

The KiwiFlyer Annual Guide to Supply and Maintenance Services

Aviation Safety Supplies

Exclusive KANNAD Part 145 Repair & Service Facility

Aviation Safety Supplies Ltd located in Tauranga is the only KANNAD approved Part 145 KANNAD repair station and warranty replacement facility in Australasia. Lloyd Klee has been a distributor for Kannad product for well over 25 years.

Kannad ELTs do need to be returned to an approved facility (KBRC) for battery replacement as specialised software and testing equipment is needed to re-certify them. In 2018, the number of locations was reduced worldwide. Testing as per the Kannad CMM ensures that the ELT is fully functional when it leaves the facility. These CMMs are now only supplied to approved facilities. Kannad ELTs only need bench testing every six years at the time of battery replacement.

Aviation Safety Supplies Ltd has CAA Part 145 approval and also holds ISO9001:2015 certification. They expect to have SMS in place by April 2019.

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

The company offers a prompt 24 hour service for most 406MHz service requirements and have Kannad loan/hire ELTs available for AOG situations and/or any repair requirements. In addition, they

carry stocks of new Kannad INTEGRA ELTs. These newer Integra models of fixed wing and helicopter version come with a ten year warranty and the Integra range is fitted with an internal GPS and a backup 406MHz antenna within the ELT case.

Aviation Safety has a new trade-in (rebate) arrangement for those wishing to upgrade the older Kannad AF & Compact series to the Integra. This is an exclusive arrangement. The company also stock and service a range of Inflatable Lifejackets, Carbon Monoxide Monitors and most brands of 406MHz PLBs.

The brands of stocked products include Baltic, GME, Kannad, McMurdo, Ocean Signal, Switlik Inflatable TSO lifejackets (stowable ten year service) and the popular X-Back Helicopter series, the Switlik Single Person Liferaft, a new Switlik Liferaft with a five year service life, the Switlik UZIP Immersion Suit and 406MHz ELT testers (BT200) from WS Technologies. Aircraft tracking devices such as SPOT 3 are also stocked along with a range of SAR harnesses, lanyards and belts for human slung loads during helicopter operations.

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

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A NEW LEASE ON LIFE

SPECIALIST AVIATION PROVIDER AIRWORK OFFERS A SPECTRUM OF SUPPORT SERVICES FOR BOTH HELICOPTERS AND FIXED-WING AIRCRAFT.

BY GRAHAM CHANDLER | AIRWORK NZ IMAGES



Auckland-based Airwork Group is a global aviation provider with a unique ability to provide turnkey aviation services.

The various divisions that comprise the Airwork Group offer a full complement of aviation services, which includes helicopter and fixed-wing flight operations, aircraft engineering, maintenance, repair and overhaul (MRO) services, sales, and aircraft leasing.

"We are focused in three distinct areas of industry," said Claude Alviani, Group strategy and business development manager. "The first being fixed-wing airline operations and leasing with our Boeing 737 and Boeing 757 aircraft. The second is providing helicopter operations, leasing and sales, and the third involves the range of maintenance, repair and overhaul services, as well as modifications and upgrades predominantly for helicopters, but also for fixed-wing."

Airwork was founded in Wellington, New Zealand, in 1936 and over the years since, it has continually evolved to meet the changing needs of its customers and to equip its staff to keep pace with technology.

"We believe that New Zealand has one of the oldest and most diverse aviation traditions," said Alviani. "This tradition was borne out of dealing with the country's varying topography, its isolation from the rest of the world, and its dependence on land-based economic activities."

"Since our inception, we've developed industry-leading capabilities that we think sets us apart from other aviation operators. In addition to our helicopter and fixed-wing operations, we are proud of the broad range of aviation support services that our body of highly skilled aviation professionals provides. We are recognised for these world class services, holding Service Centre approvals with Airbus, Honeywell, Kawasaki, Breeze Eastern, and we are a licensed distributor for a range of other aviation products from Honeywell, Genesys and Dart to mention a few."

Another core strength at Airwork is the inventory management component of its robust supply chain and aviation supplier networks. This is a critical function of the business because its customer base spans the world: North and South America, Europe, Southeast Asia, Africa, Australia and New Zealand.

The company also maintains an extensive range of dynamic component overhaul capabilities for a wide range of helicopter

types. Moreover, the turbine workshop can perform Hot Section Inspections (HSIs), providing repair and overhaul services for a number of engine types, and the Honeywell engine test cell enables engines to be tested, providing performance data on service repairs for customers.

The in-house avionics overhaul, instrument repair and inspection engineers and the design and manufacturing teams work closely with customers to develop specific modifications and supplemental type certificates (STCs) that provide increased performance and extended operational capabilities for the customers.

It is this range of in-house capabilities that led Airwork down the path of looking at upgrading the BK117 helicopter as a world-leading, specialty product. User organisations have an increasing desire for helicopter modifications that provide distinct safety advantages to the conduct of their flight operations.

Excellent examples of how technology has made aviation safer are visible in flight deck systems designed to help pilots avoid safety problems more common in the past, such as controlled-flight-into-terrain (CFIT) and collisions with other aircraft in flight.

Terrain awareness and warning systems and synthetic vision systems that improve a pilot's understanding of the flight environment, were made possible following the advent of digital instrument displays and GPS, which have helped to dramatically reduce CFIT accidents.

"Similarly, airborne collision avoidance systems (ACAS) have helped to reduce the incidence of mid-air collisions between aircraft by actively monitoring the airspace around an aircraft to improve a pilot's awareness and avoidance of conflicting traffic in the vicinity," said Alviani.

"The BK117 Evolution, as we call it, comes about from our desire to serve those end users. To begin with, we sought to increase the engine power to meet Category 'A' performance and the Honeywell LTS101-850 engine modification was born."

Airwork is the holder of the STC for this significant aircraft performance and safety improvement for the BK117-B2, with more than 50 aircraft modified to date.

However, the upgraded engine was just the beginning. "We also wanted to defend those engines against their operating environment," said Alviani. "So we developed the BK117 particle separator."

