Approach

THE NEW ZEALAND AIRCRAFT OWNERS AND PILOTS MAGAZINE
WINTER 2019

Perfect waffle

Build-assisted Carbon Cub

Back to Basics NI

Electronic visibility – are you out there?

AOPA EVENTS • INDUSTRY NEWS & VIEWS • COMING EVENTS AND MORE

Approach

***ISSUE**: Winter 2019*

ISSN 2422-8230 / 2538-1083 *(Online)*

Coming events

- *AOPA Winter fly-in Omarama, 12–14 July (Contingency, 19–21 July)*
- *Wairarapa Aero Club 90th Anniversary, Hood Aerodrome, Masterton 20–22 September*
- *30th IAOPA World Assembly Montreal, Canada 29 June – 4 July 2020*

For more information visit www.aopa.co.nz

Cover photo: Hanmer autumn Fly-in, April 2019 *(for more, read the article on pg 10-11).*

(Photo credit: Rob Peck)

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.

ISSN 2422-8230 (print) / **ISSN 2538-1083** (online)

Editor: Anna Mackenzie ph 027 3345466; amack@airnet.net.nz

Advertising enquiries: Don Ryder ph 04 479 1367 / 027 442 0016 / don.ryder@aopa.co.nz

Administration: Mary Bruce ph 0272 940819 / admin@aopa.co.nz

Postal address: AOPA NZ Inc, PO Box 659, Wanaka 9343

Deadline for ads, articles and photos for the next (Spring) issue: **20 July 2019**.

President's Report

Hi folks, the AGM season has come and gone, the winter has arrived and the flying is good, well, in patches. I spent March in Cheshire, supporting Sue and having some quality time with her terminally ill father. Very worthwhile but a dismal place to be camped up, the clouds were low; the cold wind comes from the wrong direction, plus the sun, when you can see it, appears to go the wrong way. Funny how being an aviator makes you aware of the environment. I was going to go flying while there but ended up shelving it as the weather windows were tight and the road traffic was doing my head in. I used to enjoy driving in the UK but not this time.

So back to NZ and I was pointing out Mt Tapuae-O-Uenuku to my 12 year old Blue Light 'copilot'; it was very clear and imposing from our Canterbury coastal position, and the fact that it was 100 miles away was totally lost on her. We are so fortunate with our visibility; one good reason to be in the roaring forties.

The 2019 fly-away calendar has got off to a good start. Back to Basics went well and the Hanmer fly away was a great day in the tail end of a southerly. Thanks to all the organisers who did the hard yards in the background.

The 'Main Event' of our winter, the gathering in Omarama, has strong interest, we can only hope for a good weather window. I would like to stress a couple of items from the governance perspective: please remember the basics of airmanship, use the radio to let others know where you are and what you are doing, be short and to the point (chatter on 128.95 on a second radio, if you have that luxury), do read the procedures, the AOPA arrival and departure procedures at Omarama work really well, everyone needs to use them. AOPA does not have an alcohol policy but we strongly support the rules on this matter, 8–12 hours bottle to throttle. I think it is only courteous for our passengers to also follow this advice and we would rather we all keep the beer and wine for the evening function…

Our Social and Safety work-stream are running a workshop shortly so I look forward to having a detailed proposal around how AOPA NZ runs social flying activities. This will not change the 'gaggle of friends' individual responsibility, where each pilot is responsible for his own decisions, but it will give a standard format to what we will offer. Included will be: pre-planning, registration, briefing, leadership, finances, debriefing, reporting, etc. Hopefully once this format is approved and tested it will give our membership more clarity around what AOPA is going to offer pilots who fly at our activities.

Wellington has been busy, however, the glacial speed of progress has not changed. We are getting increasingly frustrated and are discussing ways of raising our profile further; we may have to take some more drastic action to get GA the attention it deserves in the 'sacred halls of power'. Ian Andrews is working tirelessly and continuing to take our issues to the highest level possible. Access to controlled airspace is our latest issue; Airways' lack of controllers is not only closing down Queenstown airport but shutting us out of airspace too. Hope to have news on medical reform soon, but I have said that before, I know.

We are working on a plan to give GA aircraft the option of moving away from full certification to a 'de-certified' category. The idea is that owners can become qualified to do their own maintenance and install modern safety equipment, which is more affordable than the present certified offerings, etc. This will be a one-way transition and the aircraft will never be certifiable again. We will be suggesting that such a classification will also be suitable as a transition for LSA, as we are concerned that modification to LSA will become difficult as planes become older. The rules should mirror the 'Home Built' category. Canada has done this and Australia and USA are reviewing their maintenance categories. Watch this space.

The Queenstown Lakes District Council airfield review went well for us, and workable rules have now been proposed for the rural area. This is an ongoing issue with the Queenstown Basin, so not over yet.

Hope your winter is going well and you are keeping warm. Fly safe.

Steve Brown, President

A warm welcome to new members:

Tom Ashton, Nelson, Mooney M20C; Peter Avery, Taupo, Gyrocopter Magni; Henric Bechgaard, Alexandra, Socata TB20; Russell Brunold, Winton, Aerospool Dynamic WT9; Arron Cooper, Invercargill, Cessna 172M; Richard Currie, Pauanui; Ruben Eingaertner, Paraparaumu Beach; Chris Hart, Napier; Cathleen Heslan, Rakaia; Lyall Hopcroft, Balfour, Tecnam Eaglet; Matt Laming, Wanaka; Jonathan Laubscher, Porirua, Cessna 172F; Jeremy & Brian Leigh, Tuakau, Cessna 172N; Jo McCaughan, Cromwell; Chloe Murray, Fairlie; Brad Raven, New Plymouth, Cessna 170A; Kate Rogers, Taihape; Devon Sansbury, Wanaka; Max & Denise Saunders, Wellington, Flitzer Z-21A, Jabiru J160; Jude Scott, Whangaparaoa; Stephen Shepherd, Napier, Cessna 172N; Neville Stirling, Winton, Alpi Pioneer 300; Greg van der Hulst, Rangiora, Zenair CH701SP; Michael Waring, Cambridge, England; Mark Woodhouse, Nelson, Chipmunk DHC-1; Bettina Yockney, Christchurch; Kynan Yu, Cromwell, Cessna 172XP; Patrick West, Christchurch; Ellen Franklin, Lower Hutt.

Despite slightly less than perfect weather, a few hardy souls took up the opportunity to enjoy a fly-around during the AGM weekend in Rangiora in March. Other highlights included the impressively eclectic Northbrook Museum and excellent dinner at Rossburn Receptions.

AOPA News

AOPA Winter Fly-in returns to Omarama

The perenially popular AOPA Winter Fly-in is this year scheduled for 12 – 14 July (with a bad weather contingency of 19 – 21 July), and it will be back in Omarama, based at the Countrytime Hotel.

The Winter Fly-in has invariably offered a great weekend of fun, flying and socialising. Countrytime Hotel is one of the few hotels in New Zealand where you can land and taxi to within a few hundred metres of the front door. It's also child friendly, ensuring the fly-in can be an ideal family event.

The programme includes a casual dinner and catch-up on Friday night, full-day flying programme on Saturday (with the group split to accommodate all levels of flying experience and interest) across a range of options. Weather permitting, Central Otago, the West Coast, Fiordland, and perhaps even Stewart Island are options. On Saturday night it's time for convivial company, plenty of flying chat and great food, then on Sunday you can enjoy a big breakfast before you head home.

Book now on the website – www.aopa.co.nz; this is an extremely popular event, and rightly so!

Christine Taylor Memorial Golf

A popular event in the AOPA calendar, the biennial Christine Taylor Memorial Golf Tournament was this year played at Rangiora Golf Club on the Friday preceeding the AGM.

With the North Island team a little light on numbers, a couple of South Islanders volunteered to help out. Assiduously captained by Arden Jennings, the North Island team won the Tournament for 2019. Which we were assured at the AGM dinner had nothing at all to do with the number of South Islanders in their ranks!

From the VP

Hi everyone. May already and the summer fly-ins have all come and gone. They appear to have been enjoyed by all participating, and it's great to see we are attracting new and younger pilots to these events.

With this influx of perhaps less experienced individuals, the Exec will be looking hard at how we run things. However, as this Nanny State is finding out, no matter what we put in practice, incidents still take place. To mitigate these we can set rules BUT unfortunately there is NO substitute for experience and common sense.

Common sense can't be taught, it comes down to individuals (and those not using it will/should be reminded). What can be passed on is experienced knowledge and good flying practice.

