

KiwiFlyer™

Magazine of the New Zealand Aviation Community

Issue 31 2013 #6

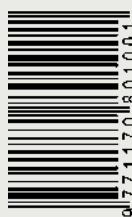


Supply and Maintenance Supplement Edition

Robinson R22 Overhaul

A Taste of Venom: Flying the DH 112

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From the Editor

Welcome to our holiday season issue of KiwiFlyer. There's plenty of reading in this one which runs to a bumper 72 pages, making it our largest edition yet. This issue includes a Supply and Maintenance Supplement section, with editorial and business profiles on a wide variety of aviation maintenance providers and supply organisations. The supplement includes a detailed article about a Robinson R22 overhaul, including everything owners need to know of and think about when undertaking such a project. This should be of interest to anyone completing an aircraft overhaul, whether for rotary or fixed wing, as many of the considerations and decisions required are the same regardless of the aircraft type.

Our other feature article for this issue is all about the excitement of owning, maintaining, and flying a warbird jet, in this case the DH 112 Venom based at Ohakea. Gavin Conroy put the story together with interviews and editorial provided by John Luff who owns the aircraft, Gerry Gaston who sourced, then overhauled and maintains it, and Sean Perrett who undertook the test flying and is the Venom's airshow display pilot.

In the last issue, we promoted legendary helicopter pilot Bill Black's new book on his life so far and offered four copies in a draw for KiwiFlyer readers. We received dozens of entries. One of the book winners happened to be the NEST Crew at Whangarei. When we emailed them to pass on the good news, Chief Pilot Peter Turnbull replied with thanks and mentioned that "I had my first helicopter flight with Bill Black about 1967, (Gas bottles to Centre Island in Lake Te Anau) and look how it ended up." Indeed, and memories like that were typically included with many of the entries we received. We'll see if we can keep acquiring things for reader giveaways throughout next year.

It's almost Christmas, again. It surely isn't 12 months since the last one, but it is a good time to say a sincere thanks to everyone who helps bring each issue of KiwiFlyer together. That especially includes all of the advertisers who make the whole thing financially possible to produce. When you need something, please support them in kind with your business. And a very sincere thanks also goes out to all those who contribute towards the content in KiwiFlyer, both to our regular writers and also to those who simply pop something in an email from time to time. Thanks also to our readers, especially for the feedback you send. We look forward to bringing you even more interesting tales of aviation in 2014.

Happy Christmas and Safe Flying to you all.

Michael Norton
Editor, KiwiFlyer Magazine

In this issue

12. **A Taste of Venom: Flying the DH 112**
Owner John Luff, Engineer Gerry Gaston, and Test Pilot Sean Perrett share their impressions and the excitement of a warbird jet fighter.
18. **The Kiwi Flyer Interview: Chris Rudge**
Jill McCaw talks to Chris Rudge, pilot of balloons, gliders, helicopters and an Ag-Cat.
20. **Saitek ProFlight Multi Panel Test**
We try out some of the latest flight sim enhancement gear from Saitek.
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24. **Oceania MD Helicopters Conference**
We report on the recent MD Helicopters Conference hosted by Oceania Aviation.
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Your Editor put this article together, covering everything you need to know about Robinson helicopter overhauls. Lots of tips for other aircraft are included too.
34. **Gavin Conroy - Gallery 2013**
We share images from what Gavin says was his best year of photographic opportunities yet.
38. **Supply and Maintenance Supplement**
Here begins 25 pages of supply and maintenance profiles and insights from a wide range of providers from around the country.
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We profile one of our quiet achievers on the international stage, Radiola Aerospace.
57. **Cross Country Soaring: Challenge & Reward**
Often, people learn to glide at an airfield and then drift away from the sport, but now more clubs are emphasising cross country training.
60. **The McCulloch J2 Gyroplane**
In the 1970s, there were in fact a couple of certified commercial gyro models. John Brough writes about his McCulloch J-2 Super.
62. **Ag. Planes Past and Present**
John Nicolson continues his series. This time it's Cessna's Agwagon and Skywagon.
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Ruth Presland recently went to the Far North.
11. **Accidents and Incidents**
25. **Event Guide**
66. **ZK Review**

Front Cover: Your Editor flying a freshly overhauled Robinson R22 near Ardmore. Gavin Conroy photograph. (Surely it's okay to put yourself on the cover once every 30 issues :-)



Industry News Briefs

P-750 XSTOL Gains Russian Type Acceptance

Pacific Aerospace Limited (PAL) has gained Type Acceptance for the P-750 XSTOL aircraft for Russia which paves the way for its Russian agent to deliver the first of 37 P-750 XSTOLs to this promising market over the next five years.



Serial number XL186 is the first P-750 bound for Russia and the 85th of its type produced by PAL. It will be operated by the Parachute Training Centre skydive drop-zone in Moscow.

"Russia is an exciting market for us" said Damian Camp, CEO of PAL. "Capturing just a small fraction of the replacement market for the 17,000 pre-WWII Antonov AN2 biplanes produced in Russia would be a big deal for us," he said.

Needing just 720 feet (220m) to take off carrying a useful load of 4,200lbs (1,905kgs), which is more than its empty weight of 3,300lbs (1,497kgs), the P-750 XSTOL also has a superior range over its competitors of an impressive 1,179nm (2,183km).

The 10-seat P-750 is used around the world for freight, passenger, aerial survey and surveillance, medevac, agriculture and skydiving operations. It needs just 720 feet to take off carrying a useful load of 4,200lbs which is more than its empty weight of 3,300lbs. It is certified in 16 countries, including with FAA and EASA under FAR Part 23, and has also been certified against ICAO Annex 6 for Single Engine IFR Commercial Passenger Transport Operations. With the Russian approval coming hot on the heels of gaining Chinese Type Validation in December, Pacific Aerospace is in the process of increasing its production rate. www.aerospace.co.nz

Eagle Flight Training trains Vietnam Airlines cadets

Eagle Flight Training at Ardmore have been approved as a flight training organisation by the Civil Aviation Authority of Vietnam and will soon begin training Vietnam Airlines cadet pilots. Officials from CAA Vietnam and Vietnam Airlines inspected Eagle Flight Training's facility in August. They were satisfied with the standard and quality of training and left with confidence that Vietnamese students would be well looked after at the school.



Holding CAA Part 141 and NZQA accreditation, Eagle Flight Training has trained directly enrolled students from more than 15 countries and is a training provider for the Hong Kong Civil Aviation Department. Vietnam Airlines is the national carrier of Vietnam and expects its fleet of modern aircraft to reach 100 by 2015 and 150 by 2020.

Angel Flight Pilots Wanted

"Flying an Angel Flight NZ mission may be the most satisfying flying you will do." Angel Flight NZ is an organisation of private pilots who volunteer their time and their planes to fly passengers for non-urgent medical treatment, for free. They now have 45 pilots and 68 ground-based volunteers and coordinators and have flown a combined 5944 nm in missions.

They are particularly seeking pilots from Napier, New Plymouth, Paraparaumu, Palmerston North and the South Island to join them. Pilots need to have 250 hours PIC, have current BFR and Medical, and be willing to donate 5-10 hours of their time and their aircraft per year.

To find out more, please contact Lance Weller on 09 434 3271 or 027 893 4587 email: lance@angelflightnz.co.nz

New rescue helicopter chair appointed

Northland Emergency Services Trust Chairman John Bain announced his decision to step down at NEST's 25th Anniversary celebrations, held in Whangarei recently. His commitment to NEST extends 25 years, where he was an instrumental part in establishing the dedicated rescue helicopter service for people in Northland.

NEST's rescue helicopter service has saved the lives of more than 1,000 people since it began, and flown more than 15,000 people in need. John says "NEST has grown to a point where it has exceeded my expectations and dreams for an air rescue service assisting the people of Northland. Now is the right time to step away and let someone else take the helm."

In December, Paul Ahlers, the Deputy Chair and next longest serving trustee will take charge. He is looking forward to the



challenge and says he will be working hard to support the increasing demand and funding for NEST's services which have grown from 100 hours of rescues a year in 1988, to 1000 hours in the last 12 months.

Massey offers custom MBA for Qatar Airways

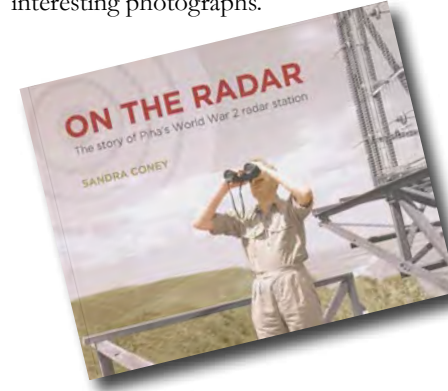
A group of 15 pilots, engineers and managers from Qatar Airways will see their careers take off thanks to an agreement with Massey University to deliver a two-year MBA programme.

The unique arrangement will see a programme of 15 papers delivered as contact courses by Massey lecturers, supported by a web-based learning management system. Massey lecturers from both the MBA programme and the School of Aviation will travel to Doha for five days at a time to deliver each course.

The students will also travel to Massey's Manawatu campus for two of the papers and a study tour of leading New Zealand organisations.

On the Radar

We like receiving books to review (note to publishers) but not having any aircraft on the cover, this one sat for a while before it got looked at. Turns out to be fascinating, very well researched and written by Sandra Coney in an engaging style, and full of interesting photographs.



On the Radar is the story of Piha's WWII radar station. Radar was high-tech weaponry in the day (it's what helped defeat the Germans of course) and Piha was part of a coastal network permanently on the lookout for invading planes and submarines, all reporting to the secret nerve centre at The Filter Room. It seems strange to consider in 2013, but the threat of invasion was very real in World War II and the book accurately captures the tension of the time. It's also a book about people, time and place, depicting a period in New Zealand's history which much of the current generation knows very little about.

Anyone interested in history, technology, and aviation will enjoy On the Radar. We did. An ideal Christmas present for hard-to-buy-for aviators. Available from www.piha.co.nz/books or Whitcoulls/PaperPlus.

New HFT Base for Christchurch

Helicopter Flight Training (HFT) Ltd has announced the opening of a Christchurch base in January 2014. The company has established office and hangar facilities at Rangiora Airfield with an initial 12 students due to start training in January.

HFT has been developing other training bases in addition to their Ardmore Airport site, with new locations at Thames Airfield and Tauranga Airfield. CEO Phill Maguire says the company is also researching other sites, such as Nelson and Wanaka.

HFT has also announced what it believes to be the most affordable CPL(H) in NZ. The 'Diploma in Aviation' training programme includes the CPL and other work focused skills. The 78 week course includes Advanced Long-line, Fire Bucket, Heli-deck op's, GPS for VFR, Night-Frost, Dangerous Goods, First Aid, Operations and Maintenance control for \$78,000 and includes the PPL(H). Studylink student loans are available for suitable applicants.

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Latest model King Air 250 on tour

ARRIVING in New Zealand as the last issue of KiwiFlyer went to print was the latest variant to the Beechcraft King Air range, the King Air 250.

Following a ferry flight from the USA through Europe, Turkey, Singapore and Australia, this new model aircraft commenced its Asia-Pacific demonstration tour at Ardmore. A fine effort from Hawker Pacific Ardmore Manager Martyn Griffiths and his team saw the aircraft looking as though it had just rolled off the production line, floodlit under cover for invited guests to view. NZ stops on the tour included Wanganui, Paraparaumu, Nelson, Christchurch, Napier, then Auckland to Norfolk Island and Australia.

An evolution of the King Air B200, the King Air 250 incorporates composite winglets and lightweight composite propellers. It is also fitted with the Rockwell Collins Pro Line 21 avionics suite, aptly described by Hawker Pacific's company pilot Rod Mendham as "magic". Rod's more technical description is that the demonstrator aircraft is RNP10 (Required Navigation Performance 10nm) compliant, is RVSM (Reduced Vertical Separation Minima) equipped for flight above 29,000 feet, has Satellite AFIS, and satellite based vertical precision accurate enough for coupled approaches under auto-pilot. It is also fitted with an infrared camera which can see anything warm on the runway, allowing take-off in fog, or for improved vision on unlit taxiways at night. The Royal Flying Doctor Service now has these installed on all their B200s, being particularly useful for picking out animals on airstrips at night. Aside from the luxurious cabin, another nice feature from the passengers point of view is the inclusion of mains power outlets (rated to 4A) in the cabin, ideal for running computers and other electronic devices. The demonstrator's cabin has an executive fit-out, with seating for 8

passengers (including one in the cockpit and one in the rear).

With 1700shp from the twin P&WC PT6A-52 turboprops, the King Air 250 has a maximum cruise speed of 310kts, a range (with 4 passengers) of 2200km, a maximum operating altitude of 35,000 feet, needing 643m for take-off and 867m for landing. Maximum take-off weight is 5670kg. Rod says that the -52 engines can maintain full power without temperature limits all the way to 24,000 feet at ISA, making for faster climbs to cruise altitude.

The King Air name has some 50 years of history and development now, with close to 200 of the various versions during that time currently operating across Australia and New Zealand in a variety of aeromedical, government, military, private and commercial roles. The type has a rich heritage and has been a mainstay in its category for many years. Popularity has been assured in Australasia thanks to the short distance efficiency of the turboprop engines, providing an ideal compromise between jets and smaller aircraft that can't get above the weather. Able to operate off 'unimproved' strips, the King Air 250 is only a little slower than a similar sized jet and offers more seats and more range for less fuel burn.

A brand new King Air 250 can currently be yours for less than US\$6m. King Air operators in NZ have the advantage of Hawker Pacific's service facility at Ardmore as well as benefitting from the investment Hawker Pacific has in maintaining the RNZAF B200 King Air fleet.

For more information about the Beechcraft range, contact John Oppenheim on +61 2 9708 8566, email: john.oppenheim@hawkerpacific.com or visit www.hawkerpacific.com

Hawker Pacific Ardmore Manager Martyn Griffiths can be reached at 09 295 1630 or martyn.griffiths@hawkerpacific.com



1: On display at Ardmore. 2: Luxurious cabin seats up to 8 passengers. 3: Rockwell Collins Pro Line 21 avionics.

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CTC Aviation makes flying as a profession more accessible to Kiwis

AIRLINE pilot training organisation, CTC Aviation has announced a new Diploma in Aviation that also provides both sponsorship funding and successful graduates with an instructor job with the company at the end of their training.

As a key incentive to encourage enthusiasm for the profession of flight instruction, the company is funding the fees for the Instructor training phase of the course representing a value of \$40,000 in sponsorship leading into employment.

CTC Aviation's Acting Managing Director, Julian So, said "gaining an instructor position at CTC Aviation is a highly rewarding professional vocation either as a career instructor or as part of a pathway towards airline flying."

"Many of our former instructors are now flying with major airlines, including Air New Zealand and Jetstar. Progressing your aviation career as part of our instructor team is a fantastic opportunity to be part of a great company as well as train talented and enthusiastic airline pilot Cadets."

"Offering this new Diploma programme is also another way in which we further support the New Zealand aviation industry, whilst also future-proofing our own instructor team," he explained.

In addition to enabling successful graduates to secure a job with the company at the end of training, the CTC Aviation sponsorship scheme covers trainees' costs to complete its instructor training course – a value of \$40,000. This reduces the headline price of the Diploma programme to \$96,000. Trainees can access \$70,000 in student loans, leaving them with only \$26,000 to self-fund.



CTC Aviation requires a working commitment from successful graduates who accept the sponsorship and then an instructor position. The company currently employs 60 instructors with 250 Cadet airline pilots undergoing training and expects this number to grow to approximately 300 Cadets during the next two years.

The CTC Aviation Group is a world-leading airline training and pilot resourcing company. The company trains approximately 2,000 aircrew for more than 50 global airlines each year. These include British Airways, Dragonair, easyJet, easyJet Switzerland, fastjet, Flybe, flydubai, IndiGo, Jet2.com, the Jetstar Group, Monarch Airlines, Oman Air, Qatar Airways, Royal Brunei Airlines, Thomas Cook Airlines and Thomson Airways.

New Zealanders interested in applying for the new Diploma in Aviation and gaining a flight instructor job upon successful graduation can find out more from www.ctcwings.com or by phoning 07 843 3304.

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Avsure Insurance Feature

contributed by Bill Beard

Aviation Insurance Explanation of Terms

Insurance policies have a number of terms and definitions that may not always be fully understood. Bill Beard from Avsure explains:

Hull Insurance

This is the main component of an aircraft policy. The hull insurance is intended to provide payment towards the cost of repairing or replacing an aircraft that has been damaged. Most policies protect the aircraft on an "all risk" basis, meaning that the aircraft is covered against any cause of loss unless specifically excluded. Excluded items typically include things like mechanical breakdown, ordinary wear and tear and loss of use. You can buy coverage while the aircraft is on the ground, taxiing and in flight.

Aircraft Liability Coverage

This is the other major element of an Aircraft Hull and Liability Policy. Liability coverage protects those who are covered by the policy against action brought by others who claim that they have suffered injury or that their property has been damaged in relation to the insured aircraft. In New Zealand personal injury and death claims fall under ACC legislation.

Named Insured

This is the actual policyholder(s) specifically named on the policy. Named insureds are responsible for premium payment, and have the authority to cancel or make changes to a policy.

Additional Assureds

Are persons or entities other than the policyholder, who are covered under the provisions of the policy. Additional insureds are given the same protection under the policy that the policyholder is. It should be noted that the 'limit of liability' is the maximum that the insurance company will pay to settle a claim. In other words, say three entities are each 'additional insureds' on the policy in an action, the 'liability limit' of the policy will be split among the individuals.

Private, Pleasure and Business Uses

Private Pleasure and Business aircraft insurance is coverage for non-professional, non-commercial aircraft. In other words, general aviation aircraft, flown by the owner or authorised pilot, operated for pleasure or non-aviation business use but specifically not for hire, or rental or compensation. This means that you cannot make a charge for the use of your airplane or helicopter.

Open Pilot Warranty

A clause in the insurance policy that lays out the requirements for pilots who fly the aircraft other than those specifically named in the policy and is usually subject to the pilot meeting minimum qualifications and flying experience requirements.

Subrogation

A legal doctrine under which your insurance company attempts, in your name, to recover money it has paid under your policy due to the fault or actions of a third party. In aviation insurance, the most common example of this is physical

damage to your aircraft caused by a third party, such as a maintenance provider.

Waiver of Subrogation

A promise, in advance, by you and your insurer not to try to recover damages from a party who causes damage to your aircraft. Waivers of this sort can be found in hangar agreements, and are sometimes requested by Instructors or Professional Pilots who will be providing you with pilot services.

To discuss this topic or any other questions relating to aviation insurance or to seek quotations, contact Bill Beard on 0800 322 206.

Accident and Incident Reports are provided courtesy of **Avsure**

Type: Fly Synthesis Storch S SAQ
Location: Te Kohwai **POB:** 1
Operation: Private Other **Injuries:** Nil
Date: 17 September 2013
Report: Aircraft stalled while initiating a go-around on short final for a private strip neighbouring Te Kohwai airfield. The aircraft's port wing dropped, with the aircraft striking the Te Kohwai runway 05 boundary fence. The nose gear collapsed, and the aircraft came to a stop facing in the opposite direction.

Type: Cessna 180 BWK
Location: Eskhead Station **POB:** 2
Operation: Private Other **Injuries:** Nil
Date: 2 November 2013
Report: During takeoff, pilot lost control of the aircraft due to a crosswind gust. The aircraft left the runway, the right main gear collapsed, with the propeller, right wing tip, and right h-stabiliser striking the ground.

Type: Glasfugel Std Libelle GGK
Location: Springfield **POB:** 1
Operation: Private Other **Injuries:** Nil
Date: 28 October 2013
Report: During an out landing the pilot realised they would be unable complete a landing in their chosen paddock. A left turn was conducted at approximately 10ft AGL to land in the next paddock into the easterly wind. The glider stalled during the turn, striking the ground and breaking the tail. The pilot was uninjured.

Type: Gippsland GA200C FJN
Location: Eskhead Station **POB:** 1
Operation: Agricultural **Injuries:** Nil
Date: 18 November 2013
Report: During topdressing, an engine power loss occurred resulting in a forced landing into a paddock damaging the undercarriage and one wing.

Type: Piper PA-18A BOY
Location: Hastings **POB:** 1
Operation: Private Other **Injuries:** Nil
Date: 14 September 2013
Report: Prop struck ground during takeoff. Engine removed for bulk strip.

These weekly accident reports are sourced from www.caa.govt.nz and contain information as reported to the CAA recently. The accuracy of the information supplied cannot be guaranteed. Refer to www.caa.govt.nz for details which may be added as more information is received.



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A taste of Venom: Flying the DH 112

November 2013 marks the first anniversary of de Havilland DH 112 Venom Mk1 ZK-VNM's test flight at Ardmore after its import and refurbishment by keen warbird enthusiast John Luff. Trusted with the test flight, numerous display flights since, and with helping teach John how to fly the jet was RNZAF pilot Squadron Leader Sean Perrett. Since that test flight, KiwiFlyer Contributor and ace photographer Gavin Conroy has met with Sean, John and VNM on various occasions, and put this article together to give KiwiFlyer readers a taste of what it is like inside the cockpit of a warbird jet fighter.

ZK-VNM is one of only a few Venoms still operational and is the only one flying in the southern hemisphere. Its home now is RNZAF Base Ohakea, near to where owner John Luff lives in Wanganui. Possibly still the world's newest rated Venom pilot, John purchased the aircraft from Switzerland. The Swiss Air Force were the last to actively operate the type (into the 1980s) before these were retired and some entered the civilian warbird market.

John's new Venom hadn't flown for a couple of years but was structurally sound and in good overall condition. However, aircraft tend not to like sitting still for too long and there were a few "not too serious" issues arising that needed to be addressed before it could fly here again. Fortunately the aircraft was in the capable hands of engineer Gerry Gaston who worked in the RNZAF on Vampires in the last 50s and spent nine years in ERS (the Engine Reconditioning Squadron) at Woodbourne overhauling Goblin (Vampire) and Avon (Canberra) engines. John describes Gerry as "the most essential part of the project" and says it simply wouldn't have happened without him.

It was Gerry who found the aircraft for sale in Switzerland thanks to an internet search (having previously looked at and rejected one in very poor condition in the United Kingdom). What became VNM was an ex Swiss Air Force example from a flying museum that operated two Hunters and the Venom. They had decided to sell the Venom so Gerry went to look at the aircraft and was impressed with its condition, being "absolutely corrosion free". A deal was done and the aircraft disassembled and shipped down the Rhine to Rotterdam, then to New Zealand. It came with a full

set of manuals and related literature, some being in Swiss-German with a degree of interpretation required and fortunately including many pictures which were "easier to read". Also of note is that VNM has an active ejection seat and a starting system now adapted to use compressed dive air rather than cartridges.

Reassembled and brought up to flying standard in Grant Biel's hangar at Ardmore, ZK-VNM's first New Zealand flight was on November 11 2012. That first flight was to Tauranga, with SQN LDR Perrett later flying the Venom to its new home at RNZAF Base Ohakea. ZK-VNM's livery is dedicated to 14 Squadron RNZAF, carefully matched to photos of Trevor (TT) Bland's aircraft from the time when 14 SQN Venoms, based in Singapore, served in combat roles during the Malayan Emergency of 1955.

VNM has just passed through its first annual inspection as this issue of KiwiFlyer went to print. Gerry has kept a close watch on the aircraft over the last year and says it has all gone very well; "In the military these would have been thrashed, but after the work we've done, and treated kindly, it should last another 100 years."

The owner's view

The first question everyone wants to ask John is why did you decide to buy a Venom? His answer is that "there are already two Vampires flying in New Zealand and I was after something a bit different". The Venom achieves that goal and was once described as a "Vampire with hairs on its chest" by a 14 SQN Commanding Officer. The aircraft is powered by the de Havilland Ghost engine which provides an output of some 4800 pounds of thrust and ultimately delivers a fighter capable of over 500 knots in level flight.

Once back at Ohakea Sean finished the test flying. With RAF Harrier and Red Arrows experience, he was an obvious choice for the role. Of course John's ambition was to fly the jet himself and he undertook dual training in a Vampire while in Switzerland before moving from the side by side layout of the Vampire to the tandem layout of Andrew Fairfax's L-39 Albatros which he spent time flying at Ohakea with Squadron Leader Jim Rankin as Instructor.

Sean then spent a lot of time with John going over the complex set up in the Venom. Indeed when one looks into the cockpit it is



ZK-VNM in the colours of RNZAF 14 SQN who operated the type in combat roles during the Malayan Emergency of 1955. Ex Swiss Air Force, VNM has a 'long nose' which was designed to carry additional avionics and camera equipment for purposes such as reconnaissance and mapping.

difficult to know where to start. John says that "Then one day Jim said 'Yeah I think you're good to go', so away I went."

John says the Venom is "awesome to fly", though "I'd be less than honest not to say I was pretty nervous at the time". Sean was in the tower at Ohakea for that first flight. Jim went up to 10,000 feet and "did some stalling, though the stall warning had been set very high by the previous owners at 135kts which was quite distracting to a new boy and we've since adjusted it back to 115kts. The takeoff and landing were both okay." Since then John has flown into Wanganui (where he lives) and also completed a few cross country flights, including to New Plymouth, Gisborne and Woodbourne. Cross country flights are conducted on moderate power settings at about 235kts air speed as John says "any more power than that and it scoffs fuel like it's going out of fashion".

Needless to say, John is very grateful to Gerry, Sean, Jim, and RNZAF Base Ohakea for all of their support to the project.

