



# Approach

THE NEW ZEALAND AIRCRAFT OWNERS AND PILOTS MAGAZINE  
AUTUMN 2020

*ADS-B update*  
*Wrong way to New Zealand*  
*Ensuring weather works for you*  
*Student Microlight Build*



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## Approach

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### Coming events

- AOPA 49<sup>th</sup> AGM  
7 March 2020, Motueka
- AOPA Summer Safari  
8-14 March 2020  
northern South Island
- Warbirds over Wanaka  
1 April 2020
- Taildragger Weekend  
16-17 May, Waipukurau
- AOPA Winter Fly-in  
29-31 May, Oamaru
- Charlie Draper's Darfield Fly-in  
18-20 September

For more information visit  
[www.aopa.co.nz](http://www.aopa.co.nz)

Cover photo: Lachlan Ross (left) and Jarred Lister fitting the engine of the RV Student Microlight Build (see pg17)  
(Photo credit: Pete Steers)



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Deadline for ads, articles and photos for the next (Winter) issue: 20 April 2020.



## President's Report

Hi folks. I finished one of my 'Short Approaches' recently by noting that I felt flying was good for my mental health. This was not supposed to be a deep and meaningful comment, just a nice way to finish. Well, it got

me thinking and made a few other folks think too. There are only so many things in our lives that improve our mental wellbeing: maybe family, maybe friends, maybe work, maybe the garden and, maybe, flying. We are all unique and we relate to different components of our lives differently. Spending time contemplating the actions and aspects of our lives that give us emotional fulfilment and mental restoration is worthwhile.

It is generally accepted that doctors hand out antidepressant drugs far too often. Many of us resist handing them out, at least until it is the last resort; but then, hand them out we do. GPs in our country do not have many other tools at their disposal. Is the problem caused by the stress of modern life, by nuclear families, other people's expectations, social media, alcohol or drugs? I don't profess to know the answers. However, the increasing prevalence of mental health suffering, mainly depression and anxiety, are clear and undisputed. This is a problem for pilots and aviation regulators as much as for anyone else.

If you will forgive me delving into medical science for a moment and having a look at how effective these anti-depressant drugs are, we find that they are pretty useless. When official groups have combined numerous good studies, i.e. ones where half the patients are given sugar pills and half real pills, and neither the doctors nor patients know which is which, then only one

in 25 patients gets more benefit from the real pill than the placebo. Funnily enough, the sugar pills have almost as many side effects too... Yet still we persevere. I could not see us adding a feature that performs so badly to our planes. Our community needs better tools.

It would be great to find a study which investigates the soothing mental effects of sitting in the pilot's seat of a familiar aircraft as the wheels leave the earth and the sky beckons. Sadly, the funders of robust studies will not make any money out of such an investigation, so it won't get done. I guess the doctors won't be prescribing 'time out' flying a plane any time soon.

My interest was supported by AOPA USA with the introduction video for Alyssa Cobb, their online managing editor – a big job. She flies a C170 that she bought from her dad, and expresses very clearly how her time flying recreationally is what keeps her sane through the deadlines and demands of a complex and important role. She is the new face on 'AOPA live.com' for those who are not already regular followers of the Friday insight into AOPA USA.

Aviation doctors and authorities are very sensitive about pilots and their mental health. GermanWings and MH370 are all too fresh in our memories. However, I think we often fail to look at the other side of mental health; that is, the positive influences. I am starting a push to recognise this. I plan to emphasise the mental soothing and relaxation that is brought about by being 'up there' away from all the troubles of the world. Let's get a balance. Let's look for our 'happy places' and have no hesitation about drawing on them when we need to.

'Four wheels move the body, two wings move the soul...'

*Steve Brown, President*



Is anyone out there still flying? Every fibre of me suspects that the answer is a resounding 'Yes!' yet with each issue it becomes harder to source articles about all the entertaining, educational, even everyday flying that you, our members, are doing.

Think about throwing a few words together after a good day out or fly-away trip. We all like to read about and be inspired by others' adventures; let's make a point of sharing them.

This issue we look at the timely topic of ADS-B. From details of the lobbied-for subsidy to hands-on installation experience from the perspective of both pilot and engineer, these articles aim to assist if you are currently planning how to move forward. Take home message: act now.

The AGM and Summer Safari are creeping up fast. Weather prevented my attending many of last year's AOPA events (HB to Te Kuiti by road was just a step too far!) but I have my fingers crossed, eye on the ten day forecast, and hope to catch up with as many of you as possible in Motueka and beyond.

*Anna Mackenzie, Editor*

## aopa.nz/webcams - new cameras

Two new camera sites have recently been added to our website. Thanks to Terry Wilkins for making his two cameras at Balfour available. They are a great addition. Thanks also to Tussock Networks and Murray Paterson for adding the new camera looking south over Alexandra. This camera replaces the one at Alexandra looking north, which recently failed.

Aopa NZ maintains the webcam site for the use of all pilots. We are grateful to all the individuals and organisations who have made their cameras available. We know the facility is widely used by both private and commercial pilots.

Your suggestions for new camera sites are gratefully accepted.



## AOPA News

### Summer Safari and AOPA AGM 2020

AOPA's AGM weekend always offers a range of activities, socialising, formalities and fun, and this year launches the Summer Safari. And it's not too late to jump onboard! The AGM will take place at 3.30pm on Saturday 7 March at the Motueka Top Ten Holiday Park conference room, with the AGM Dinner to follow at 6pm.

The Summer Safari kicks off the next day, Sunday 8 March, running through to 14 March. It will take in the West Coast, Golden Bay, Tasman Bay, Marlborough Sounds, d'Urville Island, Wairua, Awatere and Clarence Valleys, Kaikoura coast and Waiiau. For further details, visit [aopa.co.nz](http://aopa.co.nz) and click on coming events.

### Save the date: Winter Fly-in 2020

This year's Winter Fly-in sees a revised date and format. The 2020 AOPA Winter Fly-in will be held Friday 29 – Monday 31 May, the last weekend that Countrytime Hotel at Omarama is open before its winter hibernation. This means that we will be in Omarama for Queen's Birthday weekend, rain, hail or snow. There will be no cancellation date.

There will be at least one day of flying around the southern South Island during the weekend. Weather will dictate which day and where, as per usual.

Please phone your bookings to Countrytime Hotel, 03 438 9894, to secure your room. Phoning is the way to go because online the Hotel is booked out to AOPA so online you will end up at the Heritage Hotel, a wee walk away from the Countrytime. Always, when booking in for events, mention you are with AOPA.

### Charlie Draper's Darfield fly-in

This fly-in has become very popular, with over forty aircraft taking in the fantastic Canterbury weather and strips in the local area and mountains. Mark this year's date in your diary now: 18 – 20 September 2020.

Accommodation options are Darfield Motel, 03 9754504 and Darfield Hotel, 03 3188325. Please mention you are with AOPA. Registration for the event will come by email nearer the time.

### Record year for ASPEQ

The 2018/19 financial year has turned in the best results yet for ASPEQ. The AGM in Wellington on 5 December saw the two shareholders (NZ Aviation Federation and Aviation New Zealand) advised that revenue for the 12 months was in excess of \$10 million. Although the company's primary activities still revolve around aviation industry groups, ASPEQ now provides exam facilities to ten different industries in 27 countries, with a grand total of 99,300 exams conducted over the year. With 58 permanent staff operating out of three offices (Lower Hutt, London and Canberra), the dividends flowing through to the wider aviation industry are now very significant indeed.

### A warm welcome to new members:

Charlie Beetham, Havelock North; Blythe & Grant Biel, Auckland, DAA; Jeff Brooks, Kaikoura; Francois & Nikki Buys, Auckland; Alex Campbell, Wellington; Neil Campbell, Fairlie, LPB; Chris Clark, Blenheim, CGM; Ross Collett, Timaru, RWD; Mitchell Coombe, Hamilton, DNF; Sam Deavoll, Christchurch; Max Earnshaw, Christchurch, OST, VMC; Owain George, Wellington, KAL; Phil Gottlieb, Foxton, CNA; Murray Hamilton, Kaikoura, JKO; Sean James, Papakura; Paul Jones, Blenheim, VQU; Abi Lane, Queenstown; Ka wai (Keith) Ma, Auckland; Rob Masters, Christchurch; Ian & Joanne McClelland, Blenheim, CKC; Robert McDonald, Auckland; Jay McIntyre, Blenheim; Murray Mulcahy, Auckland, SBL; Simon Paterson, Queenstown; Bill Penman, Tauranga, TES; Gayan Perera, Auckland, RJD; Caleb Riordan, Lower Hutt; Mark Robertson, Blenheim; Mike & Des Ryan, Lumsden, DMX; Steven Stokes, Whangarei, DWX; Jason Street, Rangiora; Glenn Thompson, Dunedin, TSB; Gary & Tess Thorne, Rotorua, VGT; Stephen Todd & Barbara Stirling, Murchison, TLO; Rick Velvin, Auckland, MAF; Arjen Visser, Auckland, MBY.

