

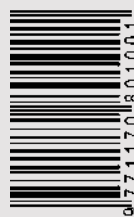
KiwiFlyer™

Magazine of the New Zealand Aviation Community

Issue 54 2017 #5



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ISSN 1170-8018



Kiwi Racer at Reno

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From the Editor

Welcome to Issue 54 of KiwiFlyer. Given that 6 divides into 54, this must be an anniversary edition. Nine years of KiwiFlyer! When Mrs. KiwiFlyer proof reads this she'll probably want a cake. Aside from cake, anniversaries are an opportune occasion to say thanks to everyone who helps bring each KiwiFlyer issue together. It couldn't be done without enthusiastic contributors and supportive advertisers. The regular encouraging feedback we receive from readers helps quite a bit too. Thank you all.

Graeme Frew and Team's outstanding participation in the Reno Air Races this year will already be known to most readers, but the behind the scenes details of their adventure won't be. Thanks to contributions directly from Graeme and Engineer Jay McIntyre, this issue features the story of race preparation and racing. It's a must read, if not for the excitement of participating in the world's fastest motorsport, then equally for Kiwi patriotism and can-do attitudes. Congratulations to everyone who was involved in this adventure, almost certainly now the first of more to come.

Every year at this time we offer up a section of the magazine for aviation suppliers and maintainers to update readers on their businesses, projects, achievements, and plans for the future. The common theme this year seems to be of expansion and a need for staff. The aviation economy may well have turned a corner for the better. That's providing the regulators don't do anything to push it backwards again. In this regard we include two articles from different sources seeking to communicate and draw support for the issues they are contending on behalf of all General Aviators. These are to do with levies and the use of in-flight recordings as prosecution evidence. There will surely be numerous readers of the latter article who wonder that it could just as easily be them currently in the hot seat.

Speaking of getting caught doing things one shouldn't, hands up amateur aerobats who enjoy manoeuvres beyond those required to simply get from A to B, and also who might be inclined to display their skills from time to time. Aside from the obvious inference to become professionally trained and to behave professionally, Grant Benns has written an excellent article on aerobatic sequence design including plenty of reasons to plan ahead and never ad lib. His words are both good advice and informative reading.

Lastly, who wants free Warbirds Over Wanaka tickets? We have some to draw before Christmas, then again at the end of February. Entry to the draw is as simple as sending me an email.

Happy aviating. Enjoy your reading.

Michael Norton

Editor | Publisher
KiwiFlyer Magazine



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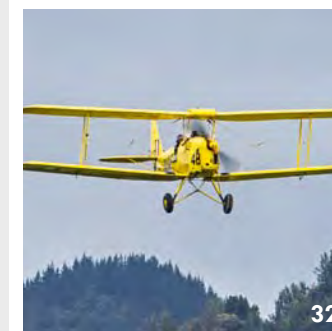
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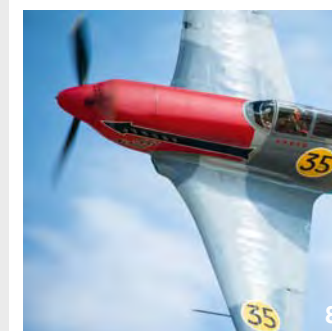
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Graeme Frew in his Yak 3 at the 2017 Reno Air Races.



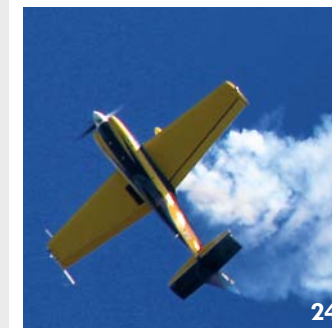
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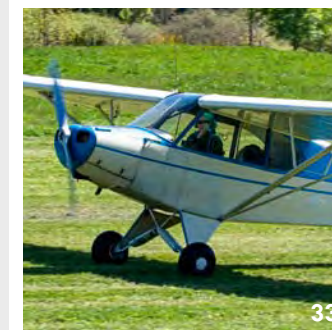
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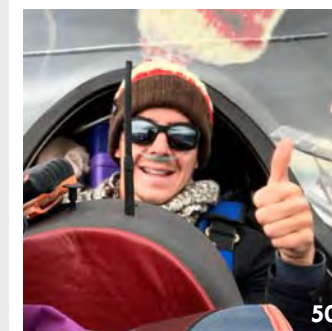
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Salus Aviation & Oceania Aviation Join

New Zealand-based Salus Aviation Group, has merged with Oceania Aviation to become one of the largest general aviation operators and engineering businesses in Australasia. Oceania Aviation currently has operations at nine locations in New Zealand. The merger will further strengthen Salus Aviation's portfolio of aviation-related businesses. The Salus Group maintains, repairs, overhauls, operates and leases helicopters and small aircraft throughout the Asia Pacific region.

The integration of Oceania will see Salus Aviation operating as two divisions. The Maintenance, Repair and Overhaul operation, New Zealand's largest, will specialise in engineering and parts sales for general aviation aircraft, both fixed wing and rotor. This division employs some 160 staff at the nine NZ facilities and plans to increase its presence in Australasia.

The Fleet Operations business leases and sells aircraft and has around 25 aircraft throughout the Asia Pacific region. Salus has a rapidly increasing lease fleet of over 13 Cessna aircraft powered by Continental Diesel's CD-155 Turbo Engines.

Oceania directors Gordon Luke and Josh Camp will join the Board of Salus. Don McCracken will remain CEO of Oceania. "We have a great opportunity to access capital to grow our business by joining with Salus. The two companies have worked together for some time and in formalising our arrangements we can move to another level of performance and services that we can offer the market. There will be no staff changes and in fact this will give us the ability to employ even more skilled people," says Gordon.

Salus Aviation directors are considering options to further grow the business by acquiring existing, well managed operations and through a continuing growth path for the existing operations.

Craig Brownie, a director of Salus and Bancorp New Zealand comments that "We see an exceptional opportunity to continue to grow Salus Aviation in Australasia and beyond. We're thinking about a range of options to raise capital to continue to grow the Group. With Oceania on board Salus Aviation's revenue is likely to be around \$70m this year".

Safety improvement scholarship

Airways and Christchurch Airport are offering a \$5000 scholarship to a person or project helping to create greater aviation safety in NZ. Applications for the 2018 Jilly Murphy Memorial Scholarship for

Aviation Safety close on December 10th.

Anyone who can demonstrate a tangible contribution to improving aviation safety is eligible to apply, Airways' interim Chief Executive Pauline Lamb says. "Safety is at the heart of what we do and each year Airways and Christchurch Airport offer this scholarship to give someone with a great safety improvement idea a helping hand in getting it off the ground."

The scholarship fund may be used for learning, resources, or equipment for a person focussed on aviation safety. A project could be research, or development of a process or product.

Go to www.airways.co.nz/about/safety-scholarship for more information.

B.Av applications close soon

Applications for the Massey University School of Aviation B.Av degree (January 2018 cohort) close on 28th November.

B.Av Graduates complete a unique, integrated aviation university qualification, intended for those planning a professional career as a pilot. Three years of study and flying cover core technical subjects such as navigation, meteorology, aerodynamics, etc., and non-technical subjects such as human factors, threat and error management, etc., culminating in either a flight instructor course or aviation business management studies. Graduates enjoy careers in the aviation industry throughout the world.

See page 18 of this issue of KiwiFlyer for more information.

WOW Community Trust Flying Scholarship Winners

Warbirds Over Wanaka Flying Scholarship winner Ryan Southam says winning one of this year's scholarships means he can fulfil his warbird dreams that much sooner.

Ryan, aged 42 from Blenheim, has won one of two \$5,000 scholarships awarded this year by the Warbirds Over Wanaka Community Trust from funds raised at the 2016 Airshow. The other winner is 35-year-old Adam Butcher from Te Anau.

The pair were selected from more than 30 applicants. Warbirds Over Wanaka General Manager Ed Taylor says for the second year running the standard of those who applied was outstanding.

"Like the first year it was actually very hard to sort out the winners, there were so many who missed out who we are sure would have been very worthy recipients. We urge all those who missed out to apply again next time," says Ed.

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New Books for Christmas

Fearless: The extraordinary untold story of NZ's Great War airmen

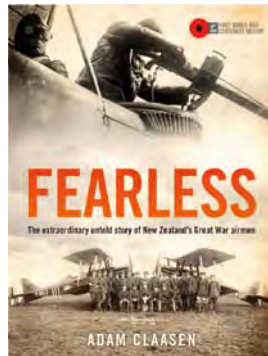
By Adam Claason

Massey University Press 2017, \$60

During the Great War, New Zealanders became enthusiastic participants in the new field of aviation. While there is a considerable amount of written information available surrounding New Zealand soldiers at Gallipoli and on the Western Front, very little has been published on the airmen of the First World War. 'Fearless' draws on extensive archival material from New Zealand, Australia and Britain as Dr Adam Claason delves into New Zealand's reluctance to become involved in military aviation, the challenges facing the establishment of local flying schools and the journeys undertaken by New Zealanders as they headed into the battlefields of the Great War. This book tells the extraordinary stories of New Zealand aviators as they flew across such widely varied locations as the Middle East and Mesopotamia, the North Sea, Northern France and Belgium, and East Africa.

'Fearless' is beautifully presented, with over 170 photographs and images, and is so much more than a 'coffee table book'. While the book is based on historical research it is written in a highly accessible style: one can open the book to any page and instantly feel drawn into the fascinating narratives.

This very readable book honours the astounding heroism and bravery shown by New Zealand's airmen. Highly recommended.



Classic Planes: Celebrating New Zealand's Rich Aviation History

By Ivor Wilkins

Penguin Random House, \$95

Reviewed by Jill McCaw

Ivor Wilkins had written a well-received book called Classic Boats when he was asked if he could follow up with one on classic aircraft, even though he had no knowledge of, or particular interest in planes at the time. He explains, "The main purpose of this project has been not to document every technical detail, nor to record every classic aeroplane flying in New Zealand skies. Rather, it has sought to represent a community of dedicated people and their aeroplanes, to celebrate their passion and tell their stories."

This is a well-researched book that doesn't lose the focus on the people behind the flying machines. I like that. The book is beautifully illustrated with photographs taken by the author. We haven't seen Wilkins in the aviation photography business before, but he is talented with a camera and the photographs are fabulous.

My only quibble with this book is its name. My understanding of a classic plane is this definition from the EAA: An aircraft constructed by the original manufacturer, or his licensee, on or after September 1, 1945, up to and including December 31, 1955. Earlier and it's vintage, newer and it's deemed to be contemporary. Replicas are contemporary.



That's obviously not the definition Wilkin is using as this book starts with an exploration of Richard Pearse, New Zealand's contender for the title of first to fly a powered aircraft. The book's sub title would have been a much better title (although it wouldn't have matched with Classic Boats) as the book also has chapters on people: Herbert Pither of the Croydon Aircraft Company who restores classic aircraft, Jean Batten and Tim Wallis, as well as aircraft. Don't worry, there is a roll call of fascinating aircraft and some wonderful tales about passionate owners, restorers and pilots.

"In every conversation with the owners of these aeroplanes, what shines through is the romance of it," Wilkin says. And in words and in pictures this gorgeous book captures the romance of flight. This is a beautiful addition to your coffee table.

Escape - The Best Sport Ever The true story of a NZ pilot in WWII

By Frank Gatland DFM

Reviewed by Jill McCaw

Frank Gatland was a well-known member of the Auckland Gliding Club and one of my early instructors. He was an instructor, tow-pilot and long-time CFI. Most people who knew him had no idea of his escapades during the war. A Stirling Bomber Pilot who was not afraid of getting the job done, Frank won a gallantry award for a daring low-level attack in Italy. He was shot down and captured, but made multiple escape attempts through Nazi-held Europe.

Frank's story is told in such a deadpan fashion, you'll forget that he and his mates were actually often in mortal peril. He was a young, bullet-proof Kiwi, having a grand adventure and we're fortunate that his son Arthur has now published the book that Frank spent many years working on. The book starts a little slowly as Frank fills us in on his voyage to Britain and early adventures based in England, but once he is shot down and on the run, the story really picks up. When I got to that part, I was riveted and raced through to the end. This is very much a first-person account and it is fair to say that Frank was not the greatest writer, but his warmth and enthusiasm more than makes up for that. I enjoyed this glimpse into my old friend's war time experiences.

Books may be purchased from Arthur Gatland.
Email gatlandaj@ihug.oc.nz or phone 021 609 767.



Lima leaps to the rescue

Northland Rescue Helicopter Fundraiser, \$12

Following the success of its first children's book 'Juliet to the Rescue', the Northland Rescue Helicopter Team have released a second instalment. This time a chopper nicknamed Lima plays the starring role. Lima Leaps to the Rescue is an adventure tale about two kids who go hunting for treasure in the sand dunes of Ahipara when a boogie board ride down the dunes goes wrong.

NRH General Manager, Vanessa Furze, says the first book was such a great success they wanted to create a series of books to bring all the helicopters to life. "The original idea behind creating a story book was it being a fun yet educational fundraising idea. But it became much more than that by showcasing what we do as a rescue service and raising awareness of the lifesaving work our team does," says Vanessa. All proceeds from the sale of the books go to the Northland Rescue Helicopter. Visit www.nest.org.nz to purchase.

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Reno 2017

Daring to Dream

Full Noise 35 in the capable hands of Graeme Frew during their outstanding debut performance at the 2017 Reno Air Races

In the previous two issues of KiwiFlyer, Graeme Frew of Fighter Flights Limited has related the story of getting the FFL Yak 3 from Omapa to Reno, and ready to race in the Unlimited Class at the 54th National Championship Air Races. Our report in the last issue saw Graeme explain the plan to fit a race engine on site in the USA, and full of anticipation about how fast the aircraft would go and how exciting the experience was going to be. The race of course, has now been run. In Graeme's words, here's what happened:

"Comin' up on you Graeme". My immediate thought was 'Stevo Hinton knows my name!', shortly followed by 'holy cow' as the highly modified Mustangs, Voodoo and Strega smoked past me, closing at over 250 km/hr on lap two of the Unlimited Gold. The finale to Reno 2017 wasn't quite going as I'd planned but I knew I was taking part in a race for the ages. What a journey it was to make that race in this, my rookie year at the Reno Air Races.

The efforts to get ready to race and to then ship my Yak 3 to Los Angeles have been previously documented but all the preparation and planning in the world couldn't have prepared me and my

awesome volunteer team for what was to come.

The reassembly started on schedule at Chino Airport, L.A. on Sunday the 20th of August. Thanks to the tireless efforts of Jay McIntyre, of Jem Aviation, friend and sponsor, and Nephew Daniel Frew we were ready for the engine in three days. So far so good and the Joe Yancey sponsored engine went in the airframe without too much ado. Unfortunately we had arrived in an unprecedented heat-wave and found ourselves trying to run in a brand new engine in 45 degree heat. I struggled to keep the coolant and oil temperatures off of their maximum limits and even at cruise power the needles stayed stubbornly

close to the redline. We were hoping for things to come right with more run-time but on the Thursday prior to having to be at Reno for the weekend tech inspection, it was time to launch off. During the test flying I'd been using only half throttle to make take-off power so I knew the engine had plenty of boogie, but those damn temperatures!

I had a number of make or break, campaign ending decisions in this endeavour to be the first Kiwi to race his own aeroplane at Reno. The first came as I was climbing out of Chino Airport over the wider L.A. area. It was a city of 20 million people and my engine temperatures were on the maximum

and my spray bar cooling water was fast running out. If I returned, well my campaign may be over before it began. I elected to 'Remain calm and carry on' as the slogan goes. Thankfully there was a little relief for temperatures AND heart rate as I levelled Fullnoise at a slightly cooler 6500 feet and I could reduce the power. After my first planned fuel stop I then had a problem with the oil pressure dropping off so I utilised the services of the excellent American Air Traffic system and with their guidance carried out a precautionary divert to nearby Fresno Airport. I discovered that I was losing oil out of the engine breather but with no obvious signs of any engine problem, and

I decided very early on that the best way to avoid wake turbulence was to be in front of everyone else.

after topping the oil and fuel I decided to press on. One thing that was in my favour was that an airport was never far away! Another fuel stop near Sacramento had me close to the planned route through the 9000 feet high Sierra Nevada mountains and close to arriving at Reno 30 minutes before twilight. I elected to carry on and arrived in Reno Stead to find the sun low on the horizon for the favoured westerly runway. I elected to land out of sun but with a quartering tailwind, and came as close to ground looping the Yak as I ever have. The irony was not lost on me as I shutdown - that the last act of this aeroplane at Reno had been a take-off crash on that very runway some 18 years ago. Regardless, I was really here and the dream was still alive.

So to the business of qualifying. Fullnoise sailed through tech inspection after some judicious cleaning and it was time to start training for my race license check-ride. This process would normally be four flights and a check but due to there being seven rookies and one instructor we all qualified with a spin round the pylons, plus demonstration of a safe pass on the Instructor in his Sea Fury, and a practice mayday approach. Unfortunately my oil pressure problem surfaced once again and I elected to carry out a precautionary mayday landing; at least it was good practice. I once again had a decision to make but if I quit now there was no qualification and with that, no racing. I was never going to come this far and give it away but I did ring my engine builder that night and insist he bring my stock engine with him from L.A.

The next day it was make or break; fail the check-ride and it would be hasta la vista baby. Needless to say I had a lot riding on the Sunday flight and was very relieved when Sherman Smoot handed me my Unlimited race licence #236, the 236th ever awarded in history. Make or break moment two had been successfully

Harry Measures Photography

negotiated and the pressure slightly relieved. Another improving situation was that the team was gathering and I went from doing everything on Saturday to many hands making light work by Monday.

Monday and Tuesday of race week consisted of making the required 10 practise laps around the pylons but it was evident that my sponsored race engine was just not going to work out. The engine was still running hot and losing oil, even at conservative power settings, so I called the team into a huddle at 2pm and proposed an engine change. The deal was that we needed to have the stock engine installed, tech inspected, test flown and a qualifying time posted by midday the next day. The team of Jay, Brad Engbrecht, Al Marshall and Ryan Southam never hesitated and along with Joe and Pat Yancey there was soon a flurry of spanners and screw drivers as Fullnoise started to come apart. They pulled off a minor miracle (and passed a Reno right

of passage) by working through the night and completing a three day process in 16 hours. Thanks to that great ANZAC spirit we were able to use Aussie jet racer Mark Pracy's hangar to facilitate the change in roiling thunderstorms, the first line of which had dampened our spirits somewhat in the open pit area. I left the hangar after midnight. With my stock engine sitting in place and the team in great spirits, I knew we would make the deadline. Another test passed.

Thunderstorms and a pesky oil leak prevented me posting a qualifying time but thankfully the rules stated when there isn't a full field of racers, non-qualifiers could start at the back of the pack. Consequently I found myself at the end of a veritable who's who of warbirds for Bronze heat 1C. The field consisted of an Allison powered P-51A, a P-51D, a Wildcat, a Corsair, a P-40, a Spitfire and yours truly as tail end Charlie. It was noted at morning brief that this was the first all rookie field ever in race history!