Thirsty work

The only real downside to operating a Venom is its very high fuel burn. It averages more than 20 litres per minute in the cruise and you can almost quadruple that figure at low level and high speed. The internal fuel tanks hold just 1500 litres and John says that if you kept the power on without climbing much after take-off, then it would all be gone in 17 minutes. Fortunately the tip tanks take capacity to 2200 litres and pylon tanks add a further 800 litres. So full fuel is 3000 litres. That's still not a very long flight even in the cruise for which John describes fuel burn as "very economical, by comparison". Fuel burn aside, John says he is well rewarded with exhilarating flying and after all it is a true de Havilland fighter; "It can't get any better than that". Mr. de Havilland was apparently very happy with his fighter at the time too, being quoted as "extolling the virtues of the new Ghost engine with its high 750 hour TBO and moderate fuel consumption of just 700 gallons per hour".



Above: Owner John Luff strapped in and preparing for a flight. Whereas many warbird jets have de-activated ejection seats, the one in ZK-VNM is live.

Left: Inside the cockpit is a busy place to be. Built in Switzerland, most of the instruments read in French.



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The test and display pilot's view

In the words of Sean Perrett:

"When John Luff asked me if I would like to carry out the test flying on his Venom, it didn't take me long to decide. I was lucky enough to have spent my entire RAF career flying jets, starting my Basic Flying Training on the Jet Provost Mk 3 and ending it on the Harrier GR7. Although I hadn't flown a jet for a few years I felt that I had sufficient experience to take on the challenge of flying a first generation jet fighter.

To clarify a point about test flying, a qualified Test Pilot is someone who has passed either The Empire Test Pilot School in the UK or an equivalent course in the United States Navy or Air Force. These courses take about a year and qualify the graduate to fly any type of aircraft. To be eligible to fly as a 'Test Pilot' in New Zealand, the CAA must issue a Test Pilot Approval which they look at on a case by case basis.

Once the CAA had issued me a Test Pilot Approval it was time to get my head in the books and learn how to fly the Venom. The RAF Pilot's Notes were written in the early 1950s and were a good place to start. Without exception, the ex RNZAF and RAF Venom pilots that I spoke to said that the aircraft was a delight to fly and didn't have any vices. There was only one ex Venom pilot who made it sound like flying a Venom was as difficult as splitting the atom! I am pleased to say he was wrong.

The cockpit is small and smells like an old aircraft should. The bottom of the windscreen seems to start just above the pilot's boots providing excellent forward visibility. The layout of the instruments is typical of many British aircraft of that era. As this particular aircraft is one of 250 Venoms built in Switzerland, all of the gauges and switches are in French.

Like many old British aircraft, the Venom is taxied and steered by using the rudder and a brake lever on the stick. With the rudders central the brake supplies hydraulic pressure to both main wheels, with left or right rudder applied it will only supply pressure to that side.

When take-off power is applied and the brakes are released, there is a reassuring push in the back. The Venom accelerates quickly and the rudders become effective very early on. During take-off, the engine is burning 150 litres of AVTUR every minute – there's not many minutes until the tanks are dry. It is important not to rotate the Venom too early as it will become airborne and wallow in ground effect, neither climbing nor accelerating. On a still wind day at ISA temperatures the ground roll on take-off is stated as 900 yards (823 metres).

Once safely airborne, gear and flap is selected up and the pressurisation is selected on. The aircraft handles very nicely with well harmonised and light controls. Aerobatics are easy and the turn rate is impressive. That said, loop will still use about 4000 feet of airspace pulling about 4G.

The landing is not difficult providing you are on profile and not slow. There is a minimum engine setting on finals of 5000 RPM. The reason for this is because below that RPM the engine will take too long to spool up if an overshoot is required.

During the landing roll, braking must be avoided until the rudders are neutral otherwise there will only be brake pressure supplied to one wheel. The Venom was one of the first aircraft fitted with the Maxaret anti-skid system. This enables the pilot to brake on landing without locking up the wheels and bursting tyres.

In summary, the Venom is a delight to fly and operate. As with any fast jet, you have to stay on top of the fuel remaining

as it would be very easy to park the throttle and empty the tanks. As a comparison to other jets I have flown, the Venom is by far the oldest and its performance would be better than that of the Aermacchi MB339 and close to that of the Hawk. It is certainly the only wooden jet I have flown." (The Venom and Vampire have wooden fuselages forward of the engine bulkhead.)

Airshow Season

During 2013, ZK-VNM was introduced to the airshow public, most notably at Wings Over Wairarapa in Masterton and at Classic Fighters Omana. Sean flew polished solo displays as well as joining with other aircraft in formation. At Wairarapa, the audience were treated to a display not seen anywhere else in the world when Mosquito KA114 led a four ship display comprising of a Vampire on each wing and the Venom in the slot position. The crowd just loved it and for many that 10 minute display was the highlight of the show.

Then at Classic Fighters a pairs display lead by the Venom with a former 14 Squadron BAC Mk 88 Strikemaster was another crowd pleaser and took everyone back to a time when both types were in operational service with the RNZAF.

This season the Venom is booked for Classic Flyers at Tauranga in January. Spectators are likely to enjoy the aircraft almost as much as John will flying it there and Sean will during the display.

Captions:

Right: A menacing view of the Venom which wouldn't look out of place in a Star Wars movie.

Left: Here exits 4800 pounds of thrust, and what remains of 150 litres per minute of fuel during take-off. The low power cruise consumption is just 20 lpm.



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Jon Farmer and Peter Beer are two gentlemen pilots, both in their 80s, whom have been flying for over 40 years. Last month they took delivery of a new Foxbat A22LS Light Sport aircraft from Doug King of Lite Flight Green NZ Ltd based in Pukekohe, and say they are overjoyed at how much

balance, with a slow stall speed (28knots), helping to make the Foxbat simple and stable to fly at all times. Cruise speed is in the order of 95-100kts. Doug also points to the robustness of the undercarriage and balloon tyres allowing for landings in short rough paddocks for pleasure "or a pee". He says

the Foxbat "is a great utility aircraft with a range of other uses such as training or glider towing, and it obviously has excellent short landing and takeoff capabilities. Floats can be fitted for amphibious use if required. It has been flying for many years in many countries and has proven itself with an impeccable track record".

Doug says that it is always an inspiration and pleasure to meet people whom are younger or older with a passion for flying and "it's been great to be able to help Jon and Peter into an aircraft that is so suited for them". Jon and Peter are excited about their future flying in the Foxbat and KiwiFlyer certainly wishes them a great many enjoyable hours in the sky with their new aircraft.



Jon Farmer and Peter Beer with their new Foxbat A22LS

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Contributed by Stephen Boyce, Sales Manager, Oceania Aviation Group

Robinson R66 thrives in Canada's Mountains

AS BOTH a Pilot and Sales Manager of Robinson Helicopter products in New Zealand, I was pleased to see the recent acceptance of the R66 by Transport Canada and I eagerly wait to see what new and interesting uses the Canadians might have for the impressive R66. There is a commonality between our countries in how we view and use helicopters but Canada is going to put the R66 through its paces as they operate at higher altitudes and in colder climates than most. After years of utility flying up there, I know the Canadians are looking hard at the performance of the model and comparing the external lift capacity and running costs to the Bell 206 and EC120.

I decided to call a former colleague Eric Gould who has literally owned, operated and sold dozens of Robinsons and his first comment was how fortunate we were in New Zealand to have access to a Cargo Hook STC for the Robinson R66. Eric confessed that they needed to understand how the R66 would change the turbine market and to that end they flew over 120 hrs on their demonstrator around the operators in the mountains of British Columbia and into the dry heat of Alberta. Everyone was seriously impressed about the performance – solid feedback that reinforces the capability of the type as an option against the

incumbent light turbine fleet for utility and private use. Eric is hopeful they will have the Onboard Systems Hook STC soon and expects the coming 2014 season to be outstanding for the Robinson R66 brand.

I asked him what his personal experience of flying it was and he suggested that it would be better to accept Richard Alzetta's letter as an independent testimony (below). The type has experienced a less than ideal start in the light turbine category and it is much better to hear the thoughts of a commercial aviator in place of the rumour mill. The R66 powered by the RR300 is a game changer for high altitude performance, speed and external load operations. It is a cost competitive brand new aircraft with full warranty, affordable direct



A game changer in the light turbine market, Skysales Aviation have two new Robinson R66s available in New Zealand for immediate delivery.

operating costs (DOC) and they are available with full support from Skysales Aviation in Christchurch.

Stephen Boyce, Sales Manager and Pilot, Oceania Aviation Group

For more information

Contact Stephen Boyce on +64 21 540 460, email: stephen@ohl.co.nz or visit www.oceania-aviation.com Skysales Aviation is part of the Oceania Aviation Group.

From: Richard Alzetta
Date: September 10th to 25th, 2013

The following is the little write up I promised about flying the R66 in the mountains. You can use it as you wish for promoting this remarkable helicopter. Location: West of Calgary AB in the Canadian Rocky Mountains. Aircraft: R66 Turbine Helicopter. Pilot: Richard Alzetta.

I HAVE over 21,600 hours of flying experience with more than 5,000 hours in the mountains of Europe, Alaska, Asia and Canada.

With more than 7,000 hours on Robinson Helicopters (my first purchase from Eric was the R44 Astro), I really wanted to try the R66 especially in the mountains which is where I am the happiest flying.

Firstly, I was really impressed by the aircraft's quality of construction and the attention to little details like lights on the side glass of the hydraulic reservoir and transmission, the single point refuelling with a sturdy fuel cap, the large baggage compartment and many other changes from the R44 Raven II. A nice touch was the middle back seat that can be easily replaced by a plug with two armrests and cup holders, giving this helicopter an executive look... very cool!

I wanted to experience for myself what it would be like to fly it in the mountains with a good average load and at up to 12,000 feet where most flying in the Rockies would take place. Eric Gould had already

performed Max Gross 10,000 feet hover OGE with pedal turns so we did not duplicate that.

I flew it with Luke Yanik, and also Bill McMullen (a pilot friend) as an observer. We started with a full fuel load and were working in the mountains with 3/4 tank of fuel. Our total weight was 2,360 lbs. (340 lbs. below Max Weight). This was what I planned as it would be a very realistic weight for someone taking two friends hiking or heli-fishing. It also showed that we could have carried another 200 lb. passenger plus backpacks and still be below max.

The weather was cloudy with scattered clouds and a 10/15 knots westerly wind. We climbed to approximately 12,000 feet using 75% torque and about 70 to 75 knots airspeed. We landed at 11,200 feet with no problem at all and later hovered out of ground effect at 12,000 feet using 82% torque with lots of MGT available and lots of tail rotor authority left and right. We also landed later, on a 9,000 feet pinnacle which was no problem.

For someone who likes to go hiking, I find that the R66 would be the ideal machine; simple, reliable and turbine powered with excellent performance and ease of maintenance.

I do not know of any light turbine helicopter that can match it for price and performance. I strongly recommend it.

Richard Alzetta



An Interview with Chris Rudge

Pilot of balloons, gliders, helicopters, and a bright red Grumman Ag-Cat



Chris Rudge with his Ag-Cat at Pukaki Airfield.

THIS issue's interviewee is a pilot who has turned his passion for flying into a dream job. Chris Rudge is the only New Zealand pilot, and one of a rare few around the world to log over a thousand hours each flying balloons, gliders and power aircraft commercially. These days he is based at Pukaki Airfield in the Mackenzie Basin and flies tourists around Mt Cook and into the mountains in a bright red Grumman Ag-Cat.

Chris you've obviously got a lifelong passion for flying. Did you grow up on an airfield?

Ha, pretty much, yes. Both my parents were glider pilots. Dad's other passion was mountaineering and that rubbed off on me too. We moved to Palmerston North when I was five and I was dragged to the gliding field most weekends - but hardly kicking! I really enjoyed flying with my Dad.

And you went on to get your PPL?

Not straight away. I came down to Lincoln University in Canterbury to do the Diploma in Parks and Recreation. I joined

the Canterbury Gliding Club in 1984 and soloed in a glider known as 'The Duck', a Capstan with the registration DU. (Glider registrations all start ZK-G which is commonly ignored by their pilots.)

I also joined the Canterbury Aero Club and learnt to fly powered-aircraft in Cherokees. My fixed-wing solo was in an aircraft which had a similar registration - DUW. In 1985 I moved to Nelson and got my PPL with the Nelson Aero Club. While there, I worked full-time as a 'gopher' for Air Albatross handling freight and refuelling Metroliners.

Were you aiming to become a commercial pilot or was it something you were just doing for fun at that stage?

Definitely just for fun, but I kept up my flying wherever I worked. In 1986 I got a job at Tongariro National Park and was a member of the Taumarunui Aero Club and flew gliders at Taupo. I met well-known aviation identity Fred Ladd when I was up there. He was a fit old guy and a laugh a minute.

What happened next?

In 1987 I came back down to Christchurch for a job with the NZ Antarctic Programme. I'd always been keen on photography and writing since I was in school and becoming the programme's Information Officer was a great fit for me. In Tongariro I'd been producing summer and winter newspapers and a quarterly journal. I'd also been organising the summer nature programme. So I had everything that DSIR Antarctic, as it was known then, wanted - mountaineering, tramping, photography and writing. I did press releases, sent photos to NZ newspapers and worked to sell Antarctic science to the public.

Tell us some highlights of Antarctica.

There were a lot. I got to the Dry Valleys a few times and I flew over the Mt Erebus crash site on the 10th Anniversary of the crash with a super VHS camera filming for TV3.

When I was working back in Christchurch I did a mid-winter supply drop to McMurdo in a C141 Starlifter and another one all the way to the South Pole.

For the Mactown drop the temperature was about -30°C and they opened the back doors. The aircraft is slightly tail down and everyone is back behind the load. They pull on a line which cuts a rope and all the cargo goes out the door with parachutes on static lines. The cargo contains fresh fruit and veges and there are strobes on the crates so the guys can find them quickly - nothing worse than a salad containing lettuce that has been frozen!

The flight to the Pole was right up there in the top ten things I've done in my life. It's the closest thing on earth to going to space. It was -63°C when the side doors were opened to throw the load out.

The South Pole is 9000 feet ASL and we were flying at 10,000 feet. The guys pushing the cargo out don't have harnesses but they do wear a parachute in case they go out the door accidentally. Everyone was breathing hard because of the altitude. I was taking photos of the drop but, despite wearing every piece of issued clothing, I was still freezing. The only light was moonlight. Looking down at the drifting snow in the eerie light, it was like being at Moon Base

Alpha - a scene straight out of a Sci-Fi movie.

It is five hours from Christchurch to McMurdo, then another three to the pole and then all of that back again. They have to do two mid-air refuels with a KC 10 tanker. I was lucky to be on the flight deck for the first one and it was an incredible sight as we flew only metres below another huge aircraft in the twilight. The reason they don't use the back doors at the Pole is they could freeze open. In that case, the aircraft can't re-pressurise and you would have to return to New Zealand below 10,000 feet. Because of the extra time that would take, the tanker would have to return to Christchurch, refuel and then hopefully meet you somewhere over the ocean on the way home. If you didn't get the fuel, the thought isn't worth thinking about.

On the way back we flew past the Aurora Australis. It was exactly like a curtain to each horizon, a wall of moving light. We flew right under it and then it was a behind us. No photo could do it justice.

How long did you work for the Antarctic Programme?

Three and a half years.

Did you do any flying during all of this?

Yes, a lot. I re-joined the Canterbury Gliding Club and got myself tow rated, flying the club's Pawnee in which I did close to 5000 tows.

And it was about then that you started to think about aviation as a career?

Yes, after getting a New Zealand CPL, I travelled to Canada and got a Canadian licence and a float plane rating. Returning to New Zealand, I saw an ad in the paper wanting balloon pilots for Up Up And Away in Christchurch. They took on two of us. We had to have a fixed wing or helicopter CPL and they gave us training. It was all a bit rushed. We went down to the Omarama/Twizel area and did about 20 hours in one week to get the total of 35 hours required for a flight test and licence issue. It was very pioneering. Up Up And Away was the first commercial balloon company to fly out of Hagley Park in Christchurch and we often landed at Wigram which was still an active airfield at the time.

It was exciting times. In 1993 Peter Koller and I set an official height record of just under 25,000 feet. That record and another we did for distance and endurance from Pukaki to Mt Somers still stand as the absolute ballooning records in New Zealand. It surprises me that, twenty years later, no one has bettered them.

How long were you ballooning in all?

Twelve years. I flew a bit over 1000 hours and something like 8000 passengers. That's a lot of people to care for. That was for Up Up And Away, Aoraki Balloon Safaris and a Canadian company out of Calgary and Winnipeg. It was nice to be based in Lyttelton with the family. During that time, I was also manager of Ferrymead Historic Park and did 30 hours flying a Robinson R22 with Garden City Helicopters.

It was about then that I was ready for a change and started looking at other aviation work - possibly flying for the airlines. I got my single pilot multi-engine instrument rating and had an interview with Origin Pacific but they folded a couple of months later.

Was that when you got into gliding?

That's right. Out of the blue I got approached by Peter Newport of Southern Soaring - a commercial gliding company in Omarama. He was after a CFI and manager. On offer was a good salary,

weekends off and transport costs to and from Christchurch paid for. It was a dream job. As the business developed, we ran very successful mountain soaring courses where clients paid for 15 hours flying in five days. Almost without exception we achieved this, which just goes to show how good the weather in the Mackenzie Basin is. I got to fly to Mt Cook with people from the UK, Russia, USA and all over the world. Sitting at 20,000 feet above Mt Cook, I'd know I'd given them one of the best gliding experiences they'll ever have. There was real joy in seeing their pleasure. And I got to do it almost every week!

Where did the red Ag-Cat come into it?

We found a lot of tourists wanted to share an aviation experience - hard to do in a glider which only takes one passenger plus the pilot. The Ag-Cat, which has two seats in front of the pilot, was purchased with Les and Irene Lamb and Darren Smith to fill this niche. We got Part 135 certification and the business grew from there. The Ag-Cat is a fun aircraft to fly and the passengers enjoy the leather flying clothing and nostalgia of open-cockpit flying. It's the sort of flying that author/pilot Richard Bach wrote about.

And now you fly out of Pukaki Airfield?

Yes, when the other Omarama gliding business, Glide Omarama, purchased Southern Soaring I decided to leave gliding and fly the Ag-Cat full time. I bought the others out and ran it from Omarama for a season by myself. The patronage was up 100% but I just couldn't get a good profile and the airport company made things too hard. I'd been in touch with the guys on the Pukaki Airport Board and they were really helpful. I said, I'll need a cross vector. They said, okay, and made it. I said, I'll need a hangar. They said, you can lease space in a hangar under construction and you can have accommodation in the hangar. I couldn't say no.

Plus it's a great site, right by the highway.

That's right. You can't miss seeing the aircraft as you drive along the main Christchurch to Queenstown tourist route. My wife, Tania Jones, and I purchased the northern-most section for that very reason - it gives the business a high profile.

Okay, I'll let you plug your business. When and what do you offer?

We fly at Pukaki from September through to April or early May. We have six flight options starting from \$245 per person. I get the passengers dressed up in leather jackets, flying helmets and goggles. The flights are incredibly scenic, even the basic one over the Twizel area and the Lord of The Rings filming location. We do scenic flights into the mountains and our premier flight is over Mt Cook and the West Coast glaciers - one of the best views in the world.

What are your long term plans?

I'd like to develop the business further. There is definitely room for expansion but it would have to be careful development. NZ tourism is precarious but we are seeing an increasing number of Chinese tourists, particularly those travelling independently. Having said that, most of our clients come from New Zealand. We get a lot of people driving in off the highway but a big percentage of our business comes from word of mouth advertising. If you provide a good service at a good price, any good business should succeed.

Chris, thanks for talking with us. We wish you good fortune and a glorious summer flying.

Saitek Pro Flight Multi Panel Review

I HAVE been a licenced pilot for four years, but a flight simulator enthusiast for more than a decade. During this time, I've discovered there are many different ways to customise the flight simming experience, and have spent hundreds of dollars on software

upgrades to enhance my aircraft and scenery files. Up until now, I have held back on any major hardware accessories due to expense and limited availability in New Zealand.

However, Saitek are now offering a range of cockpit panel products that may be used in conjunction with their long established desktop yoke controllers, or just alongside their regular joystick products. For this review, I've recently been flying with the ProFlight Multi Panel, running with my Cyborg Evo stick.

Out of the box

The unit itself measures 280mm x 83mm and screws onto a 50mm deep sturdy plastic base. The assembly can then be mounted atop the Pro Flight Yoke System if you already own one, or alternatively attached to your desk surface with included Velcro sticky strips.

Installation is extremely simple. Plug in the USB 2.0 data/power cable and run the setup file on the included CD-ROM. The Saitek driver automatically maps the seven autopilot controls and two surface controls to their assigned key command line within the FSX backend settings, so no further time consuming calibration is required at all. A simple Saitek control functionality verification application is also added to the Windows start menu after the installation completes, with an image of the Multi Panel that lights up, or adjusts each button and switch as you press or turn them in front of you.

What you get

On the far left of the panel is a five point selection dial, which chooses either ALT (Altitude), VS (Vertical Speed), IAS (Indicated Air Speed), HDG (Heading), or CRS (Course). Depending on

which particular mode the pointer is set to, you are then able to customise its value with a large rotating dial on the right hand side of the large central LED screen- clockwise to increase the value, or anticlockwise to decrease it.



Adding a Saitek Pro Flight Multi Panel to your flight sim system can significantly increase the realism of the experience, probably a lot more than you might expect.

The backlit screen is crisp and clear, with red characters on a black background easily legible. The mode type is displayed on the left with its abbreviated selection code, and its value on the left. In the pictured example, an altitude of 3100 feet and a vertical descent of 700 feet per minute are shown.

Below the screen are the autopilot system softkeys, which light up when in use, flash when armed and glow a steady orange colour whilst engaged. The AP key turns the entire autopilot system on or off, whilst the HDG, NAV, IAS, ALT, VS, APR and REV activate or deactivate each sub setting inside FSX.

The intuitive layout of the autopilot panel would be obvious to a novice, but also replicates the standard design found on the panel of many light to medium sized aircraft worldwide.

On the far right hand side of the panel are three bigger, ergonomically represented controls for arming larger aircraft with an auto throttle function, a flap up/down toggle, and a trim wheel for winding the nose up and down.

Flying with the Saitek Pro Flight Multi Panel

Making input movements on the panel with these controls adds an element of realism to the simulation that the repetition of holding down a keyboard key or joystick button had subtly removed. The rolling of the pitch wheel with one's hand, followed by the real time raising or lowering of the horizon on the computer screen in front of you has a much more pronounced effect on realism that I expected.

I was able to carry out a FSX test flight using the Multi Panel five minutes after opening the box, and chose the Cirrus SR22 add-on (published by Carenado) to test the integration with a third party



software developer's autopilot system and the Multi Panel hardware.

In IMC weather conditions I'd programmed into the sim, the panel easily allowed me to control my speed, ascent, and direction as I climbed up through 8/8s or stratus to level off at 8000 feet overhead Lake Taupo. I then coursed the aircraft's Garmin 1000 CDI pointer to guide me out to the coast, and descend at a slow enough forward and vertical speed so that my computers graphics processing unit could load the ground scenery smoothly enough to not blur or stutter as I landed in VMC at Napier. The entire process was unbelievably simple, with the Saitek hardware delivering every function it promises on the box without the slightest hesitation or complication.

I've recently spent many sim sessions replicating IFR cross country flights in preparation for a real world flight test and can now only wish I'd had this product running on my computer during the previous few months. The Multi Panel would have eliminated all the time I'd spent hovering my mouse cursor over the on screen cockpit dials that I'd had to zoom my view in to find, then fiddle around with the mouse scroller to set the value I'd been assigned to fly. The large, easy and clear Multi Panel inputs reduce any chance of error and allow the sim pilot more time to enjoy the simulation, or study approach plates or airspace charts. This is a great accessory for the recreational simmer, but a must have for any students wanting to maximise their IFR simulator training!

Compatibility

For the more serious simmers that fly PMDG heavy metal add-ons, a third party SPAD (Saitek Panel Advanced Driver) is required from <http://fstools.weebly.com/> to make the Multi Panel function correctly. X-Plane and Microsoft Flight Simulator 2004 pilots can also run this panel, with the additional download of Saitek controllers from <http://forums.x-plane.org> and FSUIPC respectively. However, the device is designed first and foremost for Microsoft Flight Simulator X, and makes for a fantastic enhancement to the overall simulation experience.

Where to buy

For more information or to purchase, see the entire range of Saitek flight sim products at www.vrconcepts.co.nz or phone VR Concepts on 0800 872662.

Martinborough Heli Safari

8 helicopters and 25 very excited owners and passengers set off for four days in late November on the 7th NZ Heli-Safari organised by Roy Crane from North Shore Helicopter Training in Auckland. KiwiFlyer asked Roy to write about the trip for our readers' interest.

THE original NZ Heli Safari concept (back in 2005) was to enhance private and commercial pilot's experiences in an unknown environment but with the added bonus of flying in an organised group with family and friends, mixed with landing at some really cool places to enhance the fun. This years trip down through the North Island and the lower east coast to Cape Palliser and Martinborough exceeded all expectations.

Two JetRangers, a LongRanger, two R44's, one EC120 and two R22's battled the weather Gods on initial departure from North Shore but by the time the gaggle passed the Bombay's, the sun was shining and the spirits were lifted.

First stop was Waitomo for a spot of caving and some sight-seeing for the above ground dwellers in the group. We caused a little stir with a mass landing at the Waitomo rugby club and the campers in the paddock next door rushed to the fence. One entrepreneurial kid shouted out if anyone was famous, then quickly added that his mother was single!