### Chart book takes off



The idea of combining all the Airways charts into one handy A4 booklet was originally intended as more a member benefit than a money-making venture, and when the Executive signed off on a substantial budget to get the ambitious project underway, the expectation was that it would break even. But "Why hasn't somebody thought of this idea before now?" was the frequent response to Ian Andrew's initial mock-up version.

Considerable negotiation went on to sort out copyright and other financial agreements with Aeropath, with additional funds allocated for promotion before too many pilots ordered the traditional large-scale charts as they became available. Our own external publicity in *Kiwi Flyer* and *NZ Aviation News* was supported by both publications providing additional editorial coverage.

The Executive is now happy to report that sales have well exceeded expectations, even providing a bit of extra revenue. Thanks to all our members who have made this project such a success by purchasing a copy at the special AOPA members exclusive price. And if you're planning to attend the Wanaka Warbirds this Easter and still haven't a copy of all the latest chart changes, don't delay – order your copy of our VNC Chart book from the AOPA website pronto.

### Lease aircraft wanted

The Otago Aero Club wishes to lease a Cessna 172 or Piper PA28 for flight training and members' use. If you can assist, please contact Joe Calder on 021 2473232 or [joecalder@hotmail.com](mailto:joecalder@hotmail.com)

# ADS-B installation subsidy

By Ian Andrews

The theme of this issue is ADS-B, and I'm sure that top of many of our members' minds at present is the installation subsidy brokered with CAA, the detail of which is currently being finalised.

To recap, ADS-B out will get a \$2500 plus GST payment from the Government general fund. If you voluntarily add ADS-B in, you will get a further \$500 plus GST.

For most operators who are predominantly VFR, that is about half the cost of the equipment. I can hear a few of you screaming now that it cost you more than that, or that you have special needs fitment. All I can say is that this was the best deal we could do, so let's move on and get fitted with the simplest and most straightforward gear we can buy.

Now is the time to talk to your avionics supplier, but I suggest that you look around and get several quotes, particularly for the installation.

My latest information is that the rebate/subsidy scheme will be ready to go by around the end of March. There are no details yet around how it will be done, but we were advised that it would be kept simple. The scheme will be administered by CAA, but we need to remember that it comes from taxpayer funds, so there needs to be a good level of accountability on our part. To claim it you will need your receipt and, at the very least, an avionics shop test showing compliance.

The challenge we now have, currently being addressed by the NZ Aviation Federation (NZAF), is the GPS source that can be used for a Trig TT21 or TT22, which some of you have fitted already. This is more likely to be relevant to gliders or microlights, but may also affect any certified aircraft with limited panel space. If you bought those transponders after the 2014 date, you can claim the subsidy, but you will need the receipt, so start looking.

NZAF have three members looking at the use of a TN72 uncertified unit as the GPS source. They are working with Trig and CAA to get acceptance, but will need some Acceptable Technical Data (ATD) for the installation. We have a long way to go yet. Please be patient as we are going as fast as we can.

At the same time, we are exploring the MGL unit through Stuart Parker from RAANZ. My information is that this will also help many Dynon users who have the Trig transponders.

Feel free to send me an email on your

particular issue, but please remember that we are trying very hard to get a solution that compares with the base price of the Appareo or Garmin all-in-one unit that sells for around US\$3000. I noticed that Aircraft Spruce had a package deal going last month for the TT22 and the TN72 for just under that price.

Now to the ADS-B in subsidy. Be careful. I suggest you read the article by Ian Sinclair in this magazine to see what he did then had to undo. My experience of fitting a TCAS system in both the Malibu and Piper Dakota was a NZ\$20,000 all up cost in both cases. The \$500 subsidy will ease the pain a little, and there are options which don't substantially increase the cost over the base price of the ADS-B out unit. It is a great add-on and definitely helps locating traffic.

That covers the basic scheme. The burning question is: What do you do now?

My advice is do not wait for a cheaper unit to suddenly appear on the market. It is not going to happen. Get to your avionics shop and get a quote, then just get on with it. The shops are filling up with orders and if you leave it until the last minute, it will be like buying an Air NZ airfare. The price will go up.

A final piece of advice. If you are IFR or intending to be IFR, make the jump to a good GNSS Navigator and use the subsidy to help get yourself up to a modern standard. It is well worth the effort and cost. The only piece of equipment I can think of that was made over 70 years ago and is still going strong, is my grandmother's old hand eggbeater. The new ones are rubbish compared to that. However, you cannot say that about a new Garmin G5 or similar electronic HSI



which will allow you to ditch the 70-year-old vacuum system in your plane.

## Ongoing advocacy

With ADS-B on the back burner as the details of the subsidy scheme are nipped out, NZAF is focussed on a range of other advocacy issues. The PPL Medical submission has closed now and NZAF has done a great job of countering almost everything in the Notice of Proposed Rule making (NPRM). We now go into a review phase with CAA and I can assure you we have a solid, risk based argument on our

side. This was our chance to change the medical for ever and to become in line with or better than other countries who have similar medicals. If you have not done so already, please go to the AOPA NZ website and look at the submission we made. NZAF have funded the TDB Advisory risk analysis which is the basis of our arguments. The only limitations on a PPL that can be justified are a weight limit of 2730KG on the aircraft and a five-passenger limit, plus pilot. We will push this objective to the limit.

Other issues include a funding review, Performance Based Navigation (PBN) rules, Advisory Circular (AC) reviews, Drone regulation, all of which we are working on, at what is a very difficult time for CAA. The organisation is currently undergoing a massive internal restructure and it is at times difficult to know who to deal with. I expect this will be finished by end July, but who knows? This is Government and my view is that we must be at the table even if we do not like the menu. The upcoming elections will stall everything to do with rules from about the end of May until the next government is established.

If there is a change, then the delay is even greater while new Ministers are chosen and briefed by the bureaucrats.

A final note on ADS-B in or out. Remaining days are on our website countdown clock, so there is no excuse to delay. The deadline will not be extended and if AOPA NZ was asked, we would agree. The message we want to get out now is that when you install it, turn it on and leave it on. If you are worried about Big Brother watching, take a bus and wear a greatcoat.

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# A practical insight: installing ADS-B into ZK-COL

By Ian Sinclair

I'd been talking to Oceania Aviation, Flightline, in Dunedin for a while about options for installing an ADS-B transponder in ZK-COL, a Cessna 172G, and, with the announcement of the subsidy for ADS-B installation, it was time to proceed.

The panel of the 172 is basic. The electronics that were permanently installed in the aircraft before fitting the new ADS-B transponder were the existing King KT76A Mode C transponder, two VHF transceivers and a 406 ELT. I also had some not permanently installed electronics that I use while flying: a four place intercom, Android tablet, my Android phone, a Stratux ADS-B in receiver and a bluetooth interface for the intercom.

The two options quoted by Flightline were from Garmin and Appareo. Both quoted options can have ADS-B in. Initially I thought I'd only install the ADS-B out, but the more I thought it through, the more it made sense to eliminate wiring and clutter in the cockpit by also permanently installing ADS-B in.

I chose the Appareo Stratus ESG with the Stratus 3i ADS-B in receiver permanently installed. It was a more economical

(relative term) option. Also the Status 3i is functionally the same as the Stratux ADS-B in that I was already flying with. Importantly it has a newly enabled GDL90 data output format to share ADS-B traffic and AHRS (Attitude and Heading Reference System) data. GDL90 format is supported by a wider range of software suppliers than the native Stratus data format. Importantly for me, this includes software options that run on Android



devices. I have no plans to upgrade the panel with any permanently installed electronics that would require a certified GPS source, which was offered with the Garmin option.

I placed the order and set a date for the install to coincide with a planned trip to Mosgiel. As I was a bit late arriving in Dunedin on the allocated day, COL only got into the hangar last thing Thursday. The install went as planned and I picked up COL late Friday afternoon.

COL already had a passive GPS antenna, installed on the fuselage behind the back window halfway back to the tail, which was not being used. This was removed and the Appareo GPS antenna was mounted in its place. The existing transponder's altitude encoder, 1090MHz transmit/receive horn and wiring was reused. Apart from the GPS antenna change, the only visual difference is the new Appareo transponder replacing the previous Mode C transponder in the panel and a new circuit breaker.

## So what is different now in terms of flying the aircraft?

The ADS-B out is just a transponder. I turn it on and forget it. I like that it shows me the encoder altitude on the display. Apart from that there is nothing to say.

