

CLASSIC *WINGS*



Vol. 18 No. 2 2011 Issue 80



**CURTISS P-40
TOMAHAWK!**

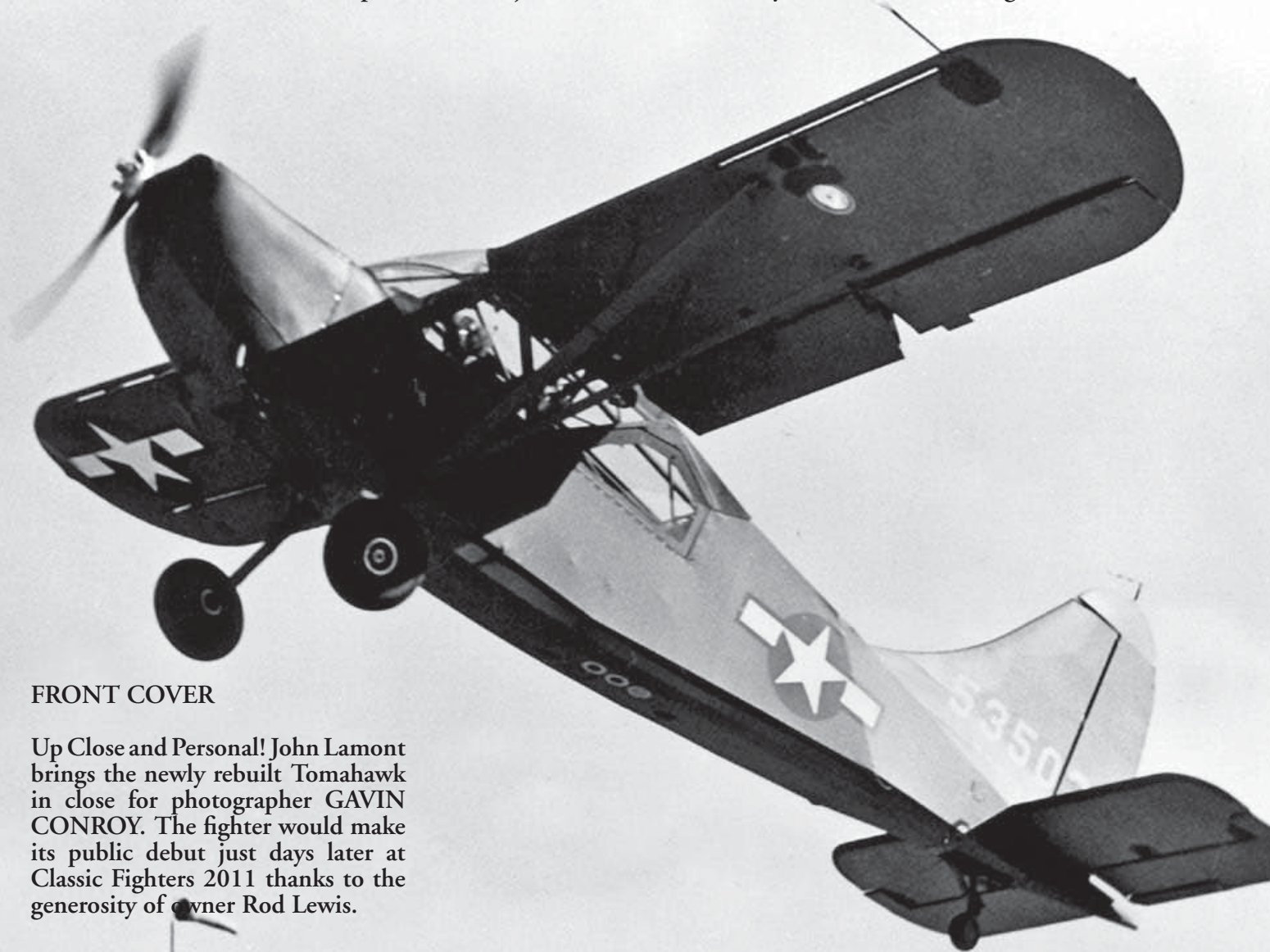
AUST \$9.95 (Incl GST)

N.Z \$10.50 (Incl GST)



9 771172 964001

FOCKE WULF FW190 * STINSON L-5
CLASSIC FIGHTERS AIRSHOW



FRONT COVER

Up Close and Personal! John Lamont brings the newly rebuilt Tomahawk in close for photographer GAVIN CONROY. The fighter would make its public debut just days later at Classic Fighters 2011 thanks to the generosity of owner Rod Lewis.

THIS PAGE

A Press publicity shot captures the L-5 in 'short take off' mode. The aircraft was touted enthusiastically upon entering USAAF service as being able to clear a 50 ft (15.2 m) obstacle after a 650 ft (198 m) take off run.

Photo: via SDASM



The Journal dedicated to
Vintage and Warbird Aircraft
Worldwide.

Editor: Graham Orphan

Deputy Editor: Dave McDonald

Contributing Photographers:

Gavin Conroy	Zig Pasznicki
Andreas Zeitler	Joe Rimensberger
Brian Marshall	Doug Fisher
Robert Greinert	Peter Hallen
Jerry Yagen	Matthias Dorst
Morgan Kaolian	James Orphan
Nigel Arnot	Michael Biddulph
Peter Handley	Chris Gee
Gavin Hadfield	Jerry Chisum
Mike Nixon	Mark Sheppard
Jim Larson	Connie Goss
Cory Graff	Motty Mottram
Brad Hurley	Warrick Johnston
Jon Davison	Lara Taberner
Damien Burke	Tony Clarke
William Hamilton	Martina Wellman
Klas Gjolmesli	Roberto Yáñez
Korey Wells	

PRE-PRESS/PRINTING

Blueprint Media Ltd.

EDITORIAL/SUBSCRIPTIONS

Classic Wings is produced 5 times per year

Web site: www.classicwings.com

Email: editor@cwd.co.nz or subs@cwd.co.nz

AUSTRALIA

5 Issues: AUD \$44.00 10 Issues: AUD \$84.00

PO Box 625, Mt Ommaany, Qld 4074

Fax/Ph 07 3278 9690

NEW ZEALAND

5 Issues: NZD \$44.00 10 Issues: NZD \$84.00

PO Box 534, Blenheim, N.Z.

Ph: (64) 3 578 9609 Fax: 03 577 6451

U.S.A. OFFICE

PO Box 1356, Moorpark, CA 93020-1356

USA freefax: 1 877 577 8560

NTH HEMISPHERE

5 Issues: USD \$39.00

10 Issues: USD \$72.00

ADVERTISING

PO Box 534, Blenheim, N.Z.

Ph. (64) 3- 578 9609

Fax. (64) 3-577 6451

Email: advertise@cwd.co.nz

Editor's letter

THE VALUE OF AIRSHOWS



Zig Pasznicki

It's a scary thing when you put your name in the 'Airshow Organiser' column on the documentation required by the country's administrators of civil aviation. The sense of 'The buck stops here' could never be greater!

I must apologise to all Classic Wings readers that your magazine has played second fiddle to this other role which consumed almost my every waking hour since mid 2010. This may have been a voluntary position for myself and the team of some two dozen people, but that did not diminish the sense of importance we all felt to 'get it right'. Such are the demands of running a major event, but I figure readers will understand that airshows are very important to the continued operation of heritage aircraft.

These aircraft need to be seen. Static displays in museums have a huge role to play but to really convey the stories that the machines and their crews wrote during crucial times in history, nothing beats seeing, hearing and smelling them in action. We have been hugely fortunate with Classic Fighters, to have a wide range of aircraft from throughout aviation history, especially from both world wars. At our first Classic Fighters show in 2001 we set about creating the Southern Hemisphere's first dedicated WW-I display featuring aircraft, vehicles, ground troops and involved sets. For the 10 year anniversary, we were thrilled to be able to host a WW-I event with some 15 flyable aircraft, most seen in the air together, to produce what may have been the largest Great War action sequence ever displayed. We are indebted to Sir Peter Jackson and the TVAL team for furnishing aircraft and vehicles, and also to Kermit Weeks for displaying his newly completed Albatros D.Va.

The WW-II segment provided some equally significant firsts including Murray Miers' Focke-Wulf Fw190, the first ever seen anywhere in Australia or New Zealand. Another 'first' was the presence of the just-restored Curtiss P-40C Tomahawk, kindly made available by Rod Lewis of Texas to fly at the show and beautifully displayed by John Lamont. Once again a major theatrical display ensued, culminating in the spectacular demise of the full scale V2 rocket just as it began to lift off, ending in a huge ball of fire.