Map reading skills were then fully tested on lifting to find Mellonsfolly Old West Town which was the first overnight stop. A truly remarkable recreation in the middle of absolutely nowhere, where the good, the bad and the ugly dressed up and holed up for the night. One of the highlights was Eddie the Pie Man setting off a very, very loud cannon that could be felt for miles.

Once the early morning low cloud had cleared, a beeline was made past

the southern slopes of Mt Ruapehu, over the Ruahine Ranges to the east coast. The weather decided to close in around Castlepoint Lighthouse, so after

a brief landing we set off for a great lunch at the (well respected Wairarapa aviation family) Williams' homestead. With everyone landing in bullshit, literally, we were entertained by great aviation tales. Some then promptly cut huge divots in the lawn trying to get a hole in one on the make shift lake golf hole. Unless that is, you're a LongRanger pilot who shanked his shot 2m forward then 200m horizontally, nearly taking out the prized thoroughbred horses minding their own business in the stables!

Lunch digested, The Vintage Aviation Museum was the next

stop 7nms away for a special tour of Peter Jackson's prized collection at Hood Airfield. Sara would have started 15 mins earlier if it hadn't been for a young R22 pilot who decided to take the scenic route from lunch and went 10nms in the wrong direction :-)

Two nights followed in Martinborough enjoying a short tour around Cape Palliser and landing at Lake Ferry for the prized fish and chips. Then of course much merriment, when everyone biked around the vineyards sipping the local pinot.

It was cloudless all day for the return trip north, through the Desert Road and then a lunch stop at Hobbiton rounded off a really fun and highly memorable trip.

Who knows where we will end up next year, but another adventure to the South Island is on the cards and it will be great if we can get 15+ helicopters joining in from all around the country next time... after all, life's short and there's way too much fun not to be missed!

Roy can be contacted on 021 340 654 or by email: roy@helitraining.co.nz www.helitraining.co.nz



2 of 8 helicopters at the Waitomo Rugby Club. One young lad enquired whether anyone was famous, as his Mum was single.



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contributed by Frank Parker

P-40 Kittyhawk

In Issue 29 of KiwiFlyer, regular Warbirds Contributor Frank Parker reminisced on his many hours of Harvard flying. In this issue, he reviews his next favourite aircraft, the Curtiss P-40 Kittyhawk.

MY FIRST experience with this aircraft was in the form of a balsa model as a nine year old. I recall the results were dismal and certainly did not leave an impression.

It was not until Garth Hogan and Charles Darby rebuilt A2-448 'Currawong' that the Kittyhawk registered on my conscience. This was the late 1990s, the time when I personally reacquainted myself with the 'Warbird' movement after a decade's respite following a career with the RNZAF.

The Kittyhawk is not well recognised in New Zealand - a point I find intriguing as the aircraft has a far closer connection to our aviation history than the more recognised Hurricane, Spitfire and Mustang. The Kittyhawk is often disparagingly compared to the Spitfire, however in my opinion that is a poor comparison as its design era is more that of the Hurricane's which it would surpass on most points. The Kittyhawk was the frontline aircraft in New Zealand, Australian and USAF service during the early years of the Pacific War. Indeed with the USN Grumman Wildcat these were the aircraft that stopped the Imperial Japanese onslaught.

My big break with the Kittyhawk was on June 26th 2003 when Garth Hogan allowed me to complete a type rating in Currawong. I recall it well. The aircraft was a two-seater but only single controls at that point. I sat in the back with John Lamont flying for an observation flight then we swapped places with myself at the controls and John calling the shots before a solo flight.

As a seasoned Harvard pilot the transition was not too demanding and in many respects the cockpit is not vastly different to the Harvard. It has a 'period' American feel to it and many of the controls, switches, instruments and functionality are similar. The cockpit is spacious with a reasonable layout. There are the normal ergonomic issues that go with the period; the gear and flap selectors, the engine 'hot air', the cowl flaps. Flight instruments are scattered here and there with no reference to the accepted standard panel. Nonetheless, the overall cockpit environment is friendly and works well.

And so, what is it like? I often describe the Kittyhawk a one and a half Harvards; about 150% of the weight, 150% of the power (at the reduced settings we use) and 150% of the performance. It has the Harvard's classical control harmony and control feel. In manoeuvre the aircraft talks to the pilot, the elevators become progressively heavier as speed is increased and the wing produces a generous amount of buffet approaching the stall. It's an aircraft that requires a lot of rudder attention, as considerable yaw accompanies speed and power changes. The ailerons are delightfully 'light' and produce the best roll rate of any of the aircraft in this class.

The Allison V1710 engine has a reputation for dependability and while engine handling is straight forward it does deserve consideration. The big V12 is more highly tuned than the venerable Pratt and Whitney 1340 of the Harvard, a thoroughbred compared to a hack pony.

Carburation is via a Stromberg pressure carburettor with automatic mixture control. The aircraft I generally fly has an automatic boost control which further simplifies engine control

These engines do not like rapid power changes or high RPM

with low boost and with an overhaul cost approaching \$150 per hour, careful handling is money in the bank

The Kittyhawk's ancillary systems are typical 1930s technology.

Electrics are 24 volt generator based and once working are generally trouble free.

The gear and flap are hydraulic via an electric/hydraulic pump with a manual backup. The electric pump is operated by a toggle switch on the control stick which is activated by squeezing with the little pinky finger. This takes a few attempts to get the knack of. The gear and flap selectors are mounted directly on the hydraulic distribution valve. Being essentially co-located they are an ergonomic nightmare courting disaster.

The cowl flaps are operated by a large 'handbrake' style lever which will have the skin off your knuckles in a wink. This also requires attention to the operating temperatures as flight phase is changed. Brakes are hydraulic drum style operated by the rudder pedals. They are effective and generally trouble free.

Performance and Handling

Compared to the Harvard the P-40's performance is sprightly, while compared to a modern high performance homebuilt (Glasair etc.) it is similar. Initial climb is 150 mph and climb rate about 2000 fpm, with a cruise speed of 205 mph (180 knots, 335 kph).

Aerobatic manoeuvres, loops, and barrel rolls are entered at 250 to 270 mph and use around 2000 feet of altitude. As already mentioned the roll rate is crisp which makes an aileron roll delightful and an essential component of any display flying. Again I note the positive and crisp control feel and response, but don't forget the rudder pedals, you need to use them - all the time!

Circuit work is straight forward, downwind reducing to 140 mph, gear down. The large wheels create considerable drag and nose down pitch. On base with half flap reducing to 120 mph and 100 mph across the fence will give a nice touchdown and reasonable landing roll. We tend to do a wheeler landing, this giving positive rudder control and better forward visibility. At the end of the summer season with reasonable currency we will go for a three pointer on a grass surface, however in this attitude forward visibility is seriously impaired. A ground loop is an occupational hazard in these aircraft, nonetheless, the Kittyhawk tracks nicely on rollout and has a good 12 knots crosswind capability.

Whilst slightly biased through my close association with the aircraft, I continue to find the Kittyhawk a delight to fly. It is a honest, responsive, no-nonsense aircraft; definitely my number one pilot's plane.

Cheers, frankly@xtra.co.nz

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Above: P-40 Kittyhawk Currawong in pursuit of a Japanese Mitsubishi A6M Zero Fighter at Warbirds Over Wanaka 2010



Left: One of my Kittyhawk highlights was flying at Warbirds over Wanaka with six 50 cal machine guns firing blank ammunition (a first for any worldwide airshow). The fitting and testing of the guns and the protocols that go with this process added a new insight to the aircraft. It was no longer a historic aircraft, rather a historic weapons system. The addition of the guns realised the whole rationale of the aircraft - a get down and get dirty gunslinger. In the 1940s the six 50 cal were considerable firepower which led to the P-40 being a respected close air support aircraft, the A-10 Warthog of its era.

The Battle of Milne Bay

THE Battle of Milne Bay was a small but important battle fought in the South West Pacific in August 1942 during World War Two. The action of RAAF Kittyhawk fighters was pivotal in its outcome.

Milne Bay on the Eastern Tip of Papua was a joint Australian USA garrison which was attacked by the Japanese in support of a strategy to capture Port Moresby. The Milne Bay defending Force was much larger than the Japanese expected and was supported by Two RAAF Squadrons of Kittyhawks.

The Japanese launched an attack on 25th August with some 1500 Naval Troops (marines) who made early gains in the ensuing jungle warfare. The telling weapon for the defenders were the Kittyhawk aircraft which were able to provide close support to the defending ground forces and attack the Japanese logistics by day. The Battle

which continued for 11 days (25 Aug to 7 Sept) became one of Japanese attack by night and Allied defence by day.

Following a pitched battle on the airfield perimeter on 31st Aug the Australian Forces gained the upper hand and forced a Japanese withdrawal. The action was complete when the remaining Japanese force was evacuated by sea on the night of 7th September.

While Milne Bay was a minor action in the overall Pacific Campaign, it is recognised as the first defeat of the Japanese Forces in this theatre. It dispelled the theory of Japanese invincibility and denied the Imperial Forces their Port Moresby and New Guinea strategy which further restricted their aims of securing the South West Pacific. With similar action at Guadalcanal in the Solomon Islands it signalled the end of Japanese Expansionism in the Pacific.



Taxiways were laid out with interlocking, perforated steel Marsden Matting.



Kittyhawk landing at #1 Airstrip, guarded by a Bofors 40mm anti-aircraft gun.



Japanese Ha-Go tanks, bogged in the mud and abandoned.



Oceania Aviation host MD Helicopters Conference

IN September, Oceania Aviation hosted the first of an international series of MD Helicopters roadshows. Proposed by MD Helicopters as a process with which to connect with customers, their original vision was to arrive in country for something akin to a breakfast meeting with a few interested operators.

However interest from the Oceania network was such that a full day conference was scheduled, taking place at the Hilton in Queenstown.

The conference was attended by 60 delegates, including 4 from MD Helicopters, 1 from Rolls Royce, and 2 from CAA. 20 New Zealand operators and maintenance providers were represented, with others travelling from Australia, Indonesia and New Caledonia to hear what the MD Helicopters representatives had to say.

Present from MD Helicopters were Bill Cusick, VP Customer Support; Justin Barnett, Manager Worldwide Authorised Partnerships; Randall Schaffer, Supervisor Spares Support and; Brad Rushton, Field Service Engineer.

Bill Cusick opened proceedings, explaining that their intention for the conference was to make sure that MD is on the right path and meeting customer needs, saying that "We want to understand the issues customers are facing, we want to know what is lacking, what your perception is of our customer support, and we are seeking to validate the progress that we believe MD has been making."

History

Descended from (Howard) Hughes Aircraft circa 1947, MD Helicopters has passed through several hands since being purchased by McDonnell Douglas in 1984. McDonnell Douglas merged with Boeing in 1997, then the civilian helicopter line was sold to a subsidiary of RDM Holdings in 1999. In 2005, after suffering poor performance, the company was bought by Patriarch Partners, headed up by Lynn Tilton, who specialises in buying and fixing distressed iconic brand companies. At the time there were just 30 employees. Recapitalised as MD Helicopters Inc. and having weathered various storms, not the least of which was the Global Financial Crisis, MD Helicopters are in a stronger position now than for a long time, with sales, customer support, and profitability all improving. Just this year, the company's organisational structure has reverted to a traditional model, having been very flat previously with all senior positions reporting directly to Lynn.

To indicate the scale of the company and its legacy, there are 2250 single engine Hughes / MD helicopters globally. The mix is in the order of 44% military to 56% commercial, with 29% in the Asia Pacific region. Of the commercial types, 14% are still 500C models, 44% are 500D and 22% are 500E models.

MD Helicopters now employs several hundred staff and for the first time since 2008, annual production (in 2013) has been sold out, and that occurred back in June. Production this year is 13 aircraft. Three MD902 Explorers have been sold year to date with 4 deliveries scheduled for 2014. The MD540F Armed Scout

Helicopter is currently under development as is a new universal avionics display system. Going forward, the sales forecast is for 20% commercial, 20% state/municipal and 60% military.

A primary intention of the conference with Oceania Aviation

was for MD Helicopters to communicate their significantly improving spares and support position to operators and maintenance providers. Their target 'spares fill rate' within 7 days is 94%. Currently it is 80% and hugely improved from a year ago when it was just 60%. The AOG (aircraft on ground) target is zero. In 2013 the average is 2, again a significant improvement from an average 12 in 2012 and 25 in 2011. The AOG list is reviewed 3 times every week and had been zero for 8 weeks prior to the conference. In Bill Cusick's words, "We are now focused on satisfying customers, not hiding from them".

Feedback from attendees in the initial round of introductions suggested that many were there to question MD spares availability and pricing, seeking transparency of parts pricing and controls on parts price increases, as well as seeking support for older aircraft and confidence in the parts supply chain. Bill Cusick acknowledged that a few years ago, if it wasn't for the sunk cost of aircraft, many operators might have gone to other brands.

In fairness, it has to be acknowledged that the first step to fixing a problem is accepting that one exists. The MD team presented numerous steps that have been taken to address the issues raised and also the demonstrable progress that has been achieved over the last two years.

What happened at MD Helicopters and what has changed

When the GFC hit, MD was forced to pull forecasts on parts suppliers and many were left holding unwanted inventory while MD opted to only purchase parts that had been 'ordered' rather than for stock. The parts supply chain became compromised by 'hostage' issues and during the period 2008 to 2010 a lot of second and third tier suppliers to the supply chain went out of business. This ultimately meant that some parts had to be re-designed and re-certified before they could be supplied again. Problems were compounded by a cost-plus approach to parts supply that meant prices sometimes doubled overnight. Suffice to say that many operators and maintenance suppliers were distressed by the situations they were faced with.

MD Helicopters now produce a lot more parts in-house, suppliers are back on-board, and the approach to cost-plus is being tempered by price matching with competitor parts and challenging vendors to improve efficiency and reduce prices. A fixed price list for 2014 is in place and parts are being ordered for stocking by MD again. MD is currently tracking and forecasting all high demand parts in New Zealand and Australia. The MD Repairs and Returns division which was offsite (and out of sight) has been moved to the main factory location. Flying hours are being obtained from operators by Skysales and Oceania, then provided to MD for Sales



Inventory and Operations Planning purposes.

Going forward, MD Helicopters' image is now one of significant recovery and demonstrable improvement. Bill Cusick says that the company is self-funding and on solid ground to strongly support existing and new operators and their maintenance providers.

Operators, many of whom love the product and wouldn't fly anything else, are sure to be pleased.

Awards at Conference

Three awards were presented by Bill Cusick to operators at the conference. James Scott of Alpine Adventures received recognition as the largest operator of MD helicopters in NZ. Liam Mulqueen of Societe Miniere Georges Montagnat in Noumea received an award for still operating a Hughes 500C, owned from new. And Roy Conomos from Aeropower in Australia received a high flight hours achievement award.

For more information

Oceania Aviation are MD Helicopters distributors throughout Australasia. For aircraft sales enquiries contact Stephen Boyce on 09 296 2644 or e: stephen@ohl.co.nz For maintenance or Airborne Systems role equipment enquiries contact Russell Goulden on 09 296 2644 or e: russell@ohl.co.nz www.oceania-aviation.com

Conference Announcement: Local overhauls for MD rotor hubs

A SPECIAL joint announcement was made by Oceania and MD Helicopters that overhaul capability for the 369D main rotor hubs

will begin at Oceania's Ardmore Airfield facility in April/May 2014.

Oceania will be the only commercial facility outside MD appointed to carry out this specialist task which will remove the need for Australasian and Pacific operators to send hubs to the U.S. for repair or overhaul. Peter Hatley, Oceania's Component Overhaul Manager, said "this closes the loop for total support of MD components. We have been working closely with MD for some time to complete in-country support for D,E,F and Notar helicopters not only in New Zealand but throughout the Pacific, Australia and Indonesia".

The appointment of Oceania as a hub overhaul facility by MD Helicopters is a significant sign of the respect between the two companies and something that will be of great benefit to local operators.

For more information on component maintenance services or to register interest in a hub overhaul for next year contact Peter Hatley on 09 296 2644 or email: pete@ohl.co.nz



A typical sight: MD500E on spraying duties.

KiwiFlyer Event Guide

January 1st

Athbey Farm New Years Day Fly-in

Annual Manawatu Microlight Club Fly-in at Athbey Farm, Woodville. Arrive in time for a \$10 midday lunch. Contact Colin MacMillan on 06 328 7882 or email: macmillan@inspire.net.nz

January 4th-5th

Warbirds and Wheels at Whitianga

NZ Warbirds Association with Mercury Bay Aero Club and Speedway are providing flying displays at 1030, 1230 and 1430hrs, plus stockcar racing and entertainment. Email: mbac@xtra.co.nz

January 10th-24th

Walsh Memorial Scout Flying School

Annual two-week flying school for Scouts and other young people at Matamata Airfield. For more information visit www.scouts.org.nz/walsh, E: walsh@scouts.org.nz or phone David Jupp on 021 476 676.

January 26th

Classics of the Sky Tauranga Airshow

Commemorating the centenary of WWI with TVAL aircraft plus the usual NZ

airshow displays, pyrotechnics, military re-enactors, and trade sites. www.tcas.co.nz or email: airshow@classicflyersnz.com

February 1st-2nd

Healthy Bastards Bush Pilot Champs

At Omapa. Contact Craig Anderson on 029 890 4910 or craig@soundsaero.co.nz

February 1st-2nd

Dargaville Air Rally

Tour of Northland. Dinner & Speaker. Contact Graham Walker for details: E: graham@walkermagic.com

February 20th-22nd

Flying NZ National Competition 2014

and Trans Tasman Trophy Competitions Hosted by Tauranga Aero Club. More information www.flyingnz.co.nz

March 7th-9th

SAA SportAvex and Golden Jubilee

Bridge Pa, Hastings. The SAA celebrates 50 years and invites all past and present members and others to this gala event. Contact Adrienne, e: admin@saa.org.nz

April 1st-4th

Warbirds Over Wanaka Airshow

See www.warbirdsoverwanaka.com



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The Vintage Aviator Remembrance Day Airshow



THE Vintage Aviator Limited's Remembrance Day Airshow on 9 November at the Hood Aerodrome in Masterton was a huge success once again. This year the format saw two changes. The first was a flight line walk about; the spectators had an hour before the flying got underway to get much closer to the aircraft, with pilots on hand to answer questions and explain what it is like to fly these wonderful machines. A revised positioning of spectators, with the hangars to their backs was the second change. This resulted in a much better outlook for the field and uncluttered photography. The show was to debut two new airworthy aircraft, a Sopwith Snipe, the second of this type to fly in New Zealand and an Albatros D.II. These two aircraft brought the total WWI aircraft on the flight line to 24 – a very rare sight! As usual, the show was opened by the Stampe and Tiger Moth performing a ribbon cut. The two aircraft looped and rolled skilfully around the sky attempting to cut the ribbon as it got ever closer to the ground.



A welcome return to the airshow scene was the Avro 504k, New Zealand's oldest surviving aircraft. The skill of the pilot was unexpectedly put to the test when just after take-off the Avro developed engine trouble, resulting in a hard landing with the left wing tip touching the ground. While all this was going on the graceful Royal Aircraft Factory B.E.2c observation and reconnaissance aeroplane was performing its display. In 1914 the B.E.2c was the first British aircraft to arrive in France. Next in the air was the Bristol Fighter F.2b which saw service from 1916 through to the early 1930s. These vintage aircraft were originally started by a ground crew turning the propeller by hand but as the engines became more powerful this became more difficult and a new method of starting was required. Captain Charles Bentfield Hucks came up with the idea of a mechanical starting system which was mounted on a modified Ford model T chassis. A replica Hucks starter was on hand to assist with starting at the airshow.

The first of the new aircraft to take to the skies was the Albatros D.II, D.386/17 in the colours of Haupt Oswald Boelcke of Jasta 2. Gene De Marco flew the aeroplane forming up with a pair of Albatros D.Va.

The attending crowd was treated to mock dogfights between a Nieuport 11 and a Pfalz D.III, a Fokker Dr.1 triplane and a Sopwith Triplane, and the Sopwith Camel and Fokker D.VII. In each case the German fighter was defeated. Other aircraft on display were the S.E.5a, F.E.2b, B.E.2f (the armed version of the B.E.2c), Fokker D.VIII and the Sopwith Pup "Betty", N6205 in the colours of Flt Cdr J Fall of 3 Naval Sqn RNAS Marieux France, April 1917. Light wind conditions are required for this aeroplane and it's the first time that I have seen it in the air.

To round off a wonderful afternoon of flying we were treated to the second debut aircraft, the Sopwith 7F1 Snipe, F2367 of B flight 70 Sqn RAF, Bickendorf Cologne, Germany 1919. Flown by the busy Gene De Marco this is the second airworthy Snipe built by TVAL. The other is with Kermit Weeks at his Fantasy of Flight aviation museum in Polk City, Florida.

None of this would be possible without the hardworking volunteers that run the airshow. If you have not yet attended one of these splendid events then visit the TVAL website (www.thevintageaviator.co.nz) for details of their next show or for more information on these magnificent flying machines.

Captions:

1: A most impressive line up of WWI aircraft. **2:** Bristol Fighter with Hucks starter waiting to start the engine. **3:** Avro 5k being assisted while taxiing out to start its display. **4:** Albatros DII's debut show with Gene De Marco in control. **5:** Sopwith Pup "Betty". **6:** Gene De Marco again in action, this time in the new Sopwith Snipe. **7:** Bristol Fighter searching for the enemy. **8:** Dogfight, Sopwith against Fokker, the Germans never seem to win.

Whitianga Warbirds and Wheels on 4th January

FOR 2014, the Whitianga Warbirds and Wheels airshow and open day moves to Saturday 4th January. In recent years the event has been held later in the year and plagued with untimely bad weather.

The Aero Club has a new strategy for this year and hopes that the weather will surely be good for the 4th, when the town will also be at capacity with the huge annual surge in holiday population.

The format is along the lines of Warbirds Open Days which Ardmore visitors will be familiar with. There will be 3 one hour Flying Display slots by NZ Warbirds featuring WWII fighters, plus solo and formation aerobatics. Some 22-30 aircraft will be involved, scheduled for 10.30am, 12.30pm and 2.30pm.

Aviation leisure and adventure aircraft displays including gliders, skydiving and sport aircraft, autogyros and model aircraft. Stock-cars and speedway displays will take place at the speedway track adjacent to the airport.

Landing fees are waived for the day and between 70 and 100 aircraft are expected to visit.

Joyrides will be available in famous warbirds including the DC-3, Spitfire, P40 Kittyhawk and various vintage aircraft.

The event is being well marketed across the Coromandel Peninsular with flyers going into local newspapers and posters spread throughout towns.

Just in case, the rain postponement day is Sunday 5th January.

Summer Spectacular!
WHITIANGA WARBIRDS & WHEELS
Saturday 4 January 2014
Whitianga Airfield

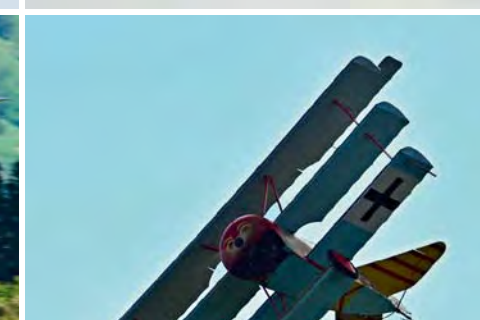
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Robinson Helicopter Overhauls

The story of an R22 overhaul by Heliflite Pacific at Ardmore

ONE OF the good things about Robinson helicopters is that there is comparatively little scheduled maintenance required until 2200 hours of engine time is reached or until 12 years has passed. One of the bad things though, is that pretty much everything then gets attended to at once. Depending on how carried away an owner gets with options such as cosmetics and avionics upgrades, etc., the bill could well nudge \$200,000 just for an R22. That said, if you do opt for a 'factory quality' overhaul with 'new everything' then you will fly away in the equivalent of a factory new helicopter. Given that it should have been reassembled with New Zealand conditions and corrosion protection in mind, you might even convince yourself the result is better than factory new.

Overhauling an R22 is similar to an R44, although there are some components that are lifed differently. In both cases, there are a variety of options to take and decisions to make along the way. Aside from all the cosmetic choices, an R22 Beta can be turned partly or fully into a Beta II model, and an R44 Astro can be 'hydraulised' and turned into a Raven. (Heliflite are one of only two companies worldwide who are sanctioned by the factory to convert Astros to Ravens.)

This article follows an R22 Beta (ZK-HII) overhaul by Heliflite Pacific Limited at Ardmore. This particular example was for a customer who wanted the aircraft returned to factory-new condition, based on a philosophy that the additional expense of doing so was a relatively small burden in the overall cost of overhaul and ownership. This approach ultimately results in savings throughout the life of the overhauled aircraft as unscheduled maintenance costs will be kept very low.

Such an approach also fits the philosophy of Heliflite. Manager Brett Sanders says that as a Robinson Distributor and also because of the standards that their staff apply, Heliflite "will always favour quality over price and are unlikely to ever be the cheapest option. Our approach is to keep prices reasonable and still do a job that looks as though it came straight out of the factory. The factory quote for labour in a typical overhaul is 220 hours but the reality is that the potential is there for that amount to be doubled. That said, we'll always try to accommodate a reasonable deal for the owner depending on their requirements and timeframe." Brett did also say that Heliflite will tend to be choosy about what overhaul jobs they do accept, simply because of the commitment that is also required from the owner in order to achieve a 'factory' result.

