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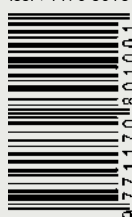
Magazine of the New Zealand Aviation Community

Issue 42 2015 #5

**Kiwi Flyers'
Winter Escapes
to Oshkosh,
Reno and the U.K.**

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**Supply & Maintenance Annual Guide
When the Vulcan Visited
The HIMS Programme in NZ**

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From the Editor

If this is the 42nd edition of KiwiFlyer we must have been producing the magazine for seven years now. Happy birthday to us! The first issue came out in October 2008 which seems both a long time ago, and also a little like yesterday. Certainly a lot has happened in-between. From the magazine's point of view, some great contributors have joined the team over the years. I surely couldn't put each issue together without the varied and interesting material that magically arrives at my desk. Much thanks to you all. And thanks too, to a very loyal collection of advertisers who are a pleasure to work with and to help promote via these pages. Several thousand copies of KiwiFlyer are sent out for free, every issue, to all aircraft operators and aviation businesses in New Zealand and it is of course the advertising support that funds this distribution. We know our readers support the advertisers within, so our thanks goes out to you all as well.

This issue features our annual Guide to Aviation Supply and Maintenance. Numerous maintenance organisations have been profiled, providing updates of the year that was and of new services and products now offered. There are several who have undertaken significant demand-driven expansion during the last 12 months, a sign that the health of our industry is improving, and particularly a sign that these organisations are doing something exactly right within it.

This time of year is when a lot of fair-weather recreational fliers dust off the logbook and take up their sport again for summer. If that's you, then do spend some time with an Instructor to polish the skills up first. Speaking from experience, not only will you be safer as a result, you'll feel more relaxed and enjoy your flying more too - which of course is what it should be about in any case.

Our other feature in this issue of KiwiFlyer is based on our various contributors' winter holidays. Frank went to Reno, and so did Penny. John went to Oshkosh. Gavin went to several aviation events in the U.K. And your Editor stayed home. In hindsight, that hardly seems fair. They had some great times away, and returned with some excellent photos and stories of their travels. These events are on the to-do list of many Kiwi Flyers and I expect the articles in this issue may well be just the nudge that some readers need to book a trip for themselves next year.

Enjoy your reading. Fly safe.

Michael Norton
Editor, KiwiFlyer Magazine

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Front Cover: The Avro Vulcan, photographed in the UK by Gavin Conroy last month prior to its final flight.





Industry News Briefs

NZ Aviation invests in Silentium 172

The New Zealand Aviation Flying School based at Matamata is the first recipient of Oceania Aviation's Turbo Diesel Silentium Series Cessna 172 aircraft.



The Silentium 172, which is powered by a Continental Diesel CD-155, was first launched at the AIA Aviation Summit in June 2015 and since then has been demonstrated to several interested parties throughout the country.

Larry Jooste, Oceania Aviation's champion of the Silentium Series says, "It is pleasing to see the first sale go to the flight training market, where the cost saving benefits and improved performance of the Turbo Diesel will be most appreciated by the aircraft's new owners."

Turbo Diesel has often been promoted as the future of GA with manufacturers such as Diamond and Cessna moving toward the technology. Oceania's Silentium 'upgrade' option is sure to be on the radar of a good many more operators in NZ and overseas. www.oceania-aviation.com

Omaka Aviation Heritage Centre #2

Congratulations to the magnificent Omaka Aviation Heritage Centre which has been named by TripAdvisor as the second ranked museum in the South Pacific in their annual Travellers' Choice Awards 2015. Award winners are determined using an algorithm on the quantity and quality of reviews of destinations worldwide, gathered over a 12-month period.

Jane Orphan, Omaka Aviation Heritage Centre director, said "I'm just thrilled that so many visitors have enjoyed their experience at the Omaka AHC so much, that they have been moved to want to tell others and to share the experience via TripAdvisor. This could not help but spur us on to bigger and better things as we work towards the opening of the new WWII display in the middle of next year. There are certainly exciting times ahead". www.omaka.org.nz

New Agencies for Aerosport

Aerosport are now representing the German gyroplane manufacturer AutoGyro GmbH in New Zealand. Previous customer waiting times of 6 months have been all but eliminated by a policy of holding new ready-to-fly Autogyros in stock for immediate delivery. Training options have expanded with the addition of an AutoGyro Calidus to Trevor Shadbolt of Go Gyro Ltd in Nelson. This sees training now available in AutoGyros in Dunedin, Nelson, Hamilton and Auckland. At Tauranga, training and servicing is now also available at Solo Wings. A further step forward for the sport is that full flying insurance is now available through Aerosport for any autogyro brand.



Aerosport have also added to their fixed-wing fleet with the all new ONE Light Sport Aircraft.

Aerosport owner Anton Meier says the ONE is a major step forward in the development of LSA / Microlight aircraft being of full composite construction with a safety Kevlar / Carbon composite security roll cage. He says the aircraft is "luxuriously appointed with all the features, style, cabin room, luggage space, performance, and the ease of proper opening doors that is normally reserved for GA aircraft such as the Cirrus SR22 and Cessna TTX". Contact Anton for more information: 021 289 5999, anton@aerosport or www.aerosport.co.nz

Cirrus SR22 on line at Whakatane

Peter Rutledge has placed a Cirrus SR22 on line at Aerohire in Whakatane. It is available for training, ratings, and private hire to anyone meeting appropriate standards in a short Cirrus test flight, which Peter says is a take-off, climb, a few turns and a stall, then back for a few circuits. Peter suggests being at Whakatane on Saturdays at lunch time to watch the DC3 arrive from Auckland - or better still be on it. Aerohire also has full sized Flight Simulator for which he says they have

received many compliments. Also on line at Aerohire is a Bristell LSA.

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Whitianga Departure Lounge Café open

The popular Departure Lounge Café at Whitianga is open again, having been closed for the quieter winter months. Fly into Whitianga for delicious gourmet burgers and bar snacks, coffees and cold drinks. Open Thursdays through Mondays, 11am – 3pm and a late night on Friday until 8pm. Catering available. Ph 07 866 2214.

New Cessna Pilot Training Centre

Auckland Aero Club has become an approved Cessna Pilot Training Centre and thus receives additional support from Cessna including using the brand for marketing, ongoing training for Instructors and the passing on of flight training enquiries directly from Cessna. Club students may be eligible to participate in Cessna's Catch the Sky programme, where new aircraft owners receive financial support from Cessna to assist with their flight training at an approved Cessna Pilot Centre.

Auckland Aero Club CFI, Leo Pardon says, "It is exciting to have been selected to join Cessna's network of world class training facilities. We hope this commercial relationship with Cessna will not only increase the club's visibility in the New Zealand market, but also internationally. I mean, who wouldn't want to learn to fly in New Zealand?" Indeed. www.aac.org.nz

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A Hidden Safety Issue

What do you think the most common identified medical cause of an airliner crash is? Heart attack? Stroke? Seizures? What about murder-suicide? The answer is none of the above. In this article Dr. David Powell from FlyingMedicine.com (based at Ardmore) explains a hidden safety issue for pilots, along with an approach to addressing the matter in a manner that doesn't jeopardise pilot licencing.

A STUDY compiled by ICAO examined the worldwide database of crashes over a 21 year period. 10 accidents were assigned a medical cause by the investigators. Of the 10 accidents, six had a significant finding attributing the crash to the use of alcohol or other drugs by the pilots. In an automated multi-crew environment, conditions causing risky behaviour are much more dangerous than dramatic incapacitations. Just like any other occupational group, pilots are not immune to the ravages of substance abuse or substance dependence. For pilots the substance most likely to cause problems is alcohol.

Are we talking here about the large numbers amongst us who drink a bit more than we should? No, this concerns a smaller group of individuals who over time have gradually started to lose control of their drinking, until eventually they develop some of the cardinal features of dependence. These include:

Consequences – neglecting the impact on relationships, finances, health, work performance and possibly trouble with the law – “he’s a lovely guy when he’s sober” should be a red flag.
Blackout – drinking to the point of not being able to remember

part of the night before.

Compulsion - drinking to stop from feeling unwell, unhappy or afraid, and struggling to say “no”.

Preoccupation - planning to drink to drunkenness and neglecting responsibilities because of drinking.

Tolerance - needing more alcohol to get the same effect and losing the ability to gauge when drunk. Often being the one who can “drink everyone else under the table”.

It could happen to anyone

You might think that this couldn't happen to a good, sensible pilot. Yet around the world capable, intelligent and well-intentioned pilots continue to occasionally be caught with a positive breath alcohol test and often display the symptoms listed above. This is not so much wilful behaviour as the effect of an insidious and deceptive illness. And the sad thing is that often their fellow pilots suspected (or even knew) that there was a problem. Dependence is an illness – with a strong genetic predisposition, associated abnormal brain chemistry and with a predictable symptom set. Many in aviation have seen friends or colleagues go through the stages of having no issue with alcohol, to misuse, abuse and finally dependency. The good news though is that while no cure is available, there are potentially successful and reliable treatments.

Don't think that random testing programmes are a reliable defence against this happening; unfortunately these often only catch people when the disease has progressed. And if someone tests

positive then it's going to be difficult for them to retain their job – one of the reasons why the 'HIMS' programme was created.

The HIMS programme

The HIMS programme was introduced in the 1970s in the USA. Up until that time, identified alcohol dependence meant permanent loss of a pilot licence for medical reasons, so it was a problem that never got diagnosed – until too late. When three doctors from the FAA, the Union and one of the airlines got together and decided there must be a better way, they launched a new programme which they called HIMS (the Human Intervention and Motivation Study) so as to give no clue as to what it was really about. Its purpose was getting help for pilots who were suspected by their fellow pilots or their loved ones of having a problem, before it was too late. Nearly 40 years on, that programme has successfully returned well over 5,000 US pilots to flying with an extraordinary long-term success rate of around 90%. That is the power of a peer-led programme in which sobriety is a condition of continued employment.

HIMS in New Zealand

The New Zealand version of HIMS has a much shorter history, but we have modelled our programme on the US success - helping pilots and air traffic controllers with alcohol and other chemical dependency issues return to work after successful treatment, sooner than they otherwise could. The team uses peer volunteers and educates aviation management staff; it includes pilots who have been down the track of dependence and turned their lives around, aided by aviation doctors who will get involved when appropriate. HIMS NZ has the written support of the leaders of Air NZ, Airways, RNZAF, NZALPA, Federation of Air NZ Pilots, Qantas/Jet Connect, VANZ and the CAA Director. General aviation is also in scope, if needed. Principally HIMS provides a pathway whereby you can raise confidential concerns about a colleague, friend, or partner. We will provide advice, information and assistance in addressing dependency issues and how to obtain help, where needed, for pilots or controllers before they put their lives or livelihood at risk.

How it works

The biggest hurdle is getting someone to accept that they may need some help. Some participants enrol on their own because they realise they have a problem and need to do something about it. However, it is more common that a pilot or controller enters the HIMS programme as a result of an intervention by colleagues concerned enough to confront the individual in a carefully prepared manner. On other occasions it may be management personnel who encourage them into the programme. The aim of such an intervention is to have the person undertake a professional evaluation by one or more alcohol and drug use specialist(s). If that process deems it necessary, then the individual will hopefully accept the need for appropriate treatment which in many cases will be some weeks in a residential treatment facility, of which HIMS has access to many, some of them off-shore. Once successfully treated, the person will be strongly supported by the HIMS team through rehabilitation, and the process of re-certification with CAA.

You could help someone else

Our message is that it is everyone's responsibility to address a problem when they see it; you will not be doing someone with a dependency issue any favours by looking away. The sequence of steps – peer identification, intervention, evaluation and diagnosis, treatment and re-certification has proved to have a high rate of success. Any queries to the HIMS NZ team will be treated with strict confidentiality. Further information about HIMS and contact details can be found at www.hims.org.nz



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Rolling, Rolls and Rollers

CONTINUING the theme of earlier articles in this series, this time around we shall explore another basic manoeuvre fundamental to aerobatics called the Aileron Roll, sometimes called the stick-roll in other parts of the world or a slow-roll, even though it may be done at 400°/second.

When you consider the origins of fixed-wing flight, at some point one of the early pioneers must have realised that just going in a straight line would be fairly limiting, and also require a huge amount of fuel to get back to where you started. Along these lines, anybody who has seen Dick Rutan talk of his epic, non-stop, around-the-world flight in Voyager will recall him talking to his designer-brother, Burt Rutan, about the abysmal rolling characteristics of the aircraft - Burt's retort being "Dick, it's a world-flight... it doesn't have to turn at all".

Some early flying machines, such as the Wright Flyer, utilised 'wing-warping' - a good idea at the time, copied from nature, however this would become structurally challenging on larger and faster aircraft, and ultimately did not provide the required roll control that another invention - the aileron - could produce.

Another early invention that came about from observing the further effects of utilising ailerons - adverse yaw - was the rudder. As an aside, have you ever seen a bird with a rudder? Natural evolution still beats all of mankind's best efforts, although perhaps we are slowly catching up with aircraft like the B2 bomber.

Of-course, you don't have to 'roll' to 'turn', but rudder-only turns can be mighty uncomfortable and, at low-speed, actually quite dangerous. Don't try this yourself unless you are in an aerobatic aircraft with lots of height, but the effect of a skidding turn with speed decaying towards the stall will lead to a spectacular un-commanded roll, with resultant height loss...

So, thus armed with ailerons, a rudder and elevator, we are taught early-on in our flying training the art of turning - roll with aileron

to the desired bank-angle, balance with rudder and maintain the desired vertical profile with elevator. With practice, this becomes second nature.

At some point, early on in the piece, some bright (or not-so-

bright) spark kept his airplane rolling, beyond what was required to change direction, until the wings were level again - yet the plane hadn't changed direction at all, and thus was born the aileron roll. Thank-you, bright/dim spark!

In considering the flight path of an aircraft carrying out manoeuvres, and especially aerobatic manoeuvres, mention is often made of distilling the entire bulk of the aircraft into just one little dot, acting though the aircraft's centre of gravity. When viewed from the ground, either by spectators or competition judges, many manoeuvres are prescribed by the movement of this imaginary dot rather than the attitude of the larger aircraft around it. An aileron roll is such a manoeuvre. In the world of competition aerobatics, during any aileron roll this dot must prescribe a straight line whilst the aircraft is rolling.

As alluded to above, a movement of a particular control surface will often produce a secondary effect such that motion in one axis often produces motion in another axis - for example, the further effect of

roll is pitch, the further effect of yaw is roll etc. A pure, roll-only rotation of the aircraft around its longitudinal axis is very hard to produce, although watching a high-speed aircraft such as a jet fighter (an A4 Skyhawk best comes to mind) looks as close to perfection as I can recall. Modern aerobatic monoplanes such as the Extra MX, Edge and Giles can also do a reasonably good job of this, assisted by full-span ailerons. However, most low-speed aerobatic aircraft, and particularly trainers like the Robin, Cessna 152A, Tiger Moth, Chipmunk, and Yak 52, etc. produce a roll which, from the outside, has a combination of differing pitch and yaw movements and quite often the flight path of the 'dot' moves



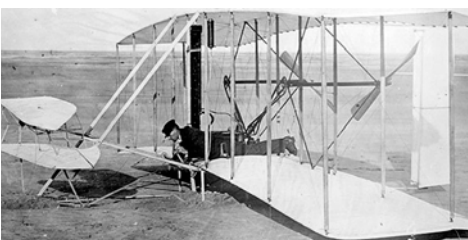
The passenger's view from an L-39 Albatros cockpit.



A rate of roll measured with a calendar: The Rutan Voyager.



Some early flying machines utilised wing warping, copied from nature, but without the roll control of the later ailerons or yaw control of a rudder, which birds manage quite well without. At right, the B2 Bomber.



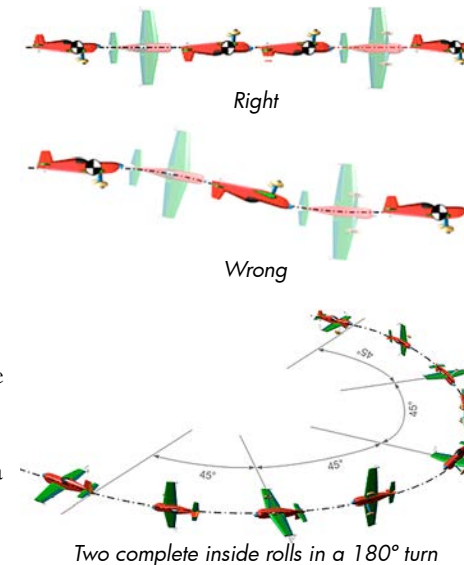
up and down somewhat. The slower the aircraft, and the slower the roll-rate, the greater the control inputs must be in all axes to keep the aircraft rolling in a manner that minimises movement of the 'dot'. To watch an aircraft like a Cessna 152 Aerobat carry out a perfect aileron roll is to marvel at the skill of the pilot, much more so than in a high-speed, dedicated aerobatic aircraft.

As per our earlier discussion on loops, rolls can be either 'passenger rolls', i.e. comfortable for the passenger but pretty ugly when viewed from outside, or 'competition rolls', which hopefully look great but can feel pretty odd from the inside. Why? Consider the control deflections required to achieve the result of the 'dot' staying level - the easiest way to talk about this is to break the roll into quarters (although in reality the whole roll is a continuous blend of control inputs):

1st Quarter

You initiate the roll with left aileron (let's assume a left roll from this point) and a smidgen of up elevator to counter the nose dropping with roll, but as you don't want to turn you must start to progressively feed in right rudder and ease off the elevator. Your reference point is a spot in the distance, just above the horizon, so keep that nailed front and centre. At the end of the first quarter you will have quite a bit of

right rudder, to keep the nose up, but no elevator - any elevator will tend to pull the nose further left.