In addition to this, the lightweight, nine-seat configuration enables quick change in roles between internal cargo and passenger operations. The re-engined BK117 Evolution has been identified as a great light twin aircraft for human external cargo (HEC) operators looking to upgrade from a single to the twin engine PC1 safety it provides.

Airwork is currently developing a dual hook system that will be available to HEC operators in the near future that will dramatically improve the safety of external load operations involving high value loads or construction efforts requiring the support of people on the ground.

Airwork's modification offerings incorporated in the BK117 Evolution make for a long list. The glass cockpit offers 3D Synthetic Vision EFIS to enhance safety, reduce pilot workload, increase flexibility and lower the cost of operation.

"We believe the BK117 Evolution provides equivalent safety to new aircraft systems and the airframe remanufacturing program and PC1 performance enables this aircraft and crews to maintain the rigorous standards of safety sought by user organisations involved in day/night offshore transfer and HEMS [helicopter emergency medical services] operations."

"Our Airwork mods allow the operator to comply with VFR [visual flight rules] and IFR [instrument flight rules] performance-based navigation requirements, which are currently being implemented around the world," added Alviani.

"Future modifications to provide vibration health monitoring (VHM) and flight data monitoring (FDM) are in the works," he said.

The Airwork BK117 Evolution is a refurbished aircraft. With engines that now provide PC1 performance, and an avionics suite equivalent to new generation aircraft, it's a global winner from a long-established aviation leader.

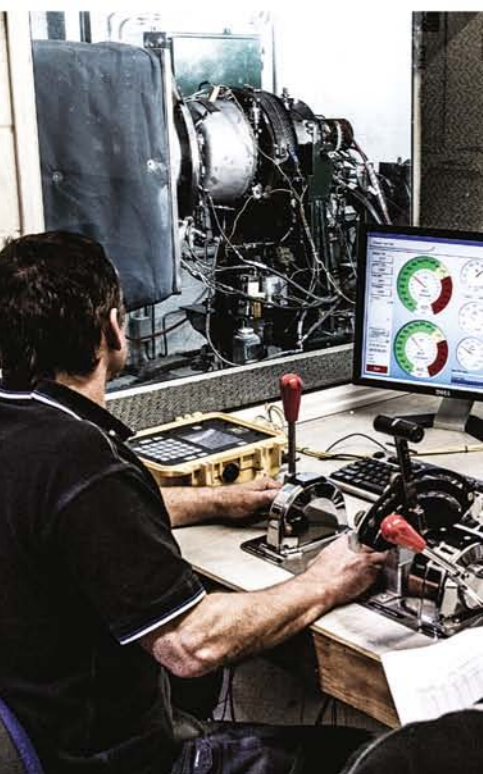
"Worldwide, I would say there isn't another helicopter and modification organisation that is able to support a helicopter modification program like the BK117 Evolution, the way we do," said Alviani.




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“ Since our inception, we've developed industry-leading capabilities that we think sets us apart from other aviation operators.

— Claude Alviani, Group strategy and business development manager



Rotor blades flying out of Oceania's repair division



Composite Structures Division Manager for Oceania Aviation, Jeremy Davies inspecting a rotor blade for repair.

Back in 2011, Oceania Aviation developed a purpose built rotor blade repair facility in a vacant hangar at Ardmore. Some onlookers wondered where the demand for such a significant investment was going to come from, but Oceania's Directors were confident. Their confidence has been well proven now. The facility is full of work that arrives from Australia, the Pacific, and locally. The original team of two is now four, led by Composite Structures Division Manager Jeremy Davies who says he will soon be on the lookout for a new trainee to help with a continuously increasing workload.

Leveraging from a long term relationship with Advanced Composite Structures (ACS) in Canada whom the company has a technical and training agreement with, Jeremy and his team can offer a large range of composite and metal structure repair schemes – often beyond the expectations of clients. That's particularly the case with 'expanded

repair schemes' where blade damage and repair isn't already covered by a suitably documented process. Jeremy says they can look at all possibilities to repair blades and have processes in place to seek expanded repair scheme design and approval from international specialist qualified persons.

The in-house facilities at Oceania's Composite Structures Division are extensive and include many jigs and fixtures that are unique in New Zealand. A filtered preparation room provides for cleaning and sanding processes prior to paint application which takes place in a dedicated 10m long downdraught spray booth. Alongside the spray booth is a separate structural bonding clean room with controlled (and continuously monitored/recorded) temperature and humidity. A suite of specialist bonding fixtures as well as electronically controlled multi-heater blankets for structural adhesive thermo-setting are all in near permanent use. Next to the clean room

is an area designated for electronic rotor blade balancing of sufficient quality that re-installed blades often require negligible adjustment at the time of dynamic balancing.

When the facility was opened six years ago the intention was to be sufficiently equipped for common repairs such that work could be completed in the time it would normally take to crate and transport blades from and back to New Zealand. That goal was achieved very early on, and now the team's capability and efficiency is such that blades for overseas clients arrive on a weekly basis. They frequently now process 25 or more sets of blades through the shop at any one time.

Interest from the Asia Pacific region has been boosted in the last year by EASA certification of Oceania's blade, component and turbine divisions which can now issue EASA Part 145 Authorised Release Certificates (Form Ones) after the completion of maintenance services. These are recognised internationally and accepted by many Civil Aviation Authorities and regulators around the world.

Common blade types under repair include Sikorsky, Airbus, MD, BK117, BO105 and Van Horn.

Capabilities include repair and replacement of worn, damaged or unserviceable parts, corrosion rectification, debonding and void solutions, and more.

For more information

For further information contact Jeremy Davies on 09 296 2644 or email: jeremy.davies@oal.nz

Talk Cargo - It's what we do

Founded in 2012 with 'a passion to provide the very best tailored freight solutions', Talkcargo quickly grew with their own fully owned operational bases now in Australia, New Zealand and the United Kingdom. In addition to this a service centre is being created in India with a view of further expansion towards opportunities in Asia.

