

The Fieldair Way

Fieldair Engineering Limited has a long and proud history that now dates back 60 years, all the way to the story of the strangled goose which still forms the company's logo. That story is part of New Zealand's early aviation folklore, involving a company Tiger Moth and flying skills (from both the pilot and the goose) that would have done Biggles proud. Whilst there might not be room for that type of shenanigans in today's safety conscious industry, the image of the 'Strangled Goose' and the name Fieldair Engineering together speak of decades of aviation experience in New Zealand.

Those years have amassed levels of skill and knowledge into the company that are found in few other similar sized aviation businesses in this part of the world. Fieldair has become a Maintenance, Repair and Overhaul organisation with an exceptionally wide range of capabilities, offering operators from GA through to major airlines, the opportunity to work alongside them as true aviation MRO partners.

Much has been said about the No.8 wire mentality of New Zealanders – an almost legendary aptitude to make anything work through thinking outside the box - and Engineering Manager (Support) Phil Byrne says that same reputation remains true in Fieldair today; "Our various departments have the ability to offer imaginative support in a wide range of areas, and we're well situated to provide tailor-made support packages and strong customer-focus, thanks to each department having its own manager and process controller."

The depth of ability and level of support customers can expect from Fieldair becomes obvious when one considers just how much infrastructure and scale this versatile company has. Seven of the company's primary departments are profiled below.

Engine Repair

Fieldair has been overhauling aircraft engines continuously since 1969, with a skill set and capability list that has evolved along with

the aircraft the company cares for. Department Manager Quentin Hughes cites an example of the DHC-2 Beaver which started out life with a Wasp Junior Radial Engine but, thanks to the aircraft being so robust and serviceable, many have ended up with turbine conversions. "Our engine shop at Fieldair has the experience and ability to overhaul most engine types in common use in New Zealand today, and we keep a watchful eye on future engine development opportunities to maintain our leadership position in this part of the industry," says Quentin.



Matt Lee putting the finishing touches to a freshly overhauled Lycoming O-720

Fieldair engineers can fairly claim to be Radial Engine experts, with a wealth of experience in a wide variety of engine types. These include the original Wasp Junior (P&W R985), the Wasp (P&W 1340), and the Double Wasp (P&W 1830). It's a noteworthy skill-set, especially considering how many Beavers, Otters and warbirds are flying in Australasia with these power plants.

The company is certified by Lycoming as a service centre, and also caters for a variety of other makes. These include TCM Continental, and of course Pratt and Whitney. Services available in the Engine Shop include cylinder repairs, exhaust system repairs, non-destructive testing, propeller balancing and aviation machining. Quentin says that an exciting announcement coming in 2015 will add additional propeller services to this department's capability list. The company also has Lycoming IO-720 engines available on a lease to buy basis.

For further information on Fieldair's Engine Shop capabilities contact Quentin Hughes (06 350 0956 or quentin@fieldair.co.nz).

Instruments & Avionics

In the 60 years since Fieldair began, the variety and capability of avionics in use has changed considerably. Fieldair's Instrument and Avionics Department now handles the full range of instrument calibration and repairs in their NZCAA Part 145 Approved Instrument Repair Facility.



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Specialising in compass and gyro instruments, and supported by a full equipment calibration service ability, Fieldair can offer services from fast annual avionics checks through to the installation of full glass cockpits. They offer an exchange programme and can arrange a same-day turnaround on AOG instrument work; a service frequently appreciated by operators who need to have their aircraft quickly back in the air earning revenue.

Fieldair has recently been named as an authorised Repair and Maintenance facility for ACR/ARTEX Locator beacons and recently became a Programming and Battery Replacement facility for Kannad ELTs as well.

Department Manager Chris McLaughlin says that as a Service Centre of Excellence for Garmin products, they can easily offer full system installation or upgrades. "New Zealand is among the world leaders in precision aerial application, and working alongside a premier GPS brand such as Garmin gives us and our customers some distinct advantages," says Chris.

Recently the company has been announced as a dealer and service centre for all Mid-Continent Equipment instruments and avionics, providing NZ-based access to some state of the art equipment. One example is the aptly named 'Life-saver' electronic attitude indicator, which Mid-Continent says is the first in the world to include on integral battery back-up. With this electronic attitude indicator now being a standard fitting on 20 aircraft makes including Beechcraft and Diamond, Fieldair can provide a valuable service to the local aviation industry.

To tap into Fieldair's wide range of instruments and avionics skills and experience, contact Chris McLaughlin (06 350 0957 or chrism@fieldair.co.nz).

Aero-Electrical

Aero-electrical systems have also advanced a long way since the days of the Tiger Moth, with numerous components that are complex, expensive, and critical to safe operation of the aircraft.

Fieldair's Electrical Engineering workshop offers repair and overhaul services for an extensive range of both fixed wing and helicopter components, including Generator Control Units, Starter Generators, Alternators, Actuators, Switches, Motors, Starters, Magnetos, Fuel Pumps, Voltage Regulators, Ignition Harnesses, Reverse current Relays and all ignition system components.

Department Manager Quentin Hughes (it's another string to his responsibility bow) says this is one of the busiest departments in the company, testament to the depth of skill and versatility they can offer their customers. Contact Quentin on 06 350 0956 or quentin@fieldair.co.nz

Supply

When you go to a supermarket, you expect it to have the stock you want. Supply Manager at Fieldair, Pat Elliot says they operate what amounts to a (CAA Part 19F approved) "Supply Supermarket". This department provides parts, spares, advice and a research and locating ability in support of the wider Fieldair Group, as well as being available to assist external customers at any time. "We're a cost-effective and efficient way to source spares and



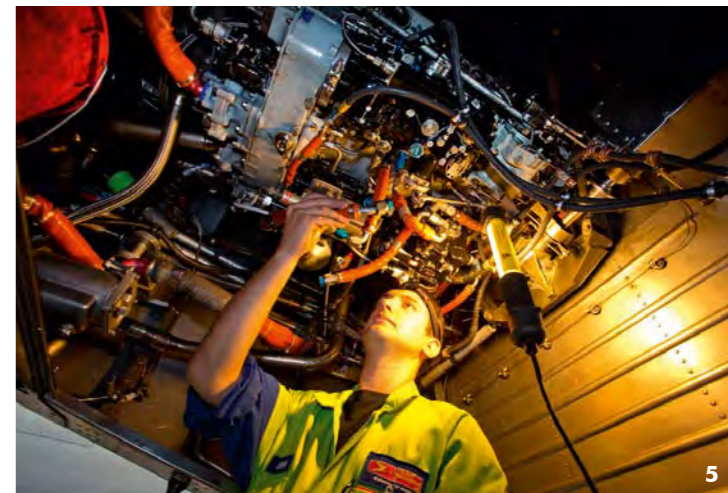
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Captions:

1. Fieldair's main hangar is a hive of activity.
2. Callum Baird ensuring the right components and paperwork are supplied.
3. 'Safe Hands' - Precision repairs on an avionics instrument being carried out by Scott Hawthorn.
4. Deep Maintenance – two experienced engineers inspect a belt frame.
5. John Frogley completing the replacement of a Fuel Control Unit.

equipment specific to the wide range of aircraft types operating in the region. And we mean region literally, including for our Pacific Island neighbours. Gear sourced through the spares department has covered everything from aircraft parts to GPU Cable Protectors to Passenger Baggage Scales,” said Pat.

