

# KiwiFlyer™

Magazine of the New Zealand Aviation Community

Issue 48

2016 #5

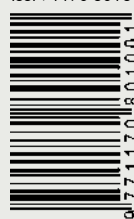


## Annual Guide to Supply and Maintenance

**Twin Hueys at Oceania Aviation  
Diamond DA62 Flight Test**

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## From the Editor

Every time that six divides into the Issue number, another year must have gone past. Thus my friends and I have been producing KiwiFlyer for eight years now. Aside from our efforts to compile something that is enjoyable to pick up and read, it's worked because of the support we gratefully receive from advertisers and without doubt also because of the support they in turn receive from readers. Thank you to all of our contributors, advertisers, and readers. Producing KiwiFlyer can be a time-consuming endeavour, but it's seldom a chore. Indeed there are times when it's positively great fun.

We had some fun for this issue. Hawker Pacific recently brought their first Diamond DA-62 into Australia and invited us for a look. Resident KiwiFlyer test pilot Grant Benns took the controls for a few circuits and other exercises out of Bankstown, including conducting a landing with one engine fully shut down (on purpose). His report is within. Grant didn't get all the fun this time though, as simultaneously, Oceania Aviation had just made one of two Bell 212s airworthy again at Ardmore and invited my lucky self for a 'jolly' around Auckland with the potential new owner's representative. He of course therefore had the front seat, but I got to be dropped off and picked up from a forest ridge top in order to take some photos. In a Twin Huey. Helicopter aficionados will understand that for anyone with even a passing interest in rotorcraft, this is a pretty cool thing. The resulting article starts on page 32.

As if that wasn't enough, the very next day both Grant and I hopped aboard a brand new Cessna Citation Latitude business jet for a trip to Wellington. Thanks Hawker Pacific once again. It was here for a day as part of a demonstration tour. It was fast, quiet, incredibly spacious, climbed at an astonishing rate, and it was likely the only time I'll ever ride in one. I'll have a much better chance of success setting my savings sights on a Huey. In any case, a Huey makes a better noise, possibly the best noise, ever. The Citation story will be ready for our December issue of KiwiFlyer which will be out in time for Christmas reading.

On the subject of Christmas, I've recently read Dave Baldwin's new book 'The Flying Doctor', and also read John Funnell's new book 'Rescue Pilot'. There's some short comments later in this issue and we'll include more in December, but suffice to say: buy them both. Both books are engaging, funny often, sad at times, very well written, full of anecdotes and wisdom, and once you've started, quite hard to put down. Either or both are guaranteed to be appreciated by any aviation minded person.

Enjoy this issue. As always, fly safe.

*Michael Norton*  
Editor, KiwiFlyer Magazine

## In this issue

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KiwiFlyer's resident test-pilot Grant Benns was invited to Sydney by Hawker Pacific to try out the new 7-seat Diamond DA-62.

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If you have a handy cliff nearby, you could try launching your glider behind a car. Jill McCaw considers this and more conventional methods.

### 31. Pioneer Rotax Conversion ticks the boxes

Robert Laskey recently converted his Alpi Pioneer to Rotax power and sent us this report.

### 32. Twin Hueys at Ardmore

Earlier this year Oceania Aviation imported a pair of Bell 212s from Japan for refurbishment and resale. They're just back in the air and on the market. Lucky us went along for a ride.

### 36. Supply and Maintenance Supplement

This year our annual supply and maintenance feature contains nearly 20 pages of provider profiles and useful information for operators of all types of aircraft.

### 54. Warbirds Ardmore Happenings

Aside from rain interfering with flying, quite a lot has happened at NZ Warbirds recently.

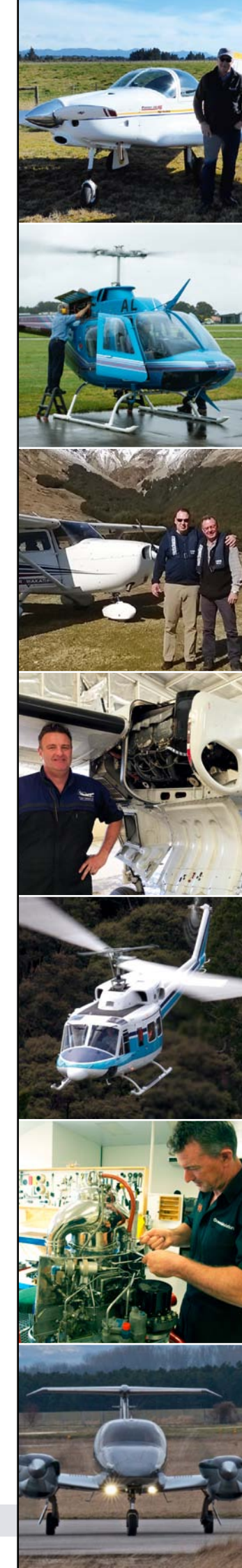
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**Front Cover:** Stephen Boyce approaches the ridge-top LZ to pick up your KiwiFlyer Editor in a Twin Huey. Woo-hoo. Michael Norton photograph.







### First R44 Cadet delivered

Heliflite have delivered the world's first production Robinson R44 Cadet to a training school in Queensland, Australia. The new 2-seat R44 Cadet's airframe, rotor system and engine are the same as an R44 Raven I, the differences being removal of the rear seat, increased cargo space, derated engine power and reduced max gross weight. Performance margins are increased however and TBO is extended from 2200 to 2400 hours. The R44 Cadet thus operates at a lower cost base and is particularly suited to students seeking to economically build R44 hours throughout their training, given that for most, their first job will be to fly an R44 commercially.

### Hawker Pacific NZ Limited achieves SMS certification

Hawker Pacific NZ Limited have recently announced two firsts in New Zealand. The company has become the first to be certified by CAA under Rule Part 100 for having a Safety Management System (SMS) in place. They are also the first to achieve Part 147 (Maintenance Training) certification in-country.

"We are proud to be leading the way as the first aviation company to achieve accreditation," Doug Park, Chief Operating Officer, Hawker Pacific said. "HPNZ were in the fortunate position that our sister companies in Australia and Asia have previously achieved certification to SMS. The global nature of the Hawker Pacific business instils a commonality of procedures and processes across all business units. This meant the basis of the procedures and processes associated with this certificate were extant in our operating systems allowing HPNZ to be viewed as a company advanced in the development toward SMS application." Doug commended HPNZ Quality and Systems Manager Robert Feasey for doing "an excellent job overseeing the certification process. Robert ensured a professional rapport with the CAA project team thereby ensuring a seamless transition," said Doug.

### Warbirds Over Wanaka Flying Scholarships Update

A total of 32 pilots have applied for the inaugural Warbirds Over Wanaka Flying Scholarships which are valued at \$5,000 each. Warbirds Over Wanaka General Manager, Ed Taylor, says "it's heartening to see there is still a lot of passion out there, especially from younger pilots, to be given the chance to fly Warbird aircraft. The Trust had intended to award one scholarship this year but given the high calibre of applications we are now looking at the possibility of making two grants in this our inaugural scholarship year."

The aim of the scholarships is to have a new crop of Warbird display pilots coming through the system to ensure there are pilots to fly Warbird aircraft for years to come. Winners are expected to be announced in November.

### Kannad Promotion and New Switlik Life Rafts

From October 15th to December 15th, any Kannad Integra ELT purchased from Lloyd Klee at Aviation Safety Supplies in Tauranga will come with a Ten year warranty and one Free battery pack (fitting charges may apply). That makes for very little cost regarding ELT maintenance for the next 12 years. Lloyd can also help out with a trade-in rebate arrangement for anyone wishing to swap from Artex to Kannad. Contact Lloyd on 07 5430075 or email lklee@aviationsafety.co.nz

Lloyd has also advised of the release of two new liferafts from Switlik. These accommodate 6 or 8 persons and feature 10 second right side up inflation upon deployment, multiple boarding stations, plus either FAR 91 or FAR 135 survival kits. A visible go/no-go gauge provides assurance the raft is charged and ready. Most notable however, is a 5 year Service Interval. For more information see www.switlik.com or contact Lloyd per the details above.

### Enhanced Vision System installed on AS350

Oceania Aviation has installed the first high resolution Astronics Max-Viz 1400 Enhanced Vision System on an AS350 helicopter in NZ, for Skywork Helicopters. The systems display provides real-time increased visibility in adverse weather conditions such as darkness, rain, fog, dust and smoke. "The decision was all about managing risk for our low level operations by choosing infrared technology over auto-pilot," said Skywork Director and Chief Pilot Roger Stevenson. "We have NVG cockpits and Goggles for night VFR if required," says Roger, "however this system is available at all times and the assurance makes everyone feel safer during the day and at night."

The Max-Viz system uses a high resolution thermal detector which can present an image on any typical video-capable display – in the absence of visible light. It can work as an alternative to, or in tandem with, light-based NVG technologies.

Oceania is in the planning stages of further installations for the Northland Rescue Trust's Sikorsky S-76s.

### Dangerous Skies at the Omaka Aviation Heritage Centre

Not far past the (outstandingly good) Omaka Aviation Heritage Centre's 10-year anniversary, the museum's second exhibition, Dangerous Skies has now opened to the public. Featuring stories of aviators and aircraft from World War II, the exhibition takes visitors on a historical as well as a geographical journey.

The stories have been brought to life by a production team of paid professionals and passionate volunteers – working tirelessly over the last 18 months. Jane Orphan, Omaka Aviation Heritage Centre director said "We have some remarkable aviation stories to



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tell from WW2. Some will be familiar, such as the Battle of Britain, but we are also introducing lesser known stories (in the West) from the Eastern Front and Burma. The aircraft we have for display take the lead but the stories provide the context.”

The exhibition includes a mixture of original and replica machines, one of these being the world's only flyable Avro Anson Mk1 and a Griffon powered Mk.XIV Spitfire. Mannequins from cinematic master craftsmen Weta Workshop will enhance scenes painstakingly created by talented local artists. We'll have photos and more details in the next edition of KiwiFlyer.

#### Massey gets approval for Performance Based Navigation Ops

In September the Massey University School of Aviation became the first flight-training organisation in New Zealand to receive approval from CAA to carry out Required Navigation Performance (RNP) operations on its 12 Diamond DA40 single-engine aircraft.

The approval process involved a detailed assessment of the airworthiness requirements as well as several discussions with the aircraft manufacturer. CAA has now begun a similar airworthiness review of Massey's two Diamond DA42 twin-engine trainers with related approvals expected in due course.

Chief Executive Massey University School of Aviation, Ashok Poduval comments that “The New Southern Sky programme set out to establish an end to end, system wide Performance Based Navigation capability, paying particular attention to enabling training and education. This provides firm evidence that the programme is moving forward in developing the basis of that capability. I am delighted that the School of Aviation team, led by Paul Kearney, has been able to lead the way.”

#### Fieldair Engineering acknowledged

Fieldair Engineering Ltd has won one of two inaugural Massey Business School (MBS) Partnership Awards which recognise the support of Massey Business School's partners and sponsors. Nominations were called from the various Schools within the MBS to identify scholarship support, contribution to scholarships and knowledge transfer, contributions to research grants and the research environment, and raising the MBS profile in the business and practitioner communities.

Fieldair are the contracted supplier of maintenance engineering services to the Massey University School of Aviation's fleet of 14 aircraft. The company was nominated by the School of Aviation in recognition of the awards they make available to students with an interest in engineering, and for their pro-active support of the School's Internship Programme for aviation management students.

## Two new books you should buy

I've read two books over the last couple of months, both by very well-known and respected NZ aviation identities. And both are exceptionally well written. Both have a RRP of \$40 and are published by Random House. It goes without saying that any NZ aviation enthusiast will struggle to put either book down. I consumed one non-stop on a plane trip and the other late one evening when continuing to read easily trumped going to sleep.

Both books deserve solid articles with extracts which we'll aim on putting together over the next couple of KiwiFlyer issues. In any case, publishing too many anecdotes now is only stealing from the enjoyment readers will get if you do go out and buy a copy, as you should.

Dave Baldwin's new book 'The Flying Doctor', is as anyone who knows Dave or has read his other publications will expect, loaded with Dave's particular style of tale telling. The book is an engaging read that starts with school and progresses with career, flying and life in general. Some readers will simply follow and laugh along with all the stories Dave relates – and there are many. But others will see between the lines where Dave has included a palpable underlying respect and gratitude for the people in his life and others met along the way. There are also numerous very astute observations on life in general. I laughed a couple of times hard enough that my eyes leaked. Then it happened again later in the book with some very touching words about less happy matters.

In his book Dave categorises some of the people he has come across as “good bastards”, clearly as a term of significant endearment and respect. Unassuming and humble however, Dave never suggests or likely even stops to consider that he's indeed a shining example of one himself.

John Funnell's book has been tag-lined 'The Daring Adventures of a New Zealand Search and Rescue Pilot'. It is indeed that and covers some 49 years and 19,000 hours of flight time in New Zealand and around the world. John starts with growing up, the attraction of aviation, then progresses through his logbook and life (which have no doubt been much the same thing), piling one great 'work story' on top of another. The book has been cleverly constructed. It is divided into chapters in the normal way – each pertaining to a segment of John's career and life thus far. Then within each chapter are numerous individual, but connected, tales and anecdotes which might run from one to a dozen pages, each covering some particular occurrence or flying mission (read adventure). As you do sometimes with a new book, I opened it to the middle to read a page and see what it was like. I had to force myself to stop 25 pages later and go back to the beginning to read it properly.

What John has also managed to unintentionally do at the same time as producing this memoir, is write much of the history of helicopters in New Zealand. He's been there for most of it, and reading this book joins the dots between all sorts of famous people and events to do with rotary aviation in New Zealand. You could enjoy it for that reason alone, never-mind the gripping adventures also within.

Congratulations to Dave and John. These books are both great contributions to our aviation history and any enthusiast's bookshelf.

# Wings over Wairarapa Air Festival launches Night Event

THE Wings over Wairarapa Air Festival returns in 2017, with a change in dates from Wellington Anniversary weekend to 17-19 February. Business Development Manager for the event, Yvonne Way, says that the change in date for their iconic North Island Festival has come about for a number of reasons:

“To attract a greater local audience, the new February dates mean that Wairarapa locals will be back at work and school after the Christmas and New Year break, enabling them to enjoy the Air Festival in their own back yard.

Also, summer can be extremely hot in the Wairarapa, so the move to February hopefully will bring more settled weather and less intense heat for the thousands of Air Festival visitors expected to attend.

Wings over Wairarapa organisers have worked closely with the RNZAF who is holding an Air Tattoo on the weekend following the Wings Air Festival - and it made sense to move the dates so that aviation enthusiasts could enjoy the two different types of events together. RNZAF participation at the Wings Air Festival is already confirmed with the debut display of the Black Falcons Display Team sure to impress.”

For the first time there will be an evening event on Saturday 18 February. Yvonne says to expect the Wairarapa skies to be lit up with breath-taking displays. Visitors to the Night event will also be able to enjoy good food, wine and entertainment during the evening.

Another innovation is a new Three Day Pass which has been introduced for the show. Costing \$90, the pass provides access to all three days of the air festival and includes entry to the RNZAF Air Tattoo the following weekend, plus entry into the Masterton A&P Show. Pass holders will have the benefit of seeing the Friday Practice Day and two full days of non-stop flying and entertainment over the weekend – plus they'll already be holding their ticket to the RNZAF event just a week later.

At this early stage the event's flying programme is still being developed. Readers can keep up to date with confirmations at the Wings over Wairarapa Facebook page and at wings.org.nz



In 2015, visitors were treated to Air Racing. Keep an eye on wings.org.nz for programme details this year.

# WINGS OVER WAIRARAPA

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# Diamond DA62 Flight Test

Back in Issue 37, nearly two years ago now, Grant Bennis flew the Diamond DA42-VI for KiwiFlyer and wrote that there were compelling reasons to give this plane consideration over more conventional options in the category. When Joe Roberson from local Diamond distributors Hawker Pacific offered up a flight opportunity in their just-arrived Diamond DA62 out of Sydney, Grant was the obvious person to send to the job, particularly with his rating resume which extends from Piper Cubs to Boeing 777s. Slotting in somewhere between those extremes in size, and probably winning on the technology and luxury scale, the 7-seat DA62 provided Grant with a very enjoyable and memorable flight. He writes:

AS I first discovered in my December 2014 flight test of the DA42-VI, the core component and most identifiable feature of these planes is their modern engine design – two of them of course. But more on those at the end of our walk-around.

The other very noticeable feature of the DA62 is its wingspan of 14.5m which is over a metre more than a DA42 and 2.6m more than the comparatively stubby wing of the Piper Seneca, the DA62's closest light-twin rival. The ailerons don't look big enough to do the job, but obviously leverage comes into play with such a large span, and there are a gaggle of vortex generators located just in front of the outer sections of the ailerons to help with airflow control at high angles of attack. The view of the engine nacelles from behind is beautiful - a study in packaging and airflow management. The top of the fin has a large and interesting shaped bulb projecting forward into the airflow, much like the bulbs seen on the bows of super-tankers. I wonder - for the same effect? The trailing edge of the rudder trim tab has a distinctly un-aerodynamic 'fence' protruding out 10mm or more for its entire length, no-doubt in the interests of providing rudder feel.

The entry doors are huge - all three of them - and a total departure from the Vans RV-style forward opening bubble of the

DA42. Obviously, with an additional row of seats to access, a new door was required for the rear row/rows, but Diamond has also completely changed the front seat access, with a gull-wing door on each side. I am sure there will be benefits in structural strength from this layout - and possibly weight penalties too - but this also directly changes the look of the windscreen, in a good way, in my humble opinion. A noticeable downside though, is the reduced visibility when looking out from either front seat - those sturdy pillars create quite large blind spots which you need to be vigilant of especially in busy airspace.

Hopping in and out of the front and rear seats is easy, thanks to the roof cut-outs of the gull-wings, and there are moulded-in handles in the door frames to assist. The front seats also have a fold-up front section of the cushion so that you can more easily plonk your feet straight on the floor without having to stand on the beautiful leather.

When I saw the big nose I assumed there must be a huge baggage locker located within, but not quite - a combination of the nose gear wheel-well and avionics storage reduces the space to two slim lockers on each side, good for soft bags up to maximum of 30kg per side. Using all seven seats means this is the only place for baggage, so you'd better hope your six passengers packed light.

By folding the last two seat-backs forward and flat, that area becomes a generous-sized baggage compartment, capable of holding up to 46 kgs. Alternately the rear seats can be easily removed (within an hour) whereupon the load capability becomes a more substantial 120 kgs. On the subject of the last row of seats and the seven seat claim, these two seats are an optional extra and probably well worth including for the odd time you may want to carry an extra couple of people. But do make sure they are short. Long legs are acceptable (as they are in all the rows) but a short back/neck would be good, as if you're over about 170



Three large gull-wing doors make for very easy cabin access.



The three middle seats include a split back (folded forward in this image). Rear seats suit persons up to about 170 cm tall.



The DA62 has an attractive forward profile and it looks wide because it is. Wingspan is 14.5 metres.



At 60% power and 8000 feet, you and your six passengers could comfortably head overseas at a TAS of 149 kts burning just 44 litres of Jet A-1 per hour.

cm/5'7" then you'll find your head is pressed against the ceiling. Diamond are factually correct in calling the plane a 7-seater, just as many car manufacturers are with their seven seat SUVs, but a better description may be '5+2'.

As you might expect, another important consideration is weight, but in this regard the Diamond does quite well. A typical empty weight of around 1650kg and a maximum zero fuel weight of 2200kg yields a payload of 550kg. By my maths that is two 100kg adults, three 70kg mid-weights, two 40kg kids, plus the front lockers full with 60kgs of bags. There is still 100kg of fuel left to take the DA62 up to the maximum take-off weight of 2300kgs, which will give you a range of around 300nm (with 30 minutes reserve). Not bad at all... actually, quite remarkable for a light twin. Just make sure that when you land there is a Jet A-1 bowser nearby, which in New Zealand is almost guaranteed. For every 30kg you leave behind, you can add another 150nm to the range, so as a generous 4-seater you will be packing your bags for Norfolk, Noumea or even Fiji if the winds are favourable. Fancy hopping around the Pacific for a month or two?

Although I haven't done the calculations, Joe tells me the centre-of-gravity range is generous, on the proviso you load 'from the front' which seems logical.

## Engines on each side

The argument for having a spare can be strong. A spare wheel in the boot of a car seems like a good idea. When I lost my only pen down the side of my seat on the flight from Auckland to Sydney for the purpose of this flight test, I was thankful to the Flight Attendant for gifting me a new one - I knew I should have packed a spare. Of course, it isn't practical to have a spare for everything - weight, size and costs can mount, rendering the car/plane/carry-on bag unfeasibly large or heavy.

Given the reliability of 'modern technology' engines, some would thus argue that more than one is not necessary, but in fact that same modern technology is making it possible to have one's cake and eat it too. Diamond's use of modern diesel engines has arguably revolutionised the efficiency of light twin-engined aircraft, and places both the DA42 that I flew in 2014 and now the DA62 at the pinnacle of light-twin design.

