



# Boutique Aircraft Restoration

WITH a growing reputation for outstanding attention to detail and quality of workmanship, Pacific Aero Coatings' business at Tauranga has increasingly moved beyond the supply of paint, fabric and refinishing advice services, and into full aircraft restoration projects.

Whilst they continue to undertake typical repairs and maintenance work to damaged aircraft paintwork or fabric, a boutique service has been created by company owner Kim Thompson to work for owners who love their older aircraft which they want to see restored to a 'factory new' standard. Such owners often want to be directly involved in the process themselves, something that is easily facilitated by the nature of the business Kim has created. Kim is passionate about aviation and says he derives a great deal of satisfaction from seeing an old aircraft leave their hangar in new condition again and with another lifetime of use ahead of it.

Kim and Pacific Aero Coatings are able to offer a complete restoration

service at a personal level where owners are welcomed to be directly involved to whatever degree their interest and available time permits. They have skills extending through all facets of aircraft refinishing including the complete spectrum of fabric work, and a wide network of aircraft engineering and fabrication support services on hand as required.

A warning to anyone wanting a 'just patch it up I want to sell it' job though: Kim approaches his work in a manner befitting certified aircraft engineering and won't cut corners. Only non-aggressive paint stripping methods are used, all corrosion will be correctly attended to, and only certified aircraft paint refinishing systems (Superflite or Du Pont) will be used to complete the job.

Kim says he despairs at how often he sees aircraft where automotive repair and refinishing techniques have been applied to do a quick job that hasn't lasted, particularly in the case of

refinishing on fabric aircraft where the finish applied looked great when new, but failed part way through its expected life, requiring unnecessary and expensive repairs.

Two interesting examples of work that has recently left the Pacific Aero Coatings hangar, representing both metal and fabric types, are a 1958 Cessna 172 B and a 1940 de Havilland Tiger Moth.



Top: ZK-BAL making its first post-restoration appearance outside the hangar at Pacific Aero Coatings prior to engine tests. Left: Flying at Gisborne. Right: Refurbished instrument panel.

Both aircraft arrived in a fairly 'sorry' state of repair, and both left looking as though they had just left the factory again, all those decades ago.

## 1940 Tiger Moth Project

ZK-BAL is a 1940 Tiger Moth domiciled at the Gisborne Aviation Museum and owned by the Darton Flying Syndicate. Manufactured in Hatfield for the RAF in 1940, it was later purchased (once released by the RAF) by East Coast Air Services for top dressing duties. Later still, Fieldair acquired East Coast Air Services and the Tiger which at the time was un-serviceable. A syndicate was formed by Peter Nicholls amongst Fieldair staff to get it flying and thereafter Peter completed a

never-before-attempted flight around the New Zealand coastline by Tiger Moth.

In 2012, BAL was brought to the Pacific Aero Coatings hangar at Tauranga to have 'crazy cracks' repaired in her fabric in order to then be inspected for a CoA. The reality was that all of the fuselage fabric was on its 'last legs' – Kim in fact put his hand right through some of it during inspection tests. The intention then became that the fuselage be re-bagged so that a CoA could be obtained.

However, on removing the fabric, they typically discovered a host of other issues including corrosion that may well have been creeping away since top dressing days. This all needed to be addressed and after consultation with the syndicate members, the project turned into a restoration. Thus the aircraft remained in Pacific Aero Coatings' hangar whilst the restoration was completed over a 12 month period as syndicate funds permitted.



1&2: Pre restoration. 'Crazy cracks' were present in the paint everywhere. 3: Wings masked for the black stripes. 4: Nearing completion during re-assembly.

This is a good example of Kim's 'boutique' approach to restoration projects where owners are invited to become as involved as they wish to. BAL's restoration actually included a number of syndicate member 'sleep-overs' in the hangar, whereby keen owners provided supervised help towards the project. Overseeing engineer was John Pheasant, well known on the NZ classic aircraft scene as a skilled engineer and Tiger Moth owner/pilot.