The company is managed by Paul King and Aubrey Inston, Aubrey being Auckland-based and focused on aviation logistics particularly in the specialty area of helicopter parts and aircraft.

Both Paul and Aubrey have long term involvements at senior levels in the aviation and logistics industries. The pair have a wealth of related experience and fully understand the various nuances of the aviation industry, and the care and timeliness required when moving parts and aircraft around the globe.

A member of global network the Aerospace Logistics Group, Talkcargo can leverage the services of numerous other worldwide members of this group which was accredited by the Global Institute of Logistics in 2017 as "the Global Best in Class Aerospace Freight Forwarding Network". Members of the ALG are independent companies who combine to provide a seamless service to fulfil the needs of aerospace companies worldwide. At time of writing, Aubrey has just returned from the annual ALG conference, this year held in Capetown. Services across the network include:

- 24-hour AOG service at all stations.
- Import and export customs clearance.
- Domestic and international air freight including hand-carried if required.
- International Sea freight.
- Domestic distribution and specialist courier services.

Talkcargo's approach extends a long way past generic services however. Aubrey says their strengths are in their aviation competencies, especially regarding aircraft engines, rotor blades, and other high value parts logistics.

The word 'partnership' comes up frequently in conversation - particularly when discussing opportunities for importing aviation maintenance/repair work into New Zealand. Aubrey says that if a NZ company has a particular strength they can market overseas then Talkcargo



The team at work including hands-on (the ladder) support by Aubrey.



Rotor blades on their way to the airport.

can partner with them to ensure all freighting requirements are efficiently managed on behalf of their overseas clients and themselves. "Some people would think it's too hard to conduct their business internationally because of the logistics," says Aubrey, "but we can make it seem like they are dealing with a local company."

Evidence of Talkcargo's can-do approach comes in the form of numerous unsolicited testimonials - often direct from a customer to a third party. Such was the case between Oceania Aviation and one of their blade shop customers in Australia recently. The literal email conversation: "(Customer) I get quite annoyed at the incompetence of some people in these freight companies to try and think outside the box sometimes, and give you all the information you need."

"(Jeremy Davies from Oceania Aviation) I know how you feel! I have copied Natasha from Talkcargo to see if she can help you. Tash is very good at this kind of thing... she fixes my shipping problems all the time!" And yes, the difficulty being

encountered with a non-aviation specialist freight company was quickly resolved. Oceania's Jonathan Bowen describes their recently developing relationship with Talkcargo as very effective; "Aubrey handles things and [in the case of temporary imports] makes it seem like there are no borders for us."

Another example of can-do logistics recently involved temperature controlled adhesives personally delivered on weekends in order to meet particular handling requirements.

Talkcargo also have plenty of experience moving complete aircraft, notably helicopters which are of course more common international travellers. Aubrey speaks of recently managing several aircraft through Auckland Port delays, working hard to gain priority and also to achieve cost reductions for their clients.

In Aubrey's words, the company name says it all "if you need to talk cargo, it's what we do. Succeeding with challenges is at the forefront of all our business". Contact Aubrey on 021 595 608 or email: Aubrey@talkcargo.aero

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Oceania Aviation appointed as Bell CSF



There are 118 Bell helicopters on the NZ register. Pictured is the latest Bell 505 Jet Ranger X.

On Friday 23rd November, Oceania Aviation hosted a launch party at their Ardmore base to celebrate their newly appointed status as a new (and the only) Bell Customer Service Facility in New Zealand. Bell owners, operators and other guests from throughout the country were greeted with a visual feast on the helipads in front of the Oceania hangar. On show were two Bell 429s, a Bell 427, Bell 505 Jet Ranger X, and a Bell 206L Long Ranger. Inside the hangar were caterers and tables full of gourmet nibbles.

Oceania Aviation's Commercial Manager MRO, Peter Hatley welcomed attendees with appreciation and enthusiasm. Peter spoke of Oceania's desire to provide exceptional service with the new Bell partnership now providing a platform to take their Bell customer support to the next level. In asking and answering the question of motivation Peter talked about a desire to provide 'safe



L-R: Peter Empson, Chris Schaefer, Damien Dew, Peter Hatley, Michelle Bush, Dan McQuestin, Alex Spence.

and simple flight', safety being a given and simplicity coming from the Service Centre being a one stop shop with local resources and stock supported directly by the wider Bell network.

Bell Executives at the event included Sydney based Business Development Manager Dan McQuestin and Singapore based Asia Pacific General Manager Chris Schaefer who spoke in support of the New Zealand market and Oceania Aviation partnership. Familiar to locals but also Sydney based, Bell Customer Service Engineer Peter Empson also attended the event on behalf of Bell.

Additionally showing support were Damien Dew from Heliwest Group (one of five Bell Customer Service Facilities in Australia), as well as Alex Spence from

Sikorsky Helitech.

Oceania's new Bell CSF can only benefit the growing number of Bell helicopter owners and operators in this country. As Peter Hatley concluded in his presentation, "this will not only be a great partnership with Bell but will be great for helicopter aviation in New Zealand."

The new Bell partnership now complements Oceania Aviation's other Service Centre partnerships with world leading manufacturers including MD Helicopters, Schweizer RSG, and Cessna.

For more information

Contact Oceania Aviation's Commercial Manager MRO, Peter Hatley on 027 673 0590 or peter.hatley@oal.nz www.oceania-aviation.com

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Central Aero Engineering moves to larger premises at Hamilton

When your mantra is 'Here to help', you're near certain to enjoy a lot of variety in the work that comes through the door. Central Aero Engineering's hangar at Hamilton Airport is often packed full of interesting projects alongside the usual scheduled maintenance requirements of many aircraft in the company's care.

Paul Waterhouse and his team at Central Aero are pleased to announce that their current space restrictions are soon to be alleviated. They and neighbours Central Aero Electrical have just moved down the road to the Super Air site, whose vacant hangar they are now leasing a substantial part of. This will provide Central Aero with around 50% more space than currently.

As well as expanding their hangarage, a new team member, Craig Thomas, is about to join the company. Craig's skill set includes fitting and tool making - very useful for fabrication work.