Whilst the DA42-VI had 168hp Austro AE300s, the DA62 engines have been up-rated to 180 hp, now designated the AE330. Essentially they are the same engine, with changes made to some components to allow for an increase in boost pressure to deliver the higher power and torque. Having been in service for five years, the AE300 has proven itself to be reliable and economical. Austro



Forward lockers hold 30kg in each side.



Engine cowling is a work of art.



Fine details abound. Cabin lights and leather.





engines have in fact now logged some 925,000 hours in total. With an initial TBO (time between overhaul) set at 1000hrs, this has steadily climbed as the engine's in-service history has accumulated. The TBO is now set at 1800hrs, with the final goal of 2400hrs programmed to be approved in the near future.

As a 'new' engine, the AE330 has started its life with a 1000hr TBO, but as with its close relative, Austro is targeting a TBO of 2400hrs in time. At the end of their 'life', the engines are returned to the Austro factory in Austria for overhaul. At this point the owner has the option of receiving the engine back as a zero-timed 'factory overhaul' or opting for a new-build engine in exchange. You might think all sounds a bit complicated, but both Lycoming and Continental have offered this service since about forever. If you are a high-time user you'll likely be comforted by the 2-year/1000hr warranty on the engines as well as the DA62 airframe.

### Costs and Performance

The airframe is predominantly composite and as such promises lower short and long-term maintenance costs. Composites don't corrode! Recommended service intervals for the DA62 start at 100 hours, avoiding the need for the 50 hour inspections of more conventional airframes. Numbers provided by Diamond suggest hourly direct operating costs (excluding fuel) of 116 Euro per hour for an aircraft flying 200 hours per year, or as low as 105 Euro for aircraft flying 1000 hours per year. Call that NZ\$200 per hour. I asked "what about the engine/prop overhaul" and was told by Joe Roberson, Diamond Aircraft Sales Executive for Hawker Pacific, that engine/prop overhaul costs were included in the figure. "Both engines?" "Yup!".

This then moves us on to the other side of the operating equation - fuel. You may recall from my flight test of the DA42-VI, the amazing fuel numbers achieved from that airframe/engine combination. This plane is better, although it depends on how you measure it. The flight manual suggests best economy speed (at 8000') is at 60% power, giving a true airspeed of 149kts at little more than 22 litres/hour per engine - that's about 44 litres per hour

total. At the same power setting, the DA42-VI would be burning 39 litres per hour and going 147 KTAS - pretty close. But hang on - the DA62 is 300kg heavier (15% more) and has an extra three seats (75% more) which points to greatly improved economics, assuming you fill those seats up.

How did Diamond do this? It borders on alchemy! A walk around the outside of the DA62 shows a variety of aerodynamic cleverness - elegant turned-up wingtips that have a 787 Dreamliner look to them, low frontal area, thickened trailing edges and shapely engine ducts, which no-doubt reduce cooling drag. In profile and also head-on, the long nose that blends into the low front windscreen looks both efficient and very sleek. T-tails have aerodynamic benefits (which are, however, offset against structural costs) but you may have noticed all high-performance gliders have this configuration, for good reason. All-in-all the aerodynamics obviously work, and, because of the turbo-charging of the Austro engines, the benefits accrue the higher you climb - the DA62 is certified up to 20,000 feet (with oxygen of course), with the engine capable of producing 75% power at that altitude for a TAS of 184kts.

Diamond enthuses about the aircraft's single engine performance, claiming it will still be able to climb at 151 feet per minute at 10,000 feet with 4 adults and a couple hours of fuel - quite handy in New Zealand if for some reason you're trying to out-climb Aoraki Mt. Cook on one engine! At a maximum take-off weight of 2300kg, the sea-level single engine climb-rate is still positive - just - at 160 fpm. Not bad for 180hp and seven seats, but make sure you get your speed nailed (87kts) and be properly trimmed out. Getting back to the initial premise of carrying a spare, this does give you some comfort - you should be able to drag yourself high enough to carry out a quick circuit to re-land, something clearly not possible if you 'lose one' in a single.

Of-course, the single-engine alternative - the 5-seat Cirrus reviewed in KiwiFlyer a couple of months ago - has the option of pulling the chute (if you are high enough), which will inevitably hurt the plane but should leave you intact. How does that compare

to the consequences of poorly executed single-engine handling... Suffice to say that many variables come into play when discussing / debating the merits of twin vs. single-engines (and 'chutes), so I will just leave it there, I think!

### Our DA62 Demonstrator

When I arrive at Sydney's Bankstown Airport, the DA62 sitting on the ramp is a very highly specified demonstrator owned by

Hawker Pacific, the Diamond agents for Australia and New Zealand. Number 27 off the production line at Wiener Neustadt (New Vienna), Austria, VH-DNU is the first-of-type for Australia and is just 67 hours 'young' when we climb aboard. Most of those hours where accumulated on the delivery flight to Australia,

with my hosts for the flight, Joe and demonstration pilot Fernando Villalon being the ferry crew. By highly spec'd I mean this aircraft is loaded - air-conditioning, de-icing, oxygen, seven seats - which also makes it at the top end of both weight (1700kg) and price (A\$1.7m). The interior is a work of leather-bound art, and the colour scheme really highlights the composite curves.

I've flown with Fernando before, when he brought the DA42-VI to NZ for its demo tour of 2014. He fondly remembers the photo flight we did, rendezvousing with a de Havilland Chipmunk over the Waitemata Harbour for some air-to-air shots. As an experienced Diamond twin instructor, Fernando is the ideal man for demonstrating the DA62, as well as being a happy chap to hang out with and talk planes. He is also quite brave and trusting, as you will later see...

Getting comfortable in the pilot seat is easy, even though the seat itself doesn't move. The electric switches on the side of the instrument panel set the rudder pedals to exactly where you need them. Being a bit taller, I had a great view of the nose, and despite his more compact form Fernando seemed to have no problems with visibility. In-fact, being a bit lower in the cockpit would probably help with upwards vision through the windscreen when manoeuvring in the air.

All the controls fell easily to hand, in particular the control stick, which is an 'old-school' surprise in an otherwise modern aircraft. I quite like it - I am biased towards sticks - but after flying the Cirrus (and Airbus) it is apparent that side-sticks are the new black, and the intrusion into the cockpit of a centre-mounted stick/yoke is noticeable. However, gone are the days of maps and charts strewn about the cockpit, due to the efficient presentation of navigational information on the large Garmin 1000 screens, so having a stick in the DA62 ensures commonality with the rest of the Diamond range of aircraft.

### Start-up

Pre-flight checks are minimal, and the flick of a couple of engine master switches and the push of two round, brushed-stainless starter buttons has the two Austros purring. Did I mention no priming, no setting throttles, no holding your mouth right? Push the start button and they start, just like a modern car, hot or cold, with no drama or theatrics.

Taxiing is straight forward, but you are aware and very mindful

of the wingspan as you manoeuvre around other aircraft.

Once the coolant and oil temps are up in the green, a run-up like no other ensues. After a manual check of ECU (Engine Control Unit) A and B, the ECU Test button for the engine is pressed and held. Magic now happens.

Without pilot

input, the engine runs up to 1950rpm and cycles the prop twice, returns to idle, then does it again. The first cycle is testing ECU A and the second tests ECU B. You check that the ECU A/B Fail lights have not come on, release the Test button and job complete - now do the other engine. The whole process takes about 20 seconds for both engines. The final check is a power assurance test - a brief run-up to full power. The remaining pre-flight checks are logical but also minimal.

### Time to fly

Bankstown is a busy GA airport, with three parallel sealed runways and full Air Traffic Control. We're on 29R and following our take-off clearance, smoothly apply full power. Directional control is easy, and with just the three of us on-board, acceleration past the minimum control speed of 70kts (Vmca, take-off flap setting) to the rotate speed of 80kts is brisk. The sound of the Austros is quite different to a Lycoming or Continental-powered aircraft - there are two sounds really, the deep hum of the three-bladed MT props turning about 2300rpm, and a higher pitch purr of the 2.0 litre Mercedes-based diesel engine running at about 3900rpm. It goes without saying that the electronics do a fine job of keeping the engines perfectly synchronised. 'Positive climb - gear up', a bit more speed and 'flaps up', power back to (or below) max continuous of 95%, lower the nose to a reasonable attitude to see where we are going - and the speed settles at around 120kts with a rate of climb of 800fpm.

The stick has a nice, meaty feel and the whole experience is very smooth. Fernando coaches me through the busy airspace to the south of Bankstown as we step-climb our way up to 7000' and clear air. Along the way we have a close encounter with a Pitts doing stall turns, but have plenty of advanced warning of its presence from the Traffic Alerting System integrated into the Garmin 1000 kit.



Garmin 1000 avionics enable an elegant cockpit. Centre sticks are common with other Diamond aircraft.



The DA62 is certified up to 20,000 ft with the engines capable of 75% power at that altitude for a TAS of 184 kts.





As we climb and manoeuvre I get the now-standard demo of the advances made in envelope protection through the Garmin autopilot system and what Diamond call ESP - Electronic Stability and Protection. Exceed 45 degrees of roll and the system nudges the stick back below that. Get too slow and the ESP lowers the nose. All really good stuff, and potentially life-saving, particularly for the low-time and/or marginally current IFR pilot having a bad day. Realistically, the auto-pilot would (and should) be engaged anytime you head into cloud, but it is nice to know big-brother is watching.

Next up I am encouraged to try some stalls - now we're talking! T-tails don't tend to produce the natural aerodynamic pre-stall buffet of conventionally-mounted stabilisers and elevators, so this should be interesting. Ignoring the various warnings the plane is visually and verbally yelling at me, a bit of buffet is felt just above the stall speed, which I put down to the airflow becoming turbulent over the rear of the fuselage and spilling onto the fin. The stick doesn't rumble or shake in the traditional sense, nor do the rudder pedals really kick either, but you are aware that bad stuff is about to happen. Probably because I was over-working the rudder in my efforts to keep the plane straight, we get a wing drop at the point of stall, but all was very conventional in the recovery and, with no screams from Joe in the back, best we try that again. This time I run some flap out and the whole scenario plays out much as before... benign. I look back to Joe, to see he is enjoying the view of what looks to me like an Australian version of the Grand Canyon, so all must be good.

The party trick of this plane is the shutdown and restart of an engine, which lights up Fernando's eyes with glee - it is quite special. He smiles and winks, pulls the power on the left (critical) engine back to idle then reaches over and selects the Engine Master switch off. The engine quickly winds down to stationary, with the propeller feathering at the same time, and the stop-watch is started - due to cooling and starting restrictions we have two minutes of single engine play-time before we lose the chance to safely (and cheaply?) re-start the engine. The rudder trim knob is located just above the throttles and is both easy to reach and use - a little bit more power on the right engine, a twist of trim and we are back to carving around the sky with little fanfare. With the stop-watch ticking by and Fernando looking a little twitchy, we concur it is time to resume normality,

so the second part of the party trick commences by checking the power lever is at idle, the prop is stationary (so as not to do a running engagement of the starter) and then selecting the Engine Master 'ON'. The propeller starts to un-feather and promptly the Start button is pushed to turn the motor over. The combination of the starter motor and the un-feathering prop produces a rapid start,

which I timed scientifically (in my head) at just over three seconds. No fiddling with mixtures or prop levers 'cause there aren't any! The ease and reliability of the in-flight engine restart obviously gives Fernando plenty of confidence in the plane, as he is to demonstrate again a little later.

With both engines back running it's time to poke the nose down and head back for a few circuits. We cruise-descend back to Bankstown at 180 kts which gives me some time to take in the various other controls and indicators. The panels are fairly standard Garmin 1000 stuff, but without the keypad found in a Cirrus. A combination standby artificial horizon / Primary Flight Display is mounted between the two main displays, should everything go dark. Light switches are mounted above that, within easy reach, and the various circuit breakers are further over on the right side of the panel. It is certainly a busy instrument panel, and as with most of these modern setups some time invested in learning the avionics with an experienced and qualified instructor would be time well spent. It is actually a little ironic that the aircraft and engines have become incredibly simple to operate while the avionics have possibly gone in the other direction, although a regular operator/owner/pilot of a Garmin 1000 equipped aircraft would probably beg to differ. Back to my horse and cart, I guess.

The flap handle/switch has just three positions - Up, Take-off and Landing, with limiting speeds of 136kts and 119kts respectively. Above the gear lights is etched an interesting limitation - V<sub>le</sub>/V<sub>loe</sub> 205 KIAS, which means the gear can be extended and left extended at the V<sub>ne</sub> (never exceed speed) of the aircraft. That makes for a great airbrake, should you need to get down in a hurry, which you might do from 20,000' feet if your oxygen stops

working. Under my right forearm, beneath a fold-down armrest, are the fuel selectors, appropriately gated and pretty much idiot-proof. Each wing contains two tanks - a main of 98 litres and an (optional) auxiliary of 70 litres for a total of 327 usable litres of Jet A-1. Either engine can feed from either side. Fun-fact - we calculated

that at 30% power, 26 l/hr total and about 110kts we could loiter for over 12 hours. Note however - there is no toilet fitted.

Arriving back at Bankstown, we were cleared a 'visual approach' into the 1000' circuit for 29L, from being mid-downwind at 1500' (don't ask... it's an Australian thing), which involved a dirty dive configuring gear and flap whilst not flying too far downwind and

into somebody else's airspace. Busy, busy, but quite achievable. Over the fence at 90 kts with Landing Flap set gave a great view of the runway, and the sturdy trailing link undercarriage was very flattering to me... We did another couple of circuits before Fernando announced the final party trick - a fully feathered single-engine landing. Whilst I have done quite a few intentional-for-fun dead-stick landings in a single-engined plane (a docile Piper Cub), in 25 years I have never intentionally landed on one engine in a twin (outside of a simulator), so this got my attention.

Obviously Fernando has great confidence in the near-instantaneous starting abilities of the Austro engine, and maybe some blind confidence in my rusty light twin flying skills too. At about the same time, he verbalised what I was thinking - "don't get too slow, or too low, and leave the flap until you are on short finals with good speed". Sage advice! Having received clearance from ATC for a 'fully feathered full-stop' landing on 29C, he shut down the left engine again (great... the inboard one!) and I proceeded to carefully

descend us around the turn - not going below 100kts or getting low - before selecting full flap on short finals for another uneventful landing. Phew. Neither Joe or Fernando had told me how much this plane was worth at this stage, or if I was going to be the new owner if I damaged it. Neither had I told them how a plane like this would be forever out of my price bracket, so I guess we were even.

Happily, we taxied back to the ramp with not a scratch on the pristine paint job, and just 71 Jet A-1 litres lighter than we had left.

Without a doubt, the DA62 is a great piece of kit in every respect. Time will tell if there is take-up by private owners and/or charter companies in the same way as the DA42 has been embraced by the flying school and training community. Joe and Fernando had a busy schedule after I left them - more demo flights including to some potential NZ customers and a month long tour of Oz to show off

the DA62 to current and prospective Diamond owners. They were bound to be very impressed.

#### For more information

For all Diamond aircraft enquiries in New Zealand contact Joe Roberson at Hawker Pacific on +61 466 506 942, email: [joe.roberson@hawkerpacific.com](mailto:joe.roberson@hawkerpacific.com) More details can be found at [www.hawkerpacific.com](http://www.hawkerpacific.com) or [www.diamond-air.at](http://www.diamond-air.at)

### Diamond DA62 Specifications

at 2,300 kg MTOW for a standard aircraft in typical configuration

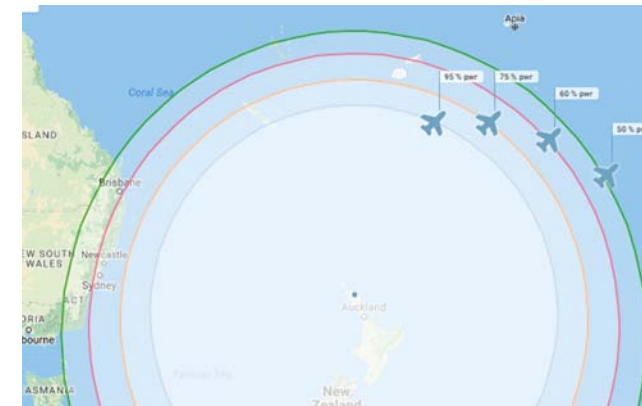
Length	9.19 m
Height	2.82 m
Wing span	14.5 m
Seats	up to 7
Useful load	710 kg
MTOW	2,300 kg
Engines	2x 180 hp Austro AE 330
Fuel capacity	Main 189 litres Auxiliary 137 litres
Fuel grade	Jet A-1
Consumption at 60%	44.7 lph (total at 12,000 ft)
Max. Speed	190 kts TAS (14,000 ft, MCP)
Max. Speed	201 kts TAS (typical config.)
Certified service ceiling	20,000 ft
Max. Range	1,283 nm (2,376 km)



Master on - Press button - Go. That's about all there is to it.



Grant's test flight included landing on a single engine - easy!



Where shall we go? (Diamond's potential range map centred on Kerikeri for MTOW of 2300 kg, 14,000 ft, ISA, no reserve.)



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# Massey University RPAS Courses

## gaining traction with NZ RPAS Users

New Zealanders continue to explore and develop the aerial phenomenon of Remotely Piloted Aircraft Systems (RPAS). Innovative new uses for RPAS appear regularly, of increasing complexity and ingenuity, and it is obvious that RPAS is becoming an significant sector of the aviation industry.

However the increase in availability of RPAS to a vast range of users, relatively few of whom are affiliated to model aircraft clubs, still sees a sharp increase in safety issues arising from a lack of awareness of the rules. This ignorance (wilful or otherwise) has already caused challenges for commercial aircraft operators in New Zealand and globally - and the potential for a catastrophic incident remains. There is a paramount need for proactive education and training to ensure safety and a user-friendly environment for all aviation participants.



Massey students on an RPAS training course.

### The problems with (some) RPAS users

Given the ease with which RPAS can be purchased and operated, problems can be significant.

- Low cost (and yet highly capable) units can be readily purchased, the battery charged, and be flying within a few hours without any prior operator knowledge or education.
- Some operators assume that as long as they are below 400 feet they are protected, when in fact even if they are following the rules they are at risk. There are numerous manned operations below this altitude.
- Without requirements for qualifications or training, some operators remain oblivious to the fact aviation is a highly regulated industry, particularly when their participation is largely unregulated.

Massey's RPAS course has continued to respond to these challenges since its inception in late 2014 and the School is now a CAA Rule Part 141 certified provider for both piloted and non-piloted training. The aim of the Massey course remains to focus on getting the individual really thinking about the airspace environment, other airspace users and SAFETY.

Students learn via traditional aviation methods: interpreting a visual navigation chart, AIP, interpreting and issuing NOTAMS, interpreting AIP supplements for airspace changes. There's no simple way around this matter.

### Graduates and Feedback

Graduates of the Massey RPAS course include representatives of the NZ Fire Service, NZ Defence Force, television and media companies, NZ Police, Regional Councils, forestry companies and the real estate industry.

The Massey courses have been very well received. Graduate feedback has included:

"I feel much more informed now that I understand the technical details required to operate RPAS safely and professionally in the airspace. The delivery of the course was just excellent. The RPAS course was a great investment for my business and I'm looking forward to attending any further courses that you may provide."

"A great and informative introduction to RPAS for our future UAV pilots. Following this course we have followed through on a UAV purchase and this course fulfils part of our 102 Certification requirements that we are working towards."

"Terrific introduction to RPAS regulations. Lots of relevant practical information regarding threats to safe operation, aviation radio use, chart reading, issuing a NOTAM, and a trip to the Palmerston North airport control tower. All drone operators should take this course."

### UAVNZ Conference

Manager Business Development and International Programmes for Massey University School of Aviation, Anke Smith, says they are proud to be a Gold Sponsor of the February 2017 Auckland UAVNZ Conference. Two 'Introduction to Regulations and Operator Conduct / Flight Examination' courses have been scheduled in Auckland to enable Conference Delegates to attend both the conference and a course.

### 2017 COURSE DATES

10–12 February 2017 (Friday to Sunday)  
AUCKLAND (Massey University, Albany Campus)

15–17 February 2017 (Wednesday to Friday)  
AUCKLAND (Massey University, Albany Campus)

10–12 March 2017 (Friday to Sunday)  
PALMERSTON NORTH

27–29 April 2017 (Thursday to Saturday)  
PALMERSTON NORTH

16–18 June 2017 (Friday to Sunday)  
PALMERSTON NORTH

Separate Group courses may be delivered onsite for groups of 10 or more. Group rates are available on application.