2nd Quarter

The aileron position shouldn't change throughout the manoeuvre, so the stick should be hard left throughout to maintain the roll. You now start landing out the rudder but increasing the forward stick until you reach the wings-level inverted position... half-way there! Depending on the aircraft, this may be quite some way forward - trainers designed for upright cruising need a high inverted attitude to maintain straight-and-level when inverted. This is also the bit when you are at -1G and hanging in your belts - beware falling objects and a years worth of dust and grass. At the completion of the second quarter the rudder should be reasonably neutral to maintain the direction of the aircraft towards the reference point ahead.

3rd Quarter

Same as the first, but from inverted - start feeding in rudder and easing off elevator in order to switch their rolls again by the end of this quarter. Because the aircraft has been slowing throughout the manoeuvre due to the drag associated with cross-controls, you will need bigger rudder inputs this time, lest you start sliding into a knife-edge descent!


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contributed by Ruth Allanson

Competition Aerobatics Events Calendar 2015

For more details check out the events page at www.aerobatics.co.nz

October 31

Flying NZ Central Region Competitions, Taumarunui Aero Club

November 7

Flying NZ Alpine Region Competitions, Mid Canterbury Aero Club, Ashburton

November 14

Flying NZ Lakes Region Competitions, Venue to be confirmed

November 21

Flying NZ Cook Strait Region Competitions, Wanganui Aero Club

November 13-15

Pitts 70th Anniversary Fly-in & Competitions, Omaka Airfield

November 21

Brian Langley Memorial Trophy, North Shore Airfield

November 28

Flying NZ Northern Region Competitions, North Shore Aero Club

February 23-28

Flying NZ Nationals, Mid Canterbury Aero Club, Ashburton

March 16-19

NZ Aerobatic Club National Championships, Hood Aerodrome Masterton

4th Quarter

The ugly quarter - this is where things can go pear-shaped. You may have lost 20 knots by now - a good reason to start the manoeuvre with speed - so the co-ordination of the controls is very important; the size of the control inputs needs to be big enough to keep the nose up and the 'dot' flying level. The common mistake is to transfer the job of keeping the nose up from the rudder to the elevator too early - the result will be a sink (from the nose dropping) and yaw (from the elevator pulling the nose off-line) which judges often refer to as 'scaloping' the finish. It feels ugly and looks worse. At the completion of the roll, you will need a higher nose attitude to maintain level flight - the judges are looking for the level flight path of your 'dot', not your nose attitude - so don't be tempted to plonk the nose back in the same place you started - you are probably 30 knots slower than when you started.

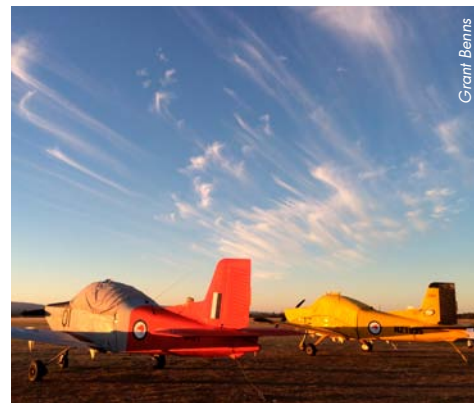
The above sequence is for the geometrically 'perfect' competition roll. The 'passenger' roll is, in-reality, more of a barrel-roll, which is a whole other subject, but essentially uses more back-elevator and balanced rudder to keep everybody in their seats and the dust on the floor. You won't score high marks for this one, unless your 'judge' is sitting beside you.

The versatility of aileron roll is huge, and the variations countless. They progress through rolls on different lines - vertically up/down and on 45° lines - as well as hesitation/point rolls and ultimately 'The Roller'. Not the car, but this is turning the aircraft whilst continuously rolling, sometimes in the direction of turn, sometimes away from the direction of turn and sometimes an alternating combination of both. From the ground, the rolling circle defies aerodynamics and common sense, but they are actually not too difficult to do (averagely) and great fun - kind of like taking a ride in a tumble drier!

As with all the advice I have dispensed - don't try this at home kids, until you can track down the right instructor with the right (aerobatic) aeroplane.

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

Planes of the NZ Aerobatic Club: CT/4 Airtrainer



DTY and JMV at the 2015 Nationals - Masterton

MOST people associate the CT/4 Airtrainer with our Air Force, where it was a great aerobatic training aircraft for many years. Fortunately, the Airtrainer has become available in the private market subsequent to their disposal from Air Force service and we regularly see one or two at NZ Aerobatic Club and FlyingNZ events. Murray Rogers of Tauranga is quite possibly the most precise aerobatic flyer of the CT/4 anywhere in the world, on the basis of his numerous trophies gained over many years flying his ex-RNZAF CT/4B. Murray has taken his plane all the way through to Intermediate-category success on many occasions, against vastly more capable aircraft, which says much about Murray's prowess, skill and commitment to quality practice time.

Whilst in need of a few more horsepower (remedied somewhat by the 300hp 'E' model), and a few less pounds, the CT/4B has a handy roll rate and great visibility. It sounds great too - rule number 2, after rule 1 (aerobatic planes must look cool) - courtesy of its 210hp Continental IO-360 engine. Another regular attendee is the NZ Warbirds CT/4B 'DTY', notable and historic as the prototype of the CT/4 family, famously flown from NZ to the Paris Airshow in 1975. Syndicate owned with a low share price and reasonable operating costs, DTY is a great aircraft in which to commence aerobatic training utilising experienced and knowledgeable Warbirds instructors.

Places to Go: Lake Station - St. Arnaud

Saint Arnaud (previously known as Rotoiti until 1921) is a small alpine village located in the north of the South Island, west of the mountains of the St. Arnaud Range and 90 km southwest of Nelson, near the historic Tophouse Settlement. It is situated at the northern end of Lake Rotoiti providing services for skiers, trampers and tourists, found on State Highway 63 between Murchison and Blenheim.

Tophouse is named after a hotel, which was established in the 19th century to house drovers moving sheep between Canterbury and Marlborough. The first drovers established a house on a terrace above the Wairau River, named Top House, as it was higher and further inland than any other. By 1856 the place was used as accommodation for other folk driving their sheep from Nelson or up from North Canterbury. In 1859 another gentlemen, Adolf Wiesenhausen built a hotel of the same name, on the south side of the road which still stands today as the historic hotel.

Pre European times, the Tophouse pass was an important Maori escape route from the rest of the South Island and for the Europeans it became the main route to the Wairau valley and the lakes district. In 1876 a telegraph station was built not far from the hotel, which provided a link to the Wairau and Buller area and wasn't decommissioned until the 1930s.

The hotel became run down and was rebuilt with cob, and in 1894 there was a double murder and suicide involving a jealous response to a rejected courtship with the local school teacher. Those staying at the historic hotel today can still search for bullet holes in the veranda roof.

Entering the area, the first thing that is noticeable is the scrubby alpine vegetation, due to the elevation of 2631 feet.

The easy way to get there is of course to plan a flying weekend to land at NZLE, Lake Station. This long grass gliding field is situated alongside SH63 and is 8 kms west of St. Arnaud. The Nelson Lakes Gliding Club flies from here most Saturdays so even though the field is well outside traffic near the NS control zone, a good look out for gliding activity is a wise idea when flying in the vicinity.

When arriving during the winter months you may like to bring your ski gear and tramping boots. Rainbow ski field is open from mid July to mid October, a little later in the season than other NZ ski fields. It boasts over 50% intermediate terrain and is only 35 minutes away from accommodation in the St. Arnaud village. The



Lake Station Airfield



Lodge style accommodation on the main road



Lake Rotoiti Wharf



St. Arnaud Garage and General Store

ski field has full facilities including a shuttle to the village. Day lift passes are \$75 for an adult with many package saver deals and multi day passes: www.skirainbow.co.nz.

There are many walking tracks in the area and my pick would be the one that goes around Lake Rotoiti. There is a water taxi that runs all year that does pick up and drop off for the tracks if you don't wish to backtrack. www.rototiwatertaxis.co.nz also offers transport for hunters and fishermen and tourist trips. The tours offer history of the area, tea and coffee and of course stunning scenery. Hamish is your friendly host; check out his website for scheduled departures or book in by phoning 021 702 278. Prices are reasonable and I would recommend this is a must-do while in the area.

Accommodation is varied; there is a very nice DOC camping ground right by the lake called Kerr Bay. It has hot showers and is surrounded by beech forest only a couple of kms from the village. Prices start at \$10 per adult per night for an unpowered site but bookings are essential during summer.

There are lodges in the village available for group bookings such as tramping clubs, and there is a holiday park, B&Bs and motel style accommodation for couples and families. I visited during the winter and found all the shops open and friendly. The dairy, which had a café attached, impressed me by selling all sorts, including the fancy Nescafe coffee sachets as individuals and had super friendly staff. Searching www.newzealand.com reveals more information on accommodation, eateries, fishing and articles on the local walks.

Synonymous with Lake Station is an annual fly-in called the Brass Monkey. It has been running for the last 25 years and anyone who has attended arrives home with great memories and great stories. I have attended twice, both of which involved staying in lodges as a large group, participating in fun competitions at the field and one particular time a winter midnight dip off the wharf at the lake. The camaraderie is exceptional with people flying in from all over

NZ. This year it has been shifted to Tapawera, which is still in the Tasman basin. Contact Kevin Allport if you wish to join in 2016: allport@actrix.co.nz.

Do enjoy your flying this summer. Definitely pull the old girl out - it is still the best way to explore the further away places such as Saint Arnaud. And do remember to be diligent on your checks if you haven't been out for a while.

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Training Chinese Pilots in the art of Gyroplane

THE aviation training industry in New Zealand has positioned itself well as an attractive destination for foreign commercial aviation students. Indeed there are many schools that depend on this as a primary revenue stream.

But what about the opportunities for recreational pilot training? New Zealand certainly has the right culture and environment for it. Recently, four Chinese students followed just this path and spent a couple of weeks learning to fly gyros with Instructor Elton Haakma at Gyrate in Tauranga, before returning home with fresh ratings in their logbooks.

KiwiFlyer spoke to them to find out more about their experience in New Zealand and what they planned to do with their new skills.



Left to right: Matthew Cheng, Timmy Lo, Oliver So, Instructor Elton Haakma, Ken Ting.

Ken Ting

Ken Ting is from Hong Kong. He obtained a PPL in Australia three years ago and says he is pursuing a dream to become an airline pilot. After a ride in a friend's gyroplane, Ken decided to learn to fly it and was introduced to Gyrate by the friend. Ken explains, "The flying culture in New Zealand is great and flying is achievable and affordable. There are lots different types of flying and flying can really become part of our lives." And he obviously enjoyed his time here, adding, "The overall experience in New Zealand and Tauranga was wonderful. This place is clean and relaxing. People are nice and gentle. Tauranga is beautiful. Although it is not as busy as Auckland, it has everything we need such as nice restaurants, shopping mall, beaches, parks and more. It is a lovely place to stay in."

Training in an MTO gyroplane was also a good experience, Ken noting that with no canopy you can feel the wind and what the plane is doing. "My training has been fruitful. Every aspect is explained clearly, and the standard of training is high," says Ken.

Back in China, Ken says he will fly gyros to polish his skills

and to spread the word of how good these aircraft are. He thinks the Chinese market has great potential as more and more Chinese people can afford flying and the Government is opening its airspace and developing general aviation.

Ken explains that "General Aviation is not common in China, and gyroplanes are absolutely new for everyone. I think aviation will be more recreational for the near future. In the long run, I believe General Aviation in China will expand quickly and there will definitely be opportunities for commercial flying. Currently the airspace is mostly controlled by military and not opened for civil aviation. But it will gradually change and we expect to see more and more flying activities in China in the future.

Matthew Cheng

Matthew was born in Hong Kong and has studied in Florida in the US. He came to New Zealand and Gyrate "because of my friend Oliver and my teacher Nigel Leung, they took me here. There are nice people, nice food and nice places. I love this country," says Matthew.

Matthew also had good things to say about learning to fly. "Training at Gyrate gave me a lot of memories. The views were great. It was always challenging, there were strong cross winds, seagulls and the New Zealand accent - all of those were kind of tough for me. I had so much fun because of Mr. Tony Unwin, also my instructor Mr. Elton Haakma: he is funny and inspiring, makes me want to keep flying the gyro for the rest of my life, and maybe one day I can be a gyro instructor like him in my country."

Matthew is looking forward to finding more chances to fly gyroplanes at home and says he thinks they will become popular across all of Asia.



Hard at work in the Gyrate classroom.



Ken, Matthew and Timmy outside Gyrate HQ at Tauranga Airport



A navigation exercise, on this occasion a cross-country to Matamata.

Timmy Lo

Timmy works as an aviation consultant to the Hong Kong Airport Authority and holds an Australian fixed wing CPL. He was also referred to Gyrate by Nigel Leung who had himself trained with Gyrate in New Zealand.

This was Timmy's second visit to New Zealand (the first was 13 years ago). He says "The facilities of Tauranga Airport are up to airline operation standards. It is a place that I would definitely recommend for both purposes of training and vacation."

Timmy also believes the MTO is a good training aircraft, being uncomplicated and easy to fly. He says "The training with Gyrate was intensive and efficient. We have flown at least two hours per day and in addition to circuit training for polishing our take-offs and landings, we have navigated to Matamata and also had chances to enjoy sightseeing. Having a bird's eye view of Wairere Falls and Mount Maunganui were absolutely impressive."

He says that recreational flying is an evolving leisure activity in the Asian community and he is seeking an opportunity to operate a gyroplane in Hong Kong and China. Timmy hopes to become an gyroplane instructor in the future and help to promote the microlight aircraft in the region.

Timmy also says that New Zealand is very well regarded for high standards of aviation training and there should be a big market for training of Chinese pilots here.

He says that currently there is extremely limited Class G airspace in China and flying a gyro under day VFR would be a luxury. There is also insufficient regulation in the area of microlight aircraft which may slow down potential promotion of the type.

However he also says, "The Government is aware of the situation and is moving forward to provide more allowance for private VFR flight and imposing new regulations in the microlight sector. I believe that recreational flying and gyroplanes will become more popular and common in the future."

Whatever the future for recreational aviation in China, these three fresh trainees will certainly be great ambassadors for training in New Zealand. More are sure to follow.

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En-route: Christchurch - Mt. Sunday

There and back again: A journey to a Lord of the Rings Mountain

Nick Ashley continues his new series focused on flying the scenic route - 'for the fun of it' as much as for just 'getting there', this time on a "Lord of the Rings" mission.

New Zealand abounds with stunning scenery which makes the country both a spectacular place to go flying and a magnet for tourists. Marketing for the latter has been assisted immensely by The Lord of the Rings and Hobbit movies, a theme continued by Air New Zealand's famous safety videos. I've personally found that the two film series even eclipse rugby as a tourist's idea of 'typical New Zealand'. It was only natural then that my three Italian friends on a tour of New Zealand were ecstatic when I suggested we could fly into the mountains in search of filming locations from the movies. Even a 0700 dawn start to avoid deteriorating weather later in the day couldn't dull Gabriele, Martino, and Silvio's excitement. Our goal was Mt. Sunday, a small rocky crag situated in the upper reaches of the Rangitata River that was used to portray the hilltop settlement of Edoras.

The sun was just starting to peek through a few scattered cumulus clouds when the four of us arrived at Christchurch Airport and I started preparing a Cessna 172P from the Air New Zealand Flying Club. The aircraft was operating at maximum all-up weight for this journey, with every spare pound allocated for fuel as our track would be far from any refuelling point. By the time we were ready to go the cloud was starting to disappear, revealing a perfect blue sky. Another good sign was the morning Air New Zealand flight from Hokitika, which arrived straight in to the crosswind Runway 11. This is always a good judge of the wind at Christchurch, aside from the usual methods, as Runway 11 is only

available to the little Beechcraft 1900D turboprop in the lightest of winds. A bit of extra priming was needed to convince the Cessna's Lycoming engine to start in the cool morning air but we were quickly on our way. Thanks to a quick-thinking air traffic controller we managed to sneak out ahead of a queue of Air New Zealand jets, and begin our journey into the mountains.



It's Edoras!, also known as Mount Sunday.

Our initial track paralleled the Waimakariri River through some of the busiest uncontrolled airspace in New Zealand, a large area of the Canterbury Plains frequently used for flight training. For the next few minutes I made several calls on the radio to coordinate with six other pilots who were also making the most of the perfect flying weather. The airwaves were silent once we cleared the training area, and I tracked alongside State Highway 73 in a climb as we passed through the foothills towards Porters Pass –

only to find an unwelcome sight along my planned route, it quickly becoming obvious that the valleys ahead were full of fog and cloud. While flight over a solid cloud base is technically legal, it is also strongly inadvisable and potentially disastrous in the mountains, as it risks disorientation and makes a successful forced landing all but impossible. I considered whether it was worth pressing on to find another way through, as sightseeing would be difficult anyway. We also had a limited fuel supply, however approaching the base of Lake Coleridge it became clear that the westernmost side of the valley was mostly free from cloud. Thus I decided to change track further to the west and press on into the wilderness, gaining an extra thousand feet of altitude for added margin on the way. I explained this to my three passengers, who were mostly just happy to be flying around and were enthralled by the sight of flying beside the lumpy white sea of fog and cloud.



Following the Waimakariri River.