Race Time

Unlimited racing is six times around an eight mile oval course that is marked by 50 ft high telephone poles. The race is started by Warbird legend Steve Hinton in a CT-133 jet, with racers diligently formed up in line abreast on Steve's right wing. Steve points us at the lighted guide pole and with the famous words "Gentleman you have a race" it is every person for themselves. The rules are that you can't change your line until after the guide pylon and you always pass on the outside. Oh and NEVER turn right. Apart from that it is all on and it is a real buzz making a safe and clean pass on another race plane.

I have to admit that racing at Reno is one of the most challenging, yet hugely satisfying things I have done in an aeroplane. It was physically and mentally demanding but crossing the ridgeline before pylon four and then descending into the aptly named 'valley of speed' is a massive and very addictive, adrenalin

rush. You feel at one with your machine and with the elements that are keeping you aloft. Those elements can get a bit stirred up in the wake of other race planes so it is often both hands on the wheel, especially in the little Yak. I decided very early on that the best way to avoid wake turbulence was to be in front of everyone else. To this end I managed a win in my first ever race and again on the Saturday Silver race. That allowed me to bump up to the Gold race on Sunday and share the company of such race legends as Strega, Voodoo, Dreadnought and Sawbones.

And so to Sunday. I never hesitated to bump up to the Gold final as it is the race that everything leads to throughout the week. Last year I was in the crowd watching the 'duck walk', where race planes and teams make their way down the crowd-line to stage in front of the main stands. This year I was in it. It was a huge buzz as I heard the call "Gentleman start your engines". I was in the company of legends, both men and machines, and



David amongst Goliaths

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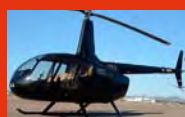
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• **2007 ROBINSON R44 RAVEN II WITH AIR-CON**: Total Time: 900 Hrs (approx.), Calypso Metallic with White Trim, Tan Velour Seats, Bladder Tanks, King VHF Radio, King Transponder / Encoder, Seven Hole Panel, RHC Oil Filter Kit, Garmin 296 GPS, Cabin Heater & Defogger, Bubble Cover, ONE OWNER SINCE NEW - Maintained by Heliflite Bankstown. AU\$ 330,000 +GST



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Reno 2017 - Daring to Dream

very mindful of how privileged I was to be so. But it was a privilege we had earned through sheer hard work and by making some tough decisions. As far as I'm aware there has only been one other racer who started at the back of the pack and made a Gold final. We might've finished 7 of 7 but I'm very proud of what Team Fullnoise achieved. There are many teams that have been going to Reno for years and never made a Gold race.

Would I go again? Too right, as I have unfinished business. I'd been planning a surprise visit to the right wing of a couple of Sea Furies in that final race so there are things left to do. We have the benefit of a year of hard won experience and I am convinced the Yak will go faster next year. We are already scheming a return for 2018 and will soon make public various levels of sponsorship so that we might connect 'business' with a huge potential customer base.

Keep following our journey via updates on Instagram Fullnoise35 and Facebook Fighter Flights - and watch out for 'Fullnoise Returns to Reno'. It promises to be another thriller!



Graeme with his newly issued Pylon Racing Licence



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The Gold race 'duck walk' and line-up.

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Racing at Reno: The Engineer

contributed by Jay McIntyre

As mentioned in the previous pages, Graeme's Reno adventure could not have taken place without the outstanding support of Engineer Jay McIntyre and his team at JEM Aviation. It's fair to say they enjoyed the challenge as much as Graeme did. Here's Jay's side of the story:

When Graeme first floated the idea of taking the Yak to Reno I blocked my ears, closed my eyes and made all sorts of child-like blabbering sounds. An hour later and a couple more glasses of wine - and my resolve had buckled. How could we NOT be involved...

Other than the amount of time away from the business, the campaign posed no real hurdles. Luckily, having shipped numerous aircraft to and from NZ we knew what we were in for there. Having said that until the moment the aircraft went into the container we never really knew for sure that it was all going to fit!

Dismantling began in July and took longer than anticipated. This was partly because we took the opportunity to rectify a few things along the way, but also because, although all practicable steps had been taken during the build back in 2012, there were a couple of areas where we had unintentionally made life difficult for ourselves with regard to future dismantling. Additionally, the loan engine fitted at the time had to be removed. This was a blessing in disguise as it made handling the fuselage much easier.

My heart was in my mouth the day the container left as the truckie sped out of the Aviation Heritage Centre at breakneck speed and around a negative camber corner. I had visions of the fuselage (on the upside of the negative camber corner) toppling over and us opening the doors in Chino to find scrap metal everywhere. In my heart I knew all was good though - and I figured that if the load survived that first corner the rest of the trip would be a breeze.

One of the other challenges in packing the container was figuring out what tooling and specialist gear would be involved. I hate asking for stuff so a great deal of planning went into this side of things. Of course, it meant I was going to be without many of my own tools for up to 6 months... Anything for the cause eh?

Dan Frew and I duly travelled to LA on August 20th where we found the aircraft had been unloaded a few days before. After thinking we had planned everything well, it turned out getting the aircraft and wing out of the container had been a bit of a drama as we had loaded it at ground level (easy) and it had had to be unloaded four feet off the ground with cranes, forklifts and a great deal of cunning (difficult). Unfortunately, America does not believe in swing lifts. How easy we have it here!

Reassembly was remarkably quick compared to dismantling, even in temperatures of up to 45 deg C. Hydration was the name of the game! Engine installation also passed easily with the exception of the prop governor. This was to give us grief on



Unloading Graeme's engine at Reno.



Engine change amidst thunderstorms.



Jay and Graeme.

both engines for the rest of the campaign and as anyone who has worked on Allison's will attest, those four mounting nuts are not always the easiest! It was made more difficult in our case as we found out that the flange on our governor is not designed for the Allison!

As Graeme alluded to, it was a challenge to carry out engine runs and tuning due to the extreme temperatures. Flights could only be made in the early morning and this was often hard to do as things did not always come together in the morning. Of course, by then the temperature was already rushing towards unflyable!

I found it interesting that even after being parked in the hangar all day, the aircraft was radiating all sorts of heat from places that we had never imagined it could do so! On a couple of occasions, I thought we had faults only to find that it was due to the grease in joints melting and running freely down the undercarriage leg! Another eye-opener was just how freely W120 oil runs in 40+ temps!

One of the briefs for this campaign was to keep any changes to the aircraft to a minimum. Things like ADI, 4 bladed props and any other number of modifications were briefly discussed, but as certifying engineer I was very much aware that these would all attract the watchful eye of the CAA. Although we would have loved to have incorporated all these things they would have most probably have required CAA to carry out an inspection of the modifications and as most of them would have had to happen in the USA. Flying an airworthiness inspector to the USA for the purpose was just not in the budget. Additionally, the time to carry out flight testing of such mods in the USA was just not available.

The FAA also carried out a cursory inspection of the aircraft and this took some time to arrange. Pretty much a waste of everyone's time, the only issue being that the NZ CAA Identifiable Paint Scheme Authorisation required us to show the registration markings when operating outside of NZ. Once this was applied the FAA Special Flight Permit was issued - very restrictive in what we could and couldn't do!

I returned home at this point to attend to business and later flew back to Reno to see if we could work out what was going on with the race engine. We had some good counsel and ideas from Steve Hinton Snr, but even this maestro could not get to the bottom of it.

Not much to say about the engine change itself other it was made easier by having only just put it in two weeks previously! As before, changing the governor chewed up more time than it should have but we had the aircraft on the line at 0900 the next morning! I loved it... it was like one of those 'back in Nam' moments and reminded me of a few experiences with 2 Sqn in Australia as the

ACF was wound down. I couldn't have led a better team!

Other than changing a bald tyre we had to do nothing to the airframe - lucky, as all my carefully selected tools had been left in Chino in deference to bringing the spare engine!

As I write, we have just returned from packing the aircraft for return to NZ. This time we got to experience loading the container 4 feet above the ground. Whilst not too difficult it certainly made for more work and mucking around, particularly as with the engine fitted in the fuselage our lifting apparatus' were stretched to the limit. As luck would have it, LA was experiencing another heatwave, but the max temperature only got to 40 this time round!

Next year? Well, supposedly there is going to be a next year. Will we be there? Damn right! - if Graeme will have us and CAA sanction our little tweaks here and there!

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The CoAX 2D is powered by a fuel injected, 6 cylinder, 4 litre, 125 HP, water cooled engine. Empty weight is 280 kg with a MTOW 450kg, cruise is 150km/h with a fuel burn of 19 lph. This aircraft received its microlight helicopter German certification in March 2017 and was the first and so far the only to do so.



The quality of construction and components used are of such a high standard I have not experienced before.

If you're interested in finding out more about this outstanding new aircraft please get in touch.

Warren Newland
021 436 030
warrennewland@yahoo.com



Racing at Reno: The Helmet Maker

contributed by Ryan Southam, Critical Angle Ltd.

"Plan to go to Reno 2017" - I had this written on a small whiteboard in my kitchen for quite some time, since Graeme had been toying with the idea, but it wasn't that long ago that the words "we're going" were uttered, shortly followed by "Do you think you could have one of the new helmets done by then, I'd like to race with it?". From that moment on it was all go...

I had been discussing helmet developments with Graeme for quite a while but the decision to go to the 2017 Reno Air Races pushed the design schedule forward quickly. I'd been quietly bringing everything together in the months prior but the immediacy of the event really kicked things into high gear. The helmet design was initially driven by my own flying requirements (vintage, warbird, aerobatics). In particular was an instructing requirement and being able to communicate with students and passengers in a civilised fashion instead of yelling. I wanted to develop a product that met my needs, and wants, as well as those of others.

As space is at a premium in most aircraft, the requirement was for a very close fitting, light, comfortable helmet and along with this the prime need for very high quality communications equipment for high noise environments. As it turns out this wasn't as easy as it sounds...

It quickly became apparent that the features wanted in an aerobatic or warbird helmet were the same as those that were required for other areas of aviation. We have since had a lot of interest from agricultural pilots, rescue and heli pilots, gyrocopter and sport aircraft pilots too. With that interest we have changed tack a little to incorporate some of the wants and needs of these other areas of aviation. Although impossible to answer 100% of feature requests, I feel the product will offer a bridge in the market that previously hasn't been there.

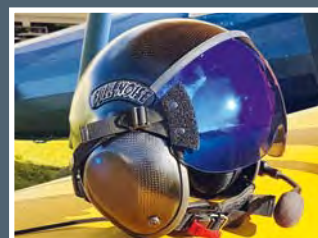
The intention is to offer several different communications options, with high quality corded Active Noise Reduction (ANR), wireless ANR and in-ear monitoring (similar to a set of audio earbuds). All of the above to be contained in a very lightweight, comfortable and impact attenuating package that is one of the lightest on the market (sub 1kg all up).

The Reno Air Race was the perfect 'trial by fire' - and given the noise and heat it performed amazingly well. The greatest compliment the design could really get came from Graeme after the races when he said, "It worked so well that I forgot I was wearing it". High praise indeed.

Although still in prototype development (99% there), minimal work is now needed to bring the design to market. Since the return to New Zealand that is getting closer day by day.

If anyone would like to know more about the design or suitability for their aircraft, or to discuss the project in any way, please do not hesitate in contacting me.

Ryan Southam, Critical Angle Ltd.
info@criticalangle.co.nz
+64 (0)27 318 7934



Racing at Reno: Gratitude

I am so very privileged to know and be friends with the sort of people that would buy into this adventure. Jay McIntyre of JEM Aviation and Joe Yancey of Yancey Enterprises (both principle sponsors) were the main reason I had the confidence to head to Reno. Ryan Southam and Tracy Dixon agreed to bring forward the manufacture of a prototype helmet they have been quietly perfecting for a number of years. I can't speak highly enough of that helmet; it was light, comfortable, with full ANR the comms were amazing AND it looked cool. The best compliment I can pay is that I forgot I was wearing it. Ryan and Tracy's company Critical Angle is an innovative Kiwi endeavour we should be proud of. It was a little surprising and very humbling to learn how many were following our progress on social media, from early drama through to successful racing. People were getting out of bed at 4:30am in the morning to watch our live streamed races! My thanks go to Paula Theodore of Vintage Events who ran all the media for a busy race pilot, and did

such an excellent job of keeping everyone updated, engaged and maybe even a little enthralled. The messages of support from home were all gratefully received.

Graeme Frew



The Team at Reno. L to R: Mike Frew (Graeme's brother), Al Marshall, Brad Engbrecht, Tracy Dixon, Ryan Southam, Paula Theodore, Daniel Frew, Graeme Frew, Jay McIntyre.



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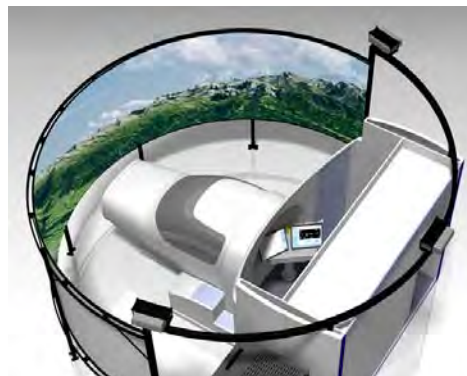


Preparing for the Future at Massey University

From ab-initio through to cadet pilot training, and with academic aviation programmes ranging from Bachelor degrees through to Doctoral studies, Massey University School of Aviation has all the aviation educational bases covered. In addition, professional short courses include RPAS regulations for recreational and industry operators. Recent developments include construction of new premises at Palmerston North Airport, plus acquisition of the latest simulation technology.



RPAS training is undertaken by B & C-Cat Instructors



A new DA 42 Simulator will be installed in 2018

Bachelor of Aviation

B.Av Graduates complete a unique, integrated aviation university qualification. This qualification is intended for those planning a professional career as a pilot. Their three years will have been spent covering core technical subjects, such as navigation, meteorology, aerodynamics, etc., and non-technical subjects such as human factors, threat and error management, etc., culminating in either a flight instructor course or aviation business management studies.

Other key elements of the school's approach to preparing students for eventual airline roles include scenario-based flight training and the use of Apple iPads as Electronic Flight Bags.

Students graduate with all the examination credits for issue of an ATPL and are issued with a New Zealand CPL and MEIR. Flight training is integrated as the practicum element of the academic papers.

All flight training is delivered in-house via the School's fleet of technically advanced Diamond single engine and twin engine aircraft equipped with full digital avionics approved for Performance Based Navigation operations.

B.Av students at Massey can look forward not only to new premises but also new high-technology ground training. By mid-2018, at the completion of Stage One of the School of Aviation's new building complex at Palmerston North Airport, Massey will take delivery of a new Diamond 42 Simulation Training Device (FSTD). Built with real avionics, high-end visuals and sophisticated instructor operating stations, these simulators are "designed to increase safety, efficiency and effectiveness". This will complement the current suite of DA 40 Mentors and

Part-Task Training devices to further supplement and enhance the ground training Massey offers its BAv students.

In addition, if required, students may undertake additional flight training on a purpose-built research simulator which measures their performance and highlights where areas of further training may be advantageous. This can be invaluable in assisting those students who require extra ground training due to (for example) limited access to modern technology during their formative or high school years.

Upon graduation B.Av graduates may apply to Massey University for a place on its two-year fixed term graduate programme as a Graduate Flight Instructor (GFI). This may then lead to full time instructor roles at Massey at the end of the internship.

Flight training under the mentorship framework of the GFI programme is highly valued by Massey graduates with one – now an Air NZ pilot – saying that "I found the Massey training and instructing set me up very well for this step into the airlines. The skills I had used in training students could be used by myself in a real environment."

Other graduates find their niche as instructors with quality aviation training organisations in NZ and Australia where they quickly add value by bringing aspects of their Massey training to those organisations. Still others commence work as commercial pilots in NZ or abroad.

Massey trained pilots can be found at major international airlines including Emirates, Etihad, Singapore Air, Thai Airways, Aeroflot, Cathay Pacific, Jet Star, Air Pacific, and of course Air NZ.

Applications close soon for the January 2018 intake of the Bachelor of Aviation degree.

RPAS

Remotely Piloted Aircraft Systems are a rapidly expanding sector in the aviation ecosystem. In line with the advanced technology of the University's own fleet of training aircraft, the School of Aviation recognises the rapid advancements in other flying technology – namely RPAS/UAVs.

With huge growth in the development and use of RPAS, local and global aviation regulators are grappling with the challenges of how to integrate RPAS into existing aviation safety systems.

The Massey School of Aviation has already been recognised as being proactive in promoting the safety aspect of the use of these devices in the aviation environment.

Massey's award-winning RPAS team is comprised of 'B' and 'C'-Cat flight instructors who are heavily committed to sharing their knowledge and expertise with the RPAS community – while simultaneously adding to the ever growing body of knowledge in the safe operation of RPAS in NZ.

Massey University has the view that it is in everyone's interest to assist the RPAS community – be they recreational users or industry operators – as they navigate unfamiliar skies and aviation regulations governing same. This reflects Massey's philosophy of a 'best practice' approach to all aspects of aviation training.

The Massey University RPAS course is constantly being refreshed to ensure its clients are provided with the latest knowledge for the safe operation of RPAS under both CAA Rule Parts 101 and 102.

Registrations are now open for the final 2017 RPAS course on 23-25 November. Courses then re-commence in February 2018. For more information please refer to www.aviation.massey.ac.nz/rpas or email Anke Smith for assistance via: aviation@massey.ac.nz

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Raglan's ocean beach with Mount Karioi rising to the left.

Fly yourself to Raglan

I know Raglan is a place often visited by North Island pilots, I've heard them say, "Let's go to Raglan for lunch." I liked the sound of that so next time I was passing Raglan - instead of just flying on by; I stopped in for a look around.

I was greeted by 05/23, a very nice 60m wide grass runway that is 646m long. The AIP suggests watch for rabbit holes, kites flying and the Norfolk pine trees at the NE end (more so on take-off,



Playground includes child minding device for when you want a go on the swings.

a veering turn is used to avoid the trees). Wise pilots will also be wary of being deceived into a too high too shallow approach over the town and then running out of runway to land upon (more than a few have run through the fence at the other end). However my main obstacle was to make sure I was securely tied down before being totally distracted by the beautiful surroundings. For someone used to flying the South Island, the terrain on the way there looks uninviting (especially for an emergency landing) but Raglan itself is a beautiful harbour which heads 12km inland and



A Raglan icon since 1866: The Harbour View Hotel.

it is a drowned river valley. Mount Karioi is an extinct volcano and stands 2500 feet to the southwest of the township.

Raglan Kopua Holiday Park is right beside the airfield and is just a very short walk from town. They cater for large groups as well as the independent traveller and they have a good website with enticing pictures of things to do. www.raglanholidaypark.co.nz Close by is a walking bridge near a large child friendly park that connects the airfield directly to town and saves walking or driving around the road. If there is a group of you, Raglan Shuttles (07 825 8159) are available to show you around the area but there is plenty to see if you prefer to stay on foot.