The importance of running shows like this cannot be underestimated and as explained, telling those historical stories is hugely important but it is just as important that in opening the gates of the airfield to the public, we share our passion with the broader population. If we ensure they are well entertained, even with non-flying aspects of the show, then we are winning the hearts and minds of the average citizenry who may one day be asked to support the closure of an airfield for residential development. Keeping ALL airfields relevant to ALL of the population is a role we must subscribe to if we wish to retain these facilities long term.

To finish, I would like to say a big 'Thank You' to everyone from the CF'11 team. This fine body of people truly excelled themselves and feedback about the show certainly underlines what an exceptional job they have done. Thank you one and all.

Cheers for now,
Graham Orphan

AUSTRALIAN WARBIRDS



IT'S TIME TO COME ON BOARD!

Become part of Australia's most exciting aviation organisation
and help keep Australian Warbirds flying!

Membership includes pro-rata subscription to Classic Wings magazine and Australian Warbirds Squadron News newsletter

Membership: Ordinary Member \$88.00 GST incl. (+ \$11.00 GST incl joining fee 1st yr); Flying/Maintenance Member \$153.00 GST incl (+\$11.00 GST incl joining fee 1st yr)

Name

Address

..... P/C

Ph (Bus).....A/H

Post To: Australian Warbirds Association Ltd,
100 Queen St, Beaconsfield, NSW 2015,
Australia

Ph 02 9698 3134

Fax 02 9699 8499

Email: admin@australianwarbirds.com.au

Website: www.australianwarbirds.com.au

NEW ZEALAND WARBIRDS



BE PART OF THE ACTION!

Join New Zealand's most colourful aviation fraternity

Membership includes subscription to Classic Wings magazine and NZ Warbirds 'Scramble' newsletter

Associate membership **\$101.20 + GST**; Full membership **\$165.50 + GST**

Name

Address

Ph(Bus) A/H.....

Post to:

New Zealand Warbirds Association Ltd.
Ardmore Airfield

Private Bag 14, Papakura
Auckland, NZ.

NZ Warbirds Contact: (09) 298 9207

Website: www.nzwarbirds.org.nz

PUT YOUR WEIGHT BEHIND THESE ORGANISATIONS

contents

- 3 EDITOR'S PAGE
- 5 CONTENTS
- 6 NEWS
- 14 SLIPSTREAM
- 16 TOMAHAWK TALES
- 20 FWI90 STALKING
- 24 CLASSIC FIGHTERS
- 33 CALENDAR/SUBS
- 34 COUCH FLYING
- 36 REAL DEAL2 FWI90
- 44 STINSON L-5
- 50 OZ FLYING EVENTS
- 52 NEWS/SNIPPETS
- 59 MARKETPLACE

16



Gavin Conroy

Gavin Conroy



20

24



Gavin Conroy

Jim Larsen



36

44



Brad Hunley

Peter Hallen



50

contents

A FIRST IN AUSTRALASIA FW190 FLIES!

Owned by the 'Chariots of Fire Fighter Collection', the FlugWerk FW 190A-8/N, wk nr.990001, ZK-RDF, flew for the first time in seven years on 20th April 2011 from Omaka Airfield, Blenheim, N.Z. with Frank Parker at the controls. This represented the first time an aircraft of this type had ever flown 'Downunder' and it was seen briefly by early visitors to the Classic Fighters Airshow. See P.20 of this edition for the full story.

SIGNIFICANT FIRST FLIGHTS - 1



Gavin Conroy



Gavin Conroy

TOMAHAWK DEBUTS

The Rod Lewis owned Curtiss P-40C 'Tomahawk', AK 295, ZK-TWK flew on 17th April 2011 from Ardmore Airfield, Auckland, N.Z. with John Lamont at the controls. Among the rarest of survivors of the Curtiss P-40 series, the Allison V-1710-C-15 powered fighter is one of just three flyable examples of the Tomahawk in existence. It was particularly pleasing to see the P-40C in formation with a P-40E and P-40N-1 at Omaka over Easter, this sight being a most emphatic world first. See P.16 of this edition for the full story.

ALBATROS ACTION

The second of The Vintage Aviator Limited's reproduction Albatros D.Va fighters took to the air on 14th April. Chief test pilot Gene DeMarco flew the aircraft during the week before it made its public debut at the Classic Fighters Airshow, Omaka, over the Easter weekend, which allowed new owner Kermit Weeks to gain familiarity with the handling characteristics of TVAL's prototype aircraft. As with the prototype, this aircraft was constructed using digitally generated plans created from the original example on display at the Australian War Memorial. Powered by an original 180 hp Mercedes engine the aircraft is finished in the colours of Lt. Adolf Schreder of Jasta 17, who claimed one victory but was killed in action on 17th March 1918 over Belgium whilst flying a Pfalz D.IIIa. The Albatros is set to join Kermit's world class collection at the 'Fantasy of Flight,' Florida.

Only two original D series Albatros are known to survive to this day. D.Va,

D5390/17, is on display in the 'Over the Front' exhibition at the Australian War Memorial, Canberra, Australia. This fighter was forced down and captured after combat with an Australian crewed RE.8 on 17th December 1917.

In the USA, the NASM has Albatros D.Va, D7161/17, thought to have served with Jasta

46, although its war history is not known. Evidence that it saw combat was confirmed during restoration by the discovery of a bullet strike that had passed through the right machine gun mount, penetrated the emergency fuel tank, and lodged in the right magneto. With thanks to Gene DeMarco



Gavin Conroy

SIGNIFICANT FIRST FLIGHTS - 2

Dr. Andreas Zeitler



HERITAGE FLIGHT GUSTAV RETURNS

The Messerschmitt Foundation's Bf109G-10, D-FDME, is back in the air after repairs following its landing accident at the ILA Berlin Airshow in 2008. On 5th April test pi-

lot Klaus Plasa took the aircraft aloft at Manching for a successful flight and the aircraft became the second airworthy '109' in the fleet of three (one static) of the type owned the EADS Heritage Flight. The Heritage collection also includes an Me262 and a replica Me163 that flies as a glider. Previously marked as 'Black 2', the refurbished Bf109G-10 has received a completely new colour scheme as well as numerous technical improvements to assure continued and safe flight operations. Plans are to present the fighter to the public this year at a selected number of air shows. Via Dr. Andreas Zeitler

TYPHOON OVER SWITZERLAND

After a full restoration requiring thousands of man hours this project led by the Swiss Association pour le Maintien du Patrimoine Aéronautique (Association for Conservation of Aviation Heritage – AMPA) Lausanne reached fruition when Bf 108B-1 Taifun, A-201, wk.nr. 1988 took off from Lausanne-La Blécherette regional airport on 30th April. The aircraft's first flight since 1959 was undertaken by Daniel Koblet who spent a faultless 45 minutes in the air. This aircraft left the Messerschmitt A.G. production line at Regensburg-Prüfening on 23rd November 1938 and was the first of 15 aircraft purchased by the Swiss Air Force as trainers for Swiss Bf 109 fighter pilots; however they were mainly operated on liaison and courier flights. Less than a month later A-201 changed hands and was transferred, bearing civil registration HB-HEB, to a construction company, only to return to the Air Force again at the end of March 1940 where



Joe Rimensberger

it served until 31st December 1959. After many years as a static exhibit at Zurich Airport, A-201 was destined to join the collection of the Military Aviation Museum in Dübendorf, however due to lack of space, the 'Taifun' was transferred to a former aircraft shelter at Raron and after negotiations the Fondation pour le Maintien du Patrimoine Aéronautique (Foundation for the Conservation of Aeronautical Heritage) obtained a long term contract for full restoration of the aircraft to flying condition. Beginning in 2001 the aircraft was overhauled with the four seat cabin renovated

and in 2006 thanks to a major donation from the Suisse Romande Lottery, a zero hour overhauled Argus As 10 C engine was purchased. On 19th February 2011, the Foundation and Association became the official owner and operator respectively, of the Messerschmitt - one of only three airworthy in Europe powered by the original 240 hp Argus As 10 C engine. From the start of the 2011 Air Show season, the AMPA will display the Bf 108 at aviation events in Switzerland and neighbouring countries. Via Joe Rimensberger

Campbell Aero Classics
The choice of today's aviators, worldwide

Titan T-51
Mustang

Supermarine
Mk 26B Spitfire

Sole authorised N.Z agents

Ivan and Sandy Campbell

**The Original Hard Shell
Leather Flying Helmet**

Tel: +64 (0) 3 312 800
www.campbellaero.com



Korey Wells

ANOTHER TWO SIX TWO AIRBORNE!!

The two seater reproduction Me262B 'White 1' has flown again following a five year break at Sanders Aeronautics, Eagles Nest airport in Ione, California. Arriving

there in August of 2006 for additional modifications and restoration work, the aircraft, owned by the Collings Foundation, took off on 2nd June with John Penney at the controls. The jet will

now undergo a 25 hour test flight profile and thereafter it is hoped the it will be ready to join 'The Wings of Freedom Tour' in company with the B-17, B-24 and P-51 later this year.