Beginning the climb up towards Porters Pass.



Progress is threatened by low-level Stratus.

Suddenly Gabriele called out from the seat behind me, pointing out the window: "Wow! Look at our shadow!" His excitement was well founded with the Cessna's shadow was being projected onto a cloud drifting below us, but surrounded in brocken spectre style by a magnificent rainbow-hued halo. Turning south to head down towards the Ashburton Lakes region brought an even better sight, as the cloud suddenly stopped and clear skies stretched ahead of us into the distance. It looked like we had finally made it out of the foggy mountains and Gabriele, Silvio and Martino would be able to fully appreciate some of this amazing scenery.

The landscape in the Ashburton Lakes area is one of contrast, with an expansive brown carpet of tussock interspersed with mirror-like lakes and surrounded by rocky mountain peaks. Passing Lake Heron, I set a course to join up with a gravel road that would lead us straight past Mt Sunday, and it wasn't long before signs of civilisation came into view, the small cluster of baches nestled between the twin lakes Camp and Clearwater. However, lurking in the distance was another thick layer of cloud and I could tell that this time the oppressive grey canopy was in no hurry to break up. If we wanted to have any chance of seeing Mt Sunday the only option would be to head in underneath.

The cloud began where the plains sloped down to the lower Rangitata River valley and as we approached it looked like there would be plenty of space to manoeuvre once we were through. However, a quick check of the local chart showed that there were only a few exits from the valley, which could become blocked if the cloud base lowered. Thankfully we only needed to travel under the cloud for a few minutes to reach our destination and so I decided to press on, with frequent glances backwards to ensure our escape route remained open. Mt. Sunday is only a couple of hundred feet higher than the surrounding riverbed, and only just earns a place on aviation charts. It was a shame that the cloud prevented us from appreciating the grandeur of the surrounding peaks, but we still managed to locate the tiny outcrop, its rocky sides rising up steeply from the flat riverbed. The buildings constructed atop the crag for the movies had long since been removed but it was still recognisable, and there was a bit of excitement in the aircraft when I pointed it out, with shouts of "Wow! Wow! It's Lord of the Rings!"

After a good number of photos, I turned the aircraft away to head across the riverbed in the hope of finding a gap in the clouds to let us up to see the mountains. There were a few holes in the ceiling, but my plan was thwarted by the Cessna's sluggish climb, as I knew the shifting layers could quickly cover us mid-climb, and that wasn't a risk worth taking. Consoled by at least being able to view Mt Sunday, we headed towards home.

My initial plan for the return trip was to reach the Canterbury Plains by cruising down to the Rangitata Gorge, but this choke point is spanned with wires, and not knowing what the cloud was like further south, the prudent option was to head back the way we came while we still could. Once we were back out in the sunshine, re-joining the gravel road from earlier took us back through the Ashburton Lakes and over the Mount Somers Gorge to the Canterbury Plains, the bright green fields and clear blue sky contrasting with the greys and browns of earlier. While the weather conditions here were more conducive to flying, the navigation became much more difficult thanks to a combination of limited ground features and complex airspace. We finished the trip off by flying a couple of rings around Christchurch City and then joined the traffic pattern to touch down, having completed our two-hour



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adventure despite the challenges en-route. It was unfortunate that the weather conditions had conspired to limit what we could see on this trip, but it was definitely more interesting and challenging from a pilot's perspective compared to cruising through the valleys in clear skies – and certainly moreso than tracking in a straight line to another location for a coffee or lunch. Better still, my three friends gained a taste of our amazing New Zealand scenery that looks so great on the big screen, but even better in person from the air.

En-route:

Christchurch - Mt. Sunday

Flight time: 1hr 54min

Approximate distance travelled: 250km

Suggested charts: B4, C12, C13

Significant radio frequencies:

FISCOM 124.4

Christchurch Tower 118.4

Uncontrolled 119.1

Canterbury CFZ 119.2

Springfield 133.55

Traffic/airspace:

Rotary traffic in the Ashburton Lakes area, skydiving at Pudding Hill, and gliding activity near Springfield. Observe valley flying procedures and keep right where possible to ensure separation.

Terrain:

Care and appropriate preparation is essential when operating in the vicinity of mountainous terrain, especially when flying in valleys.

Weather:

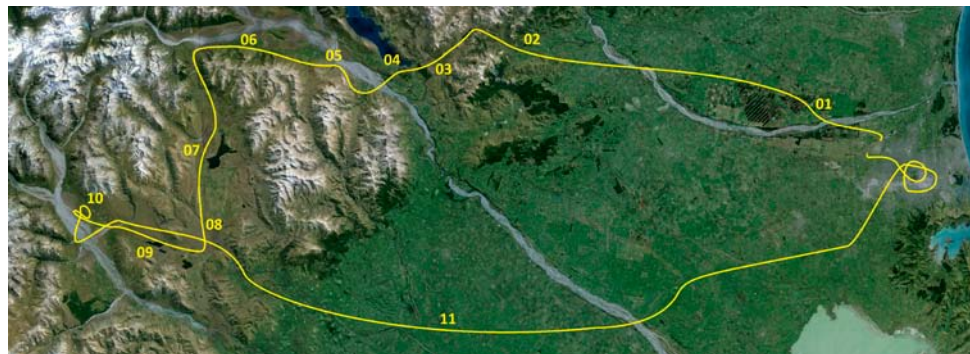
Strong westerly winds can create hazardous conditions in valleys and areas downwind of mountains, and low cloud and fog can persist in valleys in certain weather conditions.

Primary aerodrome:

n/a

Alternate aerodromes:

Limited: Pudding Hill (NZPU), and the twin Springfield (NZSF) and Wyndale (NZWY) aerodromes are all published but may not be suitable for all aircraft and conditions. A full assessment should be carried out and prior approval is required before use, refer AIP Vol 4.



The track for this journey. Numbers correspond to those on the images.



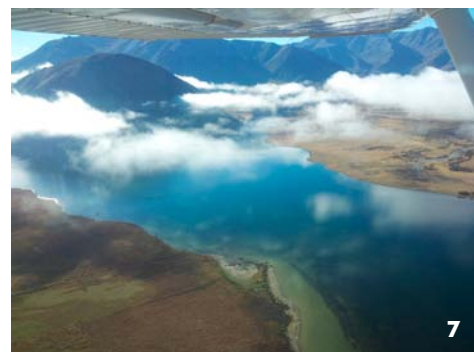
The 100 year old Coleridge hydro power plant.



Skirting the clouds over Lake Coleridge.



Our shadow projected onto the clouds below.



The amazingly calm and clear Lake Heron.



Another layer of cloud lurks in the distance.



Settlement between lakes Clearwater and Camp.



Irrigation has transformed the Canterbury Plains to a bright emerald green.

contributed by Chris Gee



Flying Stories

There are thousands of pilots in New Zealand, who have followed a wide variety of different paths to get airborne. In this issue, Chris Gee continues an occasional series to share some of the tales and perhaps more so the passion for aviation, that has led some of our pilots to where they are today. As well as humorous anecdotes that will bring a smile to existing aviators,

there is also a good deal of career advice and motivation within their words, sure to be very useful to aspiring aviators.

If you've got an interesting aviation background and would be willing to share your story with KiwiFlyer readers, then do get in contact and we'll help make that happen.

Wally Gee

In 1967 a 13 year old Wallis was on an ATC camp at Hobsonville Airbase, where he was taken for a flight in a Short Sunderland flying boat. "I was hooked with the essence of flight, the noise, the movement, the smells, and most of all the sights - looking down as the landscape slipped by...". The experience cemented a love for aircraft in his young mind, along with the belief that pilots were 'Godlike', and that his humble self would never rise to such achievement.

Fast forward ten years, to National Service in the Army at Burnham Camp, and Wally meets a man who would inspire him to take to the skies, but not in the way you would expect... "In my squad was a guy who was, to be blunt, a complete idiot. Then I found out he was also was a topdressing pilot, and I realised at that moment that if this idiot could fly planes then so could I!"

During a break between basic and core training Wally had a trial flight with the Auckland Flying School. He gained his pilot license about three months later, receiving 100% in his ground exams, which he remembers being multiple choice, and with instruction from legendary aviator Bryan Cox.

"Anyone who has flown solo will remember the incredible sensation that you get once you have completed your checks, received clearance from ATC, lined up, taken off, and are in the climb, - and you look to your right and realise that you are alone in the aircraft."

He then sat the five commercial ground exams, which had to be completed within two years with a minimum 70% pass rate, with the exception of the navigation exam at the time requiring a 100% pass rate.

Wally had one full and three part-time jobs to fund his flying habit. Once he had his commercial license, he passed his chemical rating to allow topdressing and spraying which was actually a road he never went down; "Had I moved into the agricultural aviation industry I may not have been here to talk about it given the high attrition rate at the time in the industry... Also married by now and with our first child on the way, I could not afford to leave my full-time job where I had been promoted in order to realise my dream to fly full-time. Anyone I approached about a job had the same answer... 'We need experienced pilots' they all said, but that was the issue - how do I get experience unless they give me a job? And as anyone knows at least in those days, you could not keep a family on an Instructor's measly wage". (Little has changed, Ed.)

Wally undertook charter and social flying for about 15 years until his eyesight began to fail. He recommends strongly that aspiring



Wally Gee

pilots get their commercial medical as soon as they start the training process, to avoid disappointment later.

The day Wally remembers the most vividly from his flying was a warm Sunday afternoon in November 1966. "I was practicing wheeled landings in BTK, a Piper Cub for a type rating. After about 4 'touch and goes', and at about 100 ft the engine failed without warning. "I have control!" shouted the Instructor but there was not enough runway left to stop safely. We bounced over the boundary fence, then hit a corner strainer post which removed the right wing strut and tailplane. We ended up in a ditch with the smell of fuel all around, and as I recall we both exited the door at the same time..." Luckily the only injury was a cut to Wally's leg.

It turned out the aircraft had the previous day been given its 50 hour check and there was something in the carb heat area that had not been put back correctly. "The moral of the story is if you are going to have an accident then try to let it be someone else's fault!" Wally exclaims.

Leap forward to the present day and Wally is 72, happily retired in Tauranga, volunteering at the Classic Flyers Museum helping to rebuild a Grumman Avenger TB3 Torpedo bomber to display condition. "Do I regret spending all that effort and money on a dream? Not on your life!"

(Ed's note: The surnames are not a coincidence. Wally's love of aviation undoubtedly inspired the same in Chris.)



A New Glider Arrives



Schleicher ASH 31 Mi. One like this will be flying from Drury by the time this article goes to print.

IN September a shipping container from Germany was landed in Lyttelton. It held two brand new Schleicher gliders, direct from the factory. One glider was off loaded in Christchurch and then the container continued on to Auckland where it was delivered to a factory unit in Takanini with an ASH 31 Mi glider nestled safely in its trailer inside.

The ASH 31 Mi is a high performance 'racing' ship with the option to be flown in either 18 metre or 21 metre wing configuration. The Mi designation stands for motor. It is self-launching, making it a very versatile and practical ship. This glider is full of features that make it perfect for pilots spending long days in the air, from the roomy and ergonomic safety cockpit to the compact, vibration free and maintenance friendly engine. Once the wings are on, all the pilot has to do is fly.

I was lucky enough to be there to 'help' with the uncrating as the owner is an old friend of mine, part of a group of young people who all learnt to fly at the Auckland Gliding Club more than 30 years ago. (I must say we have all aged very well.) Luckily the new owner owned a forklift because while the glider was secure in the trailer, the trailer itself was flat on the bottom of the crate with the axle and wheels secured elsewhere in the container. Raising it so that it could be slid out of the container and then lifted high enough to

bolt the axle assembly in the correct place took a lot of time and ingenuity. I wish I'd seen the container with two glider trailers in it, because I cannot imagine how they fitted. There must have been some sort of rig holding the second trailer above and to one side of the other one.

We peered through the gear door in the front of the trailer to confirm that there was a glider in there, but the new owner would not allow himself to open the trailer until his wife and daughter arrived to see it too. In the meantime his mates bolted on the wheels, attached the mudguards and made sure that everything on the trailer was as it should be. Luckily this was all achieved in time to allow us to hurriedly push the trailer inside the warehouse when the clouds opened. The shiny new trailer only got a little wet.

Family arrived and the lid of the clamshell type trailer was finally lifted. I don't think any of us had ever seen anything so new. It was shiny. It was pristine. It smelt new, like a new car but with an overlay of fibreglass. It was gorgeous. It was extraordinary to look in the engine bay and not see any grime. Everything was packed down, air inlet wrapped in plastic, pitot tube tucked into a neat little clamp on the inside of the cockpit. It was so neat it didn't seem real.

Later in the afternoon we took the glider out to the Auckland Gliding Club's airfield

at Drury to put the wings on. We thought that would be a relatively simple exercise, especially since the trailer comes with fancy self-rigging gear: a cradle that holds the fuselage at the right height for rigging and a trolley that takes all the weight of the wings and holds them in position just so while the main pins are fitted. Thank goodness we had the gear because we could not get the pins in. If we'd been doing it the old fashioned way with people holding all the weight of the wings we wouldn't have managed to do it. There is absolutely no play in a new glider and after a time of readjusting and brute force shoving, we started to wonder if the wrong pins had been supplied. Of course, by then, many helpful helpers had appeared out of the woodwork, all with their own ideas on how things should be done.

We did our best to ignore them and eventually, and probably by accident, everything lined up just so, we pushed like mad and got the pins in. Fortunately there was a hangar space waiting for the glider so we didn't have to derig it. Personally I'm hoping I don't have to help retrieve it from anywhere for at least a couple of years, until there's a little more play in the system.

It was so very pretty, so elegant and sleek and it's going to be a wonderful ship to fly. I was so pleased to see it when it was birthed, so to speak. It will have many adventures I'm sure and I'm really looking forward to seeing it in the air and having a chance to photograph it in its natural element. Congratulations to the proud new owner who remains anonymous for now.

Schleicher ASH 31 Mi Technical Data (21m Configuration)

Wing area	13.2 m ²
Wing aspect ratio	33.5
Empty mass	435 kg
Max take-off mass	700 kg
Water ballast wing	140 litres
Max. wing loading	53 kg/m ²
Min. sink	0.47 m/s
Best glide ratio	56
Fuselage length	7.07 m
Tailplane span	2.85 m
Useful load, max.	115 kg
Engine power	41 kW
Rate of climb	709 ft/min
Propeller Diameter	1.55 m

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Reno Air Races II

KiwiFlyer Warbirds contributor Frank Parker had his second trip to Reno this year and says it's a must-do for anyone interested in fast aircraft and racing.

I LAST wrote on this subject some five years ago after my first visit to the Reno Air Races. Once more the opportunity arose to attend with a group of friends - let's think about this a (micro) second, we're in.

The Reno Air Races should rank fairly high on the 'Plane Spotters' bucket list. The Reno Air Race Association positions itself as 'presenting' Authentic Air Racing reminiscent of the Golden Age - think Schneider Trophy of European (and Spitfire) fame and the Thompson races of the USA. The Thompson Races best encapsulate the Reno theme of pylon racing. Out of these halcyon days, iconic aircraft such as the Hughes Racer and GB Racer were developed, along with retractable landing gear, wing flaps, supercharging, constant speed propellers and enclosed cockpits.

Reno Nevada, in the mid west high desert of the USA is 'The Worlds Biggest Little City' and has an economy based on gambling, a mini Las Vegas if you like. The annual Air Races are one of a myriad of events held in the area.

The event is 'owned' by RARA (the Reno Air Race Association) and are very much a commercial venture. Competition is by invitation and qualification, and is held over a period of five days. There are six classes, starting from biplanes (think Pitts Specials), through sports, T-6 (Harvard), jets, and the celebrated Unlimited Class. The latter must be piston propeller aircraft and are the reserve of WWII fighters. Each

class has up to four subsections (medallion, bronze, silver and gold). A competitor may work from the lower to the upper classes through the week of competition and indeed the prize for the last Gold Class placing is higher than for the Silver Class winner - that's incentive.

The event is not only 'Racing', it attracts aficionados from throughout the USA and the world. This year's heritage parking lot sporting a 1920s Stearman (not the run of the mill Boeing Cadet), two rare Wacos, Cessna 195, OV-10 Bronco, Douglas Harpoon, B-25 and an 'L-6 Interstate Cadet', reputedly the actual aircraft being flown by Cornelia Fort at Honolulu on 7th December 1941. If that date seems familiar it was the day of the Japanese attack on Pearl Harbour and Cornelia got caught up in the fracas!

The military park hosted Blackhawk and Chinook helicopters, a couple of F-16s, C-130, C-17 and a couple of drones (not the tiddly fly-at-the-park ones - the Dash-8 sized kick-ass version!).

I almost forgot to mention the 'ideal' corporate helicopter. A Huey Cobra, man I need one of those just sooo bad...

Of course on the ground the real interest is in the 'Racing' pit areas, from stock standard P-51s, Sea Furies, Yak 3s, to the exotica, the super modified P-51s Strega, Voodoo and Rare-Bear.

Add to this 20 or more T-6 Texans and sports class hangars with super modified Lancairs, Formula 1 Racers, Biplanes...

Don't forget the trade displays (there's about a mile of them), T-shirts, posters, art, memorabilia, tarot cards, and of course food, food, and food.



Modified P-51D Mustang "Voodoo".



1932 Waco UBF-2.



Modified P-51D Mustang "Strega".



What Frank would really like on-line at Ardmore Helicopters: a Huey Cobra.

