after a quick caffeine top-up, we made a crosswind departure from RWY 25 and turned north around 10am.

Charlie and I had decided to go coastal in the Cirrus at 2500ft, and Ryan and Nerys in the C172 also obtained clearance to track through the Sunshine Coast control zone to enjoy spectacular views of the coast. Sam, in his classic red 1963 Cherokee, made a brief stop with his family at Caloundra, while Mike's Cirrus rocketed up to 8000ft for an IFR track direct to YHBA and some



RNAV practice with club CEO Steve White and his partner Maureen looking on. Kayne and his son Rayden had departed Archerfield around the same time in their Piper Arrow II.

As Charlie and I requested clearance to track coastal through Sunshine Coast I could see the silhouette of a passenger jet well out to sea and quite low over the water. We were instructed to maintain 2500ft and track over water, while the Virgin jet was told to maintain 1500ft and turn left base for a landing on RWY 18 – this looked interesting! Sure enough the Virgin 737 passed about one mile in front of us and 1000ft below and turned final just to our left – providing us with a rare and spectacular view of a 737 from above with Mt Cooloom in the background. It was interesting to see the new runway taking shape at YBSU – looks like they'll be able to handle even larger passenger jets in the future. (Note the proposed changes for YBSU airspace that are out for consultation by Air Services).



The Noosa beaches look gorgeous from the air and we tracked coastal to Double Island point where the line-up of 4WD's on the beaches looked busier than the Bruce-Hwy-heading-north-on-a-Friday-afternoon. With an 18kt tailwind we enjoyed a ground speed of 188kt and were soon overhead Inskip Point, the gateway to Fraser Island. We'd enjoyed blue skies and some fluffy cumulus to this point, but over the southern end of Fraser Island the forecast proved accurate and it became overcast and a little gloomy with showers over Fraser Island and to the west of Hervey Bay.



Fortunately there was a space in between and after overtaking a local ultralight we joined downwind for a landing on RWY 11 with light rain on the windscreen. Kayne and Rayden followed us in and within 30 minutes all of us had managed to find a way through the showers. The wing of a de Havilland Twin-Otter parked nearby provided useful shelter as the showers rolled through.

Lunch at Salt Café was excellent, with conversation revolving around all things flying and delicious meals ranging from steak sandwiches to local calamari and seafood platters. The weather improved and the restaurant afforded beautiful views across the water to Fraser Island. The after-lunch walk to the end of Urangan Pier was well worth the effort, where we watched a local fisherman haul in a 21kg spanish mackerel as part of a fishing competition.

The Urangan Pier is 900m long and was built in 1917 to service the local sugar, coal and timber exporters. While it is no longer used for commercial purposes it provided a lovely walk on a Sunday afternoon and is obviously a pretty good fishing spot too.



Despite a few isolated showers, the trip home proved just as much fun as the trip up. A few of the group went coastal to provide passengers the best view of one of the most beautiful coastlines for flying anywhere in the world – we are very fortunate to live and fly where we do. Charlie and I decided to take TOL on an inland route home, climbing to 3500ft and tracking overhead Maryborough and home to Caboolture. Within 10 minutes of take-off Charlie was sound asleep next to me and I was enjoying the scenery of the Noosa hinterland, Maleny plateau and the Glasshouse Mountains – all looking lush and green after receiving some good rains in the previous month.

It was a terrific day's flying, providing a great combination of changing weather



conditions, beautiful scenery, up-close encounters with the big jets and a delicious lunch shared with a group of like-minded aviation enthusiasts. Thanks to Sam for organising the event, and remember to follow the Redcliffe Aero Club Flyaways Facebook page for details on upcoming trips – we hope to see you there for the next one.

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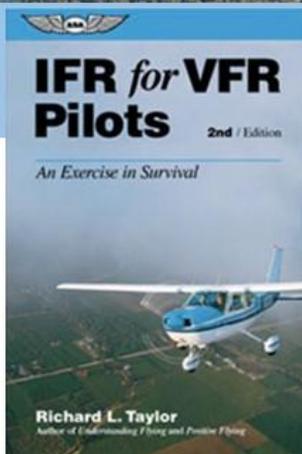


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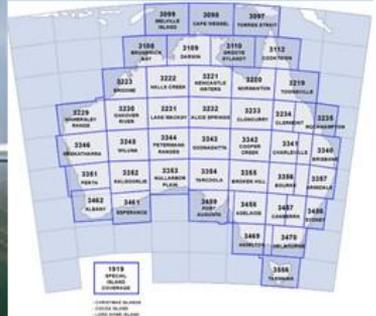
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# Some memories of RAC

by Alan Betteridge



I found a few old RAC pics I thought you may be interested in. The Miles Falcon (right) was parked at Redcliffe for many years in the mid-seventies but I never saw it fly. I have no idea whose it was or what became of it.



RXH, RIC, IRA (an aerobat) and KQS were all C150s that belonged to the club.

KOU was the club's first C172. Prior to its arrival the club used C172 EK1 belonging to Redcliffe Flying Services (Norm Thurecht's company) for its four seat aircraft.



The club later owned a PA28-180 (WMR) but I can't find a pic of it at this stage.



VH-ERS, MO20 with RAC clubhouse (right) and ops building in background.

Back then the cost was \$15 an hour, dual or solo and every weekend people would wait near the ops building hoping someone would cancel a booking so they could go flying.

My first instructional flight was on June 10, 1973 in C150 KQS with instructor Doug Young. My club number at that time was either 240 or 340 I can't remember which.

The BE58 shown in the refuelling picture below was EGE and it belonged to Redcliffe Flying Services.



# Maui flight experience

by Mike Cahill

Recently while on my return from EAA Oshkosh, I stopped off in Maui, the second largest of the Hawaiian Islands. Maui is called the Valley Isle because the valley was created in between the Haleakala Volcano, which is 10,023 feet AGL and another volcano, Mauna Kahalawai, referred to as the West Maui Mountains. The landscape on these Islands is spectacular and formed as a result of the volcanos millions of years ago. With all of this spectacular and diverse scenery I decided to take a scenic flight around Maui and the closest neighbouring Island called Molokai.