### For registration or more information

For more information contact Anke Smith on 021 627739 or by email: [aviation@massey.ac.nz](mailto:aviation@massey.ac.nz) - or register your interest online at: <https://masseyaviation.wufoo.com/forms/mtoj7uu07rac0f/>

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# INTRODUCTION TO RPAS REGULATIONS





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• **NEW R44 CADET – EST LATE SEPT 2016 FACTORY COMPLETION:** Dark Blue with White Trim, Grey Leather, 2 Seats, Rear Baggage Area, Bladder Tanks, Garmin GTR225B & GTX330ES, 6 Hole Panel, RHC Oil Filter Kit, Lycoming O-540-F1B5, 28V System, 2400 Hrs Between O/H on Airframe, Cabin Heater, Bubble Cover, RHC Warranty. US\$364,460 +GST



• **RHC FACTORY OVERHAULED R44 CLIPPER II WITH AIR-CON / IN STOCK:** Viper Red with Bright Silver Trim, Grey Leather, Pop-Out Floats, Bladder Tanks, Bubble Windows, King KY196A and TXP, NAT AA12 Audio, Garmin 250XL GPS with 2nd COM, Extra Corrosion Protection, Bubble Cover. RHC Limited Warranty. US\$496,760 + GST



• **2007 R22 BETA II:** 4120 TT: 1200 Hrs, Black with Gold Trim, Tan Leather, Cabin Heater, King KY197A, New Garmin TXP, New MR Blades TTIS 0 Hrs, New CoA, Fresh 100 Hr & AD compliance. Private Use, No Damage History. Available ex Bankstown. AU\$259,990 +GST



• **2009 ROBINSON R44 RAVEN II WITH AIR-CON:** TT: 800 Hrs (approx) White with Grey Leather, King KY196A VHF COM, King KT76C TXP/ Encoder, Bubble Windows, Garmin 495 GPS, Fuel Flow Meter, TC, Bendix/King NAV Receiver with G/S & KI209, Xenon Lights, 4 Point Harness (fwd seats), Bubble Cover. Maintained by Heliflite. AU\$420,000 +GST



• **2010 R44 RAVEN II WITH AIR-CON:** TT 500 Hrs (approx), Blue & White Astro Trim, Tan Leather, Bladder Tanks, Bubble Windows, Fire Ext., King KY196A, Garmin 695 GPS, Audio Panel, King KT76C TXP, Directional Gyro, NAT AA12 Audio, UHF Radio, Phone Kit, Cabin Heater, Bubble Cover, Based in Queensland. AU\$480,000 +GST



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# It's time for a hangar spring clean

**HANGARS** are a great place to store not only the aircraft they were built to protect, but also all manner of things that the aircraft owner may want to keep. Actually many owners treat them as a garage and warehouse in addition to an aircraft hangar.

This is not an uncommon practice, but it can lead to hazardous conditions that concern the insurers who provide coverage for the hangar as well as the aircraft within them. Every now and then there are fires started by unsafe storage practices and poor housekeeping that destroy the aeroplanes that the structures were meant to protect.

Aeroplanes seldom, if ever 'self ignite'. It's more likely the loss will be caused by faulty wiring or an appliance that malfunctions. Also living quarters built into hangars are another source that can contribute to the cause of fires.

Hangar fire prevention is based on using common sense. Ignition sources and combustibles in a hangar are usually in plain view if you take the time to look for them. Here are some items to consider when walking through your hangar:

1. Fix any faulty electrical wiring and connections. This includes frayed wiring, overlong extension cords, broken or corroded fixtures and switches. A main switch by the door that turns off electricity to the entire hangar is a good safety feature.
2. Oily rags used for maintenance and cleaning are a common spontaneous combustion source. These should be removed or stored in a fire-rated container.
3. Don't tolerate fuel leaks in your aeroplane that cause detectable odours. Just fix them.
4. Batteries are a potent heat and ignition source. The long-term or routine connection of unattended chargers in or out of the aeroplane or vehicles is not recommended.
5. Make sure there is a fire extinguisher available. Be sure you

have the correct type and that it is current and fully charged. It should be in the most accessible part of the hangar.

**6.** The number one domestic fire hazard is normally cooking. You should not leave the hangar when you're cooking.

**7.** If you have an old beer fridge, you should know that one-third of all residential fires are caused by appliances and electrical faults. If the appliance is no longer suitable for the home, it should not be in your hangar.

**8.** There's really no good reason to store fuel in a hangar other than what's in the aeroplane. There should be no draining of fuel or fuelling in a hangar including mogas for microlights and LSA's. This is asking for trouble and static-induced fuel fires from plastic containers are alarmingly regular occurrences. The same situation can be created by draining fuel from an aircraft within a hangar.

**9.** It is important to get rid of the oil-soaked carpets and rubbish and remove the boxes of junk you've been storing, to eliminate a source for a fire.

**10.** Establish a check list for the hangar by the door as a reminder to check for appliances to be turned off, fuel containers to be emptied or removed, and rubbish to be carried out.

Aircraft and related parts that have not been replaced by other parts are normally covered by your aircraft policy. Your hangar and other contents are generally covered by a premises and contents policy. If you are not sure if a particular item is covered or not you should check with your broker to make sure you have the coverage you need. A little prevention will go a long way to avoid a claim and even higher premiums under these policies.

To discuss this topic or any other aviation insurance questions, contact Bill Beard at Avsure on 0800 322 206.

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# An Interview with Carlton Campbell

## Aviation Safety Advisor, CAA

**LIKE** many of the 'interesting people' we interview for this column, Carlton Campbell has a long and varied aviation history. His enthusiasm for flying led to jobs in aviation and eventually positions within CAA. Carlton makes sure he gives back to the industry and he doesn't let a desk job stop him flying.

*You won the CAA, Flight Instructor of the year last year. Apparently Graeme Harris, the Director of Civil Aviation said that he had to think "long and hard" about making such an award to a CAA staffer. But eventually he'd come to the conclusion that since the nomination had come from industry, if "someone stands out as the best in New Zealand aviation, they deserve to be recognised for their contribution – irrespective of who they work for." How did you feel about winning the award?*

I was shocked. This is a Director's award to industry and I have generally been party to the process of promoting worthy candidates however I was out of the office during the period concerned last year. As I did not know the awardee, I was listening distractedly, wondering which instructor Graeme was referring to. The awardee had been a School Principal and I knew of teacher instructors but was baffled as to which one had also been a Principal. I disbelievably became aware that there was too much in common to me. I looked up to see Ross Crawford with his thumbs in the air, pointing at me, and heard my name called out with stunned disbelief. It was very humbling and much appreciated.

*So even though you're Aviation Safety Adviser for CAA, you're still instructing and you give your time to events like the Walsh Flying School and the Women in Aviation rallies.*

As a kid in Ashburton I was fortunate to be in the Air Scouts. Another Ashburton Scout and I attended the 4th Walsh camp (having all sorts of adventures on the way that nearly got us arrested through no fault of our own). Phil Standing, later to be Air NZ Captain was my instructor with Ian Ritchie as CFI and George Arkley as Director. I was lucky to go solo early and

with Phil as the local instructor we had access to a Tiger Moth and Air Tourer to further excite my aviation blood. I was 16.

I was unable to attend Walsh as an instructor for many years as the January camp was during the peak season for Queenstown flying. I didn't return until 2004 when I joined CAA but I have been doing so ever since, including the 50th school earlier this year. I'm very proud to be associated with the camp. So many impressive young people lap up the opportunity to excel, not only in succeeding in flying solo at the camp but also maturing and developing as a consequence of the whole experience available to them. They become what is fondly referred to as a 'Walshie' and frequently move into an aviation career; evidenced by the number of Walshies permeating all aspects of our industry. The school is fortunate to have a dedicated following of leaders and volunteers from all aspects of Scouting and aviation as well as an extremely generous group of sponsors that make it all happen.

As for the Airwomen's weekends - I relate to their culture. Ever since I was first invited to speak on Mountain Flying (I believe the first time was in Taupo over 20 years ago) I've been impressed and explained to others when answering the same question, they do two things: they enjoy flying and they enjoy each other's company and more importantly they do both things together!

*In spite of your high school Principal not accrediting you University Entrance because you were too busy studying aviation, you went on to become a school teacher yourself. Aviation won out in the end though didn't it?*

While teaching in North Canterbury with a young family I was fortunate to have two generous friends, local farmers who used to go flying with me. I worked part time for one and he became aware I was considering letting my PPL lapse due to financial pressure. He refused to give me a pay check for a school holiday work period unless I committed it to my renewal. The second recalled a conversation where we



Carlton Campbell in training mode.

had fantasised about what we would do if we came into some additional money. I came home one day after leading a school outdoor education camp in Doubtful Sound, to a letter which was quick and to the point: "C and I have just received some unexpected money. Sat down to have a cup of tea and minutes later this letter was written. Go get your CPL. Sincerely R and C." Enclosed was a cheque for \$2000 which had been my estimate of money needed, back when dreaming about what do with surprise money.

Later, as a school Principal in Garston, I was using weekend and holiday opportunities to operate as a part-time pilot with the Wakatipu Aero Club in Queenstown. The CFI had done some teaching and the President of the club was also a teacher. Both were instrumental in convincing me to obtain an instructor rating which confused me as I didn't think I could fly, let alone teach someone else. However, I persevered and moved to Queenstown to teach in the high school there, to afford more flying opportunity without excessive travel.

*And sometime after that you left teaching and spent over 15 years as Manager of Wakatipu Aero Club as well as being CFI for a number of years.*

This was the most amazing opportunity and the best job for challenge, variety, satisfaction and stimulation. In the most stimulating environment ever I got to combine two aspects of my training into one role; teaching and flying. To take people from no experience in such terrain, and give them the confidence and skills to enjoy it was immensely satisfying. We were fortunate to have an exclusive insight into the training of pilots from all over

the country and all over the world as they funnelled into Queenstown seeking experience in the area. I travelled to all corners of the country, finding myself on a beach late at night on the West Coast, or Stewart Island watching the setting sun, or on an airstrip further east near dawn watching the sun rise while waiting for a farmer, or descending off Mt Cook late in a red sky evening with tourists insisting the hues would be unbelievable were they not there to see it for themselves. I loved to take pilots from all over the world, who thought they had seen the best, into the mountains and hear them consistently say, because of the environment, "That was the most amazing flight I have ever had!"

Sadly, with the Queenstown Airport Corporation's refusal to renew the Aero Club lease as it seeks to restrict private activity on the aerodrome, the benefits Wakatipu Aero Club can offer to training local pilots for tourist operations, providing visiting pilots from all over the world quality mountain flying tuition, and the opportunity for pilots to train in one of the best training environments in the world has been lost. Watch this space. The club will be resurrected, albeit not permitted on the Queenstown aerodrome.

*During your time at Wakatipu, you instigated mountain flying courses for local aviation professionals. What made you see the need?*

It arose out of needing to refine and quantify what had been put in place previously. De-licensing occurred in 1985. Prior to that only two fixed wing operators had a licence to provide what is now known as Air Transport operations in Queenstown. When I took over in 1988, mountain flying programmes and role training for commercial operations were based on the experience of the individuals available. With the growth in scenic flight operators and pilots seeking jobs it became necessary to quantify and formalise requirements acceptable to operators. As the local training provider, Wakatipu Aero Club needed to establish a pilot standard that ensured local operators would employ our trainees rather than graduates from elsewhere.

Experience quickly taught us that we needed to provide a sound, apprenticeship type model for our graduates that allowed us to confidently employ them part time when they were fresh out of the training. What we called the '50 Hour Employability Programme' commenced. It could be part of one's CPL training if done with

us and incorporated into the 200 hour CPL minimum, or, if they came to us with a CPL already, became a minimum standard on top, for employability in the area. Those who completed this training were ensured (unless completely unable to gain confidence of other operators) of a job when one came up. They were watched during their training and often selected and offered positions for as soon as training was completed. Those who did not complete such training were often evident by their lack of local knowledge and frequency for incident or occurrence. The 50 hour course included modules on mountain flying, beach and strip operations, route training into Milford and Doubtful Sounds, Mt Cook, specified solo requirements, local knowledge and transition training, onto for example, Cessna 206 or Partenavia, emergency options and passenger handling etc.

*What are some of the challenges of mountain flying?*

To me there is no more exhilarating experience than flying around the mountains early in the day or late in the evening, on a crystal clear frosty day or in weather that challenges your decision

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making to achieve the most comfortable ride that your knowledge, training, and experience can muster. Pilots unfamiliar to the mountains have to learn to understand how the wind performs as a fluid flow around terrain, to interpret cloud, temperature and pressure cues in a way that allows safe flight, with comfort managed as best circumstances permit, and to be able to share tips and traps with other pilots such that they can have a more confident experience.

A mountain pilot needs to understand how critically important recognising where the real or imaginary horizon is, such that you can always appropriately position the nose attitude of the aircraft, to instantly recognise the lift or sink or drift experienced and then confirm with instruments to ensure that you 'fly' the aircraft rather than 'drive' it. They need to be in a head place to always anticipate and not find themselves in a place where a lack of situational awareness and poor decisions only lets them react. Pilots need to always have options.

*With all of that happening, what made you move into CAA?*

A new position was created in the licensing unit that was looking for someone with an educational and a flying background. Additionally, I had been working on contract to CAA, addressing recommendations from both TAIC and various coronials following 29 fatalities in 15 years with causal factors related to mountain flying issues. Given I was encouraged to put my name forward, the opportunity to assist in the mountain training area was too tempting to pass up.

*When you joined CAA in 2004 it was as a Training Standards Development Officer. At the time you said, "One major responsibility of the role is to establish a review process for all syllabuses, to ensure they undergo regular scrutiny in a five-year cycle." And that it was "...a priority ... to develop a guide for Mountain Flying and Terrain Awareness, for both fixed wing and rotary." Did you pull those off? What are the standards these days?*

It was certainly a challenge to balance the priorities of an effective syllabus and applicable standards in mountain flying with the wide variety of industry acceptance levels for such training to be incorporated. Unfortunately, often the base learning principle of, "you don't know what you don't know" was prejudicing people from achieving the next level of, "you now know what you don't know" and can now do something about it. In the end I believe we achieved an acceptable compromise for what the rules must always provide: the minimum acceptable standard. By keeping to the themes of: for PPL - Terrain and Weather Awareness, for CPL - Basic Mountain Flying and for role training - Advanced Mountain Flying with a ground syllabus that provides a wide scope of appropriate theory, I am pleased that pilots are less likely to inadvertently get themselves into threatening circumstances flying around terrain than previously.

With regard to the five-year cycle for reviewing all syllabuses;

it was a massive project. Yes, it was achieved for most pilot and ATS syllabi. Work is ongoing and still needed to complete engineering, balloon and glider projects. All aeroplane, helicopter and ATS syllabi are in what we term 'objective performance verb format' which presents each syllabus item in a form that pitches the learning level more clearly than ever before. With each review the opportunity for submissions from industry produced excellent

feedback which contributed to, in each case, a better product. Unfortunately, this feedback process was not always taken advantage of by critics of the syllabus.

*These days your title is Aviation Safety Adviser. What does that entail? I can't see you tied to a desk.*

Yes, being in the field more with operators was definitely the appeal. Even though the ASA role involves a lot of travel, the scenery of the South Island is much more appealing than the rear end of another commuter on the Wellington motorway, or a congested peak hour train ride.

The ASA position is essentially a liaison person between CAA and industry. The role is to facilitate appropriate activity for all concerns between CAA and industry. Desirably, I am in a position to assist with issues in everyone's interests before they blow out of proportion. As a member of the Safety Promotion team, recently changed to Communications and Safety Promotion, I am also an on-the-road-distributor of the huge range of safety products available.

I am fortunate to have retained aspects of my previous role: Instructor/Examiner/CFI seminars, Flight Examining and certification of the Instructional Technique Courses. The Instructional Technique Course is a four-day course developed following the "Towards 2005" industry/CAA forum which highlighted concerns around training standards, particularly instructor standards. Of course I am passionate about the AvKiwi Safety Seminar programme which I have been involved in, even before joining CAA. We have a strong team, well lead by Rose Wood,

that assists with associated graphics, interviews and video clips in the development of online material, apps and resources to support the theme and presentations. I enjoy the educational role of AvKiwi and encourage all instructors to leverage off these resources when working with their students.

*You obviously love flying, love the mountains and you have put a huge amount of time and energy into helping other people find that same joy and stay safe while they do so. The rest of New Zealand's pilots thank you for that. Is there anything else you would like to add?*

The support of my partner, family and friends has been immense in helping me pursue my passion for flying and helping introduce others to enjoying the mountains with increasing confidence and competence. I have been very fortunate to fly with some fantastic people, to some amazing places, in a huge variety of aircraft types, categories and circumstances. Long may it continue.



On Gorge Burn in the Eyre Mountains.



Carlton's "favourite office".

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# En-route: Bankstown to Broken Bay

## but first you'll need a CASA licence conversion

Nick Ashley continues his series focused on flying the scenic route - with a twist for this issue. He's in Australia and also tells the story of first needing to obtain the necessary Australian Civil Aviation Safety Authority licence conversion. Please note following details are correct as at October 2016.

**WHILE** there are many similarities between Australia and New Zealand, there are also a lot of small variances to look out for when flying west of the Tasman, including differences in radio frequencies, ATIS content, chart design, airspace complexity, aerodrome layout, local policies, and navigation procedures. Individually these factors may seem relatively minor, but when taken together they become a significant consideration, and proper preparation is required before jumping in an aircraft. With this in mind, I spent several hours poring over charts and documents in an attempt to become familiar with a good chunk of the information I'd need in order to operate safely in the Sydney area. I had a lot of time to study while the Civil Aviation Safety Authority of Australia [CASA] processed my licence conversion.

### Converting your licence

Pilots holding a Commercial Licence or higher are eligible to be issued with an Australian equivalent under the Trans-Tasman Mutual Recognition Agreement, but pilots holding only a Recreational or Private Licence must instead follow the steps outlined in CASA Form 61-4A which runs to ten pages and comes with an A\$140 price tag. Thankfully, there are no exams or flight tests, so part B of the form isn't required. The application does

require verified copies of logbook pages, passport photos, New Zealand licence, and identification documents and while these can potentially be verified by a few aviation doctors in New Zealand, it's far easier to get this done in Australia. In addition, three other forms need to be completed at the same time as 61-4A. Firstly, Form 1162 goes to CASA for the issuance of an Aviation Reference

Number, the equivalent of a CAA licence number – it's a single page and there is no fee. Next, Form CAA602 needs to be submitted to the Civil Aviation Authority [CAA] of New Zealand to permit them to release licence information to CASA, again a simple form and free of charge. The final form is completed online at the Aviation ID Australia website, either for an A\$200.50 Aviation Security Identification Card [ASIC] or A\$152 Document [AVID]. An Australian pilots licence doesn't by itself permit

access to an airport if the field hosts any regular air transport operations, so flying out of larger GA aerodromes require the full ASIC application. Operations from smaller fields only require the AVID process to be completed but this will greatly limit the number of available aerodromes so it's definitely worth the investment for an ASIC.

One significant difference with an Australian licence is that the vast majority of single-engine aircraft that a GA pilot might fly are grouped together under the single-engine aeroplane class, rather than the individual types listed on a New Zealand licence. However, the rules are a bare minimum and good airmanship, and indeed aircraft hire requirements, might suggest additional familiarisation training before swapping a Piper Tomahawk for a Cessna 206!



Sydney's suburbs seem to stretch endlessly into the distance.



Dense bush surrounds the city.



Controlled burn-offs are a common sight.



Waterways are quite crowded with boats.

Design feature endorsements like retractable undercarriage and operational ratings like night VFR are similar to their New Zealand equivalents.

For the average GA pilot with a clean record, it should only be a matter of time until a large envelope arrives in the mail from CASA. Unlike the simple plastic cards that the New Zealand CAA issues, PPLs from Australia are in the form of a series of perforated paper pages that, once separated into pieces, becomes a rather unwieldy but impressive-looking 'Flight Crew Licence'. It's worth investing in a licence book to protect the sheets from becoming dog-eared in the bottom of your flight bag – the A\$25 or so is a worthwhile purchase.

### Take an Instructor first

I waited for my licence to arrive before getting airborne, but dual flights can of course be made while the conversion process is underway, should the need to fly become too great. For my first dual sortie in Australia I secured the use of a Piper Warrior II, and more importantly a local flight instructor, Bill, who was happy to take me on a familiarisation flight around Sydney. It was a sweltering Sydney afternoon when I arrived at Bankstown Airport, a bustling aerodrome where Cessnas and Pipers mix with private jets, police helicopters, and small turboprops just 10 nautical miles west of Sydney International Airport. During weekdays, dozens of student pilots tax the Air Traffic Control service by pushing up the hourly movement count to double that of the nearby international field.

Aside from the mercury being above 30 degrees and rising, the weather was mostly on my side, with a stuffy high pressure system shutting down the chance of anything more than breeze. The Australian-registered Warrior looked familiar enough, tied down to a grass apron in a corner of the airfield. Bill initially followed my pre-flight checks closely but realised soon enough that I'd been there before. My time leafing through aerodrome information meant I felt nearly like a local when I released the park brake and started through the process of navigating along the ground to the active Runway, 11L, one of three parallel asphalt strips that are frequently used for simultaneous operations. Take-off clearance was swift and it was only a few minutes until the Piper was powering down the 1100m runway.

At just a few hundred feet above the ground, I realised that things weren't going to be quite as easy as I initially thought. While the high-pressure system was helping to keep the skies clear of cloud and the air calm, it also trapped a thick layer of smoke and haze, far worse than anything I'd experienced in New Zealand. It made navigating the Sydney urban area a challenging prospect, as structures such as highways, rail lines, and hospitals form the majority of the visual waypoints, and only pop into view after closing to within a few miles. I relied on a paper chart and Bill's experience to ensure I became familiar with the terrain features, and while my hours spent preparing meant that I didn't need to consult documents for every frequency and altitude, things were happening very quickly. The first waypoint for a northern departure is the cluster of tall apartment buildings and offices forming the Parramatta CBD. Thankfully, they were easily recognisable in the distance, piercing through the layer of haze hugging the ground. Other landmarks, such as the pipeline that serves to demarc the boundary of Bankstown's controlled airspace, were not so easy to spot. The limited number of suitable areas for an emergency

landing was something else that only really became noticeable from altitude. Being limited to the city fringes by Sydney International's airspace, the terrain below was composed almost entirely of suburban houses and thick vegetation.