The other mantra at Central Aero is 'Delivering fair value'. It's an approach that draws commercial and private operators, and a regular stream of home builders and microlight aircraft owners needing guidance from time to time on projects or their own routine

maintenance. "We'll always try to help," says Paul. "If you own it, or fly it, no matter what it is, from hot air balloons, to twins and helicopters, piston engines and turbines, give us a call for any advice or support you need."

Services and Capabilities

Central Aero services cover everything from pre-purchase inspections worldwide, shipping handling, CoA preparation and issue, airworthiness reviews, maintenance, repair and restoration of all flying machines, 24 month avionics checks, dynamic prop balancing, weight and balance services, maintenance control for private and air transport operators, accident and incident investigation, parts and materials supply, and builder support.

Paul is also willing to provide support to trainee engineers sitting their exams, particularly from the point of view of covering legislation and how 'proper' logbook entries should be made. "We've helped several candidates now from a practical viewpoint to explain more about what is being achieved with correct logbook completion and what they should be looking for," says Paul.

Recently in the hangar

Aside from a variety of routine maintenance and Certificate of Airworthiness tasks, a recent hangar departure has been a long term BO105 project. This helicopter arrived ex the U.K. with an expectation of being assembled and flown. Numerous issues were identified however, ultimately resulting in main rotor transmission and engine removals and associated maintenance.

Paul says a lot of work has been done this year on ag. aircraft for Super Air after they closed most of their own engineering shop operations a year ago.

A regular stream of Rotax jobs have come through the hangar, recently including a turbo replacement on a 914 and cylinder head replacement plus gearbox work on a 912.

Unpowered aircraft also feature, with regular checks and maintenance tasks being carried out on several gliders and balloons on the company's books.

For more information

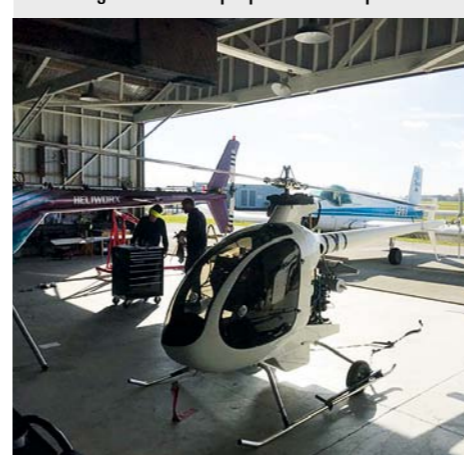
Contact Paul on: 07 843 1200, 021 743 033, email: paul@centralaero.nz or visit www.centralaero.nz



Ag plane, helicopter and LSA make for a typical day.



Long term BO105 project near completion.



Room for the little ones too: A Mosquito helicopter.



Paul Waterhouse checking a recently maintained PT6.

Everything Electrical at Central Aero

Alongside, but independent of Central Aero Engineering, is Central Aero Electrical Limited. Along with Central Aero Engineering, Central Aero Electrical has also moved down the road to a much larger workshop in the Super Air hangar.

Martin Ross who founded the company in 2008 says that many changes have occurred in the last year. Firstly is a new CEO, Hamish Ross. Hamish is a LAME who has several years of aircraft servicing experience and 'learning the ropes' of repair and overhaul of electrical components, including mechanical actuators and 'running a company with emphasis on service'.

Hamish has led Central Aero Electrical through SMS certification and expanded their capabilities especially on starter generator overhauls from 150 to 400 amp models of three main manufacturers, by utilising his overseas experience to develop business relationships with many overseas companies. Martin says that "a lot has been achieved through these relationships regarding improving workshop practices and quality systems. Our Safety Officer, Zoran Djordjic has also contributed much to our SMS programme and ensuring best practices, not only on paper but also in practice."

Talking about the variety of work evident on workbenches, Martin adds, "we're handy people - we're good at twisting our minds around unusual problems and designs". There are many occasions on the books where components that might normally have been replaced, have instead been repaired (at considerable cost saving), delivering satisfaction to the Central Aero team and also the customer. And when they don't already have an answer, the team's connections can usually help. Friends in the right places were recently engaged to visit a Romanian factory to acquire specialist information on a Russian radial magneto.

Central Aero Electrical has a comprehensive range of diagnostic equipment and a large test bench that will handle up to 12 cylinder magnetos. Capabilities cover a good range of starter/

generator, control unit rectification and overhaul work, along with 500 hour magneto inspections (usually completed with a one to two day turnaround). Mechanical actuator overhauls for various rotary and fixed wing types are also a regular job. Lately a lot of starter/generator work has passed through the business, from helicopters through to Saab 340s. Dimmer control and EPO box (engine power out) test equipment is also to hand.

Numerous exchange items are available, and Central Aero Electrical also stock a variety of parts for re-sale including starters, batteries, alternators, strobe units, starter/generators, GCUs, voltage regulators, ignition switches, and HT ignition harnesses. In many cases the company is able to deal directly with a component supplier, thus bypassing the aircraft manufacturer's mark-up which they are happy to pass on as a saving to the customer.

Contact Central Aero Electrical on 07 843 2937, Hamish on 027 493 9975, Martin on 027 733 0208, or email: centralaeroelectrical@gmail.com Their new courier address is Central Aero Electrical Limited, Ingram Road, Hamilton Airport.

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

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

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

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

Southair Services and Capabilities

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

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

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

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

For more information

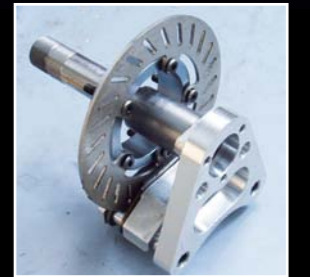
General Manager Graeme Daniell says that whatever work you need done, Southair can do it and to the highest of standards. Whether you fly a Tiger or a Turbine, Southair would welcome the privilege of looking after your aircraft and undertake to treat it as if it were their own.

Contact Graeme on 027 307 5850, email: graeme@southair.co.nz or visit www.southair.co.nz



A pair of Piper Navajo Chieftains on the apron at Southair.

