Approach

AIRCRAFT OWNERS AND PILOTS ASSOCIATION OF NEW ZEALAND
SUMMER 2023

Flying the Tasman
Darfield '23
District Plans present challenges
Flying neighbourly

AOPA FLY-INS • INDUSTRY NEWS AND VIEWS • COMING EVENTS AND MORE

Now Accepting PayPal

Buy online
www.avcraft.co.nz

Avcraft ENGINEERING NZ LTD

*All pricing Exc GST and Shipping

Feilding Aerodrome (NZFI)
Contact
06 212 0920
mat@avcraft.co.nz
avionics@avcraft.co.nz

Garmin Flight Deck

Garmin G3X

Upgrade from legacy mechanical instruments to a modern touchscreen glass cockpit with solutions for PFD, MFD and optional engine indication system (EIS) capabilities.

Garmin GFC500

It's the Autopilot Solution GA Aircraft Owners Have Been Waiting For
Cost-effective, precise and smooth in-flight characteristics, built-in self-monitoring capabilities and lower cost of ownership when compared to older autopilot systems
Designed for light piston, fixed-wing aircraft, GFC 500 is now available for a growing list of aircraft models

- Leverages certificated flight instruments such as the G5 and GI 275 for attitude reference, and optionally flight displays such as the G3X Touch or G500 TXi for display of autopilot modes and flight director cues.
- Robust feature set, including safety features such as underspeed and overspeed protection, a dedicated return-to-level (LVL) mode button, Garmin ESP™ (Electronic Stability and Protection), Flight Director (FD), coupled approaches and missed approaches when paired with a compatible navigator and much more
- Offers 2-axis (pitch and roll) capabilities with optional pitch-trim; yaw damper optionally available on select aircraft

uAvionix AV-30-C

uAvionix AV-30-C ADI/DI and secondary HSI

Cutting-Edge Technology Without the Cutting.
AV-30 fits in your existing 3" panel slot seamlessly. By mounting from behind, it preserves the "round dial" look, and eliminates the need for cutting or replacing your panel.

From $2,499USD*

Get more

AV-Mag magnetic heading now available for AV-30-C. AV-Link wireless connectivity soon to be available for AV-30-C, see traffic⁺ and update software.

⁺When paired with an approved ADS-B in source

Aithre CO Detector

➢Portable carbon monoxide detector with charger and companion iOS/Watch OS application for monitoring carbon monoxide during travel or on-the-go

➢Provides simple operation via on-off switch and provides LED indication of carbon monoxide values that are color coded to ranges of carbon monoxide

➢Includes an audible alarm above 50ppm CO gas concentration

➢The only unit with a **10 YEAR** sensor life

Only $255NZD*

AITHRE
TECHNOLOGY FOR MONITORING HEALTH IN FLIGHT

Sprague Wireless Cable Tension

SPRAGE INSTRUMENTS
AVIONICS | TESTING | INSTRUMENTS

Demo unit available, call us today

Only $2,245NZD*

12 Reasons you need to be using the WIRELESS METHOD

➢WIRELESS—more convenient than ever
➢Comes Calibrated and Certified with +/-2% full scale accuracy
➢Its so easy to use YOU ONLY NEED ONE HAND!
➢Readings Are right in front of you. You don't have to lock/unlock to get a reading
➢The SMALL HEAD will let you easily access hard to reach areas. No other Cable Tension Meter gets in these tight areas
➢A cable-free connection between the head to the meter—no fumbling required to capture a measurement
➢BUILT—TO—LAST All stainless-steel contact points with an aluminium lightweight body
➢Includes a rugged carrying case
➢Metric measurement capabilities
➢Multiple cable sizes easily changed at the push of a button, enabling all your tension measurements in one tool
➢Built in temperature sensor
➢THE WIRELESS GRIPPER WILL PAY FOR ITSELF WITH THE TIME SAVINGS YOU WILL GET

APPROACH: *SUMMER 2023*
ISSN 2422-8230 / 2538-1083 (*Online*)

Coming up

- *AOPA South Island Christmas gathering, Timaru, 2 Dec*
- *AOPA HB fly-in, Waipukurau, February, details tba*
- *AOPA NZ AGM 2024 Timaru, 8–10 March 2024*
- *Warbirds Over Wanaka 29–31 March 2024*
- *Watch your inbox for notification of One-Day Fly-ins*

For more visit www.aopa.nz

Cover photo: Taildragger weekend 2023 at HB & EC Aero Club
Photo credit: Anna Mackenzie

Contents

Regular Columns

AOPA (NZ) APPROACH Magazine is published by AOPA NZ Incorporated
Articles on relevant topics are welcomed. The editor reserves the right to edit submissions for clarity and/or length. Submission does not guarantee publication. Editorial submissions should be sent directly to the editor at editor@aopa.co.nz
ISSN 2422-8230 (print) / **ISSN 2538-1083** (online)
Editor: Anna Mackenzie ph 027 3345466; anna.mackenzie@aopa.nz
Advertising enquiries: Don Ryder ph 04 479 1367 / 027 442 0016 / don.ryder@aopa.nz
Editorial support: Ross Millichamp ph 027 9600724 / ross.millichamp@aopa.nz
Administration: admin@aopa.nz
Postal address: AOPA NZ Inc, members Services, Box 114, Geraldine 7956

Deadline for ads, articles and photos for the next (Autumn) issue: **20 January 2024**.

President's Comment

If you are a YouTube user, you might like to take a look at 'AOPA: Your Freedom to Fly @flywithaopa' which offers a very good series of articles and interactive investigations from the AOPA Air Safety Institute, until recently led by Richard McSpadden, AOPA (USA) Senior Vice President.

The worldwide aviation community was shocked and saddened to learn of Richard's death on 1 October this year in an air crash near Lake Placid, New York.

Richard had enjoyed a celebrated aviation career, including being former commander and flight leader of the US Air Force Thunderbirds. Since joining the Air Safety Institute in 2017, he had turned his attention to increasing safety awareness within the GA community.

At the time of the accident, Richard was sitting in the right-hand seat of a Cardinal Cessna 177, with the owner and PIC in the left. With two pilots onboard, the circumstances of the crash are thought provoking, especially in the light of his recently presented study entitled 'When is the impossible turn possible?'. Our sincerest condolences go to Richard's family. His loss is also a tragedy for the wider GA community.

We also share our condolences with the Wallis family over the recent loss of one of our own larger than life figures of New Zealand aviation, Sir Tim Wallis.

On a lighter note: summer is coming and we have to wonder what weather conditions it will offer for this season's gatherings. You might like to note in your diary that the AOPA NZ 2024 AGM is in Timaru, currently booked for the weekend of 8–10 March 2024. Coming up soon are the North and South Island Christmas get-togethers, and keep an eye out for details of One Day Fly-ins.

As individual pilots and as a GA organisation, we value and appreciate the strip access offered us by private landowners. AOPA NZ is taking a proactive stance regarding developments within local councils that threaten to limit aircraft movements to private strips. Executive Committee member, John Evans has been working tirelessly on the aircraft noise issue and making us aware of the RMA139, as well as liaising with strip owners, to ensure we can continue to enjoy the use of private strips. His article on page 10 provides detailed information.

The CAA campaign 'Work together, Stay apart' aims to reduce mid-air accidents and air proximity events at unattended aerodromes. The first round of seminars, 'Plane Talking 2023' is currently touring the country. Dates and venues can be found on the CAA website, or ask at your local aero club. Do consider going along; safety should always be our priority, and it's important that each one of us is aware that we always have things to learn.

Sue Kronfeld, President

From the Editor

An aviation highlight of the last few months has for me been the Taildragger Weekend at HB&EC Aero Club. Established back in 2008, the event comprises convivial company, hard-fought competition and excellent food. This year was no exception. Bad weather north and south saw only a few out-of-towners but local turn-out was strong and the event much enhanced by Saturday's blue-sky weather. My AOPA high vis vest (and my sunblock) came into use as I joined the judges and officials on the grid, aiming for a shot that captured the essence of a perfect STOL landing (photo at right shows light class winner, Hayden Faulknor, about to touch down with a near perfect line landing in his Savage Cub).

Conversations across the weekend ranged across the usual aviation-related topics and beyond. Lunch was a stand-out, largely due to weeks of labour – including making fresh falafel while the STOL event was on – by Stephanie Eilers, one of the event's key instigators way back when. Sunday's post-rugby final gathering at Waipukurau was a little dampened by a change in the weather (perhaps not just the weather), but still provided a spread of GA entertainments.

On the larger stage, in this issue we also cover two international aviation events, with Jay McIntyre at Reno and Ross Millichamp at OshKosh, and cross the Tasman with Murray Smith, amongst other great stories.

I highly recommend John Evans' article on changes creeping into District Plans. The trend he describes will impact on all our right to fly, on strip owners, on aviation events such as our regular gatherings, and even, and perhaps especially, on spontaneous fly-arounds with a few friends, dropping into an airstrip or two. Ensuring we don't drop the ball on this one rests with each and every one of us.

Anna Mackenzie, Editor

Fire extinguisher update

Last issue we ran an article on fire extinguishers for aviation use. We've since been told that halon extinguishers are legal in New Zealand for limited applications where there are no suitable alternatives, such as aviation, however they do require an import exemption approved by the EPA. All halon imports are tracked by the EPA and require annual reporting of quantities and end use.

Mat Bailey of AvCraft Engineering Ltd reinforces that commonly available household fire extinguishers are totally unsuitable for use in and around aircraft (unless of course there is no other option and lives are in danger).

Readily available dry powder ABE types are frequently fitted to aircraft, however they contain ammonium phosphate, which is known to be extremely corrosive to aircraft structures, electronic components and instruments. Even discharging one in the vicinity of an aircraft could cause corrosion damage from the agent spreading and settling on nearby surfaces. Discharging a dry powder extinguisher in the cockpit of an aircraft in flight will likely result in an immediate 'white out', with the agent causing breathing difficulties along with eye irritation, nausea and other side effects. The dry powder agent will infiltrate every nook and cranny in the cabin, including instruments and avionics. By contrast, halon gas evaporates leaving no residue and is recognised as being of low toxicity.

Halons are gaseous when discharged, don't conduct electricity, and extinguish fires by disrupting the chemical reaction causing them. There are two variants: Halon 1211, a steaming agent, used solely in portable extinguishers, and Halon 1311, a flooding agent, typically used in fixed-location extinguishers such as cargo holds and engines.

The downside is halon's detrimental effect on the ozone layer, which is why it is no longer manufactured. Both new and overhauled extinguishers use recycled gas. The environmentally friendlier alternative, halotron, is almost as effective as halon, Mat says, and has similar properties in that it leaves no residue and is low toxicity.

While fire extinguishers are not mandatory for Part 91 Operations in New Zealand, there are still plenty of halon extinguishers fitted to aircraft. Mat comments that many of these will be long overdue for inspection and hydrostatic testing. "Even though they're not mandatory equipment, if fitted, they should be maintained as part of the aircraft equipment," he says, but notes that it's not cost-effective to ship them overseas for testing with new units available for around $500.

Avcraft Engineering NZ Ltd currently has H3r portable halon extinguishers available (for Avcraft's contact details, see the inside front cover). Halotron extinguishers offer an environmentally preferable product but are elusive, come in at around double the price and bureaucracy still pertains – a situation that might usefully be considered by the EPA.