To date the ADS-B in functionality of the Stratus 3i has been unusable for me. The first hurdle was that, in order to turn on the GDL90 compatible output, you must have an iPhone or iPad to run the Appareo Horizon Pro App. Eeerrr. The App is used to configure settings and upgrade the firmware on the Status 3i. It can also display the AHRS information,

but not the ADS-B in data.

The second hurdle is that once you do have an iDevice, you need to set your device to be located in the USA to install the Appareo Horizon Pro App, as it is only available to US users. Eeerrr.

The third hurdle is that the GDL90 data stream output by the Stratus 3i will not run with my existing Naviator software. It seems all GDL90 data streams are not made equal. Double Eeerrr.

I have been in touch with Appareo and expressed my frustration regarding all three of these things. I managed to get round the first two issues by using an iDevice and lying about where I live. The third is WIP and I am confident they will eventually sort it out, or I will change software on my Android. Yay for non standard implementations of standards, not.

The fourth and probably most frustrating hurdle is that CAA are saying that the Stratus 3i cannot be permanently installed as it is not certified. Triple Eeerrr with short scream and eye roll. Lloyd has had to uninstall it and remove it from the aircraft documentation.

The Stratus 3i is a device that is designed to plug into the Stratus ADS-B out transponder for power, GPS and 1090MHz reception, built by the same manufacturer. COL is a VFR only aircraft on private ops flying 95% of its flights without entering controlled airspace. If the transponder was to fail, which it won't, the impact on flight safety is zero. The PIC is able to handle this failure. The impact is identical to the PIC reaching over and hitting the SBY or PWR button, which he is entitled to do outside

Transponder Mandatory airspace. The impact of not having ADS-B in installed in a permanent and secure way has a negative impact on safety. I fear that CAA cannot see past the use of ADS-B in controlled airspace. Hey, what about the traffic outside controlled airspace?

CAA, make it easy for us to get ADS-B out and in into our aircraft.

In the short-term I'm still using my existing ADS-B in source with Naviator. I like

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Naviator as it audibly tells you of targets that are getting close to your position. The screen also shows traffic information against a moving map, along with GPS speed and altitude. I've had a couple of real world audible warnings that have allowed me to more quickly identify an aircraft in close proximity. It's a very useful addition to the MK1 eyeball that allows your eyes to remain looking outside the cockpit. When the Rangitata River bridges were out it was interesting to fly with

so many airborne ADS-B targets showing. About half of the aircraft and helicopters were transmitting ADS-B out.

Long-term I hope that my navigation and traffic awareness can merge onto one application. If Naviator had the NZ VNC's available I would already be using them, which would be ideal. Naviator has a "Bring your own charts" mode which I'd use if I could purchase our VNC charts at a reasonable price and in a useful format. It can display 3D synthetic vision and has a PFD display option. Flights show a snail trail and are recorded for later recall. All data is available offline and the screen can be split to show, for example 1) Navigation and Traffic, and 2) PFD or synthetic vision with AHRS presented.

Currently I need two screens running two separate applications to have all the functionality I want. I run Air Nav Pro

on my Android tablet for navigation and Naviator on my phone, which is bluetooth connected to the intercom, giving audible traffic alerts, phone and music. I'll probably add a second tablet running Naviator to present the ADS-B Traffic and AHRS via a PFD on split screens, in preference to using my phone. Work in progress.

So I am now visible to other ADS-B in equipped aircraft, being tracked by ADS-B aggregation websites, and I can more reliably gain access into controlled airspace after 31 December 2021. I look forward to hearing and seeing many more ADS-B out equipped GA aircraft in and outside controlled airspace via Naviator's ADS-B in traffic awareness tools.

A lot of improvement is needed to the coverage available to websites for flight following to be useful, but this will come with time. I have been following my flights to see how good the coverage is.

Flightaware and Flightradar24 cover a fair bit of the country but it's patchy. Low level areas away from populations, and mountainous areas below the peaks are scratchy to non-existent. I was surprised that I had to set up my aircraft in Flightradar24 website in order to be able to search for it and view its history. Flightaware just seemed to work. Hopefully we can improve the ground based coverage to the extent that it can follow most VFR flights for most of the journey.

The total gst inclusive cost of the upgrade was \$10,508 and with the subsidy of \$3,450 to come, I will have a net investment of just over \$7,000 to be ADS-B out and ADS-B in equipped.

Is that good value? For me that is equal to a year's avgas, or twenty times the cost of the android tablet I fly with, or 1000 times the cost of my favourite hamburger, or seven times the cost of a LPAT device that could do the same job, or... Bottom line: it's aviation; certified stuff is way too expensive, but "Hey, what do you do?" (Mafia style voice, pained look, shrug, open palm hand gesture).

Would I do it again? Yip, I like tech stuff and ADS-B really appeals to me as a useful tool. I will probably only enter airspace a dozen times a year but, for me, the benefit is improved traffic awareness, visibility of my aircraft to other aircraft with ADS-B in receivers and flight following.

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# ADS-B is all on...

By Jay McIntyre

Well, kind of.... With the Government finally coming to the party and helping out, to some degree, with the cost of installing ADS-B, one would think owners would be crawling over one another to upgrade.

In our experience so far, this is proving to be the case, and I have actually started asking customers if they want to upgrade while we have their aircraft in the shop – with so far, little to no take up.

I'm not sure if this is because, although the grant has been announced, the Civil Aviation Authority is still developing the application process and administration system for the grant scheme. Further details and an indicative timeline are to be announced in early 2020.

Additionally, there still seems to be a considerable amount of confusion, misinformation and/or lack of understanding about the best way forward, and, in some instances, even about what is required.

Naturally, your avionics provider can explain the options, and the aim of this article is not to provide specific answers,

but rather to offer a couple of recent anecdotes which might prove useful in that they illustrate potential pitfalls and unintended consequences of having this work carried out.

So, what unit are you going to install? In New Zealand we are limited to installing the Mode S (1090MHz) Extended Squitter Transponder. It would seem that Trig and Garmin units are the go-to units for the average GA operator, and the general consensus seems to be that the average Garmin unit will cost a bit less up front but take more work to install, whereas the Trigg costs a little more but is less work wiring-wise to install. I know which one I'm going for!

Additionally, Trig have a neat little remote head unit that is perfect for older and homebuilt aircraft, which



typically have less room behind the panel. Unfortunately, we are unable to use the UAT (980MHz) units in New Zealand. Some of these are very cool, with units that fit in the wing nav light! Apparently, there is some testing going on with non-TSOed gear for New Zealand use, but as far as I am aware, nothing has yet been heard from CAA on this.

With a couple of installs under our belts, I am happy to confirm that there is nothing to be nervous about for the average install (ie: swapping Mode C for ADS-B). Your regular maintenance provider should be able to do the job with no fuss.

The initial proposal was for all ADS-B installs to be carried out by Part 145 shops, but this was completely nuts as a basic install is not difficult and if you take it down to the bare nuts and bolts, who really cares who installs it (within reason!), as long as it tests correctly. Of course, as it happens there are not enough 145s around to do the work in the time given.

The other idea that we and many others lobbied against was the idea that all Special Category aircraft and those without STCed installations would be required to have the installation designed and approved by a certified Part 146 Design Organisation. Luckily CAA were finally convinced that an appropriate amendment to AC43-14 would be suitable, and as such, ADS-B installation in your RV or Nanchang can be carried out with the minimum of fuss and without a requirement to spend \$10,000 plus with a design company for a job that is not that hard – after all, it's not like you're adding another wing!

So, as it stands, your routine Part 43 maintenance provider should be able to do the install for you, but the initial testing/calibration must be carried out by a Pt 145 maintenance provider. After that, the 24 month checks can be carried out by your normal maintenance provider, provided they have the correct test gear.

I suggest that if you are intending to upgrade other avionics at the same time and integrate everything, then you really do want to talk to a proper avionics shop.

### Things to watch for

Lastly, a couple of 'gotchas' we encountered from a recent install that could chew into that nice little rebate you're expecting...

While testing the newly installed unit, the test procedure called for the unit to be tested up to 25,000ft. I don't think the poor old altimeter had ever been to that height, and although the altitude was increased within the limits of the 2000 fpm VSI, on the way back down after calibration the altimeter decided that enough was enough and something let go inside, resulting in the altimeter sticking at 9500ft and the QNH scale being wildly out of whack.

Hmm... Who pays for that? Luckily for the owner, the avionics provider wore that one (out of the goodness of their heart) and the altimeter was easily fixed, but it is a potential unintended consequence.

Later that day, I went to carry out an engine run to complete the annual inspection on the same aircraft, only to find there was no oil pressure. Damn...

The Continental must have lost the prime to the oil pump after having sat devoid of oil for longer than intended...

Muck around for a while and eventually find that that one of the wires to the electronic oil pressure gauge had been inadvertently snipped while removing the old transponder wiring loom...