However, the Warrior's engine happily droned on as I maintained a 2000ft cruise and pressed on to the north, being careful to avoid a section of Class C airspace that has a rather high incursion rate with GA aircraft clipping the corner on departure, no doubt frustrating ATC. As we neared the end of the northern departure route, Bill suggested we start a turn back towards Bankstown. A new set of waypoints guided us back, including electrical substations, a rifle range, a large covered water reservoir, and a storage tank with a convenient strobe light placed on top. The inbound route skirted Richmond military airspace which I was more than happy to avoid. Unlike New Zealand, the air intercept rules are far more relevant in Australia! While Richmond doesn't have a permanent combat group, I didn't want to stumble through the restricted zone and risk a personal fly-by from an itinerant F/A-18 Hornet. (But what a great story that would have been. Ed.)

Most inbound traffic to Bankstown funnels overhead the large Prospect Reservoir, a 2km wide lake that makes for a perfect landmark. I was cleared straight in for Runway 11L and after an acceptable, but not excellent, touchdown I guided the Warrior back along the empty taxiways to its parking spot. Thankfully, while perhaps not a flawless demonstration, my preparation ensured that I had done enough to demonstrate competency - and so my thoughts turned to my first solo flight in Sydney.



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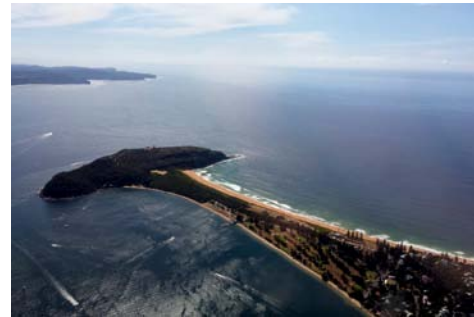




Thousands of boats reside in marinas and on moorings - in almost every sheltered bay.



The Ku-Ring-Gai Chase National Park was a filming location for 'Skippy the Bush Kangaroo'.



Palm Beach has been viewed worldwide thanks to the success of 'Home and Away'.



Patonga marks the end of the northern arrival/departure routes from Bankstown.



A rail crossing heads north from Long Island to the Central Coast.



The Brooklyn Bridge isn't quite as iconic as its American namesake.

## En-route:

### Bankstown - Broken Bay

**Flight time:** 55min

**Approximate distance travelled:** 65nm

#### Traffic/airspace:

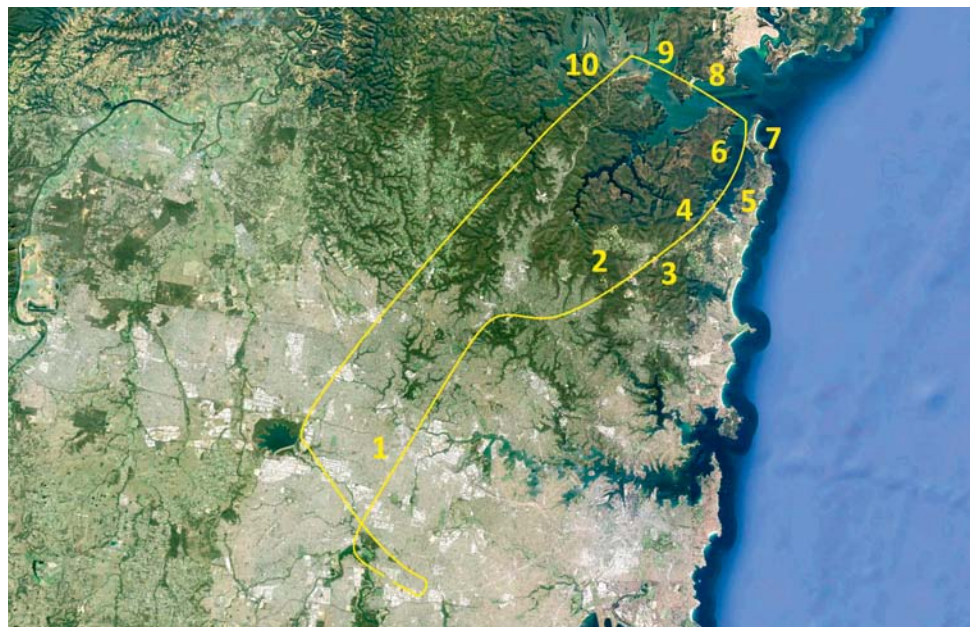
Traffic can be heavy near Bankstown. Remain clear of controlled airspace at Sydney International and military airspace at Richmond Airbase.

#### Terrain:

Limited emergency landing locations.

#### Weather:

Powerful thunderstorms can form quickly during summer months.



Nick's route from Bankstown to Broken Bay.



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## On your own

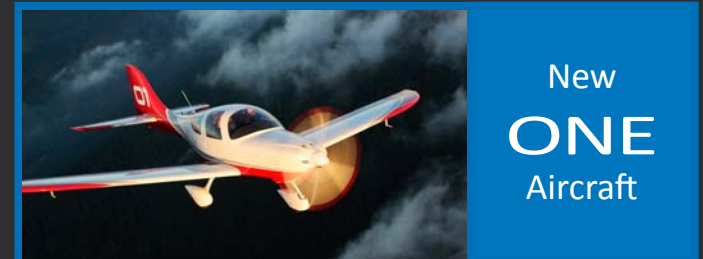
A week later I was ready to run through the same exercise, but with a friend, Sagar Kadir, beside me instead of an instructor. Being more familiar with Bankstown by now, I made an effort to conform to the local procedures and anticipate requests from ATC. While it was his first time in a light aircraft, Sagar made for the perfect passenger, happily staring out the windows and taking photos of the scenery below while I juggled everything needed to keep us on track, following the same waypoints as my previous dual flight. A cold front had passed through during the week, scrubbing away most of the haze and leaving behind light winds and layers of cirrus to shield the Australian sun. Airborne off Runway 29R this time, another Piper off 29L paralleled my climb-out, until I broke away to the north seeking out the Parramatta high-rises.

After following the now-familiar waypoints, instead of turning back early like last time, I changed course to the east, maintaining my distance from a controlled burn-off that raged near Warriewood. Ahead of us lay the expansive bush of the Ku-ring-gai Chase National Park, known for being dotted with Aboriginal sites, although they're far too small and obscured by vegetation to be spotted from the air. The park, along with the neighbouring Duffys Forest, also served as a filming site for the television series 'Skippy the Bush Kangaroo' during the 1960s. The area is best explored at ground level by the network of walking tracks, so from our aerial vantage point the submerged river valley estuary to the east called Pittwater was of more interest. Being sheltered from the powerful Tasman Sea, Pittwater is a perfect natural harbour and houses well over a thousand boats lined up in marinas and bobbing at anchor. As we cruised overhead, I peered around the Warrior's wings to watch sailboats, ferries, and luxury motor yachts negotiate the crowded estuary. Further north, Barrenjoey lighthouse was a prominent feature sitting on a small rocky hill bordering Pittwater, the larger Broken Bay, and the open ocean. Beneath the lighthouse was yet another filming location - Palm Beach's long curved stretch of golden sand being the set for the popular television series 'Home and Away'.

A change of course to the west brought us past the beachside suburb of Patonga toward the rail and road bridges at Brooklyn. Further towards Broken Bay, the water colour began to transition from a deep blue to a muddy brownish-green, as the Hawksbury River pushed sediment into the bay against the prevailing incoming tide. Brooklyn Bridge, which allows the M1 highway to head north up towards the Central Coast, also serves as the starting point for the inbound run to Bankstown, and so with another turn I aimed towards the distant city of Sydney and began checking off the inbound navigation points. Even with several miles still to run, I began thinking about how to improve upon my previous landing with BILL. I recalled that my apprehension from operating in new surroundings meant carrying excess speed over the threshold, and I wanted to nail the approach second time around. The ATIS advised that Runway 29 was still in use, the opposite direction to my last flight, but the inbound route was the same, passing over the edge of Prospect Reservoir to join the circuit pattern. With no traffic behind me, I indulged in a wide base leg, providing plenty of time to set up for finals. Like most first-time passengers in a small light aircraft, Sagar was surprised when I finally managed to grease the Warrior's wheels onto the runway, pulling off a slightly long but otherwise perfect landing. Taxiing back, I was filled with a renewed confidence, finally feeling at home in the Australian skies and already thinking ahead to the next, more ambitious, adventure.



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# Three more new Gyros arrive in NZ

## The Magni M16 C



**RECENTLY** arriving for New Zealand Magni Gyro distributor Leo Levine at Parakai is this new Magni M16 Section T. New owner Pete Avery (pictured on right with Leo) ordered the aircraft at the end of June. Just one month later it was test flown in Italy and then containerised for shipping to NZ. A day after arriving at Parakai, Pete's new gyro was assembled, inspected and made ready to fly. CAA combined the trip north with a few other aircraft inspections so there was a short delay and then with no issues raised, ZK-RPA was issued with its NZ flight permit.

The Magni M16 C complies with Section T which is the UK standard of BCAR Section T which ensures that

designated design standards have been met as a minimum requirement.

All Magni Gyros are standard with 4130 chrome moly frames and rotor cheek plates, carbon fibre bodies, Beringer hydraulic brakes, high speed pre-rotator, high inertia composite rotor blades manufactured by Magni, and aircraft grade hardware in all critical areas.

At the risk of taking the focus off the gyro, what about the flash kneeling trailer it's on! Also in the picture is Leo's Magni gyro and if we could see in the hangar behind, there would in fact be three more (all Auto-Gyro Europe models). Is West Auckland Airport Parakai being quietly taken over by gyro enthusiasts?

## The Titanium



**A FIRST** of type gyro onto the New Zealand register is this 'Titanium Gyrocopter' manufactured in Australia. Stephen Pegg from Gyrate Auckland has acquired the NZ distributorship, with this aircraft arriving in the last couple of months for a local customer.

The design follows the style of the so-called 'Euro' gyros (originated by Magni, copied by ELA, then Auto-Gyro Europe, etc.). Stephen says it makes extensive use of titanium and carbon fibre, and is fitted with high life composite rotor blades. This gyro is also fitted with one of the newly available six-bladed carbon fibre Excalibur props (see panel at right) The design includes many details for practical use such as sizeable luggage pods. Stephen says, "If you want to become enlightened, fly a Titanium Gyrocopter from Gyrate Auckland." His contact details are 021 239 6298 or gyrostp@gmail.com. Look out for more details and specifications on this new type in our next issue of KiwiFlyer.

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## and a new prop too

## The Kallithea and Excalibur



**Tony Unwin** at Gyrate in Tauranga has just landed this new Kallithea, by the Niki Rotor Aviation Company in Bulgaria. Tony says that Kallithea is Greek for 'best view'. This first of type example for the NZ register is powered by a Rotax 912ULS turning a new prop design from Helices E-props in France. Tony undertook an acceptance flight of the aircraft in Bulgaria before it shipped which he described as "very smooth".

Tony says the new 'Excalibur' prop has been deemed "remarkable" by those flying them in New Zealand (there are six now). One customer measured a static thrust improvement of 18% compared to his previous prop. The six-bladed narrow-chord prop is made of carbon fibre. Tony has become the New Zealand distributor for these props and says they are offered to the market with a six-month no-quibble money back guarantee. He says the manufacturer is well-established, making more than 7500 blades per annum, and that the lead prop now has more than 5000 hours of service on it. One very happy customer perceives that the prop has "turned his 912 into a 914". Contact Tony at Gyrate Tauranga for more information on 0800 359 249 or email: fly@gyrate.co.nz. We'll have more about this aircraft in the next KiwiFlyer.

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# Auto-tow and Winch Launching

**THERE** is a seriously cool YouTube video doing the rounds at the moment. It is a German ad for the VW Amarok four-wheel drive. Search on YouTube for 'VW Amarok stunt' to find it. It is a James Bond worthy video and the car is not the star of the show. I think gravity might be. The footage opens in a dark hangar, dramatically lit by the narrow slit of the doors. The big four-wheel drive is sighted and it rolls forward, slowly and majestically towing a glider on a shortish rope, out into the sunlight on the apron of an airfield. A mountain airfield that is ridiculously short, slopes like a ski jump and has a cliff dropping to nowhere at the bottom end.

Engine roaring, the vehicle accelerates down the runway, cliff edge approaching, glider racing along behind. And then, just in the nick of time, of course, the glider lifts off, soaring over the car as it skids to a sideways halt at the end of the runway, cliff edge only metres away. As the driver climbs out of the car the glider does an orbit, swooping back across him in salute before soaring off into the majestic French Alps.

It's a great piece of filming and the scariest version of an auto launch that I've ever seen. Filmed at Courchevel Airport in the

French Alps, known as one of the most dangerous airfields in the world, Director Anson Fogel, explained in the making-of film for the campaign: "Once you initiate a start at this airport, either you take off or you die." It certainly looks like that's true. The pilot was

Klaus Ohlmann, one of the best mountain soaring pilots in the world and the vehicle was driven by professional driver Chris Cano.

Auto launching isn't something we do very often in New Zealand. I've personally only seen it done once, way back in the '80s, when Auckland hot shot, Morrie Honey was launching his glider off the beach at Kariotahi, south west of Auckland, soaring the dunes. My husband John and his mates

used to play with the technique, also back in the '80s, down at Omarama. They used a pulley at the end of the strip and the car accelerated towards the glider. It can be very successful. The pulley arrangement allows a good launch from a short strip.

Even in the '80s aero-towing was the more popular launch method, back when avgas was cheap and old Pawnees and the like were easy to acquire and not too expensive to maintain. In the last ten years the Pawnees hit the ends of their lives (without expensive work) and have fallen out of favour. Many New Zealand clubs now use Light Sport Aircraft (LSA) for tow planes, if they have kept a tow plane at all.

Winching has become more popular as a training tool. A student can generally do three or four winch circuits for the price of one aerotow one. The drawback to winch launching is the height that can be gained. You need a long strip. The Canterbury Gliding Club's site at Springfield is around 800 metres long. The maximum height it is possible to get using our winch from the site is about 1,200 feet but usually less. Unless there's a thermal sitting somewhere around the end of the strip, a glider probably isn't going to be able to get away from that.

The Wellington Gliding Club, based at the new Greytown Soaring Centre in the Manawatu however has 2.5km of strip available on their North/South vector (03/21) and 1.8km on their Westerly vector. They don't use the Easterly direction. Their new Skylaunch dual drum winch uses light weight dyneema cord which is stronger than traditional wire cables. They routinely launch gliders, in still air, to between 2,000 and 2,500 feet QNH in under a minute. With a headwind the height reached can be up to 3,000 feet QNH. This is 1000 feet higher than the 'standard' tow release height on an aerotow. The Greytown site also has a convenient, into wind, ridge that they can pop off tow and gain height on. It is the ideal site for a winching operation and the Wellington Club no longer uses their tow plane.

**GA pilots. Please take extreme care around glider winch sites!**

There are a number of them around the country. From the top of my head I can list the following active winch sites: Kaikohe, Auckland (Drury), Piako, Greytown (Papawai), Nelson Lakes (St Arnaud), Christchurch (Springfield), Omarama occasionally and Alexandra. On occasion there may be others. These winching areas

are marked on visual navigation charts (VNCs) with a red glider symbol and a "W", plus the maximum winching altitude. Winch launching gliders are climbing at a 45-50° angle and coming up at 65 knots. Many sites have dual drum winches and are capable of launching two gliders within a couple of minutes of each other.

Greytown Soaring Centre warns: On a busy day ten or more gliders will be operating in the area. During competitions (normally in February) up to 30 gliders will be operating from Papawai. Gliders release and turn east towards the nearby ridge to gain height. The new maps may have a 3nm Common Frequency Zone (CFZ) around Papawai. Regardless of whether this makes it onto the map or not, the area frequency within the 3nm circle is 134.45 for all gliders and the Skylaunch winch. Keep a listening watch. Other sites may be using 119.10. Please do not over fly any airfield if you hear winch traffic.

Winch launching and auto launching work the same way - it is just the propulsion unit that changes. Some people describe it as a bungy jump in reverse and as the launch takes less than a minute, it can certainly seem that way. There are however distinct phases to the launch and the glider must be flown correctly, and safely, maximising the lift, for each stage. The glider is attached to the cable via a C of G belly hook and the pilot can release the tow

cable at any stage. The ground roll of about 50 metres takes the glider to flying speed and lift-off. The pilot then gently pulls back, allowing the glider to start to rotate and climb to about 150 feet. Pulling back smoothly the glider then enters the full climb stage, literally flying like a kite, but with a lot more control. The winch driver and pilot are in radio contact, correcting speed to optimise the climb. You're thrust back in your seat like an astronaut, staring at the sky and heading straight up. It is exhilarating.

As the top of the launch approaches the climb rate drops, the climb angle decreases and the horizon reappears. Back pressure on the stick is gradually released until a constant speed in normal flying attitude is reached. The pilot then releases the cable, or if she has overflowed the winch it will back-release for her. The pilot then turns away whilst the cable

is reeled back in with a parachute creating tension and stopping it from falling into a snarled mess on the ground.

## Try for yourself

If you'd like to try this exciting launch method, see the GNZ website for contact details of the clubs mentioned. If you want to try auto launching from Courchevel, I'm sorry I can't help you.

For subscriptions to SoaringNZ see the McCawMedia website.



YouTube screen shots from the VW Amarok Stunt video.



Needless to say the glider flew and the car stopped - just - in both cases.

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# Pioneer Rotax Conversion ticks the boxes

*The recreational aviation scene in NZ is full of enthusiastic participants, many of whom like nothing more than getting off the ground just for the sake of it. An unexpected experience of 'quiet where there should be noise' might be enough to quell that enthusiasm for some people, but not for Rob Laskey, who simply set about finding an alternate power source for his Alpi Pioneer 300, and is delighted with the result. Rob writes:*

MY story starts around June in 2014 when I was thinking about upgrading my Skeyranger Swift microlight for something faster to fly down to Rangiora to see my children and grandchildren. After a lot of looking I happened across an Alpi Pioneer 300 that had some appeal, especially after research which yielded favourable commentary – and I liked the idea of wood construction with its vibration damping properties. This one was Jabiru powered so I thus also spent a lot of time talking to Jabiru owners about their experiences and how to manage operating reliability.

I arranged a test flight and... fantastic! The aircraft was very fast and responsive, and all I needed to do the long cross country flights I was planning. Some delicate negotiations ensued, and I became the new proud owner.

For the next two years I flew the tail off it, all over New Zealand. One day at Rangiora I met a couple of fellow Alpi owners who said I should follow them to visit Logan McLean, the Alpi Aviation dealer in NZ who was just a short distance away. Logan greeted us warmly and then kindly also gave my plane a complementary airframe inspection. It was a fortuitous meeting as I came away knowing that the aircraft was in good condition and also confident in my knowledge of who to call if major maintenance should ever be required. Little did I know...

Time passed as I happily logged about 150 hours a year on the Alpi with everything behaving flawlessly. So it was quite a surprise earlier this year to suddenly hear a strange sound and increasing

vibration in my motor, ending some 90 seconds later with total silence as the prop stopped in front of me.

After a few stressful minutes I found myself on the ground, relieved that I had landed safely on a seldom used airstrip. After gathering my wits, the second call I made was to Logan, asking his

advice on how to get the wings off it to trailer it back home. Logan's instructions made the job easy and after getting the aircraft back to the hanger my thoughts turned to what I was going to do to get the plane airworthy again.

Over the next few weeks I had countless conversations with Logan over my options which ranged from fixing the motor, to replacing the motor with a CAMit engine, and finally the option to replace the entire front end and put a Rotax 912 in. Based on my criteria, we ended up choosing Rotax power and it

wasn't long before a new 912 ULS had arrived at Logan's workshop with my name on it.

It was quickly followed by an installation kit from Italy, and Logan then set about preinstalling the motor to a mocked up firewall he built especially for the purpose. I was pretty impressed when he then promptly loaded everything he needed onto his ute and drove from Rangiora to Feilding to perform the install. I felt more like a commercial operator with a dedicated maintenance provider, than a recreational pilot with a casually flown microlight. There were plenty of difficult logistics involved and thanks to Logan's support I'm thrilled to have the aircraft in the air so soon again.

Two months down the track, the new engine continues to perform fantastically. I'm even more pleased now than when I bought the plane – the aircraft is as good (better actually) as ever, it has a brand new engine, and I know I'll receive first class servicing and support whenever required. Who says an engine failure needs to be a bad experience – not me!



Logan and Robert at the Takaka Fly-in, August 2016.