I booked a flight with Maui Flight Academy, who own two Cirrus SR22 aircraft. On arrival at the Flight Academy I was met by the owner and CFI, Laurence Balter. We carried out a quick flight plan and before long were departing the main runway at Maui International Airport. We levelled out at 1000 feet and set the plane up at that altitude for optimum viewing of the magnificent coastal scenery. We quickly reached the end of Maui before climbing to 1500 feet and crossing over to the island of Molokai.



Molokai has a population of only 7000 inhabitants and approximately 1.5 million years ago experienced a massive earthquake and landslide which caused a tsunami 2000 feet high with the result being the tallest sea cliffs in the world. Today these cliffs are truly spectacular and a must see when you visit Maui.

We continued flying until we came to a small strip where Laurence said we would land. This was at Kalaupapa. The strip was about the same dimensions as Redcliffe and I managed it ok even with the cross wind. We did a touch and go and headed further around the bays of Molokai. We came across a small rock sticking out of the ocean. Laurence told me that this is where Jurassic Park 3 was filmed.

Climbing to 3000 feet we crossed over to the other side of Molokai and headed back to Kapalua, the popular tourist area of Maui. ATC vectored us to the smaller cross runway and tried to time us to land in between arriving jets from mainland USA. This didn't work well so we had to carry out a go around which was a very short close base/join final for a full stop. My landing wasn't text book perfect as I struggled with the wider runway and the 25kt crosswind. All was good, everything was still in one piece and we taxied back to the hangar.

This experience will go up to the top of my list as one of the best. Thanks to Laurence and Maui Flight Academy for a great flight. I can



highly recommend Maui Flight Academy and this scenic flight if ever you travel to the Hawaiian Islands.

<https://www.mauiflightacademy.com/>



# Attitudes

by Bob Tait



## Human factors can be fatal

On 25th September 1978 a Cessna 172 was carrying out instrument training at Lindberg Field, San Diego, and was cleared to transit the control zone, not above 3500 ft. At the same time, a Boeing 727 was cleared for a visual approach to Lindberg and reported that the Cessna was sighted. The air traffic controller advised the Cessna of the inbound jet traffic and within seconds of that transmission, the Boeing collided with the Cessna, killing all on board.

The National Transportation Safety Board determined that the cause of the accident was that the crew of the Boeing 727 failed to maintain visual separation as required by the terms of their clearance. Also that the crew of the Boeing, having initially advised sighting the Cessna, failed to report the subsequent loss of visual contact.

The following significant events leading up to this accident are taken from the tape of radio transmissions and the cockpit voice recorder (CVR).

When the Cessna was climbing out after its last practice ILS approach, it was instructed to take up and maintain a heading of 070°M and climb to not above 3500 feet. Meanwhile the Boeing 727 was approaching 7000 feet on descent and was cleared to continue on a visual approach with the following warning from ATC.

*ATC: "Traffic at 12 o'clock, one mile northbound."*

*727: "We're looking."*

Four seconds later:

*ATC: "Additional traffic's 12 o'clock, three miles north of the field, northeast bound, a Cessna 172, VFR, out of 1400."*

*727: "OK. We've got that other twelve."*

A few seconds later:

*ATC: "Traffic's at 12 o'clock, three miles, out of 1700."*

*727: "Traffic's in sight."*

Having been assured that the Cessna traffic was sighted, the controller became more relaxed and instructed the 727 to maintain visual separation from that aircraft and call Lindberg Tower. ATC then also advised the pilot of the Cessna that the 727 had him in sight. The Boeing continued its descent and advised Lindberg Tower that it was entering a downwind leg for runway 27. ATC issued its final warning:

*ATC: "Traffic's at 12 o'clock, one mile."*

The following CVR extracts give a picture of what was happening in the cockpit in the final seconds before impact. There were four on the flight deck - the captain, the first officer (who was flying the leg), the flight engineer and, in the jump seat, another company pilot who was positioning for duty on another flight. As the 727 entered the downwind leg the following exchanges occurred.

*Captain: (Referring to the previous ATC call) "Is that the one we're looking at?"*

*First Officer: "Yeah, but I don't see him now." Then to ATC: "OK - we had it there a minute ago, I think it's passed off to our right."*

The Tower then cleared the Boeing to land.

*First Officer: "Are we clear of the Cessna?"*

*Engineer: "Supposed to be."*

*Captain: "I guess."*

*Jump Seat: "I hope!"*

*Captain: "Oh yeah - before we turned downwind I saw him about one o' clock - probably behind us now."*

Seventeen seconds later the conflict alert warning sounded in the Approach Control Facility.

*First Officer: "There's one underneath - I was looking at that inbound there."*

There followed a number of seconds of silence on the flight deck, then exclamations and the sound of impact.

This incident provides a number of examples of human performance characteristics which so often feature in aviation accidents. The question which must be asked is why did the crew of the 727 fail to see the Cessna until it was too late to take evasive action? Part of the answer probably lies in the field of physiology and part in the field of psychology. Firstly the Cessna was being overtaken from above and behind. The approach angle of a heavy jet is quite shallow, so the Cessna would have presented a very small profile to the crew of the 727. Also, since both aircraft

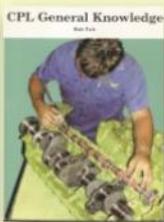
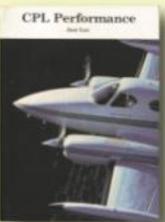
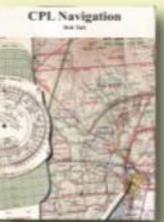
were maintaining a constant heading, the Cessna would have remained almost stationary in the 727's windscreen and so would not have triggered the eye's natural reflex to 'zero-in' on movement. The Cessna would also have been viewed against the cluttered background of the residential areas beneath, providing very poor contrast.