BUCHON IS BACK!

On Friday 6th May, John Romain of the Aircraft Restoration Company (ARCo) carried out a successful 20 minute test flight of Hispano HA112-M1L Buchon C.4K-31/G-AWHE at Duxford. It was the first time the Buchon had flown from Duxford since it departed to Bovingdon on 25th September 1968 near the end of filming of the 'Battle of Britain' movie. The aircraft has just completed a three year in-depth overhaul at ARCo for a private owner based in the UK. It is one of four Buchons leased to Spitfire Productions in 1968, by the then 'Confederate Air Force' (CAF), for use in the film's production. On screen it is known to have worn the identities of 'Red 8' and 'Red 3' and later appeared in Spanish Civil War markings in the film 'Hindenburg'. During its time with the CAF it suffered a landing accident and spent many years grounded before being overhauled and flown briefly in the 1990's. Placed up for disposal by the now titled 'Commemorative



Brian Marshall

Air Force' it was sold, and arrived at Duxford on 2nd June 2008. The Buchon is finished in the colours of Jagdgeschwader 53, the famous 'Pik-As' (Ace of Spades) unit and represents the fighter flown by Major Erich Gerlitz, Gruppenkommandeur III./JG53 based at Quotaifiya, Egypt in July

1942. C.4K-31 will be operated by the new owners of Spitfire Ltd. alongside their Spitfire LF.XVIE TD248/G-OXVI, and will be flown by either John Romain or Cliff Spink.

Meanwhile on the other side of the Pond, the Planes of Fame Buchon, N700E c/n 120, C.4K-77, is making steady progress in a return to airworthy condition and was presented to the public over the Chino Air Show weekend of 14-15th May. The aircraft has not flown since suffering damage during landing at Lydd, England whilst filming the European scenes for the movie 'Pearl Harbor' in September 2000. Repairs to remedy accident damage began some three years ago, however this objective has since turned into a full restoration. Thanks to Col Pope



Doug Fisher

SIGNIFICANT FIRST FLIGHTS - 4

RARE P-40F TAKES FLIGHT!

At Wangaratta, at the northern end of Victoria, Australia, another significant variant of the Curtiss P-40 series fighter took to the air on 14th April with Murray Griffiths at the controls. The P-40F has been subject of a complete rebuild at Precision Aerospace Productions, Wangaratta. This aircraft is only the second Merlin-engined P-40 flying after Judy Pay's lovely example, also restored in Victoria and based at Tyabb. The newly completed aircraft is P-40F-15-CU, 41-19841 and soon after its test flying was completed, it was prepared for shipping to owner Stephen Grey in England where it is hoped the aircraft will



Robert Greinert

make its airshow debut at its Duxford base. The aircraft is wearing the freshly applied nose artwork of Lt. Robert Duffield's 'Lee's Hope' operating in Italy with the 85th Fighter Squadron, 79th Fighter Group, USAAF. The '-15' variant of the P-40F has the tail-extension that was developed as a factory modification to improve directional

control (on some P-40Fs and P-40Ks and all later models), especially during the take-off roll, so its is some 13 inches longer than Judy Pay's P-40F. This aircraft makes a significant contribution into the UK warbird community, bringing a hitherto unseen model to the European airshow scene.

THE BLUNTIES ARE BACK!

Further to the news in a recent edition in which a BAE167 was to return to New

Zealand after a 19 year absence from Kiwi skies, the aircraft made a trouble free first flight on 20th

April and almost immediately made its way south to Omas, Blenheim where the aircraft appeared at the Classic Fighters Airshow over Easter. The Strikemaster, NZ6370, made a faultless debut display at the hands of Dave Brown to the delight of all, including owner Brett Nicholls (even though he was overseas at the time). For New Zealand enthusiasts this was a significant moment as no RNZAF combat jet had flown at a major N.Z. airshow since the final airshow performance by an RNZAF Skyhawk, at the very first Classic Fighters Easter show at Omas 10 years previously. The good news is that another 'Bluntie', formerly G-VPER on the UK civil register, has been purchased by Christchurch based owner Brian Hall and will be taking to New Zealand skies shortly. There is another available – see Classic Aircraft Sales, Page 58



Gavin Conroy

A LONG JOURNEY BACK TO THE SKIES

At Albury NSW, another Harvard has joined the ranks of the airworthy North American AT-6 family of aeroplanes operating in Australia. This aircraft, T-6G 51-15202, has taken a rather circuitous route to find its way into the skies of the sunburnt country. The Texan previously served with the Italian Air Force as MM53652 and is thought to have spent some time in the UK before it arrived in Australia in a quite dishevelled and disassembled state. Stored for a time with Rob Poynton's Panama Jack's Vintage Aircraft Company in Perth, an ownership change saw it headed for Narromine in Western NSW where restoration continued for several years with owner Hamish Brunton. In 2009, with

the airframe well advanced and now wearing a post-war all yellow USAF scheme, the project was purchased by well known Australian Warbird identity Steve Death who continued the work on the aircraft, especially in the areas of powerplant and electricals which still needed completion. This was finally achieved on 15th March when the aircraft, now registered VH-YVI was successfully test flown at Albury. A couple of weeks later,

the very attractive Texan was able to take part in the AAAA national Fly-in and Airshow at Echuca, Vic. during April 2-3, where Steve flew the Harvard with the other members of the excellent 'Southern Knights' formation aerobatic team, a wonderful way to welcome in a new member of the ever growing Australian population of airworthy T-6s!



Peter Hallen



via Jerry Yagen

There is no shortage of work at the Meier Motors shop based at a former air force base in Southern Germany. One of the major projects to roll out the door was Focke Wulf FW 190 A8/M, D-FMFW owned by Jerry Yagen and this was delivered in April to the Fighter Factory, Virginia. It was aggressively

his wishes. The original ring-radiator system of the wartime Fw190 is quite complicated and will not fit to the Asch 82T engine, so the team constructed a new air flow system inside the cowling which directed air with high velocity onto the ring radiator, which itself was a product of Meier Motors engineers. This approach, in combination

F-AZYS, José Ramon displayed the fighter at over 60 airshows and following the 2010 'Flying Legends' Duxford show it was decided the airframe needed a thorough inspection. Once at Meiers all paint was stripped to facilitate this. During this period it was decided to research the fighter's history and through the efforts of US based Corsair historian Rob Mears it was discovered that this aircraft had been used by US Marine Squadron VMF-513 the 'Flying Nightmares' over Korea. It was decided to present this historic aircraft not only in VMF-513's colours, but return it to -5 configuration. This required the manufacture of a new cowling, exhaust system and a myriad of other detail changes. Support came from the US with Nelson Ezell helping out with original flame-dampeners. Following some eight months of work the first engine runs were completed and on the 5th May 2011 Achim Meier, chairman of Meier Motors, took the big fighter up for a successful test flight. In his opinion the Corsair is the best flying warbird in the world "Yes, the P-51 is the Cadillac, smooth, fast and perfect. But the Corsair is a real fighter, the perfect warbird!"

These two major projects have been accompanied by several others which are ongoing. The restoration and assembly of the North American TF-51, 44-63473 and Supermarine Spitfire TR.9, VS509 being the most complex. The TF-project has a lot of missing parts, and some major ones, such as the 'doghouse' are being manufactured from scratch. Fortunately the team has a complete example to reference in the form of F-51, D-FTSI, of Max Alpha Aviation. The TF-51's Merlin engine is under



Matthias Dorst

displayed at their May air show by Marc Mathis. Job done!

Attention then focused on the second Focke Wulf project. This Flug Werk kit was purchased by Tom Blair some years ago and was built up in England, however apart from a few engine runs it remained dormant until sold to a German collector in January 2010 who tasked Meiers with modifying the airframe and getting it into the air. Consequently the aircraft was dismantled and all modifications and technical improvements made to D-FMFW were incorporated into the aircraft, with the exception of the oil cooling system. The owner elected to retain the classic ring-radiator and so the Meier Motors team had to do some 'brainstorming' to accommodate

with the 126 litre oil tank in front of the windscreen, saw the oil temperatures remain within the optimum range. On 15th April 2011, some 14 months after delivery, Juergen Meier, head mechanic for the project, fired up the engine for the first time. No problems were discovered and now all that remains is to complete the paper work, weight & balance and securing the permit to fly. The team hopes this can be accomplished by July at the latest.