Pat Elliot (06 350 1743 or pat@fieldair.co.nz) and his team offer a free parts procurement service, and the very useful ability for customers to search the Fieldair inventory on-line via their website. There is a much appreciated same-day dispatch for those items which are in their stock.

General Engineering

As part of the extensive Freightways Group, Fieldair has an important role to play in the design, provision and repair of air and road cargo equipment. Ideas developed by the team lead by Sean Henderson (06 359 0452 or sean@fieldair.co.nz) have increased efficiency within the New Zealand air and road freight network.

Products include aircraft freight containers and associated aircraft modifications that work with these, collapsible freight pallet systems, road transport pallets, and more. Sean’s team has a wide range of technical skills including design, fabrication and (aluminium and steel) welding capabilities, and works hard to ensure sufficient stock of serviceable pallets and other equipment are available to keep the courier network moving.

GSE

Fieldair have been manufacturing aviation Ground Support Equipment (GSE) for many years, with key products including Air Stairs, Ramp Equipment, Nitrogen Bottle Carts and Engine Dollies.

This year they teamed up with Flight GSE Limited in Christchurch, broadening the design and manufacturing capabilities of the company to include a range of Baggage Trolleys (Standard and Low Passenger Volume), used extensively throughout the Pacific and Australasia. The company also designs and builds Aircraft Maintenance Platforms and Steps, Aircraft Potable Water and Lavatory Carts, Fuel Drum Carts, Aviation Work Benches, and other ramp and airport product. Their effective design of Aircraft Wheel Dollies has been recognised by Airbus as being ‘Airbus Capable’ and can handle the main and nose wheels of all aircraft in the Airbus range.

Collaboration between the two companies has provided access to equipment including CAD systems, heavy presses, programmable guillotines and folders and the latest CNC Plasma Cutting system.

Ground support isn’t limited to just the equipment though. Fieldair have a team of aircraft ground handlers and refuellers at Palmerston North to ensure any customers visiting the MRO facility for work, annual checks or just advice and a cuppa are warmly welcomed through the door.

Heavy and Light Aircraft Maintenance

With experienced and fully licensed repair facilities at Auckland, Wellington, Palmerston North and Christchurch, Fieldair can be considered as a truly national engineering partner to all aircraft operators, large or small. From simple repairs and annual checks to complete overhauls and upgrades Fieldair teams can service most

aircraft makes and models flying in New Zealand today.

Engineering Manager (Aircraft) Andrew Lynn says their aircraft maintenance personnel are committed to providing the highest level of service excellence. “Our quality workmanship is supported

by stringent internal and external quality and regulatory controls (NZCAA, CASA, and BVQI). We provide a 24-hour service with minimum downtime to get operators back in the air quickly, with a ‘no compromise’ attitude in terms of flight safety. Partnering with Fieldair for the maintenance of your aircraft means placing your investment into reliable, experienced hands with a long-standing reputation for attention to detail. If you have a technical problem or just need to bounce some thoughts around then call me on 06 350 0959 or email: andrew@fieldair.co.nz”



Fieldair manufactures a wide variety of Ground Support Equipment including baggage carts, air stairs, & bottle carts.

The Flying Squad

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

There are also added benefits from working alongside engineering staff of the island airlines. Not only does the face-to-face contact help build a high level of trust between the organisations, the close contact between personnel provides for significant knowledge transfer when these opportunities occur.

The ‘Fieldair Way’

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

For more information

To find out more, visit www.fieldair.co.nz or contact the people listed in this article. Fieldair’s main office number is 06 357 1149 or email: fieldair@fieldair.co.nz

The Strangled Goose story

Some readers may be wondering about the folklore mentioned at the start of this article. One version of the story is that a Fieldair Tiger Moth pilot transiting between airstrips discovered he was sharing the sky with a single goose which looked good for dinner. He figured, rather hopefully, that he could manoeuvre alongside the bird and grab hold. Not surprisingly, the goose was uncooperative and a dogfight ensued until eventually, the hapless goose collided with the Tiger’s prop which broke (prop and goose). A successful forced landing was conducted. The pilot’s tale of an unfortunate bird strike was somewhat undone however when a farmer later requested the company’s services, noting that they had the best pilots in the country and describing the Tiger versus goose battle as taking half an hour and just missing his trees by inches before the pilot killed the goose “and then he landed to pick it up”.



KANNAD Part 145 Repair and Service Centre Aviation Safety Supplies Limited

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

Last year Lloyd indicated that a major issue to contend with was that most airlines were refusing to carry bulk stocks of lithium metal batteries. Thus there was a high chance of batteries being difficult to obtain when you wanted them.

The air freight issue has now become worse, with all airlines refusing to carry lithium metal batteries. Effective October 2014, battery packs, even for PLB’s, now have to be sea freighted.

Lloyd says this caused major headaches for many distributors as it was a sudden decision taken without warning. Fortunately he has a large order on the water and new stocks of batteries are due 30 January 2015. Efforts to work with CAA and Kannad to solve the situation for aircraft owners that need their ELTs serviced now have not been successful. Owners are advised to place their new battery orders early.

Kannad ELTs do need to be returned to an approved facility for battery replacement as specialised software and testing equipment is needed to re-certify the unit. When changing the battery in any Kannad PLB or ELT Lloyd also provides customers with a free Rescue Coordination Centre registration check.

About Aviation Safety Supplies

Aviation Safety Supplies hold CAA Part 145 and 19F endorsements and also ISO9001:2008 certification. They have long term contracts with the RAAF and also are involved with the supply of Body Armour, Night Vision, Ballistic Protection and X-Ray equipment.

The company offers a prompt 24 hour service for most 406MHz service requirements and has exchange ELTs available for AOG situations and/or repair requirements. In addition, they carry large stocks of Kannad Compact, the new Kannad Integra models in both fixed wing and helicopter versions, 406MHz Antennas and most accessories. Aviation Safety Supplies also has a trade-in (rebate) arrangement for those wishing to swap from Artex to Kannad.

Aviation Safety Supplies also stock and service a range of inflatable Lifejackets, CO2 monitors and most brands of PLBs. Some of these stocked brands include Baltic, GME, Kannad, McMurdo, Ocean Signal, Switlik and WS Technologies.

For more information

For all enquiries on any 406MHz ELT and PLB products, accessories, servicing and repairs, or for any other information on the range of products offered by Aviation Safety Supplies, contact Lloyd on 07 543 0075, email: sales@aviationsafety.co.nz or go to www.aviationsafety.co.nz



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The correct way to wash an aircraft

How you wash an aircraft and what you wash it with is a good deal more important than many aircraft owners might think. Charles Cheesman contributed this article to help raise awareness of the issues involved amongst our readers. Charles is the Managing Director of Bion Water Synergetics, a company that specialises in aerospace wash bay design and wash bay equipment.