Argh, more goodness of heart!

Speaking of old wiring looms, hopefully most maintenance providers will take the approach of spending a little extra time to remove the old looms, plus any of the other horror shows that lurk behind the panel on many of our older aircraft.

Lastly, the paperwork and certification of the install will take some hours. Most GA aircraft will be required to have

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a complete Electrical Load Analysis carried out, as for many there will not have been any electrical work done since the requirement for ELAs came into force a couple of years back. This can be a futile, time-consuming exercise that means little to the average pilot (and even engineers!). In conjunction with the ELA is a new form for the Flight Manual – the 24021-20 was quietly slipped into the system in December and is a record of the ELA that tells the pilot how long the battery will last if the electrical system fails and what the highest continuous loading of the generating system is. Additionally, it advises the pilot what electrical systems are 'load

shed' in the calculation of the ELA.

For the average Sunday afternoon pilot, I would contend that this is all a bit of gobbledy gook, as most pilots probably don't realise they have had an electrical failure until the radio or transponder goes dead!

So, let's get to it and get those ADS-B installations completed by December 2021! 🦋

Jay McIntyre is the owner, LAME, IA, PPL and chief bottle washer of JEM Aviation, a restoration and maintenance company based at Omaka airfield.

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# Wrong way to New Zealand

By David Berger



We all have our aviation heroes: Kingsford Smith, Gordon Taylor Chichester, Jean Batten... the list is long and there really is someone for everyone. My hero is Douglas Corrigan.

Corrigan applied and applied and applied for permission to cross the Atlantic from New York to Ireland in his ramshackle Curtiss Robin monoplane, but was always turned down as the authorities didn't believe he, or it, could make the trip. By 1938 he'd had enough. He sought and received permission for the less onerous coast to coast flight from New York to Los Angeles, promptly took off on an easterly heading and fetched up in Ireland. To his dying day he swore blind he mis-read his compass and only realised the error when it came time to land. He was known forever after as 'Wrong Way Corrigan'.

When it came time to bring my Cessna 185 to Australia and New Zealand from Colorado, it was apparent there were three ways to do it: in a box on a ship, by air 'the right way' and by air 'the wrong way'. For me there was only one option. Since 2019 was the first time it had become possible to cross Russia, west to east, by foreign light aircraft, instead of going 'the right way' (through Alaska, across the Bering Strait to Siberia, down to Japan, through the Philippines and Indonesia and down to Australia), we decided to go 'the wrong way': across the North Atlantic, down through Europe to Russia, across to Japan and then down through Asia. That made 278 degrees of longitude, versus 82 degrees 'the right way', but what a trip!

I bought N185MW, a 1980 Cessna A185F Skywagon, in December 2015 in North Dakota, always with the intention of bringing it to my home in Australia and flying it in New Zealand and around the South Pacific. When it comes to payload, range, efficiency and the ability to haul a load out of short, unprepared strips, the Skywagon is unmatched, which is why you trip over them in New Zealand. Nevertheless, for a long trip like this, a few extra preparations were necessary.

Flint tip tanks gave a 250lb gross weight increase and a useable fuel capacity of 430 litres. The engine was upgraded to a 550 from a 520, giving extra take-off security hot and high at heavy weights. Titanium gear and an aftermarket 14 inch tailwheel made the possibility of undercarriage failure go away. Folding jump seats allowed us to pack more stuff while cargo nets made sure it wouldn't clout us around the ears. Avionics was the really big expense, with a state of the art Garmin cockpit, an HF and some nice-to-haves like a satellite phone with mounted aerial and a panel-mounted marine VHF radio. We also had eight Turtlepac 'jerry cans' so we could tanker an extra 150 litres of fuel with us in the pod.

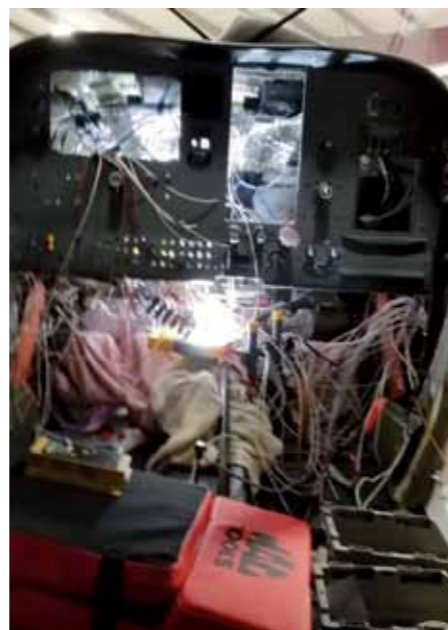
Any expedition worth its salt must be beset by impossibilities, scheduling crises and general mayhem, and so it was



Above: Greenland ice cap; inset: the three muskateers, ready to depart - Tom Berger, Joe Fournier and David Berger.

Below left: six weeks pre-departure. Below right: fuelling from drums at Schefferville on the Quebec/Labrador border.

for us. On April 1st 2019, neither of the pilots – myself and my 18-year old son, Tom – had an instrument rating. By the end of April we were converting Tom's brand new Australian instrument rating to its FAA equivalent, applying for Russian visas, getting ready to leave for USA and



congratulating ourselves on how intrepid and clever we were. All back slapping ceased, however, when we saw N185MW in the mechanic's shop in Grand Junction, Colorado, in what can only be termed 'a state of undress'.

Six months' labour by the entire engineering strength of the USS Nimitz wasn't going to see this baby in the air and there followed a short but intense three day period of breast-beating, wailing and keening (by me) and furrowed brows and uncomfortable stares into the middle distance (by the mechanics), with a final resolution adopted to work eighteen hours a day and have the aircraft ready for a delayed departure six weeks hence. And so, amazingly, it proved.

We left Grand Junction in early August and made an 820NM non-stop flight to Anoka Field in Minneapolis, where we got the new engine tuned by the Bolduc engine shop, as we weren't confident we had got it right in the 8000ft density altitudes of summer in Grand Junction.

It was immediately apparent that we had a few advantages over the aviation pioneers, which would make our trip a doddle compared to theirs. Setting course simply entailed sending the flight plan from the iPad to the panel by Bluetooth, pressing 'Accept' and letting the incredible Garmin autopilot fly us to our destination, while we monitored, enjoyed the view, listened to Spotify and chatted amongst ourselves on the mobile or sat phone.

The first part of our trip we were three-up, as we couldn't get insurance to cross the Atlantic without someone who had done it before. This meant our friend, Joe Fournier, who had been looking after the aircraft in Grand Junction and who is nothing less than a flying polymath, came with us as far as Scotland, which pleased the insurance company and pleased us even more.

From Minneapolis we skipped to Siren, Wisconsin to fill up with what we thought would be the last cheap gas of the trip, before a two-hour hop to Sault Ste Marie, just over the border in Canada. Our long-planned route to head to La Grande Riviere in Quebec for the last bowser fuel north and then via Umiujaq on the shores of Hudson Bay to refuel from our fuel bags was scotched that night due to a large low pressure, and we filed the next morning for Quebec City, 540NM due east, which was fine, as I had long wanted to see the Old Town. (Verdict: pleasant enough, but if you want old and picturesque go to Europe. The poutine was nice, though.)

The flight to Quebec City had presented patchy IMC with some thunderstorms for Tom to get his teeth into and some uncertainty about whether we'd get into the small GA field west of the city, which in the end we did without difficulty. Avgas is a problem in northern Canada but we managed to find some drums in Schefferville on the Quebec/Labrador border, 500NM NNE. This was the first time of many that we were to use our drum wrench and fuel pump; you couldn't do the trip without them.

The weather was still good so we pressed on to Iqaluit, another 530NM north, skirting the coast of Ungava Bay then crossing the Hudson Strait and southern Baffin Island to a flaming sunset.

Iqaluit, at the southern end of Baffin Island, is the largest town in the vast

territory of Nunavut and looks and feels like an Antarctic base, but with added grime and decrepitude. It is very exotic and by now we were starting to feel like the trip had really started. Accommodation and provisions were good, and as expensive as you'd expect, but the surprise was Avgas, which was cheap, dead cheap, nearly as cheap as Siren, Wisconsin, though, like everywhere, you have to buy a 200 litre drum at a time. The Turtlepacs even allowed us to take the half drum the previous pilot heading south in a Baron had had to leave behind. Damn, were we smug.