An R22 going through a Robinson factory overhaul would by default get virtually 'new everything', including plastics and wiring loom. They are effectively a new helicopter which is why the process at Robinson costs as much as it does (actually not all that much less than a new aircraft).

In Heliflite's case, Brett says generally they would go as far as to fit new plastics except for the door windows (which can't be replaced independently of the doors) and would also fit a new loom. The owner of HII recalls looking at the cabin when it was fully stripped except for the loom and thinking "I probably should replace that. It's the only thing that will be left that could ever cause any trouble." However it looked to be in good condition and cleaned up nicely, so it stayed. And caused

trouble later, or at least a diode did. The point remains that it is a 'now or never' decision and the cost of troubleshooting electrical gremlins later might easily have covered the cost of a loom replacement when you had the chance.

The overhaul process begins with the aircraft being stripped essentially down to the last nut and bolt. All that will remain is a bare cabin on a portable undercarriage or cradle. Various components are scrapped by default, many are inspected/tested and/or overhauled, and many are set aside just for cosmetic attention and later reassembly.

Lifed and on-condition components

There are a variety of components that are multiple lifed (within limits) or that run on-condition, but it would be an optimistic owner that thought all such components would be able to be refitted to an overhauled machine. New Zealand is a harsh environment for corrosion and it's only at overhaul time that most owners realise just how much more effort they should have put into preventing corrosion during the life of the aircraft.

For example, on an R22 all of the undercarriage except the aft cross tube is on-condition, but it is very rare not to have to scrap out some parts and in the case of ZK-HII it was more economic to simply buy a whole new undercarriage as a kit from Robinson and then keep the one remaining good component as a souvenir of the additional costs involved. All the scrapped parts were due to corrosion pitting. From an owner's point of view it has to be said that the quality of the paint ex-factory isn't conducive to a life beyond 12 years and some owners may like to consider

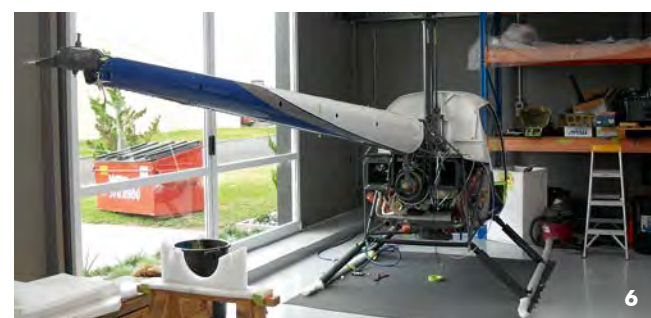
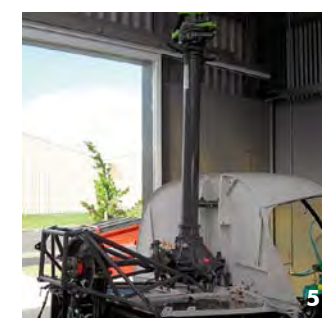
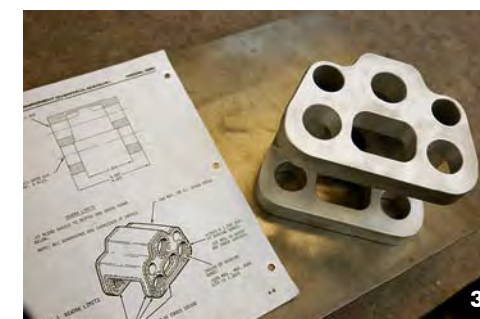
stripping it all and starting afresh before their expensive new undercarriage is re-assembled.

Frames are mostly double life items, though 50% of those tend to be scrapped due to corrosion and fretting issues. In some cases, stretched drive belts may have rubbed on the frame when un-tensioned and left wear marks that are beyond limits. (ZK-HII's frames all made it to a second life, thankfully.) It's a good idea to protect these areas of the frames for the future. And to always look under the aircraft when you clean it and attend to any areas needing regular corrosion protection.

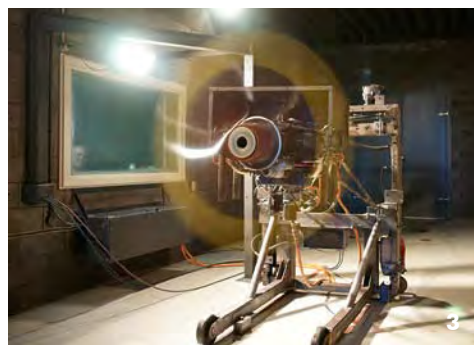
Frames, undercarriage, and control components are all stripped, inspected and crack checked using magnetic particle and fluorescent dye testing. In the case of HII, these components were sent to Rotor and Wing Maintenance at Taupo for 'overhaul' and to Fieldair Engineering for NDT. (See separate articles on both companies in this issue of KiwiFlyer.) These parts are then re-protected using a variety of methods, including powder coating, primer fill and drain for some tubes and 2-pot epoxy painting. Assembly involving a series of sealants and jointing compounds further reduces the likelihood of corrosion attack in future service. These processes should often exceed the original assembly standard and provide the extra protection required in the NZ environment.

Most tailbooms are double life items, but the forward section(s) can be prone to internal corrosion pitting damage beyond repairable limits. Replacing a skin is not approved by the manufacturer and requires an approved repair scheme certified by a design organisation. Rotor and Wing Maintenance have such a scheme and may be able to save owners the significant cost of a full tailboom replacement. It is also a good time to make sure the quality of the internal painting and corrosion protection is up to a good standard. In ZK-HII's case, two forward sections had to be replaced, but this was substantially less expensive than replacing the whole boom and also provided the opportunity to fit an additional boom antennae mount which needed to be done anyway.

R22 rotor hubs are double lifed but usually fail at the first 12 year inspection due to corrosion pitting. Limits are as low



Captions: 1: Before the big project, with just enough hours left to fly down the road to Heliflite. 2: Checking undercarriage components for corrosion limits. 3: Rotor hub ready for inspection. 4: Main transmission under inspection. 5: Mast reassembled. 6: Starting to look like a helicopter again as the tail goes back on. 7: Engine in and Powerflow exhaust fitted. 8: The loom was cleaned and retained rather than replaced, but all new terminal caps and P clamps were fitted, one of many finishing touches to make the aircraft look brand new again. 9: Overhauled tail rotor assembly. 10: Cowlings going on. Note the quality of the internal paint work. There's no chance of corrosion in the next 12 years. 11: The view between the fuel tanks. They are only partially visible when cowls are open, but received the same degree of preparation and paint finishing from Pacific Aero Coatings as the rest of the aircraft.



as just 10 thou (~0.25mm) within 300 thou of any edges, and just half a thou (~0.01mm on the inside of any bearing bores). By the time that bubbling of the paint is found in service it is probable that the resultant pitting from the corrosion is beyond limits. This was the case for ZK-HII's rotor hub and its clean, bare, bead-blasted self now sits on the corner of a desk as a \$2000 paperweight.

Transmissions are a mandatory return to factory overhaul item at 2200 hours, but can have a 12 year inspection if they are not in sync with rest of helicopter. 12 year inspection of the main rotor gearbox requires substantial disassembly and removal of the drive shaft for replacement of a sealed greased bearing located at the top of the mast. Also replaced are all seals and 'O' rings. Located in the top of the output gear carrier is a pocket prone to accumulating condensation and therefore corrosion. This area is protected by injecting a quantity of gearbox oil through a vent hole after installation. In the case of HII, both transmissions were inspected by Rotor and Wing Maintenance and returned to service.

Rotor blades and tail rotor blades are mandatory 12 year items regardless of hours. Those associated with the industry will know that a few years back Robinson stopped making stainless steel skinned blades and reverted to aluminium. This no doubt resolved any bonding difficulties but opens the door to corrosion issues instead, unless the blades are well cared for. During the years of stainless blades, many operators will have developed habits that could be considered neglectful in the case of alloy blades. The requirement for regular washing and salt removal is obvious, but it's also good practice to regularly wipe an approved corrosion preventing compound on the blade tips and especially right along the trailing edges.

The only items that must be returned to Robinson for factory overhaul aside from transmissions are clutch actuators, hydraulic equipment and engine tachometers. All other items can be attended to within NZ.

Captions:

- 1: Engine reassembly commences.
- 2: John Williams torquing cylinder heads.
- 3: The first start in the Aeromotive Test Cell.
- 4: Looking like brand new again, about to have its first (installed) start on the ground at Ardmore.
- 5: A new interior including new paint and a fully refurbished instrument panel, with GPS, PCAS, Spidertracks, and a Beta II cyclic installed.

Avionics

The engine and rotor tachometer is a mandatory overhaul item, but all other items are at the discretion of the owner. It may be time to consider trading in old radios and transponders and/or designing a new panel. That was the case in HII, which acquired a host of 'nice to have' extras such as touch screen GPS with integrated PCAS traffic, a phone kit, and spidertracks. Gyro instruments were overhauled. Given the radio display didn't work properly, the transponder was very old, and the A/H had ceased functioning, these decisions were reasonably easy to make. The result is that the panel looks and functions like brand new, helped by also opting to replace many of the actual panel components themselves. They are surprisingly inexpensive and Heliflite will nearly always take this option, especially for the circuit breaker panel which tends to get scuffed. Brett says they are even inclined to replace any circuit breakers that aren't visually up to standard, though they are always mindful of the costs involved. In the case of ZK-HII, new avionics were supplied and wired by Hawker Pacific at Ardmore, with final panel manufacture and fitting by Heliflite.

Whether replacing avionics or not, an overhaul is the best time to run some extra wiring for future purposes such as radios, antennae, hooks, GPS, charging sockets, etc. (On the subject of hooks, undercarriage reassembly time is the best time to provision for that too if there's ever a chance of wanting to fit one.)

The engine

HII's engine was overhauled by Aeromotive at Hamilton. The engine overhaul process is a standard one, although Aeromotive have several 'extras' they include under their Signature engine brand.

Stages of the process are: Receipt at Aeromotive with careful noting of all components and brackets received. Then the engine is stripped and degreased. Relevant parts are magnaflux and fluorescent dye tested, and inspected in accordance with the manufacturer's data. Service bulletins and A/Ds are reviewed, then (if not a fixed price job), pricing is finalised and agreed upon. The engine is then overhauled (see separate Aeromotive article in this issue of KiwiFlyer) and reassembled. Aeromotive returned HII's engine looking like brand new, with high quality paint and very tidy assembly work clearly evident. Owners should consider

whether to paint inlet manifolds and ceramic coat or paint exhaust manifolds at this point too. Now is the chance and it can be done for a very small marginal cost to the project. In fact, Aeromotive do now paint inlet manifolds but Greg Mundell at Aeromotive says that hardly any customers bother with exhaust manifold coatings.

Aeromotive will then run the engine in their test cell for at least 2.5 hours in accordance with the manufacturer's data, before undertaking a final inspection and handing the engine back to the customer.

Well prior to this however, owners should have given consideration to how long the engine will sit for before running again, as Aeromotive can inhibit it per manufacturer's recommendations if required. For long term storage this may involve running on inhibiting oil in the test cell, then applying a wax substance to the cylinders (which owners should reapply every month), using silica gel plugs, and

potentially filling the engine with 10 litres of oil and storing it upside down to keep the camshaft immersed.

Running in is next and should follow the manufacturer's service instructions. As a rule of thumb, owners should fly above 75% power and not let the engine get hot or sit on the ground idling, which should be at a minimum of 1000-1200 rpm. Time on the ground should be kept to a minimum, but following the proper warm-up procedure and care must be taken to avoid shock cooling. Greg Mundell at Aeromotive says to go for long flights for the first 25 hours and to avoid circuits, minimising starting and stopping. It's actually a great excuse to get in the aircraft and go somewhere without thinking about the cost because – you have to do it for the sake of the engine and you can't trust the job to anyone else. That's what Mr. KiwiFlyer told Mrs. KiwiFlyer anyway.

Other considerations

There will always be other considerations to talk through at the time. For example, Heliflite prefer to replace all rod end bearings (which don't come in the Robinson overhaul kit from the factory), because the old (serviceable) ones likely won't last another life and controls will end up getting looser over time.

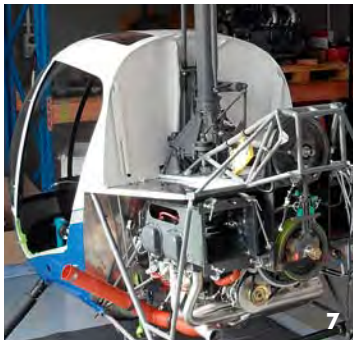
John Hobday at Rotor and Wing was able to supply a Beta II cyclic control for fitting to ZK-HII instead of its original Beta version. That and a Beta II new paint scheme make the helicopter visually indistinguishable from a Beta II unless you happen to notice the different engine or that there's no automatic carb heat system installed.

Also worth considering (and added to HII) is an aftermarket exhaust system, especially given that in the case of the R22, this must be replaced anyway. For a relatively small marginal cost, a Powerflow



ZK-HII looking and flying like brand new, over the Hauraki Gulf near Ardmore.

Gavin Conroy



Captions: 1&3: Cabin stripped to bare metal and fiberglass.
2&7: The back of the cabin is hardly visible once reassembled and even Robinson only undercoat it, but Kim fully prepped and then finish painted it.
4&5: The stripes weren't painted over the top, they are all individually laid on to the primer. **6:** On the way back to Heliflite from Pacific Aero Coatings.
8: The fan shroud was fully prepped, colour matched, and repainted too.

system from Performance Aviation in Wanaka was fitted. In the case of the R22, this is expected to provide the helicopter with hot and high performance equivalent to the Beta II (which has a larger capacity engine). It also looks and sounds rather good indeed.

Lastly, what seemed like a 'no-brainer' decision for HII was to fit a throttle switch, again from Performance Aviation (see separate article in this issue). This simple and inexpensive device prevents the engine being started unless the throttle is closed, eliminating the risk and huge expense (\$15k+) of an accidental start-up over-speed if the engine was ever to be started on an open throttle.

Paint and Cosmetics

Having spent a small fortune on everything mechanical and electronic in your helicopter, or plane, it seems a travesty not to make it look like new with fresh paint and upholstery. Heliflite's standards dictate that unless the paint is really very good, then it should be stripped and redone, inside and out. This is also a chance to do a much better job of corrosion protection than the factory ever would. Be aware though that there are paint jobs, and there are paint jobs. ZK-HII was completely stripped to bare metal and fibreglass by hand using friendly chemicals (with no mechanical sanding or blasting) and repainted using Superflite aircraft paint by Kim Thompson at Pacific Aero Coatings in Tauranga. You won't find anyone to apply more attention to detail or to do a better job.

Aircraft preparation and painting is not the same as car painting (even European car painting) and specialist aircraft paint products are not the same as automotive paint products. ZK-HII has been seen by many critical eyes post its overhaul and without exception, they all marvel at the quality of the paintwork. It looks a lot better than a new one. Fortunately for the owner, it was painted before Kim's reputation started spreading. Testament to that are several significant helicopter jobs that Kim has attended to since, including taking over part completed work from other painters that owners have been dissatisfied with – realising too late the false economy they had attempted to work within.

There are a multitude of parts that can be painted off the helicopter (Kim couldn't believe just how many for such a small aircraft as the R22), such that all surfaces and edges can be fully protected against future corrosion. Again, the standard if this approach is adopted, will likely well exceed that of a factory machine. Literally hundreds of screw heads and fastenings can also be attended to separately as well – and it's a worthy consideration to replace a lot of these with new. For the sake of a dollar each, it's another step towards making the aircraft look like brand new when the project is finished.

Heliflite prefer to refit overhauled helicopters with new factory interiors (perhaps excepting seats which may be covered locally), simply because then if the overhauled helicopter were to be parked alongside a new one, it would look exactly the same.

There's also the consideration of what to do about plastics and windows. Robinson front screens can be replaced, though it's not the easiest task. And door windows can only be replaced if the whole door is replaced too (there is a mod available to cut out the windows and bond in new ones but they won't look like new afterwards). If the plastics aren't too bad then most marks will be able to be carefully polished out, though don't expect this with actual scratches unless you're willing to risk distorting the view. Kim Thompson polished all of the plastics on ZK-HII and admittedly they were in good condition to begin with, but some who viewed the aircraft after Kim's efforts thought they were all new replacements.

Reassembly

It's in the reassembly process that attention to detail becomes most evident, and arguably where a lot of the aforementioned costs can get turned into additional value. Chief Engineer at Heliflite, Zack Erdos says that when they reassemble any aircraft, they are always thinking about how to make it last and always considering the future from a preventive maintenance point of view. Heliflite will always do more than the minimum, and be very conscious of attention to detail not only to make it look like new, but also to make it last even better than new. That was certainly the case with ZK-HII. Much of its assembly and the associated attention to detail was in the care of Engineer Dan Sumner at Heliflite, and he and the rest of the Heliflite team who all participated at some stage, are owed a big thanks from the owner for a job to be very proud of.

For more information

Contact Brett or Zack at Heliflite Pacific on 09 299 9442 or brett@heliflitepacific.com
 Contact John Hobday at Rotor and Wing Maintenance on 07 378 8688 or rotorandwing@xtra.co.nz
 Contact Greg Mundell at Aeromotive on 07 843 3199 or greg.mundell@aeromotive.co.nz
 Contact Kim Thompson at Pacific Aero Coatings on 07 378 8688 or kim@pacificaero.co.nz
 Contact Matt Bailey at Performance Aviation on 021 744 588 or matt@performanceaviation.co.nz
 Contact ZK-HII's owner at rotorflight@xtra.co.nz

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Gavin Conroy - Gallery 2013 Part 1

At about this time every year I take a bit of time to reflect on the aircraft I have photographed air to air and every year I think to myself "next year cannot get any better than this year". Since 2006 I have been proved wrong each time but this year I do wonder if I might be right. In the past I have concentrated on aircraft flying in New Zealand but in 2013 I was also able to photograph aircraft in the US, Canada, and most recently Australia.

None of the photos would have been possible without a huge amount of support from the owners and operators and I thank all of them for the time, effort and expense required to make the photos possible. Normally I simply get a phone call or email from an owner or pilot asking "would you like to photograph my aeroplane" and we move on from there.

All up, nearly 50 aircraft have had the camera pointed at them during 2013 and the last group of people I need to thank are the camera ship pilots. They are the unsung heroes in all of this, all great pilots in their own right. They lead aircraft, do the radio calls, and keep everyone safe as we fly around. What they don't get to do much is see the beautiful aircraft flying alongside of them. They have a lot to do and a lot of standing around can be involved. I thank you all for your time and patience.

Unfortunately I could not include all the aircraft from 2013 in these few pages, but watch out for more in future issues of KiwiFlyer. In the meantime, have a safe and happy holiday season.

Gavin Conroy.



Frank Parker is seen here flying the Fw-190 in hot pursuit of Sean Perrett in Brendon Deere's Spitfire at Classic Fighters 2013.



A pair of Fokkers. Gary Yardley in a D.VII and Tim Sullivan in a Dr.1.



Geoff Cooper pilots this recent DC3 import which will be based at Te Anau.



Squadron Leader Steven Bradley pilots a RAAF F/A 18A Hornet in the days leading up to the Temora Aviation Museum's airshow in November.



Simon Paul in the the Chariots of Fire Fighter Collection's Sopwith Pup replica.



Arthur Dovey and Graeme Frew enjoying their Yak-3s.



Mosquito KA114 in Canada, photographed from a B-25 Mitchell Bomber. Thanks to the Canadian Warplane Heritage museum for making this flight possible.

Gavin Conroy - Gallery 2013



Peter Meadows in his L-29 Delfin at Tauranga.



Jim Rankin flying Brendon Deere's TBM Avenger along the coast near Ohakea.



Brendon Deere and Oliver Bint flying Brendon's magnificent Harvard.



Ryan Southam in Bill and Robyn Reid's Avro Anson, with Nanchang alongside.



Jerry Chisum in the very rare de Havilland Moth owned by Jerry and Jan White.



Sean Perrett rounding Cape Campbell in a beautiful Cessna 210.



Steve Scott pilots a Q300 operated by Air Nelson.



Cam Hawley flying his Beech Staggerwing with Ryan Southam.



Rotor and Wing Maintenance Helicopter Overhaul and Role Equipment Specialists

FROM their early mission of maintaining working helicopters, Rotor and Wing Maintenance Ltd continues to offer a dependable service enhancing the safety, performance and reliability of helicopters and light aircraft, from their central North Island premises. Rotor and Wing was a start up company in 1980. The hangar and facilities have expanded over the years and the company is just completing its fifth extension. John and Shona Hobday remain at the helm.

Rotor and Wing's first Robinson Service Centre approval was gained back in the 1980s when Frank Robinson himself signed and presented certificates. Since then, the R44 Service Centre was approved and expanded. The R66 Service Centre has also been approved with early examples of the type now approaching 1000 hours flying time. The company has recently signed up with Rolls Royce to become a Service Centre for their RR300 engine installed in the R66.

The Team and Capabilities

Rotor and Wing's maintenance workshop is very well managed by Greg Newton who balances a variety of scheduled maintenance, airframe overhaul, and repair work. He is assisted by a capable team of engineers and tradesmen.

From the early days of turbine helicopters the company has also developed a considerable knowledge base and extensive experience to enhance the maintenance of the MD500 series and the Bell 206 JetRanger. The company has also had an ability to maintain the Eurocopter AS350 for some time. More recently they have introduced Nick Hockey, an experienced and skilled engineer to this capability.

Part 145 approval for both the component overhaul shop and the maintenance workshop was approved in 1997. The component overhaul shop, capably run by Murray Welch, has become a respected service for operators and other engineering maintenance providers.

In addition, John Hobday and Brad O'Brien design, develop and manufacture equipment that assists operators with a variety of tasks carried out with their machines. These include Tracmap installation systems, fire lighting systems, kayak racks, and more.

Robinson Helicopter overhauls

Over the years, Rotor and Wing have developed several processes to enhance the efficiency of Robinson helicopters' 2200 hour overhaul and 12 yearly inspection requirements.

John says that one of the keys to an efficient Robinson overhaul is to start planning well ahead of the job. "It can be a complex process and managing it for best cost involves a good deal of thought and decision making before parts are ordered," says John.

Often helicopters will have had major components changed during their previous 2200 hours flying time. Thus a decision needs to be made whether to order an overhaul kit (which can only be ordered as a complete kit) or alternatively, to order just the parts

required for the overhaul and to refit the components still with time to run. Ordering parts separately can make for a more expensive overhaul and may also mean extra parts that are usually supplied within the kit are missed.

The time from order to despatch can take up to 1 month. Sea freight, although the most economical, can also take another month to arrive. So John says it pays to start planning 3 months prior to your overhaul requirement start date.

Many of the components fitted are Robinson Helicopter exchange components. A core charge is invoiced when these components are supplied, then upon return to Robinson of the time-expired component, a strip inspection for overhaul is carried out and parts are assessed for possible core credit. Any rejected parts have their value deducted from the core credit.

Operators need to be mindful that corrosion is ever-present in the New Zealand environment. Good overhaul and reassembly techniques can minimise the potential for future corrosion and associated costs. Rotor and Wing have

proven processes including coatings and sealants to increase the overhauled helicopter's resistance to corrosion attack.

Rotor and Wing also provide a variety of in-house component overhaul services, including for frames and undercarriages. These services are offered to other maintenance providers to assist them with carrying out 2200 hour overhauls on their own customer's aircraft. In some cases Rotor and Wing have exchange frames, undercarriage, tail cone, etc. available which facilitate a faster turn-around for the overhaul process.

John says that the most economic and efficient overhauls are the one that happen methodically and in a short time; "Planning is the key. With the many years of overhaul experience we have, Rotor and Wing is now in a position to offer turn-around times of as little as 4 weeks."

John adds that "With a job that can be as large and variable as a full helicopter overhaul, keeping control of the project's costs may be an issue of concern for customers. We're confident enough of our processes to eliminate that concern completely and offer fixed price overhaul contracts if that is what the customer would like."

For more information

For Robinson overhaul enquiries, aircraft maintenance, or role equipment requirements, contact John on 07 378 8688, E: rotorandwing@xtra.co.nz or visit www.rotorandwing.co.nz



Tracmap installation on an R44. Systems are also available for the R22, H300 and H500.



Fire-Fly Fire Lighter produced by Rotor and Wing.

Warbird Ejection Seats Reactivation and Maintenance by Warbird Egress Systems Limited

EMERGENCY aircrew escape systems have become mandatory equipment in high performance military aircraft since their first rudimentary designs were installed in Swedish and German aircraft of WWII. By the mid 1950s, UK company Martin-Baker had established itself as the world leader in the design and manufacture of ejection seats for aircraft such as the Hawker Hunter, BAe Strikemaster, and DH Vampire/Venom, to name a few. When the world's Air Forces retired these aircraft from service, the explosive charges were removed from the ejection seats and the aircraft sold off for scrap or to private owners wanting to fly them on a civilian register as 'Warbirds'.

The RNZAF have had live ejection seat systems in various aircraft since 1955, but it is the civilian owners choice if they want to have a live system. The only other method of escape is bailing out, but that is generally next to impossible in most scenarios. New Zealand has seen many Warbirds on the register, but not until 1996

has a civilian owner wanted the egress system to be made 'live' in one, this being ex Singaporean Air Force single seat Hawker Hunter ZK-JIL. The maintenance team requested RNZAF Armaments Technician SGT Glen Turner to install the live seat system in ZK-

JIL. Glen had spent more than four years servicing Strikemaster, Skyhawk and MB339 Macchi ejection seats during a posting to the Ohakea Seat Bay which included systems training in Italy on the new Martin-Baker seats for the MB339 in 1991. When researching the task, Glen discovered there were no regulations in NZ civilian aviation laws that governed the

fitting and use of live ejection seats, so he drafted a set of rules and they were published by the NZCAA in December 1997 as AC43-21. The NZCAA issued Glen with a specific Maintenance Approval and he created his own Limited Liability company - Warbird Egress Systems NZ Ltd.