BAL's wings had already been re-fabricated as part of earlier repairs and this work stood up to testing processes, so Pacific Aero Coatings' involvement was initially to strip and replace all of the fuselage fabric. All of the airframe was then corrosion treated and painted, and the tail feathers were also replaced. Various wood components were either restored or replaced and all flying wires were tested, treated and painted. Corrosion in the mainstays was also fixed. The instrument panels were refurbished and cracks were repaired in the engine cowls, the only item not attended to during Kim's work being the engine which was still performing well.

The whole aircraft was then repainted to its original colour scheme. Kim says that this was in fact quite a process, involving yellow, black, green, white and silver. Aviation certified Superflite paint systems were used, being Superflite dope on fabric and Superflite System 6 urethane on all of the metal componentry.

ZK-BAL left Pacific Aero Coatings and returned to Gisborne in July of 2012 and has been in regular use and much enjoyed by her syndicate owners since then.

## 1958 Cessna 172 B Project

ZK-EHA is a 1958 Cessna 172 brought into New Zealand late in 2006 by Paul Andrews who had found it languishing in a shed in Australia. Paul says he loved the idea of owning a 'retro' aeroplane and has in fact since put his 172N up for sale, due to his restored classic model being so much more enjoyable to fly. Paul flew EHA around New Zealand before syndicating the aircraft and in 2012 deciding, along with

the other syndicate members, to restore it to original condition.

It took time to find someone to undertake the project as Paul and the other owners didn't want a typical strip-and-paint approach to be taken. For one, they knew there would be a lot of corrosion to deal with, Cessna SIDs (Special Inspection Documents) needed to be complied with and, in addition, the aircraft had suffered hail damage in Australia which was going to require special attention during the refinishing process. Essentially, the owners wanted a genuine restoration done with love, where the aircraft would be returned to service in original condition and with another 50 years of life ahead of it.

Kim's reputation eventually led them to Pacific Aero Coatings, where they spent time getting to know Kim and then committed to the project.

Historic photos were obtained with the intention that the aircraft be returned to its original paint scheme and except for exchanging polished aluminium for metallic silver paint, this approach has been faithful all the way down to red dots on the wheel centres. As nice as it would be to have retained the polished aluminium finish of the original aircraft, this was deemed impractical in the coastal NZ environment.

When EHA arrived at Pacific Aero Coatings, the interior had already been attended to, so in this case Kim's work was limited to all of the aircraft's surfaces and external presentation. Kim kindly describes the appearance and condition on arrival as "well used".

The place that any project like this starts with is paint removal. Kim prefers to do this task himself so that he knows how it was done, choosing to use only aviation certified water-soluble paint strippers and non-aggressive removal methods, with no metal or abrasive tools used against metal surfaces. Kim says that he wants to personally be sure there is no risk of caustic chemicals remaining in lap joints and that there is no risk of panel damage or distortion from the processes used.

Fully stripped of paint, Kim says that



Ready for another 50 years. EHA in the sun at Tauranga.

**Captions**  
1&2: Fully restored inside and out.  
3&4: On arrival at Pacific Aero Coatings, in "well-used" condition.  
5: Only aviation certified water-soluble paint strippers are used, with non-aggressive removal methods to ensure panels are not damaged or distorted.  
6: Hail damage is clearly evident on the upper wing surfaces.  
7: Wing sections inside the spray booth for painting.



all of the gremlins hiding under the existing finish were exposed – noting that what can be seen on top of the paint is often nothing compared to what is hiding beneath it. As expected, EHA did indeed have major corrosion issues to the extent that some panels were completely replaced with the assistance of FlightCare at Tauranga. Along with complying with all Cessna SIDs during the process, they discovered the undercarriage was holding on by a “mere fraction” of the original fittings and structure.

Another example of hidden troubles was found when the fuel tank was removed, exposing corrosion that would soon have become an issue and whose discovery wasn't in fact a SIDs requirement.

The (original Continental O-300) engine was removed and the mounts sent for testing and then repainted.