Autoflight



Bespoke Components



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027 824 1978
autoflightneil@gmail.com

‘Everything starts from the battery’

Aviation Ni-Cad Services reaches 35 years in business

Founded by Clive Dixon in 1983, Aviation Ni-Cad Services Ltd. provides “top-of-the-line” Ni-Cad battery servicing from their Ardmore premises. That equates to 35 years in business, although Clive has in fact worked on the airfield continuously now for 40 years, originally as an employee of Motor Holdings and then Marine Helicopters.

Aviation Ni-Cad Services was an early adopter of SMS and in 2017 was certificated under the SMS regulations which says Clive, “a challenging and successful process helped by an experienced and competent local consultant, and an accommodating CAA team.”

Battery/Aircraft Safety

With any aircraft, be it rotary or fixed-wing, *‘everything starts from the battery’*.

Battery safety management is important for “all types of batteries”. Clive says, “Unless you are on a beach with the tide coming in or in an Extreme Emergency situation, ‘never start an aircraft with a flat battery using a GPU then fly unless it is absolutely necessary. You must then get the battery to a battery shop to be serviced.’”

Clive says that if during or after pre-flight you find the ‘battery is dead’, don’t start the aircraft with a GPU and fly away thinking that the generator/alternator will charge it during the flight because:

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



Clive Dixon in his workshop at Ardmore

Care and Experience

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

“There are significant operational and financial benefits in specialising and doing the best job first time,” says Clive, “and we’re happy to provide the advice and services to ensure that operators achieve them.”

Aviation Ni-Cad Services hold a number of loan units of the most commonly used Ni-Cad batteries operating in New Zealand, for customer use when their batteries are being serviced.

For more information

Aviation Ni-Cad Services offer years of experience, knowledge and hold a large range of new cells, plus hardware temperature sensors, etc. are also available. If you want to upgrade or keep your battery in the best condition possible, then take or send it to Aviation Ni-Cad Services at 125 Harvard Lane, Ardmore Airfield, Papakura 2582. Contact Clive Dixon on 09 299 7133, fax 09 299 7743, or by email to: aviation.nicadnz@gmail.com



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Thriving on Projects and more

Jay McIntyre writes of another busy year for JEM Aviation at Omaka

2018 has been another busy year for JEM Aviation but the speed at which it has gone by has left little time for reflection and down time.

The GA side of the business is thriving with a never-ending procession of aircraft through the doors for annuals and repairs as needed. Late in 2017, Kyle Sinclair joined the team and took on the task of looking after the annuals on a day to day basis. He proved to be a great asset and was able to share some different perspectives on maintenance from his GA maintenance background in England.

Similarly, we were able to show him a thing or two! He was quite blown away by the sheer number of types, the pace of work and the diversity of work undertaken so it was with much reluctance that he advised he was returning to the 'Old Country' to take over the maintenance business he had worked at prior to coming to New Zealand. A shame, as he was a real asset!

Through an arrangement with the now 'retired' Lester Hope, JEM Aviation has been in the process of training up to carry out 24-month avionic tests in-house. Scott Tudor who has a bit of a natural electronics bent has been working alongside Lester for the past six months learning the many tricks that Lester has gained after many decades in the industry – thankfully he hasn't quite retired, as our plans to take over have not matured as quickly as we might have thought.

On the avionics front we are starting to see more and more interest in the digital side of things with customers choosing to eliminate traditional vacuum operated instruments when they need repair, as they see value in fitting units such as the Garmin G5 instead of spending big dollars to repair the old gear. It is very interesting fitting all this new equipment as there are so many options (and ultimately fish hooks) that it is near impossible to know it all. We suggest to our customers that they conduct as much as they can of the pre-purchase investigation into what they want so they can better understand the limitations/issues. Along the way we integrate their desires into the aircraft's specifications and alert them to any issues, often as simple



Stearman STM refurbishment.



FW 190 repairs underway.



Piper Tomahawk FML in the spray booth ready for accents.



Harvard XSA in for an engine change.

as there being no STC available for their aircraft model.

Of course, with ADSB looming, we are getting more and more requests for information on installation but to date no one has been keen to take the plunge. Along with others in the industry we have been advocating for a change to AC43-14 to allow easy installation of these units and we might finally have this across the line with a Garmin unit currently being installed in a Stearman under a trial situation.

Many Projects

On the projects front, things have been busy as usual, and the sheer size of these jobs generally has one man tied up full time to keep these progressing. This year saw the completion of the Comper Swift test flying and sadly its return to Australia. Mid-year finally saw the completion of repairs to Geoff Van Asch's Murphy Rebel. After a long wait, the overhauled engine for Harvard ZK-XSA was also received and installed just prior to departure for Reno – a lot of titivation of the airframe was carried out by the owners during the wait so she is looking very nice!

Out of the blue, we received authorisation to get the FW 190 repaired and flying in time for Classic Fighters 2019. We had been just about to pick up where we had left off with the Yak-9V project but had to divert Dick Veale onto the 190, something which he has been fastidiously working away at since May. She is coming together, but the replacement of undercarriage components has been somewhat challenging.

Speaking of the Yak-9V, we are just in the process of having design work completed by Graham Murphy on our fuselage and engine mount modifications with a view to having the engine mount fabricated and installed complete with engine and prop for Classic Fighters 2019. Other projects progressing along in the background include the WACO UOC (with RV builder of note Rex Newman at the helm), Fairchild F45 and Bucker Jungmann, all vying for attention at any one time.

At the forefront currently is a complete repaint and refurb of well-known PA-38

ZK-FML. JEM Aviation are pleased to be assisting the Walsh Aviation Support Society Inc. in this endeavour and the intention is to have the revitalised machine ready before Christmas so she can make her grand entrance at the Walsh Memorial in mid-January. Receiving much attention alongside FML is well-known Stearman ZK-STM. For some time, current owner Bruce Govenlock had been trying to get the fuselage re-bagged and out of the blue the stars aligned, and she was delivered in July. As usual, the job got a bit bigger than originally intended, but she is progressing along nicely. Lastly, but certainly not least, a Bristol Fighter replica to be based at Ardmore is progressing slowly, when recently flown DC-3 ZK-JGB is not receiving attention.