My opinion is that some of the valuable knowledge and good practice given to me at the start and even later in my flying career is not currently being shared. As some of our more experienced pilots stop attending fly-ins and other events, the next group of pilots need to step up and start mentoring.

These people have to realise they are being looked up to and followed – and that means that, though they may be able to get away with potentially risky or dodgy things, the pilots following their example will, at times, not.

Pilots who have a bit of experience will always be followed by ones with less experience. THIS IS HAPPENING. If it continues in the current manner, we will have a major problem.

Those with broad knowledge and experience should be looking out for pilots with less.

Like others, I am guilty of not doing this enough, and in the future I am planning – and I hope others will join me – in thinking a little more about who they are flying with and what their needs/ experience/ skills are. Perhaps what we need is a few more days on the ground at fly-ins, where some of the things that allow pilots to get old are discussed.

Enjoy the last of the the good weather.

Graeme Donald, Vice-President

AOPA Awards 2019

The AGM dinner, a very fine affair hosted at Rossburn Receptions in Rangiora, saw the announcement of this year's AOPA Award winners.

Most Helpful Control Tower went to Ohakea Approach, based in Christchurch.

Maintenance Shop of the Year was won by Mike Kelly of Wanaka.

Best Aviation Watering Hole was awarded to Te Araroa Honey cafe.

And perhaps most popular of all, the GA Champion Award was this year given to a very surprised Shaun Gilbertson – and the photo would suggest he was also a little pleased!

The presentation to Mike Kelly took place on 29 March and was attended by a good gathering of AOPA members and local engineers.

At the age of 83, Mike is still signing out fixed wing, from plastic to wooden, plus helicopters, balloons and gliders.

Says Shaun, "People with such a wealth of experience are to be appreciated, by our members as well as by their fellow engineers. Many of the engineers who today service our aircraft were Mike's apprentices."

During afternoon tea Mike recounted a few stories from the deer culling days of fixing aircraft in the bush then flying them back to base.

In attendance were Kevin Anderson, Hugh McLellan, Carrick McLellan, Ron Macaulay, Amon Johnson, Ian Whitmore, Tom Williams, Callum Smith, Mark Williams, Mary Bruce, Matt Bailey, Steve Bunting and Shaun Gilbertson.

Mike was extremely appreciative and felt honoured to receive the AOPA award.

More on our other winners in the next edition of APPROACH.

Above: Shaun Gilbertson, 2019 winner of the AOPA GA Champion Award. Below: Mike Kelly, winner of the 2019 AOPA Best Maintenance Shop Award and, at right, team at presentation.

One good smile deserves another...

Build-assisted Carbon Cub

By Robert Gray

My wife didn't believe me, but it was an absolute coincidence. In fall 2017 we were on a road trip in western USA and, having been diverted from the Columbia River Gorge because of forest fires, we chanced on a road sign to Yakima.

"That's where Cub Crafters are based. They make the Carbon Cub," says I.

"Why don't we go and visit them?" replies my wife, with a 'you planned this' smile.

Well I didn't plan it, but we did visit. The General Manager, Randy Lervold, gave us the guided tour and showed us their new Builder Assist programmes FX-3, a Carbon Cub variant with 186HP O-360 motor, fuel injection, constant speed prop, fat tyres and 1000lb useful load. Oh my. And my wife just loved the colour – orange. Of course, there's a cost and waiting list, both of which are large (in December 2018 the waiting list was up to two years).

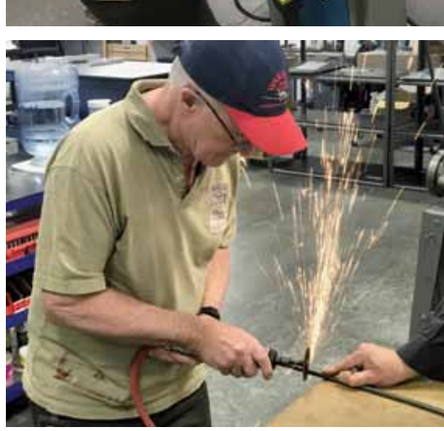
The programme is a significant variation on the normal builder assist, with which you may be familiar. Instead of going to the factory/workshop and assembling a pre-prepared kit, this one involves two visits to the factory in Yakima, separated by several months. The FAA's 'Amateur-Built Fabrication and Assembly Checklist' (the 51% rule) simply sets out an allocation of points for completing various tasks, there's no obvious rhyme or reason to it, and certainly no suggestion that the builder needs to put things made by other people together. Cub Crafters have taken advantage of this to allow the builder to 'make' many of the components that would typically be found in a kit.

My long awaited first visit happened in September 2018. Originally this was planned to tie in to another road trip, but events conspired to make this a solo journey. The visit itself involved making a wide range of components and doing things like laying up carbon fibre for the stringers, cutting struts and fuselage components, making cables, labelling the wiring loom, cutting brake lines, cutting out the windscreen, riveting flaps and ailerons, bending steel for the rudder and elevator and the like – all under supervision and working with the regular Cub Crafters' employees.

A lot of the components such as ribs, fuel tanks and the like are actually cut from plate aluminium by a CNC machine that follows a computer programme and easily creates dozens of pieces in one hit. Sadly, pressing these into shape is a very manual (and boring) process, supervised by a rather garrulous Trump supporter, involving lots of steel dies, rubber sheets and a large hydraulic press.

Luckily no one had any intention of letting me weld anything; this job was reserved for Pattie. She had little or no idea about what the components do, but is clearly a very competent young lady and showed me how to assemble the tail components into their jigs for her to weld up later. It was pretty obvious that she could knock this job out in a few minutes whereas I fumbled about and had to repeat most of the steps before it was acceptable. Worse yet a couple of key items I'd cut turned out to be too short. Luckily there's some sort of secret supply of items that have been prepared earlier for just this eventuality.

One of the most skilled processes involved bending, drilling and forming some of the tail components from the



From top: Bending the rudder with Mark; trimming steel for the stabiliser; Pattie the welder supervising. Next page: second visit.

steel I cut. This is obviously very labour (and skill) intensive and almost completely done by eye. My part turned out well, at least Mark and Pat were kind enough to say so, even if not true. I suspect any duds were quietly dumped and replaced with proper ones.

It would be fair to say that I found the first visit hard work. There's a lot to get your head around, with early starts and all day on your feet. Having retired a few years ago it was something of a shock to the system. As a result, I didn't take much time to look around, but I don't suggest putting Yakima anywhere near the top of your bucket list. What was nice was meeting so many people who, while not pilots, are thoroughly engaged in their work building custom aeroplanes. This is by no means a mass production operation, with many of the parts very much hand-crafted.

My second visit fell in December, by which time winter had fully engaged. Inland Washington State is cold, the days are short, with snow and freezing fog an omnipresent hazard. I'd been warned not to drive from Seattle as the weather can close the roads. I arrived a few days early to allow for jetlag and potential delays, and can safely report that there is very little you'd want to do outdoors.

Fortunately, Cub Crafters' workshops are well insulated and heated, unlike the ones I'm used to, and I found a mostly assembled aircraft waiting for me to finish it off. Most of the jobs were simple and included installing the empennage, the door, cowls and the like. Once that was done I met Stan, the FAA's DAR (Designated Airworthiness Representative). Stan was very pleasant but gave the aircraft a thorough inspection before giving me a fairly lengthy interview about the entire process.

Finally, Stan gave me and N442FX an FAA certificate of airworthiness for an amateur-built aircraft.

The other useful thing I did was to get a type rating in the factory's prototype FX-3, so the first flight in New Zealand wouldn't be a complete surprise. With the weather over the hills unsuitable for flying, Kris from Tac Aero had to drive two hours to Yakima, but the Yakima Valley was still and perfect for a couple of hours in the morning. The afternoon session was curtailed due to an increasing crosswind on the sealed runway and, more importantly, Kris's seat collapsing onto the rudder cables, making the landing more difficult than it needed to be.

There was more to do on N442FX after I'd left, including a factory test pilot who took it out to make sure that it worked properly, adding the NZ registration and finally, disassembly, fumigation, shipping. With Christmas and a short(ish) and unexpected stopover in Taipei, it was another four months before it arrived. Re-assembly on arrival seemed to take an age and more paperwork than can be imagined was required to get it registered in New Zealand.

Two plugs: one for Central Aero Engineering in Hamilton who reassembled the plane and dealt with the certification, and another for Trafford Facilities in the UK, who arranged the insurance. Both companies were a pleasure to deal with.