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# Twin Hueys at Ardmore

## The journey of Oceania Aviation's Bell 212s

Since the RNZAF sold their Iroquois fleet and thus stopped visiting the Army's Ardmore training ground with them, there's been a noticeable lack of decent helicopter noise in the skies over Ardmore and the Clevedon valley. Recently though, that gap has been filled by Oceania Aviation's two twin Hueys which they imported from Japan earlier this year for refurbishment and resale. The first of these has just been sold for export to the USA. Before that happened, your lucky KiwiFlyer Editor got to go for a 'jolly' around Auckland along with the new owner's representative. A seasoned pilot himself, he took the left seat with Oceania's Aircraft Sales Manager Stephen Boyce at the controls. It's fair to say the aircraft was full of Huey enthusiasts, proved by the conversation on final approach back to the TLOF at Ardmore: "Ya got to love that pop of the Huey blades (insert your own American accent)". "Best sound in the world," agreed Stephen. And I concur. Here's the story of these particular aircraft and what the Oceania team have done with them:

**FOR** many years now, Oceania Aviation have differentiated themselves in the business of aircraft sales with a commitment to providing tailored and unique solutions for their clients. This approach has contributed to their establishment as one of Australasia's leading Aircraft Sales and Brokerage companies. It is a position of pride for company Directors, Josh Camp and Jonathan Bowen, who remain heavily involved with the company's Aircraft Sales Division which is led by Sales Manager, Stephen Boyce. Stephen is also Oceania Aviation's resident test pilot. He's not afraid of a challenge either – the day after our Huey flight he was off to Cairns in a Cessna 182 to personally deliver it "as a favour".

You can't broker and sell more than 100 aircraft to operators

all over the world in just the last three years unless your sales team has a reputation for trustworthy and transparent dealings. This reputation preceded the sale of the 1981 Bell 212, when Joe Stambaugh Jr., Director of Safety and Chief Pilot for Helicopter

Applicators Inc. sought information on Oceania from colleagues in the industry. He relayed the result of his research saying: "Whenever I asked anyone about Oceania Aviation, people had nothing but good things to say about the company and the team here. It gave me the confidence to know I was dealing with a quality, reputable business before I boarded the plane for the inspection."

The 1981 Bell 212 that was acquired by Helicopter Applicators Inc, was the first of a pair of Bell 212 aircraft that Oceania Aviation

acquired in January 2016. Imported from Japan, the aircraft were previously operated by the Japanese Coast Guard and were used primarily in SAR and surveillance work. Landed within days of one another, both Bell 212s were prepared for shipping by Oceania's Engineers who travelled to opposite ends of Japan to dismantle and pack each aircraft onto 40 foot flat racks, then oversee their loading on to separate vessels bound for New Zealand over a 10-day period. Both aircraft were registered well before arrival to ensure they were on the NZCAA register upon landing and were ready for assembly and maintenance inspections in preparation for their NZCAA Certificate of Airworthiness. The aircraft were registered as ZK-HBQ and ZK-HIB.

Upon their New Zealand arrival, responsibility for the aircraft shifted from Oceania's logistics team to its Aircraft Engineers who completed the import Certificates of Airworthiness for both



Approaching the apron on the Oceania Aviation hangar at Ardmore.



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**Captions:**

1. Stephen Boyce pre-flighting. Those blades are 48 feet long and nearly 2 feet across.
2. Three rows of seats. The seat legs are designed to become a ladder should you end up on your side somehow. (The cabin is 8 feet wide).
3. Tail rotor diameter is 8'6". 4. Cyclic.
5. 365 litres an hour of burned Jet A-1 exits here.
6. Could be useful. 7. 1970s comms tech.
8. Collective. 9. A busy overhead panel.
10. I am a ...

aircraft. The Maintenance team conducted all main inspections in conjunction with BHT Part A up to 3000 hr / 5 year inspections, as well as 24 month / 1200 hour inspections of each helicopter's twin Pratt and Whitney PT6T-3B engines and the removal of all optional equipment including floats and other mission specific equipment. Oceania Aviation's Component team conducted inspections on both main rotor hubs, overhauling the mast of the 1989 Bell 212 ZK-HBQ, replacing it with an all new pole and bearings as well as replacing the swashplate support and collective sleeve plus other components, and finally replacing the trunnion in the tail rotor hub. The 1981 Bell 212 ZK-HIB, which Oceania Aviation's Components Manager, Peter Hatley described as "a minter", required no overhaul work whatsoever.

With the two aircraft airworthy, Oceania's Sales team were tasked to market and promote the aircraft to the international rotor industry and generate prospective interest in the aircraft. It wasn't long before enquiries were flowing in and Aircraft Sales Manager, Stephen Boyce was conveying the benefits of Bell 212 operation from his own on-type experiences flying in the Arctic. One of the competitive advantages of Oceania Aviation's Sales team is their ability to genuinely extoll the virtues of a particular aircraft based on their staff's own operational experiences around the world. Stephen himself has logged over 10,000 hours in both fixed and rotary wing. Clearly addicted to aviation, he continues to commit to operational work during vacation time - recently working with teams in Canada flying fire support operations in British Columbia. He explains; "When you work in the aircraft sales industry, prospective buyers often don't expect agents and brokers to have any real operational experience. So when I can relate to them so directly and discuss my own industry experiences, it offers a level of credibility that enhances our sales proposition, and it differentiates Oceania Aviation from our competitors." His motivations aren't entirely altruistic though. He adds, "That and because I love it. It's great to get out there and fly. That's why I do."

Shortly after a flight around Auckland, Joe Stambaugh Jr. reported back to his company in America, and ZK-HIB was declared sold. Oceania's Logistics team are presently making arrangements for transportation of the aircraft to Florida.


If you like the sound of the other one (double meaning there for those that get it), HBQ is still for sale at time of print.

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"We'll just go for a 'jolly' around Auckland." In a twin Huey. "Yeah I'll come," said the Editor nonchalantly. The grin probably gave me away though.







# A busy year at Avcraft Engineering NZ Ltd.

2016 has been another year of growth for Avcraft Engineering NZ Ltd. The company has a policy of 'continual progress', and Engineering Manager Mat Bailey says that "further significant investment has been made 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's list of services and accreditations is long. From Rotax powered microlights to jets, Mat says the Avcraft team has the experience, capability and tooling to support all your needs, covering all of the following and more:

- Scheduled Maintenance
- Maintenance Control and Tracking
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- Full strip and repaint
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- Battery Capacity Testing
- Scheduled Avionics Inspections
- Avionics installations
- Electrical Load Analysis
- GPS IFR Approvals
- RNP Approvals and documentation support
- ADS-B Out Approvals
- Electrical, Instrument and Avionics repairs
- Cirrus Aircraft Service Center
- Pilatus Aircraft Service Center

## A year in review

This year has seen Avcraft perform a steady stream of Garmin and Bendix King installations into many different types of aircraft. The Garmin GTN650 and GTN750 have been big sellers combined with ADS-B out installations of Bendix King and Garmin Transponders

Avcraft have the new Garmin G5 Electronic Flight Instrument in stock now and ready for immediate installation. This unit is incredible and expected to be a very popular and cost effective solution to replace those old gyro horizons. An added bonus is the built in 4-hour backup battery. Anyone flying night VFR or IMC really needs to consider the safety benefits of the new Garmin G5 in addition to their vacuum gyro instruments or as a stand-alone installation.

The company has also seen a large increase in the modifications

side of the business with many LED Landing, Taxi and Strobe Light installations, Mid-Continent USB Power Outlets, GAMI Fuel Injectors, Electroair Electronic Ignition Systems, APM Strakes and STOL kits fitted.



A typical day in the Avcraft hangar.



Cessna 402B full strip and repaint in progress.



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Tronair Cabin Pressurisation Unit being used to find fault in a King Air 300LW.

Avcraft have recently upgraded their pressurisation rig to the latest Tronair Cabin Pressure Unit. This rig can perform full pressurisation tests, leak checks and fault finding on all small to medium pressurised aircraft saving considerable time and costs.

Avcraft are also New Zealand's only approved Pilatus and Cirrus Aircraft Service Centres. The company has the technical data, specialised tooling and factory training to ensure maintenance on these high-spec aircraft is performed correctly and with full factory support. As Mat says, "Why risk taking your aircraft anywhere else? We've got a tremendous amount of experience, capability and knowledge here at Avcraft. Anyone leaving an aircraft with us can be assured their asset is in good hands."

## Central Location

Being located at Feilding Aerodrome where there are no landing fees makes Avcraft 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 a courtesy car 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.

## For more information

Call 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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# Central Aero Engineering: "Here to Help"

**THERE'S** no question that Waikato based aircraft operators who have interesting aircraft and seek fair-value maintenance seem to gravitate towards Central Aero Engineering at Hamilton Airport.

The company has a very wide range of aircraft on its books and aside from routine maintenance will inevitably have one or two 'projects' on the go in their hangar at any one time. Owner and licensed engineer Paul Waterhouse says that's because his small team derives a lot of satisfaction from taking on unusual or difficult jobs and delivering great results. Plus, he 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. That's an especially important consideration for their large number of private and recreational flying clients – and an added bonus for the numerous commercial operators whose aircraft Central Aero also care for.

## What's been happening

Recent hangar diversity has included a Glasair III, Piel Emeraude, and GA8 Airvan – all for routine maintenance, a Cessna 172S which was damaged in the usual way at Raglan requiring repairs to the fuselage and some wing trauma, an RV7 that required extensive repairs after a ground altercation with a hidden obstacle, several hot air balloons for inspections and maintenance, and more. It's an eclectic mix and no wonder that Paul says "every day is interesting".

A regular visitor is a Piper Cherokee, which aside from routine inspections has been undergoing an ongoing refurbishment "a piece at a time" in order to keep costs manageable for its owner.

For those in the know about the difference it can make, prop balancing occurs from time to time, the most recent job being for a Pioneer 300 owner who went away very happy – the job successfully eliminating "that noise" there used to be.

All manner of rotorcraft are regularly through the hangar too. When KiwiFlyer visited, Heliworx's JetRanger was being test run

after a chip plug activation led the team to a turbine bearing failure. Central Aero removed and refitted the engine which was repaired by Airwork at Ardmore. Home-built Safari helicopters are also

often seen for inspections and routine maintenance, Central Aero having developed a lot of familiarity with the type. At the other end of the scale, an AirCommand autogyro recently appeared with a seized Rotax engine – traced to having previously had incorrect pistons fitted by a prior owner.

## Services and Capabilities

Central Aero Licensed Engineers Paul, Steve, Kanda and Hamish have a great deal of experience from which to tackle most jobs regardless of how unusual or difficult they might be.

Central Aero 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".

Recently Paul has found himself in demand to provide

support for people sitting their oral LAME exams - 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.

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



First run of Heliworx' JetRanger after a turbine refit following bearing replacement.



Central Aero have become specialists in balloon inspections and maintenance.



Clockwise from left: 1 Wood and fabric work are no obstacle. 2. Propeller balancing is another speciality. 3. Glasair III in the hangar, good for 250 kts.

## Central Aero Electrical Limited

**NEXT** door to Central Aero Engineering is Central Aero Electrical Ltd. Owner Martin Ross and his team of two have a reputation which Martin modestly describes as being, "handy people – we're good at twisting our minds around unusual problems and designs". Evidence of this was on the workshop bench when KiwiFlyer visited. Among other repair and overhaul work was a fuel sender unit, a low rotor rpm unit, and an expensive GPU potentially rendered obsolete due to a problem on a circuit board. Martin says they can often help save a lot of money when replacement is the only other apparent option. One of his frustrations is the increasing number of modern parts which suppliers are engineering to be return-to-base for all maintenance – so they are 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 find that other potential overhaul facilities can't undertake this work due to not having necessary documentation. They should contact Martin who might be able to help.

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. And Martin continues to build relationships directly with component suppliers, allowing him to purchase direct and bypass the aircraft manufacturer's mark-up. These are savings Martin says he is happy to pass on to customers. Contact Martin on 027 733 0208 or email: centralaero@clear.net.nz

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# The Best Gear for Lifting

## Hooks, Long Lines, Nets and more from Rotor and Wing

**HELICOPTER** lifting work needs equipment that is safe and efficient to use. Given that acceptable safety standards are not clearly designated however, the most an operator can do is choose well-designed equipment and have it tested at regular intervals. The other difficulty operators face in obtaining the best gear is that suppliers of related equipment are often commercially driven and not aviation focused.

Taupo based Rotor and Wing Maintenance Ltd may be able to help. The company has decades of experience in supplying a range of lifting gear that includes long lines, cargo nets, remote hooks and swivels. "Our products are supplied with safety, reliability and performance in mind," says John Hobday, Rotor and Wing's Chief Engineer.

### Remote Hooks

John recommends the Onboard Systems remote hook. "They have a good range of

sizes and are an affordable option," says John. The Rotor and Wing Cargo Hook shop has no problems with service and spares and these hooks have a five-year overhaul interval.

### Long Lines

Historically there has been a proliferation of different lifting lines in use. What is increasingly important is the standard of safety afforded by the different options. "We have decided to work with a safety ratio of 9:1," says John. "In the past, there have been problems with the inspection and testing of long lines which could not be easily disassembled for inspection." This problem has been resolved in the design of lines made by Rotor and Wing. While still made from Dymena rope and encased in a protective tube, the entire casing is easily removable allowing full access for inspection and testing without undoing the splicing.

### Cargo Nets

High quality cargo nets are stable in flight. Having a cargo net made and designed for New Zealand conditions keeps things simple. "We are fortunate to have the skills in New Zealand to produce rugged nets," says John. "There is no need to rely on imported nets."

The point of difference with nets produced by Rotor and Wing Maintenance is they are made by hand using strong polyester rope. John explains; "Hand-made nets are rugged and will last. Many of the nets made by our net maker are still giving good service after 20 years. Imported products are mostly machine made and aren't easy to repair."

The Rotor and Wing nets are stable enough not to roll up when the helicopter lands and can also be thrown over ground objects waiting to be loaded.

Nets come in two sizes: 3m x 3m and 3.7m x 3.7 m but other sizes can be custom made. They are supplied in a breathable carry bag that helps them stay dry.

### Swivels

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.

### Supply and more information

Rotor and Wing's Mike Bennett has nearly 10 years experience supplying long lines and other ropes. He has been responsible for the test and certification of many products for both the aviation and logging industries, and is very familiar with best practice. Mike recently attended Lift-It training on the use of synthetic slings which he found very informative. "I can see where aviation sits compared to the other industries I have supplied for," Mike says.

John is always looking for new ideas or ways of improving safety, performance and reliability of equipment for his customers. Next in the pipeline are three-aside bike racks for the Bell LongRanger and a hot refueling kit for the Robinson R44.

For more information contact John via [john@rotorandwing.co.nz](mailto:john@rotorandwing.co.nz) or Mike via [stores@rotorandwing.co.nz](mailto:stores@rotorandwing.co.nz)

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# Exclusive KANNAD Part 145

## Repair and Service Facility

Aviation Safety Supplies Ltd located in Tauranga is the only KANNAD approved Part 145 KANNAD repair station and warranty replacement facility in New Zealand. Lloyd Klee has been a distributor for Kannad product for well over 20 years.

Kannad ELTs do need to be returned to an approved facility for battery replacement as specialised software and testing equipment is needed to re-certify them. Thorough testing as per the Kannad CMM ensures that the ELT is fully functional when it leaves the facility. Aviation Safety Supplies Ltd has just renewed their CAA Part 145 approval and also holds ISO9001:2008 certification.

Lloyd is also an active participant in several RTCA working 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 & Artex exchange ELTs available for AOG situations and/or any repair requirements.

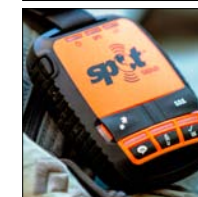
In addition, they carry good stocks of new and refurbished Kannad Compact

ELTs. They also stock the newer Kannad Integra models of both fixed wing and helicopter versions. A new promotion is now offering a TEN year warranty on all new Kannad Integra ELTs and a short term promo offers a free replacement battery for the Integra range. 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. Brands stocked include Baltic, GME, Kannad, McMurdo, Ocean Signal, Switlik inflatable TSO lifejackets (stowable ten year service and X-Back Helicopter series), the Switlik Single Person Liferraft, a new SWITLIK liferaft with a five year service life and WS Technologies 406MHz ELT Testers. Tracking

devices such as the SPOT 3 and the newer In-Reach SE are also stocked.

For all enquiries on any 406MHz ELT and PLB products, accessories, servicing and repairs contact Lloyd on 07 543 0075, email: [sales@aviationsafety.co.nz](mailto:sales@aviationsafety.co.nz) or visit [www.aviationsafety.co.nz](http://www.aviationsafety.co.nz)



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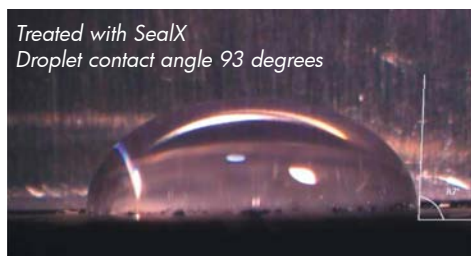
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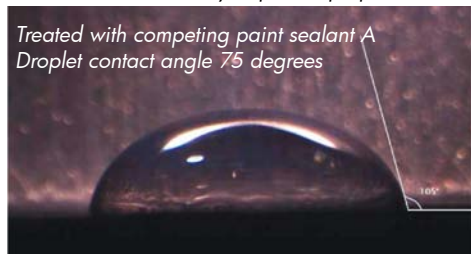


# Serious Paint Protection with



Treated with SealX  
Droplet contact angle 93 degrees

These are water droplet images on a painted surface exposed to 200 hours of QUV-B light, simulating more than six years in NZ sunlight. SealX (above) was the only treatment which maintained true hydrophobic properties.



Treated with competing paint sealant A  
Droplet contact angle 75 degrees



Untreated control sample  
Droplet contact angle 66 degrees



Treated with competing paint sealant B  
Droplet contact angle 65 degrees



This recently SealX'ed King Air is almost glowing and isn't even outside in the sunlight.

A GREAT many of New Zealand's aircraft fleet have the misfortune to live outdoors. And even those that are hangared are of course still outside for much of their time where they are exposed to our fairly harsh (particularly in terms of UV) climate. Given that it costs at least \$10,000 for even an average repaint job on a small aircraft, and vastly more as they get larger or for quality work, it's prudent to do as much as you can to protect your aircraft's paint now, before nature and time can degrade it any further.

Anyone who cleans and polishes their car or aircraft using automotive products will know that if the vehicle lives outside, the polish is pretty much gone within six months – a lack of water beading telling the tale. Over the last couple of years, a variety of specialist-applied products have appeared in the market – often touting nano-particles or similar, and claiming to provide long term paint protection. Not all live up to their claims however and very few have been laboratory tested or approved for aviation use.

A product which has been laboratory tested and certified, can offer certified proof of claims made, and is approved for aviation use by Boeing and Airbus, is SealX – distributed in New Zealand by Tom Muller of International Yacht Services Limited based in Whangarei. KiwiFlyer readers might recognise Tom as also being the exclusive authorised distributor of CorrosionX in this market (via Corrosion Control NZ Limited).

SealX provides a very long lasting UV shield to almost any surface it is applied to, including paint, plastic, glass, Plexiglas, Lexan, Perspex, and more. Paint in poor condition will need to be cut first, but if in good existing condition then may be 'primed' using a SealX cleaning solution which is then wiped off before spraying on SealX itself. The surface is then buffed off with a clean microfiber cloth. Subsequent cleaning can be achieved with water alone or any PH-neutral cleaning product (SealX Drywash or SealX Wash diluted to 1:300 are ideal). SealX products are water-based and environmentally friendly. The products are also MPI approved in NZ for use in public areas and food processing plants.

## Independent testing

Laboratory tests confirm that SealX lasts significantly longer than other products making similar claims (some of which are offered with 12 year guarantees). Independent ASTM testing by Dulux Laboratories proved that only SealX met criteria for maintaining true hydrophobic properties on treated surfaces (paint and fabric) after completion of 100 hours QUV-B exposure (simulating about six years in the New Zealand sun). Commentary regarding the test by Dulux comparing four products on four surfaces was as follows:

- After 24 hours QUV-B exposure, surface cracking was noted on the (untreated) fibreglass control specimen. (This clearly shows how harsh the test was.)
- SealX treated specimens were the only specimens to show advancing contact angle greater than 90 degrees after 100 hours of QUV-B exposure.

## Application and Cost

A further advantage of SealX is that is quite suitable for DIY application. Product is available in 500 ml spray bottles or by bulk quantity for higher volume users. Tom says that a typical light aircraft might require \$200-\$300 of product. Application of the primer/cleaner and then SealX sealant will take no more than a few hours if the existing paintwork is in good condition – an incentive to therefore apply

the product to new or freshly detailed aircraft. Restoring older, faded paint by cutting can easily add half a day to the job, but in general if a SealX agent is engaged to complete the work, costs can usually be kept below \$1000+GST.

As Tom is quick to point out, it's an investment that really does deliver a return. Not only will the aircraft look better, it will be hugely easier to keep clean, it won't require expensive repainting or paintwork maintenance every 10 years, and it will maintain a higher resale value.

You can also apply SealX to your car of course. Assuming that no cutting is required, a SealX agent will do the job for a standard charge of \$500+GST per car (which includes the cost of materials), and in a clear demonstration of faith in the product, the job comes with a five year transferable guarantee.