The Main Event

To the main event, the racing. There are up to three races every morning and afternoon. Each race takes approximately an hour to start, taxi, take off, position for a running start, then race 6 to 8 laps of the pylon course.

There are numerous courses (approx) 3.1 miles for Formula One, 3.3 miles for T-6, 6.9 miles for the Sport Class, 8.1 miles for Jets and 8.1 miles for the Unlimited Class. Some races are a procession, and others are hotly contested where competitors vie for position for the next day as the stakes progressively rise. With a little 'gamesmanship' mixed in however and the only real result is the Sunday Final!

Speeds are impressive, Formula One manage 230 mph (America buddy) on an O-320 and the T-6 220+ mph. The Sports winner, a Thunder Mustang gets to 390 mph, and Jets get into the 500s.

The Unlimited Gold race was run at an average just short of 500 mph. Reportly the highly modified P-51 'Strega' won Saturday's qualifying race at 80 inches of MAP and had 120+ inches available for the final. It was suggested these engines incur 1000 hours of 'wear' over the course of the week - this is a serious 'deep pocket' pursuit.

The race was up to expectations. Strega, flown by retired astronaut 'Hoot Gibson' and Voodoo, piloted by Steve Hinton; the young bull and the old bull were the favourites. Then add in Rare Bear which was on song and Dreadnought, a 4000hp Hawker Sea Fury. After several laps Strega had the advantage, a couple more later and Voodoo withdrew to leave Strega, Rare Bear and Dreadnought 1-2-3. The sight and sound of these aircraft flying by approaching 500 mph is impressive. Enough said.

continued on page 22



Grumman F8F-2 Bearcat "Rare Bear".



Rare Bear, capable of 490+ mph.



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Sharp Nemesis NXT "Relentless".

Second Opinion

contributed by Penny Belworthy

It does seem like your KiwiFlyer Editor was the only one who stayed home this year. Penny Belworthy who looks after the KiwiFlyer ZK Review pages was also at Reno and describes her time there thus:

THE Reno Air Races was the most spectacular event I have ever been to. The noise of the aircraft at full throttle hurtling around the four pylons, the amazingly high speeds achieved (at incredibly low levels) was all pure excitement. Reno is the perfect place to hold this annual event with days of endless summer - hot temperatures and no wind. The days ranged from 15 degrees C in the morning to highs of around 40 midday. The airfield is at 5000 feet ASL but its vectors are very long to allow any size aircraft to operate there.

Of all the race classes, the best in my opinion is the Unlimited Class which includes the Sea Furies and Mustangs. There are usually around eight aircraft in a race and as the weekend proceeds there are heats to determine places for the gold metal races held on Sunday.

In between these races is a range of amazing air displays; for example an extremely precise routine by the Breitling Jet Team from Switzerland flying L-39C Albatros aircraft, and David Martin performing brutal aerobatics in his Breitling CAP 232 aircraft which includes his signature tumbling manoeuvre - it's entertaining enough just trying to work out how the plane is still flying.

Then there is the 'Tora Tora Tora', a re-enactment of the bombing of Pearl Harbour where the Commemorative Air Force provides eight to ten authentic aircraft for the event. Replica Japanese Fighter/Attack and Dive Bomber aircraft perform much as they did at Pearl Harbour providing a breath-taking show laced with smoke, fire and explosions.

There are also all the static aircraft on display and as well you can wander around the pits areas and talk to the race pilots and their teams. Plus the locals based on the airfield have their hangers open and invite you in for a chat and to admire their aircraft. It's a really great event and if there weren't so many other places in the world to visit we would definitely be going back next year.

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In my mind Reno is a must-do if you're interested in fast aircraft and racing. There is plenty to see and do and if you can make a group it's so much more enjoyable. Every September, put a mark in the diary!

On my previous trip to Reno the Gold Final was abandoned because of excessive crosswind conditions so this year I was able to consummate the experience. We were fortunate in being part of a group with a corporate box which led to evening conviviality and – did I mention Reno is a gambling town - small wins on the pokies with slightly bigger loses on the blackjack table. Well maybe that's a reason to return...



RV8 "Naughty Angel" ahead of RV8 "Ice Hawk".



Out of the Valley of Speed and around the fourth pylon, T6s head to the finish line.



The Breitling Jet Precision Formation Team.

A Side Trip to the Yukon

ON THE way to Reno we had the opportunity to visit my son and family in Canada. Dion has been flying helicopters in the Yukon for six years, the last three at Haines Junction, approximately halfway from Vancouver to Fairbanks Alaska. He has the perfect utility helicopter job with a mixture of tourist, Parks Canada, scientific and mineral survey, fire fighting and SAR work in moderate summer temps (mid twenties) to arctic winter temps (it's only at minus 35 that the chopper stays in the shed).

While there we had an opportunity to take a ski plane ride to the Kluane Ice Fields in the Kluane National Park. If you are into 'alpine', superlatives are not enough to explain this area. A glacier the size of our Tasman Glacier fades into insignificance. In the words of our pilot Tom Bradley who also flies with Air Safaris in Tekapo, Kluane Park is larger than Switzerland, holds enough frozen water to fill every lake and river in Canada and has the largest icecap outside of the Arctic.

Tom flew us from 'Silver City' (well it may have been a City one time in history) strip, an old WWII airfield, (as is Haines Junction) in his Helio Courier to land on the ice fields at 10,000 feet. Also in Tom's words, this area is breathtakingly remote and there are two ways out; by the aircraft or by Dion and his helicopter! A quick snowball fight in the fresh powder (so dry you couldn't make a ball) then it was back for a picnic on the shore of Kluane Lake. Sometimes you just get lucky; the whole flight in one word 'Stunning'!



Family photos on the Kluane Ice Fields.



Glaciers here make the NZ ones seem a little small.



Picnicing on the shore of Kluane Lake.



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Maintenance Shop Insurance

HAVING purchased Aircraft Hull Coverage, you rightly assume your maintenance shop has what the industry calls "Aviation Hangarkeepers and Products Liability Insurance". Often have I heard the comment "I don't need hull cover yet as it will be covered by my engineer's insurance when it's in his hangar".

The facts are that this may not be the case. Hangarkeepers Insurance only covers the negligence and legal liability of the hangar owner with regard to aircraft held in their care and custody. If your engineering organisation denies they are responsible or the circumstances of the loss won't stand up in court, then you can't expect any compensation from their insurers. It is very important then, that you maintain your own insurance even for a construction project or lengthy refurbishment programme.

Having clarified that, let's consider a couple of scenarios that might occur totally beyond your control ie, the hangar burns down, the aircraft (or parts) are stolen or during an engine run the apprentice taxies into something requiring a replacement prop and bulk strip (even worse if your engine is running on condition and you

have to overhaul the engine).

If you have your own hull insurance, you may be reluctant to claim under your own policy as there is the policy deductible to consider, loss of No Claims Bonus, a possible premium increase next renewal and a claim that you could be accountable for, for years to come. If the shop readily admits liability and their insurers step up to the mark then it could be convenient to let them get on and rectify the damage.

However, even if there is no dispute with the shop or their insurers denying liability it's always best to lodge a claim under your own policy and let your own insurers appoint a Loss Adjuster to sort out the mess. They will do the negotiations, pay any legal fees that arise and isolate you from the nitty gritty negotiations. By assigning the claim to your insurance company you will have an adjuster that will be on your side and like you will want your aircraft repaired quickly and properly. In addition, your insurance company will have every expectation of recovering all the costs from the negligent party.

Even though the loss will be a claim under your policy, a loss due to someone

else's negligence will not generally be considered adversely in future renewal evaluations. Your insurance adjuster will take charge and if necessary redirect repairs to an alternative repairer (only with your approval) who may be able to get the job done quicker. Your insurers will in turn pursue the negligent party and their insurers for full reimbursement and also assist in the recovery of the deductible and any other relevant expenses. Your insurance company assumes your Rights of Recovery when they pay the repair costs – this is called Subrogation.

Things naturally take an entirely different course if you or your repair shop are not insured. My best advice therefore is to firstly ascertain your maintenance provider has the necessary Hangarkeepers/Products Liability Cover and their level of coverage is enough to cover the full value of your aircraft. Low cost maintenance is a bad option when it comes at the cost of no insurance back-up.

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

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Flying in to Oshkosh

KiwiFlyer Contributor John McCaw went to Oshkosh this year, but not by the means most common to tourists from New Zealand. John's Oshkosh arrival was by air in a Bonanza with a friend from Nevada. With 10,000 planes all landing at Oshkosh for the big event, we thought that leg of the trip warranted a story in itself. Read on...

I HAD the opportunity to travel to Oshkosh this year. Jim Herd, a soaring friend from Minden, Nevada offered me a seat in his Beechcraft Bonanza to Oshkosh. That was too good an idea to turn down and I felt confident to travel with Jim as he has done this trip across the US numerous times.

Jim owns a 1989, A36 Bonanza equipped with a turbo charged motor which gives the extra performance required to fly from high altitude density airfields or over high terrain and weather. Jim's Bonanza is capable of flying up to 25,000 feet but we limited our flying to 18,000 feet under VFR operations. The plane is equipped with a Mountain High Oxygen System with four units for use with a cannula.

We decided to start our journey early from Minden, Nevada to avoid turbulence from thermal activity. Preparations were completed by 0730 and we departed to the east with Jim's friend Tom Glaze who also owned a Bonanza. Travelling over the high desert of Nevada is very spectacular with high ranges and otherwise flat terrain. There's not a lot of human activity other than small towns and large mines. After flying past many dry salt lakes we arrived at Heber City Airport Utah which is situated in the mountains near Park City (one of the sites of the 2002 Winter Olympics).

We stayed the night at Park City, a very pretty town surrounded by mountains and numerous ski fields and were accommodated by another friend of Jim's, Tom Vayda who also owns a V tailed Bonanza. We did some planning to determine the time to arrive at Oshkosh when the field would open in the evening after the airshow approximately 6.30pm.

Thus we intended to stop at Yankton, South Dakota approximately four hours from Heber City and then allow another two to three hours to Oshkosh.

Leaving Heber City airport the following day we climbed high across the Uinta Mountains (part of the Rocky Mountains) at

13528 feet. The country is very deceptive for the pilot because a lot of the ground is 10,000 feet or higher with high winds and turbulence associated with it. We analysed the weather and decided to deviate north to avoid a front and associated thunderstorms. Live weather onboard is a huge help in these situations. This route took us over Rapid City, Mt Rushmore, The Badlands, a very barren but beautiful National Park of eroded pinnacles and spires.

Eventually we left the high altitude barren land for some remote farmland, until later near the Missouri River where intensive farming occurs with a lot of corn and beans planted. We landed at Yankton, South Dakota (1200 ft ASL) for fuel and lunch. A local club put on lunch for visitors en-route to Oshkosh. Yankton is an agricultural town on the Missouri River, made famous after being visited by the explorers Lewis and Clarke in 1804.

We timed our departure to arrive at Oshkosh around 6.15pm. The weather looked good for this sector and we flew across very intensive farming country with plenty of windmills and corn and then crossed the Mississippi River - a major trade route in the US.

We soon became occupied with scanning the sky for other aircraft heading to Oshkosh. With so many aircraft arriving at the same time, procedures needed to be well scrutinised. The first point to fly to was Ripon, a small town SW of Oshkosh where planes arriving from all directions meet. Transponders are turned to standby and lights are turned on.

The airport was yet to open so we flew a left-hand circuit of Rush Lake (one of two holding points). Slower aircraft are required to maintain 90 kts at 1800 ft, but we decided to join the faster



The Bonanza at Yankton ND.

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Arriving at Oshkosh, downwind for 27.

aircraft at 135 kts and 2300 ft. As we completed the turn the airport opened. We had to keep a really good lookout once we flew over Ripon and followed the rail tracks to Fisk (all planes follow the same track). Once at Fisk, Ground Controllers called "Blue and white Bonanza, rock your wings." Jim rocked the wings with a deliberate motion. Pilots do not reply and remain silent unless asked.

We were assigned runway 27. Once downwind we were identified again and given a coloured dot to land on. There are two separate dots 1500ft apart. Arrival on runway 36 has 36L and 36R with 3 dots per side with up to 6 aircraft landing at one time. (This is the only way you can achieve 10,000 planes landing at Oshkosh in such a short period. It is a good time for good airmanship with quite a lot of pressure. There is a fairly tight turn on to finals, about the time we heard a call on the radio "Bonanza put down your wheels". Jim and I both checked and yes, our undercarriage was already down.

Once landed we immediately depart the runway and display a sign in the windscreen which the ground volunteers use to identify our parking area. Each has a 2 or 3 letter code such as GAP (general aviation parking) or VAP (vintage aircraft parking), etc. We managed to find a park in the general aircraft parking between a Cessna 172 and an Aerostar, then tied the Bonanza down securely. Many of the locals rent houses out to Oshkosh visitors and we were lucky to have acquired one close to the airport.

Separate accommodation is not a necessity however and a lot of the visitors who arrive by air simply camp beside their planes with good facilities provided by numerous ablution blocks. The climate suits camping with nice warm nights.



Copper Mine at Eley Nevada.



On the road to Park City



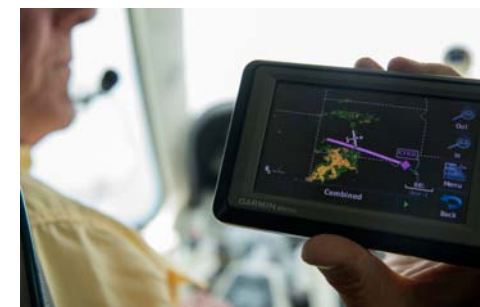
Olympic Park at Park City.



Heber City.



Kings Peak.



Live weather en route,



Passing by nasty weather.



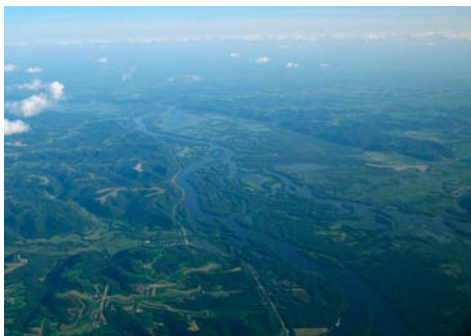
Finals for Scott Bluff.



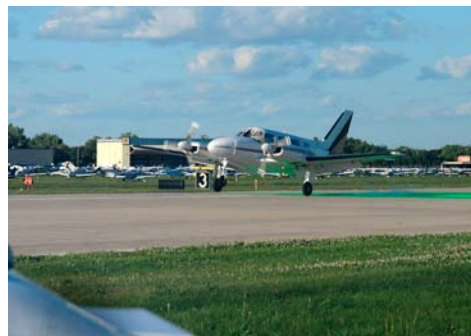
The boys at Yankton.



Corn country.



Mississippi River



A twin lands on the green dot at Oshkosh.



Scott's Bluff.



Freeway, South Dakota.



Open space in Wyoming.



The Badlands.



Encarpments, North Dakota.



Rockies.



Uinta Mountains.



Approaching Heber City.

The Return Journey

After the show, we packed up early on Sunday and taxied to the holding point where Controllers in elevated huts give us a VFR clearance to take off west. All the instructions given were clear and simple, and even the odd compliment given such as: "beautiful Stearman enjoy your flight".

Departing to the West was fairly simple over flat country. After flying over the Mississippi River the weather improved and we climbed to 16000 ft setting course for Scott's Bluff, a small town in Nebraska at 3891 ft ASL where we stopped for fuel and lunch. Time in the air was 4.5 hrs (near the endurance of the Bonanza). Leaving Scott's Bluff it was a 2.5hr flight to Heber City over very scenic territory including wild west towns Laramie, Casper and Cheyenne before heading through the Rockies. Landing back at Heber City we dropped off Tom Vayda and purchased enough fuel for the flight to Minden. Temperatures were quite high and it was great have that extra performance from the turbo as we departed from the 100 degF 5600 ft field. We had a turbulent flight back through Nevada with all the thermal activity at 17000 ft (and being a glider pilot I thoroughly enjoyed it). We pushed the Bonanza in to the hanger at about 6.30pm.

What a great experience it was to travel over such a vast country and such variable terrain. 18.4 hrs flying time in total. Many thanks to Jim Herd for the opportunity to travel with him, and for his kind generosity.