The servicing package that Glen offers also includes the sourcing, importation, storage and fitting of the explosive cartridges and rocket motors. Hawker Hunter ZK-JIL flew for the first time in NZ in March 2001, and because of that Glen has been involved with many other private ventures, including Hawker Hunters in Quebec/Canada and Brisbane/Australia, Vampires in NZ and USA, an EE Lightning in Mississippi/USA, F86 in Ardmore/NZ, DH Venom ZK-VNM at Ohakea/NZ and the Draken A4 Skyhawks in Florida/USA.

The business of servicing and supporting live ejection seat systems cannot be done alone, therefore Glen has joined the team of Safety Equipment Services Ltd (SES) in England (Martin-Baker's commercial agency), and was certified by Martin-Baker technical engineers for routine equipment servicing as part of the SES crew in 2008. Glen's company was recently appointed as SES's authorised agent and distributor in this Pacific area of operations.

Now nearing retirement from the RNZAF, Glen is looking to create a full time business from escape systems servicing and installations of various manufacturers' types, with more privately owned aircraft and a fleet of seats to manage as a long term project.

Contact Glen on 021 732 835, or email: egresssystem@egresssystems.nz



Left: Glen Turner works on the seat in the de Havilland Venom at Ardmore.



Right: Glen fitting ejection seats into the ex-RNZAF Skyhawk fleet.

ROBINSON OVERHAULS

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More than Maintenance at Fieldair Engineering

Fieldair Engineering Ltd. is more than just a specialist aircraft maintenance company – it has a multitude of support services that grew out of its own requirements, and are now very much central to how the organisation operates today. Fieldair Engineering Manager Phil Byrne says that “The key to our success is understanding the customers requirement and working collaboratively together to achieve the same goals”.

Fieldair's aviation history

Fieldair was established in 1951 to maintain and overhaul the company's agricultural fleet, which eventually grew to more than 45 aircraft and helicopters. However when the market for agricultural topdressing began to rationalise, the company reinvented itself as a specialist aviation engineering business and freight transporter.

Fieldair Holdings Limited is the holding company for both Airfreight NZ Ltd and Fieldair Engineering Ltd which currently employs about 85 staff including 17 full-time pilots on contract, most of whom are engineers and based primarily at the company's headquarters at Palmerston North Airport. There are also engineering bases at Christchurch and Auckland International Airports, with Hamilton's new aviation painting facility (APS Ltd.) a recent joint venture.

Fieldair is part of the Freightways group of companies and plays a vital role delivering freight throughout New Zealand with its fleet of CV580s and CV5800 aircraft. This fleet transports up to 65 tonnes every working night of the year, making sure that 'next day' delivery means just that.

Fieldair Engineering has continued to upgrade its facilities and today ranks amongst New Zealand's most capable aircraft maintenance companies, providing air transport and general aviation operators with access to a wide range of airframe, engine, instrument, electrical and manufacturing services.



Fieldair's main facilities at Palmerston North Airport.

Quietly achieving: Avionics, Maintenance & Engines

Without much fuss, Fieldair has steadily grown its capabilities and has become renowned for being a company that likes to say 'Yes'. Fieldair has a stable, experienced workforce and excellent facilities, and is proud of its reputation for safety and service.

Phil says that with the largest and most capable avionics team

in New Zealand, Fieldair's Instrument Services Division can boast customers from New Zealand, the South Pacific and right around the world – with customers returning for both reasons of price and quality. As a Garmin (one of many associate OEM's) Service Centre, retro fitting of glass cockpits into legacy aircraft has become a much more frequent occurrence. Original pricing and time to install 'glass' initially put many operators off these upgrades. But with the strong NZ dollar, improved installation kits and certified STCs now available to service centres, the time has never been better to talk to the 'ISD' team. ISD services include complete aircraft instrumentation repair and overhaul, compass and gyro instruments, annual avionics checks and complex upgrades.

Fieldair specialise in a range of maintenance work, including scheduled maintenance, annual inspections, modifications, overhauls, repaints, major structural repairs, role conversions and aircraft restoration.

Fieldair's electrical workshop provides quality 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, fuel pumps and voltage regulators - very little is outside of their capability.

In addition, the company operates an engine shop, which services and maintains piston engines. Fieldair has been overhauling aircraft engines continuously since 1969 and has a reputation for reliability and high standards. They are a certified Lycoming Service Centre and can offer customers turnkey solutions.



The joint venture APS painting facility at Hamilton.



Fieldair's Instrument Services Division can undertake all types of repair, overhaul and major upgrade work. Lower right: Heavy engine maintenance.

Strong Engineering & Electronic abilities

Probably unbeknown to the majority of NZ aviators, Fieldair provide a variety of additional engineering services. The company is CAA Part 148 certified and undertakes a wide range of general engineering projects, having extensive experience at manufacturing freight handling and containment systems for road and aviation transport - as well as passenger stairs, trolleys and other ground support equipment. They are specialists in short-run contracts in steel and aluminium alloys.

Fieldair has a ground handling and maintenance team as well as operating the local refuel department around the clock 24/7 on behalf of Air BP. As Phil says, “everywhere you look you can find one of our Fieldair team making it happen”.

Successful tenders for Airport Companies and the RNZAF have played a significant role in Fieldair's expansion of general engineering services which are now located at a separate hangar away from Fieldair's main facility.

Fieldair's range of work includes making parts and modifying aircraft for role changes or equipment upgrades. Aircraft operators with any such requirements are invited to contact Fieldair – Phil says they are always happy to come and discuss requirements at your site to save you time. Recent jobs include E-link chargers for the Air NZ Link fleet and several role equipment assemblies for various helicopter operators.

Part 145 approved and with Fieldair's ISO9001 quality accreditation also behind it, ISD repairs a vast array of precision equipment and instrumentation outside of aviation. They can also calibrate external customers tooling, pressure gauges and other electronic equipment in a timely and cost effective manner.

There's an international component to Fieldair's operation too. The re-generation of the ex-RNZAF Skyhawk fleet has involved the Fieldair avionics team from Palmerston North, ensuring that the complete avionic suites were made serviceable and shipped to the USA. Specialists from the team were required to accompany the equipment, then install and test it - and were delighted to see the first few aircraft fly prior to departure. Draken (the customer) was so pleased with the result that an on-going contract for this support has now been agreed and will operate for years to come.

Parts and Supply

Fieldair Engineering operates a fully stocked supply department, providing aircraft inventory, break-down spares, consumables and logistics solutions in direct support of their maintenance activities. The parts and supply team also provide advice and support to external customers maintaining other aircraft. Part 19F approved, Phil says the Fieldair team offer a dependable, prompt, and cost

effective service that includes free advice on spares procurement, on-line parts searching of Fieldair's inventory, and 'same day' despatch service for in-stock items. He also says that assisting local operators in sourcing parts is common – “contact us anytime”.

Flexible labour and contracting services

Fieldair Engineering is a large organisation with a wide range of skills and expertise. It has the ability to move staff within its various

departments to make full use of their skills and experience when required. Phil says that “Another thing we have started creating is a labour pool for members of the aviation industry. In aviation you often require 'surge' labour for a particular large or urgent job. There are often a lot of independent contractors and it can take a lot of time to track them down. We're aiming to maintain a database of those contractors, as well as our own employees. It means we can better manage that pool of labour and this is starting to gain traction. We administer the contractors for other members of the aviation industry. It works for the contractor; it works for us; and it works for the organisations and companies that have that critical requirement.”

Fieldair in the community

Fieldair is a major employer and is often called upon to engage with the local community, regularly hosting businesses and

charitable groups in their large hangars. Staff are encouraged to be community contributors too, and Fieldair provides resources annually to support completion of the Cancer Society's Relay for Life, as well as towards cyclists by supporting the Tour de Manawatu each year.

For more information

Phil says that Fieldair is “seeing good signs of growth at the moment, especially in the avionics shop, contracted aircraft maintenance and the manufacturing department. Because of our scale and reputation, and the complete capability package we can offer, we're getting more approaches from companies and operators looking for support and engineering services throughout NZ.”

For enquiries regarding any of Fieldair's services, contact Phil Byrne in the first instance on 09 357 1149, email: phil.byrne@fieldair.co.nz or visit www.fieldair.co.nz





Signature Engines from Aeromotive

AS WELL as providing a suite of other fixed-wing maintenance services, Aeromotive at Hamilton Airport have a comprehensive firewall forward capability, with the engine shop supported by peripheral bays for stripping, inspection and NDT, electrical, fuel and stores for all engine components.

Approved as a Lycoming Service Centre and a Centurion Service Centre, Aeromotive can cater for most piston engines in the market, whether in for complete overhaul or remedial work following a prop strike or overspeed, etc.

All overhaul work at Aeromotive is able to be carried out in-house, there being no requirement for outwork. Also on site is the only dedicated piston engine test cell in the country, making it easy to test-run and calibrate engines in a controlled environment following overhaul.

Oceania Group Engine Overhaul Manager is Greg Mundell who also oversees all overhaul work through the Hamilton facility. At Aeromotive South in Timaru, engine work is headed up by Terry Wilson.

Aeromotive's standard overhaul product is branded 'Signature', a Signature Overhaul including various features to ensure premium quality and longevity of service.

Signature engines are fitted with new cylinder kits (rather than overhauling original components), and in the case of a flat tappet engine, a new cam and followers. In both cases, Greg says the value added exceeds the cost involved. Cylinders can be overhauled instead, but there's a risk they may only last for half a life ("and commercial operators don't want to have to worry about cylinder leak rates all the time"), and whilst experience says that used camshafts will be dimensionally fine, they will carry metallurgical fatigue and there is a reasonable probability that they will fail before the next engine TBO is achieved.

A new ignition harness will also be fitted as this is another low cost exercise at the time of overhaul versus being more expensive down the track once the engine has been installed.

Sparkplugs are usually replaced, though operators may choose to retain existing ones if they are low time and particularly if of an expensive type.

Aeromotive take pride in the appearance of their work. Greg

says "We think if your engine overhaul costs you \$30k then the engine should look like you just spent \$30k on it. We go to a lot of effort and do the best job possible for appearance and future corrosion protection."

Customers can negotiate out of any of the mentioned Signature range options if they wish, but Greg says the engine won't then be Signature branded or carry the same warranty.

Greg is happy to quote for fixed price overhaul work, with

Signature quotes being based on the existing crankshaft and crankcase being reusable. A large range of exchange engines can be drawn from the wider Oceania Group if required, or if customers want to retain their own engine then a 10 day turnaround is available by arrangement.

Other maintenance opportunities

Of course with Aeromotive's wider capabilities all under the same roof, it makes sense to not only bring

the engine, but the rest of the aircraft as well. Any other repairs or work required, including Cessna SIDs inspections can then be efficiently accomplished at the same time.

Greg says that operators should also consider overhaul of their engine mounts, cables, and baffles (the latter being required as part of the engine warranty conditions).

It's also a good time to complete any upcoming major checks, such as for fuel tanks (10yr) on Pipers, etc.

If the engine arrives for overhaul still attached to the aircraft, then Aeromotive will dynamically balance the prop, though this is usually done after 10-15 hours of run-in time because the engine operations for balancing aren't conducive to the running in process.

For more information

Also in this issue of KiwiFlyer is an article on the overhaul of a Robinson R22, with more information on the engine overhaul process including the stages of overhaul, inhibition for storage, and running in requirements.

To find out more about the services and options offered by Aeromotive, contact Greg Mundell on 07 843 3199 or email: greg.mundell@aeromotive.co.nz www.aeromotive.co.nz



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JEM Aviation Maintenance and Restoration Specialists

ENCOURAGED by the planned opening of the Omaka based Aviation Heritage Centre, JEM aviation opened its doors in 2006 and has grown steadily on a diet of antique and warbird aircraft restoration and maintenance.

The dedicated team of four is led by company director, licensed engineer and I.A., Jay McIntyre. Jay says that "the JEM team come from varying backgrounds resulting in innovative approaches to problem solving and a range of highly useable skills not often seen in workshops these days."

While most commonly associated with perhaps the more exotic end of the aircraft spectrum, JEM is equally at home maintaining the pride and joy of any owner. Jay explains; "GA aircraft haven't historically made up the bulk of our work load but we are enjoying seeing the numbers grow as owners realise there are other options to their traditional maintainer. We welcome all aircraft owners and operators to come and discuss the options with us."

Fabric work is a speciality and along with that comes painting. "Our reputation as a 'finisher', based on completed projects including Cub, Auster, Cherokee, Yak-3 and various Nanchang's is seeing a steady increase in repaint enquiries. We are committed to the highest quality and to this end have invested significantly in this area of the business." A second hangar

within the Omaka Aviation Heritage Centre Airpark has been purchased with the view of becoming a dedicated paint-shop.

Painting is only the finishing touch

however, and full rebuild capabilities from the smallest part to complete aircraft are offered. In addition JEM has the ability to overhaul 'Special' category engines. Jay says they are very lucky to have two dedicated aircraft machinists within the Blenheim region, giving quick turn around and clear communication. Additionally, a specialist company literally on the back doorstep means easy access to procedures such as plating, NDT and propeller services.

The JEM team loves a challenge and are becoming known throughout Australasia for their accommodating attitude, proficient skills and can-do attitude. "As an enthusiast myself, I am rewarded when an aircraft

owner leaves happy," says Jay. "Customers enjoy regular communication and the JEM Aviation team work closely to ensure projects are completed efficiently, competently and with respect to their budget and expectations." Jay says that no aircraft is too great or small; "Consider us as your aircraft maintenance provider or restoration project specialist".

For more information

Contact Jay McIntyre by phone on 03 578 3063, email: jay@jemaviation.co.nz or visit www.jemaviation.co.nz



Jay McIntyre, owner of JEM Aviation.



Omaka Real Flying Club's Tiger Moth BER, based at Omaka and under the care of the JEM Aviation team.



Yak-3 ZK-VVS, restored to as-new flying condition by JEM Aviation. See the feature in KiwiFlyer Issue 24.



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Ardmore Airport, Auckland.



Innovative Propeller and Specialist solutions from Safe Air at Blenheim



Lead hand, Darren Goodall, displays the latest Hartzell Top Prop kit, available through SAFE AIR.

SAFE AIR Limited, located at Blenheim Airport, is the largest facility of its kind in the southern hemisphere and the only OEM-approved services provider for Hamilton Sundstrand, McCauley and Hartzell propellers.

For over 60 years, from its inception as the cargo carrier Straits Air Freight Express (operating Bristol freighters across Cook Strait), to the present day One-Stop aircraft, propulsion and specialist services Maintenance, Repair and Overhaul facility in New Zealand, SAFE AIR has re-invented itself many times to better serve the needs of a dynamic aviation industry.

From Argosies to A-4 Skyhawk fighter jets, and Cessnas to C130Js, SAFE's history includes decades of exciting accomplishments ensuring the safe operations of aircraft. The company's scope runs from single piston-engine planes common at local aeroclubs, to charter cargo and passenger aircraft serving the tourist

market, and right through to Air Force helicopter and heavy-lift aircraft readiness.

We are a unique operation by anyone's standards, and continue to provide innovative solutions to the varied enquiries we receive from customers all over the world, and here at home in New Zealand.

Right now, we are working on aircraft, engines and propellers from repeat customers in Thailand, Pacific Islands, USA, Germany and Australia, with interest pending from South America and Canada.

With a deep commitment to servicing the RNZAF ongoing requirements, whether it be a ramp-up to maximum capacity to accommodate fleet upgrades, or ramp-down in recognition of a reduced work scope, SAFE has developed a reputation for excellence in aviation. We are first and foremost customer-focused, and have adapted the various departments to meet customer priorities, always ensuring compliance and safety are paramount.

Propeller and Composites Services

When Don McKenzie completes a propeller job, he wants the customer to say "Wow" when they open the box on receipt. In his 20 years with SAFE, Don has completed overhauls on propellers from Mosquitos, Spitfires, and multiple blade types too many to list.

The SAFE Specialised Composites Bay does great work undertaking the evolving processes required to ensure blades are airworthy. There is more to a blade overhaul than meets the eye and it takes highly-trained personnel to achieve the standards set by our OEMs. Paul Fry and Shane Matthews, resident composite wizards at SAFE have some 25 years between them in the Composites Bay, and SAFE is the only Hartzell-approved facility in Australasia able to change the leading edge guards on Hartzell blades.

Electroplating and Engineering Services

Tony Little, Manager Specialist Services, oversees the largest electroplating bay in the southern hemisphere. We're very proud of the breadth of services we offer; from chrome to nickel, copper, cadmium and silver, ours is the pre-eminent location for all plating, and under one roof. The plating resource is utilised by many of our maintenance services, such as on propeller shafts, hubs, and engine parts. Many parts come in just for plating services.

In conjunction with the specialist plating bay, we offer the gamut of capabilities around machining, metal forming, grinding, welding, shot-peening, heat treatment and painting to name a few. Together with non-destructive testing, calibration, balancing, and optical alignment, SAFE is a powerhouse of aircraft solutions for most repair, maintenance and often manufacturing work, from single parts to ongoing multiple-aircraft servicing.

One such instance was a *small* job we did for a US customer who was looking to set up a training facility. They needed a couple of dozen A-4 Skyhawks to be dragged out of the desert and refurbished to flight-worthy status. Over a period of 12 months, Jock Cameron, Mike Spooner and several others were among the SAFE personnel who changed fuel hoses, repaired engines, prepared the aircraft and signed them off for flight. With this, SAFE continues to service the engines and remains involved as a valued resource for the US company's operations.

Engineering Design Services

Another area we are particularly proud of is our Engineering Design capability. We offer a total package: design, manufacture, install, test, certify and maintenance of a comprehensive range of complete turn-key solutions for a single aircraft or an entire fleet. David Goodwin, Manager, ED, oversees a single source solution where SAFE manages all aspects of the entire project including through-life support once operational. Past designs and modifications include GPS installations, glass cockpit and avionics upgrades, Cockpit Voice Flight Data Recorder installations, fuselage and wing structural design and more.

Our Customers' Experience

Our One-Stop story wouldn't be complete without a short flight down memory lane: Concerning one of the final missions of the Bristol Freighter into the Chatham Islands, pilot Craig Emeny related that his Cessna 180 was "not behaving very well" and he was reluctant to leave the island. At the time, the local pub ran out of beer, with the publican anxious that "if the boys take the top shelf they'll go crazy." So they chartered a Bristol flight to save their sanity and sure thing, the Bristol arrived with two tonnes of beer on board! But that wasn't the end of the story – Craig needed his Cessna returned to the mainland, so the boys all got together and stripped off the wings, loaded the Cessna into the Bristol, and it flew as cargo back to Blenheim, where it was reassembled.

Craig continues to utilise SAFE's expertise in servicing his Convair 580 turbines and gearboxes. SAFE sources parts from all over the world and Craig is very happy with the relationship. "It means not having to ship overseas, and the guys go out of their way to make things happen," reports Craig.

This is just one of the accolades SAFE personnel receive on an ongoing basis. It is not uncommon to open emails expressing thanks and appreciation for the "excellent service and great price."

So let me allow a customer to have the last word: "The fact that we were able to do this and now have our maintenance back on, is in no small part due to the efforts of your team."

Today, SAFE remains alive and well, undergoing another transformation to reposition for whatever the aviation industry requires next, and continuing to provide customers with a unique combination of services, talent, and can-do attitude. We look forward to supporting all aviators in whatever way we can.



Left: Precision measuring by Don McKenzie. Centre: The largest Electroplating Bay under one roof in the southern hemisphere. Right: Electroplating in progress.



SAFE AIR was instrumental in preparing these Skyhawks for flight readiness.

Propeller Experts

Specialist Services

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Performance Aviation

Innovative thinking delivers mods for performance and safety

Performance Aviation Limited have been operating since July 2006 when Matt Bailey set up operations at Wanaka Airport. Matt and his team undertake a diverse range of helicopter and fixed-wing maintenance and overhaul, with a variety of helicopters on the books (they are one of the largest Robinson maintenance bases in the South Island) and a list of fixed-wing aircraft that include P-51 Mustang, L-39 Albatros jet, PAC 750XL, and more. Recently, Performance Aviation was approved as a Guimbal Cabri Service Centre, now caring for a Cabri based near Tekapo.

Cost effective mods available

It was always Matt's plan to offer more than basic aircraft maintenance and to this end, the company has either developed themselves, or acquired agencies for a variety of mods that are now available to cost effectively improve the performance of aircraft and offer good returns on investment for operators.

These approved modifications are available to all operators and their maintenance providers, giving Performance Aviation a customer reach well beyond their local patch.

Electroair Electronic Ignition Kits

Performance Aviation have recently been appointed as Australasian dealers for Electroair, who produce the EIS-41000 series of electronic ignition kits which are fully STC'd for most Lycoming and Continental four cylinder engines. 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-41000 will typically improve fuel economy on average by 10-15% (many operators have reported consistent fuel savings of 1gph or greater). Additionally there will be an improvement in horsepower, smoother engine operation, and improved high altitude performance.

Matt says that customers can also expect easier starting and longer spark plug life with less fouling. Most parts on the EIS-41000 are not life limited, contributing towards lower maintenance costs and an expectation that the system will comfortably pay for itself within the first 1000 hours.

See the article in KiwiFlyer Issue 30 for more information. Matt says an Electroair kit has now been fitted to an aircraft at a major flight training school in the North Island. Their early report has been of a noticeable difference on start-up, the engine being easier to start and running smoother on the ground.

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 fully STC'd Robinson R22 Beta exhaust system that provides operators with a hot and high performance considered near equivalent to a R22 Beta II. Their testing showed that owners should expect to save 5 litres of fuel per hour if they operate at the performance levels they would be accustomed to. Or they can trade that fuel saving for the noticeably increased performance that is available, particularly in hot and high conditions. Carb heat is also significantly improved thanks to a more efficient collector and shroud design.

Another expectation is to not replace the system at 2200 hours (for US\$2500+) as is the case with standard systems.

Start-up Over-speed Protection for Robinson R22 Helicopters.

This simple mechanism is also in development for the R44. Matt says he just needs a few wise owners to sign up which would underwrite the STC process. KiwiFlyer thinks this device is one of the cheapest insurance options you could buy because...

The start-up over-speed protection system designed by Performance Aviation prevents the engine from being started unless the throttle is closed. Most start-up over-speeds occur because the throttle has been turned to the wrong stop, i.e. full

open. In such a case, the resulting overspeed will almost certainly go straight through the upper limit that necessitates a bulk engine strip. By the time that's done for an R22 there likely won't be change from \$15,000 or \$20,000 in the case of an R44. Even if you think you would never do that yourself, consider the other people who might fly your helicopter from time to time, and who will pay if it does happen. The mod only costs a few hundred dollars to buy and doesn't take long to fit. Start-up over-speeds happen more often than you might think. Robinson agents Heliflite Pacific at Ardmore say they attend to at least one a year.

For more information

Contact Matt Bailey at Performance Aviation by phone on 021 744 588, email: matt@performanceaviation.co.nz
www.performanceaviation.co.nz
www.facebook.com/performanceaviation



Performance Aviation are a Guimbal Service Centre.



Electronic Ignition kits for Lycoming and Continental.



Powerflow exhaust system fitted on Robinson R22.

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the originator of the carbon fibre boom concept

for Robinson R44

- Lightweight, 72kg with 4hp Honda
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- Fast and simple installation and removal
- Single boom isolation option



for AS350 B2, B3, and Super C

- 1000 litre capacity with room for foaming
- Belly tank incorporating simple one person installation and removal
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- Optional light weight carbon fibre tank
- Single boom isolation option
- Accurate, pressure operated contents gauge in pilot's console
- Dump doors open and close from pilot's controls for fire fighting and partial load dumps
- Designed by Operators for Operators
- Competitively priced
- Buy NZ made



R44 BAGGAGE PODS by HELISPECS

- 220 litres capacity per pod
- Light weight - each pod only weighs 14kg
- 250lb structural load per pod
- Vented for animal carriage
- Removable drain bung for cleaning
- Simple 30 second installation or removal
- Elegant design and excellent functionality



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Battery Installation for Bell 206, AS350, MD369C,D,E,F,530F,600N

- Maintenance free sealed lead acid batteries
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R44 GROUND HANDLING WHEELS

- Eliminates twisting loads
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Phone Roger at **HELISPECS**
 on 027 498 2812 to discuss
 all your helicopter requirements
 or email: heli.specs@hotmail.com

KANNAD ELT battery replacements due commencing Jan 2014

Lloyd Klee of Aviation Safety Supplies based at Tauranga advises that KANNAD ELTs and PLBs are coming up for battery replacements commencing January 2014. It is a good idea for operators to look now and see exactly when theirs will fall due so it can be booked in to ensure that parts are in stock and that a fast turnaround time can be provided. This is usually 48 hours subject to the availability of batteries. If required, Lloyd says he does have a number of exchange units available.

Aviation Safety Supplies are the only KANNAD approved Part 145 repair station in New Zealand and offer a 24 month warranty on all KANNAD products that they re-battery and re-certify. Lloyd also provides customers with a free RCC registration check.