CAA safety campaign

Work together
Stay apart

'Work together, Stay apart' is an industry-wide safety campaign led by the CAA that aims to reduce the likelihood of mid-air accidents and the number of near collision and air proximity events within the circuit at unattended aerodromes.

Launched in June this year, the campaign will run for two years and include initiatives such as seminars for industry participants, working groups on specific issues, and educational material. The first seminar, 'Plane Talking 2023', has been well received around the country, and there's plenty more to come. For more information about the safety campaign and what's coming up, check out the CAA website: aviation.govt.nz/wtsa

New VNC chart time

As from 30 November, we are no longer permitted to use old VNC charts. The new and convenient AOPA NZ VNC Chart book is now available from the AOPA NZ website at a special reduced member price ($88 including gst and postage). Order yours today!

New Cessna interiors

The latest cabin up-dates from Cessna include both enhanced comfort and impressively stylish interiors that any aircraft owner would be proud of. There are also up-dated instrument panels and new exterior paint styles on offer. Please check out their new ad on the inside back cover.

Welcome to new members:

Andrew Moir, Te Awamutu; Andrew Barron, Timaru; Peter Galuszka, Wellington; Adam Seumanutafa, Hastings; Jeff Kerwin, Hamilton; Jackie Bumby, Tauranga; Jon Wallace, Paraparaumu; Hayden Cook, Patea; Robert Prochownik, Panmure; Reon Blake, Ashburton; Philip Milne, Kapiti; Craig Riley, Napier; Craig Stobbs, Rangiora; Taylor Green, Rangiora; Nick Taylor, Alexandra; Ryan Humphreys, Rangiora; R Hyndman, Waihi; Craig Emeny, Chatham Islands; Simon Matthews, Birkenhead; Nigel Davy, Queenstown; Andrea Loughlin, Sydney;Sean Mickleburgh, Te Puke; Bruce Gardner, Rangiora; Simon Lowther, Pukekohe; Nick Rayner, New Plymouth; Sarah Sharpe, Paekākāriki; Dan Readman, Hamilton

Vice-President's view

In August Chris Hoffman, John Evans and I attended the Aviation New Zealand conference in Christchurch. While the meeting covered a wide range of aviation issues, it was surprising how many were of relevance to private aircraft owners.

The future of fossil fuelled aircraft was a common theme. There has been a lot of talk in the media about the development of electric airliners, but Air New Zealand admits that the technology still has some way to go and that the medium term future of low carbon aviation appears to be sustainable aviation fuel run through traditional gas turbine engines.

Although Christchurch Airport Company has gone so far as to install an electric aircraft charging station, it acknowledges that the challenges facing the industry go beyond just building the aircraft.Michael Singleton said that getting electricity to the charging station and into the aircraft will be a challenge in itself. The company's modelling suggests that charging an aircraft for a short run, such as Christchurch to Wanaka, will take more electricity than it currently takes to run the entire terminal!

The arrival of automation into the aviation scene seems much more imminent. Air New Zealand Chief Pilot David Morgan thinks that we are moving from a 'people-centric' to a 'system-centric' environment. 'Increased automation with less human tactical interventions' were the words he used.

Surprisingly, he also believes that we currently have too much controlled airspace in New Zealand and that the need for it will decrease further with automation.

Everybody seems surprised at how quickly the airline industry has come back to life after covid. However, airline recovery and growth has serious implications for private aircraft operators. The demand for pilots has put training organisations under huge pressure. They in turn are putting pressure on parts and engine suppliers, which is one reason why private aircraft operators are facing long delays. Second-hand aircraft are also being snapped up by training organisations, making them expensive and hard to find for aspiring private owners.

Maximilian Buerger of AFM Aero estimates that operating costs for training organisations have increased by 30% since covid. He predicts that aircraft operating costs and shortages will continue to get worse into 2024-25.

Carlton Campbell of CAA introduced their 'Work together, Stay apart' campaign which has subsequently been rolled out around New Zealand. The early focus has been on the overhead join for right-hand circuits, which he believes has been taught in at least six different variants in the past. The campaign is striving for agreed, consistent training and practices. Carlton also recommends that circuit refresher work occurs at the start of the BFR when the pilot is still fresh.

Chris Brandolino of NIWA described the improvements that had been made in their weather modelling in recent years. Their current 'ensemble' system simultaneously runs multiple instances of the forecast model using slightly different conditions or scientific configurations. While short-term and long-term forecasts are improving, the medium-term forecasts (two to three weeks) remain difficult.

Herwin Bongers, an Air New Zealand Captain who also serves on the ICAO Mental Health Working Group, gave a sobering address on health issues amongst commercial pilots. Research suggests that 56% of commercial pilots do not disclose medical ailments for fear of the impact on their careers. Failure to declare can also mean failure to get treatment, which can have long-term health implications.

The research also found that 40% of commercial pilots have suffered from 'moderate psychological distress' at some point but, again, may not seek treatment for fear of career prospects.

I guess what he was saying was that pilots are not superhuman, and suffer the same ailments, weaknesses and vulnerabilities as the wider population. Dealing with these issues by excluding affected people from aviation is both unreasonable and unlikely to succeed in the long run, especially as the demand for pilots worldwide is going through the roof.

My thanks go out to Aviation New Zealand for organising and hosting this high quality event.

Fly safely through the coming summer season.

Ross Millichamp, Vice-President

Darfield 2023

By Ross Millichamp

The Darfield Fly-in is one of the most popular AOPA NZ social events of the year. Run in mid September, it offers good proximity for a number of members and the early spring weather usually allows great access into a multitude of strips across the plains and in the mountains. Usually!

In 2023, after many years of uninterrupted events, the weather gods made themselves felt and the Darfield Fly-in was pretty much a wash-out. Southerly winds and low cloud prevented all but one bloke in a Cessna 172 getting to the home strip on Peter Morrison's farm on the first day. How Brian Curry got there from Feilding is something of a mystery. Like Moses, I guess the clouds just parted as he made his way south.

Despite the weather, the decision was made to proceed with the social side of the event, given that many of the registered attendees lived locally. The exceptions were Kevin Anderson, Murray Paterson and Shaun Gilbertson, who rather heroically drove up from Wanaka, saying that it was the least they could do after a bunch of Canterbury people drove to Haast for the Winter Fly-in a few years back.

The Friday night social attracted 44 people and was held at John and Trish Crawford's beautiful home at Aylesbury Airfield. The catering was handled by Trish with a bit of help from Fleur Earl and Rebecca Prattley of the Darfield School PTA.

The weather cleared a little on Saturday to allow some local flying. Mike Oakley led a group around some of the bigger local paddocks while others flew over to Cust for lunch at the Lou McAllister airstrip. I took off from home near Charing Cross, travelled the short distance to the Morrison farm before looking out the back window to see the weather closing in behind me. I turned around and went straight home to avoid getting stuck somewhere.

The Saturday night social was held at the Kirwee Rugby Club and, in keeping with tradition, food was provided by the Darfield Fish and Chip/Chinese takeaway. This time 48 people attended, to enjoy the camaraderie and to show their support for Charlie Draper and the organising team. Here's hoping for better weather in 2024.

Flying Trans-Tasman

By Murray Smith

Back in 2005, I flew to Australia with the late Neville Harding, having two years prior, along with the Bradleys and Greys, taken the family on a loop of central Australia in aircraft we hired from Archerfield.

Though I often thought about a repeat, as time went by, I concluded that it wasn't going to happen, deciding I'd left it too late… Fast-forward to March 2022, when I stumbled across a social media advertisement titled 'William Creek Flying Safari'. I'm not usually an avid keyboard social media warrior – I mainly look at pictures and move on – but this advertisement caught our attention.

The distance didn't daunt me as we live just south of Hamilton and quite often direct line it VFR to and from Invercargill, a distance of 600NM (ice cream containers readily available, remembering to remove the lid should the need arise!).

After extensive research, including contacting previous participants who gave sound endorsements, I was reasonably confident the company organisers were legitimate and capable event organisers. The idea of an organised safari was a plus, and we ended up doing two. Once the itinerary and documentation were obtained planning started though, as some of you will know, my enthusiasm for advanced planning is not all that great.

At about this time (March '22) Covid regulations on both sides of the Tasman were starting to ease, but there remained a mountain of paperwork and approvals to allow us to be in Bankstown by 17 May 2022. Laurel planned to meet me in Sydney. She was keen on another pilot accompanying me across the Tasman, feeling a second pilot would be preferable in the event of something not going to plan. With the safari organiser's input, a second pilot was sorted.

A review of CAA and CASA regulatory requirements for trans-Tasman light aircraft private ops was next on the agenda, followed by NZ MPI, NZ Customs, ABF (Australian Border Force) DAFF (Australian Department of Agriculture Fisheries and Forestry). There was also a Lord Howe Island Board (LHIB) approval required for non-technical and technical stopovers.

ZK-EOF has STCed tip tanks which hold 45 useable litres each plus mains, totalling 240 litres useable. Flight planned at 32 l/hr gives an endurance of 7.5 hours. The engine is a first life IO 360. TT 2150 Hours. In 2018 I had four Lycoming factory-new cylinders fitted when I had a sticking valve issue. The cylinders had about 250 hours before departure using a litre of oil every seven hours. This improved to eighteen hours per litre towards the end of the trip. Full power climbs to FL100 and LOP long flights in excess of four hours proved in my case that aero engines don't like short cold running.

My co-pilot arrived from Sydney on 10 May, so we planned for a 12 May departure from Kerikeri, staying overnight the previous evening to enable an early departure.

Customs and MPI formalities completed, liferaft and satellite phone on board, evacuation/ safety briefing done, fuelled up, navigation and PNR sorted, flightplan lodged, weight and balance, NOTAMs/weather obtained, pre-departure disinfection done, passengers onboard, luggage and ancillary equipment secured, checklist completed and accommodation arranged, we were airborne from Kerikeri at 08:50 NZT.

I'd been studying the weather patterns for a few days prior to departure and the 12th was indicating 15–20 knots from the SE at FL100. Just over four hours later we were on the ground at SYNF.

Once out of KK we set up for a full power climb to FL100. The flight to Norfolk was totally uneventful, weather as predicted, although the SE wind was more like 10-15knt. Sat phone was brilliant for comms with Oceanic. It was blue-toothed to my headset, while an app on my phone enabled me to communicate using my phone in the normal manner via the Sat

phone (thanks Steve B.) Our back-up communication was VHF via the heavy iron on top.

Navigation: we carried three GPSs, running two at once. Should a discrepancy have occurred between the pair in use, the third one would be started to confirm which one was in error – hopefully. Every fifteen minutes along the way we wrote down the time, compass heading and distance to go, so that in the event of electronics going black, dead reckoning was the next and only option. Important to note that if your alternator, of which we had only one, tips over, eventually your screens go black.

Once past pont of safe return (PNR), it wasn't long before we were top of descent (TOD) and in receipt of the NF ATIS which was indicating 05 in use. We found automated ATIS station reports very unreliable due to the ground sensor receiving cloud conditions from directly above. I'm not sure if all ATIS are automated, but NF and LHI are. It usually gets cloud base fairly accurately. On our return home from Australia, the Norfolk ATIS was MVFR when we were 10 miles out and we could see that actual cloud cover was scattered at 3000ft. Five minutes later and it was confirming what we could see.