BEFORE we start with how to wash an aircraft correctly and successfully, maybe we should first ask; why should we wash it? It's not really a trick question. Obviously we want to make the aircraft clean, but the primary purpose of washing is to reduce the amount of corrosion occurring in the airframe. Or if the process is done correctly with the right product, washing can arrest existing corrosion and prevent new corrosion from occurring. Washing, should be the first step in the aircraft's Corrosion Prevention and Control Programme. It has been estimated that 80% of maintenance costs during an aircraft's life span are attributable to corrosion, so anything that can be done to reduce this figure is of significant benefit.

Other reasons for washing are safety-related; being able to see through windows clearly, not slipping when boarding or disembarking on oil and exhaust fouling etc. Surprisingly to most people, aerodynamics and fuel burn are on the bottom of the list of reasons why washing reduces costs.

Another most important, but often overlooked, safety aspect is that of an opportunity for a thorough inspection. While washing, one can carefully inspect the airframe for impact damage, degradation to seals and plastic components, loose fittings and

fastenings and other potential problems.

Now that we have ascertained why we are going to wash the aircraft, let's get ready to do it. The equipment required for the job usually includes: cleaning fluid, buckets, brush/sponge, chamois, a hose with fine spray nozzle, and other items of personal preference.



Long-term benefits may be accrued by correctly washing aircraft with appropriate products.

If you are really fortunate, you may have access to a foam applicator for applying the cleaning fluid. This is always the preferred method of applying any cleaning fluid to an aircraft. It saves time and reduces product usage and it has been proven that foam application of correct cleaning products provides the greatest defence against corrosion.

Notice that a pressure-washing device IS NOT INCLUDED in this list! Pressure washers have no place in aircraft cleaning! High pressure water will drive dirt and contaminants deep into lap joints and cavities, causing long-term degradation and damage to the airframe, along with the sand-blasting effect that is created with the particles of grime. Water applied under pressure can also damage and penetrate seals, exacerbate paint loss, and damage the adhesive bonds found on aircraft structures.

Another literally potentially fatal mistake that even professional operators make, is

to use cleaning products not specified or intended for aircraft use. On any aircraft type, whether it be ultralight, gyro, GA, RPT or heavy commercial, ONLY use products that have been formulated and approved for use on airframes. Truck and car cleaners undoubtedly do a very good job of cleaning, but they often contain highly corrosive ingredients that may damage the aircraft. The average person does not realise that truck wash usually contains

predominantly caustic soda, not something which is compatible with aluminium and other aircraft substrates. Just as alarmingly, many household cleaners and detergents contain high levels of salt. Yes, sodium chloride. Probably the very stuff we are wanting to clean off our aircraft exterior.

Certified aircraft cleaners have been thoroughly tested on materials found in airframes, to demonstrate that they will not damage or degrade any part of an aircraft's structure. Careful evaluation of cleaners available will even turn up products that have been scientifically proven to successfully arrest corrosion in airframes. Alarmingly, there are a number of cleaners on today's market that are being promoted as suitable for aircraft use but have undergone no suitability testing. As a minimum, any aircraft cleaner should have been tested for conformance to AMS 1526B and Boeing D6-17487 REVISION P by an independent testing laboratory.

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Even if you have a composite aircraft your choice of cleaning product is of equal importance as to that of a metal airframe. Many constituents of commercial and household cleaners will irreversibly damage composite substrates, acrylics, rubber and synthetic seal materials, and even two-pack paint. The wrong choice of cleaner may even damage electrical wiring and terminations. When cleaning products are evaluated for military usage, they are specifically tested on wiring and electrical components.

Above all, never use cleaners containing solvents. These may, as well as damaging the substrate, remove grease from inside bushes and penetrate or otherwise damage seals on rod ends and similar components.

Now let us begin:

1. If your aircraft's manual requires it, tape up doors with the correct "low stick" masking tape.
2. Cover pitot tubes, AOA sensors etc. with either the same "low stick" masking tape, the fabric covers supplied with the aircraft, or as the aircraft's manual dictates.
3. Follow any other procedure outlined in your aircraft's maintenance manual.
4. Lightly rinse the entire aircraft to remove loose material and dust/dirt that might scratch the surface.
5. Dilute a small quantity of cleaning fluid to the manufacturer's recommended strength for 'heavy duty' or 'badly soiled' (i.e. strong). With this concentrated solution, wash all badly fouled areas of the aircraft including brakes and wheels, oleos, exhaust trails, oil streaks and deposits around static wicks.

Most people use a sponge to apply the liquid. Purpose-made soft bristle brushes designed for washing car and truck are readily available and lend themselves to aircraft washing. A recommended alternative is to spray this strong solution on to these areas with a pressurised sprayer. These are easily found in hardware stores in the gardening section.

NOTE: Implements (Sponges, brushes, etc) used on these badly fouled areas should not be used on the rest of the airframe. Use another set for general airframe cleaning. There is abrasive and potentially damaging material on these areas that you do not want transferred to the rest of the airframe.

6. Next, make up a dilution of the cleaning product at the ratio specified for general (or light) cleaning. With this, go over the entire airframe, starting at the highest point and agitating the solution on the surface with a sponge, broom or rag to loosen dirt and grime. Special brooms are available that are designed for washing trunks and coaches. They are made from materials that will not scratch or damage the surface they are being used on. On an aircraft they save a lot of bending and stretching, not to mention keeping you away from the stuff dripping off the underside of the aircraft.

All cleaning products require a bit of physical effort, despite their manufacturers' claims of miracles! Products that do not require movement or agitation on the surface are much too aggressive for aircraft use and may contain toxic substances that could end up in your liver. Let alone the damage they must be doing to your aircraft.

7. From this point on, depending on the type of airframe, the cleaning process may need to be broken into sections, with rinsing done at the end of each section.

Again, no matter what the manufacturers claim, most detergents will leave spotting that is difficult to remove if they are allowed to

dry on the surface. Non-detergent, or more rightly non-surfactant based cleaners, such as colloidal-based technology, are thankfully available that do not seem to suffer as badly from this problem. Either way, move across the airframe as quickly and systematically as possible. To complete the cleaning process re-wash the areas that were pre-cleaned with the concentrated solution. If any parts have been missed go back and re-apply solution to them and rewash.

8. Lightly rinse the airframe using a fine spray from the hose, and if required finish off with a chamois.

9. 'To wax or not to wax?' Some people swear by the application of a wax/polish. But generally, waxing and wax-containing detergents are discouraged on aircraft.