Maintenance Shop of the Year

To cap it all off, JEM Aviation was thrilled to receive the 2018 AOPA 'Maintenance Shop of the Year award'. This was very much appreciated and vindicated the team's approach to customer service and precision repair and maintenance, although funnily enough we did not get our hands on the trophy until a certain local AOPA Committee member had his freshly rebuilt aeroplane back in his hangar!

Onwards and upwards for 2019!

Jay McIntyre

For more information

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



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Wide Ranging Maintenance at Tauranga



Mostly containing light sport aircraft and autogyros for this photo, Solo Wings hangar also sees everything from vintage aircraft through to jets such as the local L-39.

Solo Wings was founded as a small business 19 years ago at Tauranga Airport by Colin Alexander. Colin's goal was to offer a professional maintenance service to owners of microlight aircraft at a time when the technology and complexity (and popularity) of this category was just beginning to develop. Since then, the microlight and recreational flying scene has grown significantly, as has Solo Wings who now provide all manner of services to microlight, experimental, amateur-built, and GA aircraft owners. The Solo Wings team rightly attribute at least some of their company's success to a willingness to take on the jobs that others are shy of, and indeed take pride in "going the extra mile on anything more difficult or obscure".

Aircraft under the Solo Wings umbrella of care include everything from early rag and tube microlights, vintage wood and fabric aircraft, through to carbon-fibre sport planes with glass cockpits, autogyros, and experimental category aircraft such as an

Albatros L-39 jet. The company also looks after numerous amateur-built and GA aircraft.

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

Colin is quick to emphasise that the company wouldn't be where it is without a great team, who enjoy strong support from Colin in regards to ongoing training and skills development.

General Maintenance and SAMMS

Solo Wings have all the bases covered for professional light

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

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

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

Plenty of variety in this hangar

There's no shortage of variety in the work passing through Solo Wings' hangar doors. Work in progress at the moment includes a C206 getting a birthday and new engine, maintenance on a Socata Tampico, the local Gliding Club Cub, three Tecnams including

a P2008, five autogyros of various types including one for rebuild, and more. A new first of type Pipistrel has just arrived for certification, as has a Socata Trinidad from Australia. Solo Wings have also been caring for the newest sport helicopter to arrive in New Zealand, the Ardmore based Dynali H3.

Recovery and Rebuilds

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

Import and Certification Processing

With the Port of Tauranga just down the road, Solo Wings are ideally placed to provide import and export services, and handle dozens of such projects every year. The company is fully MPI approved for containerisation work and can easily attend to all incoming certification and paperwork requirements. As well as the certifications currently underway, an RV7 and Highlander have both been processed in the last two months.

For more information

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

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Increase Pride and Reduce Maintenance

Streamline Protection's aircraft detailing pays its way

In New Zealand's harsh sun and salt climate, nearly every engineer or aircraft owner will have some kind of story to tell about corrosion. The story will usually be focused on the less than pleasant surprise not only of discovering it, but more so discovering what it would cost to fix. It begs the question of how then to avoid or at least mitigate such corrosion happening in the first place. Johan and Jaco Pienaar from Streamline Protection can help.

Streamline Protection are authorised (by distributor Corrosion Control NZ) applicators of CorrosionX and SealX products for the aviation industry. Based in Te Rapa near Hamilton Airport, they are of course very active at Hamilton Airport, plus Ardmore, Auckland and Tauranga, and are quite willing to travel for work, also making regular trips also to Napier and Nelson.

The Benefits of Protection

Aside from personal satisfaction, the obvious benefit of caring appropriately for an investment as significant as an aircraft, is the reward received at maintenance or resale time. Jaco sums the matter up with two words, pride and value.

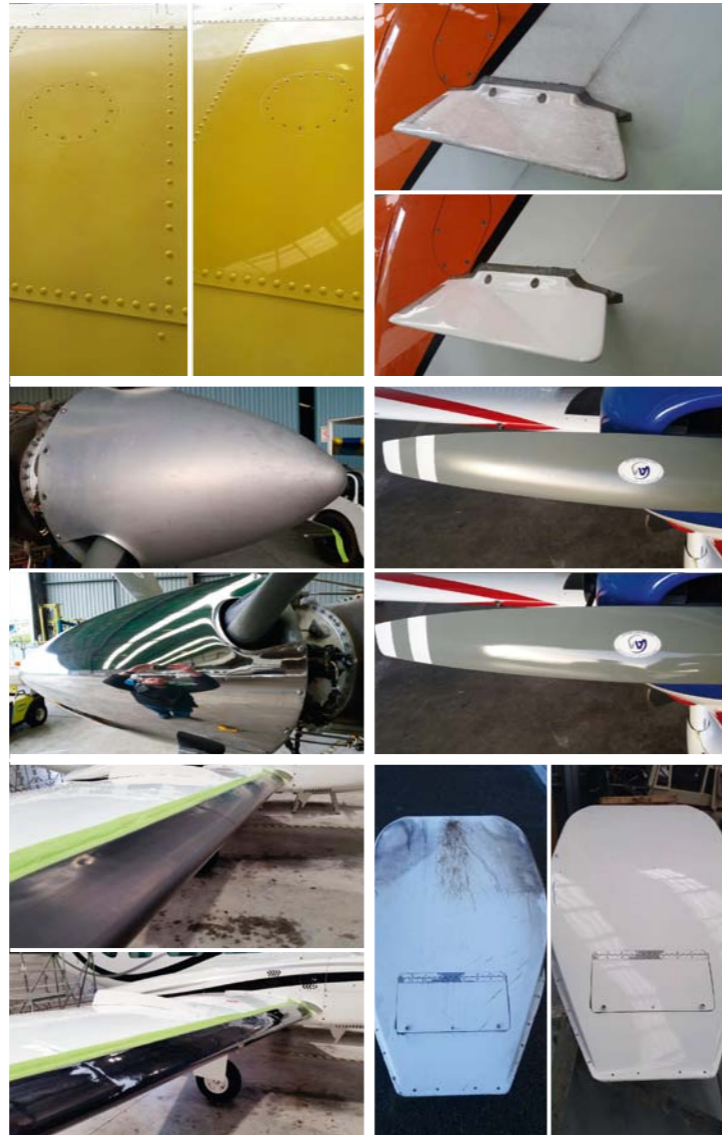
Corrosion is slow, invasive, and often hidden from normal view. Unbeknown to many owners, it is also encouraged by typical washing techniques due to soaps that are much too harsh for the application and water that is at unfavourable pH levels. Washing an aircraft requires a very different approach to washing a car or truck, as unsuitable water and soap quickly finds its way into corners and sits between skin laps – and corrodes.