Secondly, the psychological aspects include the Boeing crew's reluctance to advise ATC that they had lost sight of the Cessna. Here pride and peer pressure are at work. A pilot who is cleared for a visual approach, is expected to be able to see and avoid other aircraft. If they advise that they can no longer see the Cessna, the crew members are admitting that they cannot do what the system expects them to do. Also the crew became victims of mind set. Because they could no longer see the Cessna, they wanted to believe that it was behind them. The CVR reveals them reassuring each other with such phrases as, "supposed to be...!", "guess....", "I hope!" In this regard, a multi-crew environment can be more of a problem than a single pilot situation. Each individual crew member takes the remarks of the others as confirmation, when in fact each is asking for reassurance!

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# World balloon championships

by **Graham Pukallus**

For this year's trip Pilot and Partners attended the World Balloon Championships and Festival at Canowindra, west of Sydney. On Monday 22<sup>nd</sup> April we flew to Moree, where we spent our first night taking advantage of the artesian hot baths at our favourite Phoenix Motor Inn. We also had one of many birthday parties for Billy Grieve.

On Tuesday morning we headed to Cessnock, with a stopover at Scone. When we arrived at Scone Airport we met the president of the aero club, Geoff Pinfold, who invited us to meet the crew at Pays Warbirds Museum. We enjoyed a great tour of the facilities before having morning tea with all the aircraft maintenance team, who are restoring a large number of war birds and have some of the latest aircraft used for aerial fire bombing.

Arriving at Cessnock we were welcomed by the Hunter Recreational Flying Club president Bob Finch and members. The club was formed in 1998 and caters for home builders and ultralight aircraft enthusiasts. They have over 50 aeroplanes and more than 100 members who are active flyers. Upon arrival at our accommodation at The Wine Country Inn we were made very welcome by our host before heading off to the leagues club across the road. We celebrated Bill Grieve's birthday in style and conducted an in depth briefing for our flight of Victor 1 planned for the following morning.





We departed Cessnock early the next morning in picture perfect conditions. Victor 1 is a VFR flight route that follows the coast over water at 1000ft from the mouth of the Hawkesbury River past Sydney's beaches to south of Botany Bay. It provides breath-taking views of Sydney and the coast line. It was a most memorable flight that we will never forget. The photos say it all. The flight took us to Wollongong, where we had a stopover to check out the HARS Aviation Museum.

After a morning tea break we headed to our final destination for the day, Cowra, home of the Fly Oz Flying School.

Upon arrival at Cowra we were welcomed by our tour director Allen (Ideal Tours), who took us to visit the Japanese Gardens for lunch and a wander through the gardens, followed by a tour of the remains of the prisoner of war camps, cemetery and the town of Cowra, before transferring us to the Alana Motor Inn.



The next day was Anzac Day. Allen gave us a tour of the local historical sites with a great morning tea before driving us to Canowindra, some 40 minutes to the north, where we checked into the Historical Old Vic Hotel. Our host, Jennifer told us the history of this old building, and assisted us, explaining what to see and do during the balloon festival and our transport requirements while in Canowindra. We then took part in the ANZAC day celebration, and enjoyed a sumptuous Camp Oven Dinner as the sun set over Canowindra before the entertainment commenced. A good night was had by all.



The next day was Good Friday and we were up bright and early to attend the official balloon pilots briefing at 5:30am, before watching 15 balloons being set up and launched into a clear blue sky. What a sight! A few of our crew went up for a champagne balloon flight, which was a true highlight. We spent the rest of the day exploring the old world town and its many market events before having a great Chinese meal at the local bowls club with the pilots and crews.

The following day, Saturday 27<sup>th</sup>, a cool, new day dawned with a visit to the nearby balloon launch area where some of us helped the balloonists set up the balloons and watched them take to the air in a mass take-off. After that we had free time to watch the local festival street parade. At sunset we went to watch the famous Balloon Glow demonstration at the showgrounds. What a visually spectacular event and a great conclusion to the World Balloon Championship and Canowindra festivities.



Next morning we packed our bags and met Allan for our drive back to our planes at Cowra for the flight to Moree. Arriving at Moree, George our host transferred us to the Phoenix Motel with its hot artesian baths and Chinese restaurant.

On the last morning of our trip we were met by Scott, our guide for a Cotton Gin Tour. It was a great learning and enjoyable experience with some samples to take home. Scott took us back to the airport and we were able to view the cotton fields from above as we departed towards home.

It was the end of another great trip.



### **Contacts and recommendations**

#### **Cessnock**

Aircraft parking area is at the end of Runway 17

Bob - President Cessnock Aero Club - 0428767279

Taxi - 02 49901111

Wine Country Motel - 0249932999

#### **Cowra**

Fly Aus, Mark/Lyn for refuelling and aircraft parking - 0263421812

Alana Motel - 0263411177

Ideal Tours, Allan and Dee - 0263421797 / 0412818715

Taxi - 0428634410

#### **Canowindra**

Old Vic Hotel and Balloon flights, Jennifer - 0428441819



# Maryborough wings, wheels and warbirds

by Mike Cahill

Saturday 24<sup>th</sup> August saw seven aircraft and 21 people fly to YMYB for the annual “Wings, Wheels and Warbirds” event. During the lead up to the Saturday there was a bit of anxiety with almost all week experiencing massive westerlies into south east Queensland. The four day forecast showed that the system that was responsible for the strong gusting winds was easing and it looked like the weather was going to be great on the day.

Well as they say, that was on the surface ... the forecast looked pretty good actually. We all were off blocks on time out of YRED, 0830 local, looking at the sky, as you do and it was almost 8/8<sup>ths</sup> blue sky.

With the prevailing wind just favouring RWY25 at YRED, MSF was soon airborne and we received our IFR clearance to climb to A080, direct to YBSU and on to YMYB. Stephen White was my copilot, with Maureen in the back seat enjoying the scenery as we climbed. Not long into the flight we could see a large blanket of cloud developing below us. We briefed the RNAV (GPS) approach into Maryborough for RWY17 as the cloud base appeared low. We listened on the CTAF and could hear the other aircraft from Redcliffe that were VFR checking on conditions for their arrivals into Maryborough plus various other aircraft arriving from wherever.