One of the most stunning projects has been the restoration of Corsair F4U-5NL, BuNo 124541, which was purchased by Meier Motors/Max Alpha Aviation in the winter of 2009/2010. The Corsair was restored over the years by French enthusiasts to series -7 configuration and of course was finished in the colours of the 'Aeronavale'. Registered

NEWS NORTHERN HEMISPHERE

restoration by 'Vintage V12s' and will be delivered soon, however in order that work can continue a 'dummy' engine has been installed in the meantime. The Spitfire has spent some years on museum display and requires a lot of attention to return it to air worthy condition. It is hoped that both aircraft will return to the sky during the (northern) summer, thereafter joining the 'Air Fighter Academy' based on the island of Usedom. Here the Schuelke family has a collection of unique warbirds which already boasts a Hispano Buchon, Yakovlev Yak-9, North American AT-6, North American P-51D 'Big Beautiful Doll' and a Bucker Bü 131 Jungmann. The Schuelke family has also purchased the ditched and subsequently recovered FW 190 A8/N, F-AZZJ, and has enlisted Meier Motors to carry out the rebuild which is expected to take around three years.



Matthias Dorst

If that isn't enough, ongoing general maintenance is performed as required on the other aircraft on the premises. Currently that inventory features five P-51 Mustangs, three Spitfires, two Focke Wulf FW 190, two AT-6, Corsair, several Yak-3

and Yak-11! Oh- and did we mention two Sea Furies (the ex La Ferté Alais FB.II and T.20, VX302) waiting in the wings? Thanks to Matthias Dorst

MEMORIAL CORSAIR MOVE



Morgan Kaolian / www.aeropix.net

to resurrection by embarking on a journey to Nelson Ezell's highly regarded Ezell Aviation in Breckinridge, Texas. Some two years of restoration work by local volunteers will be bypassed when the aircraft will be used to help return a rare Brewster F3A-1 Corsair, BuNo 04634 to the air by allowing a custom built assembly jig to be constructed using the disassembled FG-1 airframe as a pattern and model. In return, the FG-1 which had spent 37 years displayed outdoors on a pole, will have major parts restored by Ezell's crew with the assistance of several members of the Connecticut Air & Space Centre's team of restoration specialists. Fortunately once the completed FG-1 returns 'home' it will not be returning to its perch, a fibreglass replica having been secured to take its place. If you can help fund this go to www.SikorskyMemorialCorsair.org

As the result of the collaboration with Ezell Aviation and The Connecticut Air &

Space Centre, the Sikorsky Memorial FG-1 Corsair, BuNo 92460, will take a huge step on its path

PIMA P-39 HELP

The Pima Air and Space Museum's Bell P-39N Airacobra, 42-18814, which was pulled out of Tadjji, New Guinea in the early 1970s, is believed to have been assigned to the USAAF 110th Tactical Reconnaissance Squadron, 71st Tactical Reconnaissance Group of the 5th Air Force. The restoration crew are searching for period photographs and would be interested in hearing from anyone who has any useful information or photographs of the unit in the 1943-44 period. This will help to ensure that this rare combat veteran can be accurately finished.



via Pima Air & Space Museum

OMAKA HERITAGE CENTRE REVAMPED

A major overhaul of exhibits at the world renowned Aviation Heritage Centre, Omasa, Blenheim occurred in the run up to the Classic Fighters airshow held over Easter, the proceeds of which benefit the Centre. A team contracted to Wingnut Films refreshed the collection of aviation memorabilia adding significant items to an already rare collection - including one of Hermann Göring's uniforms, Rickenbacker's tunic, and items from Christiansen, Boelcke and Immelmann to name but a few.

Meanwhile the airworthy replica Albatros B.II which has been displayed since the opening of the Centre in December 2006 was dismantled and moved to Wellington for recommissioning work, its place being taken by one of only four surviving Curtiss MF Flying boats, a type used by the US Navy for training and post WWI by commercial operators for charter work and mail runs. This particular example, c/n NC 903 and US Navy A-5543, was manufactured by Naval Aircraft Factory at its facility in the Philadelphia Navy Yard and was the 61st built from a batch of 80. Little is known about this boat's early history but it was almost certainly operated at a Naval Aviation training station and thereafter released for sale as surplus in the early 1920s. It appears to have been operated for joy rides by William H. Long in the Cleveland, Ohio area and was donated by him following refurbishment to the Cleveland's Frederick C. Crawford Auto-Aviation Museum in June 1945. The Omasa AHC team are delighted to be able to display the Curtiss, mindful of the long association of the type with the Walsh brothers who trained



James Orphan



Dave McDonald

many of N.Z.'s better-known WW-I pilots. In a further change the workshop diorama has seen the original frame of the Bristol F2b replaced by a Thomas Morse Scout that was modified post-war as a two-seater by widening the fuselage. The Cen-

tre has also secured one of the ex RNZAF A-4 Skyhawks, currently stored at nearby RNZAF base Woodbourne and this will be transferred once the fighter's avionics and engine have been removed.

RARE WACO NEARING COMPLETION



Nigel Arnot

At Caboolture Aerodrome in south east Queensland, Nigel Arnot is putting the finishing touches on his rare Waco EGC-8 (c/n 5051), VH-EGC. The Waco has enjoyed a long life in Australia, having originally appeared as VH-AAF in 1938, registered to pastoral holder

G.B.S. Falkiner who used it for touring around his properties and also for insecticide spraying. A charter firm based at Rockhampton operated the Waco on tourist flights through the 1960s during which time it was named 'Jolly Roger', a moniker which stuck after the aircraft moved on. It was later based at Darwin before being moved in 'tired' condition to the Gold Coast where owner Cliff Douglas refurbished it and registered it VH-CGF.

Over the past 30 years it has changed hands a few times but has flown very little. Nigel Arnot has owned and restored a number of vintage aircraft over the years including other American classics like the Fairchild F-24W, Ryan PT-22 and Stearman (which he still owns) so the Waco could not be in better hands as this lovely old machine is set to start the next chapter in its long flying career.

YELLOW WINGS CORNELL

When the decision was made by Vintage Wings of Canada (VWoC) to celebrate the British Commonwealth Air Training Plan with a program entitled 'Yellow Wings,' VWoC set forth to find a Fairchild Cornell to join the commemorative collection, which then composed of a Harvard, Tiger Moth and Finch. After combing the Cornell community only one was found to be a candidate for a complete rebuild - a 1943 Fairchild M-62-A-3 Cornell, 10712, FC 213, owned by Vintage Aircraft Group Inc. of Albion, New York. VWoC took possession of the aircraft in February 2010 and brought it to Gatineau for a complete 'spinner to rudder' rebuild, a task headed by Oscar Verdugo. This effort was realized on 20th May 2011 when John Aitken conducted a successful test flight. Registered CF-YQR, the Ranger powered trainer wears the markings she would have worn at No. 15 EFTS, Regina, Saskatchewan during the war.

Peter Handley/Vintage Wings of Canada



PROCTOR FOUND

On 9th June, an agreement was struck to acquire a long forgotten Percival Proctor III, from its place of long term storage and take it away for restoration. This aircraft, G-ANPP, last flew in 1976 but for the past 30 years has been stored in a chicken shed where it has remained dry and in the dark. The woodwork is described as excellent and the aircraft is complete with spares that will assist the three other Proctors under restoration by the group led by Michael Biddulph at Great Oakley airfield. A very positive development in the world of preserved Percival aircraft.

Mike Biddulph



Stevens
Home & Giving

Choose from Spitfire, P-51D Mustang, P-40 Kittyhawk, Harvard, Lancaster, Corsair, Hurricane or Tiger Moth. Each mug displays factual details along with an image and comes complete with a detailed gift box.

With each mug sold, \$5 is donated to the NZ Warbirds Association.



A smart, quality BBQ apron detailed with a Warbird image and finished with an adjustable neck strap and double front pockets. Choose from Spitfire or P-51 Mustang.

With each apron sold, \$5 is donated to the NZ Warbirds Association.



At Stevens, we have everything from kitchen essentials to top brand cookware, glassware and tableware.

For quality and style you can afford, visit your local Stevens store today.

33 stores nationwide

www.stevens.co.nz
0800 801 600

SLIPSTREAM

'WIESS 11' AND A QUEST

Uwe Frömert of Germany sent in a wonderful photo taken by his grandfather of an operational Komet. 'Wiess 11' is most likely on alert on the runway ('Sitzbereitschaft'). On the back of the photo, the following notes were written: Schmalfilminsatz 15.11.44, Ofw. Franke, Ogfr. Schmidt.

The rear fuselage shows a never-seen combination of three cooling slots and a scoop. The scoop identifies this Komet as an early Messerschmitt or Klemm built Komet. Uwe is researching his grandfather's Luftwaffe career, which included Komet flying at the end of the war. Hptm Frömert was 'Einsatzoffizier (Ia)' with II./JG400. According to Uwe, an 'Einsatzoffizier'



is responsible for the training of the pilots, mission and armaments planning, and liaison with weather services and with maintenance. He was captured by British troops at the end of the war

and remained in captivity until August 1945. Uwe is very interested in hearing from anyone who can tell him more about his grandfather's career in the Luftwaffe.