Jaco says the best solution is to use a dry wash product such as Aero-Glide for all normal aircraft cleaning in between annual treatments with products such as CorrosionX and SealX. There is consistent evidence that anyone switching to such a regime will find benefits soon becoming apparent.

One such example comes from Avia Air who operate a twin-engined Piper Navajo on charter services out of Hamilton Airport. Owner Stephanie Coffey says that prior to engaging Streamline Protection to undertake annual cleaning and protective work on the aircraft (four years ago now), she and maintenance providers Hamilton Aero had been battling corrosion issues every year. The only thing she now does to the aircraft between Jaco's visits is to clean with Aero-Glide and a soft cloth. The aircraft never sees a hose or bucket of water. "The coatings Jaco applies are the bees' knees," says Stephanie. "The treatments work and save me time and maintenance dollars. I was spending thousands on corrosion management and it's much smarter to avoid it in the first place. Exhaust stains just wipe off and so do the black fretting marks around linkages. People at airports have asked me what I use to clean it with. The engineers are happy that no-one is hosing around the oleos and seals too."

Jaco and Johan have many other charter clients and also provide an annual care programme for some of Garden City Aviation's fleet when they are located in Hamilton for maintenance checks.

It's not only paint that gets refurbished and protected. Jaco also maintains Perspex windows and screens (particularly on helicopters) with aviation grade products and care, often performing small miracles of scratch removal and clarity enhancement.



Plenty of pride evident here in recent work undertaken by Streamline Protection.

Professional Application

Most of the products used by Streamline Protection can be purchased directly from them, Aero-Glide dry wash being particularly suitable for regular use by those caring for their own aircraft.

Johan says that depending on the starting condition, a full annual interior and exterior clean, cut, polish, and sealer application can take a couple of 'man' days on an aircraft such as an R44, or perhaps up to six on something like a King Air. Such work can often be scheduled to coincide with maintenance requirements, particularly as some coatings do take time to cure.

When Streamline do the work, additional benefits arise in the form of their extensive experience with preparation, scratch and oxidation removal, plus boot refinishing, leather cleaning and treatment, and metal polishing. Bring your own sunglasses for when the job is finished.

Products

Streamline Protection have a variety of aviation-approved washes and coatings available in their armoury. In common use are:

Aero-Glide: Aero-Glide is a one-step dry wash, polish, and friction reducer. The term dry wash refers to the product being sprayed or wiped on, then wiped off. No water is necessary, although if there are abrasive compounds present then these should first be washed away. Aero-Glide removes light oxidation on most finishes, leaving a bright and lustrous shine, and providing three to four months protection against UV, exhaust soot and other grime. Aero-Glide meets numerous ASTM and Boeing airline certifications.

CorrosionX Aviation: Corrosion X takes corrosion control to a whole new level. Endorsed by Boeing and Airbus and in use by the RAAF and NZDF, CorrosionX Aviation is specially formulated to displace moisture, stop corrosion instantly and provide long-lasting protection. Safe for use around avionics and on all manner of surfaces, Corrosion X can be safely applied anywhere corrosion is or might appear.

SealX Sealant: 'So much more than shiny', SealX is a water-based polymer coating which offers long term protection against UV, grime, soot, salt, water stains, dust and pollution. The product works on all painted surfaces plus glass, plastics, leather and fabric. SealX has been laboratory tested in New Zealand and proven superior to competing products. The product can be wiped or sprayed on to pre-prepared surfaces following application instructions.

RejeX: RejeX is a polymer protective coating designed to seal surfaces against bug splats, exhaust stains (including turbine residue), bird droppings, oil, grease, and belly grime. RejeX will also make 'miliness' and light scratching on Plexiglass/Perspex/plastic windows almost invisible. RejeX is wiped on and allowed to dry to a haze for approximately 20 minutes. It is then wiped off and allowed to cure for 8-12 hours depending on humidity.

Xhaust and Soot Remover: Xhaust and Soot Remover is a concentrated cleaner/degreaser suitable for aircraft surfaces. The product 'cleans the toughest exhaust soot, belly grime and bug splats'. For use on metal, plastic and rubber, the biodegradable product is left wet on the surface for up to 30 minutes, then agitated if necessary and rinsed off with water.

About Streamline Protection

Streamline Protection is a family owned and operated company. Johan and Jaco Pienaar specialise in the protection and preservation of assets, Jaco focusing on aircraft and specialist vehicles, and Johan on property. Jaco has had a passion for aircraft since childhood and takes much satisfaction from his work. "The best part of the job is when a pilot or owner sees their freshly detailed aircraft and is delighted. It always happens!," says Jaco, adding that "pride and passion are guaranteed".

For more information

To find out about options for protecting your aircraft, contact Johan on 021 081 20614, email: info@streamlineprotection.co.nz or visit www.streamlineprotection.co.nz



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SAB Avionics at Wanaka

Seeking a new life in a new country, Steve Bunting moved from the UK to Wanaka at the end of 2005 and after converting his licences from UK to NZ he founded SAB Avionics Limited just in time for the 2006 Warbirds Over Wanaka Airshow. Job numbers one and two were biennial avionics inspections on a Hurricane and Spitfire - not a bad way to start out!