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HELIFLITE OVERHAULED R22 BETA II / EST. EARLY 2016 COMPLETION SN: 3779 White with Blue Trim, New Leather Interior. Equipped with Fuel Bladder Tanks, King KY197A VHF COM, Transponder, UHF Radio, Tie Downs, Ground Handling Wheels, Bubble Cover, RHC Limited Warranty. Overhauled Engine with Warranty. POA

PRE-OWNED 2007 ROBINSON R22 BETA II S/N: 4120 TT: 1200 Hrs Black with Gold Trim, Tan Leather. Equipped with Cabin Heater /Defogger, Millibar Altimeter, King KY197A VHF Com, New Gamin Transponder with Encoder, ELT Kannad 406, New MR Blades TTIS 0 Hrs, New C of A, Fresh 100 Hourly & Ads complied with Tie Downs, Bubble Cover & Ground Handling Wheels. Privately Operated, No Damage History. Available Oct ex Bankstown Airport. POA

2013 ROBINSON R44 RAVEN I TT: 550 Hrs (approx) All over Yellow with Black logo, Tan Leather. Equipped with Fuel Bladder Tanks, 4 x Bubble Windows, Garmin GTN635 GPS/VHF COM, Garmin GTX327 TXP, Garmin SL40 VHF COM, NAT AA12 Audio Panel, ELT 406 Kannad, Directional Gyro, Turn Co-ordinator, Engine Primer, Cabin Heater & Defogger, Tie Downs, Ground Handling Wheels & Bubble Cover. History: One Owner, Based NSW and maintained by Heliflite. POA

2011 ROBINSON R44 RAVEN I TT: 150 Hrs (approx) Slate Grey Metallic with Bright Silver Metallic Trim, Tan Leather. Equipped with Fuel Bladder Tanks, 4 x Bubble Windows, Garmin 495 GPS, Garmin GTX327 TXP, King KY197A VHF COM, Fire Extinguisher, ELT 406 Kannad, Cabin Heater & Defogger, Tie Downs, Ground Handling Wheels and Bubble Cover. History: One Owner since new. Vic Based. POA

2011 ROBINSON R44 RAVEN II WITH AIR-CON TT: 450 Hrs (approx) Bright Silver Metallic with Viper Blue Pri Trim, Tan Leather. Equipped with Fuel Bladder Tanks, 4 x Bubble Windows, , Garmin GTX327 TXP, King KY196A VHF COM, Xenon Landing Lights, Cabin Heater & Defogger. History: One Owner since new. NSW Based. POA

2005 ROBINSON R44 CLIPPER II SN:10952 TT: 500 Hrs (approx) Jet Black Metallic, Tan Leather Interior. Equipped with Pop-Out Floats, 4 x Bubble Windows, Tinted Windshield, King KY196A VHF COM, AH, DG, TC, King KT76C TXP, Garmin 430 GPS/COM/VOR, Millibar Altimeter, RHC Oil Filter Kit, Rotor Brake, Fuel Bladder Tanks, NAT AA12 Audio Controller. VIC Based. POA

LATE 2006 ROBINSON R44 RAVEN I TT: 1200 Hrs (approx) Navy Blue with White Trim. Equipped with Fuel Bladder System, Tan Velour Seats, Canvas Seat Covers, 4 x Bubble Windows, Tinted Windshield, King KY196A VHF COM, TX 3200 UHF, King KT76C TXP/Encoder, CD/AM/FM Radio installed, ELT, Cargo Hook, Floor Mats, New Interior Lining, Dual Controls, Rotor Brake, Cabin Heater & Defogger, Wheels, Bubble Cover & Tie Downs. Available immediately. Based in QLD. POA

2004 ROBINSON R44 RAVEN I TT: 1440 Hrs (approx) White with Red Trim (Astro Paint Schme), Brown Leather. Equipped with Fuel Bladder Tanks, 4 x Bubble Windows, Tinted Windshield, King KY197A VHF COM, King KT76C TXP/Encoder, Garmin 420 GPS/COM, Garmin 196 GPS, AH, DG, Dual Controls, Rotor Brake, Cabin Heater & Defogger, Wheels, Extended Bubble Cover. Private owner. Based in QLD. POA

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My First Time at Oshkosh

Over the years, I (as in Editor) have received various photos from visitors to AirVenture Oshkosh but they have always leaned more towards snapshots than towards 'poster images', so much so that I've occasionally wondered just how good the airshows there are. This year, KiwiFlyer Contributor John McCaw went to Oshkosh with a media pass and did us and the event proud. He sent so many excellent images that choosing what to include here was at best, difficult. To see what else happens at the event, and the rest is just as good, you'll have to give our friend Gaye Pardy Travel a call and go there yourself next year.

THIS year I was privileged to be able to attend the world's greatest aviation celebration. AirVenture Oshkosh is situated in the lovely green state of Wisconsin. Oshkosh is usually a town with a population of 65,000 but swells dramatically with this annual event run by the Experimental Aircraft Association. The size is overwhelming. 550,000 visitors attend the week-long event which is put on by more than 5000 volunteers. There is something to suit any aviation-minded individual with 800 exhibitors, over 1000 forums and workshops, 2000 show planes and more than 10,000 aircraft in total.

Oshkosh is split into different neighbourhoods including the Sea

Base six miles away at Lake Winnibago. I visited this picturesque shaded area where seaplanes are on show with flying displays during the week. Other neighbourhoods include the Homebuilders Headquarters, Vintage Aircraft, Warbirds, Ultralights, Light Planes and Homebuilt Rotorcraft.

It's important to plan just what areas might interest you, otherwise you will get lost. Transport around the event is available via the tractor train or buses which run on a regular basis. There are ample food and drink locations scattered around the site and these managed to cater for the large crowds without too many queues.

There are many workshops and forums running continuously during the week and they cover just about every conceivable aviation topic.

I was amazed that there was ample room to wander around and talk to exhibitors with ease. I purchased a Mountain High oxygen system for my glider and it was great to have all the expertise in one place. The most popular stands seemed to be the ones selling new electronic technology including weather and navigation apps. New Zealand was represented with two stands. One was 'Fly Inn' who was promoting their flying holidays. Fly Inn is run by Matt and Jo McCaughen from their Central Otago Station, Geordie Hills. Jo

was manning the site along with pilot Sue Telford (President of NZ Association of Women in Aviation). The other New Zealand stand was 'Flight Adventures', promoting a partnership of companies flying from the Coromandel.

Airshows are run at Oshkosh every afternoon with two fantastic night events. It was lovely to find a nice place to put down my seat (I suggest buying a cheap seat) and watch 75 different acts. Everyone has a great view but it really pays to be well covered and protected from the sun. Oshkosh can be very warm and humid and plenty of hydration is very important. Some of the acts were set on themes such as a Pearl Harbour attack, Tora Tora Tora, Texas flying legends, the 70th anniversary of the Victory of the Pacific, the Battle of Britain 75th Anniversary and the 70th Anniversary of the Victory in Europe. This included the NZ built Mosquito, Lancasters, B-17 Flying Fortress and many others including P-51 Mustangs in formation.

The Vietnam era was commemorated with a wonderful range of aircraft including the first display of the impressive F-100 Super Sabre which served from 1954 to 1971. It needs 4000 ft of runway to get airborne at 165 knots and climbs out at 10,000 feet a minute.

There are too many sets to mention but some highlights for me were the F-22 Raptor completing manoeuvres that didn't seem possible. Luca Bertossio, a 25 year old from Italy displayed the Swift glider with breathtaking aerobatics in both day and night airshows. The night airshows were essential viewing in the warm evenings.

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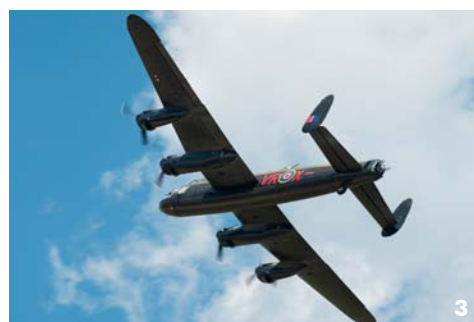
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Captions: 1: Awarded WWII Grand Champion at Oshkosh, De Havilland Mosquito KA114 was built here in NZ by Avspecs. 2: "Panchito" a B25 Mitchell Bomber. 3: Canadian Avro Lancaster. 4: The only flying Privateer maritime and patrol aircraft. 5: An AD-1 Skyraider in the Vietnam flying display. 6: Sharp pull up in the Edge 540. 7: AeroShell T6 Aerobatic display team. 8: Stearman Formation. 9: Daredevil wingwalker Teresa Stokes. 10: Texas Flying Legends formation. 11: SubSonex Jet flown by Bob Carlton. 12: Melissa Pemberton (left) flies past Skip Stewart in his 400Hp modified Pitts Special. 13: "Tora Tora Tora" Reinactment of the Pearl Harbour attack. 14&15: The amazing Jet Waco Taperwing "Screamin' Sasquatch" climbs vertically with jet assistance.



Captions: 16: Luca Bertossio spins his Swift S1 glider during a great display. 17: Icon A5 Amphibious LSA display at the Seaplane base. 18: Ribbon cutting in the highly modified Oracle Challenger III.



The F-22 Raptor at AirVenture Oshkosh. You have to wonder if the first design criteria was to make the most threatening looking aircraft possible. Having incredible flight characteristics then being just a bonus. Seeing this on display would nearly be worth the price of a trip to Oshkosh on its own. (Ed.)



Aerobatics from numerous aircraft, with lights and flares, and a 300 mph yellow school bus with afterburner, concluded with amazing fireworks and a wall of fire.

I was lucky to look closely at the specially designed Perlan Glider which is hopefully going to fly up to 90,000 feet, higher than any other winged aircraft. This project is run with partner and major funder Airbus who displayed it under the new Airbus A350 which was also a major attraction. Airbus also displayed their new wide bodied composite jet. British test pilot Frank Chapman took it through its paces and demonstrated its capabilities with steeply banked turns and fast low passes.

Oshkosh is a must for any aviation enthusiast with something for all breeds of pilots and also for those who enjoy just standing on the ground looking at planes. Start planning your trip there now.

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Captions: 1. The noisy and spectacular US Marine Corp AV-8B Harrier demonstrating its ability to hover. 2. The USAF F-4 Phantom II is displayed in the twilight. 3. The Magnificent F-100 Super Sabre Jet from the "Vietnam era". 4. The Mig-17 taking off with "Full afterburner".

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Oshkosh Night and Static Displays



John McCaw(left) and Perlan Project Test pilot Jim Payne.



Just one of the display halls. There were many hundreds of stands to view.



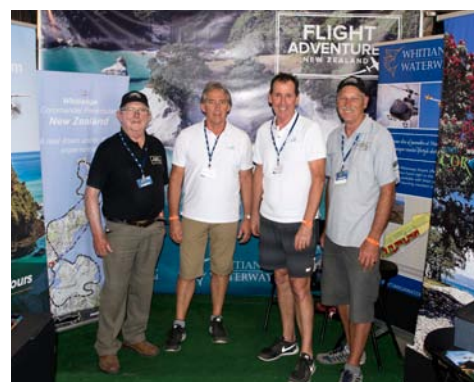
"Young Eagles" assemble a Zenith aircraft wing, which is completed to fly in just one week.



Seaplane base on Lake Winnibago a few minutes to the East.



The "Fly Inn" crew from New Zealand at their Booth which was very popular.



New Zealand exhibitors, Flight Adventures group from the Coromandel at their Stand.



The fantastic evening Concert - just part of the night entertainment.



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1



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4

Captions: The Night Airshow at Oshkosh. Perhaps the next new thing for one of our major airshow organisations? An afternoon airshow, then an evening concert, then a night airshow. It sounds good to me. The Kittyhawk firing its guns at dusk would be particularly impressive. **1:** The AeroShell T6 teams remarkable display in complete darkness. **2:** Gene Soucy pulls up during his night pyrotechnic performance called "FireFlight". **3&4:** Julie Clark flying her Beechcraft T-34 with flares and pyrotechnics.

Vulcans in NZ

AS A youngster I grew up with my older brother's folk lore stories on Vulcans, one of which was that the first Vulcan crash was into a cabbage patch. This was almost correct as it seems the first operation B.1 Vulcan (serial XA 897) crashed short of London's Heathrow airport while conducting a GCA (Ground-Controlled) approach after a flag waving tour, appropriately 'Operation Tasman Flag' of Australia and New Zealand. This was October 1956; I was yet to start school!

The Avro Vulcan was a result of Britain's post war re-arming. The Ministry of Supply issued a 'specification' to UK aircraft manufacturers for a 'medium range bomber land-plane capable of carrying a 10,000 lb bomb to a target 1500 nm from a base which may be anywhere in the world'. This was of course the 'Cold War' and the start of the 'Western World's' Nuclear Deterrence.

The result was the RAF's 'V Force' comprising Vickers Valiant, Handley Page Victor and Avro (A.V. Roe) Vulcan.

The graceful delta wing Vulcan was the most memorable of these aircraft and served with the RAF from 1956 until 1984. It started life as an unarmed high altitude strategic bomber and ended service as a low level tactical bomber.

By far the most memorable Kiwi Vulcan 'moment' was at the opening of Wellington Airport on 26 October 1959. Vulcan XH 498 on approach for a landing touched down short of the runway, damaging its port undercarriage. Judicious use of the four Olympus engines averted a tragedy and the aircraft recovered to Ohakea for a landing on nose and right main gear plus left wing tip. The aircraft

was subsequently repaired and repatriated to Mother England.

I recall 'wandering' around a Vulcan on the ground at Ohakea while in transit in my trusty Huey many years ago. Security was more relaxed back then and I was able to take a casual walk about. At this time the C-130 Hercules was a 'big' aircraft and this one was a lot bigger. I still recall the height of the undercarriage and the shadow of that huge wing. I even got a glimpse of the cockpit, which was naturally very 1950s; I could recognise most of the flight instruments from the Devon cockpit.

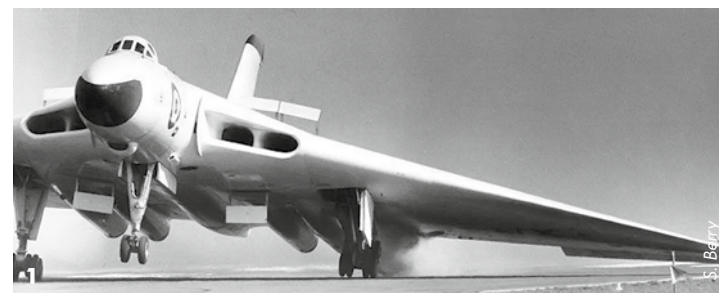
It was possibly around this time that Flying Officer John Bates entered the Guinness Book of Records for high altitude bagpipe playing with a rendition of various tunes (bagpipes – tunes ??) while overhead Ohakea at 46,000 feet. This feat was authenticated by photographic evidence and a recording by ATC in the Control Tower. As mentioned, protocol was a little more relaxed back then.

New Zealand did have a 'branded' Vulcan, a result of a visit in 1972 of Vulcan XH 562 from the Near East Air Force Bomber Wing based at Akrotiri Cyprus. It seems the aircraft was 'modified' with Kiwi insignia which remained with it for some time.

Designed as a Cold War deterrent, the only combat missions flown were bombing during the Falklands War of 1982.

The final flight of this majestic aircraft is planned for late October when the 'Vulcan to the Sky Trust' XH 558 will make its final landing at Doncasters 'Robin Hood Airport'.

Captions: 1. Vulcan XH498 touches down short at Wellington in 1959. 2. Saved by judicious use of power, XH498 is seen here with a damaged left undercarriage. 3. XH498 successfully landed at Ohakea. 4&5. Gavin Conroy's images of some of the last Vulcan flights in the UK in September.



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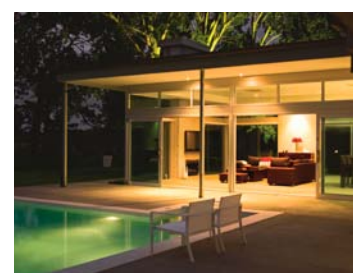
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Can you be here on the 12th?

BACK in 2007 when I was getting started in air-to-air photography I set a goal of ten aircraft types I thought I would like to fly with. Thanks to the superb Warbirds people in New Zealand, at that time I had already flown alongside a Corsair, Spitfire, and Mustang, thus acquiring the bug. I wanted to make the list a real challenge – consisting of several overseas types and some I had never even seen before.

Among others, that list ended up including the Gloster Meteor, Me262, F-18 Hornet, Avro Lancaster, DH Mosquito, Lavochkin La9, and the Avro Vulcan. It took perhaps longer than I originally expected but by the start of 2015 I had flown with nine of the aircraft on the 'list'. And time was now running out to tackle the Vulcan before the last remaining airworthy example was retired from flight.

The Vulcan had been on the radar for a while and in fact two opportunities had come up previously. One would have used a Jet Provost as a camera plane but we would have had to formate on the Vulcan and I felt I would not be able to get the near head on shots I wanted so politely said thanks but no. Then a couple of years later an opportunity came up to fly with the Vulcan using a Short Skyvan as camera plane. That aircraft has a cargo ramp like a C-130 Hercules meaning that photographing the Vulcan could be done the only way it should be - head on! Unfortunately due to work commitments at the time I could not go. That was disappointing. I was on strike two with no other options apparent – and with the Vulcan now in its last season of flight before being permanently grounded, I thought I had missed my chance.

I'm fortunate to receive a lot of requests to photograph aircraft and when I turn the computer on some days, I am not too sure what to expect. August 1st was to be one of those days. There was a message from the UK saying "Can you be here on September 12th to shoot the Vulcan? The Skyvan is the camera plane." After

talking with my wife about it, we decided I would go, even though the reality was that the flight could be scrubbed with no notice for various reasons. As usual it would be a one-shot deal and if things didn't work out on the 12th then there would be no other options.

Having things fall into place for these special events is never easy and I had never traveled so far before for one flight. So with tickets booked, the waiting game began. The plan was that we would fly from Shoreham Airport as the Vulcan would be in the area for a flying display at Goodwood. All I needed to do at this stage was be there on September 12th.

As time rolled on there was a terrible Hawker Hunter crash at Shoreham, with airspace then restricted for several weeks after for the investigation. I wondered what would happen next? Then the field was opened again in early September so we now had a base confirmed to fly from - that was great news.

Things were still looking good a week out. I knew the Vulcan had airshow appearances booked the weekend prior to our flight but after that it would not fly again until the day of our photo flight. When I went to bed on Friday

night I thought to myself "please don't break it over the weekend". However there was disappointment coming on Sunday: During a performance the nose gear leg would not extend properly, requiring the blow down method which fortunately was successful and the aeroplane landed safely. I was in contact with the Vulcan team and they suspected a hydraulic leak, but couldn't estimate how long it might take to repair.