We flew the RNAV instrument approach and were visual before reaching our LSA (Lowest Safe Altitude). During this period we noticed a light



sports aircraft that was a bit close, but still safe. It didn't show up on MSF's traffic avoidance system, so that was a lesson – you can't rely wholeheartedly on that but need to use your own eyes and all the eyes of your crew. After avoiding the traffic, we aimed to join a downwind for RWY17, the active runway, landing behind VH-RMM and in front of VH-BHN. With our planes secured (including wheel chocks due to the inclement weather) we all headed off to view the attractions, war birds, cars and planes.

Well it wasn't Oshkosh, but I have to say that the Maryborough Aero Club had organised a really great event and it was definitely worth the trip up. There were heaps of cars and bikes to see, some vintage and some modern, all shiny and looking like new. There were joyrides available in a T28 Trojan which put you back hundreds of bucks or a model train ride for free, for the kids and some big kids.



After seeing everything, tasting a few local sausages on the BBQ and a coffee, and with a few showers approaching, we decided to depart for home. We all, well almost all, departed in line. MSF's flight home was a low level coastal scenic of the beautiful Fraser Coast, Rainbow Beach and Noosa. We didn't receive a clearance from YBSU tower to transit coastal, due to one aircraft conducting a VOR Approach and a Jetstar 40 nm out to sea, so we ventured west of Maroochy and then set sail for Redcliffe. It must have been coffee time at the tower.

With our aircraft hangered we all assembled for a few drinks at the bar to discuss the day. There was plenty of banter about the aircraft that needed extra power to taxi, love it, plus planning for the next adventure.

Any member who doesn't join in on our flyaway programme is missing out on such a great time.



Make sure you keep a look out on the Facebook page for future trips.

Thanks to Sam Keenan for organising this flyaway and to all of our flyaway crew.



# Oshkosh AirVenture 2019

*AirVenture (otherwise known as “Oshkosh”) is the annual convention of the Experimental Aircraft Association (EAA). Held every July at Whitman Field Airport, on the shores of Lake Winnebago, 300km north of Chicago, it is the biggest gathering of light aircraft enthusiasts in the world. Mike Cahill, Philip Arthur and Brett Silvester met up at Oshkosh this year to help the EAA celebrate 50 consecutive years of AirVenture at Oshkosh. They each share their impressions of the event below.*



## Mike Cahill

I picked up Phil Arthur and Brett Silvester from Appleton International Airport, about 30 minutes north of Oshkosh, at 11pm on Saturday 20<sup>th</sup> July after they flew in from Brisbane but had a little adventure of my own beforehand. I'd arrived at Appleton in the morning. I'd picked up the rental car and proceeded to find our AirBnB in a tiny town called Little Chute, only about 15 minutes from Appleton Airport. While driving along the interstate highway I noticed both the car radio and my mobile phone were sending out 'Tornado Alerts'. I didn't pay a lot of attention to it, thinking I was nowhere near Tornado Alley. However, I was about five minutes from the AirBnB when a massive, violent storm hit. The winds were so strong I had trouble keeping the car in a straight line. I eventually found the house and turned the car off in the driveway. The storm was still quite violent and it was pouring with rain but after a few minutes I decided that I would make a dash to the front door of the house and get inside as it seemed to be the safest and most sensible thing to do.



Well it seemed sensible, however as I opened the car door to make a sprint to the front door, a massive steel structured pergola crashed right in front of me. I was only seconds from getting squashed. It was later revealed that the pergola was normally located in the backyard and was set up by the owners so guests could have a quiet beer after a long day at EAA. It had been picked up by the wind, blown clear over the house and dumped in the front yard. Deciding to stay in the car for safety I closed the door and waited, only to hear a large branch from the next door neighbour's tree come smashing down onto the back of the rental car. Fantastic, I thought, I am getting out of here, and rushed inside. As the fury of the storm continued I remembered the Tornado Alert...

Within 30 minutes the storm had passed and I went outside to check on damage. Another tree had fallen on the house, luckily with no real damage. It was a really nice start to the week! Apart from that storm actually all the days at EAA were fine except for one day when we had a few showers. Perfect for photo opportunities.

Well it was the 50<sup>th</sup> Anniversary of EAA AirVenture and my fifth time attending and must admit I was somewhat disappointed. I'd expected that the 50<sup>th</sup> would have been something spectacular, but in my view it fell short in comparison to previous years. The theme was "Year of the Fighter" and I guess this is where they fell short in my opinion. Although there were F15 Eagles, F18 Super Hornets, F22 Raptors and F35 Lightnings, so all the modern day fighters on static display, only the F22 and the F35 flew in regular displays. To be fair though we were treated to a flypast of both the Navy Blue Angles (F18) and the USAF Thunderbirds (F16). For me this is what I like, the noise and sheer speed of the fast jets.





On a lower key, there were plenty of prop fighters and trainers. In one afternoon display there were 24 Mustang P51's all airborne in four ship formations along with the same number of T28 Trojans. Listening to the sounds of the P51, V12 Merlin Engines and the T28's, 9 cylinder radial engines it was hard to say which sounded the best.

Other than all the other flying displays carried out like the B29s, B17s, DC3s, the water bombing aircraft and the dozens of T34 Mentors the highlight was the Wednesday evening air show, culminating in one of the best fireworks displays I have seen, especially the finale, the incredible wall of fire. Here's a link to a video of the fireworks:

<https://www.youtube.com/watch?v=frKwLzyT9KE>

To sum up, the stats for the week looked like this: 642,000 people attended with more that 10,000 aircraft. There were 12,300 campers, 2772 International visitors, 2758 show planes with 127 takeoffs/landings per hour.

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## Philip Arthur

Oshkosh? Isn't that a brand of children's clothing? This was a question I was asked on numerous occasions when I told friends I was heading to the world's biggest airshow. It was my first Oshkosh. I'd heard about it since my dad went in the 1970s and knew it was big but it still surpassed my expectations. It is sooooo much bigger than either Avalon or Paris, the other major events I've attended. And it's more focussed on GA than military so in that respect in my opinion better than those other two events. The 'convention' lasts from Sunday to Sunday and we arranged to attend for the whole week.