However, if you choose to apply a surface finish, be exceedingly careful to ascertain that it is suitable for and certified for aircraft use. Many polishes contain a cocktail of solvents and hydrocarbons that should never be applied to aircraft. Unfortunately in Australia there is documented evidence that the use of

automotive waxes and cleaning products having caused severe damage to and have necessitated the grounding of aircraft. Some preparations also build up a film on the surface which can capture and lock in marks and blemishes, making future cleaning more difficult. Even if the product information states that it is safe for use on plastics DO NOT apply it to windscreens, canopies and bubbles, or any other plastic aircraft substrate. Again, we are faced with problems that are not a great concern in other facets of life outside of aviation. Many products can leave a film on the



A foam applicator can use less cleaning product, plus save time and improve corrosion protection.



Why use a foam applicator?

- Product hangs off vertical surfaces
- Visual indication of coverage
- Increased product contact time
- Uses less water and chemicals
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Aircraft Wash Bay Design

Bion Water Synergetics is one of the few companies that understand the complexities of aerospace washing. Wash bays for aviation and aerospace require a very different approach to those used for truck, bus and industrial uses. Bion water Synergetics can assist architects and engineers in designing aircraft wash bays, or we can offer complete turnkey packages, ready to use.

For more information contact Charles at BioN Water Synergetics
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WHY ARE YOU WASHING YOUR AIRCRAFT?

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Remember - one more wash with an inferior product, one more chance of serious long term structural degradation...





windscreen which will produce optical distortion or a halo effect. Both these can be very dangerous in an aircraft. Haloing causes a circular rainbow image to appear on the solid surface of the windscreen. It can be very annoying and dangerous, as it can obscure vision.

When working on a clear surface, such as the windscreen, there is a method that should not be deviated from. When rubbing with a cloth, sponge or even fingers, ALWAYS rub perpendicular to the horizon. This is extremely important. Should you unwittingly scratch the surface, you will be able to look around the scratch rather than having to try and look through it. Multiple fine scratches can produce a form of optical distortion which fortunately only have minimal effect when viewed vertically. Again, most importantly, only use transparency cleaners that are specifically designed for aviation use. Household or automotive products are not suitable for use on aircraft plastics. Additionally, generally speaking, any product in a pressurised spray can is not suitable for use on aircraft transparencies as they contain hydrocarbons and will slowly degrade the plastic.

In closing, consider that many aircraft manuals are sadly deficient in instructions for successfully washing an aircraft without causing gradual damage to it. Likewise, do not assume that all engineers or cleaning contractors have automatically been trained in this area of aircraft maintenance.

We hope that readers of this article will perhaps look at the process of washing their aircraft in a new light. It is indeed one of the best opportunities aircraft owners have for reducing long term maintenance costs. Please do also check the airframe manufacturer's documentation, and of course note that any recommendations contained therein must always take precedence.

Charles Cheesman

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RotorFix NZ expands at Tauranga Airport

Matt Annett has recently re-branded his helicopter maintenance business at Tauranga from Annett Aviation to the more descriptive RotorFix NZ Limited. Simultaneously, in order to better support their growing customer base, the company has moved into their own hangar on the field. The extra space and independence is already proving beneficial as more machines come onto the books, both from existing customers expanding their operations, and from new customers looking for a personalised local maintenance service.

Matt says he now has 14 (and growing) helicopters under his care, including 4 AS350s, 2 Guimbal Cabri G2s, and a variety of Robinsons.

A lot of work being undertaken is far from 'routine' too, with Matt and co-worker Greg (now a full-time employee), who is also a qualified LAME, recently completing 12 yearly checks on an AS350, and with both a Robinson R22 and R44 currently in the hangar for 12 yearly overhauls.

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.

Also on the team, on a contract basis, is Gareth McCurdy who carries out ARAs for RotorFix NZ and is the maintenance controller for several customers.

Other recent work and something which is almost becoming a specialty service, has been the pre-purchase inspections (both locally and overseas) of several different helicopters for different customers. At the time of writing Matt was just back from Australia having looked at an R44 for a

private owner, and is in discussion with a potential local syndicate regarding the acquisition and subsequent maintenance of a turbine machine. Tauranga is a handy Port to use for aircraft imports with a MAF facility available on the airfield for the necessary inspections.

With more AS350s coming on to the books, Matt has acquired the latest MicroVib II Aircraft Analyser. This is capable of balancing all helicopter systems including main and tail rotors, fans, turbine engines, AS350 under-floor vibration hammers and more, including spectrum analysis of the whole aircraft.

Matt says that his underlying approach to all maintenance work is to pay attention to the basics and to preventative maintenance in order to minimise the need for field work and unscheduled repairs - especially when a \$1 component can ultimately cause thousands of times its own value in later maintenance issues. That said, when field maintenance is necessary, Matt and Greg will be there with a mobile service when required.

Matt encourages nearby operators to now treat Tauranga as a one-stop centre for helicopter maintenance, with general maintenance available from RotorFix NZ, avionics work available from Dave Gardner at Skytrack Aviation, premium painting services just a few hangars away at Pacific Aero Coatings, and ARAs available 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, email: matt@rotorfixnz.co.nz or visit www.rotorfixnz.co.nz



RotorFixNZ now maintain several AS350s, Guimbal Cabri G2s, and a large variety of Robinsons.

Avcraft Engineering at Feilding Aircraft Maintenance, Repair and Modification Specialists

Avcraft Engineering NZ Ltd was formed in 2009 by Mat Bailey and Trina Fitcher to fill a niche providing high quality aircraft maintenance to discerning owners and operators. The company has grown significantly since then, recently completing construction of a new 1000 sqm hangar at Feilding Aerodrome. It's an immaculate facility and no doubt part of the reason they have now become New Zealand's only Cirrus Aircraft Authorised Service Centre and have also recently been appointed as New Zealand's Pilatus PC-12 Service Centre.

Avcraft customers cover the spectrum of private, charter, and corporate aircraft owners. Mat and Trina take pride in the level of customer service their team provides and say they are always looking for new challenges and welcome all makes and models of aircraft. The current fleet under Avcraft's care includes Cirrus, Pilatus, Cessna, Piper, Maule, Beechcraft, Partenavia, AirTractor, and more.

Led by Trina as CEO and Mat as Engineering Manager, the Avcraft team includes five licenced engineers, most of whom are also pilots (Mat himself has more than 40 ratings). The team's experience covers everything from microlights to Airbus A320s, and one of the team members also holds an FAA CPL, FAA Airframe and Powerplant ratings, and an FAA Inspection Authority.

Services Available

If it's a 50 hour oil and filter change for a Cessna 150, a Phase Inspection on a Beech Kingair or an Annual Inspection on a Pilatus PC-12, Avcraft have the expertise and tooling to get the job done.

Latest generation Maintenance Tracking Software is used to monitor scheduled maintenance and time-lifed components, with reports automatically generated to communicate all future scheduled maintenance for forward planning.

Contact Avcraft for:

- Scheduled Maintenance and Inspections.
- Avionics inspections, repairs, modifications and installations.
- Piston and Turbine engine maintenance.
- Repairs, modifications and rebuilds, including heavy structural or corrosion.
- Fabric repairs and recovering.
- Pre-purchase inspections worldwide.