A well-established existing SealX and CorrosionX applicator is Johan Pienaar of Streamline Protection in Hamilton. Johan has been applying SealX to all manner of vehicles and aircraft since 2014. Aviation applications have ranged from a Tecnam P2008 to a Falcon 900EX as well as helicopters from R22 to EC130 and at times included full restoration of very degraded paint surfaces. Johan says they can achieve outstanding results with the SealX product range, often to the astonishment of vehicle and aircraft owners. A recent very successful job has been the Garden City Helicopters King Air C90. Johan welcomes enquiries for SealX application in the greater Waikato area. Contact him on 021 0812 0614, email: [info@streamlineprotection.co.nz](mailto:info@streamlineprotection.co.nz) or visit [www.streamlineprotection.co.nz](http://www.streamlineprotection.co.nz) for testimonials and further information.

## New Applicators sought

Several opportunities are available throughout NZ for persons interested in becoming an accredited SealX agent and applicator. Tom welcomes all enquiries, whether for solely an aviation focus, or an interest in covering the application spectrum of cars, boats, motorhomes, etc.

## For more information

SealX aviation applicators are currently located near Auckland, Hamilton, Tauranga, Napier, Nelson, and Wellington airports. More information is at [www.sealx.co.nz](http://www.sealx.co.nz) which also includes application instructions, video and test certificates. Tom Muller can be contacted on 021 469 972 or [info@sealx.co.nz](mailto:info@sealx.co.nz)



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# Engineering for Aviation

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**Fieldair Engineering** Limited has a proud history that now spans more than 60 years, from the early days of topdressing by Tiger Moth to the present expansive operation with bases in Palmerston North, Auckland, Wellington and Christchurch. The company has a wide operational scope which covers all aspects of aircraft Maintenance, Engineering and Overhaul for a very broad range of customers from light GA through to heavy airline. Company approvals include NZCAA Parts 145 Maintenance, Part 148 Manufacturing, 19F Supply and BVQI AS/NZS ISO 9001. The company comprises two Divisions; Aircraft Maintenance and Engineering Support, both supported by Financial, Administrative and QA elements.

### Aircraft Maintenance Division

With facilities at Auckland, Wellington, Palmerston North and Christchurch, Fieldair's experienced teams can service most aircraft makes and models flying in New Zealand today – from very small to very large.

Engineering Manager (Aircraft) Andrew Lynn says their aircraft maintenance personnel are committed to providing the highest level of service excellence. "Our quality workmanship is supported by stringent internal and external quality and regulatory controls (NZCAA and BVQI). We provide a 24-hour service with minimum down-time to get operators back in the air quickly, with a 'no compromise' attitude in terms of flight safety. Partnering with Fieldair for the maintenance of your aircraft means placing your investment into reliable, experienced hands with a long-standing reputation for attention to detail." If you have a technical problem or just need to bounce some thoughts around then call Andrew on 06 350 0959 or email: [andrew@fieldair.co.nz](mailto:andrew@fieldair.co.nz)

### Engineering Support Division

Within the main Fieldair base at Palmerston North is the Engineering Support Division managed by Peter Lowen. There are four support sections; Avionics, Engine and electrical components, Supply and General Engineering. All sections are kept busy providing services to a wide range of aviation related operators and activities. From research and development within the Avionics section currently involved with commercial UAVs, providing niche engine repairs within the engine section, to worldwide logistics support within the Supply section, and finally design and manufacture of airline and transport related GSE within the general engineering section, Fieldair is a 'one stop shop' for all of your aviation related requirements. Engineering Support functions are further described in the following paragraphs or you can contact Peter on 06 350 1746 or email: [peterlowen@fieldair.co.nz](mailto:peterlowen@fieldair.co.nz).

### Engine Repair Section

Fieldair first began overhauling aircraft engines in 1969 and over the years has acquired the experience and ability to overhaul most engine types common used in New Zealand today. This includes radial engines, the company having a wealth of experience on types such as the Wasp Junior (P&W R985), the Wasp (P&W 1340), and the Double Wasp (P&W 1830). The company is certified by Lycoming as a service centre, and caters for a variety of other makes. Services available in the Engine Shop include cylinder repairs, exhaust system repairs, NDT, propeller balancing and aviation machining. Fieldair also has Lycoming IO-720 engines available.

The engine repair section also incorporates an electrical component workshop that offers repair and overhaul services for an extensive range of fixed wing and helicopter components, including generator control units, starter generators, alternators, actuators, switches, motors, starters, magnetos, fuel pumps, voltage regulators, ignition harnesses, reverse current relays and all ignition system components.

All enquiries for engine and electrical component support at Fieldair should be directed to Quentin Hughes on 06 350 0956 or email: [quentin@fieldair.co.nz](mailto:quentin@fieldair.co.nz).

### Avionics Section

Fieldair's Part 145 approved Instrument and Avionics department offers a wide range of instrument calibration and repairs. Services range from fast annual avionics checks through to the installation of full glass cockpits, and same-day turnaround on AOG instrument work including an exchange option (stock permitting).

Specialising in compass and gyro instruments, Fieldair is also an authorised Repair and Maintenance facility for ACR/ARTEX locator beacons, as well as a Programming and Battery Replacement facility for Kannad ELTs.

They are also a Service Centre of Excellence for Garmin products and are at the cutting edge of UAV developments in NZ. For all aspects of instrument and avionics support, contact Chris McLaughlin on 06 350 0957 or email: [chrism@fieldair.co.nz](mailto:chrism@fieldair.co.nz).

### Supply Section

Supply Manager at Fieldair, Pat Elliot says they operate what amounts to a (CAA Part 19F approved) "Supply Supermarket". This department provides parts, spares, advice and a research and locating ability in support of the wider Fieldair Group – as

well as being available to assist external customers at any time. "We're a cost-effective and efficient way to source spares and equipment specific to the wide range of aircraft types operating in the region –including throughout the Pacific Islands," says Pat.

Fieldair customers may avail themselves of a free parts procurement service, as well as having access to search the Fieldair inventory on-line via their website. A same-day dispatch service is available for all stocked items. Pat Elliot can be contacted on 06 350 1743 or email: [pat@fieldair.co.nz](mailto:pat@fieldair.co.nz)

### General Engineering Section

Lead by Sean Henderson (06 359 0452 or [sean@fieldair.co.nz](mailto:sean@fieldair.co.nz)), the General Engineering section at Fieldair undertakes the design, provision and repair of air and road cargo equipment.

Products include aircraft freight containers, collapsible freight pallet systems, road transport pallets, and more. The team has a wide range of technical skills including for design, fabrication and (aluminium and steel) welding services. The General Engineering Section, in cooperation with Flight GSE in Christchurch, manufactures a range of aviation Ground Support Equipment (GSE), including Air Stairs, Ramp Equipment, Nitrogen Bottle Carts and Engine Dollies. The company also designs and builds aircraft maintenance platforms and steps, aircraft potable water and lavatory carts, fuel drum carts, aviation work benches, and other ramp and airport products including aircraft wheel dollies and baggage trolleys to suit all airlines.

At Palmerston North airport, ground support also extends to aircraft ground handling and refueling services.

### Expanding Operations

Fieldair Engineering is constantly looking at ways to expand their operations to cover all sectors of aviation engineering and general aviation operations.

As recent examples, Fieldair through its subsidiary Air Freight NZ, holds both NZCAA part 121 and 125 certificates, provides the Life Flight Trust with AOC and operations management, staffing of flight crew, and engineering maintenance services for its fixed wing operations. Life Flight Trust provides a 24/7 nationwide air ambulance service transporting critically ill patients who urgently require specialist medical care, often only available at one or

two hospitals in New Zealand.

Fieldair has recently expanded its capability in servicing, maintaining and modifying helicopters with Group 1 and 2 coverage for BK117, BO105, AS350/355 helicopters.

Fieldair, as part of the Freightways Group, also supports the recently introduced Parcelair overnight freight operation that operates three B737-400 aircraft which fly between Auckland, Palmerston North and Christchurch.

### The Flying Squad

The cost of ferry flights as a non-revenue activity is something operators, especially in the South Pacific Islands, seek to avoid. Depending on the work required and regulatory authority certifications, the Fieldair team can carry out service in-house or in the field. This can often be a more cost effective solution than ferrying (especially larger) aircraft back to a base in New Zealand.

### The Fieldair Way

A company doesn't grow from a single Tiger Moth spreading fertiliser, into the large organisation that Fieldair is today, without developing a 'corporate culture' along the way. General Manager of Fieldair Holdings Limited, Charles Giliam says that, "The 'Fieldair Way' embodies much about what it is to be a New Zealander. It reflects an ability to think outside the square and offer outstanding customer service. It shows up in innovative and effective products and the ability to assist operators from Stewart Island to Kiribati. Most of all it embodies the proud history and reliability one would expect from being an industry leader for the last 60 odd years. It's a great legacy to hold on to and one that we're all very proud of."

### For more information

Find out more at [www.fieldair.co.nz](http://www.fieldair.co.nz) or contact the people listed in this article. Fieldair's main office number is 06 357 1149 or email: [fieldair@fieldair.co.nz](mailto:fieldair@fieldair.co.nz)

### Captions:

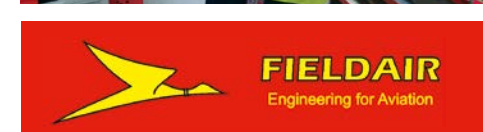
1. Andy Ridler ensuring the right components and paperwork are supplied.
2. Deep Maintenance – two experienced engineers inspect a belt frame.
3. Mat Lee putting the finishing touches to a freshly overhauled Lycoming O-720.
4. Ground Support Equipment manufactured by Fieldair.
5. Precision repairs on an avionics instrument being carried out by Scott Hawthorn.
6. The Life Flight Trust air ambulance, operated by Fieldair on behalf of the Life Flight Trust.



Plenty of variety in the Fieldair hangar: Squirrel, Jetstream, Diamond, DC3...



Ops management, crew and maintenance are provided for Parcelair & others.







## Hamilton Aero Maintenance

**BASED** at Hamilton Airport for over 30 years, Hamilton Aero Maintenance maintains a wide range of aircraft including recreational, charter, agricultural, air ambulances, corporate jets and even airliners.

Widely referred to as HAM Aero, the company has aircraft flying in from all over the North and South Islands and the South Pacific.

Staff also regularly travel to carry out maintenance requirements for their customers which can be as far away as Africa, PNG, Asia and the USA.

HAM Aero have a high ratio of licensed engineers in the hangar as well as skilled tradesmen and trainees. Their engineers hold a multitude of ratings including piston engine, turbo-prop engine and jet engine as well as non-pressurised, fabric airframe, composite and pressurised ratings - ranging from Cessna 150 up to Airbus A340 and B777.

HAM Aero engineers have decades of combined experience and between them hold NZ CAA, US FAA, EASA, Australian CASA and PNG CASA Licences. HAM Aero also have a team of highly skilled contractors who can be called on when required - specialising in structural repairs and modifications. Everything from scheduled maintenance, damage repairs, refurbishment, modifications and STC installs are carried out by the team.

HAM Aero hold NZCAA Approvals up to A1 (aircraft over 13700kg) as well as Supply and Component approvals. HAM Aero also hold Civil Aviation Authority Philippines (CAAP) Part 145 and Department of Civil Aviation Malaysia (DCAM) Part 145 approvals to carry out airline line maintenance at Auckland Airport.

Hamilton Airport is also fortunate to have a number of other support services on the airfield and in the local area including: aircraft electrical, welding, machining, parts and raw material supply, upholstery and composite repair, and a Part 146 design facility nearby. There are also paint facilities available to paint items from individual components up to a complete aircraft. HAM Aero has a range of PT6 and Beech (B200/C90) tooling as well as a fuselage pressurisation rig for tracking down those pesky leaks.

Of course HAM Aero Maintenance sister company Hamilton Aero Avionics is a part of the service offered and the two companies work hand in hand to offer complete solutions.

Whether it's private or commercial, propeller or jet, a single or 300 seater, Hamilton Aero Maintenance's philosophy remains the same - to maintain a total commitment to Quality, Service and Safety for all clients.

### For more information

For all Aircraft Maintenance requirements, give the team at Hamilton Aero Maintenance a call on 07 843 6063, email: hamaero@hamiltonaero.co.nz or visit [www.hamiltonaero.co.nz](http://www.hamiltonaero.co.nz)

## Hamilton Aero Avionics

**Hamilton Aero Avionics** has been a part of the landscape at Hamilton Airport since 1992 when the company was formed by Clive Law-Brown and Hamilton Aero Maintenance. Since then the company (known as HAM Aero Avionics) has provided quality avionics support for a large variety of aircraft. Whether, private, corporate, fixed-wing or helicopter, piston or turbine, the team at

HAM Aero Avionics do it all. Working in conjunction with HAM Aero Maintenance means a complete range of services can be supplied.

HAM Aero Avionics carry out aircraft avionics inspections, defect rectification and bench repairs as applicable. New installations of upgrades and modern 'glass cockpits' are specialties of the HAM Aero Avionics team, who are experts at "doing the (almost) impossible". This

team currently consists of three licenced avionics engineers with Electrical, Instrument and Radio ratings covering gliders and microlights up to B737/Beech 1900, plus two licenced avionics contractors (Beech 1900/Metro 227). Together they can account for over 150 years in accrued aviation experience.

The company represents the majority of GA Avionics manufacturers through its membership with the Aircraft Electronics Association (AEA), an international association connecting thousands of avionics facilities and hundreds of manufacturers.

Due to the micro-engineering of modern avionics many systems now require 'return to manufacturer' for warranty or repair and as approved agents for the leading avionics manufacturers, in the unlikely event of repair being required, HAM Aero Avionics can liaise directly with factories on the customer's behalf.

HAM Aero Avionics also specialise in EMS machines, both fixed and rotary wing for a number of Air Ambulance Trusts, and are currently performing upgrades for new PBN requirements (RNAV and RNP) for both private and air transport operators. This includes Software Configuration Management and Electrical Load Analysis requirements.

HAM Aero Avionics are proud to have recently completed the first private Part 91 RNP installation with CAA approval.

HAM Aero Avionics have already completed some ADS-B installations for the future surveillance systems proposed by Airways and CAA. They also carry out various special op's installation work on agricultural machines.

### For more information

HAM Aero Avionics speciality is tailoring your avionics requirements to suit you and your operation. Contact them on 07 843 1106, email: avionics@hamiltonaero.co.nz or visit [www.hamiltonaero.co.nz](http://www.hamiltonaero.co.nz)



## Plane Torque Ltd. sets up maintenance services at Hastings Aerodrome

**NEWLY** established at Hastings Aerodrome, and with a fresh approach to maintenance provision, is Plane Torque Limited. Director and Licensed Engineer Nic Roberts has recently commenced operations in the old NZ Aerial Mapping hangars, in accordance with his CAR Parts 43 and 66 privileges.

### Customer Focus

Nic is very enthusiastic about taking the opportunity to build up a new business and alongside a long list of existing capabilities, has formulated a strategy to provide a level of

customer-focused service that is sure to attract and retain aircraft into his care.

Nic says he recognises that for operators to be successful in their own business, they need cooperative aircraft maintenance. "In the past, aircraft maintenance provision was straightforward and compliance requirements on operators were not overly complicated. This is fast changing however, and operators are finding themselves inundated with complexity and compliance responsibilities," says Nic. It's Nic's goal to help take care of these requirements and to provide maintenance services in a manner that increases efficiency and minimises costs - whether for private, club, or commercial operators requiring careful availability management. Nic acknowledges that no two operators are the same and is happy to develop tailored customer support solutions with maintenance and pricing plans that suit individual needs.

### Experience and Capability

Having travelled and worked extensively overseas during his seventeen years in the aircraft maintenance industry, Nic has returned home to Hawke's Bay where he grew up and went to school. His career began with six years of service in the RNZAF where he qualified as an Aircraft Tech while posted to 5 SQN. He subsequently gained his LAME qualification and worked throughout

Hawke's Bay maintaining aircraft operating under a variety of rule parts including Parts 91, 115, 135, and 137. These roles provided for a wide range of experience across different aircraft and systems including Cessna, Piper, Beechcraft, Pratt &

Whitney, Lycoming, Continental, and more. Nic has Inspection Authority approval and is licensed for Group 1 & 2 airframes and engines and the PT6A engine series. He has also attained a Massey University Graduate Diploma in Aviation Studies.

Nic's experience includes undertaking major modifications

such as turbine conversions on Fletcher aircraft, installations of High Floatation landing gear systems, aircraft conversions from parachute to ag. operation, engine conversions and engine upgrades within PT6A series engines.

Nic has extensive heavy maintenance experience on PT6A turbine engines within NZ and internationally including hot section inspections, escalation programme management and maintenance, MORE engine programme experience, and Engine Condition Trend Monitoring (ECTM).

Major structural projects such as rebuilds and/or restorations can also be undertaken.

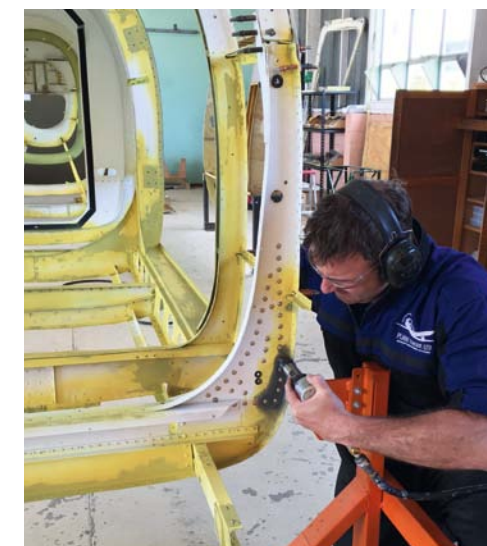
Nic's time spent overseas has involved consultation and maintenance oversight for international ZK registered aircraft, including major modifications and repairs. Nic has also designed and delivered training to international customers on behalf of New Zealand aircraft manufacturers.

### Ready to Meet

Nic looks forward to meeting operators in the Hawke's Bay and wider regional area and invites anyone he hasn't already caught up with, to give him a call whether it be for advice on any issues they have, or to have a chat about the services and support Nic can provide them with. Contact Nic on 021 068 2271 or email: [planetorque@gmail.com](mailto:planetorque@gmail.com) for more information.



Currently in the Plane Torque hangar is this PAL 08-600 Cresco being restored for Aerospread Ltd.



Nic riveting the Cresco's L/H rear wing attachments.

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# Solo Wings expand again at Tauranga

IT'S now 17 years ago that Colin Alexander started a small business at Tauranga Airport, providing professional maintenance services for microlight aircraft. This was a time when most microlight flyers were still do-it-yourself types. Colin's sense of the future has been well proven in the years since, with huge growth in the recreational flying industry and Solo Wings alike. Jointly owned by Colin and Philip Churchill, Solo Wings (2010 Limited)' philosophy has remained much the same; Colin says they still 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.

## Import and Certification Processing

Being located close to the Port of Tauranga means that Solo Wings can provide very efficient import and export services and thus they handle dozens of such projects every year. As an MPI approved sea container transitional facility, Solo Wings staff are qualified to carry out all containerisation tasks for either direction of travel. Incoming aircraft can be assembled at Tauranga and then placed on the NZ register with Solo Wings attending to all certification and paperwork requirements.

A recent arrival of interest was the first Pipistrel Taurus Electro for NZ. This self-launching electric powered glider is based at Tauranga – alongside an almost complete set of other aircraft in the Pipistrel range, also under Solo Wings' care.

## The Aviation Centre and Propeller Pad

The big news of 2016 from Solo Wings has been the development and opening of their brand new facilities; The Aviation Centre and The Propeller Pad. 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, plus autogyros. Look out for more about this in the December issue of KiwiFlyer. Suffice to say Solo Wings can now not only acquire or import your aircraft for you, but also teach you to fly it. This is in fact the case with the current arrival of an Aviat Husky coming in from the USA.

## General Maintenance and SAMMS

Solo Wings have all of the standard facilities in place for professional aircraft maintenance including weight and balance equipment, and dynamic prop balancing tools. They can carry out all manner of composites work on fibreglass or carbon fibre, as well as undertake wood, fabric and metal work from minor repairs to major fabrication.

A separate clean-room contains an engine shop, kept busy in part via their approval as a Rotax overhaul facility. Colin says they have undertaken plenty of engine work over the last 12 months – across the spectrum of types including for radials.

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. SAMMS can also be loaded

with maintenance manuals and instructions for use on the job; for example Cessna SIDs programme details. 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

Solo Wings offer a complete service for recovery, assessment and rebuild of damaged aircraft and receives a steady amount of work from 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.

## 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 regards to safety and education. To this end, they are maintenance providers at the Walsh Memorial Scout Flying School and make regular presentations to Young Eagles groups. In support of their apprenticeship programme, Solo Wings is NZQA registered as a Training Work Place and has two in-house registered Assessors.

Colin also undertakes an annual Solo Wings roadshow (via RAAANZ organised gatherings) presenting maintenance courses throughout the North and South Islands. He is also very involved in writing other national maintenance and safety education material, as well as being active in 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](mailto:info@solowings.co.nz) or visit [www.solowings.co.nz](http://www.solowings.co.nz)



Recently departing the Solo Wings hangar is this good-as-new Citabria, following a complete strip, rebuild, and repaint.