The Raglan i-Site has a helpful team and is full of ideas of what to do in the area. Also, the museum is accessed through the i-site and the displays depict early life in Raglan and also some of the region's major turning points such as Eva Rickard's tireless campaign for women's rights in Maoridom and for the Raglan Golf Course to be returned to its rightful owners after it was taken from Maori during WWII by the NZ government. Her defining moment was captured on television when she was arrested on the 9th hole in 1978, which caught the heart of New Zealanders all over the country. The land was finally returned and then it was used for job training and employment programs.

History and old hotels go hand in hand so my next stop in town was the Harbour View Hotel, which was built in 1866. Back then it had great views of the harbour before the other buildings popped up! They have rooms upstairs starting from \$60 a night and their selection of food is varied and generous. (There's a good few Auckland pilots who are happy to fly here just for the seafood chowder.) www.harbourviewhotel.co.nz Thus I was easily convinced to stay a night and have a good look around.

A feature of the main street are the Phoenix palm trees which were planted in 1922 in the centre of the road. They'll be 100 years old soon.

Raglan was traditionally a holiday destination for Hamilton folk, and in the 1960s it also became a popular surfing resort due to the number of good surfing breaks nearby. If you haven't tried surfing before and would like to, there is a surf school that caters for all levels. www.raglansurfschool.co.nz

The town's shops are a lovely mixture of the modern to eclectic in the sense that boutique food and products are readily available alongside supermarket staples. There are shops catering to the health and organic conscious, of which Raglan has a niche community.

There are also little baskets on the street that sell in-season fruit



Footbridge connects airfield and holiday park to the main street of town.

and vegetables with an honesty box, which gives the place a very Kiwi, home town feel.

Manu and Whale Bay are world-class surfing beaches and also incredibly beautiful. The closest is 3km from the town centre and is called Ngarunui Beach. It is popular for swimming, fishing and of course surfing. It does have big rips so swim between the flags.

There are a variety of walking tracks from short coastal walks from in town to climbing the summit track of Mount Karioi, this taking around 3 hours. All the tracks offer beautiful native bush and birds and of course fantastic views.

If you want to explore the harbour itself, take a sunset cruise with Wahinemoe Cruises. Their large catamaran caters for up to 70 people and the two hour cruise takes in much of the 122 kms of Raglan's Harbour coastline (named Whaingaroa, the original name for Raglan). You will see beautiful limestone formations and wildlife as well as learning history, culture and ecological stories of the area – all while having fun with the local crew. The cruise highlight is at the end when at the harbour mouth the sunset is witnessed while sampling some local fare, and perhaps a refreshment from the onboard bar. www.raglanboatcharters.co.nz

Before you head back to the airfield a compulsory stop is required at the café called The Shack. Here you will find everything organic, right down to the toilet paper which has stories written on it to keep you entertained while in the little room. The coffee is incredible but even more so is the cakes. My advice? Stock up on the cakes. And make sure next time you visit Raglan, you bring some of your friends for the trip as it truly is an iconic Kiwi Place to Go.

Ed's note: Raglan also has a degree of fame with Ardmore based trainee pilots as being one of the early go-to places when building solo cross-country time on your PPL. Many (such as myself) will remember the excitement of flying oneself 'somewhere' solo and then for the first time landing and actually doing something before flying back to Ardmore. The something inevitably involved a walk into town for a coffee and a muffin. The standard joke (at least if you were flying helicopters back in my day) being, "have you had one of those \$750 muffins at Raglan yet?"



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Challenging the Civil Aviation (Safety) Levies Amendment Order 2017

For some time now Qwilton Biel has been leading a movement in opposition to the new CAA fee structure being levied on commercial general aviation. A formal challenge is now imminent and will be defined by the number and diversity of its supporters. Qwilton updates readers with progress and intentions as follows:

Sufficient seed funds have now been raised to challenge at the Regulations Review Committee, levies introduced on 1 July. With a new government in place we anticipate filing these documents within the next two to three weeks. Our challenge will focus on the fairness and equity of the new levies on commercial general aviation, when many beneficiaries (including government) are not contributing their fair share.

The Regulations Review Committee is constrained in terms of what it can and can't consider. It can consider the consultative/authorisation process of the new levies, but cannot challenge the government's decision not to contribute more to aviation safety.

There has been no stomach in the past within the CAA or the Ministry of Transport to question government's decision not to contribute a dollar more. In fact we have been told repeatedly that if aviation considers government's lack of contribution to be a problem then the sector must make the case. A new government may see a change of heart but really we are looking to the longer term and answers to the question of how an efficient CAA should be funded.

One of our big questions will be whether there is still a role for the mixed funding model when one part – government – consistently refuses to pay its fair share. The government acquires a significant quantity of services from the CAA. The bureaucrats use all sorts of fancy terms like output class one and club goods in an attempt to disguise the fact that each year about 26,000 hours of work is done by CAA for the government and if this was paid for in the same way that the CAA's other customers must pay, at a \$284 hourly rate, then government's contribution would be about \$7.38 million. This would be an increase of 200% over government's present contribution, and would not only offset the need for CAA to introduce any new levies but also facilitate a reduction in a number of other fees and charges.

The previous Government cynically manipulated the funding rules to suit its own agenda. This is not uncommon behaviour, but a group of challengers have decided enough is enough. As mentioned, a complaint will be filed with the Regulations Review Committee in the next two to three weeks focusing on those matters within the purview of that Committee, namely;

- Did the consultative process behind the new levies meet the

threshold test for information disclosure, financial transparency and engagement?

- Are the new charges lawful?
- Do the new charges trespass on personal rights and liberties?
- Are the new charges effectively a tax?
- Are the new charges effectively a retrospective tax based on backwards looking data?

Given the way the Civil Aviation Charges, Regulations and Levies order is written, our complaint must be very narrowly targeted. But this does not mean we have not turned our minds to other related matters – one being government's persistent underfunding of aviation safety as highlighted above, and another being the exorbitant increase in CAA's operating costs that has been disguised by the introduction of these levies. The CAA's full cost recovery hourly rate now stands at \$466 and no amount of smoke and mirrors can hide the fact that this is excessive, and makes a mockery of Minister Brownlee's promised 100% cost recovery hourly rate of \$284.

How does aviation hold CAA accountable?

CAA has all the cards. Its powers are enormous. It controls all the financial data and information. It is not required, for example, to discuss its performance with its customers yet those same customers more than anyone else understand the upside and downsides of regulating safety. CAA doesn't undertake any customer surveys so how do they know if they are reaching their self-imposed performance targets? Are the self-imposed performance targets really that relevant in an SMS regulatory environment?

We are well aware that a number of aviators have repeatedly attempted to engage with the primary performance monitoring agency – the Ministry of Transport on these issues and have repeatedly been rebuffed.

The core issue is the effectiveness and efficiency of CAA and alternative avenues are being looked at to tackle this as part of this challenge. It really comes down to how we force CAA to put all funding matters on the table, including their ever escalating demands for more money.

If we look at our nearest neighbour Australia, CASA is funded 67% by a fuel tax, 23% by government and 10% by direct fees and charges. CASA's hourly rate charge varies between \$A100 and \$A190 and let's not forget the massive differences in licensing and other fixed charges. CASA's charges have not increased for over twenty years yet we don't hear any murmurings from across the Tasman that they are underfunded. How can New Zealand aviation companies realistically compete in this environment? Interestingly CASA has as one of its mandates a regulatory cost reduction programme... would our CAA ever consider going on such a diet?

Since 2012 there is no doubt that CAA has had an insatiable appetite to consume more and more of your hard earned dollars. Like all monopolies it will only change its behaviour if customers force a change – the Regulations Review Committee is our first port of call.

The strength of this challenge will be defined by the number and diversity of its supporters. If you would like more information please contact myself, Qwilton Biel, email: qwilton@biel.nz, or phone 027 493 5655.

Are you insuring at correct value?

It's always best to insure aircraft for true market value as there are significant pitfalls for the unwary who opt to deliberately under or over-insure their assets. You could inadvertently end up with a low value write-off instead of repair, or a time-consuming rebuild instead of a write-off. Bill Beard from Avsure explains the insurer's decision process:

Aircraft owners should be aware that there are disadvantages in both understating and overstating aircraft values. Generally, aviation policies are written on the basis of "agreed values" but you should check your policy on this point. In the case of an "agreed value" policy the amount of hull coverage you purchase is agreed and accepted by the underwriters at the time of taking out the insurance and that is the amount you will receive (less the deductible) in the case of a total loss.

Be alert that under an aircraft policy, the insurance company at their option may pay for, (possibly replace) or repair accident damage. If you are light on value, the insurers have the option to pay out the total sum insured, less the deductible, and take possession of the aircraft (wreckage) which they can then put up for tender and sell off. As opposed to this, if you over-insure and you have a major accident, the insurers may decide to enter into a long, expensive rebuild and you could lose the use of your aircraft (and the income!) for months. The best idea is to insure your aircraft for its true market value so that in the case of a total or constructive total loss, the sum insured will adequately enable you to replace the aircraft with a similar model in like condition.

Operators of high valued aircraft and helicopters may wish to consider insuring in US dollars. The downside is that some underwriters require that the premium must be paid in US dollars and

that US dollar premium financing is not available. The reason we highlight this is that the USA is still the main source of used aircraft and the price of replacement aircraft will be affected by any fluctuations of the NZ\$ conversion against the US\$.

It could also be a good time to review the Third Party Liability Indemnity you are insured for. The absolute minimum should be NZ\$1m however in recent years a more appropriate indemnity would be NZ\$2m which has become the industry standard but even this won't go far if you taxi into an expensive helicopter or pressurised twin. If you are operating regularly on and around busy airports frequented by high value aircraft or helicopters it would be best if you considered a higher indemnity.

To discuss any questions relating to aviation insurance or to seek quotations, contact Arden Jennings or Bill Beard at Avsure on 0800 322 206 or email: insure@avsure.co.nz www.avsure.co.nz

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Doug Brooker during an airshow performance in his MXS

Govin Conroy image

Aerobatic Sequence Design Part 1

Given the importance of energy management during an aerobatic routine, not to mention safety, a wise pilot will follow a well-considered sequence of figures which include entry gates and escape options. Grant Benns explains:

According to the Oxford English dictionary, a 'sequence' (when used as a noun) means:

1. A particular order in which related things follow each other.
2. A set of related events, movements, or items that follow each other in a particular order.

In the world of competition aerobatics, the NZ Aerobatic Club and others define a sequence as 'a grouping of aerobatic figures which constitutes one flight programme.'

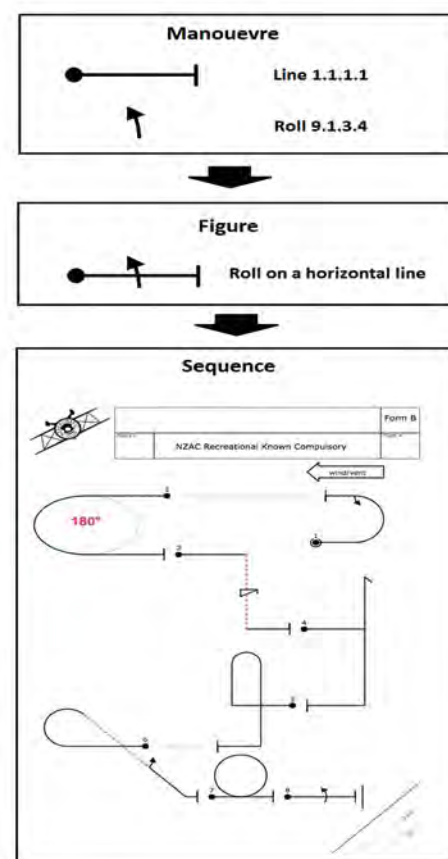
There is actually a hierarchy of definitions which fully describe the sequences flown in the competition arena, and this is worth briefly explaining before we get back to looking at sequences.

Manoeuvres, figures and sequences

The most basic component in aerobatic nomenclature is the manoeuvre, defined as 'any one of the basic aerobatic movements'. Basic aerobatic movements range from a straight-and-level line, to a loop, roll and Cuban, and then on to more complex but still singular 'movements' such as a stall turn, snap roll and spin. The definitive guide for 'basic aerobatic movements' is the Aresti catalog of aerobatic manoeuvres, which I discussed in an earlier article. Each singular movement is issued with one catalog number, for example a straight wings-level line has the catalog number 1.1.1.1 and a half-loop is 7.2.1.1. An aileron roll is another basic movement, allocated the number 9.2.1.1.

A figure is 'an individual component of an aerobatic sequence, which may contain one or more manoeuvres in combination'. So, a figure can be just one basic manoeuvre /movement, or a combination of manoeuvres.

Using the above examples, if we



combine a line manoeuvre with a roll manoeuvre, we get a figure that represents an upright, level-flight aileron roll.

If we combine the half loop manoeuvre with a half roll manoeuvre we get a 'roll-off-the-top' figure.

So, to put all of the above waffle into simple terms, a sequence contains a group of figures, individually made up of a variety of manoeuvres, which follow each other in a particular order. Phew!

Planning your sequence

The degree of preparation of your aerobatic sequence will depend on what sort of aerobatic flight you are planning to do, presuming – hopefully – your aerobatic flight is planned. (I highly recommend you plan each aerobatic flight!)

If you are out for a lazy Sunday aerobatic sortie, you will possibly be flying a single figure/manoeuvre at a time, then reflecting on your amazing skills whilst you climb for the next manoeuvre. If you are flying in front of a crowd, you should have a sequence mapped out, to best show the audience how good you/your plane (strike out as applicable) is. For competition aerobatics, you will have an official sequence to fly, prescribed by the rules of the event and flown with precision in order to win – or that's the plan.

Regardless of which category you are in, it would be best to have in mind some consideration of the basics of sequence design, either on-the-go or in a more long-term, prepared manner.

Here are my thoughts on the basics of sequence design, which I will expand on following this summary:

1. Know each figure you intend to fly and be confident you can fly it.
2. Know the entry speed range for each figure.
3. Know the height you will lose (or gain) with each figure.
4. Define your height limits.
5. Place figures in order of exit speed achieved to entry speed required.
6. Start high, finish low.
7. Place energy sappers early.
8. Remember to turn around.
9. Consider the horizontal distance required and available.
10. Create height/speed 'gates'.
11. Consider 'outs' or escapes.
12. Don't ad-lib.

Know each figure

Logically, you should know something about the figure you are proposing to fly. At the least, you should have sufficient knowledge and experience to understand the requirements of the figure (entry speeds, height loss/gain). This may sound like an odd statement, however in the higher categories of competition aerobatics you often get confronted with a figure you have never flown before, but whose individual elements you may have some experience with. Ideally, you will have learnt and practised the intended figure many times and can comfortably fly the figure, both within your capabilities and the aircraft's too.

Know the speeds

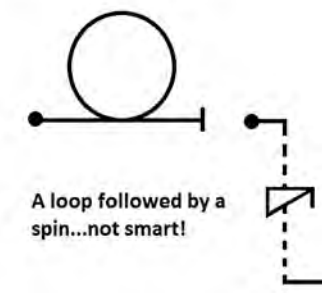
Most figures will have an ideal commencement speed for your aircraft type and possibly a range of entry speeds from which the figure will be 'flyable'. That's not to say commencing at other than the ideal entry speed will be pretty, or that it will put you in great shape for the next figure – it might well be a case of having to postpone the next figure and climb for more height – but knowing the range will help with your sequence design.

Know the height loss/gain

With practice and knowledge of the figure, you will have an idea of the height loss or gain that comes from executing the figure well – add or subtract a margin for nerves/wind/turbulence/miss-handling. Many figures will have a range of loss/gain based on the 'G' you pull, but there are trade-offs with altering this – you may get another 100-200 feet of extra height out of the 'roll-off-the-top' (above) by not pulling as hard, but you will then be quite slow, and maybe sink/stall coming out of it, or be too slow to contemplate the next figure. As mentioned in previous articles, aerobatics is a yo-yo game of energy transfer – kinetic (speed) to potential (height) and back again.

Define your height limits

Having a current aerobatic rating will define your lower height limit, this being 1500' AGL solo or 3000' AGL with a passenger. Note these numbers are AGL (above ground level) therefore you need to know the ground level below you. At many events the pilots will set QFE / zero feet on the altimeter prior to take-off for an aerobatic flight overhead the field. You may also have a display authorisation that



allows you to come lower. Either way, by knowing your potential height loss you can plan the positioning of figures in a sequence to ensure you stay above your minimum heights – with a margin.

Also consider anything that may define your upper limits of a sequence – this may be cloud-related but most often it may be airspace. If there is controlled airspace above you, into which you don't have a clearance, consider your height gain on figures like loops and stall-turns to ensure you don't get a 'please call the tower' message, or worse – a near miss with a big shiny jet.

Figure placement considering speed

A figure requiring a high speed for entry (e.g. a loop) should follow a figure that exits at a high speed (e.g. a stall turn). Equally, a low entry-speed figure (e.g. a spin) should follow a low exit-speed figure (anything that finishes after a climb, e.g. a roll-off-the-top).

Start high, finish low

Unless your plane has after-burners, and/or a thrust-weight ratio greater than 1:1, gravity always wins. Therefore, it is generally best to start your sequence high, with the expectation of losing a bit of height through most figures – pulling 'G' creates drag and few light aircraft have the power to overcome the relentless pull of drag and gravity. Therefore, start as high as you can and plan your figures around this.

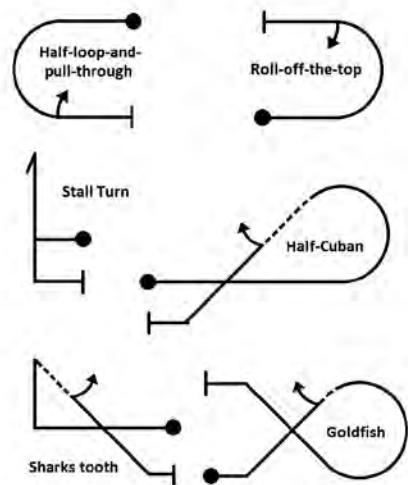
Place energy sappers early

Energy sappers are figures which don't allow you to yo-yo your height/energy loss into a near-equal gain. For example, you will generally finish a loop or a stall turn at the same height and speed as you started. The 'roll-off-the-top' half loop/half roll will have you losing speed but gaining height – energy conversion. However, any spin is a total energy sapper – you will potentially lose 500'-1000'



and come out with insufficient speed to regain the height loss back. Snap rolls are another example of an energy sapper – the exit speed, due to drag, is much lower than the entry speed. With this in mind, and following on from the previous paragraph, it is best to place your energy sappers (like a spin) towards the beginning of your sequence.