At TOD for Norfolk another mandatory disinfection was required, with another under supervision upon arriving at NF apron, doors and windows to remain closed and only to be opened when the process has been completed to the (grumpy) inspector's satisfaction. We had time and date stamped photos as evidence. At Norfolk they are most pedantic and rightly so! ABF / Customs officers at Norfolk later mentioned that the DAFF lady had the first cruise ship in after covid that morning and there were compliance and paperwork issues.

We stayed three nights at Norfolk to take advantage of tailwinds to Lord Howe. May 15, after completing formalities, we set off at 9:50 local time. Four hours and 50 minutes later we landed into a turbulent 15knt crosswind, runway 010. Such conditions are fairly usual in NE conditions at LHI due to the surrounding terrain. Formalities here were similar but with a more user friendly DAFF officer. The ABF (Australian Border Force) Beagle did his duty then we were able to disembark, refuel, secure the aircraft and proceed to our accommodation. I remembered the refueler at LHI from our 2005 trip; he's lived there all his life and his stories are legendary. He tells accounts of refuelling Sunderlands.

The eastern Australian seaboard weather from north to south had been wet for months, with the only authorised points of entry for DAAF and ABF being Brisbane, Gold Coast and Sydney YSSY. On our 2005 crossing, LHI was one of many eastern seaboard entry ports. Staying an extra day at LHI gave us a weather window to fly from LHI to Sydney via Port McQuarrie then tracking the coast to YSSY. Gold Coast and Brisbane were MVFR. So, on 17 May at 8:45 local time, with no other destination choice, we set out on the longest leg to YSSY for compliance with DAFF and ABF requirements, followed by a short hop to Bankstown.

The flight was enjoyable and at FL100 was very comfortable with good fuel endurance – 28 l/hr, 45% power. There's quite a large area of restricted air force airspace between LHI and Port McQuarrie so, with no clearances available, we had to track slightly north to remain clear. After three hours and with good weather and winds along the way, the Australian coastline came into view. We crossed the coast north of Port McQuarrie then tracked south along, as per flight plan, to YSSY. Listening to Williamstown as we headed south, it soon became apparent that, due to volume of traffic, they were refusing all VFR clearances through their airspace, so I decided with a ZK rego my chances were zilch!

We made a slow descent to enjoy the coastal scenery and duly received

Overflying Sydney Harbour and the Harbour Bridge was a highlight.

clearance to transit Williamstown via the coastal transit lane at 1000ft – yes, you need a clearance to transit the transit lane; you soon find out why as there is a lot of helicopter traffic crossing your track at the same height, servicing off-shore large coal ships waiting to enter Newcastle Port. Control is very good at advising their positions and intentions.

Once clear of Williamstown it wasn't long before the northern outskirts of Gosford and Sydney came into view. Contact was made with Centre ATC as we approached the Sydney coastal transit lane which, in contrast with Williamstown, was not too busy with post-covid Australian domestic and international traffic just starting to increase. The low-level flight along Sydney's northern coastline was superb, with the highlight being crossing the Sydney harbour entrance and seeing the CBD and harbour bridge in all its glory.

Abeam Coogee beach we were handed over to Sydney tower and vectored to hold at Botany Bay harbour entrance for two orbits at 500ft, with instructions to report visual contact with an ATR on a long final for 34R. Once visual contact was established we were cleared for final approach onto 34R, and, surprise, surprise, a 'please keep your speed up' request! About two miles out our landing clearance was issued with instructions to land short and take the first available taxiway. With a good 10 knots of wind on the nose we landed flapless so we were out of the way asap. Sydney ATC and tower were very helpful and tolerant.

I had arranged for FBO Jet Aviation to arrange biosecurity attendance. Taxi instructions were issued in stages for the long taxi to Jet Aviation. OzRunways airport ground plate during taxi significantly reduced confusion from the myriad of taxiways and holding points. It turned out we did not need to be processed by ABF again at Sydney as this had already been done in Norfolk – conflicting information from various sources! Once formalities were taken care of, fuel and oil checked, pilot and crew fed and watered, flight plan to Bankstown filed, we were set to go.

Issued with taxi instructions for runway 34R, departure via the harbour bridge and onwards to Bankstown for an 11 arrival. At one point during our taxi for departure from Sydney, a following 787 was instructed "Follow C172 ahead." His readback was "Following the C172 ahead," followed by a short pause then, "I've never done that before." Of course, I had to chime in with "Once in a lifetime opportunity, enjoy!" that triggered a barrage of mic activations and chuckles.

At the holding point we were given clearance for immediate departure, so off we went. By the time we were overhead the end of the runway there was almost 1000ft on the clock. An onwards clearance to Bankstown was soon issued, tracking via harbour bridge, reporting again harbour bridge 2500ft.

There are three parallel runways at YSBK 11/29, L,C and R. Bankstown proved a lot busier than Sydney but eventually we were issued with landing instructions for a downwind right-hand for runway 11 right. Seven hours after departing Lord Howe Island we were at Bankstown, plane secured, tidied up, checked, refuelled and ready to begin our safari.

To be continued next issue…

Poolburn One Day Fly-in

By Murray Paterson

We woke to a cool southerly and a report of 15 kts SW at the Poolburn Dam. Fortunately, one of our members has a house beside the water's edge and could keep us up-to-date as the morning went on. The One Day Fly-in was on! Claire and I arrived early and spent half an hour checking and filling rabbit holes and scratchings before the troops began to gather. A good mix of aviators and friends and family soon arrived, giving a final count of fourteen aircraft and one helicopter enjoying a day that just got better and better. Poolburn is a fantastic destination in every respect. A few folk were picked up by Craig Buist and taken over to the dam, checking out the two short strips on the ground before trying them out on the way home. There was lots of chat and the next generation were well entertained by flying gliders off the high rocks. Another thumbs up result for the One Day Fly-in format!

Flying to entertain all ages of attendees...

Rising Ground and No Room to Turn

In ***Rising Ground***, Vivien Eyers tells the story of her brother, Geoff Williams, described as inheriting his determination to fly from their father, who flew Lancasters in WWII, and his 'disregard for inconvenient rules' from their seafaring grandfather.

In covering their childhood, Vivien paints a delightful picture of family life and growing up in Otago through the 1960s. Her tales of her unorthodox brother and his unswerving focus on aviation make the book an entertaining read.

Geoff began designing, building and flying single-seat aircraft in the 1970s, continuing to the late 1990s. The trials and challenges he overcame include no shortage of incidents and subsequent repairs and redesigns. There was some cat and mouse with the then CAD (now CAA), not so much because Geoff intended any disregard for the rules, but more because he believed such rules were not relevant to his endeavours.

His wide circle of friends and airstrip owners supported his efforts, and his Mark 4 aircraft went on to be duly inspected and registered before passing on through two subsequent owners. It is now in storage at the Croyden Aviation Centre.

Geoff's story is a great read, well told and professionally produced, covering a little known story from an important era in the growth of GA in New Zealand. Copies are available from the author, Vivien Eyers, email vivieneyers@gmail.com

Reviewed by Anna Mackenzie

District Plans Part 2

By John Evans

In Part 1 of this series on the impact of District Planning on GA, run in the autumn edition of *Approach*, we discussed the increasing number of rules within District Plans that potentially restrict existing private airstrip owners. It may help to read that again if this topic is of interest, as it explains the District Planning process that I refer to here.

There are common themes popping up within district plans and, for many of us, the following restrictions will limit the existing use or make it non-compliant. To illustrate I've picked a few councils who have most recently drafted/proposed plans. Note, these references mostly relate to fixed wing aircraft, not to helicopters or activities ancillary to rural production, as District Plans often treat these separately.

The place to look is in the relevant District Plan under the General Rural Zone, and also the Noise chapter.

Setbacks: From Residential zones, consented building platforms, neighbouring property, 500m (Timaru Proposed Plan), 2km from any residential zone boundary (Selwyn Operative Plan), 1km from any consented building platform (Selwyn Operative Plan). Use: 4 movements per day (Selwyn Operative Plan), 10 movements per month (Timaru Proposed Plan), 8 movements per week (Waitaki Draft Plan) Hours: 0700-1900 (Selwyn Operative Plan). Other requirements: a log kept of all movements (time/date), to be made available to council on request (Selwyn Operative Plan). Electric aircraft exempted from movement limits (Waitaki Draft Plan). No flight path is over a Residential Zone, Rural Lifestyle Zone, or Settlement Zone (Waitaki Draft Plan)

The electric aircraft feature of Waitaki's Draft Plan has me stumped. If it is about noise, what difference does the energy source make, especially if it is an electric vertical takeoff/landing (EVTOL) aircraft 'air taxi', which is not necessarily quiet! And Waitaki's Draft plan seeking to restrict overflight is territory the Council and CAA lawyers will need to argue over.

Waitomo Proposed Plan (Notified October 2022) does not have specific rules concerning fixed wing aircraft as other councils tend to, but it has noise standards, between 0700–1900 of 50dB (LAeq). LAeq is an averaged noise measurement, typically taken over a period of 15 minutes unless stated otherwise. It is important to understand the logarithmic nature of dB values. What that means is that 80dB is 10,000 times the pressure of 40dB. Which means, when averaging, the LAeq value is extremely sensitive to even very short-term elevated noise levels, given it is the average of all the dB values in the data set to the power of 10 value.

As far as LAeq is concerned, a persistent lower level of noise can yield the same result as almost no background noise with a very short period of elevated noise. Which would you prefer?

50dB (LAeq) is really quiet; it is less than morning bird song in a rural area. Almost every noise generating activity would be prohibited if a neighbouring property could hear it. But District Plans typically exclude noise generated by the likes of the following: aircraft in flight (other than noise associated with take-off and landing), vehicles on legal roads, trains, boats, primary production noise (including machinery, animals and non-recreational dogs). A recreational versus non-recreational dog you ask… It is unclear how District Plans filter out permitted noise from LAeq measurements, from what is subject to noise controls and, if more than one source generates "unpermitted noise", who is enforced – the person that made the first noise or who added to it? Enforcing a noise complaint if it was exceeded by an intermittent source would be difficult, first requiring the evidence be collected by a specialist when the noise occurred, then presenting a case that had other background permitted noise filtered out, then adding in unpermitted noise, identifying its source, and so on.

Part 3 will go into more detail regarding how noise controls are applied in District Plans, and how aircraft measure up versus other noise generating activities. It is an area where we have to enlist the services of acoustic consultants to understand how the likes of ourselves, as aircraft operators, can work out whether we fit within it or not.

So, why is all this coming about? As Part 1 mentioned, District Councils feel a duty to control the unexpected, in case it was to ever be a problem. It also depends on how they interpret the National Policy Statements (NPS) and Resource Management Act (RMA), what they copy from other councils' plans, and the shared guidance received from a small pool of consultants. In the current environment, interpretations of the NPS and RMA appear more progressive. Older District Plan Noise Chapters did not spell out specific dB values.