Mike had been a few times before so he was able to explain where most things were but it is so large an area that it takes a while to get your head around it. We had a Bell helicopter ride on the first day to get a bird's eye view of the layout and it took me all week to cover most of the things on offer. Never a dull moment as they say. For me, the technical seminars were a major attraction. The EAA App lets you work out what's on where each day and makes it easy to compile a program of interesting topics. Want to know how best to avoid icing? How to adjust your mixture to get best fuel economy or best power? How to read met forecasts better? What the latest is in unmanned aircraft? With about 20 different

presentations running simultaneously from 8am to 5pm each day there was almost always something interesting to go to. And when the jet lag got the better of me (it took me four days to get over the jet lag) I went out and watched the airshow which ran from 2-6pm each afternoon.

One highlight for me was a restored De Havilland Mosquito. My dad was a navigator in the Pathfinders in WWII and flew in Mossies (the so-called "wooden wonder") so it has always been top of mind for me. To see (and hear) one actually flying was amazing. It's the third one that Total Rebuild, a company based in New Zealand, has restored from scratch and was only delivered in February this year. It had been shipped in pieces from NZ to its new home in Texas and only flown 17 hours including the flight up to Wisconsin so was essentially a brand new aeroplane. The head of Total Rebuild was interviewed at a forum on the Friday afternoon and told the story of how the wreck was found, recovered and restored. The interview was filmed and can be accessed via the link below. The interview is typical of the types of sessions that occurred the whole week. In this forum the first 40 minutes was an interview with retired USAF veteran Dick Rutan, followed by the Mosquito restoration discussion.

<https://vimeo.com/350372918>





Seeing a real B17 Flying Fortress and B29 Superfortress up close and in the air was amazing too. There were so many other historic aircraft and of course the modern day fighters.



There were also all the light sport aircraft of all shapes and sizes and the GA aircraft suppliers, whether it be Cirrus, Diamond, Piper, Cessna, Beechcraft and the larger corporate types like Pilatus. Everyone who is anyone was represented as well as a huge variety of aircraft equipment suppliers. Some had their own large display area while others rented booths in one of four large halls. I didn't even really investigate these, there were too many of them.





So, yes I'd recommend a trip at least once to Oshkosh to any light aircraft enthusiast. Accommodation in the area around Oshkosh is booked out early so we had an AirBnB at Appleton, about 30 minutes up the interstate motorway to the north. It was an easy drive down and back each day and the traffic management was so good that we never had to queue. Avalon management could learn a thing or two from the EAA.





We flew into Appleton from Chicago. If you want to fly yourself in, you can arrange to fly in with a US instructor. If you do fly in and camp you will probably have a really good experience, being fully immersed in the Oshkosh world of aviation for a full week. Camping is a reasonable option given the warm weather we encountered. However, there is still a risk of storms and rain (as mentioned by Mike) so for me an AirBnB makes more sense. It's good to retreat to a home like environment at the end of the day and enjoy a barbie. Having said that, the EAA do have events on site most evenings so they would have been interesting to attend. Flying into Appleton is easy and it's easy to hire a car there. From next year I understand Qantas will have direct flights from Brisbane to Chicago so there's really no excuse for not going! My only other recommendation is to fly into the US a few days before the start of the event so that you can recover from the jet lag and make the most of what is a really busy week.





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# Engine management lessons from Oshkosh

by Brett Silvester

## Introduction

Engine management is often debated between pilots and such debate is likely to continue as there are numerous parameters in effect for any given situation. As a result, engine management will continue to be a hot topic until aircraft have Engine Management Systems (EMS) installed, as commonly found in motor vehicles.

One of the things I wanted to learn from the experts at Oshkosh 2019 was how to improve my understanding of aircraft engine management. I was particularly interested in the best management methods for the Teledyne Continental IO-550 naturally aspirated engine found in the Beechcraft Baron/Bonanza, Cessna TTx, Mooney M20 and Cirrus SR22, when operated under South East Queensland conditions of "ISA plus" temperatures and typical cruising altitudes of 6,000-8,000ft.

The following is an outline of my takeaways regarding engine management from Cirrus and Teledyne Continental Motors (Continental) presentations and discussions at Oshkosh, including the subjects of engine oil, cruise power and mixture settings.

## Engine Oil

Engine oil has five major functions:

- Reduce friction between moving parts to a negligible amount
- Provide necessary cooling to the internal areas of the engine that cannot be cooled by external means
- Cushion moving parts against shock and help seal the piston rings to the cylinder walls

- Protect the highly finished internal parts of the engine from rust and corrosion
- Keep the interior of the engine clean and free of sludge, dirt, varnish and other harmful contaminants

Internal engine parts rely on the protection of an oil film, once the walls become dry, they are subject to corrosion damage from the moisture that is always present in the atmosphere and inside the engine. An inactive engine is therefore susceptible to corrosion damage.

Continental recommend that for all cruise power settings, Cylinder Heat Temperatures (CHTs) should be in the 360° to 400°F range and the oil temperature should be between 180° and 210°F. We asked a Continental representative at the show why they recommend that their engines run rich of peak (ROP). His response was that they want the oil temperature to be above 180°F (at the sensor, giving around 212°F on underside of the pistons) to assure condensation burn off in the oil which can lead to internal corrosion.



Moisture enters the engine each time you start it up and shut it down. Immediately after start up, moisture will condense on the cold metal parts inside the engine due to the rapid temperature change that is taking place. The more humid the atmosphere, the more serious the moisture issues. This condition is at its worst in high humidity coastal regions such as Redcliffe.

Once the engine oil is hot enough, however, the water absorbed by the oil will turn to steam and once it becomes a vapor, it will be expelled through the crankcase breather. It is therefore recommended to run engines at least once a week in flight, with thirty minutes at cruise power and oil temperatures of 180° to 210°F usually being sufficient to completely “dry out” the lubricating oil. This practice, along with frequent oil changes, will help retain the engine’s mechanical health.