Remember to turn around



Generally, you will want to keep your sequence within a relatively confined space, for a number of reasons – the crowd or judges, terrain, airspace or other traffic in the vicinity. With this in mind, you will need to have a few turn-around figures in your repertoire to incorporate into your sequence. Sorry, you're flying aerobatics now so a plain 180 degree turn won't cut it (although it is a judgeable aerobatic figure) – how about a stall turn, half-cuban, half-loop/half-roll (up or down), half-square loop, 'goldfish', 'sharks-tooth' etc.? Each of these figures have many variations, and most are not energy-sappers. You can also use some of these figures to counter any cross-wind drift, whilst most will also give you a good look at your display area/box as you dive back down.

Horizontal distances

Some figures go a long way across the sky, such as a very slow/point-roll, while some go a long way up and/or down. Some do both, such as this



crazy thing called an 'N'. The horizontal distance required can always be changed by positioning the figure into wind or downwind, but what if, on the day, you have no wind or all-crosswind? Perhaps it might be best to leave that 200kt downwind 8 point-roll out of your sequence!

Create height/speed gates

Going right back to our first three points, by knowing your figure's speed and height requirements you will be able to assess throughout the sequence design likely 'gates' that you both need and will achieve. Through practice – at a higher altitude! – you will determine if the assumptions you made during the design of your sequence are valid, and if you need to make any adjustments to selected figures. Writing critical entry 'gates' at various points in your sequence, down on your sequence card provides you with numbers to hang your hat on when your brain is spinning and your eyes are bouncing – if the numbers you are seeing on your ASI or altimeter aren't enough, stop and climb. For example, you have determined that you need to start your sequence at 160kts and 3000' in order to get through it without stopping, all going well. You may also have put in a check-point/gate half way through, as a 'how goes it?'. There is no place for guessing or hoping when you get low.

Consider 'outs' or escapes

Some figures are inherently safe – generally those that climb and/or finish higher than they started. There are a few that have claimed lives and/or keep dry-cleaners very busy – anything that pulls towards the ground, has the potential to skid/slip lower, or the potential to enter a spin. Half-roll-and-pull-through, barrel rolls, reverse half-cubans, stall turns are all potential trouble-makers. Rolls-Royce famously lost a beautiful Spitfire years ago to a humble loop, albeit one that started near ground level and finished six feet below it. In the design of the sequence you must be particularly aware of the inherently dangerous figures and place them in the sequence at a point where there is height to manage any issue that might arise from poor execution of the figure. In a previous column, I made mention of good manoeuvres that can go bad – the mitigation is practise and a margin of spare height. The escape is using your situational awareness to recognise a

figure going bad early and then having a plan of how to abandon it. Generally, this will involve a fast roll and/or pull to the closest horizon, given you know where this is and you have the height to execute the recovery.

Don't ad-lib

When I wrote this, I thought "what does ad-lib actually mean" – back to the Oxford dictionary!

Ad-lib, short for ad-libitum means 'performed without previous preparation', which does not sound like a good recipe for aviation safety, particularly in the realm of aerobatic flight where you are flying closer to edge of the aircraft's operating envelope.

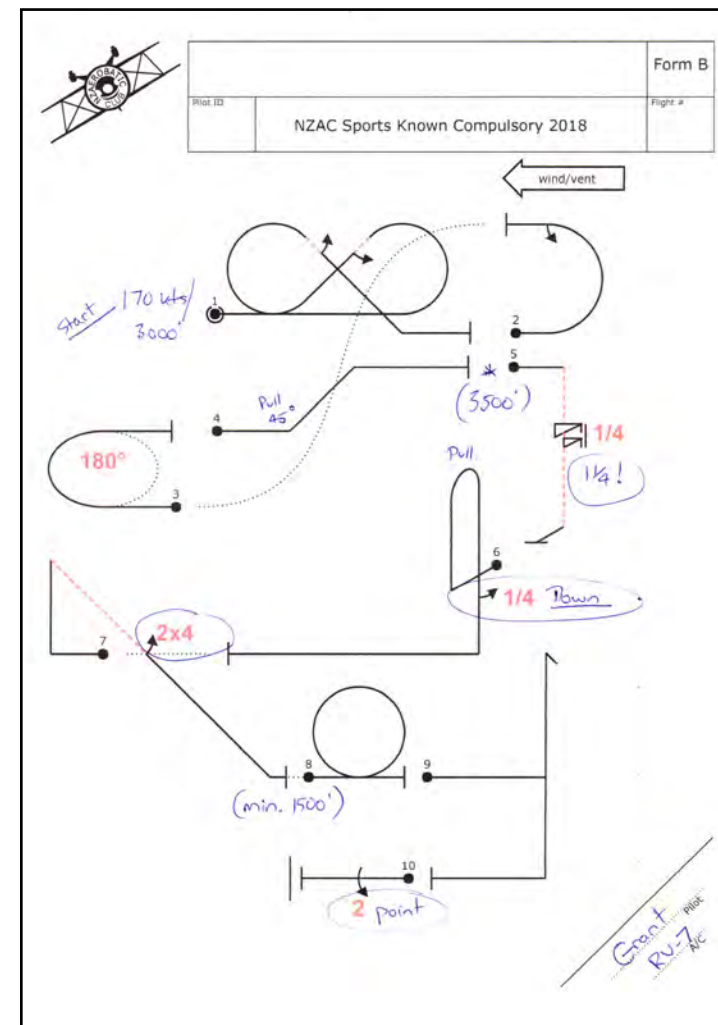
Rattling though a relatively unplanned, 'ad-libbed', but low-risk sequence at height should present few issues, so long as you maintain your margins of height and speed, and know when to break off and climb up for more of both.

Aerobatic competition sequences are prescribed and in theory pilots will fly what is on the sequence card in front of them – but not always! Occasionally, the sequence gets out of order and a figure is flown in the wrong place, which may lead to a big issue with speed or height. Whilst not intentional, this is a form of 'ad-libbing' however normally at a competition there is the safety backup of eagle-eyed judges on the ground, ready to call a 'break' (over the radio) requiring the pilot to immediately stop the sequence and resume normal upright flight.

The display regime has, sadly, demonstrated the worst outcomes of ad-libbing, where both the pressure to perform in front of a crowd mixes with diminished height margins and little room for error. Here, practise and discipline must come to the fore, to remove the temptation of adding something different or unplanned to the sequence.

Part 2 to follow

There is some really great software online which can help with sequence design, but first you need to understand the basics, as I have covered off above. In a future article we will look at creating a flyable, safe and enjoyable sequence that might just help you win a \$10 plastic cup!



Not annotations on sequence for pre-planned height and speed gates.

Footnote: These articles are intended to whet appetites for advanced flying and to offer tips to aerobatics beginners. Dual instruction and observance of CAA rules is a must-have - especially for safety and also for learning correct techniques and finesse of manoeuvres for the particular aircraft you are flying. For more information, enquire about aerobatics instruction at your local aero club or see www.aerobatics.co.nz



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Two new Magni Gyros arrive in NZ

Magni Gyro's side by side two-place gyro, the M24 Orion.

October was a big month for NZ Magni Gyro dealer Leo Levine at Parakai. Two new M24 gyros arrived and joined the register for proud new owners Peter Randell and John Wiessing. Both aircraft will be located north of Auckland, and will be regularly on show at Dargaville Aero Club where Peter and John are members (Peter is the Club Chairman).

As often occurs with an interesting aircraft type, one attracts more to an area and such has been the case at Dargaville. The Dargaville Aero Club has to rate as one of the more progressive in the country, having embraced microlight operations very early

on and since logged many thousands of hours of pilot training on club aircraft. A unique feature of the club is that all instruction, and often accommodation too, is given free of charge except for the cost of operating the aircraft.

A couple of years back, Dargaville Aero Club commenced autogyro training using Instructor Rusty Russell's personal gyro, then in 2016 became the first aero club in NZ to purchase their own gyro and make it available for instruction and private hire. Shortly thereafter, long-time club member Allan Jessop invested in a Magni M16 gyro for himself.

What sparked Peter and John's interest? Rusty Russell needs to take the blame for that. Watching him flying and instructing

in windy and blustery conditions in the Dargaville Club gyro got both Peter and John thinking that these gyro machines were something to seriously consider, although John had been very interested in gyros for a number of years prior as well. Subsequently they both completed their gyro licences with Rusty. John was keen to purchase one and undertook trial flights in the side-by-side seated models available in NZ, deciding to place his order with Leo for a Magni M24 shortly thereafter. Discussions with Peter resulted in him deciding to place an order for an M24 as well. This conveniently meant that shipping costs could be shared – both aircraft fitting in the same container.

The order and production process was straight forward, with both gyros departing Italy on schedule around three months after order and then arriving at Parakai six weeks later.

According to Leo, the next part of the process was quite impressive and a credit to the people involved, particularly at CAA. The gyros were unloaded from the container on a Thursday, then with owners keen to assist in the simple job of assembly, they were assembled on the same day. The local IA (Inspection Authority) completed his side of the process and CAA were advised on Friday that they were now ready for inspection. CAA duly arrived and signed them off on the following Tuesday, less than a week from when the container doors were opened.

Subsequently, the mandatory two hours of test flying was completed on both aircraft by Rusty Russell and both Magni M24s were flown to their respective owners' farm strips the following week. For a time there, West Auckland Airport Parakai was perhaps the busiest gyro airspace in the country, hosting the two new aircraft, plus Leo's Magni M22 demonstrator, and the gyros of Oskar Stielau and Derrick Willis, both also domiciled at the field.

With gyro ratings already on their licences, John and Peter simply needed type conversions and these were signed off in short order by Rusty.

What next? Look out for John and Peter at an event near you. John has done a lot of flying time in his Foxbat ZK-FBT and is a regular to most fly-ins like the Black Sands and other fun runs. Peter is an equally frequent flyer, in his sleek and fast Alpi Pioneer 200 which is now up for sale.

About Magni Gyro

Vittorio Magni has been building autogyros in Italy since 1987 when he first created his VPM Gyro range, later becoming Magni Gyros in 1996. It's fair to say that Vittorio was the originator of the modern gyro design style, evidence being that many of the so-called 'modern' autogyro types look a lot like Magni's designs.

With history, experience, and very well proven durability and safety on its side, Magni Gyro currently produces four different autogyro models. These are the M14 Scout, M16 Tandem Trainer, M22 Voyager, and M24 Orion. All but the M24 are tandem configuration two-place machines. The M24 is Magni's flagship model, offering fully-enclosed luxurious side-by-side seating for two. It is available produced to BCAR Section-T spec if required.

Magni Gyros are loaded with all the features now expected of modern recreational aircraft, but also adhere to traditionally proven aircraft design and manufacturing techniques such as having a 4130 chromoly steel welded tube frame – known for lightness, corrosion resistance and (most importantly in a rotorcraft environment), fatigue tolerance.

Power options are from any of the Rotax 912 / 914 range and avionics can be easily configured to owner requirements.



John Wiessing's new Magni M24 at Parakai.

Magni Gyro in New Zealand

There are currently ten Magni gyros on the NZ register. The brand is ably represented here by Leo Levine who has more than 2300 hours of gyro time in his logbook and also holds helicopter ratings. Anyone interested in more information or an introductory flight is invited to contact Leo at Parakai, on 021 0284 2049, email: leo@magnigyro.co.nz or visit www.magnigyro.co.nz



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The General Aviation Advocacy Group

Five years ago, Des Lines and Brian Mackie were concerned about General Aviation's downward spiral. The Civil Aviation Authority had just dramatically increased its fees and charges. They quickly discovered that many others were just as worried. This led to the General Aviation Advocacy Group, a social network which now has a database of more than 2000 pilots and operators. The GAA and its supporters act as General Aviation watchdogs, voicing the concerns of aviators who are not represented by established organisations and generally keeping them informed on issues as they develop. The GAA also offers a free advocacy service to individuals who may not feel confident in dealing with the CAA on their own.

Since forming the GAA, Des and Brian have established a panel of well-qualified contributors, and now work on multiple issues of importance for General Aviators simultaneously. The GAA website, www.CAA.gen.nz covers their work in detail along with news and reader comments. Brian Mackie provided this update of current important issues for KiwiFlyer readers:

Audio and video use as evidence

We've been made aware of a pending prosecution by CAA against a pilot that we believe has serious implications for general aviators and professional pilots.

It involves a pilot who is being prosecuted for events that occurred on a cross-country flight during which the aircraft encountered unforeseen bad weather.

The evidence that the prosecution is principally relying on stems from audio and video material recorded by a young student pilot, during a training flight. The student used a GoPro camera fitted inside the cockpit, and a separate audio recording device.

The lawyer acting for the pilot believes that cockpit audio and video recordings are inadmissible in any criminal



Could in flight video or voice recordings be used to prosecute you for a perceived misdemeanor?

proceedings in New Zealand, against any pilot. There is Court of Appeal support for this, following the 1990s Dash 8 crash on approach to Palmerston North, with no other court decision to the contrary.

The Prosecution view

The Prosecution view is that this exclusion of audio and video recordings applies only if TAIC is investigating and that it is free to use such audio and visual evidence in prosecuting a pilot, where the CAA or the police have investigated and not TAIC. The pilot's lawyer is of the view this opinion was not supported by the Court of Appeal decision. And that also, when the TAIC Amendment Bill was passed through Parliament to prohibit CVRs being used in criminal proceedings against pilots, the Hansard records of the third reading of the Bill when enacted did not support the Prosecution's opinion either. The entire issue needs to be considered and ruled upon.

The implications for GA pilots and operators

If the CAA is successful in securing the admissibility of cockpit audio and video recordings in cases other than a TAIC investigation, the implications for GA pilots are obvious.

Since the 1990s, when the TAIC Amendment Bill was introduced in

respect to dedicated aircraft CVRs, rapid and probably unforeseen advances in technology have resulted in a proliferation of pseudo-CVRs in the form of GoPro-style cameras, iPads, smartphones etc.

A recording taken by a co-pilot or student pilot, or even a passenger within close proximity to the cockpit on a smart device or camera can now be taken out of context, and used to bring prosecution action against a pilot. These devices, with their monocular depth perception and limited field of vision, will often portray an inaccurate view of what a pilot is actually encountering and weather conditions in particular may look worse than what was actually experienced.

The CAA could use such recordings in a prosecution against a GA pilot, unless a ruling is made that they are totally inadmissible against all pilots, regardless of who investigates.

The CAA has applied to the District Court to have the video and audio evidence admitted against the pilot. The pilot is therefore in the position of either having to accept that the CAA can use that evidence, or defend it. If the CAA loses in the District Court, it is likely to appeal, as any ruling prohibiting the authority from using such information obviously has ongoing implications in future CAA investigations. That has serious cost implications for the accused

pilot, who cannot afford to fight this alone. A ballpark forecast of costs to argue the matter in the District Court alone is about \$15,000.

At this time, the pilot does not have sufficient funds to meet the estimated costs of fighting this legal challenge, and if unable to do so, it may be left to the Judge to decide and rule on the admissibility point with the CAA lawyers appearing and making submissions, and potentially no one appearing to argue against them.

We need to recognise, as a community of aviators, that what the accused is confronting has wider implications for the rest of us. This is why we are looking for support from fellow pilots and operators prepared to assist in the funding to obtain a definitive judicial ruling on the admissibility of these recordings as evidence in criminal proceedings against all pilots.

To enable contributions, a bank account has been set up as follows:
ASB, Victoria Road, Devonport
Account name: GA Advocacy Fund
Account number: 12-3065-0148085-02

All funds collected will be applied to fighting this legal admissibility issue alone. Should the pilot subsequently have to go to court to answer to the substantive charge, the pilot will have to ultimately decide on what course to take, and will bear any costs of that.

If for any reason there is a surplus of funds after this admissibility issue is resolved, we would ask you to contribute on the basis that a record of all contributors will be kept and all contributors will be surveyed as to how the General Aviation Advocacy Group should apply any surplus funds.

RPLs & the \$11 refund

As a result of the GAA's challenge to the wording of AC61-20 Rev 7, we secured refunds for CPL and ATPL holders who wished to exercise the privileges stated in CAR 61.41 and had previously been required to apply (and pay) for a Recreational Pilot Licence.

But we also sought a refund of the \$11.10 NZTA fee, which was part of the Fit and Proper Person declaration. At first, the CAA wanted proof of payment, but we objected to that because the charging error was the Authority's and the onus was on the CAA to rectify the matter using its own records. A CAA official told us we

would have to visit the Authority's website to discover what it had decided about this.

But then the CAA wrote again, saying:

CAA is prepared to reimburse that sum to affected RPL holders without proof of payment being required. To identify eligibility, CAA will be reviewing each individual's file. Please note that the LTSA fee of \$11.10 has only been in place since 01 June 2011 so anyone obtaining a report prior to this date would not have incurred any cost.

Reimbursements will be processed as soon as possible in the upcoming weeks to all those who have responded to their letters.

Admittedly a small monetary win, but it's the principle that matters.

The current situation regarding PPL holders

The GAA has been pursuing the issue of an "anomaly" in CAR 61.41 which prevents PPL holders from exercising the privileges of a lower licence – the RPL. The CAA had told us:

We have discussed the content of your letter at some length and while agreeing that the current wording of Part 61.41 creates an anomaly we cannot change that in the AC as the Rule overrides the AC. We will be making it clear in the AC that in its current state the Rule only applies to ATPL and CPL. However, we are in the process of submitting an issue assessment recommendation to address this anomaly. Part 61.41 is prescriptive and will require a Rule change to allow PPL to be treated in the same manner as ATPL and CPL hence the need for this issues assessment. We encourage you to submit a request for a Rules issue assessment of Part 61.41 to add weight to the process.

Please note that we cannot confirm the implied intent of Part 61.41(b) as the Rules are made by the Minister under section 14A(d) of the Civil Aviation Act therefore the intent is the Minister's not the Authority's.

After that, we submitted a request for a Rules issue assessment. This process will take some considerable time (probably years), due to other assessments that are ahead of ours.

As a stopgap measure, we petitioned the Director to exercise his exemption power under s37 of the Civil Aviation Act. At first, he refused, until we showed him evidence of his having signed an exemption in similar circumstances. We're looking forward to Graeme Harris' decision.

For more information and GAA contact details, visit www.caa.gen.nz

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de Havilland DH 82A Tiger Moth ZK-BLI on final approach to Taumarunui. Duck formation vacating early crosswind.

Taumarunui Airfield turns 50

Taumarunui Airfield was opened by the then Prime Minister, Keith Holyoake, in 1967. It celebrated its 50th anniversary on the weekend of 14th October 2017 with plenty of visitors, competitions, and camaraderie. Paul Le Roy reports:

History shows that the residents of the Taumarunui area began the search for a suitable site for an aerodrome in 1928 and finally settled on the location in 1964. The long grass all-weather runway is capable of serving a DC3 in both passenger and agricultural

roles. The airport would foster growth in the region as well as boost tourism - and become the home of the Taumarunui Aero Club.

The Grand Opening Pageant in 1967 included aerobatic, glider and topdressing displays, and parachutists. There were also special aircraft displays including RNZAF representation in the form of Iroquois helicopter and Canberra Jet Bomber. Unfortunately, bad weather in the area reduced the number of aircraft on show from 120 to 50. An aerial photograph shows that the event was well supported with many hundreds of cars parked up. A further



Piper PA-18 Super Cub BQX at Taumarunui's Opening on 17 October 1967.