The project took over eighteen months from the initial order to the first flight in April. Was it worth it? Only time will tell, but so far so good, and the smile still hasn't left my face.

Perfect waffle

Hanmer in autumn

By Ian Sinclair

What a blast. Hanmer is a great jumping off point for an adventure weekend. Lots of people travel to Hanmer to experience the excellent outdoor activities, sample the hospitality or just decompress. The area is blessed with places to tramp and camp that are not overrun, bike tracks that provide for all levels of challenge for pedal pushers, rivers for water sports, ski fields and, or course, those hot pools. It is simply a great place to be.

The AOPA NZ Autumn fly-in, organised by local Paul Hood, lets us look over the brow of the hills around Hanmer and into the wider area. This place is testament to the fact that all areas in New Zealand have so much to offer. Sometimes escaping from the big destinations and chilling in real New Zealand is such a gift.

But, I'm getting ahead of myself. To get to a fly-in you need to leave home. My adventure sidekick and voice of reason, Pecker, turns up at the planned time, we load up the steed and depart to Rangiora. Critically, he has arrived with two packets of lollies. Gotta have a hostie. Awesome!

We are flying in a dying southerly, tailwind, smooth, a clearing sky and medium cloud base as we depart home base in South Canterbury. The crud that has been with us overnight, and earlier in the day, has worked its way north and all indications are that Hanmer will be achievable.

Not too much traffic in the NZRT circuit, we join overhead, land on 22 and taxi to the pumps. There's always an art to estimating the optimum fuel load for an adventure. Cautious 'need range' voice says, fill it up to the top; 'get it off the strip' voice says, just take what you need. Fuel pickup choices for Saturday are Kaikoura and Omaka so we mediate the voices and decide to leave Rangiora with one side full and the other half. That will leave us with two and a half hours out of River Road on Saturday.

Rangiora to Hanmer offers a bit more waffle than leg one, but nothing to be concerned about. Paul's strip at River Road is easy to find; we make an arrival call and join to arrive on a down-sun final on 06. The local FBO (Paul) provides an Uber-like service to town. Sweet.

Friday night is fun. A catch up, some food and the usual pilot waffle (Pecker, not me). Hanmer has lots of eateries.

Out of the pit on Saturday, a quick check out in the carpark shows signs of morning mist but nothing to dampen the day. Excellent. Trip to the bakery for a pie breakfast and a bread roll stuffed in the backpack for lunch. We are good to go.

Airborne from River Road we head south to Montrose. There is plenty of length; landing is to the west. You cannot ignore the power poles left of the landing strip. It is a bit one-way so an early go/nogo is verbalised and we commit. Short hover taxi, roll and slow and park at the western end under the wires. Time for photos, pilot waffle (Pecker, not me) and we talk about our next destination.

Airborne we follow the Waiau river northeast to Gardners' strip. We over reach a bit and need to backtrack southwest, cross, join downwind, slot in with some final traffic and land. More waffle (Pecker, not me). We discuss options and decide we are off to Paul's strip at Parnassus.

The strip has had some recent rain so there is standing water on the bottom third. We miss the first bit with a well-timed bounce and swim through the next pond, making a wake. Pecker wants to stay and waffle but I say, no, we need to go. A bit of prep and we identify where Quail Flat is. The vehicle track at Parnassus looks a bit more inviting than the grass so we launch off it. Great news. We rediscover the lollies.

We climb towards Quail Flat to about 4k and drop over a saddle into the Clarence. There is a bit of departing ground movement at Quail Flat so we join in train with SID and cruise the valley, returning as a flight of four after the traffic has departed.

Man. Pecker needs a shower or something. Everyone leaves Quail Flat as soon as we shutdown. It is definitely him, not me, honest. More waffle (PNM), photos and damn, it's time to go fly again.

Airborne out of Quail Flat and head downstream. We pass the Muzzle Homestead strip but decide to truck on. It's right on the edge of our performance capabilities and the wind is shifty in the valley. Another day!

We sneak over a ridge or two and bring up Richmond Brook under the left wing, join left downwind, sequence behind traffic on final and land. Man I could eat a horse. Lucky it's lunch time. The backpack produces the goods. Eat, waffle (PNM), drink, waffle (PNM).

We decide that Dumgree sounds like fun. We get briefed and depart on track. Overhead for a look and position to join left base over the pond. Target speed and height are OK at our decision point so we commit. The wind drops a bit behind the trees but it all works out. You know the drill. Park, Waffle (PNM) and work out what is next.

We head up the Awatere. The strip at Gladstone Downs has good length but is in a concise valley and there is terrain on approach and departure. We do a planned approach and overshoot to get a good look and check the wind. It's a tight valley at low level but it all works. There is no one else on the ground. Pecker is confused so he just waffles to me. We backtrack without a shutdown, line up and depart downstream, climb staying on the hard right of the valley and turn 180 left to head upstream on track to the Molesworth strip.

Molesworth has a lot of planes parked on the ground so we join close with the strip under the left wing and decide to join left hand for a downstream landing. There are lots of people on the ground so Pecker is like a pig in… heaven. Waffle is supreme (PNM). He is silent for a bit then starts cleaning the windscreen. Is he sick, does he need food, what should I do? Stuff it, lets fly. We take off upstream and head to Red Gate.

We cross overhead Red Gate, have a look and join downwind left hand. On final the sun is low but still behind the shield so we proceed. There is plenty of room to park. We shut down and do a mini waffle (PNM) and discuss options from here.

Tomorrow requires an early departure for us so we decide to go to Kaikoura and fill the tanks so we can get home direct. Out of Red Gate we cross several ridges heading for Kaikoura. It feels like a strange path. Normally when I come through here I'm travelling with the valleys but this path is across them. Seems like a new world. We cross overhead Kaikoura and join. On the ground Pecker feels lonely and seeks the company of anyone who would accept landing fees. After some walk and waffle his mission is complete. The tanks are full and we're good to go.

Airbourne off 23 out of Kaikoura we climb and track towards River Road. Man, that sun is a pest now. Right on the eyeball. We find lollies to strengthen our superpowers and carry on.

River Road is quiet, we're about last, we join downwind right hand for a down sun landing. It works out OK, and Dan offers a ride to town. Perfect!

Tie the steed down, sneak a few more lollies and we're off to town. All good days deserve a good night. Hanmer delivers and we tuck ourselves into bed just after the witching hour. Pecker is still waffling.

Sunday is a pearler. Paul picks us up and we depart River Road on track home. OK, there are a few deviations to check stuff out but mostly pointing at home. We land in time to pack up the truck and drive to Christchurch to assist with a flat shift.

Thanks Paul for a great weekend. We loved it. Pecker is still waffling about it...

Perfect!

Back to Basics fly-in

By Craig Irons

Having been beaten up by the nor-wester everywhere from Castle Point to Cape Palliser to Turakirae Head only eighteen months earlier, I was looking forward to a smoother ride for my return to the Wairarapa on my first AOPA fly-in.

After talking with other pilots, I discovered that most have experienced the same wind and extreme 'ride' through turbulence and all the thrills a wind-wave in the lee of the Rimutaka Ranges can deliver. Locals tell me this coast can have the worst flying conditions in New Zealand, and that the south coastline of the North Island is best flown in a southerly wind or zero wind conditions.

The weather for the AOPA Back to Basics Fly-in could be a game changer… do I go or do I stay home on the farm?

The weather forecast was looking promising. At Foxpine I loaded the Cessna with camping gear then flew north to Feilding to fill fuel tanks and jerry cans, then east to cross the Tararua Range, tracking Martinborough with co-ordinates for Cameron's strip loaded into the Air Nav Pro. Having studied the supplied arrival procedure and maps, and after a quick surf on Google Earth, I was confident of arriving at spot X on the map.

I soon found myself overhead a short-looking strip of freshly harvested lucerne on an elevated terrace. A handful of aircraft were parked at the southern end; a welcome sight. The windsock was limp, which gave landing options. Runway 20 was chosen for the approach; I was looking down onto a picturesque valley above the Pahoa River. This was a pretty cool approach and called for slow and steady flying, full flap and stable, making small power adjustments to nail the speed and descent, touching down close enough to the mark on the 500m strip.

Jack Cameron's strip is about 10nm to the east of Martinborough on a Wairarapa sheep and cattle station of over 8000 acres. The mainly hill country property has been in the Cameron family for generations, since the mid-1800s. The fly-in offered a great opportunity to visit, and the visit proved pretty special.