### **Engine Management for Cruise with Naturally Aspirated Engines**

The term “peak” refers to the peak Exhaust Gas Temperature (EGT) data point that occurs in a particular cylinder when it burns the optimum fuel to air mixture ratio of 14.7:1. This ratio provides an exhaust gas with close to the highest combustion pressures and temperatures. EGTs during cruise should typically be within 50-75°F of peak. If a percent power gauge is installed it provides an indication of the total power output i.e. 75% power setting on the Continental IO-550 provides 310hp X 75% = 232.5hp. If the fuel:air ratio is adjusted to provide less than the optimum amount of fuel for a given air flow, the engine is said to be running lean of peak (LOP). If adjusted to provide more than the optimum amount of fuel for a given air flow, the engine is running rich of peak (ROP).

Air and fuel flows – balanced or not?

For best engine performance, the airflow to each cylinder should be as close as possible to the same value. Current production Teledyne Continental Motors engine models, such as IO-550-N and TSIO-550, feature balanced induction systems. When leaning with a balanced induction system, the difference in mixture setting between the first

cylinder EGT and the last cylinder EGT reaching peak temperature is an indication of injector performance. Typically for balanced induction systems, we would expect no more than 0.5 GPH flow rate difference between first and last cylinder EGT peaks. It is advisable to keep a record of the flow rate difference for your engine, so you can detect any increase over time and possible injector fouling.

If you lean an engine too much it will start to run rough, this is when the fuel:air mixture in some cylinders has become too lean to support normal combustion. This data point is used when utilising the “engine rough” leaning technique. With the introduction of Position Tuned Fuel Injector Nozzles difficulties with LOP operation have virtually disappeared and so balanced induction systems engines can now operate smoothly and efficiently at LOP power settings.

High Power Cruise and ROP or Low Power Cruise and LOP?

Choosing to operate at high power cruise, commonly referred to as “best power”, allows you to achieve greater horse power from your engine and therefore faster cruise speeds. This means that you will be aiming to adjust the mixture to be ROP and the excess fuel, by way of changing the combustion pressure and temperature, will lead to slightly reduced power output with some engine cooling.

Low power cruise is generally defined as power settings below 65%. A cruise setting with low power and LOP is commonly referred to as “best economy” and allows the engine to use less fuel per mile travelled and still have sufficient horse power at a slightly reduced cruise speed. When running LOP excess air will provide some engine cooling.

Your first decision when managing your engine in cruise is to decide on your desired airspeed, range profile and therefore desired power setting. You may prefer a high power cruise at Best Power or a low power cruise at Best Economy. Your choice will determine your power and mixture settings at a given Density Altitude.

When it comes to cruise power, you first want to select a % power setting between 75% (High Power) and 55% (Low Power) for optimal engine durability. You then need to decide whether you want to run ROP or LOP. Some benefits of running LOP are:

- Improved engine efficiency
- Greater fuel economy
- Smoother engine operation
- Longer spark plug life, less fouling
- Reduced operating costs and
- Reduced engine temperatures

#### EGT Leaning Method

The graph on the next page shows how EGT, CHT and engine power are affected by changing the mixture ratio. To lean your engine for best power (ROP) first select your desired power setting (say 75%) at full rich, then smoothly lean the mixture until the first cylinder EGT peaks. Next, enrich the mixture until the first cylinder's EGT is 75°F below peak temperature to establish the proper mixture, then continue to monitor engine temperatures, especially CHTs. If your engine temperatures are hotter than recommended and you are ROP, enrich the mixture further to cool the engine.

To lean your engine for best economy (LOP), firstly select your desired power setting at full rich then smoothly retard the mixture until the last cylinder EGT peaks. Next, continue leaning until the last cylinder's EGT is 50°F below peak temperature to establish the proper mixture, then continue to monitor engine temperatures especially CHTs. If your engine temperatures are hotter than recommended and you are LOP, lean further to cool the engine but not so far as to make the engine run rough. Alternatively, you can cool the engine by enriching the mixture and returning to ROP operation.

LOP operation reduces power by up to 10% for a given RPM and manifold pressure setting. So, you may start by setting your engine power higher than your desired end value, anticipating that the power will naturally reduce during the leaning process e.g. an initial setting of 68% power for a final 65% power value.

If at any point you change altitude then the altitude density will change and therefore you will need to

adjust the % power and readjust your mixture setting.

How do operators like their engines managed?

Some individual operators such as Mike Cahill, who knows his engine characteristics very well and changes his oil every 30 hours, prefer the benefits of running their engines LOP. Flight schools that operate numerous engine types in different airframes often stipulate that their engines are run ROP however. I assume that this is because:

- Some engine manufacturers recommend running ROP
- Training flights are generally frequent and short in duration
- ROP is easier for students to understand
- It's easier to go from ROP to maximum power if required