Piper PA-18 Super Cub BQX at Taumarunui's 50th on 14 October 2017.

milestone for the airport was the official opening pageant for the Aero Club rooms in February 1972.

Now to fast-forward to the activities in October 2017. Saturday started bright and early with the pilots' briefing on the day's activities at 9am. Little to no wind and cloud meant that pilots would use runway 19, where the spot landing and bombing targets had been set up earlier. The judges headed out to their spots and aircraft began warming up and taking off. Anyone who has witnessed or participated in similar events before will know just how difficult it is to drop a one pound 'bomb' from 200 feet

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There were eight Tiger Moths, a Fox Moth and a Gypsy Moth at Taumarunui Airfield's 50th Anniversary Celebration. Seven Tigers and the Gypsy can be seen here.



There was no shortage of aircraft variety at Taumarunui Airfield's 50th Anniversary Celebration.

onto a small target. Most of the bombs were way off! The spot landing was equally as difficult, but some good skills were demonstrated in the efforts made to achieve a three-point landing at a specific spot. A separate set of judges were scoring the perfect loop competition — the least egg (or pear) shaped track in the sky wins!

Soon it was time for lunch. I was about to pack the camera up when one of the judges said that a surprise display was about to take place. Moments later the de Havilland DH.112 appeared and did a super high-speed pass followed by a low and slow one. One more fast pass and he was gone!

The afternoon was much the same and then the flying was over and the planes could rest while everyone reflected on a great day of flying.

Sunday would be more relaxed and the briefing set for 10ish - make that 11! By now the weather was starting to close in from the west and all to soon it was raining. Predictions were being made that it would clear by 1pm, but with a long drive back to Wellington ahead I decided to commence the trip home.

My family and I had a great time in the King Country and I would like to thank John, Paul, Jeanette, Kevin and Graeme for their hospitality. Thanks also to all the pilots who made the journey for this special event. I hope that the photos do your aircraft and flying skill justice.

Now to find another excuse to visit.

Paul Le Roy 



13 social flyers on the ground during a stop at Nathan Wilson's recently constructed Matuanui Farm strip. 23 aircraft were involved altogether.

One of the joys of having an aircraft and a group of like-minded friends is that spontaneous fun times occur with some frequency. So was the case on a recent fine weekend in the South Island when Alpi Pioneer 200 owner Kevin Dore phoned NZ Alpi agent Logan McLean and suggested a trip. Logan then phoned several Alpi owners within range and says, "before I knew it other people were calling to say can we come too? Answer sure it's not just for Alpi flyers." In short order the 'trip' became an enjoyable gathering of 23 aircraft including Dynamics, RANS, Furio, Europa and 13 Alpi Pioneers, ending up at Manapouri for lunch. Kevin picks up the story:

With the Taieri and Te Anau/Manapouri plates printed off from the AIP I made a final weather check before setting the alarm for 5am and hitting the hay.

As usual, I didn't have to wait for the alarm to sound, I was up at 4.50am and had a quick glance out the window to get a feel for the day ahead. As forecast, the weather couldn't have been better and we, that is a group of Alpi owners were off to points far south of our Canterbury base. There was Rob Laskey who had flown down the night before from Feilding in his Pioneer 300, and Grant Mackay the newbie to aviation and brand new owner of Pioneer 300 SGM accompanied by Logan McLean. Also leaving from Fernside Fields was David Leefe in his Pioneer 300 MWL, plus myself in Pioneer 200 Hawk KPD.

Along the way we would pick up in mid-flight near Timaru, Ross Marfell in his 300 RFT and Graeme and Margaret Smith in their near new Pioneer 300 RetractableTGB and Dave Robinson, a friend of Graeme in his Europa. It wasn't long before we were joined by Robert Trotter flying out of his strip near the Opuha Dam in the Fairlie basin.

Our first destination was Taieri airfield where we were greeted by Otago Aero Club President and Alpi owner Colin Chalmers, Jonathon Elliot and Geoff Laing, owner of a Pioneer 200.

Our next stop was Matuanui Farm 10 nm south of Balclutha where we teamed up with Michael Blomfield from Opio in Western Southland in his Dynamic WT9 and a couple of Rans S6 flown by Bradley York and his brother law. We were hosted by the landowner and aviation enthusiast Nathan Wilson who had recently put in this great little strip. There were now 13 aircraft on the ground at this stunning location in the lush green Clutha District of South Otago.

On leaving Nathan and Linda's farm destined for Mike Blomfield's strip at Opio, Mike suggested we first head east to the coast and then head south as far as Waipapa Point lighthouse, the most south eastern point of the South Island. This has to be one of the most beautiful locations in the country known as The Catlins (Ruth Allanson wrote this up as a Place to Go in Issue 53 of KiwiFlyer) and flying low just off the coast following the cliffs and inlets is a great way to see it.

From Waipapa Point we tracked straight across to Opio just skirting the Invercargill Control Zone.

In true Southern Hospitality tradition, Mike and Karen put on a great BBQ for everyone to the point where we all had to redo our weight and balance calc's before departing on our next leg to Manapouri/Te Anau Airport about 20 minutes flying time away. The guys at the Fiordland Aero Club at Manapouri were amazing as usual and had all the fuel we needed for our trip home.

What an amazing bunch of friendly people that day and what a wonderful, versatile little aircraft the Alpi Pioneer is.

Heading home on auto-pilot at 9500 feet seemed to provide the smoothest ride and 2.5 hours later into a 20 kt headwind across the Canterbury Plains, we touched down at Fernside Fields. We had flown 642 nautical miles in 6 hours 50 minutes (although the 300 Retractable were obviously quite a bit faster at 135kts).

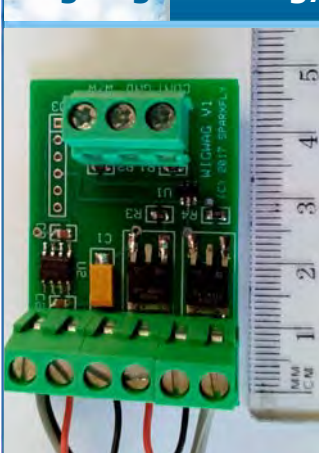
Fuel burn in my Pioneer 200 was 100 litres or just under 15 litres of Mogas per hour.

Now, where to next!

Kevin Dore



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Vector Aerospace in Brisbane is the only Pratt & Whitney Canada PT6A Designated Overhaul Facility in the Asia Pacific region.

PT6A Designated Overhaul Facilities available at Vector Aerospace in Brisbane

Vector Aerospace is a multi-national corporation providing maintenance, repair and overhaul (MRO) services for fixed- and rotary-wing aircraft operators around the globe. The company's Engine Services – Atlantic facility, located in Brisbane, is a fully authorised Pratt & Whitney Canada Designated Overhaul Facility for the PT6A family of engines – and the only such facility in the Asia Pacific region. A mobile repair team operating from Brisbane also offers support for a range of additional Pratt & Whitney Canada powerplants.

New Zealand operators of the PT6A engine family are invited to contact Simon Wilks, Regional Sales and Service Manager, or any of the team at Vector Aerospace in Brisbane for all engine repair, overhaul, and accessory requirements, including for the supply of rental and exchange engines.

Introducing Vector Aerospace in Brisbane

Located in sunny Brisbane, Vector Aerospace Australia is part of Vector's Engine Services – Atlantic (ES-A) family.

Our Brisbane facility, which celebrated its fifth year of supporting operators in the Asia-Pacific region last August, is a 26,000 sq. ft. site, staffed by 62 dedicated employees. The facility supports PT6A operators throughout the Asia Pacific region, with an overhaul line, repair line, hot section line, fuel nozzle cell and a Mobile Repair Team (MRT). We have a very diverse customer base, both culturally (spanning 3,200 language variants!) and geographically. On any given day, as well as Australia and New Zealand, we could be dealing with customers from China, Japan, Maldives, Papua New Guinea, India, Indonesia the Philippines, and more.

In addition to supporting the PT6A engine, the MRT side

of the business also has approvals for the P&WC PW100, JT15D, PW300 and PT6T engines. Our customer base ranges from owner/operators who fly their aircraft for personal use, to aeromedical operators such as the Royal Flying Doctor Service, and from armed forces such as the Royal Australian Air Force, to air tour customers operating pleasure flights over the Great Barrier Reef. We also have a new customer base of agricultural companies that perform crop spraying and fire-fighting. Each customer has their own unique identity and needs, which we are proud to support.

Our Brisbane facility was originally established in 1986 by Pratt & Whitney Canada (P&WC), and became a full overhaul facility with a test cell in 2000. The facility was sold to Vector Aerospace in 2012, and all employees transferred over to Vector. This signified the start of a new era, and gave the facility the autonomy to deliver what customers in the region were looking for. A new sales team was hired, consisting of four sales managers with very specific skill sets which complement each other to satisfy all customer needs.

To better align ourselves with Vector's philosophy of setting the standard of customer service, several changes were implemented within the facility in order to restructure and refocus on customers. Significant investments have been made to continually develop and grow the facility's capabilities to better support our customer base. These investments have been a resounding success, both with our customers and our employees, with more investment planned in the coming years.

Like any operation, there are challenges – and satisfaction from meeting them successfully. Managing our very diverse customer base is a challenge we enjoy and face daily. Different cultures require different approaches. New Zealand is very similar to Australia for example, but very different to India.

Logistics can be challenging but are also a strength. It takes five days for engine parts to reach the Brisbane facility from North America, so we have developed systems and relationships to conduct as much business locally as possible, in order to best manage our turnaround times and minimise costs.

Since we became a Vector facility five years ago we have witnessed significant growth, which has led to an increase in staff and more opportunities for our employees. Although of course we remain reactive to customers' urgent needs, the schedule for engine overhauls this year is already largely locked in with confirmed orders from customers.

Our team at the Brisbane facility is extremely valued. They have a solid reputation for excellent quality of work and customer service. Their attitude and commitment are the major reasons for our success and strong customer relationships throughout the Asia Pacific region.

Enquiries from PT6A operators in New Zealand are most welcome. Contact us on +61 7 3268 0000 to speak with one of our team and find out more about the support we can offer.



The Vector Aerospace Team in Brisbane this year celebrated 5 years of operation.



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A busy 2017 for the team at Avcraft Engineering NZ Ltd.

2017 has seen another year of strong growth for Avcraft Engineering NZ Ltd. The company remains focused on its policy of 'continual progress', and Engineering Manager Mat Bailey says the organisation continues to invest in tooling, training and staff, ensuring "the Avcraft team is always ready to provide world-class support for your aircraft, regardless of make or model, or maintenance required."

Avcraft Engineering NZ Ltd.'s list of services, approvals and dealerships is extensive and provides for a 'one-stop' shop with the experience, capability and equipment to support all needs, including:

- Scheduled Maintenance
- Maintenance Control and Tracking
- Sheetmetal repairs and rebuilds
- Composite repairs
- Insurance repairs
- Corrosion and paint repairs
- Full strip and repaint
- Fabric repairs to complete recovering
- Pressurisation System maintenance
- Battery Capacity Testing
- Scheduled Avionics Inspections
- Avionics installations
- Electrical Load Analysis
- PBN Approvals / Documentation
- ADS-B Out Installations
- Electrical and Instrument repairs
- Avionics repairs
- Cirrus Aircraft Service Centre
- Pilatus Aircraft Service Centre

A year in review

This year has seen the Avionics team busy with continuous back-to-back installations of Garmin and Bendix King products into many different types of aircraft. The Garmin GTN650 and GTN750 remain the most popular option combined with ADS-B Out Garmin, Bendix King, Appareo and Trig Transponders.

A very big thanks must go to our fantastic customers and their continued support enabling Avcraft Engineering NZ Ltd. to complete the most Garmin G500 installs for New Zealand in 2017. The impending release of the incredible new 7 inch and 10.6 inch Garmin G500 TXi's in January 2018 will ensure this trend continues. The Avcraft Avionics team are extensively trained, and importantly, very experienced to ensure a seamless



Pilatus PC-12 scheduled maintenance



Garmin G500 installation



Airtractor rebuild

installation in to your aircraft. From initial advice and planning, right through to PBN approval, administering your Software Configuration Management Plans and ongoing support, "our Avionics team will get the job done right the first time and take the hassle out of your upgrades," says Avionics Manager, Jake Bradley. If you're thinking PBN, ADS-B Out or a modern and cost effective autopilot, call Jake to discuss.

Pilatus and Cirrus

Avcraft Engineering NZ Ltd. is New Zealand's only factory approved Pilatus and Cirrus Aircraft Service Centre. The company has the technical data, specialised tooling and factory training to ensure maintenance on these advanced aircraft is performed correctly and with full factory support. As Mat says, "We've got a tremendous amount of experience, capability and knowledge here at Avcraft. You can be assured your asset is in good hands."

Centrally located

Being conveniently located at Feilding Aerodrome, with no landing fees, Avcraft is readily accessible from North and South Islands. Mat says a large number of regular customers fly down from Auckland or up from the South Island, adding, "We have courtesy cars available and reduced rates at local motels if you want to overnight. We also offer a pickup and delivery service for your aircraft to keep it hassle free." A 24/7 Breakdown Service is also available New Zealand wide.

Foreign aircraft support

With CASA and FAA Licensed Engineers, Avcraft can also support US and Australian registered aircraft for Scheduled Maintenance, Repairs and Breakdown Support. US and Australian Certificates of Airworthiness and Export Certificates of Airworthiness can be issued locally. Avcraft have the experience and licence coverage to provide a full range of services to those operating foreign registered aircraft in New Zealand.

SMS

Avcraft Engineering NZ Ltd has recently had their Safety Management System approved by the New Zealand CAA, one of the first Part 145 Maintenance Organisations to reach this milestone. CEO and Safety Manager, Trina Fitcher, has driven this project from the outset and very capably ensured compliance and an easy transition.

For more information

Call Trina, Mat or one of the team at Avcraft on 06 212 0920, email: mat@avcraft.co.nz or drop in to the hangar at Feilding Aerodrome and discuss your maintenance needs.

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Thinking ADS-B?

GTX-335/345

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inbuilt WAAS - List \$3795: Our Price \$3510*

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Aviation Safety Supplies Ltd has renewed their CAA Part 145 approval and also holds ISO9001:2008 certification. They are now working through SMS.

Lloyd is also an active participant in several RTCA groups that are reviewing the next generation 406MHz ELT which will activate due to flight anomaly.

The company offers a prompt 24 hour service for most 406MHz service requirements and have Kannad ELTs available for AOG situations and/or any repair requirements. In addition, they carry good stocks of new and refurbished Kannad Compact ELTs. They also stock

the newer Kannad Integra models of both fixed wing and helicopter versions. A TEN year warranty is offered on all new Kannad Integra ELTs.

Aviation Safety also has a trade in (rebate) arrangement for those wishing to swap from Artex to Kannad.

The company also stock and service a range of Inflatable Lifejackets, Carbon Monoxide Monitors and most brands of 406MHz PLBs.

The brands of stocked products include Baltic, GME, Kannad, McMurdo, Ocean Signal, Switlik inflatable TSO lifejackets (stowable ten year service) and the popular X-Back Helicopter series, the Switlik Single Person Liferaft, a new SWITLIK liferaft with a five year service life, the Switlik Immersion Suit and 406MHz ELT testers from WS Technologies. Aircraft tracking devices such as the SPOT 3 are also stocked.

Launched within the last twelve months is a new range of SAR harnesses, lanyards and belts for human slung loads during helicopter operations.

For all enquiries on any 406MHz ELT and PLB products, accessories, servicing and repairs contact Lloyd on 07 5430075, email: sales@aviationsafety.co.nz or visit www.aviationsafety.co.nz

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Rotor and Wing Maintenance

Based at Taupo since commencing business in 1980, Rotor and Wing Maintenance Limited maintain a focus of enhancing the safety, performance and reliability of helicopters and light aircraft. Business has grown steadily over the years, with owners John and Shona Hobday expanding their hangar and facilities numerous times. The company became an early Robinson Service Centre during the 1980s, back when Frank Robinson himself signed and presented certificates. Countless Robinson overhauls have since been completed, including one of the first R66 overhauls worldwide.

Managed by Greg Newton, the workshop undertakes scheduled maintenance, airframe overhaul, and repair work across a wide variety of types. In particular the company has extensive experience on MD500 and AS350 series aircraft as well as the Bell 206 JetRanger.

Part 145 approvals for both the component overhaul shop and the maintenance workshop were achieved in 1997. The component overhaul shop, managed by accomplished engineer Murray Welch, has long provided a valued service for operators and other engineering maintenance providers.

Robinson Helicopter overhauls

Over the years, Rotor and Wing have developed several processes to enhance the efficiency of Robinson helicopters' 2200 hour overhaul and 12 yearly inspection requirements. John says that one of the keys is to start planning well ahead of the job. "It can be a complex process and managing it for best cost involves a good deal of thought and decision making before parts are ordered," says John.

Often helicopters will have had major components changed during their previous 2200 hours flying time. Cost/benefit decisions need to be made whether to order a complete overhaul kit or to source just the parts required for the overhaul and to refit components still having time to run. With shipping times and costs also to be considered, John says it pays to start planning three months ahead of the actual overhaul date.

Operators should consider that good overhaul and reassembly techniques can minimise the potential for future corrosion and associated costs. Rotor and Wing have

proven processes to increase the overhauled helicopter's resistance to corrosion attack.

Rotor and Wing also provide a variety of in-house component overhaul services, including for frames and undercarriages, often undertaken for other maintenance providers' overhaul projects. Rotor and Wing may also have exchange frames, undercarriage, tail cone, etc. available which facilitate a faster turn-around for the overhaul process.

John says that the most economic and efficient overhauls are the ones that happen methodically and in a short time; "Planning is the key. With the many years of overhaul experience we have, Rotor and Wing is in a position to offer turn-around times of as little as 4 weeks. As well, we're confident enough of our processes to offer fixed price overhaul contracts if that is what the customer would like."

Lifting Equipment Specialists

A further area of expertise at Rotor and Wing is the development and supply

of lifting equipment. The company has decades of experience in supplying a range of lifting gear that includes remote hooks, long lines, cargo nets and swivels.

John recommends the Onboard Systems remote hook which has flexible options and straight forward servicing and overhaul requirements.

Long lines designed by Rotor and Wing have a safety ratio of 9:1 and can be easily disassembled for inspection (without undoing splicing) due to removable casings.

Cargo nets produced by Rotor and Wing are made by hand using strong polyester rope. Ruggedness is well-proven with many still giving good service after 20 years.

A swivel and its associated electrical connections are fitted above the remote hook to prevent damage to lifting equipment caused by rotating loads. Rotor and Wing manufacture these or can supply the Onboard Systems swivels.