A big welcome from Jack and a ride on the back of the ute saw us delivered to the campsite in the valley. Tents were put up next to the shearers quarters, stretchers erected and sleeping bags rolled out in the nearby woolshed. The BBQ was soon cranking; a great time to say 'Gidday' and meet everyone there.

It was a tad chilly but a clear, calm, starry night; the river valley full of Moreporks calling from deep in the bush. Probably the coldest night of the year for most, especially for those who had ventured down from the north Waikato. Even those from the deep South found it a little cooler than normal for early March.

Clockwise from top left: Castle Point; James Rogers' shepherding experience comes to the fore; overhead Wellington; the gaggle gathers at Flat Point.

A brief shower of rain on the Saturday morning marked the arrival of the promised southerly and a daytime temperature drop – most came expecting high 20°s but were met with a 10°C windchill; we all layered up.

After breakfast it was a short walk up the gravel track to the airstrip on the terrace for a briefing. We split into two groups for the day, with the plan of meeting up for lunch at Flat Point.

Cessna 150s, 172s, 182s, 180s, 185s, Piper Cherokees, Archers, Dakotas, high wing/low wing, nose wheel and tail draggers all welcome; a Grumman, a Tobago, a couple of Murphy Rebels, a Rans Microlight, a Citabria, Bolkow and the resident Maule all took to the sky. The wide range of aircraft handled the strips with ease – no extreme outback landings on this trip.

One group tracked southwest to Jimmy Field's and Lake Ferry strips while our group headed northeast to Fairbrother, a 450m Ag Strip, then on to Castlepoint lighthouse, tracking south to Riversdale Beach and following the rugged coastline into a stiff southerly as Flat Point came into view on the nose.

One after another we joined overhead and then downwind for runway 17 Flat Point. Dropping into the 500m grass strip with a 20 knot headwind meant landings were slow and short. Flat Point airfield is located on Flat Point Station, a 9000 acre sheep and cattle property on the Wairarapa coast. Over twenty aircraft landed for lunch, giving the locals a bit of excitement on a Saturday morning.

The Camerons had catered generously and we were soon each tucking into a two-foot long filled bread roll… all were fully satisfied!

A highlight of the trip for me occurred at Flat Point. James Rogers flew over low and slow to join downwind in his Cessna 185 ZK-CES, turning base leg and finals, pulling off a beautiful stabilised approach in the 20 knot southerly, showing us all how it is done.

After touchdown James transitioned from pilot to shepherd in a heartbeat, instinctively knowing what the sheep, who had appeared out of nowhere, were going to do next. There was a brief game of chicken… a go around was not necessary; James gave the sheep the eye and they trotted off the airstrip as if under command – brilliant!

Flat Point airstrip was very well groomed and maintained. An airstrip like this on the rugged East Coast, only metres from the pristine Pacific Ocean, is rare and very special – thank you to the McGuinesses for making your strip available for the AOPA Fly-in.

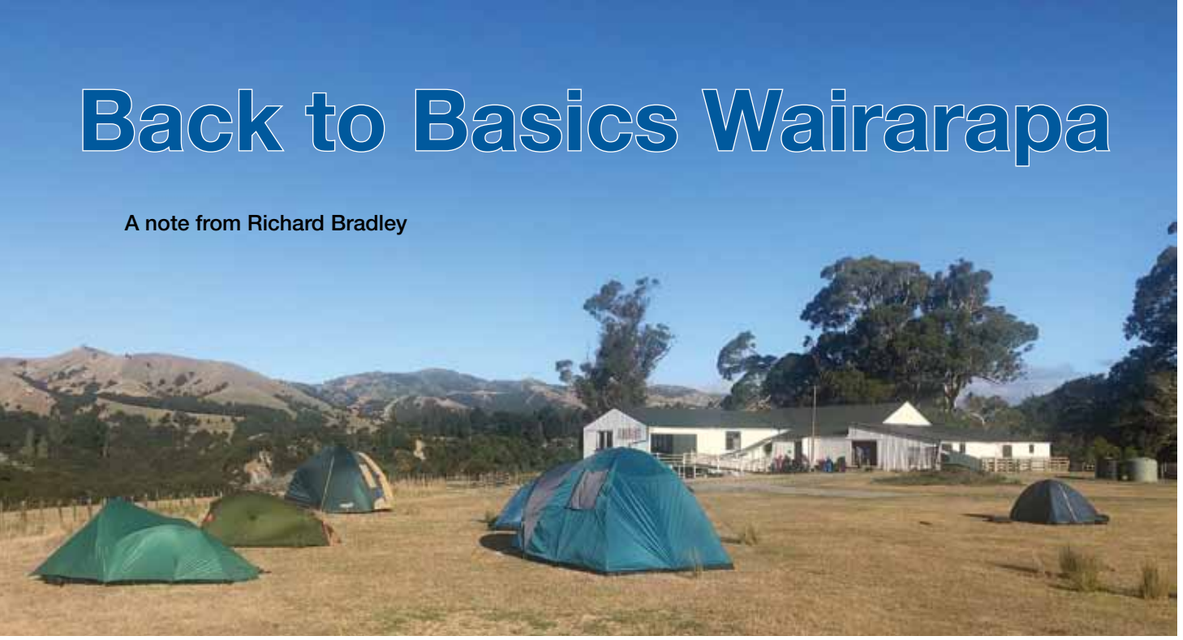
We divided again after lunch, exploring more local strips, some stopping for fuel in Masterton before returning to Cameron's Strip and our Back to Basics base for the evening.

I had to leave for home on Saturday evening flying Lake Ferry, Turakirae Head through Wellington ATC, and was given clearance to track Paraparaumu via the city, overhead the airport and Westpac Stadium, which capped off an amazing weekend of flying the Wairarapa back country.

Big thanks to all who made this Fly-in possible, especially Richard Bradley. Thank you to Jack Cameron and family; you were most generous and hospitable and we are very grateful to you for opening the doors to your exceptional property and for hosting Back to Basics Wairarapa. Thanks also, AOPA, it was outstanding, and great to meet so many awesome people who share the same spirit of adventure. Looking forward to the next AOPA Fly-in.

Back to Basics Wairarapa

A note from Richard Bradley



The rescheduled 'Back to Basics' Wairarapa took place over the weekend of 1–3 March in weather that was a little less than perfect, but participants are giving the event the 'thumbs up'.

We didn't get everything exactly right, but this is the first one we've run up this way, and we've learnt from the experience. That said, it was a great weekend with lots of interesting and very proficient flying by the wide variety of participants. The camp and fellowship were memorable.

Twenty-one aircraft took part, with crews including four pre-school children and a couple of teenagers. Several of the members were on their first AOPA fly-in.

We are enormously grateful to our hosts, the Cameron family at Moeraki Station, to other landowners who made their strips available to us over the weekend, and to Roger Fairbrother for organising venues, food and logistics. The support and feedback the organisers have received was wide-ranging and much appreciated.

For more on Back to Basics Wairarapa, read the article on page 10.

New to the Executive:

Ivor Yockney

A passionate aviator and family man, Ivor Yockney joined the AOPA Executive last month at the 2019 AGM in Rangiora. He tells us a little about himself.

Passionate about the outdoors and outdoor pursuits, I studied at Lincoln University, in 1994 completing a Bachelor of Parks and Recreation and Management degree, followed by a Masters of Applied Science, and have been employed by Landcare Research as a wildlife ecologist ever since. This occupation has seen me specialise in wildlife management, which requires spending a large amount of time in remote areas of New Zealand, as well as engaging in international travel to offer our unique Kiwi expertise in this field.

One of the fortunate consequences of having a job which requires working in remote places is the significant amount of aviation involved. I started flying in 2002, completing my PPL then progressing through a CPL in 2009. Shortly after that I started flying commercial operations, predominantly conducting specialised wildlife radio tracking and access to remote stations for my work. During this time, I was fortunate to be provided an opportunity by Hugh Robinson to fly commercially under Canterbury Aviation. This was an excellent opportunity, allowing a greater scope of work and increasing my aviation experience in the commercial environment. I currently hold a Senior Person role as Safety Officer and fly my Cessna 185 part-time under this Air Operator Certificate.

As my job requires significantly more time in helicopters than fixed wing aircraft, it seemed logical that I should I complete my CPL (H). Presently I am consolidating time flying the Hughes 500 series, which has been an unexpected but welcome transition.