Lloyd says there is now quite a major issue to contend with in that, effective October 2013, most airlines have refused to carry bulk stocks of lithium metal batteries. Thus there is a high chance of batteries being difficult to obtain when you want them. Unless the circumstances change, this will mean that higher quantities of batteries will need to be imported by sea freight at less frequent intervals, ultimately at higher cost and with the risk that if forecasts aren't accurate then we will have older rather than newer batteries available to ELT owners. Hence the advantage of checking when yours is due and booking its replacement some time in advance. KANNAD ELTs do need to be returned to an approved facility for battery replacement as specialised software and testing equipment is needed for the job.

For more information

For all enquiries on ELT and PLB products, accessories and antennae for helicopter or fixed wing applications, contact Lloyd Klee (details below). Aviation Safety Supplies also stock ELT and PLB testing equipment as well as a wide range of other safety products including life jackets and collision avoidance systems.

KANNAD 406AF Compact or Integra

406 MHz PLBs priced from \$487 incl GST

406MHz PLBs comply with NZ CAA Microlight and Gliding requirements.



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WHENEVER aircraft hardware is required, commercial organisations and homebuilders all turn to Aviation and Performance Parts. Owned and managed by Lianne Bergin, and based on Auckland's North Shore, the company has a proud history of delivering all manner of essential aircraft items to its customers who include airlines, maintenance organisations, aero clubs, home builders, and also car enthusiasts.

Aviation and Performance Parts range includes all manner of Pilot Supplies, Accessories, Aircraft Seats, Aircraft Engine Parts, Air Frame Parts, Avionics, Batteries, Books, Covering Materials, Decals, Ducting, Electrical Components and Mounts, Filters, Fuel System Parts, Grips, Hardware, Headsets and Intercoms, Hinges, Hoses, Instruments (engine and flight), Jet Parts, Lock Wire, Metal Supplies (steel and aluminium), Paint, Pulleys, Seals, Switches, Aviation Tools, Trim Systems, Wheels, Wire, Wood, and much more.

They are direct importers and have a large warehouse of both certified and non-certified stock onsite for immediate despatch. CAA Part 19F certified, there is full track and trace systems in place for serialised parts. A range of Cessna aircraft parts are also stocked, as is a very large variety of AN, MS and NAS hardware.

Aviation and Performance Parts are the New Zealand Aircraft Spruce and Specialty distributor, with weekly shipments of parts coming in from this huge US supplier. See www.aircraftspruce.com for the many thousands of items they have available.

Shipping is easily arranged all over the country and to the South Pacific Islands, and local customers are welcome to call into the showroom at Mairangi Bay. Lianne says there is no minimum order quantity or value. If you need just one nut or washer, it will be supplied with a smile. The same goes for advice. Lianne and her team have many years of experience in the industry and are happy to help with any questions people have regarding their project requirements.

For more information

Aviation and Performance Parts' goal is to provide high quality parts on time for a reasonable price. To find out more about how the team can support your requirements, contact Lianne on 09 476 0984, e: sales@apparts.co.nz or visit www.apparts.co.nz



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More Capability at Central Aero Engineering

Central Aero Engineering at Hamilton Airport continues to steadily grow with two new staff in the main workshop, plus an additional team member for sister company Central Aero Electrical next door. Joining Paul Waterhouse and Steve Grainger are Hamish Ross who is working towards becoming licenced, and licenced engineer Kanda Sami currently in a part-time role. Instead of Paul answering the phone, callers are now greeted by Maureen Griffiths in the office, freeing Paul up to spend more time with customers and in the hangar. And joining Martin Ross at Central Aero Electrical Limited is Zoran Dordic, whose East European background has been of great assistance with Russian YAK Manuals

Paul says the new staff are a welcome addition to the company, bringing more capability to an already long list of services, and more diverse experiences with which to support clients.

In the hangar

Supporting the claim of diverse capabilities, in the hangar when KiwiFlyer visited at the end of November were a Bell JetRanger for 3000hr component inspections as well as a hydraulic pump and reservoir unit change, a Robinson R22 for a belt change and another for an actuator change, an amateur built Arion Lightning about to start flight testing, and a Cessna 172 in for SIDs inspections and refurbishment. There was also a Robinson R44 about to head out with new bladder tanks fitted (this being the fifth completed by Central Aero to date).

That diversity suggests that if Central Aero are specialised in anything, it is customer service. To that effect, one of Paul's comments for this article was to reinforce the offer that aircraft operators are welcome to phone up anytime, simply to ask a question or for advice on any aircraft issue – regardless of whether they are existing customers or not.

Wide capabilities

Central Aero Engineering's capability list is wide indeed and now includes relatively recent equipment additions of test equipment to allow 24 month avionics checks to be carried out on site, plus a new set of scales for providing a weight and balance service.

With experience on Robinson, Bell, and Eurocopter types to name a few, Central Aero can provide comprehensive maintenance services for piston and turbine helicopters, including for Robinson 2200hr/12yr overhauls which they have previously carried out.

Fixed wing maintenance is also regularly conducted, with recent workload mostly involving Cessna SIDs programme compliance. With compliance deadlines getting closer, Paul reminds owners who haven't taken action that they need to do so very soon to avoid grounding their aircraft. Central Aero can repair much of the potential damage and wear that will be found in-house. The most recent project in this regard was a Cessna 185 which was completely stripped inside and out, then repainted and reassembled for a

perfect first flight. Paul says the owner was thrilled.

Central Aero have significant workshop resources for sheetmetal fabrication and repair and Paul says they continue to work with design organisations in support of mods development. One such project was the construction of sample components for Beech floor beam reinforcements.

Another string to the Central Aero bow is the provision of rebuild and restoration services, and of supervision services for restoration projects, a grand example being the stunning looking Ryan STM in the next hangar.

Paul can also provide qualified maintenance control services, with appropriate licence coverage and experience relating to the operators aircraft.

For other maintenance facilities, Paul offers a maintenance auditing service when required. He is often called upon to conduct airworthiness reviews for other providers who prefer someone from outside their organisation to see and comment on maintenance processes.

And it doesn't end there. Hot air balloon inspection and repairs are on the list, as are gliders, autogyros, microlights, LSAs, and quite a lot more as well. See www.centralaero.co.nz for Central Aero's full capability details.

Import and CoA services are also provided from "anywhere" to NZ, and following this process, a Piper Cub will be arriving in the hangar early next year, ex the USA.

Central Aero Electrical Limited

Operating from the hangar next door, Martin Ross, Principal of Central Aero Electrical Ltd., has also been adding capability to his business. With new employee Zoran Dordic, he is now offering more electronics repair services (especially for obsolete parts that manufacturers might no longer support), as well as helicopter actuator overhauls. Martin is the go-to person for all odd and unusual electrical requirements, especially for elderly

aircraft such as Tiger Moths and WWII varieties. Over the years he has acquired many service manuals for older aircraft for which he says he has undertaken a lot of recent magneto and overhaul work.

Martin has also been building up a large stock of tested and exchange units for a variety of aircraft. These include Starter Generators, GCUs, Voltage Regulators, Reverse Current and Over Voltage Relays, Whelen Strobe Units, H369 Actuators, as well as various 14V and 28V Alternators and Starters. Call for details.

For more information

Paul says that "If you're thinking maintenance, then think Central Aero. We'll be pleased to help whether it be just for friendly advice, or to book a job in." Contact Paul on 021 418 677, email: paul@centralaero.co.nz or visit www.centralaero.co.nz

Martin Ross at Central Aero Electrical can be contacted on 027 733 0208 or by email: centralaero@clear.net.nz



Top: Steve Grainger working on a hydraulic pump and reservoir unit change for a JetRanger. Above: Kanda Sami and Hamish Ross working together on Cessna SIDs remedial maintenance.



NZ's Radiola Aerospace a world leader

With a fascinating history and product offering, and significant success on the international stage, one would think that Radiola Aerospace would be more well-known to New Zealand aviators. In this country though, the aviation services that Radiola offers are in the main provided by state-owned monopoly Airways New Zealand, to a degree thus restricting local recognition of Radiola's capability and achievements.

SPECIALISING in the delivery of systems and services that enable aircraft to land in safety, day or night, in all weather and environments, Radiola Aerospace is a significant exporter of New Zealand talent and technology to international military and civil aviation customers. The company is a major international provider of ground-based aeronautical radio navigation aids and communications systems, flight inspection and flight validation and other support services.

Navigation and Communication Systems

Radiola Aerospace has long standing experience in the delivery, maintenance and support of ground-air communications systems, and traditional ground-based navigation systems such as ILS, VOR, DME, and NDB. The company also delivers tailored GPS-based solutions that enable precise tracking, monitoring and control of airborne and ground-based assets in both low and high threat environments. Systems can be supplied as turn-key, ready to work in any environment, including for demanding tactical and military requirements. Communications systems can be delivered as stand-alone or in support of navigational aids, and include VCCS, HF, VHF/UHF and microwave, all for fixed or mobile requirements. Meteorological systems as well as airfield lighting and signage solutions are also supplied by the company.

Flight Inspection and Flight Validation Systems

Flight inspection and flight validation represent important steps in the delivery of ground and space-based navigation solutions. Radiola uses specialist test equipment to ensure that navigation aids are performing to the exacting standards required of them.

Now operating five flight inspection systems, Radiola is equipped to supply flight inspection teams who are skilled in various languages and cultures and can deploy at short notice to many different countries. The company also partners with local organisations to establish their own local flight inspection

capabilities when required.

A Radiola base in Nottingham in the United Kingdom provides flight inspection services to Europe, North Africa and the Middle

East utilising the Diamond DA42 (specially modified for Radiola in a partnership arrangement with Diamond Aircraft). These aircraft are fitted with Radiola's AT 940 flight inspection package which provides commissioning, special, engineering and periodic flight inspection of ILS, NDB, AGL/PAPI, VOR, PAR, PSR/SSR, DME, and TACAN navigation aids.

Flight validation of an instrument approach, including RNP AR procedures, is a final part of the formal regulatory approval process. It confirms the procedure complies with international design standards, provides the required terrain and obstacle clearances, and is safely flyable with an acceptable pilot workload. These, and periodic revalidation of published instrument approaches are critical components to assure the flying safety of travelling public. Checks may also include runway markings, lighting systems, and wind direction indicators. Radiola's worldwide

experience in this process is extensive with more than 1500 procedures validated to date.

Military Solutions

It may surprise many readers to find that Radiola Aerospace has a long history of supporting military operations not only at home but also deployed in hostile environments. The company has completed contracts for the RAAF, RNZAF, USAF, USACE and USMC, delivering customised systems in locations including Iraq, Afghanistan, Timor L'este, as well as Australia and New Zealand.

Airfield Lighting Systems

Radiola also deliver fully compliant airfield lighting solutions, tailored to individual situations. These include cabled and solar systems, incandescent or LED runway and taxiway lighting, control and pilot activation systems, as well as WDI, RTIL/REIL, PAPI and ALS systems. Services may include anything from design advice and support through to full turnkey project management.

A strategy of quality

Tracing its origins back to the formation of AWA in New Zealand in 1913 (AWA supplied the first ATC radar system to CAANZ), Radiola has participated in the international marketplace

since 1995. The company has now operated in more than 60 countries, with consistent growth in capability and capacity during this time - all funded from operating profits and with no cross-subsidisation from other operations. This is in fact very praiseworthy. As Executive Director Richard Thompson says, "We've never been in a position, nor wished to receive 'gifted revenue' from captive markets to fund development." That's something he says the company does unfortunately see in some markets, often alongside reducing standards and rising costs for operators. Richard says that Radiola's strategy is to compete strictly on quality rather than cost and it's a strategy that stands the company in good stead with authorities and regulators around the world. For example, Radiola is one of only three companies certificated to provide Flight Inspection Services in the United Kingdom by the UK CAA. Its quality driven strategy also sees Radiola win projects against stiff international competition, often against Air Navigation Service providers or Civil Aviation Authorities which operate as monopolies in their own countries.

A history of leadership

Radiola Aerospace has achieved several firsts in its fields of operation. These have included introducing advanced aircraft and electronic technology to create significant flight inspection efficiencies and full standards compliance. Radiola was the first to use portable flight inspection systems under a regulatory approval, and also the first to use the Diamond DA42 aircraft for flight inspection. Richard says that in all cases, others have followed their lead. He says the company was also instrumental in the development of the latest generation flight inspection systems from Airfield Technology in the U.S. The 'AT 940' was developed to meet specifications set by Radiola who were the first to purchase and deploy the system.

Diversely skilled, multi-tasking staff

By necessity, Radiola projects are frequently complex and integrated. 100% owned by its staff, Radiola's team includes navigation engineers who are specialised in ground based navigation solutions, advanced satellite precision tracking solutions and communications networks. The company's Flight Inspectors have more than 100 years of experience inspecting and calibrating navigation aids all over the world. All Radiola staff have diverse skillsets and are expert at multi-tasking in international environments, often under difficult conditions.

For more information

To find out more about the benefits this innovative, private company delivers to its customers, contact Richard Thompson on 04 238 0113, e: richardt@radaero.com or visit www.radaero.com

Company Milestones

RADIOLA Aerospace Limited was established as a stand-alone company in 2003. At that time it took over the assets, contracts and staff of the defence and aerospace division of Radiola Corporation which had been formed in 1990 in a management buy-out of the major divisions of AWA NZ. AWA, a company formed by Marconi and Telefunken in 1913, had a long history of supplying systems to NZCAA and defence forces.

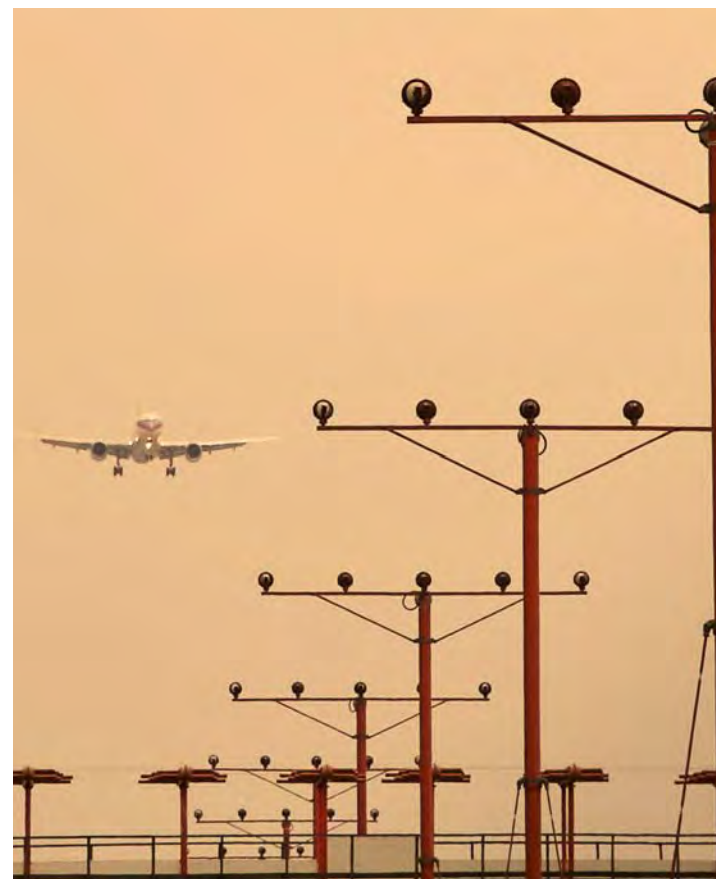
Today, Radiola Aerospace is a staff-owned, internationally recognised company specialising in the sale, installation and support of ground-based aeronautical radio navigation aids and communications systems, and the provision of flight inspection and flight validation services.

Historical milestones include:

- 1913 Formation of AWA in New Zealand.
- 1950 AWA supplies first ATC radar system to CAANZ.
- 1987 AWA supplies three VOR-TACAN systems to RNZAF.
- 1991 Radiola is certified to ISO:9001.
- 1995 4 ILS/DME systems supplied and installed for RNZAF.
- 1996 CAANZ Part 171 certification.
- 1996 Awarded long term contract to operate and maintain RNZAF ILS/DME and provide flight inspection services.
- 1998 First offshore contracts for nav aids; HF ATC for Fiji CAA and ILS/DME, lighting and flight insp. for Vanuatu CAA.
- 2000 RNZAF contracts for VORTAC ops and maintenance.
- 2003 Management and staff purchase the defence and aerospace division of Radiola to form Radiola Aerospace Limited.
- 2003 Flight insp. services to Samoa, Fiji, Tunisia, Bangladesh.
- 2005 Flight inspection services to ICAO.
- 2008 100% owned Australian subsidiary formed.
- 2008 Awarded 3 year CASA contract to provide NPA flight validation services at 300 aerodromes.
- 2009 ASSI certifies Radiola Aerospace under OTAR PART 173 for flight inspection in British Overseas Territories.
- 2010 100% owned United Kingdom subsidiary formed.
- 2011 CASA flight validation services contract extended 3 years.
- 2011 CAA United Kingdom certifies Radiola under CAR CAP670 for flight inspection services.



Flight inspection crew on deployment in Angola, Africa in 2013.



Flight inspection is a safety critical function.





It all starts with the battery

Aviation Ni-Cad Services celebrates 30 years in business at Ardmore

IT WAS 1983 when Clive Dixon left his employment at Marine Helicopters and started contracting his services to companies based at Ardmore Airfield. Seeing a niche opportunity, he soon acquired a charger/analyser and that year undertook 60 nickel cadmium battery services for his customers. The service proved popular and before long Clive was working solely on nickel cadmium battery servicing, leasing his current premises at Ardmore in 1989.

Still fiercely independent and working on his own more often than not, Aviation Ni-Cad Services Limited now holds NZCAA Part 145 C3 and Part 19F S1 and S2 certificates. Clive says he was "probably the first one-man-band organisation to get Part 145 certification", which was "tricky at the time as I obviously couldn't carry out self-audits, but I organise an auditor from my customer base to do that for me."

Nowadays Clive has "several of the best charger/analysers available," and undertakes some 400 battery services every year for customers all over New Zealand. Compared to most other operations that service batteries as an add-on part time service, Aviation Ni-Cad Services Limited is a specialist company that does nothing else but batteries.

Customers first

Clive prides himself on customer focus and has always offered a 24/7 service. If the lights are on at 3am, it could well be Clive getting an urgent job done for someone who needs their battery back the next day. It's an approach which has secured a wide customer base that includes Eagle Air, Air Nelson, Airwork, Eurocopter, plus numerous helicopter and business jet operators. One customer even ships batteries from Australia back to NZ for servicing because of the poor experience they have had in Australia.

Nickel cadmium battery servicing requirements

All nickel cadmium batteries require servicing on a regular basis. "It's the same philosophy as replacing oil in an engine," says Clive. Depending on the battery and the aircraft manufacturer, servicing may be required every 3 or 6 months, and overhaul every 12 months. A typical service involves capacity testing, deep cycling (usually 2 to 3 and sometimes 4 times), and the checking of temperature sensors. An annual overhaul requires a complete strip down and inspection, with each of the 20 cells having 15 items of hardware to check.

In the early days of nickel cadmium battery use in New Zealand, batteries were often seriously damaged by lack of servicing because at the time, many operators didn't consider it necessary. Regular servicing prolongs the life of batteries, and with a typical value in the order of \$9000, prolonging the life is a good idea.

The major reason for deep cycling is to overcome what is termed the 'memory effect' caused by the positive plate charging slightly slower than the negative plate. This is due to constant voltage charging on the aircraft. On the bench recharging is carried out by a constant current recharger which brings the two plates up to capacity together.

Clive has examples of nickel cadmium batteries that (thanks to being looked after and serviced regularly), have remained in service for between 10 and 15 years.

The advantage of nickel cadmium batteries

Nickel cadmium batteries were developed because of their capacity for high power output, making them ideal for starting turbine engines where they can typically deliver 10-20 times as much power as an equivalent lead-acid battery. Clive says that turbine overhaul engineers can tell which engines have been spooled up by nickel cadmium versus lead acid batteries.

Another nickel cadmium battery benefit is that if a single cell fails, it can be replaced individually with a new or PWS (part worn serviceable) matched cell.

Spare parts available

Aviation Ni-Cad Services hold the largest stock of nickel cadmium battery parts in New Zealand including a wide variety of replacement cells, sensors, cases, lids and hardware. It is also possible to combine previously tested sets of cells of the same type from two or more batteries. This can save money or having to completely replace the whole battery, especially for an operator using multiples of the same type.

For more information

For all enquiries, contact Clive by phone on 09 299 7133, fax 09 299 7743, or email: tc Dixon@xtra.co.nz



Clive Dixon at work in his Ardmore workshop.

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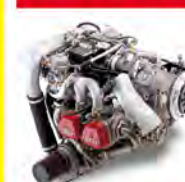
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Helicopter Services from Annett Aviation

Matt Annett has been involved with helicopter maintenance since leaving school. After 8 years with Lakeland Helicopters working on R22s, H300 and 500s, Jetrangers and Hueys, in 2006 he left New Zealand for an OE in the United Kingdom. There he acquired further experience on Robinson overhauls and various Eurocopter types before returning here in 2008. Working as a Contractor initially, in 2011 Matt saw an opportunity to set up in Tauranga where a demand for helicopter services wasn't being met.

Sharing a hangar with Neil Laing (who happens to have been Chief Engineer at Lakeland Helicopters back when Matt was there), Annett Aviation now has a dozen machines on its books, including R22, R44, AS350, and the two Guimbal Cabri G2s located in Whakatane. Annett Aviation is an approved Service Centre for Guimbal Helicopters. Soon there will also be a BO105, Matt having sourced it in Texas for an existing R44 customer. Involved from the start in that acquisition, Matt says he looked at several before finding a suitable one and completing pre-purchase inspections, then arranging its packaging support and import to New Zealand. It is now due to arrive here in the next month. Once in Tauranga, it is planned to undergo an 8 year inspection and be given a new coat of paint by neighbouring company Pacific Aero Coatings.

When KiwiFlyer visited recently, Matt and co-worker Greg (also a LAME) were reassembling the Philips Trust AS350 rescue helicopter after stripping it for painting and undertaking other mechanical work at the same time. Other recent jobs in the hangar include several R44 bladder tanks and some tidy-up work on an Iroquois from Portugal destined for Hunter Valley firefighting.



Matt Annett working on the Philips Trust AS350 rescue helicopter after stripping it for re-painting and other mechanical work.

Group 1 and 2 rotorcraft as well as Arriel and RR250 rated, Matt says that the business has built up progressively and now has a 50/50 split of private and commercial customers, covering operators from tourism, through rescue and agricultural applications. Matt also has a helicopter PPL and can therefore fly when he needs to.

Getting rotors right

A particular strength of the business is rotor smoothing and tuning. Neil and Matt have a reputation for persevering in order to "get it right", with Matt adding that "We're always aiming for zero rather than whatever limit might be deemed to be acceptable. We apply that philosophy to all of our work and are always trying to go that little bit extra with attention to detail. It's worth it for job and customer satisfaction and is also an approach we like to think can potentially make the difference between a good day, or a not so good day for an operator."

Matt says that Tauranga can now be considered a one-stop centre for helicopter maintenance, with all general maintenance available from themselves, avionics work available from Dave Gardner at Skytrack Aviation, premium painting services from Kim Thompson at Pacific Aero Coatings, and ARAs from Gareth McCurdy. As Matt says, "Tauranga is a great place for helicopter operators to come for maintenance – stay for a holiday."

For more information

For more information contact Matt Annett on 027 266 5505, or email: matt@annettaviation.co.nz

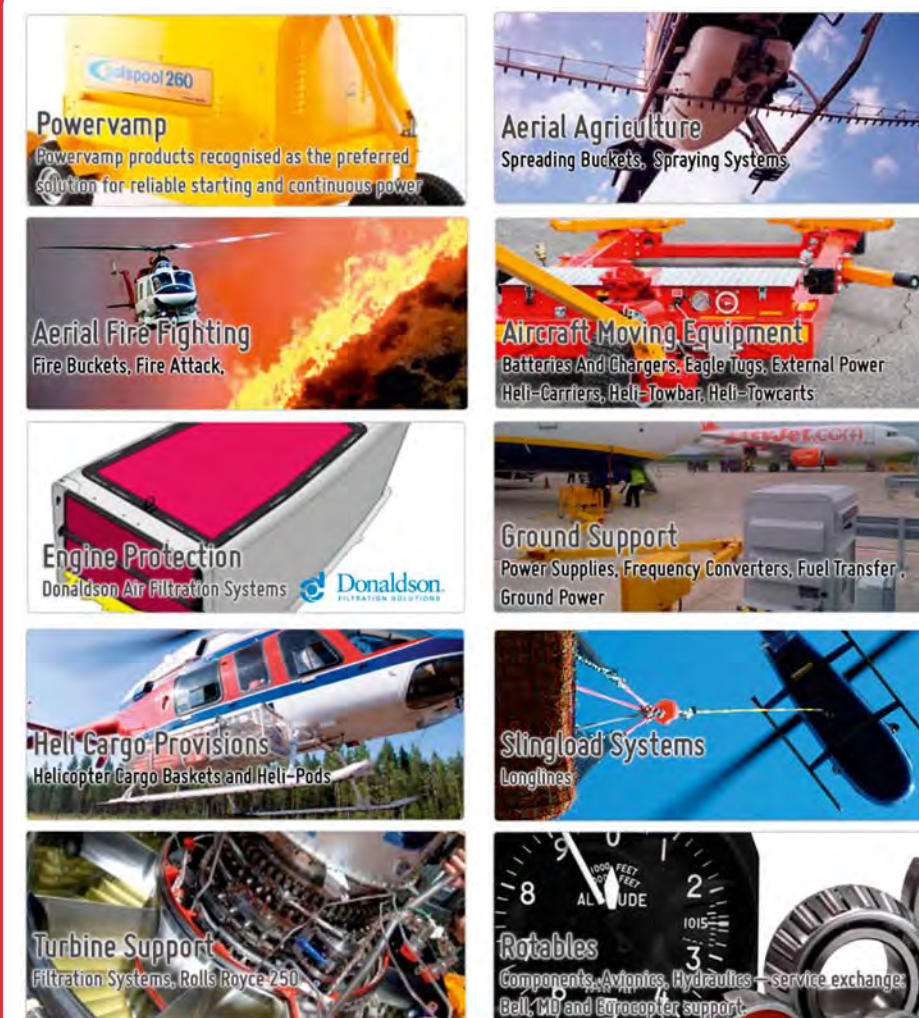
Barry Cordage Helicopter Longline and Cargo Nets now distributed by Aeromarsters Powervamp

HELICOPTER operators in New Zealand now have access to the world renowned helicopter longline and cargo net products from Barry Cordage in Canada. Since 1978 Barry Cordage has manufactured a wide range of rope and netting related products, most of which are used across half of the world's countries and on all 5 continents. "The thing I found about Barry Cordage and their people is that they listen to what the industry wants and they find the most cost appropriate and cost effective solutions. They have the scale of a huge company but maintain the personalised approach and values of something much smaller. These guys are here to genuinely help and they base their reputation on finding the right solutions. These guys don't 'say', these guys 'do', and it's suppliers like these that we want to work with," says Tony Marsters of Aeromarsters Powervamp.