For all enquiries contact John or Shona on 07 378 8688 or rotorandwing@xtra.co.nz

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One Stop Aviation at Tauranga

Solo Wings was founded as a small business 18 years ago at Tauranga Airport by Colin Alexander. Colin's goal was to offer a professional maintenance service to owners of microlight aircraft at a time when the technology and complexity (and popularity) of this category was just beginning to develop. Since then, the microlight and recreational flying scene has grown significantly, as has Solo Wings who now provide all manner of services to microlight, experimental, amateur-built, and GA aircraft owners. The Solo Wings team rightly attribute at least some of their company's success to a willingness to take on the jobs that others are shy of, and indeed take pride in "going the extra mile on anything more difficult or obscure".

Aircraft under the Solo Wings umbrella of care include everything from early rag and tube microlights, vintage wood and fabric aircraft, through to carbon-fibre sport planes with glass cockpits, autogyros, and experimental category aircraft such as an Albatros L-39 jet. The company also looks after numerous amateur-built and GA aircraft.

Solo Wings are factory appointed as a Service Centre for many of the major recreational aviation brands, such as Tecnam, Pipistrel, Viper, Auto-gyro Europe, Rotax, Airmaster, and more. Colin says they enjoy direct access to the manufacturers' technical people, many of whom they have personally met on factory training courses and visits. In the case of Rotax, Solo Wings are the only New Zealand maintenance provider approved by the factory as a Rotax sales, maintenance and overhaul facility.

Colin is quick to emphasise that the company wouldn't be where it is without a great team, who enjoy strong support from Colin in regards to ongoing training and skills development. One such example is Colin's son Saul who trained with Solo Wings and is now fully licensed. "Quite useful," says Colin proudly.

General Maintenance and SAMMS

Solo Wings have all the bases covered for professional light aircraft maintenance. They can carry out composites work on fibreglass or carbon fibre, as well as undertake wood, fabric and metal work from minor repairs to major fabrication. Weight and balance, and dynamic prop balancing equipment is all to hand.

A separate clean-room contains an engine shop and although Rotax overhauls are a dominant part of the business, other types (including radial) are welcome.

Maintenance requirements for all aircraft under Solo Wings care are kept track of via SAMMS, an online software tool (developed in-house) dubbed the Safer Aircraft Maintenance Management System. Solo Wings engineers use permanently-online tablets for managing checks, time studies, stock maintenance, due list updating, tasks per plane, and more. The system is fully automated to create Loose-Leaf-Log-Entries on job completion and is also available online to customers, to assist with their maintenance control and to eliminate due date or work scope surprises.

Rebuilds and Insurance work

In the hangar at the moment following a recent mishap is a Just Aircraft SuperSTOL for fuselage welding and re-fabricating prior to a new wing arriving which will also need to be fabricated. Solo Wings receive a steady stream of such jobs, and offer a complete



Solo Wings Team photo.



Recovery through to rebuild - Solo Wings are specialists in putting mishaps right.

service for recovery, assessment and rebuild of damaged aircraft for insurance companies and private owners who have had a bad day and need someone to put everything right again. The company also becomes involved in accident investigation when required.

Another current rebuild project is a Viper SD4 which the company acquired with corrosion issues that are in the process of being put right. This aircraft has a full avionics suite – look out for it online at the Solo Wings Aviation Centre soon.

Import and Certification Processing

With the Port of Tauranga just down the road, Solo Wings are ideally placed to provide import and export services, and handle dozens of such projects every year. The company is fully MPI approved for containerisation work and of course can easily attend to all incoming certification and paperwork requirements.

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The Aviation Centre and Propeller Pad

In 2016 Solo Wings opened their new Aviation Centre and 'The Propeller Pad', around the corner and opposite to the main entrance to Tauranga Airport. The latter offers pilot accommodation at the airport and the former provides flight training services across the spectrum of GA and microlight/sport fixed-wing aircraft including seaplanes and autogyros. Thus Solo Wings can now not only acquire and maintain your aircraft for you, they can also teach you to fly it. It's best to book in advance at the Propeller Pad which has proven very popular, especially at the moment with Air Chathams running a service to Tauranga most weekends throughout summer.

In the Aviation Community

From the beginning, one of the Solo Wings principles has been to participate in and support the aviation community, particularly in regard to what Colin calls a 'Safer Aviation Philosophy'. A lot of time is invested in promoting safety via education, whether by participation in AvKiwi seminars, supporting apprenticeship programmes, giving lessons in logbook completion, or providing maintenance training to microlight owners. Colin is also active in RAANZ and the New Southern Skies programme.

For more information

If you need advice for recreational or other aircraft maintenance, aircraft importing, or support with an aviation project, give one of the team at Solo Wings a call on 07 574 7973, email: info@solowings.co.nz or visit www.solowings.co.nz Solo Wings continues to grow. Qualified engineers interested in employment should also feel free to get in contact.

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Primary Avionics

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Military training in New Zealand's Air Force laid a groundwork in excellence for Adam Seumanutafa (Sammy) from Primary Avionics Ltd. Located at Hamilton Airport, Primary Avionics strives to provide quality solutions for installations, refits, upgrades and maintenance of all avionics systems. Making sure it looks good and does the job in the cockpit is only part of the equation for Sammy who believes that what's behind the panel is where the true art of avionics lies. Future proofing for ease of maintenance, eliminating potential issues from wear and tear through good practice and ensuring all remains "Smokefree" is paramount to his philosophy.

Currently a lot of Sammy's time is being spent reconfiguring systems in recently imported AS350 helicopters. These have required a high level of customisation and are involving multiple installations of Garmin G600 electronic EFIS systems.

A 2017 highlight has been providing oversight and signoff for Garmin's latest version of the G1000, the NXI, into a ZK registered King Air. Garmin, Aspen, Bendix-King, TRIG, PS Engineering, Jupiter and NAT avionics are all systems that Sammy knows well, with preliminary approval also granted for a TRIG dealership.

His experience across a broad range of avionics products means Sammy is well placed to be able to spend time with customers discussing the options available to achieve exactly the result required. This could be a basic radio unit in an enthusiast's aircraft, through to systems used in agriculture and forestry, right through to a glass cockpit system in a medevac or other specialist aircraft. "Being able to understand and communicate with customers as well as being flexible enough to provide custom solutions is one of the benefits of being a

smaller company," says Sammy. "Nothing gets lost in translation and we're able to move quickly for tight turnarounds or unexpected maintenance".

Holding all electrical, instrument and radio ratings for up to a BE300, Sammy is perfectly positioned at Hamilton airport to cater for these aircraft in the greater Waikato and Bay of Plenty and is happy to travel further afield if called upon. Alongside these avionics specific ratings, he also holds various airframe and engine ratings as well as Inspection Authorisation. This provides continuity of signoff and eliminates the need for multiple licensed engineers on one job reducing scheduling delays and extra cost.

This broader view of aircraft maintenance has also led to Sammy becoming involved with the CAA's working group for the upcoming ADS-B mandate. This has provided an invaluable insight into how the rest of the industry views ADS-B and once mandated what systems would be best suited to different tiers of the aviation market. "What's good for a helicopter operator may be completely wrong for a light sport owner," says Sammy.

Sammy's philosophy is centred on the pilot; "What I have come to realise over the years is that 'it needs to be right for the pilot,'" he says. "It doesn't matter what the avionics engineer reckons, at the end of the day the pilot needs to feel comfortable with their avionics. To that end I spend as much time as possible discussing with the user what they need/want then summarise to make sure we're both on the same page."

If you're after an independent, well informed avionics engineer who is fluent in both Geek and English then give Sammy a call on 022 636 6573, email: sammy@primaryavionics.co.nz or visit www.primaryavionics.co.nz



Avionics Canterbury Wide Expands

Following more than 20 years of avionics work for the RNZAF, David Harnett formed Avionics Canterbury Wide in 2006 to provide a fully mobile avionics service, centred on Canterbury and extending throughout the South Island. As the business grew, David took on an apprentice, Andrew Duff who is now licensed and continues to work for the company. Demand for their services has continued to grow and recently Gavin Simôn, also licensed, joined the team from Air NZ with 30 years of industry experience behind him. A fourth, albeit temporary member of the team is Bob Waghorn, currently on board for work experience.

David says the company's growth has in part paralleled that of loyal commercial customers who have continued to upgrade older aircraft and also bring new aircraft on line. It has also been thanks to a steady flow of new customers who have come to the business for anything from checks through to full installations. If one takes the time to read some of the testimonials on the Avionics Canterbury Wide website, it will become apparent that the growth likely also has a lot to do with excellent trouble-shooting skills and a friendly, efficient service.

Mobile and Fixed Base

Having begun as a fully mobile business operating from a customised van configured to offer all manner of on-the-ground avionics testing and services, the company has for some time been in demand to provide hangarised services and late last year purchased a hangar on Rangiora Airfield for this purpose. Work is well underway to convert this to a modern and permanent home base with appropriate facilities that will include an adjoining office and flat which customers may use for short term accommodation if required.

The hangar won't change the company's mobile service offering, which continues for all customers that need it – far and wide across the South Island. Callouts to helicopter operators are common, particularly given their ferry costs and if jobs on multiple aircraft can be combined for one visit, travel costs can then be shared. Field trips are often interesting and varied; for example following a call for assistance earlier this year, David added a trip to Gloriavale to his logbook. Customers come to Rangiora from far and wide too, one 'regular' client being from Auckland every two years for biennial checks – and a holiday at Hanmer Springs whilst in the area.



The Avionics Canterbury Wide Team outside their new Rangiora Hangar.

Services Available

Avionics Canterbury Wide provide a full range of avionics servicing and installation. David says that engine analyser installations have been popular during the last year, as have comms installations to varying levels of complexity. A lot of customers are private operators for whom David is happy to work to a careful budget including forward planning. One such customer who returns regularly commenced with a full IFR radio stack installation, then a Garmin G5, and for next year is planning an auto-pilot and ADSB transponder.

The company supports many microlights and recreational aircraft in the local area, commonly for biennial check requirements, but also for fault diagnosis and rectification when sticky problems arise. Full aircraft wiring and avionics installation services (and support) are available for builders who would prefer not to tackle this part of the project on their own.

Recently popular in the GA field, as some of the older generator units start to fail, are Plane Power installations. Plane Power have alternator STCs for most aircraft types (whether gear or belt driven), providing the opportunity to replace old technology with modern and more reliable systems.

David welcomes any enquiries for avionics advice, maintenance or installations in the South Island. Contact David on 027 222 0872 or email: avionicscanterbury@gmail.com. For more information, visit www.avionicscanterbury.co.nz.



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Based at West Auckland Airport Parakai, Bryn Lockie (LAME and IA) at Leading Edge Aviation offers a complete suite of maintenance services for certified, sports and microlight aircraft, including for Whole Aircraft Parachute Systems.

A free courtesy car is available for those flying in for service. As Bryn lives close to North Shore Airfield he can also pick up aircraft there and deliver back after maintenance work is done.

Apart from normal servicing of aircraft, Leading Edge Aviation specialise in: major rebuilds, corrosion and damage repair, refurbishment of aircraft, aircraft recovery from remote locations, import/export of aircraft, and assistance to home builders including completion of stalled projects.

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component - Engine failure over hostile terrain - Pilot disorientation or a medical event? It's great to have a 'Plan C' up your sleeve. The driving factor to have a chute installed is often that the pilot's family wants an insurance policy that can save their family members' lives, rather than just delivering a cheque after the event. A chute offers peace-of-mind for family and pilot alike. "It's not about the plane..."

Leading Edge Aviation are WAP specialists and can provide advice, installation and all servicing requirements. All brands have a six year repack/revision requirement, with BRS STC'd units for certified aircraft having 5 yearly maintenance requirements. Leading Edge can also offer exchange repacked/revised units for certain models.

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Thriving on Projects and more

Another great year for JEM Aviation at Omarka

2017 has been another great year for the team at JEM Aviation, albeit with more than a fair share of unforeseen left-field challenges, Chief Engineer Jay McIntyre reports.

On several occasions another pair of hands in the hangar could easily have been kept busy, and of course a certain Reno distraction (see elsewhere this issue) saw resources temporarily relocated half way around the world. Limitations on labour have however, had somewhat of a silver lining for some customers, as funds could be diverted into purchasing items needed to complete their various projects. Demand on labour is of course now higher than ever. Jay says, "If anyone is interested in a job, please contact us! However, you will need a good range of skills, preferably an aviation background, and be able to be left to your own devices to some degree. A serious love of aviation and sense of humour are also required as working with us is much more than 'just a job!'"

Projects aside, the company has been kept busy with annual inspections, routine maintenance, modifications and repairs to the GA fleet under JEM Aviation's care. Jay says Scott Tudor is the main man on the ground and over the past two years has really cut his spurs on this front. Jay laughs, "We just need to get him licensed and into the paperwork!"

JEM Aviation has become a popular GA maintenance provider in the last 3-4 years, something that Jay says has "snuck up on them" to the point that another engineer could now easily be employed. By necessity Jay's role is changing as the company grows. No longer is there time for an annual sojourn to Hastings for annual inspections, and in the office Jay has relinquished numerous administrative duties to the capable hands of Paula Holdaway, in order that he provide direction and oversight to an increasing number of contractors and semi-volunteers involved in restoration projects.

In addition to the quality work that comes off the hangar floor, Jay takes particular pride in the quality of the paperwork that is delivered with the finished product. "While it does add time to the job, the customer knows exactly what has been done and can be confident



Robin Officer at work on cowl sections for an Australian P-38



Robin's craftsmanship in the form of Swift spats.



WACO UOC with Robin's cowls.



90hp Cub Bkx during rebuild / rebag.

that the future value of their aircraft will not be compromised by shoddy and incomplete records," says Jay. He doesn't mind nagging when required, or hearing that it wasn't 'the way we did it at XYZ', as long as the result meets his standards.

Hangar 2

A second hangar which was expanded into two years ago is now well set up and houses a certified spray booth and most recently an air-conditioned engine/hydraulic clean room - currently utilised for bulk strip and inspection/repair of engines destined for Special Category aircraft. These include Gipsy Major engines, something Jay says seems to have become increasingly hard for owners to find service/overhaul capabilities for in recent years. The first engine is from an Australian registered aircraft destined for France. "Although the engine has only 500 hours TSO, and was only meant to need the cylinders refitted, some odd things were noted that dictated a complete strip and reassembly," says Jay, "as someone, somewhere along the way had pulled it apart and haphazardly put it back together!" Waiting in the shadows are a number of Ranger engines for the fleet of Bristol Fighters that were recently liberated from Chino.

Also operating out of the second hangar is Robin Officer, a master metal worker and coachbuilder who spent 25 years in the USA and worked for Jay Leno on his car collection prior to returning to New Zealand. Robin is being "put to good use" on such projects as spats for the Fairchild F24 and Comper Swift, cowlings for WACO UOC, F24 and Bristol Fighter, and any number of fairings and compound shapes required by various projects. Jay says "His work is amazing and while he has enough to go on with, the more work we can provide, the longer he will stay! Do talk to us if you need any coachbuilding support."

Projects

On the projects front, Jay reports that the Comper Swift is heading towards completion. Niggly carb jetting and ignition issues prevented a display at Classic Fighters this year but have now



Trevor Collin's F-24 undergoing final assembly.



Fairchild F45 as removed from 35 years of storage in California.



Comper Swift undergoing final assembly.

been resolved. "Hopefully by the time you are reading this, the pretty little English racer will have flown," says Jay. Another project with a long gestation has been DC-3 ZK-JGB. Requiring more work than ever envisioned she went through a long hiatus whilst financial resources were gathered. A CoA inspection to allow Part 91 operations is imminent.

New projects in the shop include an ultra-rare 1934 Fairchild F-45, ex Australian Tiger Moth, Bucker Jungmann and Bristol Fighter replica. Existing projects such as the Yak-9V and repairs to the FW-190 continue in the background as time and money allow. "On a very positive note," says Jay, "the WACO UOC (ZK-AEL) is making stunning progress with Rex Newman at the helm. The only problem being that his contribution to date far outweighs mine and I will be in for some serious work shortly to even the score!" Also in the throes of completion is Nanchang ZK-WOK. Recently departed volunteer, Dave Simms spent the better part of three years bringing her back to life after an out-landing in 2007. At the time of his passing, JEM Aviation were about to take on the final preparation for her return to flight. At time of writing, the undercarriage had just been raised for the first time in ten years.

For more information

For all aviation engineering requirements, whether a routine check or a warbird acquisition and restoration project, contact Jay McIntyre on 03 578 3063 or 021 504 048, email: jay@jemaviation.co.nz or visit www.jemaviation.co.nz



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“Here to Help” at Hamilton Airport

Maintenance providers are often differentiated by their focus, whether that be rotorcraft or fixed-wing, sport aircraft or warbirds, etc. Rather than identify with any particular type or style of aircraft, Hamilton based Central Aero Engineering's owner Paul Waterhouse describes their focus as “delivering fair value” and their approach as being “here to help”. It's a strategy that draws private and commercial customers and sees a steady variety of interesting aircraft through their hangar for all manner of routine maintenance, through to overhaul and rebuild requirements. And that's not to mention the support regularly given to home builders and microlight aircraft owners needing guidance from time to time on projects or their own routine maintenance.

Paul and his team of four licensed engineers (Steve, Hamish, Kanda, and Dave who recently joined ex. Eagle Airways) derive a lot of satisfaction from taking on unusual or difficult jobs and delivering results “that delight customers”. Plus, Paul says that because overheads are comparatively low for the level of equipment and experience they can provide, costs can be maintained at an affordable level. “It all goes towards our fair-value philosophy,” says Paul.

In the Hangar

There's no shortage of diversity on any given day in the Central Aero hangar. Visitors can expect to see engines from Gypsy to turbine, and aircraft from balloons to helicopters.

Recently departed has been a Beech Bonanza which arrived for undercarriage removal and refurbishment. Other recent work has included various ag. aircraft (PT6 and IO-720 powered), and a Cessna 172 in for engine overhaul.

In the hangar are a variety of other Cessnas (180, 182, 152) and a freshly imported MBB Bo 105 helicopter. Central Aero supported the new owner with sourcing and importing and are now preparing the aircraft for its NZ



One of several Cessnas in the hangar currently.



Freshly imported Bo 105 getting ready for CoA.



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C180 maintenance in progress.

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“Every day is interesting,” says Paul. Although absent at time of writing, microlights and sport aircraft also make regular appearances – including types such as Dynamic, Sportcruiser and Bristell, plus rotorcraft including autogyros and the Safari helicopter of which several are ‘on the books’.

Services and Capabilities

The depth of licensed engineering experience in the hangar means there's no question that Central Aero can tackle most jobs regardless of how unusual or difficult they might be.

Central Aero's services cover everything from pre-purchase inspections worldwide, shipping container handling, CoA preparation and issue, airworthiness reviews, maintenance, repair and restoration of all flying machines, 24 month avionics checks (including mode S transponder testing), dynamic prop balancing, weight and balance services, maintenance control for private and air transport operators, accident and incident investigation, builder support, parts and materials supply, - and “good old-fashioned free advice”. Paul says; “If you own it, or fly it, no matter what it is, from hot air balloons, to twins and helicopters, piston engines and turbines, give us a call, ‘We are here to Help’”.