I am married to Bettina and we have two children Jessica (15) and Evan (11) who have both been flying with us since their infancy. Bettina was brought up in a remote area of the Marlborough Sounds (another reason for owning a plane), and as a family we often travel from our property in Christchurch to the Sounds, where we've recently built a hangar and are currently reinstating a disused airstrip on Bettina's family farm.

AOPA has provided me with a great meeting place for like-minded aviators, and as a family we have enjoyed the camaraderie of various fly-ins over the years, with the Omarama winter fly-in being the annual highlight on our social flying calendar, as it is particularly family friendly.

Ivor, Evan, Jessica and Bettina Yockney

To me, AOPA offers an excellent cross-section of aviators because it is not a 'type' association, and as such, the variety of pilots, their families, life experiences, ages and the associated aircraft types is always fascinating.

I stood for the Executive because I feel I can give something back with knowledge gained through my aviation experience and continued involvement. I deal with a lot of new issues in the commercial environment before they trickle down to private pilots.

I believe new members also need something more immediately tangible from AOPA, especially if they are at an early stage in their flying careers, where they may not understand or appreciate the amount of advocacy work AOPA does on their behalf in the aviation sector. This may be in the form of social events, spontaneous fly aways or a pilot mentoring scheme that encourages new pilots to establish a safe and enjoyable start to their recreational flying. In doing so, we encourage the next generation of aviators to enjoy recreational aviation in an increasingly complex environment.

Thoughts on safety *from Paul Hood*

Aircraft fuel management

There are a few aspects to managing our aircraft fuel. First, on every flight we make, it is not only essential to have sufficient fuel for the trip, it is a legal requirement for VFR to have sufficient fuel to get to our destination plus an extra 30 minutes at cruise consumption by day, and 45 minutes at night. IFR requires more.

To calculate that, you need to know the aircraft's fuel usage in climb, cruise and descent. While there is a fuel consumption guide in the aircraft manual, this will vary depending on how the plane is flown. We should all develop a good understanding of our own aircraft consumption under our own piloting. You also need to know the weather to work out your ground speed. Most of the EFB (Electronic Flight Bag) apps can calculate fuel usage as long as the right information is put in.

While the saying goes 'one of the most useless things in aviation is air in the fuel tank', we do need to be aware that fuel load affects our weight, and weight and balance. When strip flying, strip surfaces, slope and length sometimes require the aircraft to be considerably lighter than its max all-up weight. If the strip is one-way, wind direction and strength are further factors that will impact on the calculation. With strip flying, your hourly fuel usage will be higher with multiple take offs with high power settings, so you may need to keep a close check on your fuel level throughout the day. This will help you develop an understanding of the aircraft's fuel consumption under these flying conditions.

With winter coming on, be aware that cold, damp conditions are more conducive to condensation forming in the fuel tank. This is exacerbated if you don't fly your aircraft as much in winter. Thus, it is important to be even more vigilant when checking fuel from the fuel drains in the wing and under the engine. It is a good idea to take fuel from the drains before moving the aircraft, as movement can mix the water with the fuel. The drains are at the low point in the tank where any water will settle.

Along with checking fuel drains in your pre-flight, dipping the fuel with the fuel stick is the most accurate method of measuring fuel. Fuel sticks are specific to the aircraft, so must stay with the aircraft and not be used on another plane. Good practice if not using your aircraft is to keep the fuel tanks near full, as empty tanks are a better environment for development of condensation.

If siphoning fuel from your aircraft or fueling from a container, be aware that the container must be earthed (connected) to the aircraft, and use a metal funnel. Avoid wearing nylon clothing when handling fuel; static electricity is not your friend when dealing with fuel. The earth wire on fuel pumps should always be used and needs to be connected to a metal part of the aircraft. Be aware that it is important to get the earth clamp connected to bare metal; paint and plastic are not good conductors.

Happy and safe flying, and try to give that aircraft a run over the winter months.

On the Boeing 737 Max and autopilot trim runaways

By Russell Taylor

For those of you, like myself, who have taken more than a passing interest in recent developments with Boeings 737 Max aircraft, the following story outlines the similarities in the autopilot systems with our own aircraft.

With the recent Indonesian Lion Air crash, followed shortly afterwards by the loss of the Ethiopian 737 Max, suspicion has grown that the newly developed MCAS anti-stall system may have been to blame in both accidents. I have a little more to add on this from my own experience, but more on that later.

With the airline industry around the world downsizing to smaller twin engine aircraft with better fuel consumption, Boeing moved to increase the power and cabin size on its most popular twin engine jet, the 737, to meet the new emerging market.

With the increased power from the larger engines mounted further forward than on earlier 737 models, Boeing engineers found that, when hand-flown with the flaps retracted, the aircraft had undesirable handling characteristics at higher angles of attack.

The MCAS system was Boeing's answer, using an angle of attack sensor which, when activated at higher angles of attack, fed a trim down signal to the aircraft's computer, commanding a nose down trim to prevent a stall. Unfortunately it appears, from information thus far released, that the angle of attack sensor has failed in both these accidents, sending erroneous signals to each aircraft's computer commanding full forward trim, which the pilots could not override, causing a complete loss of control. It was found that instead of a small downward adjustment of forward trim over a given time, when the angle of attack sensor failed, the computer rolled in full forward trim.

You might ask, what has this got to do with my aircraft? In actual fact, a lot!

I fly a Beech Bonanza A36 fitted with the original legacy Century 3 autopilot. For those of you who fly Pipers, it is known as an Altimatic 3. This autopilot is a three axis autopilot featuring Heading, Roll and Pitch. If you have an Altimatic 2 or Century 2, it only has a two axis function of Heading and Roll; it does not have the Pitch or Altitude hold.

The Century 3 fitted to my aircraft also has electric trim which, when the altitude hold is selected, trims the aircraft automatically, adjusting the trim forward and back to maintain altitude. It has a small indicator which constantly shows the degree of pitch, and you can see the trim wheel rolling forward and back, adjusting the trim to maintain altitude, particularly when flying in turbulent air.

Although this autopilot is forty years old and analogue, it still does quite a good job of flying the aircraft in most flight conditions, although it does not have the accuracy to fly an ILS that well, so I choose to hand fly the ILS approaches.

That brings me around to my own situation with a trim runaway.

Fortunately I am an avid reader of all things aviation, and I have read a lot over the years about the dangers of errant autopilots, and how they will kill you if you don't treat them with respect. Just prior to this incident I had read in the American Bonanza Society magazine about the dangers of a trim runaway in a Bonanza. The article stated that while in autopilot altitude hold, if a trim runaway occurs, the aircraft CANNOT be recovered from the ensuing dive without manually rolling back the trim by hand. There have already been many fatal accidents in USA through this cause. Using the electric trim switch on the yoke will be too slow to provide recovery before the speed goes through VNE. Bonanzas are very slippery aeroplanes and normally cruise at 160 knots TAS.

In 2002 I was flying around Australia on an AOPA Safari with my wife Christine. We had flown from New Zealand via Norfolk and Lord Howe Islands to Bathurst in New South Wales, then on around the south coast to Mildura in South Australia.

We were cruising along at about 2500ft, passing fellow Kiwi planes on a beautiful clear blue day and were just about to set up a descent into Port Augusta for fuel. The autopilot was engaged and everything was pretty good in the world.

Suddenly CRASH. The autopilot, struggling to hold altitude against full forward trim, let go, sending the control column flying into the dash. Next second we were weightless with everything inside the aircraft stuck to the roof. I could not pull the plane out of the dive and the speed was heading up to red line.

Instinct kicked in and I rolled back the trim wheel as fast as I could, which pulled the plane out of the dive without going through VNE. Christine asked what had happened but I couldn't talk, my vocal chords wouldn't move. After landing and when the shaking had stopped, I managed to tell her what had happened. I was lucky, I didn't have to change my underwear! The rest of the trip went without further mishap, with the electric trim turned off.

Back in New Zealand the real challenge began: what had caused this trim runaway?

Speaking to many avionics shops, no one seemed to have any idea what it could be. I flew the aircraft to a well known shop in Auckland and left it with them for a couple weeks to diagnose the problem, no luck, the problem continued. It was too dangerous to use the aircraft in altitude hold until it was solved. I was flying along watching the trim gauge like a hawk for any sign of forward trim starting to occur, but the problem continued and I just couldn't use Alt Hold safely. Wherever I went I would ask engineers if they had encountered this problem, but no one had heard of it.