# From Concept to Creation

## High Demand for Flight Structures' Design and Build Services

HAMILTON Airport has been a hive of activity in 2016 with local companies collaborating to develop first-class role conversions and equipment for operators across New Zealand. In their busiest year yet, Flight Structures Ltd. has undertaken projects covering the spectrum of major airframe repairs, through to bespoke airframe modifications, and role equipment development across aero-medical, agricultural and the general aviation sectors.

The company has grown steadily since inception in 2003, recently expanding again to meet demand - relocating to a larger facility and taking on three additional staff. Their workshop now includes a range of metal and composite manufacturing processes, and the company also has numerous accredited sub-contractors available on call to produce componentry when required.

Flight Structures holds CAA Part 146 (Design) and Part 148 (Manufacturing) certificates. CEO Jon Kerr says that the company started its manufacturing division with two goals; "To provide complete solutions for our clients and work on in-house projects. Our competitive advantage lies with design-build prototypes and short run projects where we can leverage off our expertise in design and certification. Our strength is being able to move quickly on our feet to provide entrepreneurial customised products."

Contact Flight Structures on 07 843 1128 or by email via [info@flightstructures.co.nz](mailto:info@flightstructures.co.nz) For examples of STCs, recent projects and much more information, see [www.flightstructures.co.nz](http://www.flightstructures.co.nz)

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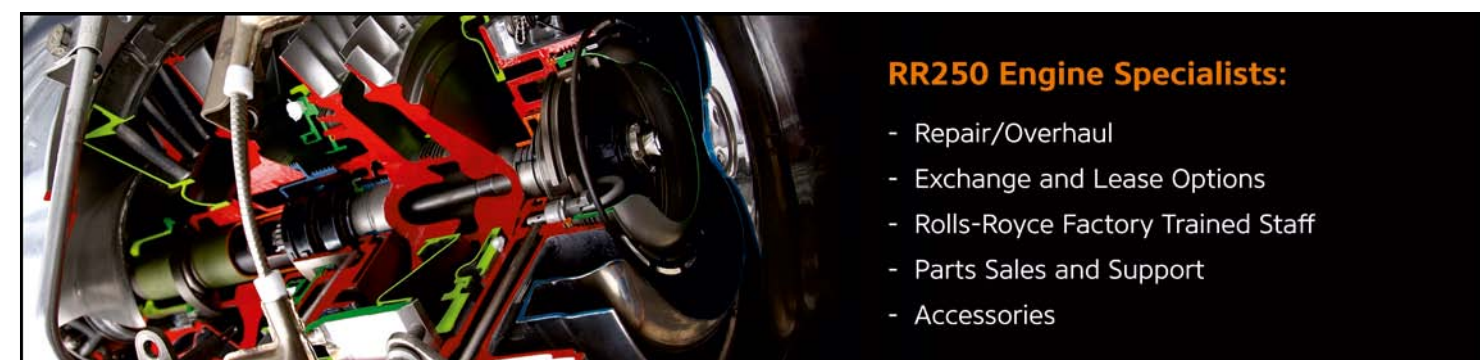
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## Inhibit corrosion by washing with Zi-400 University Laboratory Tests Prove the Benefits

**CORROSION** is very expensive. Ask anyone who has taken their aircraft through a Cessna SIDs programme or a 12 year inspection. Thus it makes a lot of sense to do everything you can to prevent it happening (either at all, or at least so fast) in the first place. We all do our best to keep our aircraft clean, but many owners treat that task as exactly that – a cleaning process. They choose whatever cleaning product looks best from their local automotive store without realising that such products are generally designed only for shine – and that nearly all, by the nature of their chemistry actually cause corrosion in aluminium. All too often, corrosion protection is treated as something you spray on particularly sensitive parts that aren't protected by paint or other coatings.

There's merit in doing that, but the less obvious corrosion can also cost big dollars at overhaul time when almost microscopic pitting on important components puts them out of tolerance for re-use, or when structural skins have to be replaced due to hidden corrosion taking place in crevices and around rivets which has spread to places not obvious on casual inspection.

The best thing you can do for your aircraft and your wallet is to combine the two tasks of washing and corrosion inhibition, by washing with a product that is designed to achieve both, even when the corrosion has already started. One such product, which has undergone extensive

laboratory testing to prove the claims made, is ECO2000's Zi-400 Certified Airframe Cleaner, distributed in NZ by Avclean.

The only products that can safely be used on aircraft are ones that have been tested and conform to aircraft standards. Product data will show if they have aeronautical certification. The basic standards that need to be met are: Boeing D6-17487 REVISION P & D6-7127 REVISION M as well as AMS 1526B & AMS 1550B. Meeting these specifications does not mean that the product is non-corroding. It simply means that the product corrodes the sample at a rate less than what is stated in the specification. The Australian regulator CASA has acknowledged that there are issues with using non-certified cleaning products, as AWB 02-019 states: "The use of non-approved cleaning agents should cease. These agents can damage seals, rubber components and surfaces, leading to corrosion and possible component failures."

### University Laboratory Tested

In July of this year, at the Aircraft Airworthiness and Sustainment Australian Conference, Professor Bruce Hinton of Deakin University in Victoria, Australia, a recognised world figure in corrosion studies, gave a plenary presentation on Corrosion Prevention with Aircraft Washing Detergents. He reported on research the University had undertaken

to compare the corrosion prevention properties of Zi-400 and Zi-400HD airframe cleaners, compared to an untreated sample and another treated with a commonly used detergent promoted as an "Aircraft and Precision Cleaner" which incidentally, passes aeronautical certification. The tests were designed to determine the products' effectiveness as inhibitors of corrosion on aluminium alloys AA 7075-T651 and AA 2024-T351 and SAE 4140 steel in a 0.1 M Sodium Chloride solution.

Tests under constant immersion provided corrosion rate data, and corrosion pit depths. Galvanic couples between the aluminium alloys and copper were used to assess the effectiveness of these detergents in reducing the rate of galvanic corrosion when present at the start of the corrosion process. In another series of galvanic tests, the detergents were added after the corrosion processes were well established. This was done to determine how effective the detergent would be in retarding the growth, if applied, of existing corrosion.

The results were compelling and showed that both Zi-400 and Zi-400HD were very effective corrosion inhibitors under both constant immersion conditions and with the galvanic tests (aluminium alloys). They also significantly reduced the rate of galvanic corrosion when added to an existing corrosion process.

In contrast, the other detergent tested provided some levels of inhibition in the constant immersion corrosion tests, but its effectiveness was very dependent on the alloy type and on concentration. In some cases the presence of this other detergent produced faster corrosion rates than the control solution of 0.1 M NaCl.

With the galvanic tests, the Zi products reduced the corrosion rates by at least a factor of 3, while the other product tested was not as effective. Both Zi products reduced the galvanic corrosion rate for both alloys when added to an existing corrosion process. In comparison the other product tested had no such effect.

### For more information

Visit [www.eco2000.com](http://www.eco2000.com) to find out more about Zi-400 and other products. Contact ECO2000 on +61 7 4095 2928 or by email to: [cleaning@eco2000.com.au](mailto:cleaning@eco2000.com.au)

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## Decades of Experience and a Full Range of Engineering Services at Southair

**LOCATED** at Otago's Taieri Airport, Southair has been maintaining, rebuilding and restoring aircraft since 1964. More than 50 years of history and growth have resulted in an aircraft maintenance organisation that not only embraces latest technologies but also retains traditional aircraft engineering skills.

The company is steeped with history. In the beginning, customers flew fabric covered Piper crop dusters. Nowadays Southair maintains numerous turbine-powered agricultural and passenger planes, as well as a wide range of GA aircraft. An extensive catalogue of fixed and rotary wing services are offered from fabric work through to engine overhaul.

Southair's team of nine engineering/admin staff count more than 170 years of aircraft maintenance experience between them. With such loyalty, they are capable of achieving a wide variety of tasks in regards to all aviation issues.

### Southair Services and Capabilities

Southair's extensive capability list covers ratings for Airframe Group 1, 2, 3, 4 and 7; Rotorcraft Group 1 and 2; Powerplant Group 1, 2, 3 (Allison A250, Pratt & Whitney PT6, Walter/GE M601), and Group 7 (Fixed Pitch Propeller). The Engine Shop staff are specialists in Lycoming, Continental, Gipsy, and Rotax engines and components.

As well as covering nearly everything to do with General Aviation, services include vintage aircraft restoration, full repaints (in a purpose built, heated, 13x13m paint shop), aircraft salvage and repair, engine and components overhaul, NDT, corrosion work, propeller dynamic balancing, pre-purchase inspections, ARAs and more. They have also purchased an Olympus Iplex 2 Borescope for inspecting those hard to get places. Everything from minor repairs, to support for amateur builders, to complex restorations of antique aircraft can be accommodated.

Southair became an approved Robinson Helicopter Company Service Centre many years ago and continues to maintain and overhaul Robinsons and other types.

A large stock of parts are maintained, including legacy Cessna and Piper stock.

Pre-purchase inspections by licensed engineers can be arranged, and a full maintenance control service is available.

### For more information

General Manager Graeme Daniell says that whatever work you need done, Southair can do it and to the highest of standards. Whether you fly a Tiger or a Turbine, Southair would welcome the privilege of looking after your aircraft and undertake to treat it as if it were their own.

Contact Graeme on 027 307 5850, or email: [graeme@southair.co.nz](mailto:graeme@southair.co.nz)



A Cresco in the purpose-built Southair Paint Shop

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# EASA Certification Extends International Capability for Oceania Aviation

ON September 25th 2016 Oceania Aviation celebrated 24 years of operation which is no small achievement in the papyrus thin margins of General Aviation. Throughout those 24 years Oceania Aviation has embraced all facets of GA; initially selling and distributing

parts for rotorcraft before venturing into aircraft sales, aircraft maintenance, and even flying as operators during the early 2000s. The company has always been driven by the entrepreneurial motivations of its Directors, Josh Camp, Jonathan Bowen, Gordon Luke and company CEO, Don McCracken, together

seeking new opportunities to expand capability and improve viability in the competitive General Aviation industry.

Oceania Aviation currently employs more than 160 staff across six New Zealand locations and delivers comprehensive sales and support services to customers all around the globe. It is with a view towards international markets that Oceania Aviation now foresees its future opportunities. Company CEO Don McCracken says that "As one of the largest players in the domestic market, we have a responsibility to New Zealand GA to grow Oceania Aviation's presence in the Asia-Pacific region and bring international business back to New Zealand. We have always had some presence with our aircraft sales capabilities, but it is now time to expand beyond aircraft sales and establish our world class MRO facilities within that market space."

First evidence of this strategic shift towards Asia Pacific is the expansion of EASA Part 145 capability through Oceania Aviation's Composite Structures, Turbine and Component Overhaul shops. The EASA Certification process involves an extensive audit of applicants, requiring investment from all relevant departments and was overseen by the company's Quality Assurance team. Oceania Aviation's Safety Manager, Armin Sadafi managed Oceania's application, which included the EASA Part 145 application along with the company's Maintenance Organisation Exposition which ensures full compliance with the applicable requirements and the relevant EASA instructions. This was an arduous process which included a number of compliance audits to ensure facilities, documentation, tooling, equipment, material, components and personnel were reviewed and audited - and complied with all applicable EASA Part-145 and EASA Part-M requirements.

Being awarded EASA certification enables Oceania Aviation's Blade, Component and Turbine divisions to issue EASA Part 145 Authorised Release Certificates (Form Ones) after the completion of maintenance services, which are recognised internationally and accepted by many Civil Aviation Authorities and regulators

around the world. The addition of these capabilities to Oceania Aviation's existing EASA certified Piston Engine Overhaul services enhances their international reputation as a maintenance provider and endorses their processes and facilities as world class. Don

McCracken emphasises the achievement as a significant team effort, saying that "Extension of the EASA Capability was a goal we set ourselves as a company in 2014 and to have achieved it is a reflection of the quality of our team and the processes we have developed to ensure Oceania Aviation is globally competitive."



Oceania Aviation: EASA Certified



## For more information

To find out more about Oceania Aviation's extensive maintenance services throughout NZ, phone 09 296 2644, email: [oceania@ohl.co.nz](mailto:oceania@ohl.co.nz) or visit [www.oceania-aviation.com](http://www.oceania-aviation.com)

## Oceania Aviation's EASA Certified Capabilities

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### Component Overhaul

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- Sikorsky 300 transmission, gearboxes, and dampers repaired and overhauled

### Piston Engine Overhaul

- Lycoming and Continental Approved Service Centre
- Three Engine Shops across New Zealand

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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..."

## Servicing Requirements

As you would expect, there are some servicing requirements that need to be taken care of. Bryn Lockie of WAP specialists Leading Edge Aviation explains that all brands have a six year repack requirement. However 'repack' is a bit of a misnomer as there is more to it than that. The chute is pulled out, inspected, updated with any applicable revisions, refolded and packed. Most are pressed in special packing shells with up to ten tonnes of force applied to get them to conform to the container and minimise the space taken by the unit.

All European brands have a six year rocket life and BRS has a 12 year rocket life.

BRS STC'd units for certified aircraft have a 5 year line cutter replacement and a 10 year repack/revision/rocket life.

Leading Edge handles repacks/revisions for most units with

sport BRS units done in house. Galaxy/GRS, Magnum/Stratos07/Junkers are handled

for repack/revision in Europe and imported back as explosive items. They can also offer exchange repacked/revised units for certain models. Bryn says that BRS units have the lowest ongoing maintenance costs.

## Importing and handling

When the parachute system including rocket is installed in an aircraft, the rocket is exempt from explosive regulation. However when a repacked item is imported it no longer has that exemption and is subject to the full requirements of the Explosives Regulations.

Leading Edge has the necessary classes of explosive importation, handling, storage and supply licences, and the specific approvals required for each explosive 'article' (rocket).

## For more information

Based at West Auckland Airport Parakai, Bryn Lockie at Leading Edge can handle all your Whole Aircraft Parachute System needs, whether a casual query, attending to servicing, or a full new installation. Contact Bryn on 09 973 5119, [info@LEAV8.com](mailto:info@LEAV8.com) or visit [www.WestAucklandAirport.co.nz](http://www.WestAucklandAirport.co.nz)



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# Ardmore Warbird Happenings

IN MY previous article a couple of months back I wrote about the purchase of the new Hangar Facility for the Warbirds Association. With summer supposedly around the corner, I had hoped to write in this issue about some flying activity. However, if you reside north of say Picton you will know we have endured one of the wettest springs on record so flying has been more than a challenge over past weeks.

The first event the Weather God frowned on was the annual Battle of Britain Memorial Service Flypast at the Auckland Cenotaph in September. We all know that September is closer to winter than summer and this particular event is a 50/50, however being optimists we always plan for a successful day. For 2016 let it be recorded

that the planes were ready, the pilots were ready, the BBQ was set up but alas, the hangar doors remained closed to keep the horizontal rain out. Indeed most weekends have been less than suitable flying weather, and as my old instructor said, "only thing you can do about the weather... nothing".

The upside to this of course is we have had plenty of non-flying time for 'Hangar Bees' to tidy up the new facility, turning the house into the home if you like. There have been a number of jobs; developing a gift shop, painting and sprucing up the hangar interior and developing the first of the mezzanine display areas in readiness for migration of the current Visitor Centre.

I must congratulate the erstwhile band of volunteers who have cheerfully turned out for the past five-plus weekends to make this happen. Suffice to say preparing and painting 100 metres plus of 3 metre walls is not to be taken lightly.

We have moved the first aircraft into the hangar, the A-4 Skyhawk taking pride of place at the entrance. We aim to have a varied and interesting selection of our fleet on display within the next few weeks, coincident with the first components of the Visitor Centre move.

Looking ahead, the Association is well down the track of planning our next Open Day on November 13. This will take the form of previous Open Days; three one-hour flying slots throughout the day displaying a variety of our hardware. We have been running these events twice yearly for a number of years. They serve a number of uses; an opportunity for the Association to present ourselves to the Public, an opportunity for our pilots to fly their displays over our home field, and

perhaps most importantly an opportunity for a family day out at minimal cost. We require about 2000 through the gates to cover the cost of operation and money raised above that goes towards assisting with a variety of projects - developing our new hangar currently a high priority.

The theme of this Open Day is 'Armistice Day'. We feel at this time of the year it is appropriate to commemorate the end of the Great War, more so as we are in the centenary of that epoch of modern history. We are hopeful (weather permitting) to have a special display item on show - can't say any more.

The next item on our social calendar is the Members' Grand Opening of the new Hangar. This will be a dress-up function for members to christen the facility and also double up as our Christmas 'Do'. Following this event we will be established in the 'Silly Season' before looking forward to a relaxing summer holiday. It is planned to have a more formal opening of the new hangar in the New Year.

## Other 'Happenings'

The high point has to go to the successful flying of the Mosquito rebuild recently completed by Avspecs Ltd, the second in two years. This flight was at the mercy of the aforementioned unsavoury weather and went without a hitch, testimony to the skill and dedication of the people involved. Once again it is destined for the US. I'm just going to continue with those Lotto tickets!

To the low point. Many readers will be aware of the unfortunate 'belly landing' of the 'new' T-28 Trojan in late September. This aircraft which is owned



First residents in the new NZ Warbirds Association hangar at Ardmore.

by a Christchurch-based member had been on rebuild following its import from the US as an advanced project. On the test flying programme the pilot, (CFI Dave Brown) found he could not activate the undercarriage selector. In layman's terms it was jammed in the up selection. Despite considerable trouble shooting, including calls to Australia and anyone who may have known 'something', the problem could not be resolved so the unenviable decision was made to complete a wheels-up landing. With emergency services on standby 'Brownie' made a text book touchdown on the old '07' runway. As one observer noted; "smartass", he even put it bang on the centreline! Ironically, once on the ground and lifted off the runway the Engineers were able to dislodge the jammed lever with more brute force than could be achieved in the cockpit and you guessed it, the gear came down. Bugger!

On a brighter note, the de Havilland folk had a successful fly-in at Taumaranui (15/16 October). This annual event masquerades as the Tiger Club's AGM and this year's event also celebrated 70 years since the first flight of the deHavilland Chipmunk trainer. A good number of these delightful aircraft turned up. While not one to gossip, word is there may also have been a high speed 'event' by a certain propeller-less deHavilland type

That wraps up an uneventful but eventful couple of months. Now for some better weather and flying prior to Christmas.

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Still maintaining working aircraft in the Central North Island, 10 kms from Taupo. No transponder. No NDSB. No problem.

### Contact Roger at HELISPECS

027 498 2812 or [heli@helispecs.co.nz](mailto:heli@helispecs.co.nz)



**ZK-HHA Bell UH-1B**

**Beck Helicopters Ltd**, who CEO/Chief Pilot Allan Beck QSM says are currently the longest serving helicopter operator in New Zealand (established in 1972), purchased this UH-1B from Osborne Aviation in Stanley, Tasmania, at the end of 2015. It



was on the US register, then was put onto the Australian register and now has just come onto the NZ register. HHA has had an interesting history, including being the test 'vehicle' for the NASA strakes modification on the tail boom. It also was one of the first to have a Commercial 204B tail boom and long main rotor blades installed under an STC.

Allan says the aircraft was purchased as a spare to complement their other two flying Hueys, and as a fill-in until the fourth Huey (HHU) purchased a few years ago is brought online. It will be used for all of the company's extensive aerial work operations including agricultural, fire fighting and construction. It will be fitted out over time with the many modifications unique to BHL's operations, and will be a valuable backup machine for pressure times such as fire fighting.

**ZK-PHL Vans RV-10**

**WHEN** I asked Phillip Anderson to describe his new RV-10 he said well "it's just cool". That pretty much sums up this very smooth, fast, four seat aircraft. Phillip has been flying a Piper Warrior and decided it was time to move up in aircraft so he



contacted the owners of the only other RV-10 in NZ, Neil and Sarah from Bulls, who invited him over and took him flying. Phillip says he was blown away with the performance of their aircraft.

He then went on to purchase and organise the transit flight of ZK-PHL, which was VH-ICY built in 2008. Powered with a six-cylinder fuel injected 260 hp Lycoming IO-540 engine this RV10 cruises along at 160kts. Like other RVs, the RV-10 has an impressively low stall and landing speed. It is also a very responsive plane, but at the same time stable and easy to fly.

VH-ICY had enough fuel capacity and speed not to require extra fuel tanks for the trans-Tasman flight from Brisbane via Lord Howe and Norfolk Islands to Auckland. Phillip met the aircraft in Auckland and flew down with the ferry pilot to Hawera where the aircraft will be hangered – and no doubt very regularly flown.

**ZK-KUB Cub Crafters CC11-160**

**Jim Richmond**, of Cub Crafters, is one of those fortunate people who have made a successful career of something they love. In Jim's case, it's a deep appreciation of an iconic airplane: The Piper Super Cub.



Back in 1980 Jim made the decision to sell his business and switch to rebuilding Super Cubs. Cub Crafters was thus born. More recently, in response to the creation of the LSA class, Cub Crafters developed the 100-horsepower Sport Cub and the new 180 hp (and very STOL) Carbon Cub SS.