Now, welcome to the Greenland west-to-east time wrinkle, so cursed by ferry pilots. You lose two hours between Iqaluit and Kangerlussuaq in west Greenland, 500NM away, or about four hours flight for us. From Kangerlussuaq to our next stop, Kulusuk, across the ice cap on the east coast, was another 350NM, or three hours. But it's summer and we're at 60 North, so daylight isn't an issue, right? Wrong. All airfields in Greenland close at 17:00 local time (L), and unscheduled after hours costs are  $\square$ 1500/ hour that the airfield has to be kept open for you. This means that piston singles need to plan carefully if they want to make as much headway as possible from Iqaluit through Greenland in a good weather window. Not only that, but we are slower than most (120kt TAS at 9000ft when heavily loaded, running lean



of peak at 44 l/hr) and so headwinds can make a big difference.

Having got in at sunset to Iqaluit we knew we wouldn't be able to get out early enough the next day to get to Kulusuk, because no amount of pencil-sucking, Garmin-gazing or Google-mapping could get us wheels-up from Iqaluit any later than 04:00L to make it to Kulusuk with two hours margin by 15:00L, and that presumed no headwinds. This gave us a pleasant rest day in Iqaluit in glorious weather, so we visited the local sights (the worst Tim Hortons coffee shop in Canada) and went for a short flit round the barren landscape before fuelling. We had a nice chat with a Kenn Borek Twin Otter crew who were shortly to leave for the Antarctic, where they were going to support the Australian bases for the summer.

Best of all, though, we were on hand in the afternoon to welcome the Silver Spitfire and its PC12 support plane (with documentary film crew, naturally) as they came through on their east-west circumnavigation. A more jovial bunch of posh English public schoolboys on the jolly to end all jollies you could not imagine.

Reveille at Zero Dark-Thirty got us to the airport at 3am, where we spent an entertaining twenty minutes trying to persuade the terrified security guard he wouldn't lose his job if he let us in to walk the half mile to our aircraft. We were finally



Above: the Silver Spitfire in Iqaluit. Below left: inbound baffin Island and fogbound islet off Baffin coast. Below right: crossing Greenland ice cap. Far right: Iceland.

away by 04:15L, climbing out over a still, silent wilderness of rock and lakes. Two hours in and the sun was fully up and we were cruising along at 9000ft, the engine so smooth it had faded into nothingness, suspended as if motionless over a dazzling Davis Strait, and in that near fugue state which seems to envelop one after a burst of early morning activity. It was as if nothing had ever before existed, or would ever exist, but us three in our tiny metal bubble.

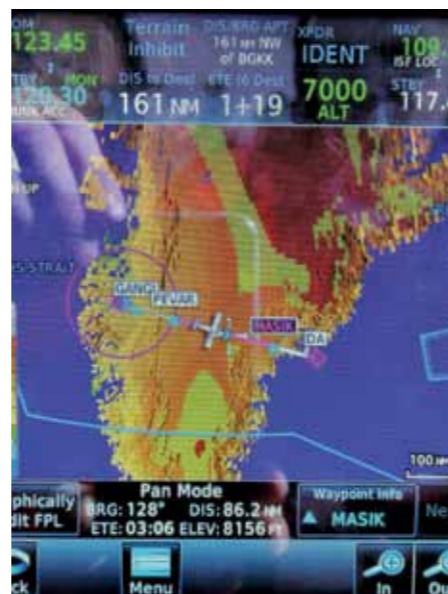
Out in the middle of the strait we spotted a pair of coasters crossing each other north to south and could hear them chatting away in Danish on the marine VHF. We called them for a radio check and after what felt like a stunned silence got a response from a gruff old sea dog. We had fun imagining what he looked like and what foul, six months buried, pickled fish he was no doubt having for breakfast.

Of the fjords, mountains, glaciers and lakes of West Greenland, I'll say what you think I'll say: stunning, unbelievable. And then we were at Kangerlussuaq, a large military strip and also the Chicago O'Hare of Greenland. Almost all the international flights come in here, to be met by a small fleet of Dash 8s to distribute passengers to the small, coastal settlements. There is a big hotel on the field to accommodate them when the weather goes bad, which is often. There are no immigration formalities and after a quick stop for a bowser refuel and a chat with a pair of CIA dudes ferrying a King Air to Baghdad, we were off to Kulusuk, reflecting on how the feel of the administration offices was so Scandinavian and such a contrast to

the North America we had just left.

We filed VFR across the ice cap and the route to Kulusuk takes you across one of the lowest points, under 9000ft. There is no scenery on earth like it outside Antarctica. We were by now experiencing the enthralling tingle that here we were, flying our little aerial contraption which had brought us by a series of short hops to this improbable, magical place.

As we approached the crest, we were keeping an eye out for the DYE-2 Early Warning Station, which was suddenly abandoned one day in 1988. At first, it was just a piece of dirt on the windscreen, then it was a ship far out on the ocean, then there it was, its five-storey bulk standing as a frozen memorial to the Cold War. Next to it is the summer-only, US National Science Foundation's Camp Raven, with its ski-way where the US Antarctic LC-130 pilots do their ski training.



Kulusuk, with its gravel runway, sits on an island just off the coast and the descent from the ice cap is quite steep. As one of the few airstrips on the east coast, it's a rendezvous point for an eclectic band of travellers in one of the most delightful little hotels imaginable, run by a jovial native Greenlander. While we were there, there was a Basler on geophysical survey work, a Huey circumnavigating the Greenland coast to service GPS interferometer ground stations, TV crews from CNN and Channel 5 in the UK, an all-female bunch of intrepid hikers from Canada who had just completed a two week hike in the mountains, and a husband and wife Jetprop crew from Germany, just passing through like us.

A 20-minute walk from the hotel, itself a 10-minute walk from the airport, brings you to the village of Kulusuk, picturesque beyond belief with its tiny, upright, multi-coloured houses, dotted as if at random in the wild landscape. It is straight out of the pages of National Geographic magazine.

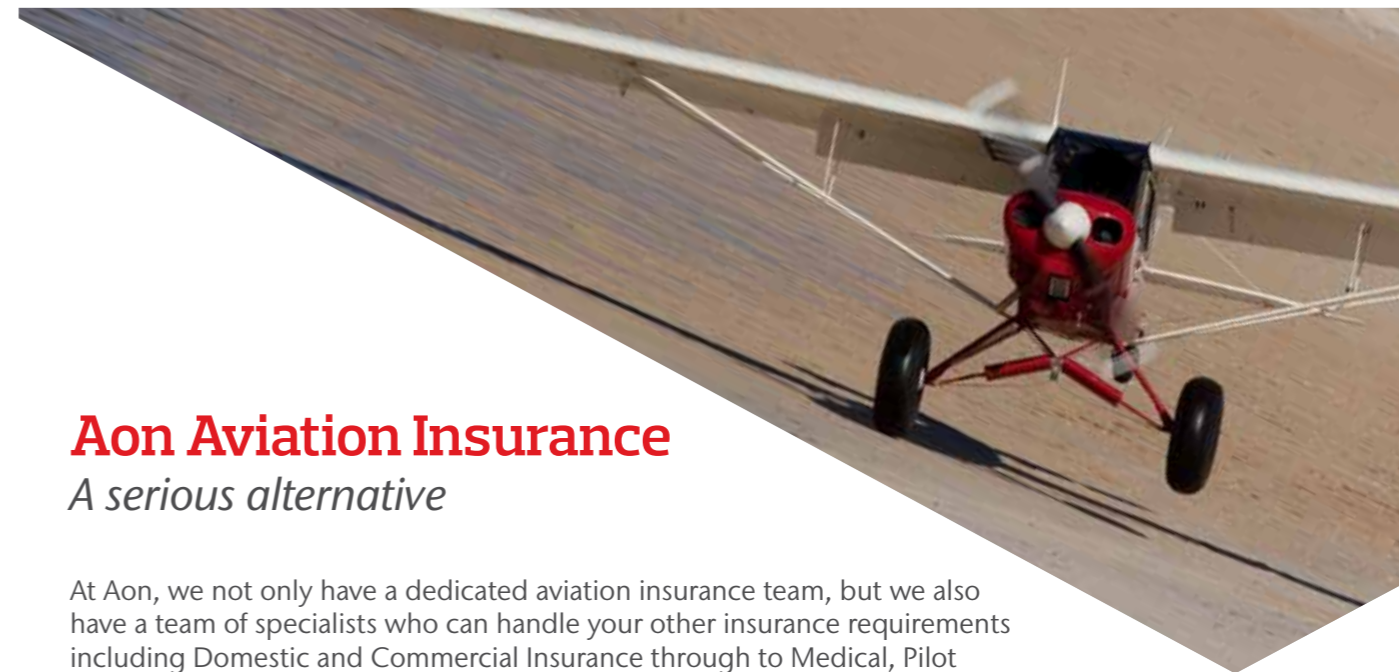
The next leg to Reykjavik across the Denmark Strait needs a careful appraisal of the weather. Even in August, icing is



a major consideration and after much analysis we decided to file for 11,000ft, which we thought was probably between layers, but with an ultimate low-level out in the form of a 2000ft cloud base, so we could always drop down and skim along the ocean. The following day was looking similar, but without the guarantee of the relatively high cloud base, so we resolved

to get on and duly proceeded to don our wearisome survival suits once more, strap in and take off. In the event, as it so often does, it turned out better than we thought and we were soon pinching ourselves as the Icelandic coast came into view.