WACOS & TIGERS



The 'Mickey Mouse' Tiger ZK-ATX had an even shorter life than the Waco after it appeared in your photograph, being damaged in an accident near Rukuhia in October 1952, after which it was not rebuilt.

Best wishes. Graham

Dear Graham

Some time ago I saw a write up about a group at Omaka who were going to restore a Waco. I remember thinking at the time that I had a photo of the aircraft taken at Hobsonville in the winter of 1950 during an open day. I was a young airman at a training school and the Air Force trade school had at that time a Zero, Seafire and Firefly. The photo of the Tiger Moth ZK-ATX with the Mickey Mouse logo may also spark a few memories with someone.

I do enjoy your magazine and reading about the amazing restoration projects that are being undertaken around the country. I would be interested to know if ZK-ALG is indeed a Waco and if it is of interest to the Omaka group.

Yours faithfully

Malcolm McNaught, Masterton, NZ.

Dear Malcolm

Many thanks for the note you sent containing the photos of the Waco ZK-ALG and the Tiger ZK-ATX. You are correct re identifying the Waco however this is not ZK-ALA, the Waco UOC presently being restored at Omaka, but rather, a Waco UIC. Sadly, this machine no longer survives, having suffered an engine failure and resultant forced landing in Whangarei Harbour in Sept 1957. This was an unfortunate loss however the return to N.Z. of the Omaka Waco and its planned restoration to fly again at the very airfield that was its first home, will hopefully make up for this a little.



CLOSE CALL

Hi, I thought this shot maybe of interest to you as it was taken by my Father Pilot Officer PFH Rowley after this DC 3 had a mid air and obviously the pilot managed to get it down in one piece! Thanks and regards. Peter Rowley.



CANADIAN KOMET

Jerry Vernon of Canada forwarded a very interesting photo of one of the Canadian Komets, most likely taken in one of the old Rockcliffe museum hangars sometime in 1960s. For a history of this and other surviving Me 163 aircraft please see Issues #78-79.



AIR LEAGUE GUARDIANS

Hi Graham

In the previous Slipstream column, Brian Grinter mentions a Firefly and Boomerang at Blacktown NSW. In March 1967 I took the attached photo (only one I'm afraid) but I don't think that I saw the Boomerang there. I thought that the Boomerang was A46-30 the one at Williamtown (NSW) but I'm not sure of this.

Whatever happened to the Firefly?

Regards Keith Titmuss, Australia.

Hi Keith

Many thanks for supplying the photo. Brian responds with some information on the aircraft - "The Firefly was acquired in 1956 by the AAL Squadron OC and was surplus RAN Firefly AS.6 s/n WD827, this for the considerable amount

of 100 pounds. It remained on the property until 1972. A deal was made with Moorabbin Museum to exchange the Firefly for a Vampire FB.31 (A79-422) and a Rolls Royce Derwent jet engine. The Firefly is still at Moorabbin today, although it has been repainted since with D-Day style stripes. The Boomerang (A46-30) was received by the AAL in 1946 after it was used for filming "Smithy" at RAAF Richmond, standing in for the Lady Southern Cross. About 1964 it was returned to the RAAF where it was restored at RAAF Williamtown and put on display as gate guardian. AAL members from that period said the RAAF offered a Sabre in return once they were retired, in exchange for Boomerang as it was the last one around at the time. We never did get that Sabre! Later the Boomerang went to the AWM, then to the museum at Point Cook where it still is to this day"



GIPSYS, ANSONS & A SPITFIRE

Dear Graham

Attached are some photos that may be of interest to you. The elderly lady who owns the photos of the planes in the paddock said the two pilots were Claude Elder and Bill Robinson from the Essendon Aero Club (aircraft is a D.H.60G Gipsy Moth-ED). They would land on Mr. Farley Smith's property "Carinya" at Congupna, Victoria. The horse's name was Spitfire! The photo of the Anson was taken by me some time in the late 60's. My mate and I

discovered the wreck at Moorabbin airport, I tried to recover the propeller, but after removing all the nuts I couldn't get it off. On arriving the following week with some help we found it gone. The gent in the overalls worked on Ansons in the war and thought he would take an engine home. Once the engine mounts were butchered and the engine fell to ground he realised he couldn't get it in his ute, so left in disgust. I managed to souvenir the pilot's seat and several engine parts, which unfortunately we no longer have.

Regards Ray Morris, Australia.





TOMAHAWK TALES Photography

First flown on 10th April, 1941 the P-40C was powered by the 1150 hp Allison V-1710-33 which incorporated an improved fuel system and internally sealed fuel tanks. However with these improvements came increased weight and as a consequence a drop off in performance. The Tomahawk IIB was the export version of the P-40C, having additional British armament of four wing mounted 0.303-inch Browning machine guns, whilst retaining the American twin nose-mounted 0.50-inch machine guns. One of the big users of the Tomahawk was

Russia and although Russian pilots found the aircraft to be a simple machine, it suffered the same problems as all Western designed aircraft - not being able to cope with the harsh Russian winters. However with some equipment replacement and much improvisation, sorties were able to continue, albeit at a much reduced effectiveness. Pilots found the durability of the airframe, the increased firepower, pilot armour and great range adequate compensation for the lack of manoeuvrability and speed when compared with Soviet types, however the Tomahawk would soon give way to the later

P-40 models, they themselves superseded by the preferred Bell 'Cobras' and indigenous Lavochkin models.

Our subject aircraft was initially built for the RAF, however the British soon found the type unsuitable for combat in Europe where much of the dog fighting was at altitude and the fighter found itself on a ship to Russia. Arriving there in December 1941 the aircraft served on the Northern Front but had the dubious distinction of being the first combat loss of the type in the European Theatre, shot down on 1st February 1942.

Recovered from a long forgotten crash site in the former Soviet Union around 1990, the rebuild project was originally funded by Chris Gruys of Marina Del Ray, LA, USA. He purchased the project from Tom Wilson of Griffon, GA and engaged him to build the fuselage and began gathering the parts needed. Chris sent the engine to Bud Wheeler for overhaul whilst new hollow steel Curtiss Electric props were secured and overhauled in Texas. Gruys engaged AvSpecs (NZ) to supply and overhaul hydraulic components, gear legs and the horizontal, with a view to sending the completed airframe from Wilson to AvSpecs to complete. However soon afterwards Gruys uplifted the project from Wilson with the fuselage complete but no wing work undertaken, and thereafter sold the project to Provenance Fighter Sales and it was they who sent it AvSpecs



Derek Smith checks the alignment of the cowl flaps.



to complete.

Upon arrival the team carried out a full inspection of the fuselage structure and identified all of the incomplete and unsatisfactory areas, and that list was progressively worked through as required, beginning with completing a number of cast/machined components that were supplied in a raw unfinished state, mostly for the cowling and engine mounts. As Murray Griffiths of Precision

Aerospace in Wangarrata, Australia was tasked to rebuild the wings and landing gear the team separated all the wing, undercarriage and control system components and boxed them up, however before they were shipped a false wing centre section/cockpit floor was fabricated to enable work to continue on fitting out the fuselage whilst waiting for the wing to be built. The now long-stored engine was sent back to the USA or re-inspection



Progress on the complex cowlings, the original inlet casting was repaired for re-use.

by Gavin Conroy



An example of the work required. Here new oxygen bottle mounts are made using the damaged originals as patterns.



Cockpit shot showing the gun butts removed to reveal the VHF Radio and Transponder installed in the replica 50 caliber machine runs. The Tomahawk cockpit is significantly different from the Kittyhawk.



by Vintage V12's whilst the prop went to Safe Air (NZ) for inspection, assembly and balancing. After only few months in New Zealand, the project was sold to Rod Lewis of Texas.

One of the major rebuild tasks undertaken at AvSpecs was the cowling assembly. The forward pan was mounted to the front of the motor allowing the components to be fitted. Fabrication of the side rails for all the elements of the cowl assembly was required as were new side frame rail stiffeners. The manufacture of the chin cowl skins,



the 'wheeling up' of the bottom and side skins and the manufacturing of a number of missing fittings had to be undertaken as well. Following the completion of the top skin reforming, work concentrated on the manufacture of the doubler strips and the fabrication of the phenolic rubbing strips that were incorporated in this type of cowl. A very thin strip of phenolic sheet was sandwiched into the cowl assembly to provide anti fretting protection for the rails. This detail is often left off restorations, but the team felt it added a nice touch of originality to the cowls and assists with the longevity of the assembly. Meanwhile a huge number of 'smaller' jobs had to be addressed, modifying the Kittyhawk rudder pedals and the supplied rudder to P-40B/C standard, converting exhaust stubs to the correct style, fabricating the missing tail wheel and luggage doors to name but a few.