- Troubleshooting and rectification of complex aircraft systems, pressurisation and air conditioning.
- Avcraft also provide a 24 hr callout service.

Modifications

Avcraft offer a variety of performance enhancing modifications that they have previously installed on numerous aircraft.

A popular modification is the installation of GAMI fuel injectors and Digital Engine Monitoring systems - leading to typical savings on a big-bore Continental of up to 10 lph when running Lean-of-Peak.

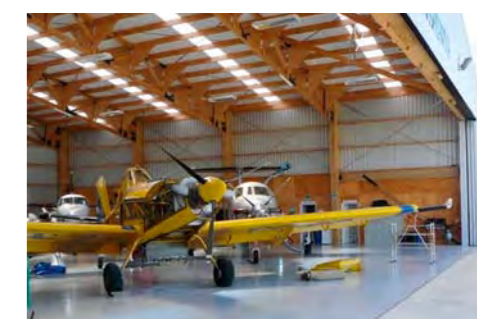
Mat says they have installed Micro Aerodynamics Vortex Generators on many different aircraft with amazing performance and handling improvements.

He also says that LED technology is now very affordable. Avcraft have PMA and STC approved systems for instrument, nav, landing, taxi, position and strobe lights.

Recently a 5 bladed MT-Composite prop was installed on a Pilatus PC-12/47, the first such combination in Australasia.

For more information

Mat and Trina welcome the opportunity to support new customers; "You can rest assured we will take good care of your asset." Phone 06 212 0920, email: matt@avcraft.co.nz or visit www.avcraft.co.nz



Top to bottom: 1. Air Tractor repairs. 2. RV9A avionics work. 3. Two PC-12/47s and a C421C.



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Solo Wings launches SAMMS

a new innovation to promote Safer Aircraft and Safer Flying

INNOVATION and business development are key practices for all successful businesses to move forward. During the last year in particular, the Solo Wings (2010 Limited) team in Tauranga have taken very much a people-based approach to improving their business. Their initiatives have been driven by the two questions; What can we do for our staff? and; What can we do for our customers? Much has been achieved in quite a short time.



Plenty of diversity in the Solo Wings hangar at Tauranga, with an autogyro, a jet, and a bi-plane all in residence.

Workplace training

The corporate buzzword would be 'a learning culture' but that phrase has become tainted by companies who talk a lot about it without really delivering the results. As well as promoting and supporting the up-skilling of their own staff, Solo Wings have started providing workplace experience for young people who are keen to join "the fabulous world of aircraft engineering." This extends from first year apprenticeships, to work place appreciation for school leavers, to work place experience required for NZQA Diploma studies. Given the additional time involved for supervision and training of such (albeit enthusiastic) people, this is much more of a 'public-good' initiative than a 'profit-centred' one. It is one corner however, of creating a work environment that encourages learning and sharing, and fosters the growth of new talent into the industry.

Another corner is their work with ServiceIQ (the Industry Training Organisation for Aeronautical Engineering), which has established Solo Wings as an NZQA Registered Training Work Place. The motivation here has been to promote opportunities for staff training with tangible outcomes. Two of Solo Wings' Senior Engineers are being trained as Registered NZQA Work Place Assessors and in fact one of the management team used to own and operate an NZQA Private Training Establishment (PTE).

SAMMS

Under development for nearly a year and now in full-time use at the company is an online software aircraft maintenance management tool called SAMMS (Safer Aircraft Maintenance Management System). SAMMS is the result of a lot of good ideas and continuous input from Solo Wings clients and staff members.

The idea first arose as a product of dozens of work structure flow-charts, drawn up by their business engineer as part of a process to prepare the company's systems for CAA Part 145 accreditation. It's an innovative initiative which they say has its prime function in the promotion of safer aircraft and therefore safer flying.

The entire Solo Wings team is passionate about SAMMS, all having had significant input into its development and having watched it grow from those flowcharts into the tablet based system it has now become. All work activity on aircraft and all stock requirements are managed by SAMMS. Solo Wings engineers use the system via personal electronic tablets to plan, record progress and accomplished work, track hours and parts, and create loose-leaf logbook entries (LLEs).

At the core of SAMMS is its aircraft database. For each aircraft serviced by Solo Wings, all components and products together with their maintenance schedules, hours and cycles are recorded. This allows the system to automatically alert Solo Wings staff and the aircraft owner of all upcoming regular and irregular inspections and services (for example, 100hr inspection, annual, ADs, etc.).

Thanks to its web-based interface, SAMMS allows customers to log in to the system from anywhere in the world with their PCs, smartphones or tablets. Once logged in, pilots and owners can view the due lists for their aircraft, edit their personal data and send messages to Solo Wings. Pilots can also input their current flying hours and cycles which automatically updates the due

Title	Interval (Hours)	Interval (Cycles)	Interval (Days)	Hours	Cycles	Date	AD/BB
CAA NZCAA requirements: Aircraft Review (Special Category) due			27/2/20				
CAA NZCAA requirements: Compass calibration - 24 month			6/3/20				
CAA NZCAA requirements: ELT 24 month check			6/3/20				
CAA NZCAA requirements: ELT battery due replacement			22/3/20				
CAA NZCAA requirements: ELT pre-to-test	9/100		27/1/20				
CAA NZCAA requirements: Radio and transponder and alternate 24 month check			6/3/20				
Rotax 912/914 Series: 100 hour inspection	9/100		27/2/20				
Rotax 912/914 Series: 200 hour inspection due			10/8/20				
Rotax 912/914 Series: 25 hour inspection							-05/20

SAMMS uses an aircraft database together with owner-entered hour information to generate easy-to-read due lists that alert of upcoming (yellow) or overdue (red) service requirements.

Registration	ZK-ASX
Type	Tecnam Astore
Variant	
Customer	Tecnam Dynastore Ltd
Serial #	015
Date of manufacture	2014-03-08
Hours / Cycles	0/91 0/120

All important data about the aircraft is captured by SAMMS. Pilots and owners are able to log in and update hours and cycles themselves.

Type	Item	Serial #	Hours	Cycles
Airframe	Tecnam Astore	015	91	120
Engine	Rotax 912/914 Series 912 ULS 2	8782594	91	120
Propeller /Rotor	Seresenich W88 Series T2ET-75J	AKC3202	91	120
Miscellaneous	CAA NZCAA requirements	91		120

The whole equipment status of the aircraft is captured by SAMMS to generate due lists which are as accurate as possible.

lists and immediately shows if anything needs attention - to both the customer and/or Solo Wings.

All this helps to ensure that no essential services are missed and that the owners and Solo Wings are made aware of upcoming maintenance requirements with ample warning, making scheduling of the work easier and less stressful for all parties involved.

There are no restrictions on the type of aircraft that SAMMS can manage. It is capable of dealing with gyros, jets, homebuilts, microlights, helicopters, biplanes, classic, vintage and modern aircraft alike, and all are handled equally by the system.