Finally, I was up in Fiji with Tom Dick flying his Piper Arrow on aerial photography when I came across an Australian engineer who had the answer. All the Century autopilots have small detachable connectors to allow each component of the autopilot system to be removed separately for maintenance. These little connectors comprise of about six little brass pins on one side entering small brass sockets on the female side. He suggested tightening up the female side by squeezing up the socket with a pointed spike then cleaning up both sides with contact cleaner. I did this to the connector on the autopilot pitch trim servo and voila, problem solved!

While in Fiji, Tom's Arrow tried to kill me as well when the engine flew to bits near Suva Airport… but that's a story for another day!

Getting back to the Boeing 737 Max saga, initial reports suggest that the pilots in the Ethiopian disaster turned off the MCAS system and started trimming the aircraft up with the yoke mounted electric trim switch. They then turned the MCAS system back on again for some reason, causing the MCAS to take over again and bringing about an unrecoverable loss of control.

One wonders what would have happened if the pilots had used the manual control wheels to recover the aircraft. Apparently they were not touched!

If you've had an experience that could help build the knowledge and awareness of other pilots, please consider sharing it in this column. Learning from others' experience is a great way to increase safety for all.

Are you electronically visible?

Do you want to follow your friends?

(Not talking about twitter Donald!)

By Ian Sinclair

Aircraft equipped with 1090ES ADS-B Out transponders can have their transmissions decoded by low cost digital receivers. These may be used for ADS-B IN traffic awareness devices in cockpit, but that is a subject for another day. The data captured from ground-based receivers can be sent to aggregation websites and then viewed by users via the internet.

Many of these sites have a design emphasis on airline operations, so that fare paying passenger flights can be monitored. There are several aggregation websites. There are many existing receivers. You have probably seen these websites.

Recently I have been looking at setup options and feeding ADS-B Out data to aggregation websites. Murray Paterson and his team at CRS have a plan to put some receivers in around Otago and Southland, so I am giving them a hand by doing some setup. The payback is that I also get my own site done.

My plan is to feed four aggregation websites. I thought I would make some brief notes on transponders, ADS-B Out, how to feed data and a brief note on using the sites.

Transponders

Mode C. My aircraft is fitted with a Mode C Transponder. It transmits on 1090Mhz. It sends a Squawk Code and altitude information when it is interrogated by SSR radar or TCAS. The transmission cannot be seen by a ADS-B IN digital receiver.

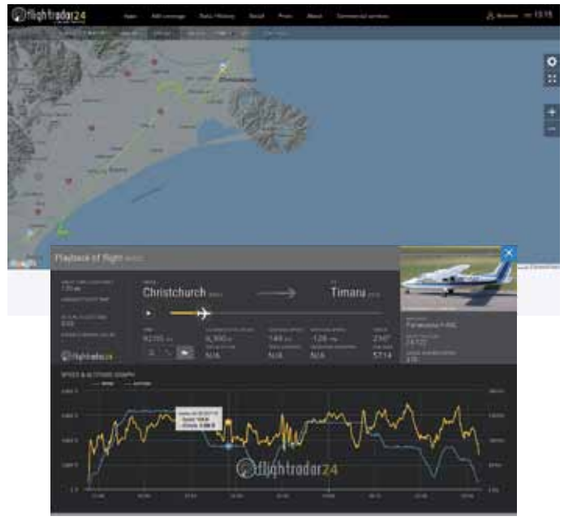
Mode S. Some aircraft have a Mode S Transponder. It transmits on 1090Mhz. It sends a Squawk code, altitude information and a unique ICAO address when it is interrogated by SSR radar or TCAS. It can work more co-operatively with SSR and TCAS. The transmission can be seen by an ADS-B IN digital receiver. The transmission does not include position and velocity information.

When a Mode S transponder transmission is received by multiple ground stations' receivers connected to the same aggregator, a position and velocity, calculated based on radio transmission travel time to the ground station receivers, can be derived. This MLAT calculation is done at the aggregation website if there are enough ground stations available. It is possible to do this as every transponder (and therefore aircraft) has a unique ICAO address included in every transmission, so the data can be matched.

1090ES ADS-B Out. The new standard. It transmits on 1090Mhz, is backward compatible with existing SSR and TCAS. It can act as a Mode S transponder. It also has a unique ICAO address included in every transmission. It has a GPS connected so it can include position and velocity information in the extended squitter transmission. ADS-B Out does not rely on an external interrogation to trigger transmission. This happens automatically. An aircraft can be tracked by a single ground receiver. Typically many receivers may receive the same transmission. The aggregator joins these together to create the virtual radar.

So what is my plan?

My desire is to track my flights as I would be able to by using any digital flight following service. When I had SpiderTracks installed, my GPS derived position travelled via satellite to their website, where I could view my flight. I could also go back in history and view previous flights. I could also set alerts.



What do I need to achieve flight following? I need to install an 1090ES ADS-B Out transponder in my aircraft, and have sufficient ground-based receivers installed to pick up transmissions during my flights. Receiving transmissions in remote, mountainous terrain and low level routes is currently a bit patchy.

Do something. To work towards achieving this goal I am going to start by feeding ADS-B Out transmissions received at my woolshed to four aggregation websites.

Hardware. The receiver uses a RaspberryPi, a computer that fits in your pocket, an SDR (Software Defined Radio) USB dongle and an external antenna, all mounted in a weatherproof box on a pole. The hardware costs about NZ$350.

Software. I have started with the Flightaware SD card image. It is plug and play and after 10 minutes on the Flightaware website it was connected and feeding. I have then installed feeders for Flightradar24, Radarbox24 and ADSBExchange. In each case it takes a few minutes to load the software and configure the website. If you are interested in step by step instructions, drop me a line. I have notes.

What it does. The RPI runs a program called dump1090-fa which configures the SDR dongle and decodes the incoming date. In the Flightaware setup you can view aircraft that your receiver is seeing in real time, on a local web page. It also runs a feeder programme for each aggregation website.

Currently it's running on my front window sill with a limited view of the sky. It is unclear how much data it will consume, but I think it will be about 1–2 GB a month. Ultimately it will depend on how many aggregation websites I feed and the number of aircraft seen. I think I will disable feeding MLAT, which will reduce transmission volume.

Aggregator data source. We are looking at these sites because they show us ADS-B Out. Some sites in some areas also collect data from Flarm, ATC, MLAT Calculations and airline flight plan estimations. Looking at the sites, we will just focus on ADS-B Out.

Setting up login accounts to aggregator websites. With all the sites, except your local PiAware Skyview and ADSBExchange, you get more functions if you have an account. If you feed a site you usually get a free plan at a reasonably comprehensive level.

PiAware Skyview. View the local receiver. You need to be hosting a receiver for this to work. Great for showing that your receiver is working. Simple options, you need to have access to the network the receiver is on.

Browse to the IP address of the receiver, eg, on my network: http://192.168.8.10 > then choose 'Go to Map'.

Try http://kb3org.info:8080/ to see a live receiver with a lot of traffic.

Flightaware. If you have 1090ES ADS-B Out you can use your own registration. I have chosen ZK-TZZ as my example as it is very active in my area.

https://flightaware.com > Search > ZK-TZZ. This will take you to the last flight. In this page you can see many options. Note that there is a warning that you can only see flights that match a flight plan. If you create a login you can set options to see non flight plan flights.

Flightradar24: https://flightradar24.com >> Search >> ZK-TZZ >> Choose a flight from the list with Play.

Radarbox: https://radarbox24.com >> On the search panel >> Advanced and enter in ZK-TZZ >> Search >> Select the ZK-TZZ that shows under registrations, expands >> See history.
You will get the latest flight. Scroll down for more flights.

ADSBExchange: https://adsbexchange.com >> Other Tracking Info >> Flight History >> Search Type - Registration >> In Enter Registration - ZK-TZZ >> Submit >> Choose a date.

Note that clicking on a track dot gives details of that transmission. Look at April 24th; this day has multiple flights on the same day. This site shows all activity for one day, not seperate flights.

Further reading about ADS-B

https://www.caa.govt.nz/ads-b/
https://www.nss.govt.nz/adsb

Let me know: ian.sinclair@aopa.co.nz or ph 027 4324150

- Which site(s) you like? Why?
- Which sites you don't like? Why?
- Where you cannot see your ADS-B Out aircraft flights recorded.
- Which website you viewed, aircraft position, altitude, date, time?

I will report back on how things go.