Warren Denholm sums up the challenge. "By far the most difficult aspect of building a P-40 B/C is that there are no drawings for any of the Tomahawk specific items. No cowling drawings, no engine installation drawings etc. Thankfully the crew at the Flying Heritage Collection, USA were most accommodating and allowed me to extensively photograph their Tomahawk which is arguably the most original example in existence.

With these photos we were able, as accurately as possible, to fill in the gaps where required. The original project was fairly complete in the cockpit area, although heavily crash damaged, so we were able to straighten out some of the badly crushed components from inside the cockpit and replicate them, including the instrument panel, wiring junction boxes, fuse boxes placards etc. This is easily the rarest and most challenging restoration we have undertaken. Even though we have



The AvSpecs team poses in front of the finished fighter. L to R. Andrew Tregidga, Paul Levitt, Stu Elliston, Warren Denholm, Andy Hosking, Derek Smith, Gary Lynn, Russell Jenkins, Bryce Nichol. Absent was Richard Waterreus.



built a few P-40s before, the Tomahawk is a very different animal from its younger brothers. The Mosquito we are doing is easy in comparison - I mean you can pop down to MOTAT and take a look at another one!"

Small wonder the project required some 25,000 man hours to complete, but no one can complain that this time was not well spent as the end result is certain to be another award winner!

POSTSCRIPT

On 17th April John Lamont lifted P-40C, AK 295, ZK-TWK, off the tarmac at Ardmore airfield, Auckland for its first flight which proved uneventful.

With few early model 'Hawks' flying, the crowds at Classic Fighters airshow, Omapa were privileged to witness this fighter making its public debut over Easter - this due to the generosity of Rod Lewis, Stephen Grey and the hard work of the AvSpecs team who pulled out all stops to get the aircraft ready for the event.

The fighter joins the only other two early model P-40s currently flying - The Fighter Collection's Duxford based example, which also wears early USAAC markings circa 1941 and the Flying Heritage Collection's AVG marked example.





STALKING SOUTHERN SKIES

April, and there is a hint of 'chill' in the air. This could have been put down to the early autumn, or perhaps it was something more ominous making its presence felt, for arriving in a container from Germany on 4th April was a fearsome reminder of the dark years of World War Two in the air, when the Luftwaffe's new radial engine fighter reigned supreme over the English Channel coast. Representing one of

the Luftwaffe's finest and about to make its home at Omaka Airfield, Blenheim was the Chariots of Fire Fighter Collection's FW 190A-8/N, wk nr.990001, ZK-RFR, ex D-FWWC.

With less than three weeks until the aircraft's scheduled debut at the Classic Fighters airshow, Omaka, Blenheim, the race was on to get the fighter reassembled, engine run, certified and test flown. The team at JEM Aviation set about the

task working long hours of overtime, and with the arrival of Flug Werk engineer Frank Hohmann progress accelerated to the point where the aircraft was fuelled and ready for an engine run in short order. After repairing a minor fuel leak, head engineer Jay McIntyre, in consultation with Frank, proceeded to start the Ash 82T 1,850 hp engine. It fired at first attempt and after the cloud of smoke dissipated, ran at various power settings for a good 10 minutes. Wheeled back into the hangar it awaited a visit from the CAA the following day and despite some nervous moments it was passed without any concerns!

FLYING THE FW190 By FRANK PARKER

I grew up in rural Thames, New Zealand, the youngest of five, with two older brothers. In the '60s 'TATCO' was the country's largest Fletcher Agricultural Aircraft operator and we brothers could tell the big engine from the small engine, or the three bladed prop sight unseen, such were the distinctive sounds of those aircraft. August



Upon arrival the team at JEM quickly set about reassembling the aircraft prior to a visit by the CAA.

Dave McDonald



Gavin Conroy

Flug Werk FW 190. The Fw 190 had flirted with my imagination since those early modelling days. I had even investigated the possibility of a 'Jurca Design' replica some 10 years past but this was discarded as an opportunity to 'invest' in the P-40 arose. And now here it was, a reproduction FW 190, just down the road at Omaka, needing a test pilot!

It was soon evident that a fair amount of preparation was required, firstly a review of the flight manual translated from German (Genglish is the term!). Clarification was sought from Benno Tissi, a work colleague who was happy to help with the flight manual and some of the cockpit signage. I spent several nights 'Googling' for any information on the original aircraft and the reproductions to gain an insight into the type. I was fortunate to receive some information from two other pilots with some experience on an original rebuild and a reproduction, in essence it was "just another Warbird" - a broad statement indeed!

And so to the first sight of this impressive aircraft. Overall the FW is similar in size to the Spitfire or P-40, however, with a long almost ungainly undercarriage it has a much higher, almost menacing stance. The 14 cylinder radial has the snuggest possible cowling with the fuselage tapering back to the rudder. The tail feathers seem too small, especially the elevator which is half the area of the P-40, more Spitfire like. First sit in the cockpit and it is snug. It was suggested it was designed around the average Luftwaffe pilot, 180 cm (5ft 9) tall and 80 kg (176 lbs) - that's me, nearly. The ergonomics are good. This is an electric aeroplane, gear and flaps are push button switches, cowl flaps a toggle switch, fuel cock a lever-solenoid, could have been a toggle. Flight instruments are in a row with no horizon, it would have been a handful IMC (Instrument Meteorological Conditions)! The secondary instruments are in a second tier, unusual at first glance but easy to assimilate.

The original aircraft had a hydro-mechanical engine controller which controlled the boost and RPM from a single power lever. This aircraft with a replacement engine deviates with a con-

ventional throttle controlling 'boost' and a rocker on the throttle end which controls RPM (chopper drivers would call it a beep switch). The boost is in 'atmospheres' (ata), airspeed in kilometres, and pressure gauges PSI - all a little 'novel' at first glance. Forward visibility in taxi attitude is limited though not unusual for this class of aircraft, however the full bubble style canopy affords great vision in all other aspects. Spend a little familiarisation time in this cockpit and it starts to feel 'right'.

Time for a ground run. From my experience in the La-9, I recalled the Ash 82 engine had plenty of 'attitude' and I wasn't disappointed. Starting is a bit of a juggle - energise, engage with the right hand, 3-4 blades mags on left hand, maybe an extra prime with the left hand and operate the throttle with the left hand, you get it! Once started the engine settles into a lumpy idle. Time to taxi, the tail wheel castors, so steering is with foot brakes which are typical of the vintage - think 1940 Ford (maybe Mercedes!) truck. The ride is solid, not too much give in those oleos, but the aircraft is overall predictable. Engine run-up from the checklist, its noisy, it vibrates but the engine checks are faultless, have I mentioned 'attitude' yet? Next is a medium speed 'run' up to 60 km/hr (30 knots) to assess the take off 'feel', then back to the hangar for a final check around the aircraft and a final review of procedures for the pilot.

The time had come, let's go flying! The first take off in a new type is always going to hold a surprise somewhere, I was not disappointed. Despite being prepared the swing on takeoff was 'impressive', airborne, brakes, gear up, phew that worked, now power - was that 1.4 or 1.2, RPM? - oops the control is coarse, turn cross wind, lets climb to around 600m (1968 ft) and slow this thing down a little. Cruise power, 2000 RPM 1.0 ata and gather one's thoughts, a close look at the gauges and temps and pressures are all stable, the engine noise now slightly subdued, vibrations still obvious and trim, now here's an issue for the techs, the aircraft only has an elevator trim, the aileron and rudder tabs set to neutral are badly out

school holidays were always modelling time (it always rained) so my dear Mother would hold her frustration as the bedroom floor became deeper in balsa wood shavings and the house reeked of dope. We built them all -Kiel Kraft kits, Kittyhawk's, Spittys, Hurricanes, Messerschmitts and Focke Wulfs. Our neighbour was training at the Aero Club for a CPL, he dreamed of flying DC 3's for NAC and he would chat across the fence with my Dad for hours about his adventures and those damn commercial exams.