It's worth a note to mention how the SAMMS system was written. Just over a year ago, Solo Wings received a letter from a German student who had recently finished his Master's degree, loved aviation, and wanted to spend time in an aviation related business in a different part of the world. Andreas Krupp had sent this letter to many people hoping to find a favourable, and compatible reply. Solo Wings agreed to offer Andreas a place in the company and one of the team also offered him local boarding and a car to use. Thus Andreas came to Tauranga for a year.

After spending a few months in the hangar, it transpired that Andreas was an accomplished programmer and it was he, whilst immersed in the Solo Wings business who wrote the SAMMS software. It wasn't all work though. Amongst other adventures, including learning to surf, Andreas updated his flying licences and flew himself all around the country.

The end result is a new business partnership between Solo Wings 2010 Ltd and Andreas, called SAMMS International Limited. The Solo Wings team says their goal is to make SAMMS available to a much wider international audience, for pilots, owners, aircraft maintenance organisations and aircraft manufacturers to share maintenance information via a common on-line platform - thus making aircraft maintenance easier, less costly and most importantly... safer.

For more information

The desire of Solo Wings is to have as many planes as possible using SAMMS. They say it's an opportunity to never miss another service, keep your log book up to date, ensure your parts usage is recorded, and that your plane is SAFE - always.

To find out more, contact Solo Wings on 07 574 7973 or visit www.solowings.co.nz

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Oceania Aviation Measurement and Calibration Laboratory opens at Hamilton

THERE are many critical measurements undertaken in aircraft and engine maintenance and it goes without saying that these measurements need to be accurate within specified tolerance levels.

Reliable measurements require reliable instruments and it follows that there must therefore be a means to ensure the reliability of those instruments is maintained.

Enter the function of Metrology (being the science of precise measurement) and the process of Calibration (determining the value of error of a measuring instrument). Calibration tells us precisely what the error is for a given measurement, such that we can take this into account each time the measuring instrument is used.

Oceania Aviation have recently opened their Measurement and Calibration Laboratory at Aeromotive in Hamilton. Previously operating as an in-house service, the laboratory services are now available to the industry at very competitive rates and with a very fast turnaround time.

The new lab is led by fully qualified Metrologist, Dirk Coetzee. Prior to joining Aeromotive in 2011, Dirk had spent 18 years as a Metrologist with the South African Air Force where he was involved in calibrating all manner of instruments, and also involved in aircraft component analysis and measurement with regards to aircraft accident investigation.

Since joining Aeromotive, initially as Quality Coordinator, Dirk has steadily developed their metrology capability to the point where all that was needed was a separate location in order to be able to hang a sign over the door and make the service available to outside customers.

A rearrangement of the previous Avionics Bay created such an opportunity and with the addition of temperature and humidity control, the Oceania Aviation Measurements and Calibration Laboratory was born. The procedures and lab environment all now comply with the requirements of ISO17025 which documents the general requirements for the competence of testing and calibration laboratories. This is all familiar territory to Dirk who set up mass metrology systems in the SAAF, achieving ISO17025 accreditation for that facility back in 2003.



Dirk Coetzee (seated) demonstrating Pressure Gauge calibration to Stephen Calvert.



Examples of instruments the lab is capable of calibrating, and a set of dimensional standards.



A Starrett Optical Comparator is used for precise non-contact measurement.



Testing a Digital Protractor for accuracy.

Capability and Services on offer

The new lab currently offers Dimensional, Force, Pressure, and Torque Metrology and can accurately calibrate instruments such as: Micrometers (internal, external to 5", depth, thread blade and deep throat), Depth Gauges, Calipers up to 8", Plug Gauges, Swage Gauges, Propeller Protractors, Force Gauges to 150 lb, Torque Wrenches (0-258 ft.lb, 0-3097 in.lb, 0-350 Nm), Cable Tensiometers, Torsiometers, Pressure Gauges to 10,000 psi, and Differential Pressure Testers. These capabilities will be steadily expanded as new equipment and standards are acquired.

Dirk is currently training Stephen Calvert as his assistant and says their aim is to offer a premium service at a very competitive price, with a policy of same-day-in, same-day-out delivery – or at worst an overnight service for work that arrives late in the day.

Customers also have the benefit of dealing with people who speak 'aviation' and understand the requirements of CAR Parts 145 and 43. Laboratory measurement standards are traceable and the laboratory is environmentally controlled to assure measurement repeatability.

Dirk has a policy of taking enough measurements to provide a solid understanding of the linear performance of an instrument as well as its repeatability. For example, they calibrate at five intervals for Torque Wrench calibration where commonly only three is required by ISO6789. They will also quote measurement uncertainty at various intervals throughout the instrument's measuring range (sometimes commonly only quoted at one setting).

Where possible, instruments will be adjusted to bring accuracy within the desired specified limits (for example torque wrenches will be adjusted to fall within the 4% or 6% error limit depending on the wrench type).

Calibration certificates reflect all the measurement results 'as received' and 'as left', with measurement uncertainty calculated to 2 sigma, giving a confidence level of approximately 95%.

Some 'rotatable' instruments are available for loan in the case of urgent requirements or temporary replacement of unserviceable instruments.

Calculating uncertainty

All contributing factors are taken into consideration when calculating measurement uncertainty. This includes amongst others, resolution of the instrument, temperature and instrument repeatability. A mean and standard deviation for repeatability is calculated with every calibration and added to the uncertainty budget and a final quoted uncertainty reflected to the customer at 2 sigma. For example, a Micrometer reads 0.6151" instead of the nominal 0.6150", meaning that the instrument reflects an error of 0.0001". Assuming that an uncertainty was calculated at 0.00007" for this measurement, customers can be approximately 95% confident that the instrument's accuracy is 0.6151 ± 0.00007 ". The beauty of uncertainty is that it reflects incomplete knowledge of the quantity based on mathematical calculation.

Calibrating the calibrators

How does Dirk ensure the standards (such as gauge blocks, weights, etc.) he uses are themselves accurate in obtaining results? In this sense 'standards' is the term used for the physical reference item such as a gauge block, weight etc.

Such 'standards' are graded, for example grade 1 gauge blocks, grade 2 gauge blocks, etc. The idea is to always calibrate against a higher reference standard of known accuracy. A grade 2 Gauge Block will be calibrated against a grade 1 Gauge Block of similar length, or a class F weight will be calibrated against a higher accuracy class E weight, or to the Measurement Standards Laboratory of NZ (MSL) standards. This ensures traceability and gives confidence in the accuracy of the calibration standards used by Dirk and his team.

Standards are also verified frequently in-house using self-verification methods.

For more information

To enquire about any calibration requirements, contact Dirk Coetzee or Stephen Calvert at the Oceania Aviation Measurement and Calibration Lab, based at Aeromotive's Hamilton Airport facility. Phone 07 843 3199

Email: calibration@aeromotive.co.nz

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TARANAKI FLIGHT TECH



Taranaki Flight Tech is located at New Plymouth Airport. Formed six years ago, the company provides maintenance and servicing to GA aircraft of all sizes.