Blue Light in Rangiora

By Senior Constable Craig Roberts

On Sunday 28 April 2019 Blue Light Canterbury got the opportunity to take seventeen youngsters flying, courtesy of AOPA members. 'Take a Kid flying' has been a favourite with Blue Light for a number of years.

A big thanks to Paul Hood and his dedicated team of nine pilots, who kindly took the time to share their passion for flying with the group of boys and girls, aged 11 to 13 years, chosen by their schools. Many of the group had never flown before, let alone been in a small fixed wing aeroplane. Thanks also to Canterbury Aero Club for their venue.

After splitting into groups, all the planes and youngsters took to the skies. Weather conditions were pretty good, sunny but with a slight nor-west breeze, which added to the adrenalin rush. Many of the youngsters also had the opportunity to go up in a helicopter, including yours truly, who has a real phobia of flying and had never dreamed of soaring the skies in a chopper. Cheers to expert pilot Tom for putting me at ease.

Throughout the day the positive interaction between pilots and kids was apparent. I couldn't help but notice the smile on the face of a lovely young lad with spina bifida, and his impeccable manners in thanking the pilots. Often teens don't say a lot or express themselves easily at the time but, I can assure you, the van rides back to town were full of non-stop chatter regarding the exciting time they'd had.

Blue Light is an incorporated society run by a group of volunteer police officers who organise youth events to help forge good relationships between young people, their families, the community and the Police. We are extremely grateful to Canterbury Aero Club, Rangiora for their hospitality, generosity and the aviation knowledge shared with us throughout this wonderful day out.

Ross Millichamp adds...

Thirty knots of westerly at 2000 feet is not the ideal scenario for giving kids their first taste of recreational aviation. Conditions on the ground were typically misleading. Rangiora is sheltered at ground level by trees and buildings, but 100 feet up it is often another story.

As the kids in my group had never been in an aircraft before, I decided to take the safest option weather-wise and track down the Ashley River and along the coast to Christchurch and back. That way I could stay low, keeping out of the wind and away from any bumps arising from turbulence off the surrounding hills. I also figured that I would never be terribly far from home base if I needed to pull the pin due to airsickness or fear of flying.

My crew's reaction to flying was mixed: one loved it, one appeared not to notice we were in the air, and the other was terrified. This last had been cheerful and confident on the ground but his mood changed within moments of becoming airborne. I asked if he wanted to continue and he nodded bravely. The flight went well for a while but when we turned for home and tracked slightly offshore he became quite anxious. It turned out that he hated water. I really felt for the kid. He had no way of knowing that flying would not be his thing, but the constrained airspace around Christchurch meant that I could not straight-line it back to Rangiora. Luckily the people in the circuit made room for a priority straight-in arrival and we quickly got back on the ground.

By the time lunch was served everyone was safely back on the ground and generally positive about the experience. The aviation converts were offered a treat in the way of a second flight, this time in Tom Elworthy's AS350.

Further memoirs of a helicopter pilot

By Peter Avery

In the last issue, I talked about how I got into flying helicopters and my first commercial jobs in New Zealand, California, Texas and PNG. In late 1992, after we had ceased heli logging in PNG, we entered into a joint venture with Jack Erickson and started heli logging with his Sikorsky Skycranes (Cranes) in the Malaysian state of Sarawak on the island of Borneo.

Jack's company, Erickson Aircrane, at that time operated a dozen Cranes purchased from the US military. He had quite a large maintenance facility based in Oregon to maintain the fleet and carry out required modifications. At that time, uses were primarily for logging, with some other lifting work and fire fighting.

Up to this point I'd flown a variety of helicopters, which was fine, but I was keen to fly one type for longer so that I could really get to know it. Well, I got my wish with the Crane. After completing training in Oregon I stepped off the plane in Sarawak with no idea I'd be there for 22 years, fly almost 20,000 hours and burn 40 million litres of jet fuel.

The Crane has two Pratt and Whitney engines totalling 9600hp and lifts 10 tons, but is thirsty at 2200l/hr. The timber companies we worked for already had extensive ground logging operations in most areas, which helped with logistics, but it was still quite a task with fuel, parts, etc, having to be transported up to eighty miles inland via rivers then trucks, sometimes on very marginal dirt logging roads.

The trees were considerably larger than in PNG, and with more harvestable species available. It was not unusual to get five or six logs, each weighing eight tons, out of one tree. The Malaysian government soon recognised the advantages of the reduced impact of heli logging in comparison to using bulldozers, and subsequently the timber companies' royalties for heli logs reduced by 50%. They also stopped bulldozers logging on slopes over 30°. This helped us considerably and within a short time we had four Cranes working.

It was a very interesting time with lots of research and development with the aircraft, logging gear and techniques. Jack would from time to time stay in camp to help us work out teething problems. At around US$10,000 per hour, people would often say, "The wood must be very valuable to warrant lifting it out by helicopter". Well, not really, we just needed to lift a lot per hour. One of the more premium and heavier species went to India for railroad sleepers, and a number of lighter species for plywood. Some of the poorer quality went to Japan for packing and pallets, etc.

We logged out to 2km and averaged between 20 and 30 lifts per hour. Being selective, and with the majority of trees still standing at great heights together with some very steep country, we generally required a 325ft long-lilne. We were still using the hybrid mechanical /electrical grapple we had developed in PNG. Smaller logs were tagged to others with heavy nylon rope, sometimes three or four in a daisy chain, which could mean a total length/height of 700ft. That increased the challenge, especially if the skid (landing area) was only a wide corner of a road on a steep face. We logged up to 5000ft with ISA plus 20° temps giving us density altitudes of up to 7500ft plus humidity. At these high DAs, our lift capacity was obviously reduced. A few years in we developed a fully hydraulic grapple which proved a real game changer. Now we could power open and close the grapple with the push of a button in the cockpit. This increased production and made it considerably easier on man and machine.

We worked three weeks on, three off and were flown back to our home countries. When weather, break downs and fuel supplies permitted, we flew up to ten hours a day and 150 hours through the three weeks. Although not as physical as digging post holes or packing possum traps up hills, leaning out of the helicopter door for up to ten hours a day still placed demands

Croation remote-controlled mine sweeper that we flew up to the Peru–Ecuador border. Top: Nine ton logs destined for railroad sleepers in India.

From top: Logging in Sarawak; landed in old bauxite mine due to weather, enroute West Malaysia; crashed Malaysian military helicopter on Perot Island that we lifted down onto a barge.

on the body, mainly on the lower back, neck and right shoulder. The mental workload lessened as we became more current and proficient, a good night's sleep being the key. It was never boring as there was just too much happening – or about to!

We had up to six mechanics (Americans are not called engineers) on site per Crane. Scheduled maintenance was carried out at night, with major checks on a progressive basis to lessen down days. However, there were still numerous days down for unscheduled maintenance, particularly in the earlier years.

Over the years, due to fluctuating timber prices and Erickson's aircraft requirements in other parts of the world, the number of machines we operated varied, at times being down to just one. The aircraft were US registered and, logging being under their Part 133, we were not bound by any flight and duty times. At one stage, in twelve months, my back to back pilot and I put in 2400 hours on one Crane. That's great utilisation!

Between 2000 and 2003 our company was short of pilots worldwide and at times I was able to fly for them in other countries in my off time. This included logging in Canada and USA, and fire fighting in Canada, USA, Italy, Australia and Brunei. We also logged in the Malaysian state of Sabah. I still enjoyed being in the air more than on the ground, so during these years I also owned and flew various helicopters in New Zealand.

In Malaysia we had a wide nationality mix of pilots and maintenance crews. I remember on one three week logging tour training co-pilots, flying with a Malaysian, Swiss, Peruvian, Greek and Cypriot, all with varying levels of English.

Over the years we ferried to various other parts of South East Asia for lift work. Twice we ferried up into the Philippines to lift in tunnelling equipment. With island hopping and fuel stops, this was about 1000 miles. With our ferry tanks fitted we had a capacity of 9000 litres – about 3.5 hours above reserve. Depending on aircraft weight, our cruise speed was only 85–104kt. Monsoon winds at the time gave us a 20kt headwind, which made fuel management a little more challenging. A faster, easier trip home though.

Manila's main fresh water supply is a large reservoir to the north, and this was drying up. They planned to tunnel 13km through a 3000ft range and divert water from a river on the higher rainfall side. It took us two weeks to fly the equipment to both ends of the proposed tunnel. Several years later we returned to fly more equipment, as a major flood had blocked the tunnel over a 5km stretch.