Steve trained in the Royal Air Force working on F4 Phantoms, Avro Vulcans and Tornado GR1s. After 13 years in the RAF, he then worked for British Aerospace in Saudi Arabia maintaining a Tornado training system fitted into two Jetstream 32s. On his return home he moved into the UK regional airline system, working at London City, Bristol and Birmingham Airports on a variety of aircraft including the Dash 7 and Dash 8, Embraer ERJ145 and the Avro RJ100.

SAB Avionics has grown steadily, increasing its customer base and capabilities, and today serves a large part of the lower South Island carrying out

avionic installations, upgrades, biennial inspections and defect rectification on everything from homebuilt aircraft through certified GA aircraft to piston and turbine helicopters. Based in their hangar and working closely with Helisupport New Zealand (as their avionics support) they have developed a sound knowledge of Airbus helicopter products.

Steve says that Ross Hayman (who is a fully licenced and type-rated helicopter mechanical engineer) has recently started training to come over to the 'dark side' and become an avionics engineer - offering a sound mechanical background and with a great future in the avionics world.

Recent projects have included returning the local P-51D Mustang 'Dove of Peace' to a more original configuration, removing the onboard IFR systems, reverse engineering the electrical systems and installing an original instrument panel. Also just completed was preparation of two AS350B2s for operations in Antarctica with upgraded

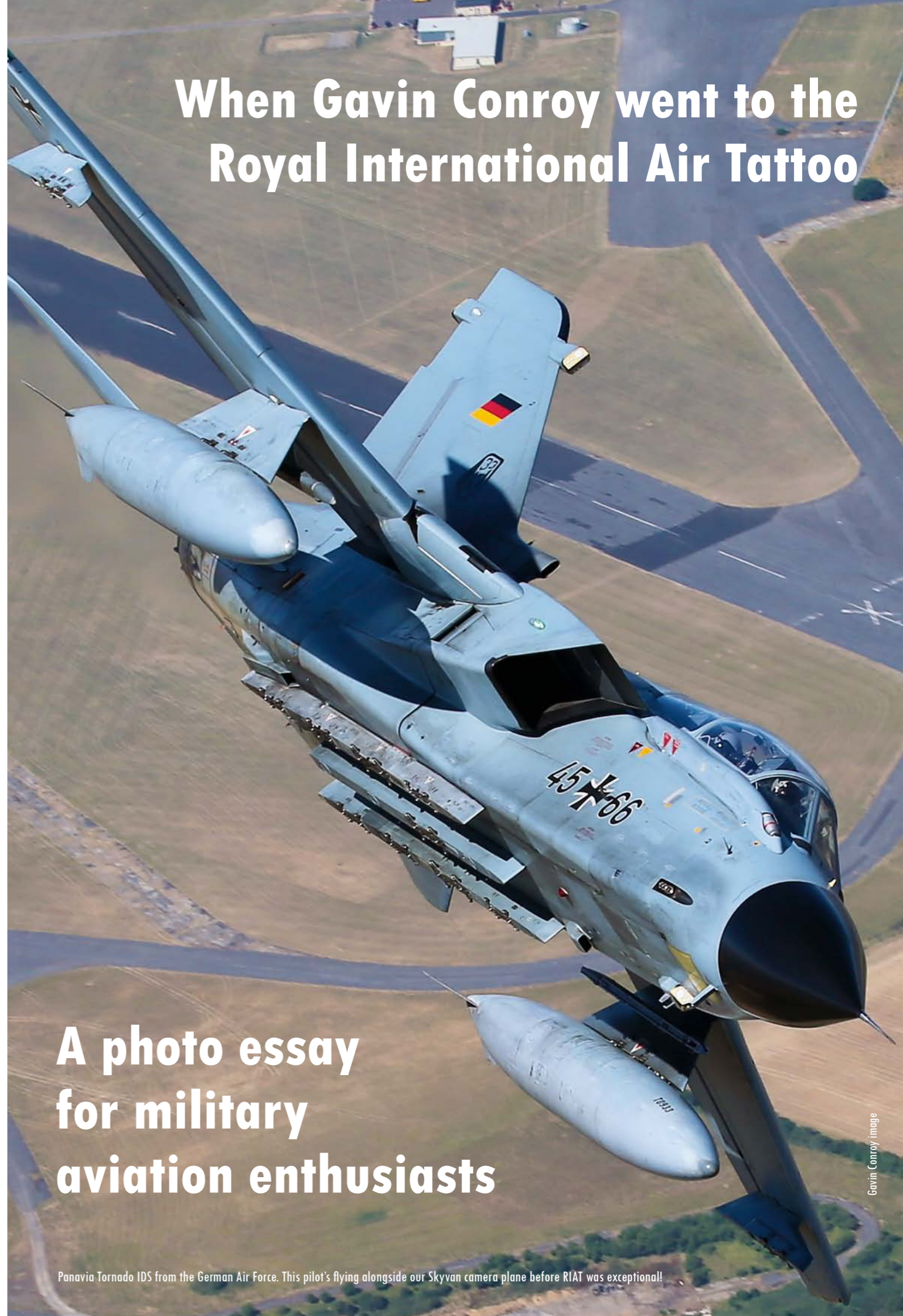
comm's, HF installation and much more. Ross is accompanying them to 'The Ice'.

Steve says that looking to the future SAB Avionics is fully geared up for the coming ADS-B requirements and with only three years to the mandate he sees busy times ahead. They have dealerships for Appareo and Trig who are both leading manufacturers of ADS-B transponders.

They also have dealerships with many other leading avionics manufacturers including Avidyne, Aspen Avionics, FreeFlight Systems, Icom, PS Engineering and Spidertracks. Recently added to the list is Talos Avionics with their innovative EFIS display system for mobile devices.



For any enquiries contact Steve on 021 189 2438. info@avionicsnz.co.nz or visit www.avionicsnz.co.nz



When Gavin Conroy went to the Royal International Air Tattoo

A photo essay for military aviation enthusiasts

Gavin Conroy image

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