I filed a Local Government Official Information and Meeting Act Request (LGOIMA) with the Timaru District Council, on January 10 2023, with two simple questions. 1) All written communication concerning the formation of GRUZ-R14 PER-3, and 2) Evidence supporting implementation of GRUZ-R14 PER-3. Concerning the formation of GRUZ-R14 PER-3, there was not really a lot of background as to why that rule was formulated, other than they just needed something and a number, so a number turned up.

Evidence supporting implementation of GRUZ-R14 PER-3 (i.e. noise complaints) was not provided. I take that as meaning that the origin of GRUZ-R14 PER-3 (movement limits) is not based on evidence that an issue exists within the Timaru District. It is a fair assumption that the noise an aircraft creates is the issue, and as mentioned, enforcement of noise controls is much harder than enforcing a setback, or that a movement limit was exceeded.

District Council planners have a life expectancy in council similar to World War One fighter pilots. The plans take years to formulate, they present drafts, then have them proposed. So whoever wrote the rule is, more often than not, long gone. Yes, you've got it: the people who write the rules within our local democracies are rarely there when it comes to the commissioner absorbing the feedback (in the form of submissions) during the hearings on the rules they wrote, or when it ends up in the High Court.

After filing submissions on the Proposed District Plan late last year, many of us also submitted in support of others' submissions, which is part of the process before we go to hearings. There were no submissions in support of the original rule and plenty of opposition to the original rules from a variety of individuals and organisations, therefore it is not legally enforced until it has been through the hearing process, which will be drawn out over years to come. Had no one submitted in opposition, then it would have taken immediate legal effect. So submitting is really important.

It is fair to say, irrespective of your council's geographical location, that District Plans will further restrict private airstrips as they write their new plans or within plan changes.

Sometimes, the only heads up you get is a request for feedback on "shaping the future plan", even just within a plan change, and part of that feedback might be about how aircraft are managed within the plan, as a bullet point hidden within swathes of documentation. In the background, the council has already written their rule, just awaiting the feedback. If they don't receive feedback on how the community values an aspect, they go, perfect, we can roll with that. So submitting is really important, and you will hear more from us when we need your support.

So what can you do? There are three avenues to legally establish your rights from a District Council perspective, and another from the CAA. But you need to get on with it as one of them is fairly straightforward, for now but maybe not for much longer.

Certificate of Compliance

These are issued under Part 139 of the Resource Management Act. It allows you to certify your activity as being lawful under an existing set of rules within a District Plan provided no new plan has been proposed. The council does not exercise discretion: provided the activity is one that complies with the Operative District Plan, i.e. lawfully established, the council must issue the Certificate, within 20 working days. Your application needs to describe the activity in sufficient detail so that it is specific to the activity in question, it cannot be used for other purposes and that it complies with the operative plan rules. This will likely include a footprint where the activity occurs, i.e. your airstrip extent, and that your activity is in accordance with the District Plan rules (this rule may be, for example, that airstrips for commercial activity are permitted, or recreational activities are permitted). If movement limits are not limited within the relevant Operative Plan, then I would be using the words "used as required" so as to avoid a number being on that certificate. The Council planners will almost certainly want to know more than they are entitled or are required to know, so stick with the line "the activity is in accordance with the Operative Plan". The certificate is treated as if it is a resource consent should the rules change. The cost ranges between councils, but you are looking at $400-$1000. Most councils have a template on their website. If they do not, the information can be emailed using another council's template as a starting point.

My airstrip is in the Waimate District, and I applied for a Certificate of Compliance, with the rule permitting my activity Section 4 Rural, 2.13 Aviation Activities limited to airstrips associated with: a. primary production; b. residential activities; or c. non-commercial recreation or transportation. You'll note that these older plans are simple in nature, largely non-restrictive, versus the types that are now being proposed, and which no doubt will be when that plan is reviewed.

The Operative Timaru District Plan lists the following as a permitted activity: "Airstrips or helicopter landing sites used for private purposes". A stark contrast to that now proposed with conditions as listed, and it is too late to apply for a Certificate of Compliance with those old rules. Do not think for a second that your council will not do the same. It really makes no difference how rural your district is (consider Gore, Waitaki and Waitomo, all very rural districts). Within 20 workings days I received my Certificate of Compliance legally establishing my activity on the land footprint I defined on an as required basis for primary production and non-commercial recreation/ transportation.

Existing Use Certificates

These are issued under Part 139A of the Resource Management Act. If an activity was legally established under an applicable district plan, and the plan rules are subsequently changed or even proposed, so that the same activity requires resource consent, then the activity may avoid the consenting requirement as an "existing use".

This requires that the present effects of the activity are the same or similar in character, intensity and scale as they were before the rule change occurred.

It also requires that the activity has been continuous, which the Act measures by reference to whether it has been discontinued for more than twelve months.

As with certificates of compliance, the council does not exercise a discretion whether to issue an existing use certificate: if the activity meets the existing use requirements outlined above, the council must issue the certificate. However, in practice, there is more scope for the existence or extent of an existing use right to be debated because it relies on there being credible evidence of the past activity, and the council needs to understand the character, intensity and scale of the activity well enough to document that within the certificate. This is important as it establishes the yardstick by which the character, scale and intensity of future activity will be assessed, to ensure the activity does not stray beyond the lawful certified use, and what was the existing use. As far as the law is concerned, existing use rights do not exist unless you have the paperwork cementing them. It is advisable to secure the existing right before being forced.

Awarora in the Able Tasman went through a lengthy and expensive battle to prove existing rights; expensive and lengthy because they had to fight opposition. Think how easy it would have been to cement that right with a Certificate of Compliance for either Timaru (based on operative and now proposed rules aforementioned) or Tasman District Councils, as examples, while that activity was permitted, versus the Existing Use Certificate pathway.

Resource Consent

This is the final avenue and not one I'll explore. It will be expensive, you may have to go public or limited notification, neighbours will likely have to sign their approval, the consent activity goes on neighbouring titles, it can get untidy, particularly if you are in a more built-up area. But for some, it may be the only avenue.

Part 157 Aerodromes

So that is all about local authorities, what about the Civil Aviation Rules?

CAR Part 157 applies to an aerodrome or heliport restricted to VFR operations that is used or intended to be used for a period of more than seven days in any thirty consecutive day period.

Part 157 proposals require the CAA to consider the impact of the aerodrome on the existing airspace environment and the risk aircraft activities present to the safety of persons or property on the ground. The CAA's determination may include features such as managing firearm discharge during duck shooting season, public exclusion through fencing, windsocks, signage, obstacles/terrain, circuit directions and use of standard overhead rejoin procedure, briefings for visiting aircraft, aerodrome layout in accordance with Advisory Circular AC139-7, and communication with other aerodrome operators/users in the surrounding area.

Few private recreational airstrips will meet the seven days in thirty threshold, but it is worth being aware of the existence/applicability of Part 157. In your case, Part 157 may further legitimise your airstrip but that is alongside local authority certificates and does not override anything the council imposes. It is optional whether the Part 157 aerodrome is included in the NZAIP and identified on aeronautical charts.

In summary, if you can comply with what is in your Operative District Plan and nothing is yet proposed, then cement that lawful right with a Certificate of Compliance. If you cannot operate within a Proposed or Operative Plan, but previously you had complied with the past rules permitting it, and you have evidence to support that use, then apply for an Existing Use Certificate. If you operate more than seven days in thirty, or want to further legitimise your airstrip, then a CAR Part 157 applies.

We want to help anyone who wants to take this advice on, so do get in touch. We have engaged an environmental lawyer to advise us on the RMA Act and some of what I have referred to here. That clarification is available to anyone who would like it, so again, please get in touch.

Be proactive when your council puts out any plans for consultation or asks for feedback. Please let us know so we can get further support amongst our community, in order that our members can retain the right to a private airstrip and allow us to visit during fly-ins. And also, and just as important, fly neighbourly!

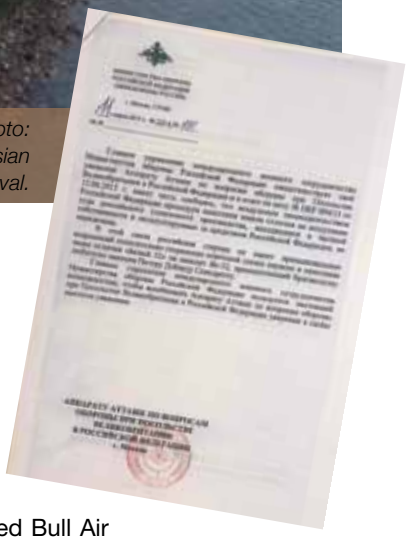
The stories an aircraft can tell...

Callsign YAK 52

by Anna Mackenzie

Perhaps each of our readers has a favourite aircraft. For Mike O'Rourke, it's the Yak-52.

Mike in YIK at the Mount, photo: Gavin Conroy. Inset: Russian stamp of approval.



"There's nothing better than the roar of the engine doing aerobatics while looking down on the rest of the world," he says. "No healthcare system could offer better mental health maintenance."

The Yak-52 first flew in 1976 and is still being produced in Bacau, Romania by Aerostar. Designed originally as a primary trainer for students who would later transition to Soviet jet aircraft, the fully aerobatic Yak-52 is a descendant of the Yak-50 and is powered by the same Ivchenko M-14PF radial engine.

The Yak has an impressive roll rate – "Stressed to +7 and –5 Gs, it rolls to the right at 180 degrees per second, with the fastest recorded roll rate being 352 degrees per second," Mike reports, adding that the 52 is capable of every manoeuvre in the Aresti aerobatics catalogue.

Entered into service as an air force trainer in 1979, the Yak-52, like most Soviet military aircraft, was designed to operate in rugged environments with minimal maintenance. One of its key features is its extensive pneumatic system. Engine starting, landing gear, flaps and wheel brakes are all pneumatically actuated. Pneumatic systems were chosen to prevent the freezing of hydraulic systems during the extremes of Russian winters.

Used across the Eastern Block as well as in Turkmenistan and Vietnam, the 52 was not usually armed, but 32 shot UB32-57 rocket pods have been fitted under each wing for training.

Mike's Yak-52 was built by Aerostar in 1991. Test flown three times between 8 and 12 July 1991, total flying time 2.05 hours, it was then delivered to DOSAAF, a training arm of the Soviet Air Force, in Moscow.

Later that year the Soviet Union collapsed, and the economy with it. That event had many repercussions, including many aircraft becoming surplus to the needs of the Russian Air Force. Mike's Yak remained in storage until 1994 when its new owner, Peter Scandrett, moved it to White Waltham in the UK.

Keeping its Russian registration, its first test flight in the UK was carried out by Paul Bonhomme, who famously went on to win the Red Bull Air Race world championship three times. The aircraft was then based at Rendcomb, the former RFC airfield where Air Chief Marshal Sir Keith Park had been an instructor in 1917.

Peter Scandrett had extensive formation aerobatic experience, being a member of a four ship Yak team that had displayed in the UK and Europe, with a number of tours to India and China.

Yak 52 being unwrapped at White Waltham, 1994

It also flew with a Sukhoi 29 in a pair display team called the Red Starz. They displayed at many UK airshows and RAF tattoos, including Duxford and the International Air Tattoo at RAF Cottesmore, keeping its original Russian trainer paint scheme.