With that risk in mind, on September 9th I headed to Woodbourne airport to start the trip. The Vulcan was still grounded but it was too late to turn back! What followed was a 90 minute flight to Auckland, 12 hours to Los Angeles followed by a 2 hour break, then another 11.5 hours to Heathrow, and finally I was picking up the rental car just after lunch on the 11th.



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After arriving at Duxford, I heard nothing until about 8pm when I was told the Vulcan had made a successful test flight just before dark so we were on again! That was great news. I thought I would get a good night of rest in, but didn't sleep a wink and soon enough it was 6am and I was out the door again for the three hour drive to Shoreham.

When I left Duxford the weather was terrible and the same on arriving in Shoreham. We had a three hour wait for the Skyvan and I then fell asleep in the rental car, only to wake a couple of hours later to a mixture of blue sky and clouds - quite windy but flyable.

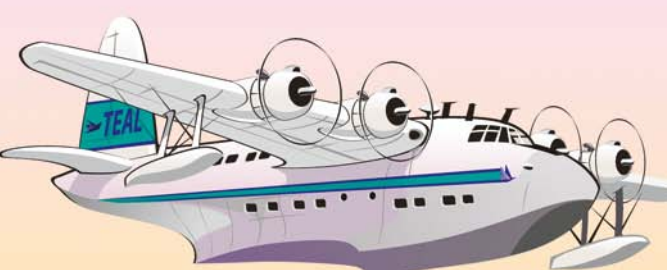
Excellent I thought, we're on again, but there was a message on my phone from the guys flying the Skyvan. A bad weather front was coming their way in Belgium. They would try to make their way around it and hoped to still be at Shoreham on time. More anxious waiting!

Just after 12.00pm the Skyvan arrived to much relief. As well, the weather had improved plus the Vulcan had been put through its extensive pre-flight check and was healthy. Now all we needed to do was go flying.



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We took off at 2.15pm to meet the Vulcan at Beachy Head at 2.30pm. Sitting on the edge of the ramp, I waited to get a visual on it. After all of the obstacles to get to this point I wasn't going to believe it until I saw it! Those first few minutes dragged on I can tell you; this would actually be the first time I would see a Vulcan in flight and what a privileged place to see it from!

Then way out in the distance we spotted it, the long lines of smoke from the four Olympus engines could not be mistaken as the pilots bought the Vulcan in close.

In it came closer and closer, looking more beautiful and aggressive as it did so.

Normally on photo flights if I get 10 minutes with a high profile aeroplane I count myself lucky but on this flight we had 30 minutes to take it all in and fill our memory cards! We flew left and right hand orbits with some nice break-aways, and with a mixture of blue skies, puffy clouds and the white cliffs. What more could you want!

What amazed me most was the sound. Sometimes jets can be difficult to hear flying in formation but not the Vulcan, I filmed 60 seconds of the flight just so I would never forget the sound. That's on Youtube now:

https://www.youtube.com/watch?v=_gE5ZI6Qank

All too soon the Vulcan made its last break, at least 60 degrees angle of bank this time and then it was gone. Finally I had shot the Vulcan after an eight year wait!

An hour or so after we landed the Skyvan team headed for home and I drove back to Duxford very happy as it had all worked out and what an amazing sight.

Gavin's trip didn't finish at Duxford. Turn the page for Part Two...

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A week of aviation in the U.K.

While in the UK on a mission to photograph the Avro Vulcan, Gavin Conroy took the opportunity to see the 75th Anniversary Battle of Britain Airshow at Duxford, plus tour some museums, and accept an invitation for a second special photography assignment.

THE Vulcan trip had placed me in the UK at just the right time as 75th Anniversary celebrations for the Battle of Britain were underway. I had thus planned to stay an extra week to see some of the flying displays - thinking that these events might make me feel a bit better if the Vulcan flight hadn't come off. In fact all of the other stuff was icing on the cake.

The day after the Vulcan flight I was invited to a Vulcan members and supporters day at Coventry where the Vulcan would display and what an impressive sight it was. For a bomber, it flies like a fighter. It was nice to finally see a Vulcan display and the "Vulcan Howl" sounds amazing!

On September 15th I was back in the car for the long drive to Goodwood. At this venue a once in a life time event was to be held.

The organisers were hoping to get 40 Hurricanes and Spitfires airborne to celebrate the Battle of Britain. To their credit they ended up with 31 aircraft taking off in sections and forming up over Goodwood, before heading to different towns and cities for a series of fly-pasts.

The 31 Spitfires and Hurricanes were joined by the Bristol Blenheim which has returned to the display circuit this year as well as a Mustang painted in RAF markings, so 33 aircraft all up!

Watching all of these aircraft take to the sky was jaw dropping. I didn't take many photos as I was so much in awe of what was happening in front of me!

Then I got to spend a day with Nigel Price (Editor of Flypast magazine) and we went to the RAF Museum at Hendon. There's so many aircraft to see here in great condition, the highlights for me

were the Stuka, Junkers 88, Heinkel 111, and Boulton Paul Defiant - but it was very difficult to pick favourites. An RE.8, Albatros and Snipe all built by The Vintage Aviator Limited are on show as well.

I also visited the De Havilland Aircraft Museum later in the week

which houses three Mosquito aircraft, one of which is the original prototype (currently being restored) and looking magnificent. It was lovely to see three of these beauties in the same place, and down the end of the drive is the house that Winston Churchill lived in during WWII.

One last museum visit was the Imperial War Museum at Duxford, which houses several jewels including an SR-71 Blackbird, TSR-2, and Concorde, etc. If you ever get the chance to visit, do be sure to give yourself a full day. My

half day there was not nearly long enough.

On the Saturday and Sunday I was to attend the 75th Anniversary Battle of Britain airshow at Duxford and planned to be there on the Friday to watch some practice flying but another aircraft was to come before that.

I ended up driving to Thruxton to fly with a very rare Supermarine Seafire Mk XVII. This aeroplane has a Rolls Royce Griffon engine fitted. It's quite a machine and it was great to fly with an aeroplane built by Supermarine during this significant part of the airshow season. Well known display pilot John Beattie was flying the Seafire, so here I was flying with another of my heroes. We joined up over historic Boscombe Down for a few photos which is another very historic airfield in England.

Finally I could base myself at Duxford for the two day airshow. There were so many highlights at that show. Two of the opening acts were stand-outs. It is rare to see an HA1112 Buchon (Spanish built Me 109 variant with an RR Merlin) flying at an airshow but at Duxford they have two and they were flown together for a display of formation aerobatics.



Supermarine Seafire over Boscombe Down. Note the arrestor hook in the tail section.



Captions: 1. Red Arrows and Battle of Britain Memorial Flight at the Duxford Airshow. 2. Spitfire and RAF Eurofighter in formation at Duxford. 3. Two Mk 1 Spitfires come out of a loop at the Imperial War Museum airshow at Duxford. 4. RAF Chinook displaying at Duxford, flown by a pilot who really knew what he was doing! 5. Bristol Blenheim taking off at Goodwood before joining with all of the Spitfires and Hurricanes. 6. B-17 "Sally B" makes a pass at Duxford in a salute to all of the brave bomber crews who flew during WWII. 7. Two Buchones at the Imperial War Museum airshow at Duxford. 8. Gloster Meteor at the Vulcan to the Sky members day at Coventry.





Three Spitfires and a Hurricane fly past at Goodwood. It was amazing to see so many Spitfires in one place!



Fifteen Spitfires and two Seafires in formation over Duxford. I cannot put into words how good this display was apart from saying it was very moving.



A very colourful Mosquito at the IWM Museum Duxford, almost looks brand new!



ME110 at the RAF Museum, Hendon, so rare and restored to the highest standard.

Not to be out done, a pair of Mk 1 Spitfires were flown together in the same fashion (my personal highlight of the show). One was flown by Paul Bonhomme, a Red Bull air race series pilot and the other by Dan Friedken from the USA who is a member of the Horsemen aerobatic team.

This display was fantastic, clearly showing the bond between the wingman and his leader, complete with puffy clouds and a crowd in total silence!

Later in the day we saw these two pilots form up on another Spitfire for some three ship loops but to me the pair was better, simply because the wing man flew so well and never once let the leader out of his sight - an RAF tactic in WWII.

An RAF Boeing Chinook did things I never thought possible from a big helicopter, including near vertical steep pull ups followed by equally steep push overs with cork screw dives. That was really something to watch!

The final display sequence was the best I have seen at any airshow.

Fifteen Spitfires and two Seafires made three or four mass formation flypasts over Duxford before splitting into two sections and flying a spectacular tail chase.

The Battle of Britain Memorial Flight (BBMF) then flew six of their fighters in a very tight formation (four Spitfires and two Hurricanes) before vacating the area, a Hawker Nimrod performed a solo display before the BBMF returned with its six fighters in formation with the Red Arrows!

The Reds then closed the show with their last display of the season. Many of the people I spoke to that have been attending Duxford shows for more than 25 years said it was the best one they have been to.

And that was it, an eleven day trip done and dusted. With so many opportunities that I couldn't turn down there wasn't much rest to be had, and the story of the trip does demonstrate some of the challenges involved with air to air photography. But the flights are always incredibly rewarding and the Vulcan flight especially so.



Mosquito prototype at the DH Aircraft Museum, under long-term restoration for static display.

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Engineering for Aviation

The Fieldair Way

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.

Engine Repair

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 including TCM Continental. 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 on a lease to buy basis.

All enquiries for engine support at Fieldair should be directed to Quentin Hughes (06 350 0956 or quentin@fieldair.co.nz).

Instruments & Avionics

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 include an exchange option for same-day turnaround on AOG instrument work.

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 with a recent service agreement with HAWK UAS Solutions. For all aspects of instrument and avionics support, contact Chris McLaughlin (06 350 0957 or chrism@fieldair.co.nz).



Fieldair provides daily operations management services, crew and engineering maintenance for Originair and the Life Flight Trust.

Aero-Electrical

Fieldair's Electrical Engineering workshop 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.

Quentin Hughes manages what has grown to become a very versatile Aero-Electrical Department (along with Engine Repair). Contact Quentin on 06 350 0956 or quentin@fieldair.co.nz.

Supply

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 pat@fieldair.co.nz.

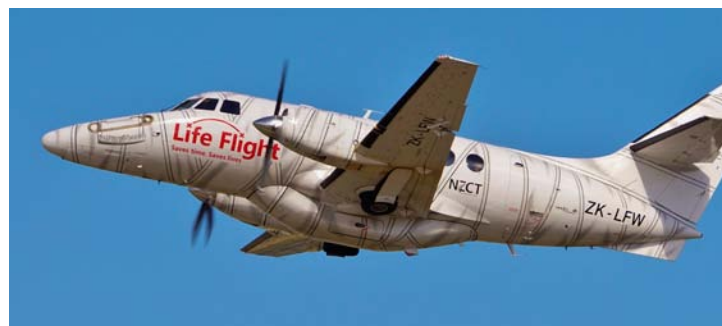
General Engineering

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

Products include aircraft freight containers and associated aircraft modifications, 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.

Ground Support Equipment

Fieldair 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 'Airbus Capable' Aircraft Wheel Dollies and a variety of baggage trolleys to suit all airlines.

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

Heavy and Light Aircraft Maintenance

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.

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 now 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.

Similar services are also now provided to Originair, a New Zealand owned and operated airline providing point-to-point

travel within New Zealand. Originair currently flies scheduled services to and from Nelson, Palmerston North and Wellington, plus charter services on demand.

Fieldair, through its subsidiary Air Freight NZ, holds both NZCAA part 121 and 125 certificates which cover its Freight operation as well as the Life Flight Trust and Originair operations.

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 out 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

To find out more, visit: 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.

Captions:

1. Callum Baird ensuring the right components and paperwork are supplied.
2. Deep Maintenance - two experienced engineers inspect a belt frame.
3. Matt 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.



Central Aero Engineering: "Here to Help"

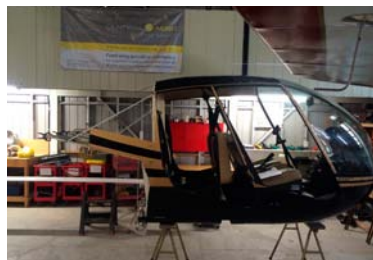
Central Aero Engineering at Hamilton Airport is frequently an interesting place to visit. They have a wide range of aircraft on their books and with a small team who thrive on the challenges of 'something different', there is inevitably something unusual happening alongside whatever routine maintenance might currently be underway.

A recent such project was the assembly of a Piper Cub for Rob Broek of Wanaka. This was a fully restored aircraft ex CubCrafters in the USA. Rob had test-flown it there post-restoration before it was crated for shipping to New Zealand with just 10 hours on the clock. An obvious question is why have your new aircraft assembled in Hamilton rather than closer to home?

Rob explains; "We looked at having the Cub transported and assembled in Wanaka by our engineer Matt Bailey and his team at Performance Aviation. Although Matt and I had discussed for Matt to do the job, we both agreed that it would make sense for Paul and his team at Central Aero to do the assembly; logistically it would be much more straightforward and Paul's team had assembled a number of CubCrafter Cubs before." It helped too that Rob had seen a YouTube video posted by another Central Aero customer. That video was of a CarbonCub assembly project, via a GoPro camera that had been secreted into the hangar and recorded a day of work on said project. Search YouTube for 'Re-assemble Carbon Cub' and watch it sped up to all happen in 2.5 minutes.

Thus Rob phoned Paul one day and asked if he would like to sort the import and devanning process (easily achieved as Central Aero are a transitional facility), assemble the aircraft, deal with its certification and paperwork, and prepare it so he could fly it back to

Wanaka. The job was duly priced and accepted then with what Paul describes as a "sea to sky" service, the process began. Paul says the project was helped along by the aircraft being immaculate – with a great many new parts – and also by Rob being "a gentleman to work with".



Clockwise from top: Robert Broek's restored Piper Cub at Wanaka. 1940 J3 Cub at Matamata. Robinson R44 stripped to its cabin during 12 yearly inspection.

With floats fitted, and after a shake-down flight with no additional work resulting, Rob fuelled his new Cub up and headed south. 'Ruby Duck' is now happily domiciled at Wanaka. Rob says that "They did a great job and UCR has run trouble-free since leaving Hamilton."

Central Aero also recently placed an original 1940 J3 Cub onto the NZ register following essentially the same process. ZK-ALY still has the same serial numbered engine it was born with and original logbooks recording its factory test flight.

Business as usual

Other recent work has incorporated taking a new Safari home-built helicopter through the CoA process, plus the usual routine maintenance,

corrosion removal and checks on all manner of aircraft including gliders, piston and turbine helicopters and hot air balloons.

A 400 hour inspection has just been completed on a hydraulic constant speed prop, a 540 engine off a Pitts has received a bulk strip, and a Cessna 172S has been rebuilt after a landing mishap. That required substantial wing and engine mount work, with Paul proud to say it flew perfectly "straight off the hangar floor".

An R44 Raven II has just had its 12 yearly inspection, involving a complete strip and Paul says another will arrive in January.

Central Aero also act as maintenance controllers for several commercially operating customers, a recent example being boutique charter company Stark Airline based in Whitianga.

Services and Capabilities

Central Aero engineers Paul, Steve and Hamish have a great deal of experience from which to tackle most jobs regardless of how unusual or difficult they might be. And with Hamish now only weeks away from receiving his licence, every staff member working on aircraft at Central Aero will soon be a licensed engineer.

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".

Central Aero Electrical Limited

Next door to Central Aero Engineering is Central Aero Electrical Ltd. Owner Martin Ross 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. The company has been recently approved by CAA to service/overhaul mechanical actuators (providing the appropriate manual is available) and has overhauled several Cessna Trim Tab actuators. Turbine electrical components also frequently pass through the shop. Recently, Martin has been receiving starter/generator overhaul work for a Pacific Islands airline – the company being so pleased with the price and service they received on a one-off job that they are now sending Martin all their work.

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. Currently in stock are a PAC XL starter/generator and GCU, plus three Cresco 250A starter/generators. 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

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

Heli Maintenance at Christchurch

Check our new Website

BASED in Christchurch and owned by David and Pip Ives, Heli Maintenance Limited was established in 2000 with a mission to focus on customer service and become the leading provider of helicopter engineering services throughout Canterbury, Marlborough and the West Coast.

Heli Maintenance is Canterbury's only CAA Part 145 A4 approved helicopter maintenance company offering helicopter sales, service and parts to numerous commercial and private owners. The team behind Chief Engineer David and Operations Manager Pip are experienced Engineers who can service your helicopter with confidence - specialising in a wide variety of types including Robinson R22, R44, R66, MD500 series, Schweizer/Hughes 300 series, AS350, EC120 and Bell 206.

As well as all routine maintenance requirements, the company also undertakes Airframe Overhaul, Rebuild & Refurbishment, Maintenance Control, GPS & Avionics Installation, Spray Equipment Installation, Aircraft Survey Pre-purchase Inspection, Annual Airworthiness Review provision and Turbine Vibration Analysis, and Dynamic Balancing and Spectrum Analysis.

Robinson Overhauls

Heli Maintenance is a fully approved Robinson helicopter service and overhaul centre. David has completed both the R66 and RR300 maintenance courses.

Role equipment and mods

Heli Maintenance have a variety of in-house developed role equipment and mods available. Their R44 Ground Handling Wheels are very popular and sell throughout Australasia. They also hold local mods for R44 and MD500 Snow Shoes, EC120 Lead Acid battery Installation, R22/R44 Pitch Links Repair, MD500 Collective Locks and MD500 Hockey Stick Repair.