After paint was stripped, bare surfaces were bead blasted to remove all traces of corrosion.

Kim's approach is always to remove all fittings from the aircraft such that there is no masking off required which is typical of the automotive approach to refinishing. Aside from avoiding the risk of overspray detracting from the finished job, this also ensures that all areas are able to be inspected and treated for corrosion which inevitably hides under such fittings.

All reassembled surfaces were specially treated with corrosion proofing aviation systems. Kim also takes extra care to ensure that all rivets are seated both into and through coated surfaces such that laps and the surface underneath the rivet heads have all been treated with product. In addition, all internal surfaces were treated with Corrosion-X in compliance with the Cessna SIDs requirements.

This aircraft was to be painted using the Du Pont Aviation System, in part because the dominant colour in the scheme would

be metallic silver, requiring a clear coat such that future cutting and polishing would not alter the paint's appearance. Another reason for the Du Pont product selection in this case was the requirement to use paint to fill the bulk of the hail damage present on many of the upper skins of the aircraft. Du Pont offer an Epoxy Surfacer component to their system that was ideal for the task. This surfacing product was able to be sanded back to smooth within safe limitations for the product and without adding appreciable weight to the aircraft. The 4 stage process involved application of:

- Du Pont Corlar Corrosion Resistant Epoxy Primer
- Du Pont Epoxy Surfacer
- Du Pont Polyurethane (aviation) Basecoat
- Du Pont Polyurethane (aviation) Clearcoat

The paint scheme for EHA which is a reproduction of the original, is of a metallic silver base with cream and red stripes laid on and with lettering on the doors that is matched to and painted on as per Cessna's factory new aircraft at the time.

Finished before Christmas 2012, EHA now lives at Hamilton and has enjoyed many flying hours since her immaculate restoration was completed.

**For more information**

If you have a restoration project you would like to discuss with Pacific Aero Coatings, or would like Kim to source a project for you to become involved with, contact Kim on 07 574 2922, email: [info@PacificAeroCoatings.com](mailto:info@PacificAeroCoatings.com) or visit [www.pacificaero.coatings.com](http://www.pacificaero.coatings.com). As an aside, Kim painted your KiwiFlyer Editor's own aircraft a couple of years ago and as a particularly fussy customer myself, I couldn't attest to his approach or workmanship more highly. *Ed.*

# New Tallon Mounting Solutions and GPS Enhancement for tablet and iOS devices

TALLON SYSTEMS, who produce elegant mounting systems for just about everything from iPads to Cup holders, has recently released a new Mini Socket and USB Mount that opens up numerous new options for aviators and for mariners utilising iOS devices for navigation and communications support in the cockpit. The new Mini Socket is only 25 mm wide and utilises Tallon's patented flush cantilever technology for mounting accessories. Once attached, the Mini Socket is as strong as the coaming or dash it is fitted into. Tallon has also launched a 5.5v USB 2A socket – meaning everything from iPads and tablets to iPhones and navigation devices can be mounted securely and cleanly and charged at the same time.

Simultaneously, the company has teamed with award-winning US GPS manufacturer Bad Elf to offer Bad Elf's GPS Pro compact GPS receiver with a Tallon mounting solution for easy use with iOS devices in aircraft, boats, and vehicles. The GPS Pro is a water resistant, handheld Apple-approved accessory that uses Bluetooth to wirelessly connect up to five users of an iPod touch, iPhone or iPad to share real-time, direct satellite GPS data for display on digital charts and a wide range of compatible aviation, marine and vehicle apps via satellite – anywhere in the world.

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Wanaka based Tallon Systems first shot to prominence in 2007 after scooping a prestigious Innovation Award at the International Boat Builders Exhibition in Miami, Florida. In 2009 Tallon founder, Peter Marshall, won the Ernst and Young New Zealand Master Entrepreneur award.

Tallon gained further recognition in 2011, receiving a Design Award from General Motors Vegas for the Most Innovative Chevrolet Accessory at the SEMA Show.

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