*'Wrong way to New Zealand' continues in the next issue of APPROACH.*



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## Controlled VFR

When it comes to getting from A to B in good time over a reasonable distance, controlled VFR in VMC is hard to beat.

Rule number one to fly controlled VFR: you require clearance from the respective controller before entering their air space. Their radio frequency can be found on the VNC charts just under where the air space lower limits are printed. Following the radio frequency are the letters TM in capitals. This means 'transponder mandatory' and you do require a minimum of an S mode transponder transmitting on alt.

Once you make contact with control, give them your aircraft type, POB and your intentions, eg, direct to destinations at x altitude. It can also be helpful to inform the controller of your plane's capability, eg, whether you have GPS ability. The controller may or may not give you a specific transponder code. Once they have identified you on radar they will normally clear you at a specified altitude though their airspace.

On transit through their airspace, the controller will be monitoring your flight and keeping separation between you and other traffic so, unlike in G air space, you aren't required to give position reports to other traffic. If you need to change course or



altitude you will need to request this from the controller, so it is important to plan ahead because clearance from the controller is not always instant.

The controller will give you the area QNH when below 13000ft. They will also give you the radio frequency to change to and instructions for contacting the next controller when leaving their area.

Controllers are humans sitting in front of a radar screen, charged with the job of managing air traffic separation, and they do want to help, so be clear and concise on the radio. Controllers' jobs are made easier if they know what you want and are competent.

All our domestic controlled airspace is either C or D. D airspace is generally found at lower levels around our regional controlled airports. Some of these areas can have little to no radar coverage, so in these areas, controllers (these being airport towers) rely on accurate position reports. These position reports should, when possible, be made with reference to visual reference points on the VNC charts. Where the controller can't clearly track you on radar, s/he may not be able to accommodate your requested track, so where possible stay in C airspace.

VFR weather minimums rules still apply with controlled VFR, so one must stay clear of cloud and have 500ft vertical clearance from cloud and 8km visibility at or above 10,000ft. It is therefore important to study the weather. Metflight is good for en route cloud base and cloud height. You don't want to get stuck above cloud at your destination. Weather webcams at or close to the destination are also a handy tool.

Also keep in mind that oxygen is required above 13,000ft, or above 10,000ft if there for more than 20 minutes. Also look at cruising levels in the AIP. For VFR tracking, north is odd thousands plus 500ft and south is even thousands plus 500ft. Controllers will give clearance for non standard levels if appropriate.

Another requirement to consider is that you must use the given area QNH when below 13,000ft and QNE (1013.2) above flight level (FL) 150. The transition area is between 13,000ft and FL 150, meaning you change from QNH to QNE when climbing through 13,000ft, and from QNE to QNH when descending through FL150.

Safe flying everyone. 🛩️



## Student built RV12

1 February 2020 was a day of celebration for a group of seven 'aircraft-mad' High School students and the team that supported them in building an RV12, registration SMB (Student Microlight Build).

The project was completed over an intense and challenging two year period by Hastings students Jacob Yardley, Jarred Lister, Lachlan Ross, Cameron Steed, Leo Day, Tyler Loveder and Finn Jackson, under the dedicated guidance of Pete Steers, co-ordinator of the Hawke's Bay Student Aircraft Build. The scheme, which kicked off with twelve students, was modelled on a programme run at Mercury Bay School in Whitianga.

Launched in mid 2017, the RV12 kit arrived in November of that year, allowing the students to put into practice the skills they'd been learning in advance, including fabricating, cutting, drilling, riveting, deburring and more. Additional skills, such as working with fibreglass, were gained as the build progressed.

November 2019 saw all their effort converted to airworthy reality.

"I'm very proud of them," Steers says. "They've put in five hours every Saturday for two years. They've studied and researched, acquired skills, put in the time and done the work."

The project relied on both sponsorship and practical support from HB&EC Aero Club and local members, Eastern and Central Community Trust, and several other key sponsors. "We just can't thank them all enough," Steers says.

The build was overseen by experienced aircraft builders, in particular local microlight IA engineer Cliff Johnson.

Once all the checks were signed off and the CAA had given the craft the tick of approval, local pilot Hamish Ross did the honours, putting the RV through its paces over ten hours, at the end of which he was full of praise for the build crew.

A few tweaks later, the RV was released for general use.

"The buzz they got out of seeing it fly really made the whole project worthwhile," Steers says.



Student Microlight Build team with their RV12: Cameron Steed, Tyler Loveder, Finn Jackson, Cliff Johnson (at back), Lachlan Ross, Leo Day, Jarred Lister and Jacob Yardley with their RV12. Inset: Cliff Johnson provides guidance.

And there is another highlight to come. Each student who saw the project through to completion will have the opportunity to put in five or six hours of flying in the craft he was involved in building. Beyond that, the RV will either be put on line with the Aero Club or sold to fund another RV12 kit for a new group to begin building. 🛩️



Test pilot Hamish Ross provides welcome feedback - note the 'RV grin'!



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# Ensuring Wx works for you not against you

Local knowledge can be critical to maximising both safety and enjoyment. Do you understand your own local environs? Help keep yourself safe by gathering as much information as possible, and carefully assessing the relevance and accuracy of that information; help keep others safe by sharing your local knowledge and experience.

Murray Paterson here shares his experience of Wx around the Taieri Basin.

## North-easterly:

Low cloud up the harbour, sometimes with reduced vis underneath, Northern Gap clagged in, reasonably smooth flying conditions in the harbour. Cloud base can be very low, say 500ft to 1500ft MSL.

If approaching from the north, don't forget wires across the harbour at Port Chalmers; upper harbour basin provides a good turning point. Winds can be up to 25kt.

## South-easterly:

Very claggy over the city and coastal strip. Flying conditions down the eastern side of the Taieri Valley at/below 1500ft AMSL can be very uncomfortable and turbulent. If going to Central Otago, should be flying into improving conditions up through

Milton, Manuka Gorge or Clutha River. If returning from Central Otago, the conditions will generally be deteriorating as you travel east; expect vis to be very poor. Note: be very sure conditions are suitable over entire route, i.e., make some phone calls.

## South-westerly:

Strong winds in the valley and southern South Island. Visibility is generally better more than 15km away from precipitation. Think about leaving the valley going north via the western hills, east of Middlemarch and out to the coast north of Shag Point. This route avoids the Northern Gap, which on the north side can be a very turbulent area for 30 miles. Departing via the city, low level up the coast may give a good ride as well. Stay away from the lee of the Maungatuas if possible.

## Westerly:

This is the worst wind for flying conditions around the Taieri Valley and southern South Island. Generally turbulent at all heights. Keep away from Maungatuas if possible. Approach from north-west over or about Mt Hyde.

## North-westerly:

A famous wind in these parts. While the ride can be rougher, it can also be smooth but slow flying to Central Otago. Generally some wave about. Watch for the 'Taieri Pet', a large lenticular formed in high nor-westers over the Rock and Pillars. Very strong winds and a glider pilot's dream. Avoid if possible.

Returning from Wanaka to Taieri, John Penno once showed me a useful route: leave Wanaka and climb to over 6500ft AMSL to cross the Dunstan Range 2km north of Thompsons Gorge then continue to cross the highest point of the Rock and Pillars and get a clearance from Dunedin Tower to continue towards Hindon before descent. You'll generally get a reasonable ride. Vis will be excellent. Watch where the Boeings and ATRs go on the approach to Dunedin. If they are joining downwind right-hand for 03, then it's rough under the Maungatuas.

## Northerly:

Also turbulent in the valley and under the Maungatuas. Don't very often get this wind. Can be turbulent lower down on the lee of the western hills. Can be crosswind at Taieri on 29, but watch for sink off Heli Otago hangars. Keep a wee bit of speed up your sleeve for the sink. Again I would leave the valley via the western hills going north. Northern Gap area can be very rough if you are

unable to get a clearance to climb higher. Going the western hills direction is helpful for the ATC staff as well.

## Got to get home

If you are planning a multi-day trip away, especially when travelling outside your familiar patch, utilise the many tools available via internet and radio to watch the trends of weather patterns along your proposed route. Metvuw's seven day maps are extremely helpful and, if watched regularly, give a good idea of trending wx.

My belief: if a legitimate concern, such as poor weather or mechanical breakdown, should arise while you are away, the reality is always that you do not have to be home tomorrow. Don't take risks. Tie the aircraft down securely and go and have a drink. This removes all the guesswork: you now can't legally fly for 12 hours, which also serves to alleviate any potential pressure from passengers. Stand up to pressure and make the responsible decision. I do not know of any employer or family member who would want you to risk an accident in order to get home.