Parts and Pilot Accessories

A wide variety of parts and pilot accessories are available in stock or by order. Speak to Ian for all questions and enquiries.

Sale and Purchase Support

Dave and Pip welcome the opportunity to work with prospective helicopter owners to help identify the aircraft they should buy, and to assist with sourcing, pre-purchase inspections, acquisition and maintenance. If you'd like someone to walk you through the steps of operating a helicopter, Dave and Pip are happy to oblige.

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Avinet expands safety and compliance support and signs up Life Flight Trust as their 200th Customer

THROUGH their software-as-a-service product Air Maestro, Avinet is a major supplier of operations and risk management tools to the aviation sector. Their user base now spans more than 6000 helicopter and fixed-wing pilots as well as commercial UAV users, across 26 countries.

Air Maestro is a fully-integrated online product that supports organisational safety, efficiency and compliance via four core components of Safety Management, Resource Planning, Operational Control and Reporting. The software aids compliance and management of a full suite of aviation regulatory requirements.

A significant milestone for the company has just been reached, with the 200th Air Maestro customer now signed up to the service. That 200th customer was New Zealand's Life Flight Trust.

Supporting Safety Management

Formalising safety management is fast becoming a legislated component of good aviation practice, and Avinet continues to develop Air Maestro to support the efficient implementation of sound safety practice for aircraft operators.

Air Maestro now provides for the creation and tracking of human factors information as a part of incident management, with reporting on human factors across all incidents over a chosen period of time.

Operational Risk Assessments can be recorded and attached to flight records, supporting needs for pre-flight risk assessments before SAR missions for example – a current area of ongoing discussion in the industry.

Supporting Aircare™ Accreditation and Compliance

As well as offering a suite of general tools to aid compliance with regulations and best practice, Air Maestro provides control and reporting systems to support Aircare™ accreditation which has been widely adopted as a code of practice amongst New Zealand agricultural and tourism operators.

Air Maestro features that support Aircare™ include:

- A Hazard and Risk Register with tools to build and manage risk assessment matrices.
- Work Practice Management for personal fatigue monitoring within rostering and timesheet modules, a requirement particularly in fire-fighting roles. Shift and duty hours, rest periods and work patterns can all be easily managed.

• Flight Records Management to eliminate duplication of data entry as well as recording agricultural information such as weather, areas treated, product applied, etc.

• Recency and Currency Management helps to ensure that all ratings and approvals are communicated and managed correctly.

• Audit Management helps keep track of internal audit systems including tracking corrective actions.

• A Document Library for Standard Operating Procedure management and distribution

Supporting Professional Drone Operators

Following his recent participation in RPAS seminars in New Zealand, Canada and the USA, Australian-based Avinet CEO, Mike Mulvihill says; "The general consensus amongst experienced aviation operators, on the topic of RPAS, is that an

accident associated with their usage is imminent. The use of drones by responsible corporations is not the concern. They generally understand their compliance obligations with safety regulations and the need to maintain certifiable schedules of operational activity and regulatory approvals." Mike says that what users need to respect within the growing RPAS market is that the main hurdle they face is not a technological or flying issue, but a regulatory one.

To that end, new developments within Air Maestro allow RPAS operators to track devices in their fleet, capture flight records and pilot log book hours and track incidents/accidents, as well as keep watch on any currency items related to the RPAS or pilot.

For more information about Air Maestro, visit: www.airmaestro.co.nz



About Life Flight Trust

New Zealand's topography and relatively sparse population combine to create a significant need for air ambulance and rescue helicopter services throughout the country. Life Flight Trust is one such charitable service which flies people to medical care when they urgently need it. Whether a lost tramp, an injured farmer or a premature baby, the mission is simple: To save lives. Operating a fixed-wing air ambulance and the Wellington-based Westpac Rescue helicopter, the Trust, and by association its supporters, have helped more than 26,000 people in need, saving a great many lives in the process. Aircraft are highly medically equipped and medical specialists are onboard every flight.



Mark Tantrum

JEM Aviation expands for new projects

ESTABLISHED in 2006 at Omaka Aerodrome by Jay McIntyre, JEM Aviation has become recognised as one of New Zealand's leading aircraft restoration and maintenance facilities. Jay and his team offer a complete range of aircraft engineering services from day-to-day maintenance of an owner's pride and joy, through to full rebuilds of 'dream' aircraft - and everything in between. Always on the lookout for new challenges, the team welcomes all types of aircraft, but specialise in the classic, antique and warbird genres, with a particular affinity for those from Eastern Bloc countries.

With a growing international customer base, this year has seen an additional full-time and two part-time tradesmen join the team. The company's footprint has also expanded, with a small hangar sold and another twice the size acquired. Manager and Chief Engineer Jay sees this new acquisition as a blank canvas opportunity for the company saying, "Our second hangar has only ever really been able to be used for storage as lack of display space in the Omaka Aviation Heritage Centre for WWII aircraft meant that housing the Yak-3 and FW-190 prevented us from making productive use of the floor space. Currently the third exhibition hall for the AHC is under construction meaning both these aircraft will soon be on public display. A further alignment of the stars saw a hangar buyer come out of left field with an offer for our smaller hangar, freeing up capital to invest in an existing 20 x 25 hangar virtually

alongside our main maintenance hangar. Our intention is to outfit it with hydraulic and engine clean rooms and a fully certified spray booth in preparation for some potentially exciting projects coming down the track."

Never backing away from a challenge, the JEM Aviation team have several interesting rebuilds underway, ranging from a ground up restoration of a Comper Swift and multiple Pobjoy engines for an Australian customer, a Yeoman Cropmaster rebuild, and a return to airworthiness project of newcomer DC-3 to New Zealand, ZK-JGB. In the background, progress continues on the Yak-9V fighter project, along with repairs to the FW-190 following its ground loop at Classic Fighters 2015. Jay explains, "All have their own challenges and require a certain amount of juggling, needless to say there is never a dull moment in the workshop!"

In amongst that is a regular procession of GA and home-built aircraft for annual inspections plus new aircraft arrivals requiring Certificate of Airworthiness inspections, and a constant parade of Nanchangs through the doors "which helps to keep the spares division busy," says Jay.

Jay says they were managing quite well for work with the high New Zealand dollar, but with an improved exchange rate are now looking forward to more overseas work coming their way; "We field many enquiries for importation of aircraft but the hit rate on these does tend to move with the NZ dollar so there should be exciting



times ahead." That new hangar space might only just have arrived in time.

For all aviation engineering requirements, whether a routine check or a warbird acquisition and restoration project, contact Jay McIntyre (details above).

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Diverse Skills at Solo Wings in Tauranga

WHEN Colin Alexander set up shop at Tauranga some 16 years ago, microlight aircraft were the poor cousins of General Aviation that other maintenance providers were keen to avoid. Fast forward to today and 'microlights' and Light Sport Aircraft have become far more sophisticated, easily rivaling their GA cousins for performance and desirability, and sometimes cost. Solo Wings have grown with the industry and now care for a diverse range of sport and GA aircraft from their purpose-built airside hangar at Tauranga Airport. Jointly owned by Colin and Philip Churchill, Solo Wings (2010 Limited)' philosophy hasn't changed; 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, and experimental category aircraft such as an Albatros L-39 jet. Customers include companies undertaking Part 135 charter operations, Part 115 adventure flights, Clubs with parachute jump planes and glider tugs, and of course private owners of recreational and GA aircraft. One of the newest aircraft onto the Solo Wings books is a jet (sustainer) powered glider.

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.

As an MPI approved sea container transitional facility, Solo Wings staff are qualified to carry out all containerisation tasks and they handle dozens of such projects every year. They are ideally located to receive new aircraft into the country via the Port of Tauranga, then to handle their assembly and placement on the NZ register including all certification and paperwork requirements.

General Maintenance and SAMMS

Solo Wings have all of the standard facilities in place for professional aircraft maintenance including sets of weight and balance equipment, dynamic prop balancing tools, and are presently investigating track and balancing systems for autogyro rotors.

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. Solo Wings are well versed in the latest Rotax 912iS, now having several such variants in their care. Not limited to Rotax and recreational engines,

the team recently fitted a new Yak radial engine and have completed turbine maintenance courses for the turbine powered aircraft also in their care.

A year ago, KiwiFlyer reported on Solo Wings' development of SAMMS, an online software tool dubbed the Safer Aircraft Maintenance Management System. This system is now live and in full-time use. All the Solo Wings engineers now have tablets to hand which are permanently online and used for 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 now containing all of the Cessna SIDs programme details. The system is fully automated (creating Loose-Leaf-Log-Entries on job completion for example), and is also available online to customers to assist with their maintenance control and to eliminate due date or work scope surprises.

Having developed and proven the product, Solo Wings are taking SAMMS

to the international market. Colin and Philip are currently demonstrating SAMMS to a large maintenance organisation in South Africa, and are also working with an international recreational aircraft manufacturer on the potential for SAMMS to link to their maintenance manuals and track parts across their international fleet.

Demand for Rebuilds

For many years, Solo Wings has offered a damaged aircraft recovery and repair service, and 2015 has been a particularly busy year. In the hangar when KiwiFlyer visited was a Citabria undergoing chrome-moly fuselage repair and associated fabric work, a RANS S6 having fabric repairs and aluminium work completed, a Sky Arrow receiving carbon repairs to its engine mounting frame, and a Tecnam receiving carbon and other rebuild work after a nose-wheel landing. Also present was a Dominic tailplane requiring woodwork and re-fabricating.

In the Aviation Community

One of the Solo Wings principles has always been to support the aviation community, particularly in ways that help promote safety and that support aviation as a career.

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.

For more information

If you need advice for recreational or other aircraft maintenance, aircraft importing, or support with an aviation project, give one of the team at Solo Wings a call on 07 574 7973, email: info@solowings.co.nz or visit www.solowings.co.nz



A full hangar and plenty of variety at Solo Wings in Tauranga.

Maintaining Working Helicopters at Taupo

BASED near Taupo and specialising in 'maintaining working helicopters', Helispecs Helicopter Maintenance Limited have continued to increase the scope of maintenance services they offer since selling their role and accessory equipment manufacturing business a short time ago.

Robinson maintenance and overhaul

Now operating as an official Robinson Service Centre, owner Roger Maisey says they are able to supply Robinson parts including rebuild kits – and can offer competitive pricing on R22 and R44 2200 hour overhauls and 12 year inspections. Helispecs Workshop Manager Dave Dennerly is a Robinson factory trained technician with a wealth of experience in New Zealand and Australia. In fact, Roger, Dave and Lenard have over 60 years helicopter maintenance experience between them.

General maintenance

Helispecs scope extends well beyond Robinson with both Roger and Dave having maintenance experience on most helicopter types used for commercial operations in New Zealand. A wide variety of machines domiciled in the central North Island are under their care.

Avionics requirements

Roger says avionics inspections can be completed in-house and they offer same-day service for Kannad ELT 24 month bench tests.

Helicopter Sales

If you are thinking of buying or selling a Robinson Helicopter, give Roger a call and see what he can do for you.



The Helispecs Team. L to R: Russell Dodds, David Dennerly, Shawanna Keehan, Roger Maisey (Director), Lenard Jones.

Aircraft refinishing

Another significant item on the company's capability list is painting. They have a purpose built spray booth on site for re-sprays and refurbishment, meaning a full service can be provided to customers seeking overhaul or touch-up work on their aircraft.

For more information

With their business focus now solely on maintenance, Roger says that further developments are in the pipeline. To find out more about any of Helispecs services or products, or for information on approach and landing procedures at their private helipad, contact Roger Maisey: 07 376 7628 or 027 498 2812, e: heli@helispecs.co.nz

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Aircraft MRO Fall Arrest Systems now available through Powervamp Pacific

Powervamp Pacific are now distributing BTS Fall Arrest Systems into New Zealand and the Pacific region.

The consequences of a fall from height can be very significant and the traditional Kiwi attitude of "I'll be okay" is no longer a mitigating argument, not least in the opinion of WorkSafe - who are progressively expanding their presence from building sites into industry in general.

Beaver Technology Services (BTS) is an Australian company with a long history of innovative product solutions for industrial fall protection applications including working at heights and in confined spaces.

The systems available through Powervamp Pacific are specifically suitable to working at height on aircraft where access and hold points may be difficult. They also include dual operator and self-rescue features.

The LFAT Trailer

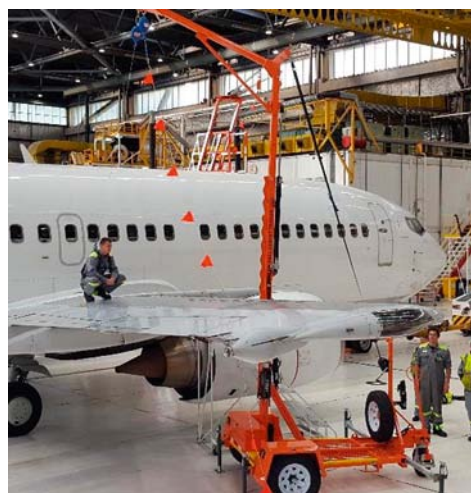
The Lifeline Fall Arrest Trailer (LFAT) is a complete overhead fall protection system that is installed on a towable road registered trailer suited for NZ road conditions.

The LFAT has a maximum working overhead anchor point height of 6.7m and a 2.1m offset mast rated for two workers, and is completely counter-weighted with predetermined weight plates.

When not in use, the mast folds down effortlessly into the trailer and is securely held in place.

LFAT takes around 5 minutes to set-up for use and a similar amount of time to lower the unit after use.

The LFAT main mast is raised and lowered using a hydraulic pump and



The BTS Lifeline Fall Arrest Trailer has an anchor height of 6.7m with a 2.1m offset rated for 2 workers.



BTS Free Standing Mobile Access Stairs provide safe access for working surfaces up to 5.5m in height.

valve assembly with built-in hose burst protection reducing any manual handling issues on-site.

The trailer includes a put-away toolbox for safe storage of harnesses and fall arrestors and an easy-to-use friction brake assembly is fitted on the multidirectional front wheel. A torsion axle assembly eliminates potential 'trailer hopping' when travelling at speed, and is also available in a heavy duty off road version if required.

The trailer has certified lifting points and forklift tyne pockets for ease of lifting and storing when shipping.

Accessories include Inertia Reels, Inertia Reels with Self Rescue Capability, and Inertia Reels with Assisted Rescue features.

The FSMASS

The Free-Standing Mobile Access Stair System (FSMASS) provides access for working surfaces up to a maximum 5.5m height. The stair-step design provides safe access to and from work areas while carrying tools and each unit is equipped with two davit anchor points providing fall protection for up to two users. Adjustable outriggers enlarge the base footprint to stabilise and level the system when in use and collapse into the base to create a small and mobile package for transportation.

For more information

Contact Tony Marsters on 09 636 6840, 021 298 5750, e: tony@powervamp.co.nz or visit www.powervamp.co.nz

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More growth for RotorFix NZ at Tauranga

RotorFix NZ at Tauranga are supporting an increasingly varied operator base, now including tuna boat operations in the South

Pacific. This work has arisen through their expertise with the Guimbal Cabri G2, of which there are now seven under their care.

RotorFix are an official Guimbal Helicopter Service Centre and were the first outside of the factory to fit pop-out floats to Cabris, travelling to Majuro and Honiara to assemble aircraft and complete field installs of floats for a local operator.

As part of their preparation for ship operations, the four aircraft in this role have also had various communications and GPS equipment installed.

Owner of Rotorfix, Matt Annett travelled to Germany and Sweden earlier this year to undertake several pre-purchase inspections on Cabris, two of which have since arrived and been placed on local flight training duties. Matt's services for inspection, importation, re-assembly, and certification have also recently been put to use with two Robinson R44 imports for local and South Island operators. More AS350s have also come under their care during this year.

Gareth McCurdy has now joined Matt and Greg at RotorFix in a full-time role,

meaning there are now three licenced engineers on staff with a very wide range of experience. Matt, himself Group 1

and 2 rotorcraft as well as Arriel and RR250 rated, also has two other licenced engineers available on call for whenever bigger jobs need to be completed quickly. With other services (such as dedicated professional aircraft painting) only a couple of hangars away, Matt encourages operators to treat Tauranga as a one-stop centre for helicopter maintenance – whether routine or rebuild.

Matt says that RotorFix's underlying approach to all maintenance work is to pay attention to the basics and to preventative maintenance in order to minimise the need for field work and unscheduled repairs – especially when a \$1 component can ultimately cause thousands of times its own value in later maintenance issues. Though if field maintenance is necessary, Matt and

his team will be there with a mobile service when required.

For more information

For any helicopter support enquiries at Tauranga contact Matt Annett on 027 266 5505 or matt@rotorfixnz.co.nz



Two more Cabris being readied for flight at Tauranga.



Several AS350s are now under the care of RotorFix.



Cabri G2s arriving for tuna boat duties.



Field installs of pop-out floats about to get underway.

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Mod's that Save Money from Performance Aviation at Wanaka



IT'S coming up 10 years since Matt Bailey opened the doors of Performance Aviation at Wanaka. Since then the company has grown to become a diverse maintenance provider for both helicopters and fixed wing aircraft. More than 30 Robinson helicopters are on the Performance Aviation books, plus MD500, B206 and Bell47, Cabri G2s and more. Fixed wing planes in their care range from a Piper Cub, through Cessna Caravans, warbird jets, and a P-51 Mustang.

The name Performance Aviation wasn't conceived by chance, as it was always Matt's plan to offer more than basic aircraft maintenance, particularly where he could see opportunities to improve components that would save operators' money in the long run. He jokes that his team, offering mods such as electronic ignitions and tuned exhaust systems, are working hard to bring aviation into the 80s.