Recently the company has expanded and now uses Ashburton Flight Tech as a maintenance base for GA aircraft operating in the South Island.

The company also maintains and rebuilds aircraft in Fiji under a Fijian 145 approval.

Taranaki and Ashburton Flight Tech now offer maintenance, servicing, rebuilds, painting and manufacturing

ASHBURTON FLIGHT TECH



in all areas of aviation as well as consultancy services for aviation auditing and maintenance controlling.

The company takes pride in maintaining personal customer relationships and providing practical and approachable methods to get the required results for customers.



Taranaki and Ashburton Flight Tech offer a wide range of aircraft maintenance and specialist manufacturing services.

For more information

Contact Gareth Semenoff at Taranaki on 06 755 0077 or 021 227 8779, or Jonny Smyth at Ashburton on 03 379 9088 or 022 044 9618

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Maintenance variety at Hawker Pacific

Ardmore Base caters for all types and sizes

WITH distributorships for Diamond, Beechcraft, and Bell, as well as a broad range of aftermarket components, avionics and engines, it is no surprise that the Hawker Pacific hangar at Ardmore is frequently filled with an eclectic range of aircraft. Maintenance services extend well beyond only the types that the company distributes, and also cover the spectrum of operators in New Zealand, from owners with one private Cessna to care for, through to corporates with jets and a fleet of twin engine helicopters.

Manager Ardmore, Martyn Griffiths says his team prides itself on offering the same level of personal service and support to every customer who comes through the door regardless of their size or budget. With a focus on customer satisfaction, the team are just as interested in the very small jobs as they are in the very big ones.

One such job in the latter category has been the refurbishment of the IAI Westwind II jet ZK-PJA. Involving nearly 3 months of work for several of the team, this job began as a 200 hour check. A lot of in-depth maintenance was carried out, culminating in new livery and a very fresh looking aeroplane. The Westwind will be operated out of Auckland by Pacific Jets Limited in a dual role including EMS ops.

Distributorships and New Products

As the NZ service facility for Bell Helicopters, Hawker Pacific carries a large Bell spares inventory and has a maintenance capability across the Bell range.

They also of course have full access to Beechcraft and Diamond spares and aircraft sales support.

Hawker Pacific is the New Zealand distributor for Dart Aerospace, offering a huge catalogue of after-market helicopter accessories for all major types. This catalogue now includes a fully STC'ed Robinson R66 cargo hook. Another recently available item is the PALL PA100 PureAir barrier filter system for the AS350/EC130, a unit of which is currently being trialled by an operator in Wanaka.

An R44 Auto-pilot

If you want your Robinson R44 to stand out from the crowd, then consider the following new options from Cool City



Busy times in the Hawker Pacific hangar recently with work on all manner of small and large rotary and fixed wing aircraft.

Avionics: The FT-100 Force Trim holds the cyclic in place giving hands-free time to perform other tasks. The SAS-100 Stability Augmentation System opposes low-amplitude upsets meaning that the only cyclic inputs required are to manoeuvre the aircraft. And the HFC-150 Autopilot offers a digital 3 axis auto-pilot solution with stability augmentation and orbit mode. Hawker Pacific are approved distributors and installers for Cool City Avionics.

Avionics

R44 auto-pilots aside, Hawker Pacific offer a full range of avionics services and are experts in the rapidly changing technology and regulations in this field. Avionics Manager Harry Van Der Hoeven is happy to offer free advice on all avionics matters including ADS-B, Mode S, WAAS, ELA, GPS IFR, and more.

This list of acronyms is becoming increasingly important to all certified aircraft owners as regulations steadily change to mandate the implementation of new satellite based navigation technology. Ground based systems are aging and undergoing little if any development, whilst satellite based technology is attracting significant investment and becoming more accessible, accurate and reliable.

It is important for any operator undertaking avionics work to be considering the system mandates that are only around the corner, and making sure that the money they spend now will contribute to any future upgrades required, and effectively become money saved later. There are fish hooks awaiting those who simply repair or replace what they have now without keeping one eye on the future. Harry is happy to help operators understand the new technologies coming in to play, and to provide assessments of cost effective upgrade opportunities.

Component Overhaul

Hawker Pacific also offers a variety of Bell and Eurocopter component overhaul services, particularly for servos and servo controls on the AS350 and Bell206. All main drivetrain components on the Bell 206 can be overhauled in-house.

For more information

All enquiries for advice or maintenance will be welcomed by the team at Hawker Pacific which now includes a dedicated Customer Service role. In the first instance contact Martyn Griffiths on 09 295 1630, 027 808 0094 or email: martyn.griffiths@hawkerpacific.com.

For specific avionics enquiries, contact Harry Van Der Hoeven on 09 295 1638, 021 942 633 or email: harry.vanderhoeven@hawkerpacific.com

www.hawkerpacific.com

Aviation and Performance Parts

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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 (details below) or visit www.apparts.co.nz



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Heli Maintenance at Christchurch

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

Heli Maintenance is Canterbury's only CAA Part 145 A4 approved helicopter maintenance company offering helicopter sales, service and parts to numerous commercial and private owners. The team behind Chief Engineer David and Operations Manager Pip are specialists in providing quality maintenance services for a wide variety of helicopters including Robinson R22, R44, R66, MD500 series, Schweizer/Hughes 300 series, AS350, EC120, AS341 Gazelle and Bell 206.

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

Robinson Overhauls

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

Role equipment and mods

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

Sale and Purchase Support

David welcomes the opportunity to work with prospective helicopter owners to help identify the aircraft they should buy, and to assist with sourcing and pre-purchase inspections, plus obviously servicing the helicopter on behalf of the new owner.



Canterbury's first and only CAA Part 145 approved helicopter maintenance facility

- We also offer the following local modifications:
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 - EC120 Lead Acid Battery Installation
 - R22/R44 Pitch Links Repair
 - MD500 Collective Lock
 - MD500 Hockey Stick Repair



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Central Aero Engineering

Central Aero Engineering at Hamilton Airport have a reputation for providing a broad range of services to commercial, GA and recreational customers regardless of their size or what they fly. The company has a diverse range of aircraft on its books extending from balloons, gliders, microlights, autogyros, experimental and homebuilt aircraft, through to all manner of GA and commercial aircraft including turbine helicopters.

This eclectic mix of work has undoubtedly arisen thanks to the personable nature of owner Paul Waterhouse and his engineering team, who revel in taking on the challenges of 'something different' and delivering professional outcomes to customers no matter how big, small, or unusual the job may happen to be.

Recent work

The Central Aero hangar is always an interesting place to visit. When KiwiFlyer called in at the start of December, domiciled inside were a Cherokee 235 looking resplendent in a new coat of paint, a homebuilt Safari helicopter, and a hot air balloon, all with various work happening on them.

The Cherokee had been completely paint stripped and re-sprayed. Avionics had also been refurbished with various redundant systems removed and new systems installed, including an iPad. Next on the owner's list is an interior overhaul.