The short range of the aircraft, which has only two hours of fuel capacity, was a problem for longer trips, particularly to airshows in Europe. "The English Channel seems a long way over cold water when you only fly for an hour and a quarter before you're dipping into your reserves," Mike comments, adding that the story is that the Russians deliberately had training aircraft with only two hours of fuel endurance, and kept their bases further than that from the border, to prevent defections to the West.

To overcome the difficulty, Peter had additional wing fuel tanks fitted by Termikas in Lithuania, increasing endurance to 4.5 hours with more than double the original fuel capacity. This involved partially deskinning the wings, but resulted in a thoroughly professional and fully approved installation that gives this particular Yak-52 the longest range of any in New Zealand. Given its airshow activities, a professional smoke system was fitted at the same time.

Peter Scandrett acquired a home and hangar at Pauanui and began flying with the famous Yak 52 aerobatic team based there, along with the larger formation team, including other Yaks, based in New Plymouth. Airshow enthusiasts will be familiar with their world class displays around the country. Before shipping his Yak to Auckland inside a 40' container, he had it refurbished and repainted. It was registered by CAA two months after its arrival, on 9 February 2016, as ZK-YIK.

The paint scheme of the aircraft is a tale in itself, being a faithful copy of the Lavochkin La-5 WWII fighter flown by Capitan Nikolai Pushkin, who had the call sign 'White 5 2'. Pushkin was a Russian air ace with nineteen personal and eight shared victories, the squadron leader of the 'Mongolian Nomads' (written in Cyrillic script on the aircraft). The squadron was so named as all twelve of their aircraft were donated by the Peoples Republic of Mongolia. By 2015, when permission was sought to replicate the paint scheme, diplomatic relations between the UK and Russia had become strained. Russian approval and certified permission was forthcoming only after the British Air Attaché in Moscow intervened (inset on previous page shows the official go-ahead).

Peter approached Mike O'Rourke in 2018; he'd decided to put the aircraft up for sale but wanted it to go to a good home. Mike was at the time flying the Classic Flyers based Yak 52, No. 718, in Tauranga. "It's a syndicated aircraft. Peter knew I wanted to have my own plane for aerobatics and airshow display."

He became YIK's proud owner in December that year, and has since been developing his aerobatic competence under the expert instruction of Paul Hughan (Huggy) and Nick Rowe. With a few Tauranga air shows and NZ Warbirds Association open days at Ardmore under his belt, he says there's plenty more to come – adding that he 'has plenty still to learn'. With another Yak 52 (718) flown by Andrew Gormlie and a Yak 55 (single seater) flown by Steve Geard, he has formed a Yak display team based in Tauranga called the YakWits, enjoying their debut airshow display at Ardmore in December 2022. Mike promises there's a lot more to come. "Watch out for our practices," he says, "usually around Tauranga – Pukahena to Waihi Beach."

Failing that, you'll no doubt catch sight of this impressively versatile aircraft at many a future airshow.

Noise for noise's sake

By Dave Paterson

Ever thought about the noise your aircraft makes? GA faces many challenges, one being the noise we make – our noise footprint. Turns out other people might not love aircraft, or aircraft noise, as we do.

The worst culprits tend to be six cylinder aircraft with constant speed propellers at high rpm.

Why are our aircraft so noisy? There are two main contributors: engine and propeller. Engine noise contributes only a fraction of the noise compared to a propeller tip turning at full rpm on take-off. It's about how close the tips get to the speed of sound – think shock waves and sonic boom.

The local speed of sound (LSS) changes with the density of the medium it travels through; mostly air for normal propeller operations. The specifics depend strongly on temperature but also air pressure and humidity. Sound travels faster in warmer air, slower in cold; faster in wet air, slower in dry. Add these factors together, and on a dry and frosty winter morning, the propeller generates more noise for the bystander.

Put another way, colder temperatures and dry air reduce the speed of sound, bringing the speed of the propeller tips closer to the speed of sound.

Let's check out the technical maths.

Speed of sound is around 343 metres per second (m/s) in dry air at 20°C. In dry air, the speed of sound is around 1.5m/s slower. Temperature decreases the speed of sound by around 0.6m/s for each degree colder the air gets, so if the temperature falls to freezing, the speed of sound drops from 343m/s to 331m/s.

Consider an 88inch (2.24m) prop on a Continental IO-520 governed to 2850rpm at full speed.

Prop circumference = 2.24m x ϖ (3.1415) = 7m

7m x 2850rpm = 20km/min = 333m/s

Speed of sound is described in Mach, Mach 1.0 being the speed of sound. This prop is doing Mach 0.97.

A prop is just a fast-moving aerofoil, and funky things happen to an aerofoil as it approaches the speed of sound. Air starts to compress and behave very differently. Instead of generating lift or thrust, a decrease in lift and increase in drag are just a couple of many changes. This makes the prop harder to turn (increase in drag) and reduces the thrust (decrease in lift). At this point, the noise really is for noise's sake. It's producing nothing of value and is probably detrimental to performance.

How about a colder day, say, freezing temperature: 0.6 m/s for each degree colder gives us 331m/s for the speed of sound in perfectly dry air. Air is never really perfectly dry, so 332 to 333m/s is more realistic.

An 88 inch prop at 2850rpm is still doing 333m/s. The prop tips are theoretically going at the speed of sound – Mach 1.0 snap, crackle, pop, and not in a good way.

Ever wondered why a noisy aircraft is very noisy on a frosty morning? This is why.

So, let's reverse the maths on the 20°C day:

88 inch, 2850rpm = Mach 0.97; 88 inch, 2700rpm = Mach 0.92; 88 inch, 2500rpm = Mach 0.85

Consider an 82 inch prop on the 20°C day:

82 inch, 2850rpm = Mach 0.91; 82 inch, 2700rpm = Mach 0.86; 82 inch, 2500rpm = Mach 0.79

2500rpm is further from Mach 1.0 and will be quieter, for any commonly available prop diameter.

Busting the myths

Damon Hyndburg and Allan Hockey of SouthAir are engine gurus with, between them, almost seventy years of experience overhauling engines. In a recent discussion about aircraft noise, they addressed two common misconceptions about reducing rpm on take-off: 'Reducing rpm will damage my engine' and 'With the reduction in performance I might not get airborne'.

What about engine damage? The fastest ways to damage your engine are detonation and overheating. It's about margins. Keep a margin away from detonation. Keep a margin away from maximum cylinder heat temp (CHT). A bit like keeping a margin above the stall when flying.

The engine always gets/takes the fuel it needs. At full throttle there is a slight enriching of the fuel mixture. This achieves a slight slowing down of the combustion event on the power stroke and helps to increase the margin away from detonation at high power settings. There is a slight increase in peak pressure in the combustion chamber, and a slight advance of the peak pressure. But a margin to detonation remains. If there was concern about the detonation margin, there is always the option of reducing the manifold pressure.

Full throttle is absolutely fine at all 'normal' rpm settings

(above 2300rpm). By reducing rpm, but maintaining WOT (wide open throttle), there will be a slight change in the peak pressure point or PPP.

Take this to the extreme. At 1400rpm the stroke takes almost twice as long but the combustion takes the same amount of time. So the combustion reaches maximum pressure before the cylinder is past top dead centre. The cylinder isn't ready to convert the explosive energy into horsepower – the bottled up pressure increases to dangerous levels as the cylinder squeezes the air/fuel mixture. This is detonation. Damage from detonation is not possible with just a minor reduction in engine rpm, especially in the 'normal' rpm range of 2200-2700rpm. The Lycoming operators' manual states that engine rpm should never be more than 700rpm lower than the manifold air pressure MAP (in inches) x100. So at 29" MAP, the engine still has a safe margin at rpms as low as 2200rpm.

Reducing rpm from 2700 to 2500 is well within the approved engine operating parameters (for a Lycoming engine). A Continental engine has many operational similarities.

We should also consider CHT. There is a constant balancing act between heat created (combustion) and cooling (airflow/airspeed over the cylinder head cooling fins). By taking off with reduced power, we are producing less heat. It might take slightly longer (in seconds) to get airborne, but with less heat, the reduced cooling is voided. If we consider the IO520 and taking off at 25/25, we are well below the max continuous power setting and at the top of the cruise power setting – perfectly acceptable.

But what about the horsepower? Reducing rpm is linear with each 100rpm equalling about 10hp. Starting at 29inches / 2850rpm = 300hp. If we reduce by 150rpm to 2700, we lose about 15hp. This is backed up by the earlier model IO-520 at WOT/2700 producing 285hp. In many models this is the maximum continuous power setting. Go further to 2500 rpm. Another 20hp gives us 265hp. Still more power than the original Cessna 185 aircraft were factory fitted with.

Check out various models of IO-520. All normally aspirated IO-520s have the exact same hardware. Cylinders, rings, pistons, conrods, cranks, bearings etc. The only slight difference in some models is in the fuel control system and the governor.

285hp at WOT/2700rpm, so 2700rpm is absolutely fine. 2500rpm will be fine too. The only question is the detonation margin. If you're worried about the detonation margin, just come back an inch or two on the throttle. It'll reduce the peak pressure and decrease another 13-26hp.

So we choose a 25/25 take off. What would that mean? 210hp. Let's consider reduced horsepower on take-off performance.

ISA day, sea level. 15°C/59°F. Calm. 2800lbs. Cessna 185 with full power gets airborne in 515ft /157m. Clears 50ft in 1025ft /313m. Reduced HP increases take-off roll, no argument. Add a margin, let's say 100%, conservatively doubling the figures.

Standard power setting. Little risk of detonation. Perfectly acceptable performance from a 600m airstrip.

Pause a moment to reiterate performance basics. Any time a pilot believes they need maximum performance for safety reasons, managing your noise signature is a lower priority.

Consider a reduced power take-off an opportunity to improve your technique. The reduced horsepower scenario is a close simulation of a hot, high, heavy day. The take-off takes longer, giving you more time to see what the nose attitude is doing and allowing you to 'feel' the aircraft being ready to fly. A good opportunity to practice.

Marlborough topdressing operator Nigel Griffith, training new pilots for Ag operations, simulates a full loaded take-off by having them take-off at a significantly reduced power setting. The low hour student learns about operating with a heavy load without some of the other risks, and the ability to 'firewall it' if the need arises. Dozens and dozens of take-offs at reduced power, in Nigel's own aircraft, at his expense – and no engine damage.

With lots of airfields over 600m long, often without obstacles, we have some good options. If the practice of reduced power take-off is new to you, find a good location and practise with an instructor. Improve your situational awareness. Learn to think about your surroundings, what you are doing, and the consequences. Think like a pilot.

If you find yourself doubting the situation, err on the side of caution. Many airstrips are shorter, or your load might be heavier. This is the time for full horsepower.

Simply put, use the power you need, when you need it.

The Resource Management Act has developed in recent decades to give affected parties a very strong voice – the 'we were here first' argument simply does not wash. Similarly, in many conservation areas, DOC is charged with 'protecting the natural quiet'. This core objective can put the needs of conservation at odds with aviation if noise is not managed carefully. The echo of a noisy aircraft in a narrow valley will quickly destroy the serenity.