I recall a few occurrences from these ferry flights. After exiting a 200ft helicopter corridor (across a large, not so clean lagoon) under Manila's approach, we climbed to 1500ft and there, level with us, was a kite. That got our attention.

Another time, while still on the main island and over stunted bush and flooded rice paddies, our main transmission chip light illuminated. This indicates that metal is being made in the transmission and is a 'land as soon as possible' situation. The rice paddies were not an option. We ended up landing on a lava island in a lake. While our mechanic was checking the chip plug and filter we were surprised to see two men on horses approaching over a ridge. One had a gun. Most folk in the Phillipines are very friendly, but there are those who are not. They kept their distance until joined by a woman carrying a sack on her back. It turned out there was a small village not far away and, hearing us land, the woman had come to sell us cold glass bottles of Coke. The smallest note I had was US$50. That made her day. With the chip checked and cokes downed, we were on our way.

Another time, while coastal at 500ft over some very nice reefs, we saw a large water spout in the distance, then another a short time later. This warranted investigating. As we approached we could see various canoes and we soon worked out the locals were fishing with explosives.

We also twice ferried up to the northern tip of Palawan Island in the Philippines to replace a flare tip on a gas rig thirty miles off shore. The boom that the tip was mounted to leaned out from the rig at 60 degrees. This put the small platform that the riggers were on to guide the four ton tip into the catches at 300ft above the ocean. This was some of the most challenging longline work I have done, as working over water provides very little reference. When in the hover setting, it can be very difficult to determine what or who is moving: the helicopter, the load, just the water, or all three. Depending on wind direction, the rig itself could be out of view also. We earned our bucks on those jobs. However the nice resort we stayed in was a welcome change from the logging camps.

We worked from the shore and in the event of an emergency when out at the rig, we were not permitted to land on the helideck, their reason being that we would over gross it. Because of men in submersibles working around the rig, we were given a set area to ditch. They did say they would come and get us with a boat though. At the time I decided, if it was a question of settling a $25 million machine into the sea or just plopping it onto the nice shiny helipad, I would go for the latter and face the music after landing.

During the second of these flare tip jobs we were informed by our office that a Malaysian Air Force Sikorsky helicopter had crashed on a small island eighty miles off the coast from Penang in West Malaysia. It had crashed on approach to a cliff-top helipad on Perot Island, a military post on the border between Malaysia and Indonesia, really just a large rock sticking out of the ocean about 500ft high and maybe 2ha in size. From where we were in the Philippines, this was a ferry of around 2000 miles, with a brief stop at our hangar in Sarawak en route. A fair proportion of the ferry was through Indonesia, where we were required to pay for fuel with unmarked US cash, so we carried a good sized stash, with firm instructions from management that all incidentals bought with it were to be well documented.

About an hour south of Singapore, late in the afternoon, we encountered some serious thunderstorms, so landed in an old bauxite mine on an Indonesian island. Within minutes many villagers had turned up. They were friendly enough and we had offers of accommodation if needed. Within two hours it cleared and we were on our way to Batam. One of our mechanics seemed a little disappointed when we left. He was Malaysian and could speak the local lingo. He let on that in the short time we were there one of the village girls wanted to marry him.

We were astounded by the number of ships in and around Singapore and the Malacca Straights. Sometimes, many miles from shore, we would come across a container ship. We discussed the possibility, should a serious mechanical problem occur, of landing on the containers – though we did wonder whether our US stash would have been enough to calm the ship's captain.

We worked from an air force base at Butterworth just north of Penang. The crew of seven on the crashed helicopter was lucky to have survived. The only thing stopping a 400ft plunge down the cliff into the sea was a tree stump that had pierced the nose section. They had immediately secured the helicopter to a large rock. We ferried out the eighty miles and lifted the helicopter down onto a barge, then refuelled from drums and flew back to Butterworth.

A few years later we ferried again to West Malaysia to construct a power pylon that was on a rocky outcrop, inaccessible to their ground equipment. This involved about ten lifts.

In 2013 we set off to recover another downed helicopter, this time southeast following Indonesian islands to West Papua. This was about 1,700 miles each way, mostly in Indonesia, so an even larger stash of US cash was required for fuel. Other than being held up for a week due paperwork issues on entering Indonesia, the ferry down went well. We were based at Timika, a town near the coast. Thirty miles north at 14,000ft is the Grassberg mine, apparently one of the world's largest gold and copper mine pits. The Russian Mil 17 helicopter had been servicing the mine and had crashed just short of a helipad at 8,500ft. With a density altitude of around 10,000ft, and the return fuel to Timika at 55 to 65 knots, this load was right at our limit. Added to that, after lifting the machine off the hillside, we then had to climb over a 9500ft ridge and fly down an adjacent valley – reason being, there were some very unfriendly folk who had rifts with the mining company and who had been shooting at helicopters in the main valley. The one we flew out had taken 25 hits several months prior and, after expensive repairs (new blades, etc) had only been flying for a month when it crashed.

A good friend of mine, who had been an engineer for us since our logging days in New Zealand and then went on to fly, was tragically killed the year before in an inadvertent IMC accident; ironically less than a mile from where we lifted the Mil 17.

The ferry back was fairly uneventful until, during the evening post-flight at the last airport leaving Indonesia, we discovered a

Top: Building a tower crane in Sarawak for canopy observations and sampling (note the courageous men inserting bolts at the mid section). Right: Big bug in Borneo. Left: Ten ton truck flown into a Peruvian oil rig.

main blade crack indication. The blade spars are charged with nitrogen and have a turkey-timer type indicator that activates with a pressure drop. Sometimes these are simply a leak in the system, but it is taken very seriously, with no further flight until the blade is replaced. As we were only a few miles from Malaysia the quickest solution was to sling one over with our Squirrel. However, that was ruled out due to the Indonesian paperwork requirement. So we waited a week for it to be boated, then returned to logging.

By now we had been in Malaysia for almost 22 years. Erickson Aircrane had been sold several times and, with a new direction of mainly fire fighting and general lift work, we ceased logging in Malaysia. I spent the next year flying the Crane in Ecuador, supporting oil rigs in the Amazon Basin. It was interesting work. We flew the rig (itself up to 150 lifts) then supported it with diesel, etc. We also flew bulldozers, diggers for pipelines and the pipe.

We then moved down into Peru, still in the Amazon basin, doing similar work. We are currently working out of a large camp by a river for barge access. There are 1200 people in the camp and at various well heads. It is primarily gas with some oil. There is a large plant and jet fuel is produced on site. Beside the Crane there are three Russian Mils and two Bell 412s for passenger transport; a gravel strip and usually two airline flights a day over the Andes to Lima for crew changes. One of the most challenging parts of this job is that we are required by the DGAC (CAA) to speak a solid level four Spanish, not only for radio coms but also for training our Peruvian co-pilots. Languages certainly were not my strong point at school!

Three years ago, whilst back in New Zealand, I was flying hunters into the ranges west of Hawke's Bay with an MD 500. It was a particularly windy day and a gyrocopter flew through the area. At that time the only thing I knew about them was that they were a contraption best steered well clear of. That was about to change. But more on that next issue.

ADS-B
Check your visibility

new southern sky

The Civil Aviation Authority is proposing that if you want to fly in controlled airspace after **31 December 2021** you will need to be **ADS-B OUT** equipped.

As an aircraft owner/operator, ADS-B will give you:

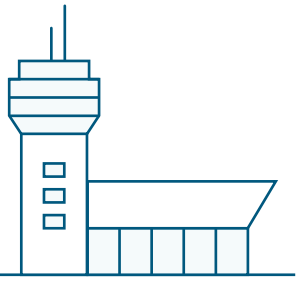
A more accurate and safer surveillance system

Visibility to air traffic control over a larger area in the New Zealand FIR because the coverage of ADS-B is greater

More precise information on your aircraft's position in an emergency, to a lower altitude and with 45 percent more coverage than currently possible with secondary radar

The option of installing ADSB-IN along with ADS-B OUT which can significantly improve situational awareness

The standards for ADS-B equipment are now set (Civil Aviation Rule Part 91.257). Talk to your Part 66 LAME or Part 145 maintenance organisation to get information specific to your aircraft and start to enjoy the benefits of ADS-B on your aircraft this summer.



www.nss.govt.nz/adsb

CAA
CIVIL AVIATION AUTHORITY OF NEW ZEALAND
Te Mana Rererangi Tūmatanui o Aotearoa