The Safari helicopter had arrived from the South Island with its owner who has moved north and needed a CoA re-issue and associated paperwork brought up to date. Paul says they are now looking after 5 Safaris (NZ distributor and builder Bruce Belfield lives in the Waikato himself), and have several R44s and a JetRanger on the books as well.

The balloon was in for a CoA. Central Aero have a growing number of balloons under their care (at least 6, says Paul), ballooning of course being a popular sport in the area. A balloon CoA involves partial inflation, then inspection of every seam on the entire envelope, standing the balloon up and operating all the various venting and turning systems, plus checking the baskets and burners for leaks, etc.

Also underway offsite was an annual/100hr check on a glider.

Central Aero have also completed several notable fabric projects this year, with a Pietenpol project currently well underway.

Paul says the previous deluge of Cessna SIDs work is tapering off but there are a lot of aircraft awaiting SIDs inspections still tucked away. "Call if you need advice," says Paul.

Services available

Central Aero's capability list is broad indeed, and a passion for all forms of aviation means that Paul and his team are more than willing to help out with engineering requirements or advice in areas that many other maintenance providers may well seek to avoid, or at least fail to show an interest in. Central Aero do of course also cover all of the traditional bases of GA maintenance for rotary and fixed wing (including Robinson 2200hr/12yr overhauls), as well as providing consultancy services for maintenance controlling, CoA issues, airworthiness reviews, pre-purchase inspections, importation "from anywhere", and more.

With new avionics equipment coming for testing Mode S transponders, all 24 month avionics checks can be carried out on site. Weight and balance services are also provided.

Central Aero have significant workshop resources for sheetmetal fabrication and repair, broadening the support the company can offer to those undertaking rebuilds or restorations, or to home-builders needing help with their project. Wood and fabric work is also well within the resources and experience of the company.

Vibration analysis equipment is on hand for propeller balancing services. Paul says many owners are astounded at the results of this relatively straight forward task – "it's some of the cheapest and best maintenance you can ever do".

A new Central Aero website has just been launched (www.centralaero.nz) and includes a full capability list as well as 'news' and 'for sale' pages. That capability list will continue to expand, driven by Paul's philosophy that something new should be achieved every month that "makes the place better and improves the services we offer to customers".

Central Aero Electrical Limited

Next door to Central Aero Engineering is Central Aero Electrical Ltd. Owner Martin Ross and a small team have a comprehensive range of diagnostic equipment to hand, and a large

test bench will handle up to 12 cylinder magnetos.

Capabilities cover a good range of piston engine starter/generator, control unit rectification and overhaul work along with the 500 hour requirement for magnetos. A growing amount of turbine electrical components are also passing through the shop. Actuator overhauls are also a common task.

Central Aero Electrical stocks and supplies various (new and hard-to-find) aircraft parts for re-sale including starters, batteries, alternators, strobe units, starter generators, GCU's, voltage regulators, ignition switches, and HT ignition harnesses. Various exchange items are also available.

A personal interest and a collection of elderly parts made serviceable, have made Martin the go-to person for all odd and unusual electrical requirements, especially for aircraft such as Tiger Moths and WWII varieties. Over the years he has acquired many service manuals for older aircraft, some requiring much negotiation and expense. And even if a manual is not available, there's a good chance that experience will win the day such that fault diagnosis and an appropriate procedure can be undertaken.

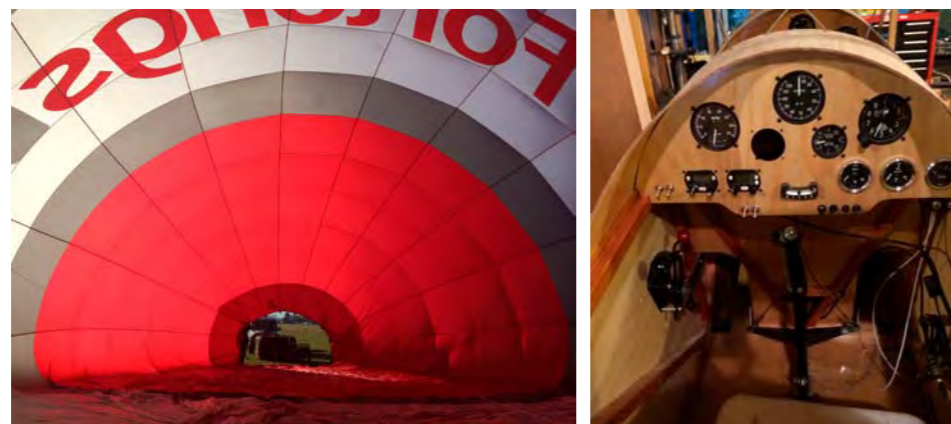
Central Aero Electrical also have a good supply of parts for B&C lightweight starters, for which there are now STCs available for fitment to all Lycoming engines. Martin says these are a lot better solution than replacing with original.

With CAR Part 145 certification behind him, Martin has also been building relationships directly with component suppliers, allowing him to easily purchase direct and bypass the aircraft manufacturer's mark-up. These are savings Martin says he is happy to pass on to customers.

For more information

Paul says that "If you're thinking maintenance, then think Central Aero. We're happy to help whether it's just advice you need, or to book a job in." Contact Paul on 07 843 1200 or 021 418 677, email: paul@centralaero.co.nz or visit www.centralaero.nz

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



Clockwise from top left: 1. A balloon inspection underway. 2. A major wood and fabric project well underway is this Pietenpol. 3. Cherokee 235 refurbishment about to have new stripes applied.

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Maintaining Working Helicopters at Taupo



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

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

Robinson maintenance and overhaul

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

General maintenance

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

Avionics requirements

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

Aircraft refinishing

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

For more information

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

Avionics Canterbury Wide

OWNED by David and Angela Harnett, Avionics Canterbury Wide Limited provides a fully mobile avionics service

centred on Canterbury and extending throughout the South Island. David began his avionics career in the RNZAF, giving 21 years of service until venturing out on his own in March 2006 with "lots of encouragement from people in the industry who have since become very loyal customers".

In May this year David took on an apprentice, Andrew Duff who has completed his basic LAME exams and is enjoying his transition to aviation.

There are several glowing testimonials on their company website for work undertaken by Avionics Canterbury Wide - such as "In my experience, there has never been an avionic fault that Dave hasn't been able to troubleshoot and fix nor an

installation problem that he hasn't been able to find a solution to."

A point of difference is that Avionics Canterbury Wide's service is fully mobile, David having configured a customised van specifically for the task. The van carries all the equipment necessary to facilitate one-person on-the-ground avionics testing for almost all possible requirements.

David and Andrew can also undertake full aircraft wiring installations for light GA, homebuilt experimental and microlight aircraft and have numerous installations to their credit, from simple to very sophisticated.

David welcomes any enquiries for avionics advice, maintenance or installations in the South Island. Contact details are at right, or visit their website www.avionicscanterbury.co.nz



David Harnett (right) with Andrew Duff.

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