That help extends beyond direct aircraft maintenance too, with Paul providing support when asked, for other engineers sitting their exams – particularly from the point of view of covering legislation and how ‘proper’ logbook entries should be made. “We've helped several candidates now from a practical viewpoint to explain more about what is being achieved with correct logbook completion and what they should be looking for,” says Paul.

For more information

Paul's contact details at Central Aero Engineering are: 07 843 1200, 021 743 033, paul@centralaero.nz or visit www.centralaero.nz


Central Aero Electrical Limited

In the neighbouring hangar to Central Aero Engineering is Central Aero Electrical Ltd. Owner Martin Ross describes his small team as, “handy people – we're good at twisting our minds around unusual problems and designs”. It's a modest boast, evidenced by the variety of jobs to be seen in the hangar at any one time. When replacement of a component seems like the only option, be it a fuel sender unit or a GPU circuit board, there's a fair chance that Martin may be able to apply some wizardry to fix the problem, often at considerable savings to the operator.

One of his frustrations is the increasing number of modern parts which suppliers are engineering to be return-to-base for all maintenance. Martin is doing his best to counter this trend by working with a Design Organisation on STCs to enable much cheaper and faster local options for operators.

Central Aero Electrical has a comprehensive range of diagnostic equipment and a large test bench that will handle up to 12 cylinder magnetos. Capabilities cover a good range of piston engine starter/generator, control unit rectification and overhaul work, along with the 500 hour requirement for magnetos. Mechanical actuator overhauls for various rotary and fixed wing types are a regular job as Martin's collection of manuals grows. Operators may be surprised to find just how broad Central Aero Electrical's capabilities are becoming in this regard. Turbine electrical components also frequently pass through the shop, including starter/generator overhaul work for Pacific Island companies.

Central Aero Electrical stocks a variety of parts for re-sale including starters, batteries, alternators, strobe units, starter generators, GCUs, voltage regulators, ignition switches, and HT ignition harnesses. Various exchange items are available. In many cases Martin is able to deal directly with a component supplier, thus bypassing the aircraft manufacturer's mark-up which he is happy to pass on as a saving to the customer. Contact Martin on 027 733 0208 or email: centralaero@clear.net.nz



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French instructor Hugo Corbille (back seat) being taken on a 1000 km cross country flight by Terry Delore. Hugo has been working at Canterbury Gliding Club.

Are volunteer based clubs at risk?

For most of the eighty odd years that gliding clubs have existed in NZ, everything has been done by volunteers. It's part of what's made a seemingly solitary sport into a strong, community based club activity. Gliders can't launch themselves and so the club relies on its members working together to get each other in the air. Are these days coming to an end? Jill McCaw charts some winds of change:

People enquiring about learning to fly gliders are often astounded to learn that they don't have to pay extra for an instructor, that the instructor is actually just a club member who is doing their bit for the club and paying back some of the support that they received while they were learning. The new member is quickly taught about ground handling of aircraft, how to hook on towropes and run wings,

and how to keep the timesheets/computer - and is expected to get stuck in and make themselves useful. Daily inspection of the two-seaters is taught early in training and the student is expected to DI the training gliders and help get the fleet out of the hangar and ready to fly. The tow pilot is a volunteer (raking up valuable hours, or just doing it for fun) and the instructors are volunteers. And that's the way it's been, for as long as everyone can remember.

But things are changing. People often just don't have the time to spend an entire day on the airfield, doing their share of the work, to get, maybe, only one flight. And there's another side to things too, economics. If everything is voluntary, then a club really only runs on the weekend; and with a hangar full of expensive assets, clubs can no longer afford to have them sitting idle five days a week.

This summer Canterbury, Taupo, Auckland and possibly Wellington gliding clubs are employing full time instructors

and/or tow pilots to keep their clubs running seven days a week. With modern work practises and quite a large proportion of retired members, many people are very happy to fly during weekdays, avoiding the weekend crush and often getting the best of the weather. Increased utilisation equals increased income and the club treasurers (also volunteers) are happy.

The paid pilots are, for all four clubs, people from overseas, combining some professional gliding work with a New Zealand holiday experience. There aren't enough of them yet to state a trend with any certainty, but they do appear to either be young people in their early twenties (but with a lot of instructional experience) or pilots who are in the older age bracket and are semi-retired. They're from a range of countries and obviously find the arrangement beneficial as they seem to keep coming back each year.

As well as utilisation, having an instructor on site allows the clubs to offer trial flights on a much more professional basis. Prospective members can book a flight for a time that suits them, turn up for the flight at the booked time, enjoy the flight, and go on their way having had a positive experience. If the trial flight leaves them feeling comfortable in the air and excited to try learning to fly, then the trial flyer can book in with the instructor for some lessons. Previously it was not possible to book trial flights or lessons for specific times. In the past, in what is generally thought of as the "usual way" of doing things, a

prospective member would turn up at a club, unannounced but raring to have a go, only to find themselves somewhere in the middle of a very long 'flying' list, waiting for their turn for a flight with an instructor along with every other trainee member on the field. They were quite likely to leave in frustration, and even if they did get a flight, all the waiting had the potential to make the whole experience very off-putting.

Thus the paid professional approach can likely only be a good thing for attracting more participants to our sport, particularly in the cities where those participants are likely to be time constrained and seeking exactly that professional approach to their recreational activity. Equally though, there will be many club members who are attracted to (and happily volunteer within) their clubs because they are such relaxed and unhurried places to hang out amongst friends. Could these be conflicting interests? That would be a shame and is perhaps something to consider a resolution for if such a perceived risk exists in your club. Could they be complementary interests? Most certainly if the financial support from one arm of the club helps to ensure the longevity of the organisation for everyone.

In the meantime, if you're interested in having a go gliding but the weekends have never suited you, check out if your local club offers mid-week flying. See the Gliding New Zealand website for contact details and information on clubs near you.

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A Grumman E2 Hawkeye at Naval Air Station Oceana.

USA Military Visits

A couple of issues back, Gavin Conroy wrote of his annual trip to Jerry Yagen's Virginia Beach Airshow in the USA. Being the enthusiast that he is, Gavin also took the opportunity to visit several military units in the Norfolk area, some bases of which are the biggest of their type in the USA. These included squadrons at Naval Air Station Oceana, Naval Station Norfolk and Langley Air Force Base.

Cameras were restricted covering operations at Norfolk and Langley but the photos of the static B-52 and F-4 Phantom and the three jets in formation on poles were taken at Langley.

Langley was particularly interesting as the main fighter based there is the F-22 Raptor. Everyone I spoke to spoke very highly of it.

On the same base is a Squadron of T-38 Fighters that are used as adversaries

to the F-22s.

I asked a T-38 pilot how they go in a dog fight against the F-22. He replied, "We only get to dogfight with the F-22 if they let us get that close. If we are intercepting F-22s long range they always have our number before we even see them."

Seeing guys in their mid-20s climbing into F-22s and blasting off into the sunset was amazing, but also reminded me how



A US Navy Super Hornet coming into land at NAS Oceana. If you are ever in that part of the world be sure to head to the lookout. You won't be disappointed.



VFC-12 flightline at NAS Oceana. All of this unit's aircraft wear schemes similar to Russian fighters and are a formidable practise enemy for Navy pilots.

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F-105 Thunderchief and F-15 Eagle at Langley AFB. Flags fly for all USA states.



This scheme gets plane spotters excited - nearly identical to Russian SU-27 Flankers.



VFC-12 Hornet provides adversary training to East Coast air wings.



The (much bigger in real life than I expected) USS Dwight D. Eisenhower heads out on deployment from NAS Norfolk. All of the aircraft will fly out a few hours later.



Boeing B-52 at Langley AFB. It was great to walk around this legendary bomber.



VFA-11 'Red Rippers' Super Hornet approaching NAS Oceana.



VFA-211 'Fighting Checkmates' Super Hornet at NAS Oceana.

old I am getting - they looked like they should still be in school!
Norfolk is a totally different place. They operate huge CH-53 helicopters, E-2C Hawkeyes, and V22 Ospreys.
The Osprey sounds like no aircraft I have ever heard and the CH-53 has some serious rotor blade noise when lifting large loads.

Naval Air Station Oceana

In the lead up to my trip I had organised a visit to a Squadron at NAS Oceana and received approval to take photos at VFC-12. VFC-12 are an Adversary or Aggressor Squadron. Their job is essentially what you would have seen in Top Gun minus all the hype. In other words they use Russian Air force tactics to try and shoot down Navy F-18 Hornets.

One senior pilot said, "When the new guys are sent to a squadron once their initial training on the Hornet is complete they get a bit of a fright when they come up against us. Most of the pilots at VFC-12 are reserve pilots so during the week for example I fly Boeing 737s and then for two days a week I come here to fly Hornets. These new guys think they have the advantage because they are newly trained and flying Super Hornets. We fly older F-18A models but they are still very capable, so for the first month or so these new guys get quite frustrated with us shooting them down all the time. We never go easy on them - it is either kill or be killed on this squadron. They get tired of being beaten up but start to adapt as time goes on. And it teaches them for thinking reservists are easy beat! We also conduct low level shipping strikes against any navy ship we are tasked to. We do all we can to break their defences but I'd better not say how we do that!"

At VFC-12 they have 80 staff tasked to keeping the jets in the air. They can have anywhere from 6 to 12 jets operational at any one time.

Their aircraft have the purposeful looking 'splinter' colour scheme. Some are painted grey on the top and blue underneath to look like an SU-35 Flanker - and all jets carry red stars so they take their job very seriously.

My final couple of hours there were spent looking at aircraft carriers. There were four in the port at the time, one of which later headed out on a deployment. These massive floating cities are awe inspiring to see, not to mention all of the Destroyers and other vessels that sail with each Carrier.

Gavin Conroy



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NZ Warbirds Ardmore Hangar Happenings

Better weather is slowly approaching at Ardmore and with that some 'Warbirds Activity'. Indeed there is a danger the grass vectors in the Auckland area will soon be dry enough to operate on, says Frank Parker with this update of NZ Warbirds Association activity at Ardmore:

It's time to get ready for summer! And with that we had a 'big clean-up' last weekend with two skips of non-collectables headed for recycling and landfill. It's always difficult to part with some items, however, junk is junk and it has to go.

A number of our aircraft are receiving maintenance attention in readiness for fairer weather, of note the Ryan STM on annual checks and the Miles Messenger which has had a top end engine overhaul. This aircraft was kindly donated to the Association by the Cowie Family Trust for us to care for and operate. Alas it had some engine deficiencies and the decision was made to rectify rather than patch up. That seemed simple, however the engine, a Cirrus Major is somewhat of an oddity and we have had some difficulty in sourcing parts. Also on maintenance is the Issacs Fury which has had a number of 'flying wires' replaced and a full re-rig. Seems it may have been flying somewhat crooked for a time. Regarding the 'heavier' metal, Harvard 52 is having an engine overhaul and 1057 which had an 'oopsie' last Wanaka has been repaired and can be seen back in the Ardmore skies. Lastly the Syndicate Chipmunk seems to be behaving after a period of 'hissy-fits', i.e. continued minor maintenance issues. There was talk of an exorcism. Maybe it worked.

Flying-wise, still a little quiet, however we have seen a number of formation sorties where the pilots are sharpening their skills for the coming season. Also the CT-4 Airtrainer and Chippy have been quite busy.

There has been a lot of planning activity for the upcoming Warbirds Open Day (which will be past tense as you're reading this). We start planning for these days at least six weeks earlier and while we have developed a well-oiled process it is important to continually review that process as personnel and participant changes need to be addressed. Additionally we must ensure we cover off the Health and Safety Requirements for such an event, an essential and somewhat daunting task in its own right. The only



Blackburn Cirrus Major under repair in the Miles Messenger.

thing we can't control is the weather and currently, four days out, it looks okay.

Personnel wise, we have a change of General Manager. Gary Rasmussen who had held the fort for two years resigned for personal reasons so it is my pleasure to welcome Trish Reynolds to our ranks. Trish has been involved in aviation for many years and brings a whole new skill-set to this important Office position. Of interest, with the involvement of new hangars the Association financial turn-over has increased some 250%. Our office processes need to be able to match this activity.

And finally, a wee excursion. Last weekend Liz and I were hosted by GAPS, the Gisborne Aviation Preservation Society. This is a small group who set up in Gisborne 20 odd years ago to 'save' a retired Fieldair Lockheed Lodestar at the airfield. They have grown the collection to include a DC-3, Grumman Avenger (currently being refurbished by the folks at Classic Flyers) a flying Tiger Moth (BAL) and other memorabilia. The reason for our visit was to take the Mk 9 TR Spitfire down to join a rally of the Rolls Royce and Bentley Car Club who were being hosted by GAPS. As with many small museums, GAPS has a struggle to meet its modest financial goals and welcomes all visitors and support. Certainly worth a look if you are in the City of First Light with some time to spare.

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ZK-SCN Alpi Aviation Pioneer 300 Hawk



Recently completed by Sefton Crandall and test flown by Wayne Harrison, this aircraft is a fine example of an Alpi Aviation Pioneer 300 'Hawk'.

The Alpi Pioneer 300 is an Italian microlight and light-sport aircraft by Alpi Aviation of Italy, represented in New Zealand by Logan Mclean. The Pioneer 300 Hawk has a wing constructed fully of wood covered with ply panels, and retractable landing gear equipped with a gas-oil damper system. The fuselage and stabiliser of this two-seat side by side aircraft is constructed of carbon-fibre.

SCN is powered by a Rotax 912ULS 100 hp engine with a three-blade variable pitch Airmaster propeller which should produce a cruise speed of around 130 kts and a stall at 35kts.

Sefton built this aircraft part-time and enjoyed the challenging aspect of the build. He considers the Alpi Aircraft in a league of their own in the microlight category with their wide flight envelope. He says they are very docile to fly yet can handle windy conditions very well.

This project, as with all projects is not just the work of the builder and

Sefton would like to thank all those who helped. Logan Mclean was "just brilliant, very helpful". Cliff Johnston who is a microlight inspector, did all Sefton's inspections and helped with any issues that came up. The "very talented" Wayne Harrison completed the test flight and testing period. Jon Hansen of Hansen Aviation "kept an eye" on Sefton throughout the build. Gary Williams was "a big help" with the painting. Mark Norgate, Murray Belfield and Steve Noad all provided advice. Sefton also wishes to thank the Hawera Club members for their willing help with the final assembly.

ZK-IJJ Rotorway A600 Talon



Bought and built by Sam Orchard of Seddon with assistance from fellow Rotorway flyer Wayne, this new RotorWay A600 kit helicopter is at time of writing, freshly finished and ready for its CAA inspection.

Sam liked the A600 due to the company's reputation, plus its two seat capability, affordability and versatility.

The RotorWay Helicopter Manufacturing Company in Arizona USA has put decades of refinement into

its design and manufacturing process, resulting in an amateur builder kit that provides everything needed for final assembly and flight. The airframe, tail boom, engine and rotor system, all come factory assembled and ready for installation. Blueprints, templates and construction and maintenance manuals are included.

Wayne said the kit was well packaged and all components were easy to identify and match up. The manual is precise and everything is very well documented. Technical support is available over the phone, online and through the factory maintenance course.

The cockpit is now all-glass, using a MGL Avionics system. The completely redesigned and tuned FADEC system now has a secondary FADEC as a clone of the primary, with any failure of the primary unit being imperceptible - with the pilot informed on the MGL display.

ZK-IJJ, the JJ representing Sam's wife Jasmine Jane's initials, is powered by the RI 600 powerplant from RotorWay International. These are completely assembled and dynamometer tested by the factory and rated at 147 hp – and should produce a cruise speed of 80-90 kts with a two-hour endurance.

I was invited by Wayne to see and photograph the finished helicopter and meet Jim, Sam's son who is currently training for his commercial helicopter licence - a fine young man who shares in the passion for aviation and can't wait for this helicopter to fly.

...ctd over

ARRIVALS - August/September 2017

CAA	Cessna 172S	Mr K Li	Auckland	Aeroplane
CBM	Cessna 172S	B B Aviation	Feilding	Aeroplane
CZJ	Morgan 10 Cheyenne	Mr G S Morgan	Renwick	Amat Built Aeroplane
DDA	RK Jungster 1	Mr D M Eller	Queenstown	Microlight Class 1
DUM	Diamond DA 42	Middle Earth Flying School Limited	Waharoa	Aeroplane
EBU	Kubicek BB30N	Mr C W Buschkuhle	Upper Moutere	Balloon
FRY	Cessna 180A	Mr R E Fry	Albany	Aeroplane
FXB	Aeroprakt A-22LS	Mr G L Dobson	Ngaruawahia	Microlight Class 2
HCB	Kawasaki BK117 B-2	Helilink Limited	Auckland	Helicopter
HCQ	Eurocopter AS 350 B3	Mr B J Comerford	Porirua	Helicopter
HEF	Eurocopter AS 350 B3	Mr B J Comerford	Porirua	Helicopter
HEM	Kawasaki BK117 B-2	Airwork (NZ) Limited	Papakura	Helicopter
HES	MBB MBB-BK117 B-2	Airwork (NZ) Limited	Papakura	Helicopter
HHT	Eurocopter AS 350 B2	Oceania Aviation Limited	Papakura	Helicopter
HLB	Eurocopter AS 350 B2	Rotor Flite N.Z. Limited	Clevedon	Helicopter
HNF	Agusta AW139	HNZ New Zealand Limited	Nelson	Helicopter
HOD	Bell 206B	MacIntyre Family Trust	Tauranga	Helicopter
HZR	Eurocopter AS 350 B2	Oceania Aviation Limited	Papakura	Helicopter
IAB	Agusta A109E	Helico NZ Limited	Auckland	Helicopter
IJC	Bell 206L-1	Titiri Hill Limited	Napier	Helicopter
IJJ	Rotorway A600 Talon	Sam Contracting 2000 Limited	Seddon	Amat Built Helicopter
IMY	Eurocopter AS 350 B3	Te Anau Helicopter Services Limited	Te Anau	Helicopter
IRR	Guimbal Cabri G2	Christchurch Helicopters 2001 Ltd	Christchurch	Helicopter
ITA	Eurocopter AS 350 BA	Rotorfix NZ Limited	Mount Maunganui	Helicopter
JLR	Cessna 182T	Pelorus Air Limited	Blenheim	Aeroplane
KCS	Martin Aircraft Series 1	Martin Aircraft Company Ltd	Christchurch	Jetpack
LDI	Corby CJ 1 Starlet U/L	Mr M A Parkinson	Whangarei	Microlight Class 1
LEN	Cessna 172P	Mr R E Fry	Albany	Aeroplane
LNU	Cessna 172R	Aeromotive Limited	Hamilton	Aeroplane
MEL	Vans RV 7A	Mr M E Lobb	Tauranga	Amat Built Aeroplane
MGI	Magni Gyro M24	Mr J W Wiessing	Whangarei	Gyroplane
MVQ	ATR-GIE ATR 72-212A	Mount Cook Airline Ltd	Christchurch	Aeroplane
NUC	Cessna 172R	Aeromotive Limited	Hamilton	Aeroplane
NUU	Cessna 172R	Aeromotive Limited	Hamilton	Aeroplane
OCB	Dassault Falcon 2000EX	Pacific Jets Limited	Auckland	Aeroplane
OEM	Cessna 172R	Aeromotive Limited	Hamilton	Aeroplane
RGO	Magni Gyro M24	Mr P M Randall	Te Kopuru	Gyroplane
RQY	Cessna 172R	Aeromotive Limited	Hamilton	Aeroplane
RQZ	Cessna 172R	Aeromotive Limited	Hamilton	Aeroplane
SCN	Alpi Aviation Pioneer 300	Mr S Crandall	Otorohanga	Microlight Class 2
SLP	Piper PA-32R-300	Southern Lakes Aviation Ltd	Queenstown	Aeroplane
ZOE	Just Aircraft SuperSTOL	J Finlayson & G Metje Partnership	Auckland	Microlight Class 2