Such was my nurturing into aviation, followed by the Air Training Corp in my quest to join the Air Force - dammed good training 'boy'. Following a decade and a half in the military, primarily on choppers I transitioned to the airline scene and then became seduced by a syndicated Harvard project. Further along the track, courtesy of Garth Hogan, I got my break to fly a P-40 Kittyhawk, that was it - a 'Warbird Junkie.' This was followed by time in a Yak 3, then the Spitfire and even a jaunt in the La-9 and more recently the L-39 Albatross. Nonetheless, it was difficult to contain my excitement when a possibility arose to fly the



Dave McDonald

Test running the Ash 82T engine -loud, lumpy and a definite 'attitude'!

of trim, I will just have to live with that. Complete some basic manoeuvres, yes just like any other aircraft, now low speed to approach the stall, 160 km/h (86 knots) all good, cycle gear and flap, slow speed on approach configuration, 150 km/h (81 knots), (let's see 1.3 X 150, about 200 on final will be good for the first landing) then off to Woodbourne with 1000 + meters (3,281+ ft) of grass to play with. The first landing was uneventful if not precise, taxi back and try it all again, a further circuit at Woodbourne then back to Omaka, getting a slight feel for the machine. This was brief as the gear malfunctioned and the right leg hung up, it was a relief when a little trouble shooting solved the problem - I think its beer o'clock!

Flight two - always easier with a little hindsight and lot of thought. This flight was overhead Omaka in the cruise, confirm engine parameters, further handling including full stalls, engine handling, approach and overshoot and landing. Firstly the trim is much improved though requiring further adjustment. This simple fact makes the flight much easier and enables a 'feel' for the aircraft. The stall is standard with little noticeable buffet although it is possibly masked by the engine vibration, the Ash 82 is certainly not a smooth Allison V-12! Clean stall is 150 km/h (81 knots) with a right wing drop, approach configuration 135 km/h (73 knots), recovery standard. The engine handling is straight forward and typical of any large capacity engine, temperatures and pressures stable throughout the flight, 70C oil 125-130C CHT. Cruise power of 2000 RPM and 1 ata boost gives 370 km/h, about 200 knots, which is expected for a WW II fighter. An approach and go-round is uneventful and an acceptable tail down



Dave McDonald

Full power and the FW 190 strains to break free.

wheeler landing makes for a successful flight.

Flight three. With the basic engine and flight parameters proven it's time to expand the envelope. This flight, once more in the airfield area, was 1.3 hours block to block. The first 25 minutes were spent confirming the previous flight and engine parameters, all stable. This was followed by some full power checks and the engine responds willingly and while the maximum obtainable power of 1.4 ata (about 42 inches MAP) is less than advertised for the engine, it is plenty for an aircraft with no military equipment (armaments etc). The engine vibration increases with the power but is acceptable (any old Bristol Freighter pilots will understand) and with those short exhaust stacks it makes a 'racket'. I increase the airspeed to 480 km/hr (260 knots) and all is stable, no evidence of airframe vibrations. Then



Gavin Conroy

Flug Werk FW 190, ZK-DFR cockpit layout, the missing instrument top left is that of the ammunition counter.

it's time for some manoeuvres starting with wingovers and lazy eights. The aircraft requires no elevator trim through a wide speed range, the aileron trim is 'sorted' so there's just a minor rudder trim 'problem'. I find the FW 'lazy' in yaw with little natural feel, almost like a helicopter or the Fokker Triplane I flew some years ago! Let's look at the ailerons, the original had a reputation as possessing powerful ailerons, it will be interesting to compare with the P-40 which is acknowledged as having excellent aileron and roll characteristics. Firstly some rolls side to side from 60 degrees left to 60 degrees right, yes the ailerons are good, but don't forget the rudder! Time for an aileron roll, nose up, check, round we go with about half aileron, easy, now to the right. How about a loop, 450 km/h (243 knots) should do, up we go, looking for the horizon, over the top, onto the line feature, ease out of the dive. The aircraft once again



is a little unstable in yaw so requires some work on the rudder otherwise normal, likewise the barrel roll. That's the 'fun' sequence, now back to the basics, change the fuel feed to the rear tank, yes that works, look at a glide about 250 km/h (135 knots), similar to the P-40 (these aircraft have brick like glide characteristics when compared to a GA Cessna). Then back to Omaka for a successful landing - a good flight.

Flight four and a new day, time to further expand the envelope. As before, this flight was in the environs of the airfield with the aim to review previous observations then push the boundaries a little. For the first 20 minutes I flew large orbits over the field at 900 m (3000 ft), all temps and pressures normal and stable. Then 17 kms (10 miles) to the west of the field I completed a full power climb from 460 to 1370 m (1500 to 4500 ft), 2400 RPM and 1.3 ata, again temps and pressures stable. This was followed by a glide back to 760 m (2493 ft) with introduction of side slip left and right, once again normal. Now some manoeuvres, wing overs, lazy eights, barrel roll, aileron roll, loops and half Cuban, the airspeed is edged to

525 km/h (285 knots) and no airframe vibrations. The pilot is starting to enjoy this aircraft! Then alas, a technical issue, an engine vibration which required a return to land which was uneventful. Two engine cooling fan blades had sheared from their retainers and damaged the propeller as they 'exited' - end of flying for now!

So the inevitable question, 'How does this air-



Frank Parker is interviewed after an eventful first flight by the TV3 News crew.

craft compare? And the answer, 'Not sure - yet'.

Firstly the FW is different- it lacks the harmonious feel of the P-40 and the classic presence of the Spitfire. The controls are neutral, they don't 'talk' to you, the elevator feels the same at 500 km/h (310 mph) as it does at 200 km/h (124 mph), the rudder is light but the balance is almost unstable - it's happy to dance in the sky. The engine shakes a little and the cockpit is noisy, in fact if you have ever been in a Rally or Track car then this is the FW 190 - it is a machine with a purpose. It is not a 'Love at first Flight' experience but one that grows.... more to follow, watch this space!!

Acknowledgments:

It would be appropriate to acknowledge all of the help which the team have received from our friends around the world -these include Steve Hinton, John Maloney, Claus Colling, Achim Meier, Michael Lerg, Christophe Jacquard, Don Hansen and Chris Tordoff of Crécy Publishing Ltd, who kindly supplied the as yet unpublished wartime pilot's notes.

JEM aviation
precision repair and maintenance

Hangar 22a
Omaka Aviation Centre
(03) 578 3063
021 504 048
jay@jemaviation.co.nz
www.jemaviation.co.nz

Classic Fighters 2011

'V FOR VICTORY' Omaka Airfield, N.Z.

by Dave McDonald

This year's Classic Fighters airshow was a resounding success despite the leaden skies over the Saturday and Sunday, however the weather gods declared that the show must go on and that it did. The rains conveniently came after the completion of the Saturday show and before the start of the Sunday event! With little wind and

mild temperatures throughout, the organizers and the crowd of some 20,000 considered themselves fortunate to be able to complete and witness another world-class airshow, being treated to spectacular flying, in-your-face ground theatre and several rare aircraft making their debuts.

Practice day saw fine, if a little windy, weather

and most pilots up with their mounts fine tuning their display for the airshow proper on Saturday. Highlights had to be the arrival of Dave Brown flying the Strikemaster, who put on a short and spirited display before flying on to land at RNZAF Woodbourne, Omaka being too short to accommodate a landing/takeoff. It would later be





The spectacular explosion that saw the end of some twelve months of dedicated volunteer labour, including generous support from local businesses, particularly Rosco Hydraulics of Renwick. The V-2 met its end through two separate explosions. Firstly a small charge broke the strops to allow the fall of the rocket, whilst the internal blast was the result of ten litres of petrol and 30 metres detonating cord being ignited with a pyro device.

Photo: Chris Gee / www.stereoimage.co.nz



announced that a second of the type (G-VPER) is due to arrive in the country for Brian Hall of Christchurch, so we can look forward to a possible two-ship formation in the future. The Lewis P-40C made a grand entrance later in the afternoon, coming in low and fast much to the delight of onlookers. Already visitors were seeing several significant debut aircraft and whilst acknowledging the engineers who toiled to have the aircraft ready, we are moved to also pay homage to the CAA inspectors who went well 'above and beyond the call of duty' to ensure that these '11th hour'



Above: The Yak-52 Formation Display Team once again put together a very polished performance.



The remarkable full-scale V-2 rocket and the amazingly convincing 'Meillerwagen' trailer were appropriately towed into position by the German Hanomag half-track before the rocket was raised to the firing position.

aircraft could fly at the show. Well done CAA!
 With the last minute unavailability of the Red Checkers due to the illness of a team member, the Marlborough Lines 'Twilight Extreme' started earlier than planned, and with the northerly winds it was certainly a lot warmer than in 2009! The RNZAF Hueys provided their usual polished display and later the V-2 fired up its engine. This full scale working replica and its equally impressive Meillerwagen (trailer) was put together by a team led by Roger Lauder and consists of a steel frame clad with aluminium and galvanised sheet on the lower four metres with the ten metre main upper section being of a wood and fabric

Tony Portelli

Heading photo: The Sopwith Triplane entered service in February 1917 and soon proved itself to be an effective fighter. 'Black Maria' represents the aircraft flown by Canadian Ace Raymond Collishaw of 'B' Flight, 10 Squadron. Photo: Gavin Conroy

construction. The burner was an air driven high speed fan, whilst the rocket 'flame' was fed by petrol at some 12 litres per minute. The finale was a spectacular fireworks display – a taste of things to come!