Good flying, and make a study of the weather in your patch to understand the local phenomena. That way you can ensure Wx works for you and not against you.

## Sources for information

- www.metvuw.com
- www.metflight.metra.co.nz
- National Radio 101.4 FM 1230 5 day forecast Monday to Friday and 1300 weekends
- Marine coastal forecast 0400 daily
- SKY TV channel 95. 🇳🇿



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# Marking the half century

## 1971 – 2021: pass the word!

March 7<sup>th</sup> 1971 was a momentous day in the history of AOPA NZ, previously known as the Kittyhawk Flying Club of New Zealand.

The founding meeting was held at Taieri Airport. Twenty-four potential members attended with a further thirty-six registered apologies – sixty in total. Growth over the last fifty years equates to an annual net gain of over 24 new members per year.

Over the last half century, AOPA has become one of the foremost organisations in the aviation sector, an outcome set in motion from day one. Early committee members set the bar high and subsequent committees and Executives have continued to grow the organisation, generating our positive standing in the political arena.

Member benefits speak for themselves: advocacy, fuel discounts, social events, quarterly magazine and e-news updates, member directory, VNC chart book, annual calendar, and more.

The most significant celebration of AOPA NZ's first fifty years will be at the 50<sup>th</sup> Annual General Meeting. This will be held at the 'The Gate' (formally known as 'The Golden Gate Lodge') in Cromwell on 20 March next year, 2021.

Celebrations will run from Friday night to Sunday. The venue offers good access for current and former members flying into Cromwell or Queenstown to join in the weekend. There are limited rooms at the venue, so please book early. There are motels nearby for the overflow.

The minutes of that first meeting show that some of the original names are still members today. We also now have several second and third generation members.

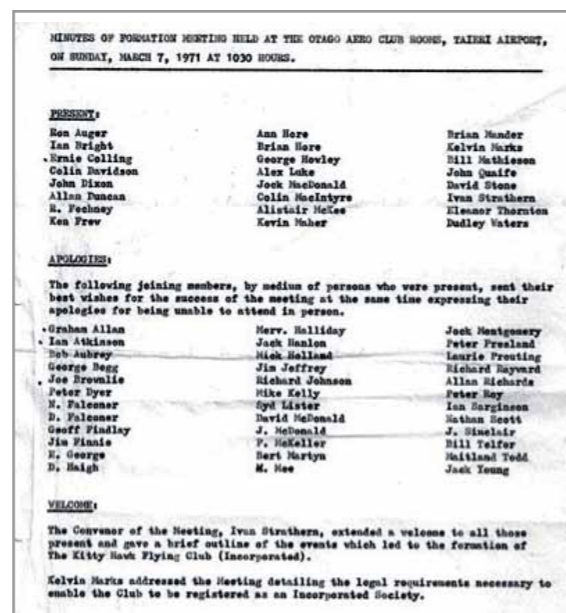
Political representation, information sharing and social events have provided compelling reasons for many to join AOPA NZ over the years. Our achievements as a 'voice' for GA are well documented in this and other publications, while attendance at flying events – where a lot of great stories and memories are both born and shared – continues to grow.

Let's get as many present and past members as possible together to celebrate fifty wonderful years. Pass the word around.

### Save the date

Date: 19–21 March 2021  
Place: The Gate, Cromwell  
Contacts: info@thegate.co.nz; ph 0800 104 451 / 03 4451777.  
When booking, please tell the nice people at The Gate that you're part of the AOPA group. The whole complex has been booked for our event.

Transport: AOPA will provide transport from Cromwell Racecourse Airfield and, depending on numbers, may be able to help those coming on commercial flights to Queenstown. A registration package will be sent to members later in the year.





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# Talking it through

By Ian Sinclair

I have a voice in my head, or is it two? I like to talk – quite a lot, according to Pecker. We are social creatures after all, so talking is a big part of being human.

And I really like to chat while I'm flying. To me everything about flying is interesting. Dealing with challenging conditions, going to places for the first time, going to a place for the hundredth time: all need some thinking to be done, and I like to verbalise my thoughts. I don't express every microthought that is racing through my head, just the ones that are part of a checklist in a process, information being gathered, or the decision that is the outcome of a process.

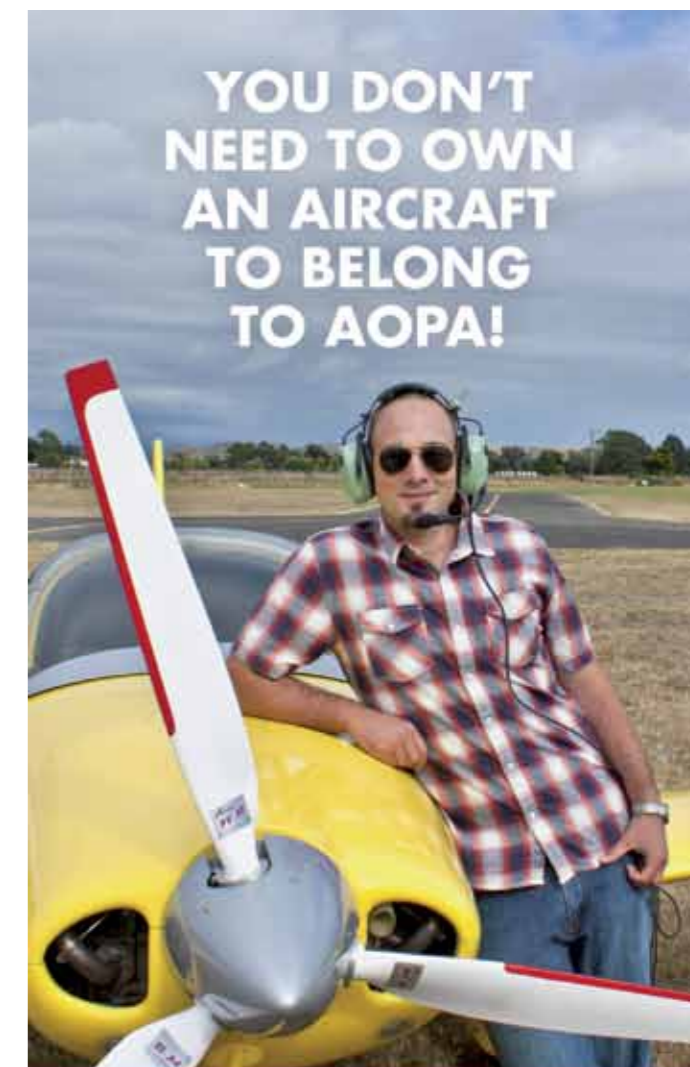
I find, when I'm flying with other people, especially other pilots, that verbalising what I'm thinking and how the decision making process is unfolding gives them the opportunity to participate. I'm comfortable to accept concerns and ideas, and to change my plans, if that's the best option, and to dive further into my process thinking, as often happens.

Flying with nervous passengers requires care and information sharing. I like to warn about changes in engine noise or aircraft attitude and any upcoming manoeuvre that they might find surprising. I attempt to predict and explain turbulence to passengers, as this is generally the most likely cause of stress.

Lately I've been doing this when I'm flying alone. I know, a bit of a worry really, but hey, it's nice to have company. Joking aside, I find that verbalising to myself, not just thinking it but saying it out loud, brings a higher level of self scrutiny. To me, once you've said what you're thinking, you need to go through a second phase of reasonability checking. "Did you really just say that, and did you mean it?!"

Generally, as the circumstances become more demanding, the level of chatter should increase. Discuss your priorities and concerns. Listen to what you're saying. If you find that the things you're saying are a bit distressing or make you uncomfortable, then revisit the facts and go through the process of what you're deciding and check to see what you have to say about it the second time around. A change of plan may be in order.

If this kind of apparent madness sounds like your thing, it's easy to get started. Just start talking. If you're doing it properly you should be able to understand the whole flight based on the commentary alone. Also the flight goes much more quickly with good company.



The Aircraft Owners and Pilots Association is an incorporated society that does its utmost to make recreational flying as accessible and affordable as possible. We offer a wide range of benefits to GA pilots, helping you enjoy the camaraderie and fun that only flying can bring – everything from safaris and fly-ins to maintenance and fuel savings, safety and technical advice, informative, professional publications, together with active representation and advocacy on your behalf with a range of government authorities.

If you're an aviation enthusiast or aspiring aircraft owner who would appreciate a little expert advice on what makes things tick in the GA arena, **check out our website:**

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# Flying in for Christmas north and south

The camaraderie of AOPA combined with that relaxed 'Christmas is coming' yearly wind-down can generate an excellent day of flying and socialising – but of course, the weather doesn't always play ball...