Another misconception is the POH must be followed or litigation from authorities is likely. CAA is far more interested in great decision making and the 'Fly Neighbourly' philosophy. The decrease in safety, and the domino effect of losing an airfield or limiting usage, is significant to CAA.

If you can't reduce power to get airborne, fair enough. As soon as you are airborne, start reducing rpm. This can happen immediately after lift-off. You do not have to wait until 500ft. Some pilots start reducing rpm at less than 50ft. Positive rate of climb and clear of obstacles; a quick glance to check you're moving the right knob, then eyes outside.

With a vernier control (typical in Cessna aircraft and others) you should be able to count the 'turns' to get back to a desired climb rpm. It doesn't have to be exact at this point; ten turns is a good start for many aircraft. Next time you get airborne have a count.

Take-off is not a time for showing off how amazing you and your aircraft are at STOL. No one is judging, let alone measuring, the length of your take-off roll. The only one measuring anything might be a high-powered lawyer, chair of the local community group, who wants to close the airfield down and is gathering data on noisy aircraft. Next thing might be your aircraft type gets restricted or even banned.

Automatically pushing the prop knob full forward for every take-off is fast becoming unacceptable, especially when full power is clearly not required and the sound could be considered anti-social. Please consider your surroundings, every take-off.

Sir Tim Wallis

It was with much sadness in October that we farewelled a veteran of the aviation world and larger than life figure, Sir Tim Wallis.

Tim grew up in Greymouth, later attending Christs College where his contemporaries say he would 'give anything a go'. And thus the stage was set.

Deerstalking was an early passion which led him to explore the potential of commercial venison farming as a way of dealing with the South Island's plague of deer. By 1963 he had established a processing plant at Luggate and two years later purchased his first helicopter to aid in recovery. Only the ninth helicopter in New Zealand, he crashed it just a few weeks later. It was a significant setback but not one that could keep Tim down.

Ever one to push both himself and the limits, Tim logged up long hours flying over the coming years, developing both the industry and his personal stake in it.

The drive and determination Tim applied to his burgeoning business was called on at a personal level when a second crash in 1967 saw him in Burwood Spinal Unit. Defying medical expectations, he was walking again six months later.

By 1971 he had formed Alpine Helicopters, alongside Luggate Game Packers, and was extending into hunting and outdoor adventure trips, tourism and farming. As venison culling began to wane, largely thanks to its own success, he began to explore the possibility of live venison recovery and venison farming.

His entrepreneurial drive led him into marketing in the international arena, and even saw him developing venison operations in Canada and Siberia.

Always coming up with new ideas, Tim without doubt earned his nickname of 'Hurricane Tim' on both a professional and personal level. He had a knack for seeing possibilities and the drive to pursue them.

In 1974 he married Prue Hazeldine and they settled in Wanaka and had four sons.

With the decline of the deer industry Tim in 1986 formed The Helicopter Line, which owned 42 helicopters and half of Treble Cone Skifield. By the end of the decade he had added a wide range of assets, Maui Campervans, Kelly Tarlton's Underwater World, Waitomo Caves, Milford track Guided Walks, Te Anau Travelodge and The Hermitage at Mt Cook amongst them. His long-held dream of buying Minaret Station would also come to fruition, and would become a keystone of the family's future tourism operations.

Biographer Neville Peat describes Tim as a generous entrepreneur with a genuine liking for people. He had an ability to make people feel he was interested in them, to make them feel good about themselves.

Tim's passion for aviation had continued to grow, and with it his collection of aircraft. After adding a Mustang and Spitfire, he established Warbirds on Parade, the forerunner of the biennial Warbirds over Wanaka, which continues to draw around 50,000 people to Wanaka every second Easter, and subsequently the NZ Fighter Pilots Museum at Wanaka Airport. The collection continued to expand: he added a Messerschmidt, a Kittyhawk, a Corsair. By 2000 there were twenty warbirds in the hangar.

Known for his infectious enthusiasm, Tim also inspired a passion for aviation in others. He never stopped exploring new ideas or pushing the envelope.

Tim was knighted for his services to the community and the venison industry in 1994.

Considering his many successes, it would be easy – though quite wrong – to think that Sir Tim led a charmed life. In 1996 he crashed his Spitfire at Wanaka, suffering a significant brain injury but once again defying the odds and, with Prue's support, battling his way back to health. Tragedy rocked the family again in 2018 when two of Tim and Prue's sons, Matt and Nick, were killed, three months apart, in helicopter accidents.

Looking back at Tim's life, it is his resilience that stands out; his ability to keep battling forward, despite the odds. Through it all he kept his feet on the ground, his focus on family, taking the world along with him as he followed his dreams.

Sir Tim's funeral encapsulated the twin lodestones of his life: aviation and family.

by John Evans

Decisions, decisions... so what's the point?

Decisions made 'on the fly' as the need arises are fraught with human factors and confirmation bias. When something really goes pear-shaped, task saturation is probable, with limited spare capacity to formulate plans. Pre-planning decision-points and solutions to possible issues specific to the environment is a better starting point.

Part 3: The decision to land

You've made the decision to get airborne, Part 1; you've made decisions enroute, Part 2; and you're still flying, but inevitably, you are landing, Part 3.

While landing is inevitable, outside of some sort of emergency, a lot goes into planning well ahead of that touch-down, with various decision points along the way. You have transitioned from the enroute phase, to now thinking about landing.

Planning early on is what sets everything up to make life a lot easier and, hopefully, most of that occurred before you left the ground. This means getting the necessary aerodrome information (ATIS, radio frequencies and aerodrome plates) or, for a backcountry strip, refreshing yourself on the last time you went there and what information may have been provided in a brief. While unexpected diversions or somewhere else to pop into are always possibilities, this generates a lot more workload, with less than ideal preparation potentially compromising other aspects of your flight.

Listening out on the radio as early as possible improves situational awareness, and perhaps glancing at your screen to cross-check that with ADS-B traffic. Getting the aircraft configured early saves workload later. Slowing down provides some time, time to cool the engine down, time for seeing and avoiding traffic and getting enough speed off for flaps/gear. Time also to get your passengers sorted, any loose items stowed and a briefing for your imminent arrival. All things that can be sorted out early. As would have applied in Part 1: the Decision to Fly and Part 2: the Decision to carry on, managing passenger expectations is important, ideally before getting airborne. Your passenger might be a fellow pilot and, while that can add a lot of value, it also clouds and can delay decision making for the pilot in command. Two-pilot environments are a whole different ball game, and a subject for another day.

The first decision point is whether you have everything sorted before getting any closer, and which way are you tracking to approach the aerodrome, considering terrain, airspace, other aerodromes and aircraft. If not, buy some time, maybe an orbit or two, or maybe avoid heading there altogether.

Carrying on in, anticipating joining requires your eyes to be primarily outside and your ears listening out. As you get closer, you'll be deciding if an overhead rejoin is the most appropriate joining procedure, or if you have ascertained traffic/wind and can sequence into a circuit leg appropriate depending on a left-hand or right-hand circuit. For a backcountry strip, it's

more about wind, terrain, slope/size/surface/sun/stock and positioning your aircraft with sufficient height to keep your options available for as long as possible. There may or may not be a windsock, so you'll be checking ground speed against airspeed, tussocks, wind patterns on lakes, moving cloud shadows and whether you are drifting.

Descending into the circuit, likely dictated by the wind or in some cases by terrain, alongside sequencing with other traffic, we have to get the aircraft configured: downwind checks, radio calls and constant lookouts, for traffic and the strip conditions. We always need an exit plan. Typically this is a go-around, and where this is executed is one of the most important Decision Points of all.

Whether your decision point is on base, finals, in the flare, 10% down an airstrip, or 90% down a runway, the action is still the same: go-around. Simply put, your decision point is where you determine there to be sufficient margin to go-around and stay airborne, or get airborne again, because there is not enough room to land, roll out and stop. Significantly more energy is involved in a late go-around gone wrong than in running off the end of a strip. Less energy at the landing scene is better for yourself, your passengers and your aircraft. Aircraft brakes and aerodynamic drag as energy dissipators are preferable to crumbling metal, broken fences, smashed trees and displaced dirt.

There is a lot to be said about 'gut feel'. Procedures offer aviators a fair amount, however we also develop and rely on muscle memory and visual recognition of a present scenario and how that relates to a past experience. We call this 'gut feel' and that is not to be discounted. If it feels wrong, or you really are not sure if this is for you, then perhaps you should have made a call to turn back or go-around earlier. As your flight progresses towards a destination, you should be getting more confident in the decisions you have made, not less! The more experience you have, the earlier you recognise what is not going right. So a substitute for less experience or a less familiar scenario is early conservative decision making.

Back to my introductory statement. Decisions made 'on the fly' as the need arises are fraught with human factors and confirmation bias.

On the approach, when things are not going quite right, it is a natural instinct to try and make it work. Engine at idle, side slipping, fast and unstable, overspeed flaps then a fast flare, floating in ground effect, using up the strip or a flat/low approach with a heap of power behind the drag curve. We have all rescued an approach but, more often than not, it ends up being unstable and untidy.

You will always be commended for doing a go-around before the landing decision point.

Decision, decisions, decisions, so what's the point?

The point is that you can execute a safe exit option. The point is pre-planning different options and, most importantly, exit options. The point is to enjoy aviation as a recreational pursuit, not to get to a chosen destination at all cost. The point is to land and live.

Last blast in Reno

By Jay McIntyre

Jay McIntyre is the owner, LAME and IA of JEM Aviation, Omaka

There was some shock felt earlier this year when the Reno Air Racing Association announced that the 2023 races would be the last after 59 years of racing at Reno-Stead airfield.

The 'Full Noise 35' race team had been hoping to campaign again in 2024 after efforts to attend a third time were thwarted by Covid, so this decision caught us all by surprise. That said, it was not in many ways, that much of a surprise, as most would agree that the glory days had long since passed. Dwindling crowds and an even faster diminishing prize pool had people wondering exactly how the races could continue. Reasons given for the cessation of racing included all the usual buzzwords of the day, including 'Health and Safety', 'urban encroachment', 'future airport growth' and the like. I'd go so far as including some native snail was under threat, but that might be pushing it. Somewhere in all the rhetoric is the truth, but you can bet it was all related to dollars!

With the announcement, the Full Noise team and supporters decided to reconvene to reminisce over our experiences at Reno in 2017 and '18. So it was that a large group of Kiwis descended on Reno in mid-September.

Being rather busy at work I'd decided that I could really only afford to be out of the country for a week and had reconciled myself to it being a 'boys' trip (apologies to all the 'gals' who came with us!). This changed quite quickly when I realised there were a couple of side trips in the offing that would aid business, particularly as just two weeks before Reno we'd taken delivery of the mighty FG-1D Corsair following its long sleep in Masterton. I'd just started corresponding with Chuck Whal, who operates Vulture's Row Aviation and is restoring seven Corsairs, and it turns out is only three hours down the road from Reno. Additionally, although I love Reno, attending for four days without an engine to change or an aeroplane to race is a bit of a long haul!

The day after arriving I hired a car and headed for a magnificent airpark at Cameron Park, west of Sacramento. Vultures Row Aviation was mind-blowing. Corsairs, all in early stages of rebuild, were scattered throughout a beautifully laid-out hangar. Through the afternoon business was conducted and a lot of Corsair-specific information gleaned. If you're familiar with Corsairs you'll know they're quite complicated, particularly the gull wing spar, and to see them being built was a great experience.