Joking aside, most aircraft are subject to a maintenance regime which mandates the overhaul or replacement of ignition systems, exhausts, and suchlike. That provides an ideal opportunity to upgrade to modern technology especially if in doing so, future operating and maintenance costs are reduced – not to mention the additional gains that can be enjoyed in aircraft performance. The mods that Performance Aviation has either developed or distributes are available to all operators and maintenance providers. Rather than being 'radical' mods, these are all soundly engineered and built with existing well-proven technology. Give Matt a call to discuss options to enhance your aircraft.

You might be surprised just how the benefits stack up.

Replacement Ignition Switch

A new development at Performance Aviation is a direct replacement for rotary ignition key switches. The rotary style switches are often troublesome and the first port of call for any starter problems. The common rotary switches have an AD mandating 500 hourly inspection and lubrication. Matt



couldn't see why these components were still accepted as 'best available' when much better technology could be employed, and resolved to do something about it. Further, the rotary switches often don't switch cleanly between circuits and can cause a backfire during mag checks with electronic ignitions installed, if not returned to 'both' between checks.

The new Performance Aviation ignition switch will be available for certified and recreational use at a substantial cost saving to a replacement Bendix rotary switch. Matt is currently working with Flight Structures on certification and invites anyone interested in the switch to contact him in order that their aircraft type can be added to the initial certification model list. Consisting of two toggles and a starter button, the new maintenance-free switch will be a direct replacement for rotary switch and occupies the same panel space.

Electroair Electronic Ignition Kits



Performance Aviation are the Australasian dealers for Electroair, who produce the EIS-4100 and EIS-6100 series of electronic ignition kits which are fully STC'd for most Lycoming and Continental four and six cylinder engines fitted to fixed-wing aircraft, with helicopter systems next in line for certification. Electroair kits include all parts (except for switches and circuit breakers which tend to be client specific) to replace the direct drive (typically right hand) magneto.

Electroair say that replacing one magneto with the EIS system will typically improve fuel economy on average by 10-15%. As an example, Matt recently supplied a 6 cylinder kit for a SR20 in Whangarei which then flew 34 hours to Norfolk, Noumea, Vanuatu, PNG, Cairns and Brisbane. Fuel consumption was 8.4 gph at 6500 feet. The pilot says that normal fuel use would have been 9 gph. Matt says that the best fuel savings from the system

arise when flying high at full throttle and reduced MAP.

Customers can also expect easier starting and longer spark plug life with less fouling. Maintenance costs are also reduced. For more detailed information, visit the Electroair website, www.electroair.net

Powerflow Exhaust Systems



Performance Aviation are the preferred Powerflow exhaust systems dealer in the Pacific region, and have fitted dozens of the systems to local aircraft. Powerflow are an extremely popular four cylinder Lycoming performance enhancement with thousands now flying around the world.

With the support of Powerflow, Performance Aviation developed a Robinson R22 Beta exhaust system that saves fuel and provides operators with a hot and high performance considered near equivalent to a R22 Beta II. (Editor's note: I operated an R22 with one of these for a few years. It definitely saved fuel, increased performance, and sounded great.)

For more detailed information, visit www.powerflowsystems.com

R22 Start-up Over-speed Protection

Performance Aviation have an R22 mod available which prevents the engine being started on an open throttle, thus preventing very expensive start-up overspeeds.

Seeking an Engineer

At the time of writing (20/10/15) Performance Aviation are looking for a Rotorcraft Group 2 Licenced Engineer to join their team and "live in paradise at Wanaka". Give Matt a call to find out more.

For more information

Contact Matt on 021 744 588, email: matt@performanceaviation.co.nz or visit www.performanceaviation.co.nz www.facebook.com/performanceaviation

Ballistic Parachute Specialists: Leading Edge Aviation



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'Whole Aircraft' Parachutes are being fitted to increasing numbers of Australian and New Zealand aircraft. In an emergency they can lower the whole aircraft with up to six passengers to the ground, and many lives have been saved worldwide.

Ballistic Parachutes are a great comfort to have up your sleeve as an option 'C' when circumstances conspire against you. The situation could be a forced landing over hostile terrain, loss of control in poor visibility, at night or over water. Or perhaps worse, a mid-air collision, structural or system failure, or pilot incapacitation. Even the most experienced and diligent pilots may someday encounter such issues.

Many aircraft are now factory fitted with ballistic parachutes, and there are also systems available that are engineered for retrofitting to most sport aircraft types. The 'Big Three' are the original American BRS who make units for sport aircraft plus C172/C182, the Czech built GRS, and Stratos07/Junkers/Magnum that are factory fitted to many European Light Sport Aircraft. There are even solutions now for autogyros and sport helicopters.



Definition of a lucky day: The aircraft you have an air-2-air with happens to have a ballistic parachute installed, and you both land safely under it.

Leading Edge has had the capability to supply new BRS systems, rockets and repack the BRS sport units in-house at West Auckland Airport - Parakai since 2012, and recently obtained the NZ approval to import the Czech rocket explosives. Previously this could only

be done legally when installed in an aircraft, which created a big problem at rocket replacement time.

Owners of the Czech units can now have repacks and rockets attended to by Leading Edge who will handle the import/export of units with the factory as well as the supply of replacement units, parts and rockets.

For new fitments, Leading Edge can give truly impartial advice on the best unit for your circumstances. Company owner Bryn Lockie says

that the secret to minimising downtime with the supply or service of any of this equipment is to speak with him early. This allows the best chance to consolidate these otherwise very expensive explosive shipments. For ballistic parachute advice, service, supply, or parts – call Bryn Lockie at Leading Edge Aviation on (09) 973 5119, email: info@LEAV8.com or visit www.leav8.com

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NZ's KANNAD Part 145 Repair and Service Facility Aviation Safety Supplies Limited

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

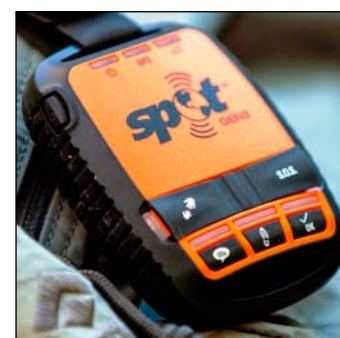
KANNAD ELTs do need to be returned to an approved facility for battery replacement as specialised software and testing equipment is needed for re-certification. A thorough testing as per the KANNAD CMM ensures that the ELT is fully functional when it leaves the facility. When changing the battery in any KANNAD PLB or ELT Lloyd also provides a free RCC registration check.

Aviation Safety Supplies hold CAA Part 145 and 19F endorsements and also ISO9001:2008 certification.

Lloyd is also an active participant in several RTCA working groups that are reviewing the next generation ELT and better crash resistance.

Aviation Safety have long term maintenance contracts with the RAAF for 406MHz AS series (Survival ELTs) and also are involved with the supply of Body Armour, Night Vision, Ballistic Protection and X-Ray equipment.

The company offers a prompt 24 hour service for most 406MHz service requirements and have



exchange ELTs available for AOG situations and/or repair requirements. This service ensures that there is no delay in getting your ELT installed promptly. In addition, they carry large stocks of KANNAD Compact ELTs, the new KANNAD Integra models of both fixed wing and helicopter versions, 406MHz antennas and most accessories such as remote control panels and mounting brackets. Aviation Safety has a trade-in (rebate) arrangement for those wishing to swap from Artex to KANNAD.

Aviation Safety also stock and service a range of inflatable lifejackets, CO2 monitors and most brands of 406MHz PLBs. Brands include Baltic, GME, KANNAD, McMurdo, Ocean Signal, Switlik inflatable TSO lifejackets (stowable ten year service and X-Back Helicopter series), the Switlik Single Person Liferaft and WS Technologies 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 or visit www.aviationsafety.co.nz



Aircraft Washing and Corrosion

CORROSION costs the aircraft industry billions every year. Generally speaking, if using the right products, equipment and techniques, washing an aircraft has an inverse relationship with airframe corrosion. Frequent, correct washing of aircraft will reduce corrosion significantly.

What are "right products"? Truck wash is good for washing aircraft, right?

Wrong. Truck wash is typically high in caustic soda. Caustic soda, or sodium hydroxide, to use it's proper name is an extremely corrosive product, especially to aluminium. Not only will it damage aluminium, it is also damaging to paint and fibreglass resins. Household cleaners are no better either. Many dishwashing liquids contain high levels of common salt which again is very corrosive. Other household cleaning products may contain bleaches and oxidising agents which also attack aluminium, fibreglass resin, paint and other aircraft substrates. There are many recorded instances of damage to aircraft being caused by using incorrect cleaning products. In some instances it has resulted in the grounding of aircraft and large repair bills to remedy the damage caused.

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. 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. If a product does not conform to these specifications it must not be used on an aircraft. Even 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."

Another myth that needs to be dispelled is that of pH. Despite what is often claimed, products with an alkaline pH (greater than 7) are not necessarily corrosive. Equally, products with pH close to 7 (neutral) may be highly corrosive. Always ask whether a product has been tested for its effects on corrosion.

Finally, water quality. Just because tap water is deemed suitable for drinking, it doesn't mean that it is fit for aircraft washing. Surprisingly, rain water is not

good for washing or rinsing aircraft either. It is too pure. In fact some minerals are desirable in the water to assist in corrosion protection, and some military manuals actually specify how much mineral content should be in water - typically calcium hardness and total alkalinity need to be

significantly present.

If long term costs of corrosion are to be avoided, then aircraft washing should be treated as aircraft maintenance and afforded the same duty of care. More information is available from www.eco2000.com.au

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Avcraft's Growth Continues at Feilding

2015 has been a big year for Feilding based Avcraft Engineering NZ Ltd. Engineering Manager Mat Bailey says they have had continued growth in all areas, particularly with CAANZ Part 145 Approval and in the areas of Pilatus Aircraft, Avionics and Electrical.

Pilatus Aircraft again demonstrated their commitment to Avcraft with major modifications and refurbishment of three Pilatus PC-12s, now in service with Sounds Air Travel and Tourism.

Two of the PC-12s underwent what is believed to be the largest modifications performed on this airframe worldwide. Both had the original PT6A-67B engines replaced with a modern and higher rated PT6A-67P, Hartzell Propellers replaced with 5 blade Composite MT-Propellers, a second battery installed on the forward pressure bulkhead in the engine bay, major electrical modifications to interface the 67P engine and battery, Garmin Touch-Screen GTN650 and GTN750 GPS/Nav/Comms and a full reconfiguration to a Corporate Commuter 9 Seat Interior as well as many smaller modifications. The majority of the necessary design and development work was carried out in-house at Avcraft, working with CASA Part 21M and CAANZ Part 148 Design Organisations.

Mat explains; "We were approached by Pilatus with a concept to refurbish and deliver a PC-12 Airliner. Pilatus instructed us with what they wanted, but the details of how to achieve it were essentially left up to us. It's a real testament to the tremendous skill and commitment of our entire team at Avcraft that these aircraft were delivered on-time and on-budget. The aircraft have proven incredibly reliable and exceeded all expectations in performance, comfort and reliability."

The last 12 months has seen Avcraft Engineering NZ Ltd appointed as a Garmin Service Centre, Honeywell Pilatus Limited Service Provider, Bendix King Dealer and Service Centre,

MidContinent Dealer and Service Centre and most recently an L-3 Avionics Dealer and Service Centre. Avcraft Avionics Manager Jake Bradley says they have an L-3 Avionics Lynx NGT-9000 ADS-B Transponder installation scheduled for November - believed to be the first in New Zealand and what should be a popular choice for those needing to meet the pending ADS-B mandate. The Lynx NGT-9000 is an all-in-one solution for ADS-B Out including

a built in WAAS GPS, simplifying installation. He says the Bendix King KT-74 ADS-B Out Transponder has also proven very popular as a cost effective plug-and-play upgrade for those aircraft currently fitted with the aging KT76A units.

The avionics side of Avcraft's business has been very busy with a large number of Garmin GTN Series installations, ADS-B installations and modifications as well as a variety of smaller modifications including Bluetooth and WiFi connectivity. A popular one has been installation of MidContinents Dual USB Charging

Port; these deliver 2.1 Amps per port, more than enough to charge and power any USB device such as iPad or tablets. Jake has a wealth of experience gained on a variety of aircraft and avionics systems, and Mat says he has proven to be a great asset to the company bringing talent and ability to design, install and diagnose. Recent Garmin, Honeywell and Bendix King training updates ensure Jake is familiar with the latest advances from these manufacturers.

CEO of Avcraft, Trina Fitcher says, "2015 has been a fantastic year for growth, and we appreciate all our loyal customers who have been with us from humble beginnings and who will continue to receive the level of service we have become renowned for. We have a very capable team always willing to go the extra mile to ensure customers get value for money and top quality service. Our fantastic staff are equally at home doing a routine service on a Cessna or Piper as they are doing a Hot-Section on a PT6. We welcome all new customers and all makes and model of aircraft."

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.

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 license coverage to provide a full range of services to those operating foreign registered aircraft in New Zealand.

Trina and Mat say to call Avcraft Engineering NZ Ltd if you are looking for Scheduled Servicing, Modifications, Avionics or Importation Support, in fact anything; "We'll be delighted to assist." Avcraft's contact details are at left:



Another busy day at the Avcraft hangar in Feilding.

Aviation Ni-Cad Services Celebrates Release Certificate #10,000

FOUNDED by Clive Dixon, Aviation Ni-Cad Services Ltd has been providing "top-of-the-line" Ni-Cad battery servicing for more than 30 years. Clive says

that despite rumours he has been hearing "promoting his retirement", he has no plans of that sort and business continues apace. In fact this year he reached a

milestone by issuing Authorised Release Certificate (NZCAA Form One) number 10,000 for the company. Clive says, "It was very fitting that it was issued to one of our most loyal and appreciative customers - Airbus Helicopters NZ - and was received by Grant de Lautour who of course 'demands the best' when dealing with multi-million dollar helicopters", as do many of his other customers.

Clive says that while it may, or in fact may not cost a little more, with this amount of experience, knowledge and a large range of new P.M.A. cells, plus hardware temperature sensors, etc. available; if you want to upgrade or keep your battery in the best condition possible, then take or send it to Aviation Ni-Cad Services Ltd. 125 Harvard Lane, Ardmore Airfield 2582.

One of the highlights of this year has been the arrival of some interesting additions to the NZ Register and over the last few months the company has received and serviced two sets of three, 25.2 Volt 53Ah batteries fitted to Gulfstream G650 aircraft. These batteries are monsters weighing over 43kg each and have very high tech temperature sensors fitted. This is an "extremely" electrically demanding and controlled aircraft and is very reliant on the complete 159 Amp-hour capacity supplied by these batteries. Thus it was imperative that they got the utmost care and attention required to ensure they were more than capable of doing their job ably, a job Clive was happy to attend to.

Battery/Aircraft Safety

Battery management for safety is important for "all types of batteries" but especially Ni-Cad batteries. Clive says, "Unless you are on a beach with the tide

coming in or in an extreme emergency situation, "never" start an aircraft with a flat battery using a GPU and fly away. Only ever fly if you have no other choice

and only as long as is absolutely necessary. Then get the battery to a battery shop to be serviced and charged as soon as possible."

Clive says that if during or after pre-flight you find

the 'battery is dead', don't start the aircraft with a GPU and fly away thinking it will be okay, because the generator/alternator will charge it during the flight as:

1. It may not, especially if the battery has been deeply discharged.
2. It can happen that some cells will charge and others may not. These cells could get very hot and this could cause a thermal runaway of both Lead-Acid or a Ni-Cad battery.
3. A battery is certificated serviceable only when it is fully charged. Should you carry out a GPU start then fly IFR or go night flying and the aircraft generator/alternator fails, there may not be enough power in the battery to drive vital instrumentation and flight controls, etc. in order to land safely.
4. With incorrect procedures, all batteries are potentially explosive - and there have been several instances before in NZ. So be Wise and Beware.

Clive holds a number of loan units of the most commonly used Ni-Cad batteries operating in New Zealand.



Clive Dixon's Authorised Release Certificate #10,000



Clive Dixon (left) is congratulated by Grant de Lautour from Airbus who received Aviation Ni-Cad Services Authorised Release Certificate #10,000.

Care and Experience

Aviation Ni-Cad Services are Specialists. Clive says they do nothing else but Service Batteries, using the latest technology Charger/Analysers in their workshop at Ardmore. These are capable of safely charging and discharging batteries whilst also monitoring current, voltage and battery temperature.

Clive also says that some maintenance organisations are acquiring old technology machines and undertaking their own battery servicing on a part-time basis without the benefit of experience or being specialists. Occasionally such examples turn up at Aviation Ni-Cad Services Ltd's workshop in a less than satisfactory condition, their previous care, or lack of, having been something of a false economy. "There are significant operational and financial benefits in specialising and doing the best job first time," says Clive, "and we're happy to provide the advice and services to ensure that operators achieve them."

For more information

Contact Clive Dixon on 09 299 7133, fax 09 299 7743, or by email to: aviation.nicadnz@gmail.com

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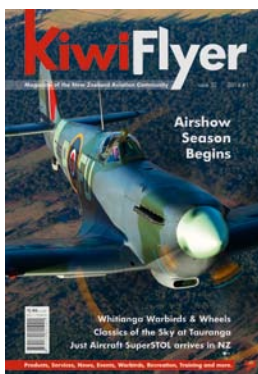
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Classified deadline for the next issue is 7th December.
Don't forget to include all of your contact details in your advertisement.



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