Barry Cordage are the creators of the Double Zipper Helix Longline which significantly reduces vibrations and oscillations frequently observed with heavier longlines at higher flying speeds. They also produce weighted end covers which allows increased flight performance without a load. They are innovators in the market with the result that Barry Cordage longline accessories are often copied by other manufacturers - because the Barry designs have been proven on mission, time and time again.

Committed to quality and safety, Barry Cordage products include custom tow lines and bridle assemblies, cargo nets, longlines and barrel slings.

Contact Tony at Aeromarsters Powervamp for any enquiries relating to longline and sling systems, or for more information on any of the growing range of products represented in NZ by Aeromarsters Powervamp. Contact details are at right.



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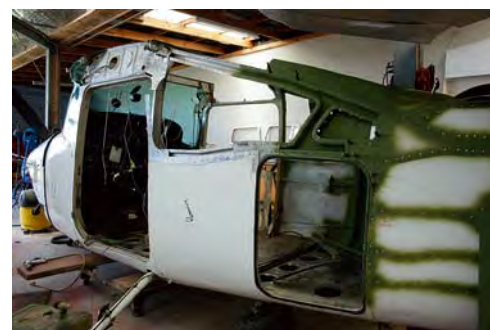
WITH 40 years of aircraft maintenance behind him, Chief Engineer at Flight Care Tauranga, Dale Trust has more than enough experience to offer light aircraft owners practical advice and solutions for all aspects of aircraft care.

Previously operating his own company Heliplane Services at Thames, Dale's employment by Flight Care added a wide range of maintenance ratings and capability to their existing Tauranga operations. Typical work involves all manner of maintenance and repair to light fixed wing GA and microlight category aircraft. Heavier aircraft are catered for at the company's Napier base.

Flight Care Tauranga's customers include private owners and companies from Ashburton to Kerikeri, flying everything from warbirds to composite microlights, and from helicopters to light twins. Many customers followed Dale from Thames and are happy to bring their aircraft to Tauranga for, in Dale's words, "friendly and economical service – and Tauranga is a very nice place to come for the day as well".

Dale says they have a very solid knowledge base particularly when it comes to Cessna SIDs inspections and also have a Cessna 100 and 200 series airframe jig on hand if required. He adds that "in particular, we aren't afraid of the big jobs and can undertake rectification of extensive corrosion if required". He also continues to develop various repair schemes for Cessna components, aiming on achieving these at half the replacement cost of equivalent new components. One example of such a project in progress is for corrosion pitting on undercarriage legs which would otherwise be unserviceable and cost thousands to replace. "We're able to fabricate a lot of bits and pieces that can cut replacement costs in half," says Dale, a typical example being C150 spars that were on the bench when KiwiFlyer visited recently.

To discuss any light aircraft maintenance requirements, particularly if seeking an experienced opinion on difficult issues, contact Dale Trust at Flight Care Tauranga on 07 572 3670 or e: tga@flightcare.co.nz



"Not afraid of the big jobs". C150 in the Flight Care hangar for SIDs inspections and extensive corrosion and fatigue rectification work (above and below).



C150 spars under fabrication by Flight Care.

Aircraft Logistics Support Limited

Steve Noad, owner of Aircraft Logistics Support Limited has a wealth of experience to share with customers. 20 years with Safe Air saw him become Logistics Manager in Blenheim, before he joined Newmans Air (predecessor to Ansett NZ and Qantas NZ) to set up their logistics as Technical Materials Manager, remaining in that role for 15 years.

Aircraft Logistics Support was initially formed to meet the demand of homebuilders, then in 2008 Steve acquired the stock of Fliteline Services in Christchurch, relocating that to his base at Rangiora Airfield. Building upon this, Aircraft Logistics now has an extensive range of metals, hardware, and aircraft associated accessories.

Significantly, they are also an authorised

distributor of Rotax engines and spare parts. Steve has a very wide experience and understanding of the supply chain for aircraft parts both in commercial aircraft and GA.

His worldwide contacts in aviation supplies and his understanding of freight forwarding enables orders to be delivered seamlessly to customers with appropriate paperwork completed, all at competitive prices. Clients include maintenance organisations, airlines, aero clubs, private aircraft owners and home builders.

For more information

For advice on any Aircraft Logistics products, contact Steve Noad on 03 310 7290, e: stevenoad@xtra.co.nz or visit www.aircraftlogistics.co.nz



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Cross Country Soaring: Challenge and Reward



A lot of people get past their first solo and then drift away from gliding, but they're missing out on the best part. Cross country soaring needn't be scary at all.

Gliding New Zealand (GNZ) wants to encourage cross country soaring as a way of increasing our membership. I think that's a great idea.

THE question you folks are probably asking is why?

Cross country soaring is what makes gliding such a challenging and exciting sport and so different from any other sort of aviation. In gliding we can't pick a destination, file a flight plan and just fly there. There are so many variables involved and no two flights are ever the same. Two pilots, setting out to do the same task and leaving half an hour apart can have completely different experiences. Pilots flying together who make slightly different decisions, a turn left, instead of a turn right can make the difference between completing a task, going home, or even landing out.

It is worth repeating the fact that a glider has no motor. It is the developed skill and experience in reading the sky that allows the glider pilot to find sources of lift. Added to that is individual piloting experience and ability to centre turns in thermals, plus experience and confidence in flying close to terrain (to ride ridge lift). This all makes staying aloft a completely different experience for each pilot. As well, there is the fact that as you fly away from your airfield you have to have somewhere else you can land. Landing is inevitable for all flights, but in gliding a change in weather conditions or a miscalculation of those conditions can have a pilot looking for a landing site in a hurry.

Gliders can land on a dime, but that too comes down to a pilot's currency and skill level. I'm only now, after a few years

of quietly making my way back into the sport, feeling that I would be happy to land in a paddock or unfamiliar airfield. This summer I'm thinking I'm ready to renew my cross country rating and start tip toeing out after the big boys and girls. That ability to land, where I want, every single time, was my major stumbling block to cross country flying. It's a really scary thing, to cut the umbilical cord of being within glide range of the airfield I took off from.

I'm not alone with that thought. It is in fact a very common scary thing and from questioning people who have left gliding after getting to solo, it has become clear that it's one of the things that has never really been addressed. The training syllabus brought people to QGP and (Glider Pilot's License) GPL and then they were left on their own.

My own club in Canterbury has recognised this for a while and held beginner cross country courses. Well known pilot Jerry O'Neill has taught his famous "cone of safety" rule. Visualise the glider, at whatever altitude, as the top of a cone of air, the sides of which are proscribed by the glide angle of the aircraft. In the case of the little Grob Single Astir I fly, that's around 32:1. So allowing myself 1000 feet for a safe circuit that gives me an distance of 39 kilometres I can fly before I must land (I can show you my workings if you like, but online conversions of feet to metres help a lot). So at 5,000 feet 39 kilometres is the radius of the base of my cone and as long as I have at least one safe landing area, within that I can fly on. The cone shifts with me, the radius changes with my height but the slope never does and the cone must always contain a landing

area. I may have to turn back to that landing area but that's fine. Homework and planning comes into this. Because while a glider can land on a dime, paddocks full of inquisitive cattle are only a last resort (cows eat gliders), as are rocky river flats, paddocks with mature crops and areas that may have sprouted grape vines since you last visited. In fact you can't land in grape country, or kiwi fruit country, at all. A paddock you can aero tow out of is a bonus, and if not, easy access to get the trailer in is good. But these are secondary considerations to landing the glider safely. (It's expensive but gliders can be helicoptered out of inaccessible valleys. It makes for wonderful photo opportunities.)

The point of all of this is, that flying out into the big scary unknown, is a lot less scary if you are prepared. And once you have learnt how to do it, and do it successfully, and landed out successfully or even gone around your course and got home, you are on the path to a lifetime's enjoyment of soaring. You can and will go anywhere, when the weather Gods and your skill permit. And it will be glorious.

Cross country flights, be they short or long, always challenge and reward those who fly them. They are what makes gliding truly a sport and what keeps glider pilots coming back for more. If you're interested in trying it out yourself, please contact your local club. Club contact details can be found on the GNZ website.

I'm Jill McCaw, editor and publisher of SoaringNZ. For subscriptions, Google SoaringNZ where the first 18 issues of the magazine are now up and free to view on my website.



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contributed by Tim Dennis

Engaging with DOC

Good progress being made by the Recreational Backcountry Pilots Association

A NEW aviation group, the Recreational Backcountry Pilots Association (RBPA) was formed late last year to engage with the Department of Conservation (DOC) on its policies affecting back country flying. RBPA chairman, Nigel Griffith, said recently that this has meant meeting with the Minister of Conservation and senior DOC staff to sort out the problems of recreational fixed-wing aircraft access to public conservation lands. Considerable progress has been made in building an understanding with DOC of the issues affecting recreational pilots wishing to use the DOC Estate. A number of matters have been, or are in the process of being, resolved.

Key negotiators for the group are Nigel Griffith, Mike Thomas and Bill Chisholm (of Chisholm Associates, Omarama). Nigel says that a lot of work is being done by all the committee members who travel quite some distances to attend various meetings. "We have identified significant issues with DOC's planning instruments such as the Draft Molesworth Management Plan and Draft Canterbury/Otago/Southland Aircraft Access Guidelines. These planning documents seek to severely restrict recreational aviation access to DOC land" says Nigel, adding that "Until now, DOC's planning processes have proceeded without much recognition of recreational aviators, and submissions from aviators have largely been ignored. Bit by bit access has become more restricted. The RBPA has been specifically formed to right these wrongs by making submissions and advocating on behalf of recreational fixed-wing aircraft pilots, alongside Groups such as AOPA, SAA and others."

The Draft Molesworth Management Plan proposed to prohibit all recreational flying access, while allowing for commercial flying, and flying for farming purposes. RBPA submitted that this was contrary to the stated intent of the Conservation Act and the Cabinet Decision on Molesworth, as well as being contrary to natural justice. The final Plan is due out later this year.

The Draft Canterbury/Otago/Southland Aircraft Access Guidelines go further in proposing that airspace is restricted above most areas of the DOC

estate. RBPA has made submissions to these documents, along with submissions from AOPA, SAA and many individuals, stating that any reasons to restrict recreational aircraft access need to be well founded, rather than blanket restrictions for unstated reasons. It's hard to imagine any pilot not agreeing with Nigel when he says "Recreational flying is a bonafide recreational pursuit, which should be fostered in accordance with the stated purpose of the Conservation Act, and should not be connected to commercial aircraft access, which has a wholly different purpose."

Some of the other issues under discussion are:

- DOC's insurance requirements for landing on DOC land contain onerous and unnecessary insurance requirements – DOC is reviewing this.
- AIRCARE which has been criticised in some quarters but is still a requirement by DOC is being reviewed. DOC advises that their focus is on noise abatement rather than other matters such as safety.
- DOC is reviewing its policy on landing on the marginal strip and river beds and seems prepared to take a practical approach to managing this.
- They are also prepared to consider allocating some landings on airstrips within National Parks for recreational use.
- DOC still wishes to retain the concept of "Natural Quiet". This concept seems poorly defined and is often used as an argument against aircraft landings within the DOC Estate. This will be an ongoing sticking point between Aviators and DOC. However as aviators we need to be increasingly aware of the adverse perception there is about aircraft noise and do our best to mitigate this by operating in a considerate way.

In summary, the RBPA is very active, continuing to meet with senior DOC staff, attending meetings with Non-Government Organisations (which includes trampers, fishers, shooters, conservation groups, Forest and Bird, 4WD, jet boaters and many



The Recreational Backcountry Pilots Association is actively working to promote recreational pilot access rights to the conservation estate.

others), and working with the Minister of Conservation to try and sort out DOC's recreational aircraft policy. RBPA is committed to building relationships with other users and DOC, which should build understanding between all the various recreational groups, and assist DOC in forming robust planning documents which are consistent with the stated purpose of the Conservation Act, which requires the department to foster recreational activity.

With the above discussions taking place, we do envisage that it will be much easier for any recreational pilot to get a one off concession in the future.

For more information

For more information on the RBPA or to become involved, contact Nigel Griffith by email at: cessna180@xtra.co.nz

The McCulloch J-2 Gyroplane

Given the present status of autogyros as 'microlight' aircraft for recreation, many readers may not realise that there were in fact some certified gyro designs produced in volume for the commercial aviation market in relatively recent times. Both from the USA, there were 68 'Air and Space 18A' Gyroplanes produced (first flight in 1965) and there were at least 83 McCulloch J-2 Gyroplanes produced (first flight in 1962). Ultimately though, neither was commercially successful. We have a McCulloch J-2 here on the New Zealand register. Arguably (at least by a gyro enthusiast such as your KiwiFlyer Editor), the history and rarity of this aircraft, alongside the

THE McCulloch J-2 was designed by Drago Jovanovich of El Segundo, California in the 1960s and went into production at Lake Havasu, Nevada in 1971 after having received FAA certification.

Drago Jovanovich was also the designer of the Hughes 300 series helicopter's rotor hub and blades as well as a small JOV-3 tandem rotor helicopter.

The rotor hub and blades are the same as the Hughes 300A helicopter and the remainder of the J-2 was purpose designed and built by McCulloch and other vendors for specialist parts such as control cables, gearbox, engine and propeller.

Two models of the J-2 were produced, the J-2 and the J-2 Super. The J-2 had an all up weight of 1500 lbs and a fixed pitch Sensenich Wooden two blade propeller.

The J-2 Super had an all up weight of 1600 lbs and a constant speed Hartzell three blade metal propeller and an exhaust muffler installation.

There were twenty one time-lifed items installed, with times ranging from 300 hours for the main rotor thrust bearing to 75,800 hours for horizontal stabiliser trunion.

There were 2 known prototypes and at least 86 production J-2s built, the majority being sold in the USA, with others going to Canada, and 6 to Australia. There are about 15 that are listed as being current and able to fly.

The McCulloch Aircraft Corporation requirement for the Gyroplane was to produce the ultra- safe, simple and easy to fly J-2 that combined the best of two aviation worlds. The simple control and economy of powered fixed wing aircraft along with the manoeuvrability of powered helicopter flight. In the end the J-2 did not have the performance of a fixed wing aircraft with a similar engine, nor perform like a helicopter. The initial purchase price was US\$22,000. Compared to a Hughes 300A helicopter at US\$36,000 and a Piper Cub at US\$14,000, it was perceived as being too expensive for the performance that it offered. Initial sales were reasonable but it was described as being underpowered in its current configuration.

fast growing popularity of autogyros, make the McCulloch J2 a desirable and affordable classic aircraft. For that matter, if you wanted to fly a gyro and were for some reason uncomfortable with un-certified two-bladed teetering rotor systems, then the McCulloch resolves that issue by having the same three-bladed system and rotor hub as the Hughes 300A helicopter. Performance won't be as crisp as a modern machine, but it won't cost as much either. Interested? KiwiFlyer asked McCulloch J-2 owner John Brough from New Plymouth, to put some information together for readers and John kindly contributed the following:



Looking every bit like a 1960s classic aircraft: The McCulloch J-2 Gyroplane.

To overcome the shortcomings a J-2 Super was produced and its constant speed metal propeller did improve performance to a level that was acceptable but it was too late and too expensive to continue production.

Production was passed to Aero Resources, Gardena, California in 1974 and they assembled another two J-2 Super Gyroplanes and provided support for a number of years before going out of business.

Flying the J-2 is different to other gyroplanes in New Zealand as it has an articulated rotor system versus the two blade semi-rigid system employed by other NZ registered gyros.

Before take-off the rotors are spun up to minimum 400 rpm and maximum 520 rpm by an engine driven pre rotator at 0 degrees pitch and at the start of the take-off roll the collective is raised to its top limit which

is 4 degrees of blade pitch. As 47 mph is reached, the gyroplane flies off the ground. Correct take-off technique is to then remain in level flight until 65 mph is reached, with climb out at 70 mph. All this happens quickly thanks to the 180hp and constant speed propeller.

In flight control is just like a fixed wing aircraft. When setting up for a final approach and landing, ease the power off to set a rate of descent as necessary to provide a glide path that is constant at 60 mph and start to flare the gyroplane at about 10 feet and reduce the power to idle and touchdown will follow with a soft landing and very short landing roll.

Maintenance is straight forward, using standard aircraft engineering practices for the Lycoming O-360-A2D, Bendix Magnetos, Hartzell Propeller, Bendix-King Radios etc. along with biennial and 4 year component checks.

Serial Number 073 was produced in 1972 and test flown after completion in August 1973.

It was operated in the USA until July 1999 before being sold to Rob Sanders here in New Zealand with a total time of 590.3 hours. First flown here in December 1999, ownership was transferred to John Brough in 2006.

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The J-2 was issued with a NZ Certificate of Airworthiness when it arrived in NZ, but as there was no provision for a certified (with CoA) gyroplane under the NZ Rules, it operated as an aircraft with a NZ CoA but not covered under current rules. This was changed in 2007 when our NZ Civil Aviation Authority reclassified the J-2 to a Class 2 microlight and issued a non-terminating microlight Aircraft Flight Permit. This made it legal to operate in New Zealand from that time on.

An overhaul of the J-2 was carried out in 2007 and it has been airworthy since that date, with a total time of 665 hours.

This gyroplane came complete with all logbooks from new, maintenance, parts, and flight manuals and compliance reports.

ZK-RCK is currently for sale. Contact John Brough for details by phone on 06 758 2813 or E: jrbrough@attglobal.net



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Ag. Planes Past and Present

Part 6 - Cessna's Agwagon and Skywagon

Cessna A188 Agwagon

The Cessna A188 Agwagon was considered the boy racer of the ag. plane world, being fast and noisy. Cessna produced nearly 4,000 Cessna 188s (all models) between 1966 and 1983 - 1,589 were Agwagons of which 62 of which arrived here ready for work between 1966 and 1976.

The 230hp A188 Agwagon, as the only purpose-built ag. plane by Cessna, and the 300hp A188B Agwagon (which differs greatly from the 230hp version in terms of a larger payload and improved airframe and cockpit) were released in the USA in 1966 (A188) and 1971 (A188B). The A188B had a Kiwi payload of 1,700lbs while the A188's payload was just 1,200lb. The Agwagon was fundamentally built-up from the best parts of the Cessna 180 - same tail cone and fin structure and it initially had the same 230hp Continental engine. Our biggest operators of the Agwagon here was Rural Aviation (with 21 units), Phoenix Aviation (10), Midland Aviation (10) and Rural Air Services (8). Phoenix Aviation acquired their first two Agwagons ex-Rural Aviation, following the cessation of Rural Aviation in 1968. Rural Aviation, the local Cessna agents, had replaced their 26-aircraft fleet (mainly Cessna 180/185s) with 21 Agwagons. In 1993 there were 14 ZK-Agwagons flying. There were 6 flying in 1997 and in 2003 there were 9 flying. There are currently 2 Agwagons registered as at 10/2013 - A188 ZK-CSL of Hamilton and one A188B Agwagon 'C' ZK-EJL of Waiau, near Cheviot - ex Neville and Jimmy Somerville of Cheviot Ag Air Ltd. EJL is one of 24 upmarket Agwagon 'Bs' that came here between 1974 and 1976.

MOTAT in Auckland has the second Agwagon to appear on the ZK-register (in 1966) being ZK-COO (following CON), which went to Rural Aviation, Phoenix Aviation and Air Contracts. COO is proudly housed at the museum in full Agwagon regalia.



Cessna A188 Agwagon ZK-CQU: Registered CQU (C/n A1880153) in November 1966 to the 'NZ Cessna people,' Rex Aviation (NZ) Ltd at New Plymouth, it went to Wanganui Aero Work Ltd in February 1967 and was there named "Mangawhero" and/or "Dave Stewart." In January 1969 CQU was groundlooped at Waitotara, then in February 1969 suffered a wire strike at Karioi and was rebuilt using the fuselage of ZK-CQM formerly of Rural Aviation/Farmers Aerial Topdressing. In September 1969 it went to Manawatu Aerial Topdressing Co Ltd of Palmerston North and there served alongside Agwagons CQG, CQH, CQT, CSK and CXO. 1970s - damaged at Ashhurst. In September 1977 CQU was withdrawn from use at Fielding and in April 1991 the registration was cancelled. (John Nicolson Collection)



ZK-CCA is one example of 22 Cessna 185 Skywagons registered to Rural Aviation and is seen here on short finals to a farm airstrip for another load, with hopper doors open (ensuring the hopper is empty). CCA, C/n 1850480, was one of 34-odd Cessna 185s that became Kiwi topdressers ex-USA in the 1960s and early 1970s. In August 1962 CCA was registered to Rural Aviation Ltd (New Plymouth.) Rural regrouped, having secured the New Zealand Cessna agency, and CCA was thereupon re-registered to Rural Aviation (1963) Ltd. In February 1966 it crashed and burned on the job and was deregistered a month later. (John Nicolson Collection)

Cessna 185 (&180) Skywagon

The Cessna 185 Skywagon, which came on line here between 1961 and 1976, first flew in 1960. Production ceased in 1985, 4,400 units having been sold. The last 260hp Continental-powered (IO-

470) version was the '185E of 1965, and then it was the 300hp Continental IO-520-D engine thereafter for the A185E (of 1965) and A185F (of 1973) models - the 'A185E ('A' for agricultural) and 'F' models were known as Agcarryalls.

The C185's payload was 1,500lb- it was a fast plane around the paddocks and the A185F had a ROC of +1,000ft/min. There are currently 60 C185s listed on the ZK-register, as at 10/2013, (none as topdressers, but many are still commercially engaged) - top numbers are 29 A185Fs, 8 185As, 7 185Cs and 6 A185Es.

The much liked Cessna 180, with a payload of between 800lb and 1,200lb (depending on the model), was going gangbusters until 1974 when, after 21 years, it was phased out of operations in favour of the bigger Agcarryall, Beaver, Agwagon, and the Fletcher FU-24 as the top-dogs in the local industry at the time. We had 62 Cessna 180s, which took to the job like ducks to water, engaged here as topdressers from 1953.

It is no surprise to me the NZCAR lists 64 examples of ZK-Cessna 180s (at 10/2013) - the most popular being the basic C180 at 25 units and the C180A model at 10 units.

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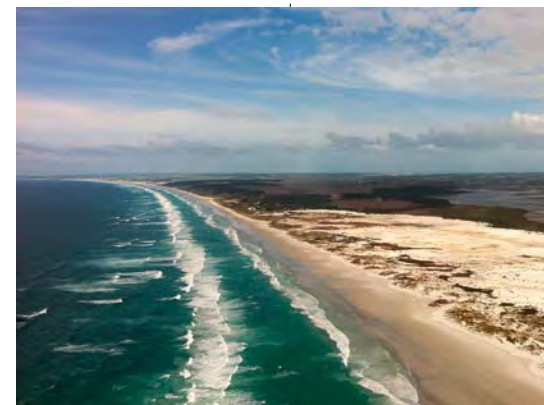
Places to Go: Kaitaia

MENTION Kaitaia and many will say it is too far away to visit. This may be true for land lovers but for the weekend out in the family plane, it is a trip to really look forward too. I was lucky enough to spend quite a lot of time flying around Northland in the 90s and going back there this September to show my friends was really exciting. However, I was a bit ho-hum about the long flight up to Cape Reinga because after-all I had seen it all before. Wrong!

The scenery absolutely blew me away. As we flew up 90 mile beach, the cabin of staunch pilots turned into camera snapping, sparkly eyed tourists, reaching over each other to glimpse the shimmering white sand and cobalt blue of the windswept sea and landscape down below. After an exhilarating flight around Cape Reinga and North Cape, we thought it only fair to drop into the Kaitaia airfield, firstly because I had never been there and secondly because it is such a huge runway in a faraway place, we wanted to check it out.