TRANSFERS - August/September 2017

BFR	Royal Aircraft BE2F	The Vintage Aviator Limited	Masterton	Aeroplane
BUB	Gardan GY-20 Minicab	Ms P A Hilliam-Kareko	Dargaville	Amat Built Aeroplane
BVV	Cessna 180C	Mr A R Midgley	Timaru	Aeroplane
CDT	Pegasus Quantum 15-912	Mr A P Black	Blenheim	Microlight Class 2
CUD	Piper PA-28-140	Griffith Parsons Partnership	Palmerston North	Aeroplane
DFU	Cessna 177B	Mr A W Payne	Auckland	Aeroplane
DWX	Cessna U206F	Plains Investments Limited	Ashburton	Aeroplane
ECI	BAe Jetstream Model 3201	Air2there.com (2008) Limited	Paraparaumu	Aeroplane
EKM	Cessna 152	Otago Aero Club (Inc)	9053	Aeroplane
ELF	Cessna 172N	Pacific Pilot Training Limited	Nelson	Aeroplane
ELX	Piper PA-28-151	Aviation Training 2017 Limited	Tauranga	Aeroplane
FGD	Cessna 152	Tauranga Aero Club (Inc)	Mount Maunganui	Aeroplane
FHP	Piper PA-28R-200	Mr R S Twentyman	Napier	Aeroplane
FLH	Cessna A152	Airline Flying Club (Inc)	Papakura	Aeroplane
GBF	Schempp-Hirth Arcus M	Mr H Bognuda	Auckland	Power Glider
GIB	Glasflugel Standard Libelle 201B	Mr J E Smith	Pukekohe	Glider
GLI	Rolladen-Schneider LS 3	Mr G E Mayson	Paraparaumu	Glider
GVW	Schleicher ASW 20	Mr L G Sharp	New Plymouth	Glider
HDK	Robinson R44	Calcorp Pty Limited	Australia	Helicopter
HEK	Eurocopter EC 120 B	Gladstone Aviation Limited	Hamilton	Helicopter
HFN	Schweizer 269C	Helicopter Operations Limited	Tirau	Helicopter
HGY	Bell 206L-1	Heliops Southland Limited	Otautau	Helicopter
HJJ	Robinson R22 Beta	Mountain View Helicopters Ltd	Christchurch	Helicopter
HLS	Eurocopter AS 350 B2	Phoenix Trading 2002 Limited	Christchurch	Helicopter
HOX	Robinson R44	Helispray South Ltd	Te Anau	Helicopter
HPE	Eurocopter AS 350 B2	Specialist Helicopter Solutions Ltd	Palmerston North	Helicopter
HRD	Robinson R22 Beta	Mt Earnslaw Trust	Glenorchy	Helicopter
HRI	Hughes 369D	Rotor Work Limited	Te Kuiti	Helicopter
HTN	MDHI 369E	Milford Helicopters Limited	Te Anau	Helicopter
HTO	Bell 206B	Ellesmere Helicopters Limited	Leeston	Helicopter
HUV	Robinson R22 Beta	Aviation Training 2017 Limited	Tauranga	Helicopter
HVK	Schweizer 269C-1	Mr P G Mutch	Auckland	Helicopter
HXO	Aerospatiale AS 355 F1	Heliflite Limited	Papakura	Helicopter
HYD	Eurocopter AS 350 D	Heliflite Limited	Papakura	Helicopter
HYN	Aerospatiale AS 355 F1	Heliflite Limited	Papakura	Helicopter
HYT	MBB BO 105 CBS-4	Heliflite Limited	Papakura	Helicopter
HZI	Robinson R22 Beta	Teleflite Pty Ltd	Australia	Helicopter
HZY	Robinson R22 Beta	Teleflite Pty Ltd	Australia	Helicopter
IAS	Robinson R44 II	Argus Aviation Leasing Limited	Motueka	Helicopter
IAS	Robinson R44 II	Reid Helicopters Nelson Limited	Wakefield	Helicopter
IFI	Eurocopter AS 350 B2	Way To Go Heli Services Limited	Rangiora	Helicopter
IFY	Kawasaki BK117 B-2	Specialist Helicopter Solutions Ltd	Palmerston North	Helicopter
IIB	Guimbal Cabri G2	Highland Helicopters Limited	Dunedin	Helicopter
IIM	Guimbal Cabri G2	Aviation Training 2017 Limited	Tauranga	Helicopter
IJC	Bell 206L-1	Lakeland Aviation (2006) Limited	Taupo	Helicopter
IRR	Guimbal Cabri G2	Cooper Family Investments Limited	Taupo	Helicopter
ITH	Robinson R44 II	PLB Holdings Limited	Huntly	Helicopter
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Event Guide

November 23rd-26th
South Island Akro-Fest at Omapa
 Aerobatic competition and fly-in. Contact
 Andrew Love on 021 818 816 or email:
 Torque_Roll@hotmail.com

January 6th
Mercury Bay Aero Club Fly-in & Open Day
 At Whitianga airfield. Cafe open. Wide
 assortment of aircraft attending. Rain day
 Sunday 7th. Contact Wally Pendray on
 021 907 782 or: pendrayw@gmail.com

January 6th
Pauanui Fly-in
 Combine a trip to Whitianga and make
 it a Coromandel day. Over 100 aircraft
 came last year! Arrive anytime. Morning
 tea at 1030. Lunch at ocean end at 1230.
 Great food and dessert. \$15 koha with
 proceeds to Pauanui community. Half price
 \$5 landing fees. Contact Trevor 029 847
 8478 or trevor@allseasonsair.co.nz

January 20th
Classics of the Sky Airshow Tauranga
 An awesome afternoon and evening.
 Gates open 1330. Show at 1500. Black
 Falcons and more including vintage military
 display. Free parking. Tickets available
 from Eventfinda. www.tcas.nz

January 27th-29th
NZ Autogyro Association Fly-in
 And AGM at Dannevirke. Plenty of
 gyros and enthusiasts coming and going
 during the weekend at this traditionally
 unstructured event. Don't be shy to turn up
 and ask questions or for a ride. Come join
 the revolution. Details might be on
 www.autogyro.org.nz

February 2nd
Healthy Bastards Bush Pilot Champs
 Annual STOL and precision landing
 competitions at Omapa. Contact Craig:
 029 890 4910 or craig@soundsaero.co.nz

Add your event. E: michael@kiwiflyer.co.nz

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Fly a real helicopter without the high cost of a certified type.
 Dependable O-360 Lycoming. Rugged design. 4130 chrome
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 and transmission shafts. Chip detectors. High inertia composite
 main rotor blades. Titanium tail rotor blades. Governor. Cyclic
 trim. Cabin heat. Roomy cabin. Contact Bruce Belfield,
 AU and NZ Dealer. Hm 07 871 5699 Mb 027 696 5159
 E: brucebelfield@xtra.co.nz www.safairnz.com

from previous page

IWS Eurocopter EC 130 B4
 IWS Eurocopter EC 130 B4
 IZP Eurocopter AS 350 B
 JCL Cessna 172RG
 JPG Sequoia Falco F.8L
 KJR Zenair CH701 STOL
 MBY Thorp S-18T
 MKH AutoGyro Cavalon
 MRL Cessna 177B
 MWC Cessna 172M
 NSC Cessna A152
 NSP Piper PA-31-350
 PSH Jabiru Jabiru J230 UL
 RAF RAF 2000 GTX
 RGG AutoGyro Europe MT03 eagle
 RQZ Cessna 172R
 RTM Tecnam P2002 Sierra
 SJS Tecnam P2002 Sierra
 SUK Sukhoi Su-29
 TAF North American F-51D
 VBA ELA Aviacion ELA 07R

Citylink PT Chopper Operations Ltd
 Independent Helicopters Limited
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 JDC Helicopters Limited
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 Enfield Holdings Limited
 AAA Flightshare Limited
 Mr C W Ashby
 Mr M L Atkinson
 Mr B I Watson
 L3 CTS Airline Academy (NZ) Ltd
 Mr L H Bonnar
 DJ Van Bysterveldt Family Trust
 Mr P R Little
 Warbird Adventure Rides Ltd
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 Brightwater
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Helicopter
 Helicopter
 Helicopter
 Aeroplane
 Amat Built Aeroplane
 Microlight Class 2
 Amat Built Aeroplane
 Gyroplane
 Aeroplane
 Aeroplane
 Aeroplane
 Aeroplane
 Microlight Class 2
 Microlight Class 2
 Microlight Class 2
 Aeroplane
 Microlight Class 2
 Microlight Class 2
 Aeroplane
 Aeroplane
 Microlight Class 2

DEPARTURES - August/September 2017

FBZ Aerostar S-49A
 GRD Schleicher ASW 20
 HAC Hughes 369E
 HRZ Robinson R22 Mariner
 ICN Bell 47J-2
 MBX Rans S-19
 MCA ATR-GIE ATR 72-212A
 MSR Murphy SR2500 Super Rebel
 RJZ Cessna 510

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ZK-ZOE Just Aircraft SuperSTOL



New Zealand's newest Just Aircraft
 SuperSTOL was recently successfully
 test flown recently at Whangarei by
 Brian Taylor for its owners/builders John
 Finlayson and Graham Metge. John said
 they liked this design because of its looks,
 versatility and its STOL performance.
 He was very impressed with the kit and it
 only took 15-18 months to construct.

The SuperSTOL is the latest product
 from Just Aircraft, with a wing designed

to enhance slow flight capabilities without
 compromising cruise speed. The (pre-
 coloured), fabric covered wing incorporates
 self-deploying leading-edge slats and long
 span Fowler flaps to further improve the
 aircraft's stall range. To complement the
 wing, a new landing gear system has been
 installed that takes full advantage of a
 hydraulic strut with a long distance of
 travel. The tail wheel also incorporates a
 hydraulic shock to lessen aggressive off
 airport landings.

The wing design allows the aircraft to
 be flown at extremely high angles of attack
 permitting it to 'drop' into small clearings.
 ZK-ZOE is powered with the 100 hp
 Rotax 912 engine to cruise around 85 kts.
 It presently has standard size tyres installed
 but the larger size are on order. John
 said he is looking forward to some beach
 landings and to flying the aircraft down
 and around the South Island.



Magni M16 Gyro

As New condition.
 Only 135 hours since new.
 Rotax 914 engine.
 Price Reduced.
 Call for details.

Contact Ian

SOLD
 0274 273
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NEW Robinson R22 Beta II



New Robinson R22 Beta II. POA.
 Contact Brett, Heliflite Pacific (NZ) Ltd,
 Ph: (09) 2999 442, Email: brett@heliflitepacific.com

NEW Robinson R44 Cadet



The new 2-place R44 Cadet is suited for flight schools
 and operators that want small helicopter economy with
 larger helicopter performance. Lycoming O-540.
 Same components as a Raven I (rear seats removed
 and aft compartment reconfigured for cargo).
 Contact Brett, Heliflite Pacific (NZ) Ltd,
 Ph: (09) 2999 442, Email: brett@heliflitepacific.com



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Aerial Survey Pilot

Kiwi Air is a company specialising in
 providing aerial survey platforms to various
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**We are currently recruiting for a Survey
 Pilot. The role requires a duty period of
 three weeks in the field with a one week
 rest period.**

Position Location:

NZ Based but will be required to fly in
 Australia for rostered periods

Minimum Qualifications:

CPL / ATPL pilots with

2500 hours total time

500 multi command

1500 hours total command

IF rated

Valid class 1 medical

NZ CPL

Australian CPL – TTMRA can be arranged

Proven eligibility to attain an ASIC card

Current driver's licence

New Zealand passport

Desired Qualifications:

Certified in Crew Resource Management

Certified in Dangerous Goods Awareness

Hypoxia Awareness certificate

Endorsement on at least one of the following
 aircraft: Islander, Titan 404, Reims F406,
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 and dedicated pilots.**

Contact: Katie Edwards

0275 355438

katie@kiwaiirltd.co.nz



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The International Aviation
 Academy of New Zealand is taking
 expressions of interest for motivated
 and ambitious leaders to join the
 management team.

Reporting to the Academy
 Operations Manager, the Training
 Manager will be responsible for the
 day to day running of various flying
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The Training Manager will remain
 operational and fly regularly in
 conjunction with their management
 duties. As a leader, both in and
 out of the aircraft you will have the
 opportunity to make a real impact in
 this challenging and fast paced role.

We are looking for a team player
 with proven leadership experience
 and a passion for managing a high-
 performing team.

Position Requirements

Minimum B Category
 Instructor Rating

Flight Instructor Experience;

Minimum 500 hours
 instructional time

Management and Leadership
 Experience would be advantageous

Applications

For any further information contact
 Jeremy Ford, Operations Manager,
 International Aviation Academy of NZ

Apply in writing, including a cover
 letter and CV to Jeremy@cac.co.nz.



VANS RV8

ZK-EYT is a very well built RV8 that has been professionally maintained by JEM Aviation to a very high standard. This is an excellent aerobatic high performance long distance aircraft (and the cover girl for the 2018 CAA calendar!).

170 kts TAS at 65% power

\$135,000

Phone: Brian 027 577 6300
Email: 264bbw@gmail.com



TTSN 260 hours. Initial flight 2009. Owned by the present owner since 2010. Hartzell CSU. Aerosport Power O-360 balanced with crossover exhaust, one magneto and electronic ignition. Dynon EFIS, EI MVP50 engine monitor, Garmin VHF & Transponder, Trio Autopilot, Spidertracks.



R44 Raven II

70 hrs since first life o/h in Apr 2016

Total Time 2222 hrs since new

Full instrument panel

Clean history

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Excellent condition

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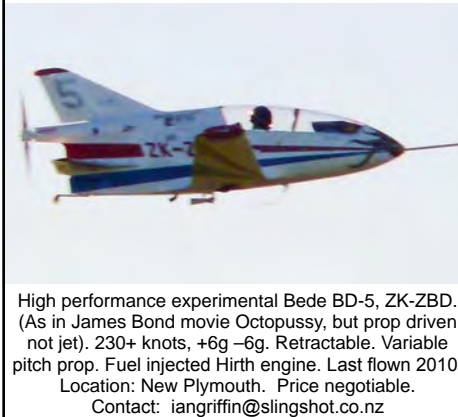
<http://www.trademe.co.nz/Browse/Listing.aspx?id=1299735048>

\$89,800 +GST

or near offer

Contact Leo on 021 0284 2049

Bede BD-5 For Sale



High performance experimental Bede BD-5, ZK-ZBD. (As in James Bond movie Octopussy, but prop driven not jet). 230+ knots, +6g -6g. Retractable. Variable pitch prop. Fuel injected Hirth engine. Last flown 2010. Location: New Plymouth. Price negotiable. Contact: iangriffin@slingshot.co.nz

Zenith Zodiac 601XLB



Microflight built from factory supplied kit by LAME in 2008. Imported early 2009. Airframe upgrade to US FAA requirements for 600kg MAUW by Solo Wings in 2010.

Jabiru 3300 six cylinder motor updated to latest specs. No flight training use.

Easy to fly: strong, fast, economical. Fully equipped: Transponder, GPS, Dynon FlightDEK-D180. New Annual. Located Whakatane.

Asking circa \$45000

Phone owner on 021 071 1582.

NEW Robinson R44 Raven I and II



New Robinson R44 Raven I and II. POA. Contact Brett, Heliflite Pacific (NZ) Ltd, Ph: (09) 2999 442, Email: brett@heliflitepacific.com

NEW Robinson R66 Turbine



4 PAX + Pilot, Cruise Speed 120 kts, 927 lb usable at max fuel. Contact Brett, Heliflite Pacific (NZ) Ltd, Ph: (09) 2999 442, Email: brett@heliflitepacific.com

New 65 hp Aerotwin Motor



Available free to someone that has an aircraft that needs a new motor (would suit a Bantam), and is interested in a share arrangement - I supply the motor and you supply the rest.

Location in the Waikato to Warkworth area. Contact Grant on 09 446 1199 or 021 0269 7405

Reach thousands of Kiwi Flyers with a classified advertisement

For private advertisers, classified advertising in KiwiFlyer is discounted to only \$35 including GST for 50 words and a colour photograph.

Send details and a cheque to Kiwi Flyer Limited PO Box 72-841, Papakura, Auckland 2244.

Alternately, email: michael@kiwiflyer.co.nz and pay by bank transfer.

Classified deadline for the next issue is 6th December. Don't forget to include all of your contact details in your advertisement.

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- ISLANDER: 3 Aircraft and Spares**
Information at www.dti-aircraftsales.com
- 1974 SCOTTISH AVIATION BULLDOG T1 MK-1**
8190 hrs since new. Aerobatic. Lycoming 200 hp. 330 to run. Hartzell constant speed prop. Full Gyro panel. Complete records. Former RAF trainer. 40 LPH for 110-115 kts. No third seat fitted. Asking \$79,900 inc. GST (if any) Price reduced. Make an offer! The owner wants it gone!!
- 1980 CESSNA 172RG "CUTLASS" ZK-EWP**
Only 2500 hrs since new. Engine 1425 hrs/4.5 years to run. Garmin GTN-650 touch screen GPS/COM. Autopilot with altitude hold. IFR. Brand new interior. \$110,500 +GST if sold in NZ
- PAPA 51 THUNDER MUSTANG ZK-TMG**
2005 model. 408 hrs TTSN. Hangared Ardmore. US\$275,000
- 1985 PARTENAVIA P68C ZK-SMB**
Only 3350 hrs since new. Engines 910 TSO. High gross weight. Price reduced. \$250,000 +GST if sold in NZ.
- de HAVILLAND CHIPMUNK ZK-JIT Ex-R.A.F.**
DHC-1 Mk22. 6,780 hrs since new. 1160 TSO on Gipsy Major 10 Mk-2. Price reduced to \$80,000 (incl GST if any)
- 1998 EAGLE 150-B ZK-EGL**
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