Back at Reno it was also fortunate that Anderson Aeromotive was in attendance with their 'shop of horrors' – a display of failed radial engine components, some of which you had to wonder how on earth they happened! They're pretty much the only place that will overhaul the Corsair's Pratt & Whitney R-2800 engine, so we spent a lot of time talking about options and timelines to overhaul ZK-COR's engine. They also overhauled the R-2000 engine fitted to Steadfast, and owner Mark O'Sullivan was able to put faces to names with whom he'd spent a lot of time on the phone. Other reasons to hang out there was their fabulous hospitality and the opportunity to chat with many highly regarded owners and operators.

Moving away from radials, the Strix Aero team also had a stand at Reno. They are a newcomer on the Allison V-1710 overhaul scene, with Cory Strix being somewhat younger than the other players in this game. With a background in modern machining processes, his company is taking a new approach to Allison overhauls; taking things back to basics on one hand, but utilising modern CAD practices on the other. It will be really interesting to see how this goes for them,

and great that a new generation is coming through, as it has been challenging dealing with most of the current aged Allison overhaulers in terms of a lack of transparency and difficulties in information transfer, not to mention getting anything done in a timely manner!

To reconcile my 'boys' trip I'd also arranged a visit to the engine builder who was overhauling the Allison engine for Mike O'Rouke's Yak-7B that we are currently rebuilding. Alistair Marshall and I drove three hours NW from Reno to Redding in northern California, again enjoying inspiring hospitality and gleaning invaluable information. The engine was in the final stages of assembly and it was satisfying to see the high level of workmanship involved. It was also great to have Al along as a second set of eyes, with his extensive engine experience confirming my thoughts.

As I write it has just been announced that six cities in the USA are vying for the rights to hold the Races in the future. Here's hoping this magic event can be continued, and with prize money that makes the huge investment required worthwhile.

Rows of Corsair wings at Vultures Row Aviation; Allison V-1710 nose cone and final assembly.

The Oshkosh Experience

By Ross Millichamp

A visit to EAA AirVenture in Wisconsin has been on my to-do list since first becoming involved in recreational aviation, and this year that goal finally came to fruition.

As the name suggests, EAA AirVenture is run by the Experimental Aircraft Association and was first held in 1953 in Milwaukee, as a small gathering of pilots and aircraft builders. It quickly out-grew its original site and moved to the nearby Rockford Airport, and from there to its 'home' at Wittman Field near Oshkosh in 1969. Today, EAA AirVenture is described variously as the 'world's greatest aviation celebration' and the 'biggest airshow of its kind in the world'. It runs for seven days in late July, and in 2023 welcomed 677,000 attendees and 10,000 visiting aircraft.

There are two options for Kiwis travelling to Oshkosh for AirVenture. The first is to join a group of aviation aficionados on an organised tour, generally staying in university hostels and catching buses to and from the airshow each day. This option is best described as 'full immersion' and, while it appeals to many pilots, it is perhaps less attractive for partners and wives. In 2023 Jinny and I took the other option and joined a small group of self organised travellers.

Our leaders John and Trish Crawford are Oshkosh veterans and had the contacts to secure a house on the water at Lake Winnebago, a thirty minute drive from Wittman Field. Although it is difficult and generally expensive to rent a local house during AirVenture, renting a campervan and staying onsite is an easy and reasonably affordable option. Our group consisted of three aircraft tragics and four normal people. We hired a couple of cars allowing John, Brian Fechney and I to spend as much time at the show as we wanted, and giving Trish, Jinny, Kris and Stan (Trish's 94 year old father) the freedom to pursue a more balanced itinerary.

Getting to Wisconsin is super-easy these days, with Air New Zealand's non-stop flights from Auckland to Chicago, which is 280km south of Oshkosh. Chicago is a world class city worthy of a visit in its own right, so Jinny and I spent a couple of days there before catching an Amtrak train from Union Station to Milwaukee where we caught up with the rest of the crew.

Most airshows are focussed on the flightline and the aircraft that are being displayed. AirVenture does not disappoint in that department with regular daily displays of civil and military aircraft, culminating in two spectacular night shows. The number of aircraft involved takes some getting used to. Whereas in New Zealand we might have one or two P51 Mustangs at an event, at AirVenture 2023 there were dozens. This was of particular interest to Brian, whose father Ron once owned a P51 and operated it from the family farm near Aylesbury. The latest military aircraft were also present, including the impressive F22 Raptor with thrust vectoring which allows it to turn like a jet boat. Between displays the military aircraft were all parked in the public area so you could go right up to them and often talk to their pilots and crew.

The number of civil aircraft was also staggering. AirVenture 2023 featured a 75th anniversary gathering of Cessna 170s, a

rare aircraft in New Zealand. There were 125 present at Wittman. Add to that the neighbouring seaplane base, and pretty much every aircraft you might ever hope to see will be there.

Despite the impressive aircraft working the flightline, the focus of AirVenture is very much on the trade displays. There is the occasional person selling magic frying pans or whatever, but the huge majority are pure aviation. Pretty much every aircraft company from the home-build manufacturers to Boeing are there.

The first display we encountered as we walked through the gate on the first day was the Cessna compound with brand new 172s, 182s, 206s and Caravans on display. Compared to the forty-five year old Cessna we own, they looked very impressive. However ,as we took a second look at the Cessna display after a day of scrutinising the offerings from Cirrus, Honda Jet and Epic, the Cessnas looked a bit plain.

The aircraft kit companies are there in force and, when you ask a question of the representatives, you will more than likely be talking to the person who designed the plane or who owns the company. It is surprising how far non-certified aircraft have come, both in terms of performance and price. After talking with the company representatives the invariable question is "How much?" One quarter to half a million US dollars is not an uncommon response.

Aircraft component and avionics companies are also well represented ,but a word of warning if you are after something specific to your particular model of aircraft. It is much better to order the parts in advance and have the manufacturer bring them to the show for you to collect, than to take your chances of them having it in stock. Always ask for an 'Oshkosh deal' though, because most of the suppliers are willing to barter in the spirit of the event. Brian was sufficiently organised to order a set of sun visors and a headliner specific to his Cessna 185. I had hoped to pick up some air vents for our Cessna 182 but never found any. Such is the scale of AirVenture that I probably walked straight past a company selling them. However, there are always bits and bobs you come across that you did not know you were after. John, an aircraft engineer, came across a panel switch for a Robin aircraft at a used parts display that one of his clients had been after for ages. How he recognised it among a box full of similar looking switches is beyond me. A word of advice for private owners hoping to buy aircraft parts at AirVenture: travel there with your engineer. A word of advice for aircraft engineers: don't go with your aircraft owner clients; you'll spend the whole time advising them on whether or not some obscure bargain will fit their aircraft!

Seminars are a big feature of AirVenture. They range from entertaining to technical. John, Brian and I went to a couple of seminars run by the manufacturer of Continental engines, describing how to operate their engines most efficiently and how to ensure a long service life. Turns out we had been operating our engines all wrong! The principle message was not to overcomplicate things by worrying about the CHTs and EGTs of individual cylinders.

The "must do's" were to keep CHTs below 420 degrees F, run full rich in the climb, and use the rule of 46 in the cruise (the first two digits of the rpm and the inches of manifold pressure should equal 46). The "nice to do's" were to try to keep the CHTs between 375 and 385 degrees F and the oil temperature between 175 and 185 degrees F. However the presenters acknowledged that this is not always possible, especially with carburetted engines, so do your best and do not stress too much about getting everything perfect.

New Zealanders have really embraced the AirVenture event. Despite the massive attendance, you keep running into Kiwis wherever you go. Most of those I met were not there for the first time, but go back every few years to see what has changed. At the start of the show you wonder how you are going to last the full seven days. Every time you hear an aircraft approaching the flight line you rush outside for a look. By the end of the show you don't even look up!

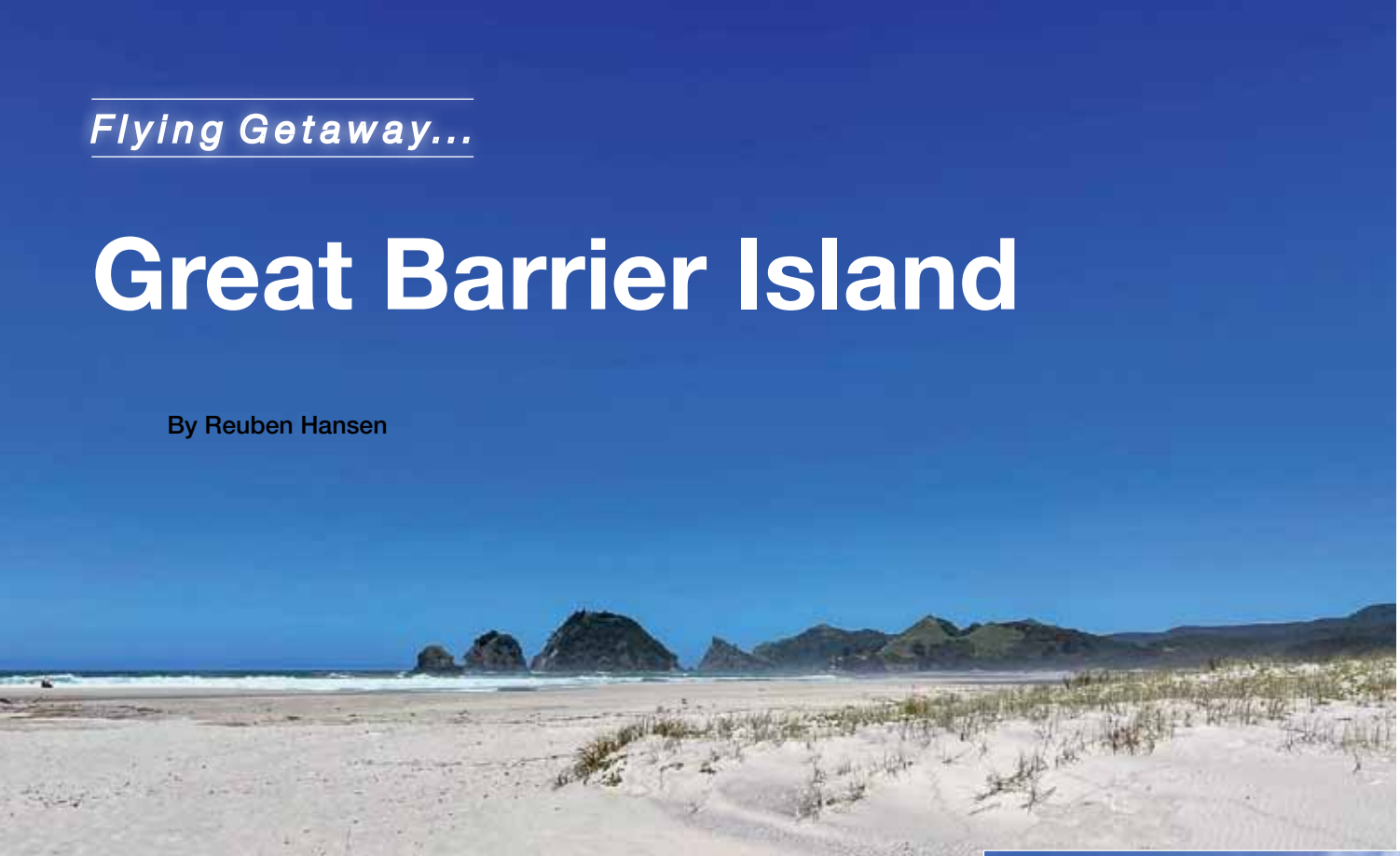
The beauty of AirVenture is that you do not have to see or do everything. In fact that is pretty much impossible. Buy the week pass and come and go as your enthusiasm and energy allow. Speaking of energy levels, it is hot! The USA was experiencing a heat wave when we were there and although the north-east was the least affected, temperatures were still in the low to mid 30s. However the show is long enough that you can time your visits to avoid the worst of the weather and still get plenty done.