Arriving overhead on 119.10 was straight forward and although it was a strong northerly, without big lumps of granite in the way, the wind was smooth. We arrived to find no-one around. Pilots are great at sensing 'foreign' pilots are in their vicinity, because just a few minutes later the first of the welcoming party turned up. We were greeted with cheery 'hellos' and cups of tea and biscuits while we admired the aero club wall and learned more about the people who were obviously enjoying participating in a successful club. The wind hadn't died and I was proud to see a student turn up for a solo lesson in the Tecnam, one of the club's aircraft. Soon, he was away happily doing circuits and I had a nostalgic thought that this club represented what many clubs around New Zealand, used to be like, when I was a tiny girl in the back of Dad's C-180. The aero club website is www.kac.co.nz

Time was moving on, so we politely said our goodbyes, but we were told the Chief was coming out for 'Club Afternoon' which is every Wednesday from 1600hrs. It is a time where the members can get together and bring along any potential students for a casual look-see, so our timing was impeccable! Jim duly arrived and some great stories started flowing and from that moment, we realised although we couldn't stay, we were definitely



From top: Tracking the coast along 90 mile beach, Cape Reinga, Kaitaia Airfield, Aero Club plane and clubrooms.

coming back for a weekend. This decided, we found out more information about accommodation. One of the club members, Peter, has a motor lodge in town so that sorted that out. Just call and he will come and pick you up at the airfield - can't beat service like that! www.kaitaiaairfield.co.nz is just 2 minutes from town but in a rural setting and has all the main tour people call in to pick you up, should you wish to drive to the Cape (2 hours) or visit nearby 90 mile beach.

The history of the area is fascinating and just a brief look into it reveals archaeological evidence showing the Far North was first settled by Polynesian ancestors of the Maori, roughly 900 years ago. Kaitaia is one of the country's oldest European towns, from about March 1834.


Maori together with early settlers, created European buildings, undertook planting and road making, and grew wheat and food crops. Maori owned their own ship and took their produce to Auckland. Before the 1860s there weren't many Europeans around but between 1870-1900 the settlement expanded rapidly when kauri gum diggers arrived, many from Dalmatia. This country is on the eastern coast of the Adriatic sea, a long way to come to settle in a new land.

Timber and Kauri gum industries and the good fertile farming land around Kaitaia combined with the port facilities at Awanui, resulted in the establishment of Kaitaia as the commercial centre for the district. The region is now mainly agricultural and much of New Zealand's avocados come from this district.

Ahipara and Awanui are beautiful settlements a short distance from Kaitaia. If you like fishing, game fishing, blo-karting or vineyards then this area is the place to stop for a few days. Kaitaia is also a hub for surfing, kayaking, kite surfing and quad bike rides. If relaxing is more your thing, then check out the arts and culture such as the gum diggers park, www.gumdiggerspark.co.nz. Or take a look at the Ancient Kauri Kingdom

shop. If you need a recommendation on a good winery ask one of the Kaitaia aero club members or you can do some pre-trip planning here: www.kaitaia.net.nz.

Be sure to put Northland on your Places to Go list for this Summer and enjoy Safe Flying for 2014.

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ZK-HAO Eurocopter AS350 B2



ZK-HAO is a new AS350 B2 for The Helicopter Line and also the first brand new one they have purchased. Pictured is General Manager for The Helicopter Line, Grant Bisset (left) with Murray Benns, Manager Sales and Operations Support for Eurocopter International Pacific in New Zealand.

The Helicopter Line is in the process of updating its fleet to improve utilisation and customer satisfaction. Chief Pilot Norm Kensington says that the tourists like it as they are all in the same room, so to speak, and the pilots love its comfort, power available and smooth flight.

The company currently has 20 aircraft on line, 17 of which are AS350 Squirrels, spread over six main bases, Fox Glacier, Franz Joesph Glacier, Glen Tanner (Mt Cook), Twizel, Queenstown and Fiordland/Manapouri. Their focus is mainly on the tourism sector but they are also able to carry out commercial work, search and rescue, firefighting and frost protection operations as well.

HAO is now online performing tourist services in Queenstown.

ZK-EMP Johnston Acrolite 1C



IT WAS an exciting time for Bernie Johnston of Christchurch recently as his newly finished Acrolite 1C bi-plane flew for the very first time. He has been building this aircraft for the last 5 years from plans.

The Acrolite is of a family of Canadian amateur-built aircraft, designed by Ron Wilson and produced in the form of plans for amateur construction. Bernie's Acrolite 1C is a single seat biplane for sportsman aerobatics, having a Hirth 300E two stroke injected engine and running a three blade carbon fibre prop. It has an 18 foot wingspan. Bernie opted to build the wings from aluminium which is of stressed skin construction with a box section main spar, a channel section rear spar and strut braced. The fuselage is of welded 4130 chrome moly steel tube and covered along with the empennage and ailerons in Polyfiber fabric.

Bernie's aircraft was test flown by Easwaran Krishnaswami who is a Senior Instructor with the Canterbury Recreational Aero Club. At the time of writing Bernie was carrying out some minor modifications and will soon be proudly flying his new aircraft himself.

ZK-KNB Jodel D11



THE Jodel D11 is a French two-seat monoplane designed in 1950 in response to a French Government request for a low-wing aircraft for use by flying clubs.

When Karl Belfield bought his partially completed Jodel D11 around 1998 it consisted of a fuselage, wing, undercarriage, tail and stabiliser and a zero hours O-200 Continental engine.

The project had in fact been started back in 1965. Karl had a lot of work to do to finish KNB, including stripping the fuselage to check internal glue joints, re-varnish the inside, install various items and re-build the instrument panel. He also fitted the main fuel tank and built a trim system. The tail plane was repaired, then the wing ribs were rebuilt and aligned. The leading edge needed to be redone as well which he says was quite a big job. Wing fuel tanks were made and the wing was fabricated and painted. Karl made the cowlings, canopy, spinner plate, wiring, fuel and brake systems, seats and more all under the watchful eye of his mentor and Dad, Murray Belfield. KNB is a very smart example of the type, with 4 hours on the Hobbs at time of writing.

CONTACT Craig Brown P: 09 295 1639
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ARRIVALS - September / October 2013

ARD	Rans S-6ES Coyote II	Ardleigh Farm Ltd	Ashburton	Microlight Class 2
AVL	AutoGyro Cavalon	Mr D J Church	Tauranga	Gyroplane
BEB	Cessna 195	B B Aviation	Feilding	Aeroplane
CEM	Robshaw BB Trya	Mr P Robshaw	Upper Hutt	Microlight Class 1
DCF	AutoGyro Calidus	Mr D C Goodwin	Tirau	Gyroplane
EMP	Johnston Acrolite 1C	Mr B Johnston	Christchurch	Microlight Class 1
EZI	Piper PA-22-135	Mr C M Batten	Silverdale	Aeroplane
HAN	Aerospaiale AS 350B2	Rotor Flite N.Z. Limited	Clevedon	Helicopter
HAO	Aerospaiale AS 350B2	The Helicopter Line Limited	Queenstown	Helicopter
HGV	Aerospaiale AS 350B2	The Helicopter Line Limited	Queenstown	Helicopter
HLS	Hughes 369E	Phoenix Trading 2002 Limited	Christchurch	Helicopter
ICL	Robinson R44	Rotor & Wing Maintenance Ltd	Taupo	Helicopter
IRL	Bell 206L-1	Helitrips Ltd	Auckland	Helicopter
JFF	Cavalier SA.102	Mr J J Fraser	Wellington	Amat Built Aeroplane
KCN	Pacific Aerospace 750XL	Pacific Aerospace Limited	Hamilton	Aeroplane
KFB	Gulfstream GVI	Execujet New Zealand Limited	Wellington	Aeroplane
KNB	Jodel D.11	Mr K N Belfield	Putaruru	Amat Built Aeroplane
LDV	Cessna T182T	D R & L J Wiseman	Feilding	Aeroplane
MBA	Vans RV 12 UL	J A & S E M Evans Family Trust	Whitianga	Microlight Class 2
MSR	Murphy SR2500 Super Rebel	Cardinal Partnership	Tauranga	Amat Built Aeroplane
NBG	Hughes Lightwing GR-912S	Mr Newbigging	Opoitiki	Microlight Class 2
NJB	R & B Bearhawk	Bearhawk Syndicate	Wellington	Amat Built Aeroplane
ONR	Piper PA-28R-200	Mr T J Donaldson	Christchurch	Aeroplane
RAG	Rans S-6ES Coyote II	Mr M D Belcher	Havelock North	Microlight Class 2
SBY	TVA Sopwith 7F.1 Snipe	The Vintage Aviator Limited	Masterton	Aeroplane
TUG	Aeropro EuroFox 3K	Onslow Investments Limited	Christchurch	Microlight Class 2
TXN	Fly Synthesis Texan Top Class	Dargaville Aero Club Incorporated	Dargaville	Microlight Class 2
WET	Progressive Aerodyne Sea Rey	Mr C J Buist	Dunedin	Microlight Class 2
WLK	Vans RV-8	Mr D J Wilkinson	Auckland	Amat Built Aeroplane
XBO	Rans S-75 Courier	Mr B L Nilsson	Outram	Microlight Class 2
YGG	AutoGyro Calidus	D M And P M Hall Munganui Park	Te Awamutu	Gyroplane
ZQN	Gippsland GA8	Milford Sound Flights Limited	Queenstown	Aeroplane

TRANSFERS - September / October 2013

AQX	Erco 415-D	Mr M A Newton	Upper Urenui	Aeroplane
BDL	Cessna 172D	Property Shop Limited	Wellington	Aeroplane
BHK	Fletcher FU24-950M	Southern Aviation Limited	Te Anau	Aeroplane
BSH	Piper PA-22-150	Mr C W Anderson	Renwick	Aeroplane
CGR	Gulfstream American GA-7	Capital Aviation Limited	Wellington	Aeroplane
CJH	Bolkow Bo 208 C Junior	Mr N L Stevenson	Dunedin	Aeroplane
CJZ	Alpi Aviation Pioneer 300	J T Elliott and C R Chalmers	Dunedin	Microlight Class 2
CKY	Cessna 150H	Avcraft Engineering NZ Ltd	Feilding	Aeroplane
CPA	Jabiru Jabiru J200	Dr G Van der Hulst	Whangarei	Microlight Class 2
DEP	Cessna 172K	Mr R J Brady	New Plymouth	Aeroplane
DLQ	NZ Aerospace FU24-950	Southern Aviation Limited	Te Anau	Aeroplane
DPE	Cessna A185F	Canterbury Aviation Limited	Christchurch	Aeroplane
EJV	Cessna A152	Ruapehu Aviation Limited	Ohakune	Aeroplane
ENV	Piper PA-28-181	Ms R D Irvine	Timaru	Aeroplane
FAF	Kavanagh C-65	Mr J P Rankin	Feilding	Balloon
FBZ	Aerostar S-49A	Mr D J Norris	Hamilton	Balloon
FPO	Cessna U206G	Taupos Floatplane Limited	Taupo	Aeroplane
GTC	Schleicher ASW 20C	Mr CG Shaw	Rangiora	Glider
HAG	Robinson R66	Heliflite Pacific Limited	Papakura	Helicopter
HAY	Hughes 369D	Lisburn Farms Limited	Papakura	Helicopter
HCV	Robinson R44 II	Far North Helicopters Limited	Whangarei	Helicopter
HET	Robinson R22 Beta	N S & E N Hinton Limited	Alexandra	Helicopter
HGZ	Robinson R44 II	The Helicopter Line Limited	Queenstown	Helicopter
HHJ	Robinson R44	35 South Limited	Tauranga	Helicopter
HIZ	Robinson R44	Maisey Thrower Family Trust	Taupo	Helicopter
HNN	Robinson R44 II	Helicontrax Ltd	Christchurch	Helicopter
HQZ	Robinson R22 Beta	Mr M R Jansen	Western Australia	Helicopter
HSL	Bell 206B	R & J Trust	Brightwater	Helicopter
HTP	KHI Kawasaki-Hughes 369HS	Remote Helicopter Operations Ltd	Matamata	Helicopter
HXA	Robinson R44	Heliflite Pacific Limited	Papakura	Helicopter
HXC	Robinson R44	Heliflite Pacific Limited	Papakura	Helicopter
IDL	Robinson R44 II	Heartland Helicopters Limited	Gisborne	Helicopter
IOA	Robinson R66	Outgro Fertiliser Limited	Dannevirke	Helicopter
IRP	Bell 427	Heletranz Limited	Auckland	Helicopter
ITL	Bell 206L-4	Heli South Limited	Balclutha	Helicopter
IWP	Robinson R44 II	Heliops Southland Ltd	Otautau	Helicopter
JBU	Cessna 152	Wakatipu Aero Club (Inc.)	Queenstown	Aeroplane
JCV	Cessna 182S	TOOMANYDAVES Limited	Auckland	Aeroplane
JNE	Piper PA-38-112	Undercover Brother Air Limited	Auckland	Aeroplane
KHA	Zenair CH701 STOL	Mr W H Lawton	Upper Moutere	Microlight Class 2
LFG	Aeroprakt A-22LS	CC Aviation Group	Auckland	Microlight Class 2
LMA	Piper PA-28-180	Mr M E Galloway	Napier	Aeroplane
MBS	Socata TB 10	Helicare Services Ltd	Nelson	Aeroplane
MCG	Cessna U206G	Cluden Station Tarras	Central Otago	Aeroplane
MXP	Cessna R172K	Eagle Flight Training Limited	Papakura	Aeroplane
NEI	Cessna 152	Mr G D Pearson	Wellington	Aeroplane
NPH	Cessna A152	Matis Aviation Limited	Wellington	Aeroplane
NPL	Cessna A152	Tauranga Aero Club (Inc)	Wellington	Aeroplane
PAM	Cessna 172K	Marlborough Gliding Club (Inc)	Mount Maunganui	Aeroplane
PIK	Micro Aviation Bantam B22S	Mr P G Andrew	Blenheim	Aeroplane
RCE	Neil Hintz Tandem Dominator	Mr M N Biddle	Hamilton	Microlight Class 2
RQA	Cessna 172S	Mr D V Pearce	Whangarei	Gyroplane
RQA	Cessna 172S	Wanganui Aero Club (Inc)	Wanganui	Aeroplane
RVK	Vans RV-6	Mr C C O'Rourke	Wanganui	Aeroplane
RVY	Vans RV-9A	Mr W R Garrett	Paraparaumu	Amat Built Aeroplane
TCE	Helio H-250	Beckenham Hills Limited	Huntly	Amat Built Aeroplane
TDS	Maule MX-7-180B	Mr M F Bowes	Cheviot	Aeroplane
TJL	Cessna 172N	TJL Rental Limited	Hokitika	Aeroplane
TPW	Pacific Aerospace Cresco 08-600	Central South Island Helicopters Ltd	Hamilton	Aeroplane
TTX	Fly Synthesis Texan Top Class	Mr B R Bickers	Oamaru	Microlight Class 2
VIA	Vans RV 6A	VIA Syndicate	Ruawai	Amat Built Aeroplane
VMW	Micro Aviation B22 Bantam	Mr DG Haig	Ohaupo	Amat Built Aeroplane
VWT	EAA Acro Sport II	Mr P E Mason	Wanaka	Microlight Class 2
WAK	Tecnam P2002-JF	Wairarapa & Ruahine Aero Club	Oxford	Amat Built Aeroplane
WEB	Bernard Webb Spyder Mono	Mr J A Bryant	Masterton	Aeroplane
WLH	ICP Savannah	Mr PT Rix	Christchurch	Microlight Class 1
WNB	Piper PA-38-112	Mr S J A Mackereth	Masterton	Microlight Class 2
ZSP	Partenavia P 68B	Taranaki Air Ambulance Trust	Auckland	Aeroplane



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To Germany, from New Zealand

Dennis Thompson International sells two Britten Norman Islanders to Germany

GERMAN authorities have just recently issued airworthiness certificates to two Britten Norman Islanders previously owned by Milford Sound Flights here in New Zealand. After 40 years of selling aircraft to and from the USA and other countries, Dennis Thompson says that this was the first time they have sold and arranged delivery of aircraft into Germany. The two aircraft have been purchased by OFD.Ostfriesischer Flug Dienst, GmbH at Emden in Germany for addition to their existing Islander fleet. The company utilises Islanders for servicing islands in the North Sea, some of which have short airstrips that the aircraft are well suited for.



Made it ! On the ground at Bremerhaven in Germany.

and professional. Dennis kept everybody in the loop and took all the pressure off us.”

The purchase was agreed upon and the project then moved onto organising the aircraft’s delivery, all the way to Germany. Dennis contacted veteran ferry pilot Jim Hazelton in Australia, whose services he has frequently used in the past. Now in his 80s, Jim has more than 30,000 hours and 200 ferry flights behind him and has never “got one wet” nor had an

accident of any kind. Jim only retired a few years ago when he couldn’t renew his medical and still runs the company, employing the services of pilots as required.

Making the delivery

Delivery via Asia and the Middle East was ruled out due to political issues and an Avgas shortage, so a decision was made to fly the aircraft to Germany via the Pacific Route.

Dennis also arranged export CoAs and coordinated all the paperwork that the process required. Especially with the vendor and purchaser being 12,000 miles apart, as agent, Dennis needed to stay well on top of the process to manage the cost and efficiency at all stages to everyone’s satisfaction. In this case, the aircraft stayed on the New Zealand register all the way to Germany which Dennis says can sometimes be more difficult as ‘ZK’ is not always well recognised everywhere on route. Fortunately he says, “Jim Hazelton knows everyone everywhere.” Jim went on the flight with one of his pilots Aleksei McNeil while Stuart Caling flew the other aircraft.

A ferry tank system and paperwork were prepared for the long flight, all to Jim’s satisfaction. Both aircraft already had HF

DEPARTURES - September / October 2013

CFM	Micro Aviation B22 Bantam	Mr B P August	Opotiki	Microlight C2	Rev
CMZ	Fletcher FU24-950M	Super Air Limited	Hamilton	Aeroplane	Rev
DLB	Grumman American AA-5	Mr J N Guthrie	New Plymouth	Aeroplane	Dest
DLH	Grumman American AA-5	Mr J V Mudgway	Nelson	Aeroplane	Rev
DMH	Eipper Quicksilver MX II	Mr D M Horrocks	Wanganui	Microlight C2	Rev
ECD	Beech C23	Mr W K Williams	Waimate	Aeroplane	Rev
EKY	Monnett Sonair II	Mr R G Ward	Christchurch	A/B Aeroplane	Rev
ELV	Cessna 152	Dr Rashmi Singh	Palmerston North	Aeroplane	Wd
ESI	Piper PA-38-112	Wings Flight Training Limited	Palmerston North	Aeroplane	Wd
FAA	Cameron A-275	Up Up And Away Ltd	Christchurch	Balloon	Rev
FAM	Cameron A-340	Up Up And Away Ltd	Christchurch	Balloon	Exp
FAR	Cameron A-375	Up Up And Away Ltd	Christchurch	Balloon	Rev
FAT	Cameron A-210	Up Up And Away Ltd	Christchurch	Balloon	Rev
FAY	Cameron A-120	Up Up And Away Ltd	Christchurch	Balloon	Rev
FAZ	Cameron A-340	Up Up And Away Ltd	Christchurch	Balloon	Rev
FMH	Thruster Aircraft Thruster Gemini	Mr A T Sim	Alexandra	Microlight C2	Rev
FVM	Micro Aviation B22 Bantam	Mr B A Flavell	Warkworth	Microlight C2	Rev
FVY	Piper PA-38-112	Wings Flight Training Limited	Palmerston North	Aeroplane	Wd
GHA	LET L-13 Blanik	Hauraki Aero Club (Inc)	Thames	Glider	Wd
GIT	LET L-13 Blanik	Hauraki Aero Club (Inc)	Thames	Glider	Wd
GJC	Glasflugel Hornet	Mr J D Eggers	Timaru	Glider	Rev
GSF	Eiri Ky PIK-20E II	D A & J D Berkett	Okaki	Power Glider	Rev
HAK	MBB BO 105 CBS-5	Oceania Aviation Limited	Papakura	Helicopter	Exp
HFF	Robinson R44 II	Helinorth Limited	Whangarei	Helicopter	Dest
HTI	Hughes 369HS	Dark Horse Helicopters Limited	Queenstown	Helicopter	Rev
HVA	MBB BO 105 CBS-4	Van Asch Wines Limited	Queenstown	Helicopter	Exp
HVZ	Hughes 369E	Waimana Helicopters 2010 Ltd	Waimana	Helicopter	Exp
IOS	Innovator Mosquito XE	Mr R Sullivan	Auckland	Microlight C2	Rev
IQI	Kawasaki BK117 B-2	Airwork (NZ) Limited	Papakura	Helicopter	Exp
JBX	Piper PA-38-112	Wings Flight Training Limited	Palmerston North	Aeroplane	Wd
JCI	Cessna 172N	Sullivan Family	NSW, Australia	Aeroplane	Rev
JGC	Cessna 152	Wings Flight Training Limited	Palmerston North	Aeroplane	Wd
JIX	Aerobute Aerobute Dual Deluxe	Mr R M D Davie	Fairlie	Microlight C2	W/d
JLA	Cessna 152	Wings Flight Training Limited	Palmerston North	Aeroplane	Wd
JMO	Cessna A150K	Wings Flight Training Limited	Palmerston North	Aeroplane	Wd
KCK	Pacific Aerospace 750XL	Pacific Aerospace Limited	Hamilton	Aeroplane	Exp
MSF	Britten-Norman BN2A-26	OFD Ostfriesischer Flug Dienst	Germany	Aeroplane	Exp
NGK	Boeing 737-3K2	Air New Zealand Ltd	Auckland	Aeroplane	Wd
PCT	S.M.A.N. Petrel	Mr C P Turner	Auckland	Microlight C2	Rev
PGT	Thunder and Colt AX7-77	Mr P J Dineall	Australia	Balloon	Wd
PRF	Cessna 172M	PRF Limited	Waiheke Airfield	Aeroplane	Rev
RAF	RAF 2000 GTX	Mr C W Morris	Westland	Microlight C2	Rev
RBU	Bensen B8M Gyro-copter	Mr L G Heslop	Nelson	Microlight C1	W/d
REF	Brock KB-2	Mr M Tuffery	Upper Moutere	Gyroplane	Rev
SAJ	NZ Aerospace FU24-950M	Super Air Limited	Hamilton	Aeroplane	Rev
TBM	Cessna 525B	Pacific Jets Limited	Christchurch	Aeroplane	Exp
TKD	Micro Aviation B22 Bantam	The Biggles Microlight Club	Taupo	Microlight C2	Rev
TSS	Britten-Norman BN2A-26	OFD Ostfriesischer Flug Dienst	Germany	Aeroplane	Exp
UUA	Cameron Z-90	Up Up And Away Ltd	Christchurch	Balloon	Rev

radios and one had VOR/ILS. In a nod to inexpensive modern technology, they left equipped with multiple portable GPSs and iPads. When KiwiFlyer discussed the trip with Jim he did mention that “GPS has taken all the excitement out of the job”, before relating exciting tales of Pacific crossings in decades past. Another piece of Jim wisdom is that single engine flying is no bad thing as “there’s only half as much that can go wrong.”

It was of course a major trip for those aircraft and Jim says it went perfectly, even though that required a degree of good fortune given they had to fly VFR the whole way. As Jim says, “It was quite a big ask to fly a couple of non-IFR planes across the Pacific and no-one will ever have flown an Islander from Queenstown to Emden before, but the two pilots were both excellent blokes with lots of enthusiasm.” With all of his experience, Jim still rates the trip as “one of the toughest ferry flights, at least in terms of getting there in a short space of time which we did,” adding that “at times we were just about frozen stiff.”

The flight logs show 91.1 hours of flight time over 14 days for a trip that transited PagoPago, Christmas Island, Hawaii, California, across the USA to Goose Bay in New Foundland, then Reykjavik in Iceland

and to Bremen in Germany.

The only significant weather encountered was at the end of a 10 hour leg from Goose Bay to Reykjavik, where they arrived in deteriorating conditions to land with 50kts on the runway, fortunately straight along it.

Both aircraft arrived defect free, a credit to Milford Sound Flights over their years of ownership, Jim adding that “the aircraft must have been beautifully maintained”.

As this issue of KiwiFlyer went to print, Dennis had just received a letter from Peter Nierenberger saying “Many thanks to you, Andy Pye and Jim Hazelton and his team for the very professional transaction.”

For more information

Dennis Thompson International have 40 years of experience buying and selling aircraft, including brokering deals for sales between Australia and the USA (where aircraft have moved from the VH to N registers while in transit through New Zealand). They have an extensive network of international contacts with which to support aircraft ownership transactions of any size in any location.

Contact Dennis on 09 298 6249, email: dennis@dtiaircraftsales.com or visit www.dtiaircraftsales.com

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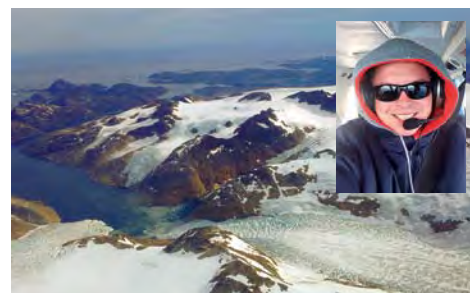
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KiwiFlyer is published every two months by Kiwi Flyer Limited.
Editor: Michael Norton

Subscription rates: KiwiFlyer is delivered free to every NZ aircraft operator and aviation document holding business. Others may subscribe for just \$25 (6 issues). Back issues may be downloaded free from our website.

All correspondence or enquiries to: Kiwi Flyer Limited, PO Box 72-841, Papakura, Auckland 2244.

Phone: 0800 KFLYER (0800 535 937)

Email: editor@kiwiflyer.co.nz Web: www.kiwiflyer.co.nz

Advertising deadline for the next issue is 17th January.

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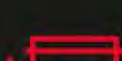
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