This impressed Don Hudson, from Geraldine, as he had seen two Carbon Cubs flying down at Wanaka and decided this was the aircraft that would suit his needs. He contacted the US agent but this avenue was deemed too expensive, then he noticed one advertised in Australia. VH-OOA was an ex-demonstrator in Melbourne whose owner had retired from being the agent and decided to sell. Don went over for a week to see and fly the aircraft. A price was decided upon and the arrangements put in place to have the aircraft shipped to Dunedin where Callum Smith from Wanaka, took care of the reassembly.

**ARRIVALS - July/August 2016**

AIE	De Havilland DH 82A Tiger Moth	Royal New Zealand Air Force	Bulls	Aeroplane
ART	Tecnam P2008	Excalibur Trust	Ohope	Microlight Class 2
DBC	Zenair CH701 SP	Mr J A Herlihy	Ranfurly	Microlight Class 2
DEU	Czech Aircraft Works Sportcruiser	Mr D J Urquhart	Upper Moutere	Microlight Class 2
DMB	Vans RV 12 UL	Private Owner		Microlight Class 2
DPC	Gippsland GA200C	Patchett Ag-Air 2015 Limited		Aeroplane
DUZ	Thrush S2R-T34	Southern Aviation Limited		Aeroplane
FCX	Cessna T206H	Oceania Aviation Limited		Aeroplane
FHC	De Havilland D.H. 98 Mosquito T.III	AVSpecs Limited		Aeroplane
FSR	Gippsland GA8	Stark Airlines Limited		Aeroplane
GBH	Schempp-Hirth Ventus-2a	Mr R M Gaddes		Glider
HBZ	Eurocopter EC 130 B4	Heletranz Limited		Helicopter
HHA	Bell UH-1B	Beck Helicopters Limited		Helicopter
HJH	Westland Westland Bell 47G-3B-1	Mr C J Marsden		Helicopter
HJZ	Eurocopter AS 350 B2	Airwork (NZ) Limited		Helicopter
HKR	Bell 206B	Beck Helicopters Limited		Helicopter
HOL	Hughes 369FF	Airwest Helicopters Limited		Helicopter
HPE	Eurocopter AS 350 B2	The Alpine Group Limited		Helicopter
IEM	Eurocopter EC 130 T2	North Shore Helicopters Limited		Helicopter
IER	Eurocopter AS 350 B2	Heliventures NZ Limited		Helicopter
IGT	Bell 206B	Helicopters South Canterbury 2015		Helicopter
IHQ	Eurocopter AS 350 B2	Helicopters Queenstown Limited		Helicopter
IWE	Eurocopter AS 350 B2	Helicopters Queenstown Limited		Helicopter
IZP	Eurocopter AS 350 B	Oceania Aviation Limited		Helicopter
KDD	Pacific Aerospace 750XL	Pacific Aerospace Limited		Aeroplane
KDE	Pacific Aerospace 750XL	Pacific Aerospace Limited		Aeroplane
KDG	Pacific Aerospace 750XL	Pacific Aerospace Limited		Aeroplane
KTF	Just Aircraft SuperSTOL	Mr F A Fullerton-Smith		Microlight Class 2
KUB	Cub Crafters CC11-160 UL	Ardleigh Farm Ltd		Microlight Class 2
LSW	Rans S-6ES Coyote II	Mr J H Richards		Microlight Class 2
MCQ	Just Aircraft Highlander	Mr N J McHugh		Microlight Class 2
MVM	ATR-GIE ATR 72212A	Mount Cook Airline Ltd		Aeroplane
MVN	ATR-GIE ATR 72212A	Mount Cook Airline Ltd		Aeroplane
NZI	Boeing 787-9	Air New Zealand Ltd		Aeroplane
PAT	Boeing 737-4Y0	Airwork Flight Operations Limited		Aeroplane
PHL	Vans RV 10	Mr P G Anderson		Amat Built Aeroplane
PKR	Cessna 177B	Mr S I Parker		Aeroplane
RBC	Aviat A-1B	H & R Alexander Family Trust		Aeroplane
RGB	Tecnam P92 Echo Classic	Canterbury Recreational Aircraft Club		Microlight Class 2
RNZ	North American Harvard 2A*	Royal New Zealand Air Force		Aeroplane
RUN	NA Rotorwerks Pitbull SS	Mr B S Taylor		Microlight Class 1
TLL	Boeing 737-484	Airwork Flight Operations Limited		Aeroplane
VIX	Bellanca 17-30A	Mr G R Richards		Aeroplane

**TRANSFERS - July/August 2016**

BAD	Cessna A150L	BAD Partnership	Whangarei	Aeroplane
CDF	Morane-Saulnier MS 885	Mr H T H Davison	Culverdon	Aeroplane
CET	Alpi Aviation Pioneer 200	Mr R Tai	Kawakawa	Microlight Class 2
DCM	Piper PA-34-200	AHBA Limited	Hastings	Aeroplane
DES	Vans RV 7	Barry Family Trust	Warkworth	Amat Built Aeroplane
EAJ	Raytheon 1900D	Manila Aerospace Products Trading	Phillipines	Aeroplane
EBX	Piper PA-28-181	Flight Hauraki Limited	Auckland	Aeroplane
EEF	Gardner GY-20 Minicab U/L	NL Furmage & SB Leves Partnership	Strafford	Microlight Class 2
EWV	Aerospool Dynamic WT9	EVVV Partnership	Pictou	Microlight Class 2
FCO	Cessna 152	Nelson Aviation College Ltd	Motueka	Aeroplane
FDB	Flight Design CTLS	Mr L P Spicer	Hamilton	Microlight Class 2
FPQ	Micro Aviation B22 Bantam	Mr H B Crowe	Rangiora	Microlight Class 2
FUZ	Aerospool Dynamic WT9	Mr K J Slattery	Rangiora	Microlight Class 2
FVR	Grumman American AA-1C	Mr D C Stringer	Porirua	Aeroplane
FXO	Quicksilver Sprint II	Mr G J Carlson	Huntly	Microlight Class 2
GDN	Schleicher K 7 Rhoadler	GDN Syndicate	Temuka	Glider
HBI	Eurocopter AS 350 BA	Fox Franz Heliservices Limited	Franz Josef Glacier	Helicopter
HBR	Eurocopter AS 350 BA	Helilink Limited	Auckland	Helicopter
HCE	Robinson R66	Precision Helicopters Limited	Upper Urenui	Helicopter
HDZ	Hughes 369D	Fox Franz Heliservices Limited	Franz Josef Glacier	Helicopter
HFL	Robinson R22 Beta	Wild Animal Management Limited	Manapouri	Helicopter
HGE	Airbus Helicopters MBB-BK117 D-2	Fox Franz Heliservices Limited	Franz Josef Glacier	Helicopter
HHM	Eurocopter AS 350 B	Fox Franz Heliservices Limited	Franz Josef Glacier	Helicopter
HHO	Hughes 369D	Fox Franz Heliservices Limited	Franz Josef Glacier	Helicopter
HIQ	Bell 206B	Positano Helicopters Limited	Dunedin	Helicopter
HKI	Hughes 369HS	Fox Franz Heliservices Limited	Franz Josef Glacier	Helicopter
HMD	Eurocopter AS 350 B2	Southern Lakes Helicopters Limited	Te Anau	Helicopter
HNI	Hughes 369D	Fox Franz Heliservices Limited	Franz Josef Glacier	Helicopter
HOH	Robinson R44 II	Fox Franz Heliservices Limited	Franz Josef Glacier	Helicopter
HOI	Eurocopter AS 350 B2	Central South Island Helicopters Ltd	Oamaru	Helicopter
HOJ	Hughes 369D	Hill Country Helicopters (1986) Ltd	Wanganui	Helicopter
HPB	Airbus Helicopters MBB-BK117 D-2	Pacific Helicopters Ltd	Papua New Guinea	Helicopter
HPX	Robinson R22 Beta	Station Air Limited	Ashburton	Helicopter
HQG	Eurocopter AS 350 B2	Van Asch Wines Limited	Queenstown	Helicopter
HSC	Hughes 369E	Otago Airspread Limited	Mosgiel	Helicopter
HSE	Eurocopter AS 350 B	Fox Franz Heliservices Limited	Franz Josef Glacier	Helicopter
HSZ	Hughes 369HS	Fox Franz Heliservices Limited	Franz Josef Glacier	Helicopter
HVT	Hughes 369D	Fox Franz Heliservices Limited	Franz Josef Glacier	Helicopter
IBO	MBB BO 105 CBS-4	Enora Holdings Ltd	Seychelles	Helicopter
ICR	Eurocopter AS 350 B2	Fox Franz Heliservices Limited	Franz Josef Glacier	Helicopter
IDD	Hughes 369D	Fox Franz Heliservices Limited	Franz Josef Glacier	Helicopter
IDN	Eurocopter EC 130 B4	North Shore Helicopters Limited	Auckland	Helicopter
IEP	Eurocopter AS 350 B2	Heli Tours Limited	Queenstown	Helicopter
IFA	Bell 206L-3	Anderson Helicopters Limited	Hokitika	Helicopter
IGA	McDonnell Douglas 500N	Glacier Country Helicopters Limited	Franz Josef Glacier	Helicopter
IIF	Guimbal Cabri G2	Tauranga Helicopter Training Ltd	Mount Maunganui	Helicopter

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## from previous page

INM Hughes 369E  
INS Canadian Home Rotors Safari  
IOA Robinson R66  
IOK Robinson R44 II  
IWB Robinson R44 II  
IXT Robinson R66  
IZY Robinson R44 II  
JGA Piper PA-31  
JNW Pitts S-1 Special  
KRA Saab-Scania SAAB SF340A  
LAB Cessna R182  
MAG Cessna 172P  
MDF Cessna 152  
MOF Europa Europa Classic UL  
MUM Cessna A152  
RVS Vans RV 12 UL  
SIK Cessna 170B  
SNJ Monnett Sonerai IIS  
TBO Cessna T182T  
TFH Thruster Aircraft Thruster T500  
VIP Piper PA-31-350  
WWW Piper PA-28-161  
YZD Cessna 510

The Caterpillar Trust  
Mr P F Sugrue  
Heliworx Aotearoa Limited  
Fox Franz Heliservices Limited  
Heli-Hire Limited  
Heliworx Aotearoa Limited  
Fox Franz Heliservices Limited  
Flight Hauraki Limited  
Mr D F R McMillan  
Air Chathams Limited  
Ryan Place Limited  
Airline Flying Club (Inc)  
NZICPA  
Mr P E G Richards  
Cessna A152  
Ottago Aero Club (Inc)  
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Mr E J Grooby  
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Skyline Aviation Limited

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Rotorua  
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Auckland  
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## DEPARTURES - July/August 2016

EAJ Raytheon 1900D  
EAM Raytheon 1900D  
EHQ Piper PA-39  
ELE Kifox Kifox Lite Squared  
HHX Eurocopter AS 350 B2  
HLA Robinson R44 II  
HNC Schweizer 269C-1  
HPB Airbus Helicopters MBB-BK117 D-2  
HUG Eurocopter AS 350 BA  
HWL Robinson R22 Beta  
HZZ Eurocopter AS 350 BA  
IBU Vertical Aviation Hummingbird  
IHP Agusta AW139  
JMJ Martin Aircraft P12  
NCK Boeing 767-319  
UPX Piper PA-34-220T  
WLT Zlin Z-137T

Manila Aerospace Products Trading  
Kampala Executive Aviation (M) Ltd  
Mr E F Smith  
Mr R Tait  
Helilink Limited  
Mr D A Rivers  
HFT Limited  
Pacific Helicopters Ltd  
Garden City Helicopters Limited  
Crown Rock Farm Limited  
Search And Rescue Services Limited  
Johnson Aviation Importers Ltd  
HNZ New Zealand Limited  
Martin Aircraft Company Ltd  
Air New Zealand Ltd  
Roc On Aviation Limited  
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Cook Islands  
Kawakawa  
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Papua New Guinea  
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Tapanui  
Taupo  
Brightwater  
Nelson  
Christchurch  
Auckland  
Wellington  
Oxford

Aeroplane  
Aeroplane  
Aeroplane  
Microlight C2  
Helicopter  
Helicopter  
Helicopter  
Helicopter  
Helicopter  
Helicopter  
A/B Helicopter  
Helicopter  
Microlight C1  
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The fuselage is welded 4130 tube steel with fabric covering and most other components are made of light-weight carbon fibre. The wings are fitted with vortex generators for low-speed flight control. The engine in ZK-KUB (very appropriate registration) is a 180hp Titan that gives a cruise of just over 90 kts and climbs out at 1500 feet per minute. Don is really enjoying flying this aircraft. He says it's nice to fly, handles turbulence well and he is enjoying the short take-off and landing capabilities. Don's aircraft will be kept at home on the farm in Geraldine - ideal for checking on the stock.

## ZK-DEU Czech Aircraft Works Sportcruiser



Another fast Class 2 microlight flew for the first time in NZ recently after being imported by Don Urquhart of Upper Moutere. ZK-DEU is a Czech Aircraft Works Sportcruiser.

Don had previously flown Alistair Hart's Sportcruiser and other aircraft, and found that he liked the Sportcruiser the best. He describes it as "perfect". The aircraft was reassembled by Solo Wings in Tauranga and then Don and Alistair had a very enjoyable flight back to the South Island in DEU's roomy cockpit. This Sportcruiser is powered by a 100 hp Rotax 912 with an inflight adjustable propeller and cruises at 120 kts using 18 litres per hour. The aircraft is fitted with GPS and other avionic systems, as well as a ballistic parachute.

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## The KiwiFlyer Events Guide

## Flying NZ Regional &amp; National Competition Dates for 2016-2017

Nov 5: Cook Strait Region at Kapiti Coast Airport  
Nov 12: Alpine Region at Omapa Airfield  
Nov 19: Lake Region at Balclutha Airfield  
Nov 26: Northern Region at Mercer Airfield

January 1st

## Wings Over Woodville Fly-in

At Athbey Farm. The 12th Annual New Year's Day fly-in and world's first annual aviation event. Be in time for a \$10 midday lunch. More details from Colin MacMillan, phone 06 328 7882 or 027 451 5817 email: macmillan@inspire.net.nz

January 11th - 25th

## 51st Walsh Memorial Scout Flying School

Annual two-week flying school for Scouts and other young people at Matamata Airfield. More information at [www.scouts.org.nz/walsh](http://www.scouts.org.nz/walsh) email: [walsh@scouts.org.nz](mailto:walsh@scouts.org.nz) or phone David Jupp on 021 476 676.

January 21st

## Classics of the Sky

Tauranga City Airshow. This year's focus is Jets in the Air plus a Hot Rod and Dragster Show. Gates open 1pm. Displays start at 4pm. More details from Classic Flyers 07 572 4000, [airshow@classicflyersnz.com](mailto:airshow@classicflyersnz.com) or [www.tcas.co.nz](http://www.tcas.co.nz).

January 28th

## Stratford Aero Club 85th Birthday

Contact details can be found on Stratford Aerodrome blog <http://blogspotbigsky.blogspot.co.nz/> Or contact Nick Furnage [bigsky4394@gmail.com](mailto:bigsky4394@gmail.com)

January 28th - 29th

## NZ Autogyro Association Fly-in

And AGM at Dannevirke. Details on [www.autogyro.org.nz](http://www.autogyro.org.nz)

February 4th - 6th

## SAANZ Great Plains Fly-in Ashburton

Annual summer fly-in with competitions, AGM, annual dinner. Contact Gavin Magill on 027 291 0525 E: [admin@saa.org.nz](mailto:admin@saa.org.nz) [www.saa.org.nz](http://www.saa.org.nz)

February 4th

## Healthy Bastards Bush Pilot Champs

At Omaka, Blenheim. Contact Craig Anderson on 029 890 4910 or [craig@soundsaero.co.nz](mailto:craig@soundsaero.co.nz)

February 13th - 19th

## 2017 Flying NZ National Champs

at Taumarunui Airfield as follows:

Feb 13 Arrival  
Feb 14 Practice  
Feb 15 Aerobatics  
Feb 16 Wildcard, Nav and Low level

Feb 17 National Championship Events  
Feb 18 Professional Pilot Events  
Feb 18 Microlight Events  
More information at [www.flyingnz.co.nz](http://www.flyingnz.co.nz)

February 17th - 19th

## Wings Over Wairarapa Air Festival

All types of aircraft on the ground and flying. Featuring the debut display of the new RNZAF Black Falcons. Three day passes include entry to Ohakea the following week. More info from [www.wings.org.nz](http://www.wings.org.nz)

February 24th - 26th

## RNZAF Ohakea Airshow

A not-to-be-missed airshow celebrating 80 years of service to New Zealand by the RNZAF as an independent armed service. The three days will be jam-packed with displays from the RNZAF fleets, joined by several aircraft from international Air Force partners. More details to follow.

April 14th - 16th

## Yealands Classic Fighters Airshow Omaka

At Blenheim. This year's theme is Racing Through Time. With displays by Reno racing champion Steadfast. Also includes Knights of the Sky Great War Exhibition. [www.omaka.org.nz](http://www.omaka.org.nz)

To add your event to this list, send an email to [michael@kiwiflyer.co.nz](mailto:michael@kiwiflyer.co.nz) or phone 09 279 9924

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# Places to Go: Karamea

**KARAMEA** is set quietly in the northwest of the South Island and with the mild climate and natural scenery it has a real 'off the beaten track' feel. Getting there is a 1.5 hour drive from Westport or to fly in, the Karamea airfield is available for use without permission of the operator. Landing fees are \$10 payable on the day and the main runway 01/19 is sealed with a 0.4 slope uphill to the north. The frequency is unattended 119.10. Avoid the grass in times of wet.

Recently I spent a week in this wonderful area and what struck me was the natural feel of the place and how friendly the people were. On arrival we stopped at the information centre also lending itself to a local book and craft shop. The ladies were super-friendly and explained we could hire a rental car from Karamea Express for \$75 a day, ph 03 7826 757.

Karamea's main street is spread out with a small shopping area near the info. centre. We visited a second hand shop, which doubled as an organic or alternative food store and opposite that was the General Store that doubled as the Post Office. These stores are like stepping back into the '50s, not unlike the other end of the Heaphy track (well over 400kms drive away) where there is the Langford Store, in Bainham, run by the same family since 1928.

The Heaphy and Wangapeka tracks draw many travellers but there are also lots of stunning shorter walks and natural limestone sites that are a big draw card for holidaymakers. We picked up a sheet on the walks at the Info Centre and I carried the dog-eared remains of it back home, as we followed the walks it mentioned.

Further along the main road is the Domain camp ground which is tidy and reasonably priced. Another option I saw was a sustainable backpacker called Rongos which was recently featured on TV – where guests can purchase a meal which is grown on the property. The other accommodation is called The Last Resort; this has beds for all budgets and would be ideal for a romantic or family getaway. Both will pick you up from the airport and The Last Resort also has a lovely dining area where you can sit and enjoy the tranquility. They also offer hot showers for passing walkers and bikers for a very reasonable \$5.

Two natural formations that you



Karamea Airfield Arrivals.



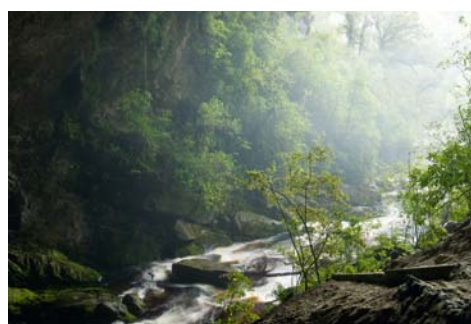
Ruth at the start of the Heaphy Track.



Underway on the Heaphy Track.



Karamea rush hour.



Majestic New Zealand forest.

must visit are the Oparama Arches and the Honeycomb Hill Caves. Both are impressive limestone formations surrounded by truly impressive native bush. The road to the arches is very narrow and windy and really only suitable for a car or 4wd. The caves have extinct bird bones such as the Moa and the Arches have eight short walks to do in the area. Carry on north to visit Kohaihai, which is 3km beyond the Council road and the start of the Heaphy Track. There is a lovely DOC camping ground there, which is a photographers dream, beside the roaring Tasman Sea.

We walked the first two hours of the Heaphy track that is along picturesque coastal land covered in Nikau Palms (the southern-most growing palm in the world). Early Maori used it for waterproof thatching for their buildings, ate the young flower clumps, (raw or cooked) and used the leaves to wrap food in for cooking.

Situated in the Kahurangi National Park, the area is steeped in history. Maori lived on the coast from early days - they are thought to have arrived around 1500. Bones of the Giant Haast Eagle have been found in Karamea's extensive limestone caving systems. Gold mining attracted the first Europeans in the 1860s and first settlement took place in 1874.

There was a natural harbour, which was initially the only contact with the outside world until the road was opened to Westport in 1916. Immigrants arrived from England with a small group arriving from Shetland Islands. The Murchison Earthquake of 1929 silted up the harbour so it was no longer of any use and also closed the road for about two years. Farming was a major industry as well as timber and flax, but dairying was the mainstay with the first factory opening in 1911. Today dairying is still the main income for the region along with tourism and horticulture.

This area is much like Fiordland and Stewart Island, in the fact that not many of us have managed to visit. I highly recommend you plan a trip here and if you have a nose for a good story read 'Kahurangi Calling' By Gerard Hindmarsh, a compelling blend of natural and social history of the area. (Ed's note: He also wrote Swamp Fever which is a very enjoyable read too.)

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