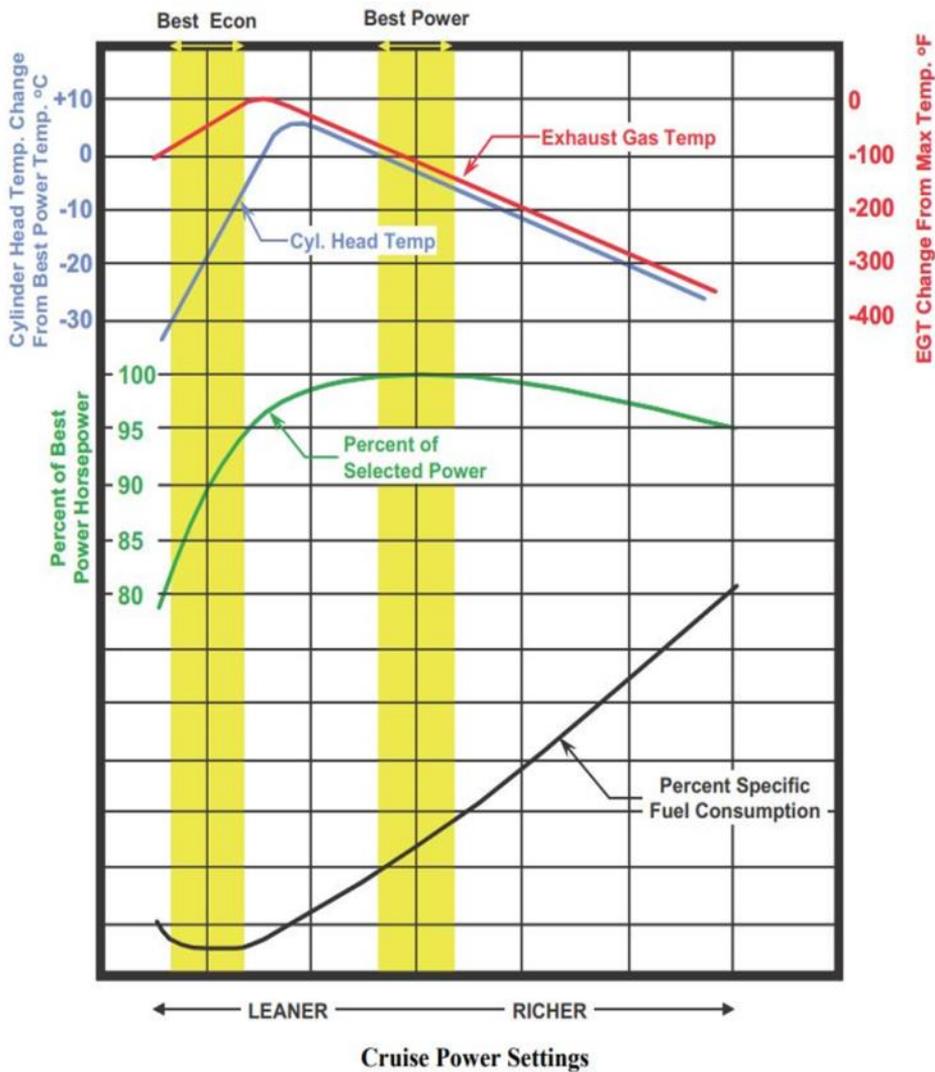
From an instructor's perspective I'm told operating ROP results in one less thing for students to concentrate on in the initial stages while they are still learning attitudes, radios, etc. ROP is also easily transferable between airframes/manufacturers as not all recommend operation at LOP. It is therefore easier to teach ROP initially and introduce LOP later on for those airframes and students that have the capacity to adopt the practice.

#### Conclusions

Always manage the engine in accordance with the instructions in the Pilot's Operating Handbook for the specific aircraft. It is not about which engine management procedure ROP or LOP is better, it is about what is most suitable for your situation.

Whichever procedure you are using you must continue to monitor engine temperatures, especially CHTs, and understand which procedure you are going to use to reduce engine temperatures if they exceed the recommended levels, either by enriching the mixture for ROP or leaning the mixture for LOP.

Technical information in this article was primarily sourced from Teledyne Continental Motors and Cirrus Aircraft.



Source: *Tips on Engine Care - Your Personal Guide to the Continental Engine*  
TEC-1 ©2010 Teledyne Continental Motors, Inc.

CHT - Cylinder Head Temperature  
EGT - Exhaust Gas Temperature  
EMS - Engine Management Systems  
GPH - Fuel Flow, US Gallons per Hour  
ISA - International Standard Atmosphere

LOP - Lean of Peak  
Peak - A cylinder's maximum exhaust gas temperature  
ROP - Rich of Peak  
RPM - Revolutions per Minute  
Continental - Teledyne Continental Motors

# Stanthorpe weekend

by Bryan Galvin

Our annual weekend trip to Stanthorpe this year took place on 15<sup>th</sup> and 16<sup>th</sup> June. Weather was an interesting factor both flying there and coming back.

The weather going to Stanthorpe was cloudy with occasional showers. Having said that, the absence of the traditional winter westerly winds meant there was no turbulence. I had an uneventful flight there except for some rain squalls near Stanthorpe.

A total of eight planes flew in with 23 people on board. Some were old timers and for some it was their first time on a Stanthorpe Wine trip. Alan, our bus driver / tour guide picked us up at 9:30am and we were soon off tasting the delights of various wineries. Despite a valiant effort, we only managed to do two wineries before lunch. These were Ridgemills and Whiskey Gully Wines.

For those in the know, Ridgemills is once again producing that excellent red wine known as "The Mongrel". For some reason, Sam, a most ardent supporter of The Mongrel in the past, did not buy any! Both wineries were excellent with great hospitality. Lunch was at Claudia's Country Restaurant where we had an excellent two course lunch complemented by more wine.

After lunch we managed two more wineries which were also very good, especially Rumbalara Estate Winery with its well-known animal named wines and the Impi Thickshakes (12% alcohol content). A few people tried one and were rewarded with a feeling of euphoria for the rest of the afternoon. We finished the day with a stop at the Brass Monkey Brewery for a cleansing ale.





Because of the cloud cover the weather was quite mild. Everyone behaved except for Tanya who got into trouble at the Brass Monkey for letting the dog in out of the rain. The proprietor lady chased the poor wet dog around the brewery, threw it out into the rainstorm and then admonished Tanya for letting it in!

It was also fair to say some of the planes replaced an hour's flying time of fuel with an equal amount of wine on the return trip. I think some wineries did very well out of the Club!

Accommodation at the High Street Motor Inn was well organised and we retired for a break before reconvening for dinner. Again, dinner was a three course meal and excellent. With such a big day, most people retired in good order and everyone had vacated the restaurant and bar well before midnight.

Sunday brought challenging weather and our plan to go sightseeing in the morning was altered because of fog in the morning, cloud and thunderstorms for the trip home. It was foggy until about 10am so we visited the Olive Plantation and shop but with the fog lifting we made a unanimous decision to return to the airport for an early return to Redcliffe. The weather forecast was for deteriorating conditions so we opted for caution and an early flight.

Some planes flew direct to Redcliffe though they had to make significant diversions to avoid storms. Some planes flew via Toowoomba and they ended up with low cloud for some of the way. All returned to Redcliffe safely.

All in all a great weekend!



# Club cleanups

Prior to the 50<sup>th</sup> anniversary celebrations we had a couple of club cleanups. An enthusiastic band of members volunteered to make light work of the tasks at hand. Thanks to all those who took part.