By Barbara Stirling and George Thompson

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## Manapouri fly-in

The AOPA Christmas fly-in to Manapouri on 30 November last year attracted over forty aircraft, with over 100 people present from Fiordland Aero Club and AOPA.

The weather was clear and hot with a light breeze, and most people gathered in the hangar to enjoy a general catch up and a fabulous BBQ lunch with lamb patties, sausages, spuds and salads.

Most folk attending were from the lower South Island, with some coming from as far afield as Timaru. It was a good day enjoyed by all, and all flew safely home.

## Te Kuiti Christmas BBQ

Forecast unfavourable weather didn't arrive until later on the day of the northern AOPA Christmas gathering, 8 December, but the predicted forecast was enough for many of the intending out-of-locale pilots to cancel plans to attend the Northern AOPA Christmas BBQ luncheon, held in conjunction with Waitomo Aero Club.

President Peter Voyce welcomed the nearly fifty locals in attendance, many of them affiliated to AOPA, and thanked others who had made the effort to attend by road. With the weather proving less severe than predicted, many of these were disappointed that they had not flown, with the exception of those who had come from National Park.

The annual Primrose Memorial Landing Competition was contested by mainly local members, the winner being Cecil Hickman in his Cessna 150 CTB.

Kim Primrose had made the trip down by road and was on hand to present Cecil with the trophy.

With the threat of darkening skies in the west (see image above), most of the visitors had departed by 3pm, leaving local members to continue with the fellowship that such events offer, and which made for a great Sunday afternoon.

It was a successful first-time event for Te Kuiti, and central enough to attract the region's more distant members had the weather been more sympathetic.

# AVweb<sup>+</sup> 2010-2020

AVweb's Paul Bertorelli sums up the decade and makes a few predictions...

*With thanks to AVweb for permission to reprint.*

## WHAT JUST HAPPENED?

As the decade closes, and a new one is afoot, I'm noting some general aviation milestones. Technically, I'm 364 days early, because the decade doesn't officially end until December 31, 2020.

Here then, placed in order of actual and potential impact, is my list of general aviation milestones for the past decade.

**Chinese cash infusion:** This is more important than many are willing to admit. Without Chinese capital, Cirrus may have withered, Continental wouldn't be getting a new factory and Mooney would have faltered, although it did anyway. For reasons mostly related to insufficient return on investment, western capital gave many of these companies a pass. That Chinese money did not have been a plus for US GA so far. Prediction: Don't be surprised to see some of these companies come back to US ownership.

**Basic Med:** Another one I thought I'd never see. Eliminating the Third-Class medical requirement has knocked down a worrisome barrier for many would-be pilots and brought quite a few back into the fold. While I don't think it's the game changer some people claim, Basic Med is still a significant step forward.

Prediction: Driver's licence certification will be a reality for pilots flying other than for-hire by 2030.

**Autoland:** This one sneaks in just under the deadline, having been announced just two months ago. Its short-term significance is trivial, because it's unlikely to find much use in the seldom-needed emergency backup role for an incapacitated pilot. It will be a nice sales lever for the aeroplanes that have it available, such as the Cirrus VisionJet, the Piper M600 SLS and, soon, the TBM.

The larger impact is in the distance, because autoland portends autonomous flight and that's the next major evolutionary step. It's not that the industry – Garmin – has done it, but that it made the commitment to do it. Prediction: The market will clamour for routine-use autoland.

**Simulators:** In the airline and bizjet worlds, simulators have been standard equipment for decades. It's getting that way in light general aviation and that bodes well for better, more effective and less expensive training. Airplanes have always been terrible classrooms and now even the smallest flight schools can afford capable simulators. Prediction: More competition and ever more sophisticated visuals and displays, plus a major breakthrough in feedback and fidelity.

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**Affordable avionics:** This is one I never would have predicted. But in 2016, when EAA approached Dynon about approvals in certified aircraft for its D10 electronic gyro, the FAA got on board. That unleashed the hounds and before long, Garmin was investing in approvals for its own line of experimental avionics – including autopilots – and developing new products to fill the pipeline. Judging by what we're pretty sure is coming, the process continues. Prediction: Five years hence, both avionics and airframe approval will follow ASTM-style consensus standards.

**ADS-B:** You knew I had to mention it, and midway on the list seems appropriate. Forced into buying what they did not want and insisted they couldn't afford, many owners have come to loathe the very idea of ADS-B. But for not that much investment, it returns real benefits in datalinked weather and traffic information, something that was a pipe dream two decades ago. Prediction: Equipage rates will continue to increase, but the FAA's NextGen will be mired in delays and performance shortfalls.

**Tablets and apps:** Early in the decade, when tablet apps first appeared, we sniped "some cool apps, but mostly hype." By now, however, tablets have evolutionised the way some pilots fly, blurring what used to be lines between preflight planning, flight management and navigation. For many pilots, lack of a tablet is a no-go. Tablet technology seems to have plateaued, so the next development may be price breaks. Prediction: Through cellphone and onboard networks, apps will become ever more integrated with the aeroplane, especially new aircraft. But after-market hardware and apps will update even older airplanes.

**Diesel engines:** This milestone applies mostly to one company: Diamond Aircraft. Through vision and sheer determination, Diamond has a full line of predominantly diesel aircraft powered by the exceptionally smooth Austro engines. Judging by a recent visit to the company's Ontario plant, sales are strong. Prediction: Diesel will remain a one-trick pony ridden by Diamond.

**Cirrus VisionJet:** This merits special mention because of what it represents: Survivor status of a would-be swarm of airplanes called very light jets. But the VisionJet is the only aircraft that truly fits the definition and as we've previously noted, this aeroplane uniquely matches the requirements of its customers, while remaining accessible for a reasonably skilled pilot to fly safely. Prediction: Before 2025, two competitors in the small VLJ class will emerge. Cirrus will introduce a new engine option.

**Electric aeroplanes:** As a market presence, electric aeroplanes have still failed to launch. Battery limitations are only part of it. The aeroplanes remain minimally capable and are quite expensive to build, but attractively cheap to operate. So far, only one company, Slovenia-based Pipistrel, has anything approaching volume you could call market share. But the technology continues to improve and the much-discussed urban air mobility idea will generate breakthroughs, even if the market itself doesn't gel quite the way Uber thinks. Prediction: By 2030, electric aeroplanes will be a major player in the training fleet and some commercial electrics will be in service. But gasoline engines will still rule.

Worthy of mention are some also-rans. Although not a huge seller, CubCrafter's Xcub is the ultimate iteration of the rag-and-tube taildragger. It's luxuriously appointed and if a pleasanter flying taildragger exists, I haven't seen it.

Three safety items of note. Angle-of-attack indicators, TKS anti-icing systems, and synthetic vision. None of these are new to the last decade, but all three have become more widely fielded. Of the three, TKS may be the most potent safety enhancer. Effective and practical, owners who have it, swear by it. While I like AoA, I remain skeptical that it's been properly ingrained into training doctrine to have had much effect.

Two more honourable mentions apply to the powerplant development field, which, due to weak demand and the cost of certification, is somewhat moribund. Nonetheless, Rotax has stepped up with two engines, the 912 iS and the 915 iS. Both are state-of-the-art FADEC-driven engines that are finding buyers in the light sport market. Lycoming quietly continued work on the IE2 electronic engine and it's now entering service in the Tecnam 2012 Traveler commuter aircraft. Engine progress is slow, but it's not invisible.

**Misfires?**

I can think of a few. Mooney's attractive M10 trainer failed to ignite after the company put a sharp pencil on market potential. Cessna killed both the high-performance TTx and the hapless Skycatcher, after neither got much love from the marketing department. The decade also saw Cessna announce then cancel two diesel projects, one for the 172 and one for the 182. BendixKing struggled to compete with Garmin not just in the past decade, but the one before it, too, culminating in the demise of the KSN 770. If I do more than mention NavWorx, I'll provoke too much collective heartburn so ... I won't. ✈️



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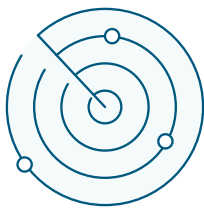
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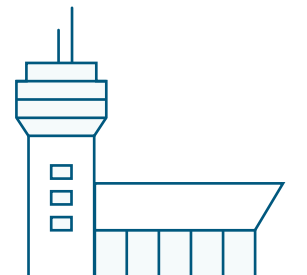


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The standards for ADS-B equipment are now set (Civil Aviation Rule Part 91.257). Talk to your Part 66 LAME or Part 145 maintenance organisation to get information specific to your aircraft and start to enjoy the benefits of ADS-B on your aircraft this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



[www.nss.govt.nz/adsb](http://www.nss.govt.nz/adsb)