You have to hand it to the Americans, they do these events so well. What is generally a small regional city is transformed, seemingly overnight, into an international centre of aviation excellence. AirVenture has its own newspaper and radio station, and anyone who is anyone in the aviation world is there. I had thought that AirVenture would be a once in a lifetime experience, but I'm now starting to think that once is never enough!

Flying Getaway...

Great Barrier Island

By Reuben Hansen



Summer is the time to wheel the plane out and stretch its wings through those long warm days. Great Barrier Island is a fantastic flying destination, whether you're looking for an adventure-filled day trip, an overnight stay or a destination for ground-based recreational activities.

Make the journey memorable

As the old cliché says, 'It's not only about the destination, but also the journey' and a summer flying getaway is not exempt from this. Trips to Great Barrier often include a visit to one of the beautiful Coromandel airfields; perhaps Whitianga for an avgas top up and snack at the 'Coro Club Cafe', or a lunch stop at Tauranga with a visit to the Classic Flyers Museum. Options abound for other routes from more westerly origins.

Great Barrier Island's airfields

Both of which are available for private use without prior approval from the operator.

Great Barrier (NZGB) is often referred to as 'Claris' and is the main airfield used by both commercial and private operators. Located towards the south of the island, this airfield is a brief walk from local Claris businesses and is the main focus in this article.

Okiwi Station (NZOX) 'Okiwi' is located about 7NM northwest of NZGB and is a neat little aerodrome with a modern tarseal runway which is a great destination for some circuits, a picnic, or if you want to access recreational walks or the likes on the more northern parts of the island. With only a few movements a week and no scheduled commercial flights, Okiwi is much quieter than Claris so can provide the more 'authentic' tranquil Great Barrier Island experience.

Local weather considerations

Given that you'll usually make a coastal arrival from either the south or the north, weather is generally not too much of a prohibiting factor in getting to Great Barrier. Be mindful in an easterly as, being an island, Great Barrier can get some very interesting and unfavourable localised weather conditions bringing low cloud, rain and associated poor visibility.

In saying that, westerly or south-west weather systems that bring poor weather to the likes of Auckland and Ardmore can actually turn out to be nice days on Great Barrier! So don't let Auckland's weather put you off, if other indications are showing that it is probably a nice day on the island.

Westerly conditions, while providing clear skies and good visibility, can lead to other considerations. Runway 28 will likely be in use at Great Barrier on such days and good mountain/valley flying practices are essential to ensure not only safe flying but comfort for your passengers. Although not mandated as is the case for the likes of Milford Sound, for first timers into the Barrier it would be wise to get a brief from someone who is experienced with Great Barrier or has at least been there before. My contact details are at the front of this magazine if anyone would like more information on the specifics of flying in and out of NZGB.

Parking

Upon landing at Great Barrier, you'll find a modern terminal with toilet facilities, a vending machine for refreshments and an information centre. The asphalt area directly outside the terminal is for passenger let down only according to the AIP plate, with more permanent parking and tie down areas found north of the terminal, beyond the runway 06 threshold.

Local airspace

Both NZGB and NZOX are situated within B174 Great Barrier Mandatory Broadcast Zone. Frequency 124.4mHz requiring transmissions every 10 minutes. 28/10 are the primary runways used at NZGB but there is the option of the 06/24 grass runways if conditions require it. 28/10 is a 9m wide, 900m+ sealed runway. The circuit is on the northern side of the airport (right hand 28, left hand 10).

Commercial traffic movements increase significantly in the summer months and at times there is an arrival and departure at least every half an hour through the peak season. Generally commercial traffic arrives from Auckland/North Shore via Blind Bay and joins via the overhead and into the downwind leg. Departures off 28 are straight out toward Whangaparapara and via Tryphena if runway 10 is in use. These measures are not mandated or even recommended in the AIP plate, but I think it is beneficial for other users of the airfield to have an idea of what the traffic trends and directions tend to be.

Time to refuel

There are no fuel facilities available to aircraft on Great Barrier.

However, there are refuelling facilities available for pilots within walking distance.

'Burga Shak' is located within five minutes walking distance of Claris Airport and is a great spot for a lunch stop. It offers a variety of mouth-watering burger options and the burgers are massive!

For those who prefer bakery style cuisine, next to Burga Shak is 'Baked on Barrier' where you'll find a pie warmer full of hearty food as well as slices, cakes and coffee.

'My Fat Puku', nearby, is a cafe with more of a dine-in experience, while the Claris Store is a contemporary dairy/convenience store, very handy to the airport,

and especially good if you're just after an iceblock or cold drink to cool down on a hot day.

Staying over?

Great Barrier has many Air BnB options as well as lodge style accommodation such as Aotea Lodge and Great Barrier Lodge. The Currach Irish pub also has accommodation attached.

Rental cars are available by prior arrangement and can be collected from Claris airport via Medlands Rentals. Hiring a rental car is a great idea if you want to make the most of your visit to Great Barrier. Tryphena is approximately 30 minutes drive from Claris and is one of the main populated areas on the island, it is home to safe swimming beaches, the pub and more stores such as the Stonewall Store, an upmarket convenience/food/goods store.

All can easily be found on the internet with a quick google search.

Spare time on Great Barrier?

If you're thinking of staying for a longer period, there are some great non-aviation-related activities that you might consider adding to your itinerary.

Local beaches include Kaitoke Beach, which is a five to ten minute walk from the airport and is often deserted, so if you fancy yourself a semi-private beach for a cool dip, this is the one for you. Medlands Beach is popular and a five minute drive from Claris. Encompassed by large dunes and mature trees, Medlands provides estuary swimming and is a popular surfing beach. There is also a DOC campsite here. Some of the Air BnBs are also located locally to Medlands Beach.

Keen golfer? There is a nine hole golf course just outside Claris.

For keen trampers, there are plenty of walking tracks for all experience levels, whether you're looking for a short walk of a couple of hours or a multi-day tramp staying over in a DOC hut. The island offers something for everyone.

For those who want to enjoy the summer sunshine with a beverage, Island Gin is a local gin distillery (my personal favourite, highly recommended), while Aotea Brewing offers excellent locally brewed beer.

I hope I've inspired many AOPA NZ members to enjoy all that Great Barrier Island has to offer!

Quality control for aviation fuel

Have you ever wondered about the fuel you put into your tanks? We asked GOfuel to provide answers to some common queries about fuel quality and classification.

GOfuel's Aviation Fuel Quality Control Programme, designed to ensure the storage and delivery of the correct type and grade of uncontaminated fuel into customer aircraft operations, includes a documented process that provides an auditable record of all aspects of receipt, handling and delivery of aviation fuel; technical advice on fuel quality control and fuel transportation, technical training in handling, storage and dispensing, periodic fuel quality control inspections and site control inspections.

Fuel classification

Aviation fuels in New Zealand are classified as follows:

Avgas 100LL is a gasoline fuel for piston engine aircraft. Avgas 100LL has a lean mixture minimum octane rating of 99.6 while its rich mixture octane rating exceeds 130. Avgas 100LL, also known as Avgas 100/130 Low Lead, has a maximum lead content of 0.56 gm/litre. It is dyed blue for ease of identification. Avgas 100LL is produced to stringent manufacturing specifications and is checked at defined points in the supply chain to ensure it is clean, dry and free from contamination. Avgas 100LL complies with the following standards: British Military Standard DEF STAN 91-090, US Civil Specification.

Jet A-1 is a kerosene type fuel that is used by turbine engine aircraft and for various industrial and commercial applications. Jet A-1 is manufactured to stringent international specifications and is checked throughout the supply chain to ensure that its high level of cleanliness is maintained and that it conforms to specification when it delivered. It complies with the following standards: British DEF STAN 91-91 latest Issue, US Civil Specification ASTM D1655 (Jet A-1).

Misfuelling

Every year around the world a number of aircraft are refueled with the incorrect grade of fuel. Fortunately this error is usually detected before the aircraft takes off, but sadly not always.

To ensure the correct fuel is loaded into tankers, dedicated delivery vehicles are used for Jet and Avgas, with product key tags and product selective couplings, supported by product checks using equipment and documentation to test for correct and clean product. Delivery into tanks is also carried out with selective couplings, ie, Jet tanker to Jet tank, Avgas tanker to Avgas tank. The fuel tanker/driver can only hook up to the tank via the correct selective product coupling.

Drivers are trained in the complete process, including testing the product after delivery. A control document is completed and a copy is left on-site as part of CAA Part 9F Fluids. Companies holding this certificate are audited by CAA.

Pilots have a selective product fuelcard, either an Avgas card or a Jet card. No Eftpos or credit cards are accepted at aviation sites, ensuring another measure is in place. Pilots should also carry out their fuel checks as per their training.

The angle on fuel tanks

GA tanks can be above ground or underground horizontal designed tanks. They are constructed and installed to avoid the egress of water and dirt, and provide a positive low point to collect water and sediment for ease of removal. To achieve this slope, the tank should be installed with a continuous slope of 1:50 minimum. Tanks are fitted with a low point drain line with pipelines entering from the top of the tank only. Above ground tanks now have an external pump to allow product to be drawn from the low point bottom of tank for testing. The outlet line that goes to the refueling nozzle is fitted to the high end of the tank and at least 150mm from the bottom so it never pulls fuel from the low end of the tank. Grade dedicated padlocks are also fitted. While there are differences in the detail and specifics of engineering designs, the safety aspects always apply.

ALL-NEW INTERIOR FOR

NEW CESSNA PISTONS

Cessna
BY TEXTRON AVIATION

Cessna high-wing piston aircraft will feature new high tech standard features and sleek interior design options with added convenience.

Updates include modern and comfortable seating, enhanced cabin amenities, updated instrument panels and new exterior paint styles.

Contact your Textron Aviation representative today.

www.cessna.txtav.com

SKYHAWK

TURBO SKYLANE

SKYLANE

TURBO STATIONAIR

Planning is a breeze with OzRunways.

Take off on your journey this summer with the ultimate EFB tool for quick and easy flight planning.

Try **OzRunways on iOS** or **RWY on Android** today! Download from the App Store or Google Play for a **FREE 30 day trial.**

OzRunways
Electronic Flight Bag

OzRunways
Download on the App Store

RWY
GET IT ON Google Play

ozrunways.com