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# Cunnamulla fella festival

by Alan & Suzanne Carlisle

Do you need an outback Queensland experience? Outback Australia is our favourite place. Recently we read about the Cunnamulla Fella Festival, held at the end of August each year, one week before the nearby Birdsville Races. We thought it would be the perfect getaway, so using the Queensland government's Outback Festival Guide we planned a trip out there.

Arriving in Cunnamulla on Friday 30<sup>th</sup> August we caught the local taxi from the airport into town (yes, they have a taxi way out west). We stayed at the Warrego Hotel/Motel. It has brand new standalone cabins (not demountables) in a garden setting – most impressive. They also have first rate motel units. After settling into our beautiful accommodation, we went shopping and were amazed to find some beautiful footwear 20% cheaper than back home in Brisbane. A trip to the local visitor information centre ensured we had our tickets for the festival and an inspection of one of the most impressive tourist facilities we have ever come across - allow one hour.

That evening we walked to the festival centre and loved the rodeo riding, mini bulls for the kids and big bands, including Adam Brand, winner of 12 Golden

Guitars. We got our money's worth on the first night. Saturday breakfast commenced at 0700 hours in the main street, soon followed by an all-day street market where for a small donation we had a pocket knife sharpened and bought a beautifully hand-made (by the seller) leather bag 50% cheaper than back home in Brisbane. Then we experienced the most remarkable sheep dog demonstration we have ever had the pleasure to witness. All day long the nearby rostrum had musicians playing. Wood chopping and whip cracking seminars had us fascinated too.

Then came the Cunnamulla Fella Festival highlight - the PBR bull ride. Professional Bull Riders Inc. (PBR) was founded in 1992 by 20 accomplished bull riders who decided to develop bull riding – the most popular event in traditional rodeo – into a stand-alone sport. Since launching in 2006, Professional Bull Riders Australia (PBRA) has grown to become a premium sports experience with almost half a million fans and 16 Cup Series Events annually, including at the Cunnamulla Fella.



We took advantage of the VIP Chute Tour, an exclusive behind-the-scenes tour of the PBR and Rodeo by the Australian Rodeo Queen Entrants (highly recommended - \$100pp). We had VIP access to the rear of the bull ring and met the riders, the safety clowns, the stock agents, the Master of Ceremonies, Adam Brand, and his support team, as well as the Mayor. We shared dinner and drinks with the Cunnamulla Fella Festival team and then were given the VIP seats on the arena, next to the MC and judges. What a special privilege! This was our first Bull Ride and now just ask me anything about the 8 second adventure. Adam Brand obviously just loves these gigs, and he insisted we come back for drinks after the show. How beautiful people are in the outback. The festival show finished with one of the best fireworks I have seen since New Year's Eve 2000.

On Sunday we flew 10 minutes to Eulo, an opal town 70km west of Cunnamulla, where the Fella Festival continued. The local "international" airport is huge and only two minutes' walk from the CBD of Eulo - what a town! One pub, one leathersgoods shop, one opal shop, one police station, one arty shop and one school.



*Unseasonal flies ensured this fashion accessory was the biggest seller this year*



Eulo had a street market all day. We had lunch of camel sausages and local beef hamburgers. There was more retail therapy, Eulo having the most amazing opal and leather stores I have ever come across. With a new leather belt, we were off to the World International Lizard Races, where we purchased a very good-looking Lizard called "Flat Out". After two heats we were competing in the World Lizard Racing Championship. Our lizard led from the start and was only overtaken by half a head at the finish line. We were runners up in the World Lizard Racing Championship – that was a great thrill and the local Eulo school benefited from our enthusiasm. Just the best day ever.

*Main Street Eulo, the aircraft were parked 100 metres to the left of where Suzanne is standing*

Back into the aircraft we flew ten minutes north west to Yowah, another opal mining settlement. Wow what a special spot! The only place to stay is the Artesian Caravan Park, that has motel rooms and an executive cabin. It has a number of private bath rooms (free), with two baths each, for couples to soak up the artesian water. Anne, the owner of the caravan park, picked us up and conveyed us to our Executive Cabin where we had our own artesian bath, fire pit and BBQ. We watched meteors sailing across the skylight whilst lying in our most private spa bath. There is a general store where you can buy all your food supplies and on Thursdays they have a camp community cook up.

The next day was Monday and after another 12 minute flight further west we were at Thargomindah, where the local tourist walk commences and finishes at the airport. Did you know that Thargo (as the locals call it) was the first town in Queensland to have electricity? In 1898 it used water pressure from the Artesian Basin to generate hydro-electric power. The tourist walk would make Melbourne and Sydney jealous – it's brand new and really impressive. Allow three hours to walk and explore.

*Cunnamulla is situated on the banks of the great Warrego River*



*Eulo Lizard Races. No real lizard was harmed during these races, jockeys were required to wind their plastic lizards over a 25 metres straight track*



Our next flight was a 30 minute one north to Quilpie where we had a short 15 minute walk from the famous Amy Johnson Airport. Lunch at the local pub was a treat. Our final flight that day took a little bit longer to Charleville (40 minutes) where you can visit the Cosmos Centre and view the incredible beauty of the Milky Way Galaxy through powerful telescopes unaffected by lights and pollution. We bedded down for the night at the Mulga Country Motor Inn. It's the nearest to the airport with only a 5 minute walk to your plane. It's also only 5 minutes from the Cosmos Centre. The refuellers at Charleville Airport have a loan car that they lend to aviators to get around town free of charge, providing you buy your fuel from them and return it next day full of fuel. As we didn't even use one litre of fuel driving to the motel and back I just give them \$10 donation to keep the loan car going for aviators – they appreciate it.

If you wanted more adventure outback, you could add Innaminka, the Dig Tree and Birdsville onto this trip to round out a great experience. The Cunnamulla Fellow Festival followed by the Birdsville Races – thoroughly recommended!

<https://cunnamullafellafestival.com.au>

<https://www.warreghotel.com.au>

<https://www.outbackqueensland.com.au/town/eulo/>

<https://www.yowahcaravanpark.com>

<https://www.mulgacountry.com.au>

<https://www.cosmoscentre.com/home>

*Cunnamulla local enjoying a cool beer outside the local pub*





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