Saturday dawned mild but overcast, fortunately very little wind allowed the fragile World War One aircraft to do battle, and that they did,



Gavin Conroy

Always a crowd favourite, 'The Catalina Club's' ex RCAF Canso represents one of the 56 Catalinas operated by the RNZAF in the Pacific. Its appearance at Classic Fighters was made possible by sponsorship from an aptly named Marlborough company, Catalina Wines.



Fast becoming the most popular warbird in N.Z. is Brendon Deere's magnificent Spitfire Mk.IX, PV270 sponsored at Classic Fighters by John Deere Tractors (and yes they are distantly related).

the melee of twisting, turning and diving biplanes was a sight to behold, and a tribute to the pilots who must have had their necks checked at the chiropractor following the show! The turn radius on the Bristol Fighter was incredible as were the flybys of the seven Fokker Triplanes of von Richthofen's famous 'Flying Circus' - where else but Omaka!? In the end it came down to a duel between 'that' Red Triplane and the spluttering Camel, however the exceptional piloting skills of John Lanham and Gene DeMarco respectively meant the outcome was inconclusive – but this was not so on the ground. The war in the air was just part of the scenario, the ground battle was equally intense, and despite the Allies having the advantage of the two full scale replica World War One tanks, the German forces applied the better tactics and came out victorious.

One of the special guests at this year's event was Kermit Weeks from Florida, owner of the world's largest private collection of aircraft, many of which are displayed at the 'Fantasy of Flight'

The Vintage Aviator's Fokker D.VII leads the Albatros DV.a. Built in France for 'The Blue Max' movie the D.VII has undergone a major rework in order that it reflects more accurately this potent late war fighter's classic lines. Photo by Gavin Conroy.

Museum at Polk City. Kermit proudly displayed his newly recreated Albatros D.Va built by the Vintage Aviator Ltd for him around one of his original World War One 180 hp Mercedes engines. What a lovely sound emanating from an equally lovely aircraft! The fighter was first flown

on 14th April and wears the colours of Lt. Adolf Schreder of Jasta 17, who claimed one victory and was KIA on 17th March 1918 over Belgium whilst flying a Pfalz D.IIIa.

Unfortunately a wet Woodbourne runway and a low cloud base meant the Strikemaster did not make an appearance again until the Sunday show, but the current RNZAF put on a great display with the evergreen Iroquois, the Seasprite and the well drilled Kiwi Blue parachute team. The Historic Flight's Harvard thrilled the crowds with a tight display from experienced ex Red Arrows pilot Sqn. Ldr. Sean Perrett.

Speaking of tight displays, the Yak-52 Formation Team pulled another polished performance out of the bag enhancing their already formidable reputation. Television's 'Master Chef' judge Simon Gault's Thunder Mustang display was also a head turner, and according to announcer Peter MacQuarters' commentary, it was even more im-



Gavin Conroy

pressive due to the fact he has a fully fitted out kitchen in the cockpit!

Anyone seeking a break from the non-stop air and ground action had many other distractions to keep them entertained. The Gold Pass tent was brimming as that sell-out section provided excellent meals and famous Wither Hills wine, all in convivial surroundings. An extremely popular facility that has developed over recent years was the 'Taste Marlborough' marquee, open to all comers to try about a dozen labels from Marlborough's world-famous wine-makers. And then there was a great variety of food and drink outlets catering to a broad range of tastes, along with an excellent mix of trade-stalls providing aviation and non-aviation products. The kids were looked after with an extensive fun zone, whilst there was also a hugely impressive collection of classic motor vehicles, largely of British origin and including a touring party of Rolls Royce and Bentley products. Then of course there was that very popular Classic Fighters feature, 'Restoration Row' which allows visitors a preview of local projects that may appear in the air at future Omaka events. This year's line-up continued the noticeable Luftwaffe presence with Ian Dunkerley's WW-II era Weihe glider, and John Hitzke's Bucker Jungmann, ac-



A highlight for many was the debut of the Rod Lewis owned P-40C 'Tomahawk.' Here pilot John Lamont leads the ex RNZAF P-40E Kittyhawk flown by Stu Goldspink who travelled from England to participate!

companied by several advanced WW-I projects, the syndicate Yak-9V, John Saunders' unexpected Harvard, the long forgotten NZ1041 and a pre-war Fairchild F-24C8e which is coming along

beautifully. Joining the aircraft in the new 'fighter corral' this year was the full-scale Stuka replica and the Frew Syndicate Yak-3Ua with its newly revealed 4th Guard 'Orchanskaya' Fighter Division colours.

Engine run displays were provided by an Allison V-12 owned by Laurie Gudsell, whilst Al Marshall was so intent on getting his 'spare' Bristol Hercules fired up on its custom built trailer that the Bristol Freighter missed its 'taxi by' display slot on Saturday due to some 'misappropriation' of vital parts! This was made up for on the Sunday when the team stopped to pick up a 'hitch hiker'. A young lad had an unexpected thrill of a life-time when he was hauled aboard the big aircraft and up into the Freighter's 'office'. He also enjoying the acknowledgment of an envious crowd at the same time!

The afternoon saw the tools of a later war on display, the lead up taking us through the classic era with the Tiger Moths and lovely DC-3s, the Harvards of the Roaring 40s display team and the lumbering Catalina doing what it does best - looking elegant!

With the sounds of the 'heavy metal' roaring and crackling in the background, Corsair pilot extraordinaire Keith Skilling wowed the crowds with his signature display in the powerful fighter, surely the best display of the type anywhere!

One of the many highlights this year was the gathering of no fewer than three P-40s - the freshly restored and only recently flown P-40C 'Tomahawk', AK 295, ZK-TWK, which was generously allowed to attend and make its public debut thanks to American owner Rod Lewis, the ex RNZAF P-40E of the 'Old Stick & Rudder Company' and the Ardmore based ex RAAF P-



Two classics of the 'Golden Age' of aviation lumber past the crowd, the much loved DC-3 never fails to please!



FG-1 Corsair, NZ5648, owned by the Old Stick & Rudder Company, is the sole airworthy survivor of 424 supplied to the RNZAF. Humid conditions on the Sunday saw the formation of wing and propeller tip vortices during Keith Skilling's tight and fast display.

40N-1. The three of these buzzing the airfield was a thrill indeed and an education in the differences between the early and late model examples of the P-40 'Hawk' family. In 2009 Brendon Deere's Spitfire IX deservedly took away the Grand Champion trophy and this year this lovely aircraft was joined by Doug Brooker's twin seat example. With airshow stalwart Graham Bethel in his P-51D joining the World War Two fighter stable, the scene was set for an epic finale. Whilst these aircraft formed up a special guest arrived in the Miles Messenger to visit the troops, none other than Winston Churchill flashing the 'V' for Victory hand signal, the crowd returning it in kind, although not always in the appropriate manner!



Gravin Conroy

Now owned by warbird enthusiast Brett Nicholls, BAE Strikemaster NZ6370, had previously operated with Jet Fighter Adventure Flights in NSW.

Left: Trouble Ahead! A lone Sopwith Camel turns to face an onslaught of seven Fokker Triplanes belonging to von Richthofen's Flying Circus.

Below: Hands across the sea. Sir Peter Jackson (right) congratulates American Kermit Weeks on his wonderful Albatros, built by 'The Vintage Aviator Ltd', and soon to join Kermit in Florida.

CENTER SPREAD OVERLEAF: Kermit Weeks delighted the crowd with his display in the beautifully marked and only recently completed Albatros D.Va Photo: Gravin Conroy



Meanwhile things were about to get chaotic, the Allied forces having spotted a mobile V-2 rocket launch site, heavily guarded by elite Waffen SS troops backed up by an incredible replica Panzer IV. This tank is powered by a 2 stroke V6 Detroit Diesel driving custom made polyurethane tracks through a pair of hydraulic motors. The box section steel frame chassis was built in Wellington and the fibreglass shell and body was built



Gravin Conroy

by WETA Workshop. Featuring a working turret and machine gun port, the main gun fires blanks and the machine gun is gas operated. Typical of anything coming out of Wellington, it is almost impossible to distinguish from the original! The Panzer IV was also backed by a somewhat war weary big brother- the Panther. The V-2 rocket was raised into firing position on its trailer when

War in the Air – The Bristol Fighter gunner accounts for an attacking Fokker D.VII, however the crew are not yet aware of the lurking danger below in the form of an Albatros fighter.



Gravin Conroy







Luftwaffe presence at airshows is always limited. Having three representatives in one place is rare so it was great to see the Me108, Fw190 and 'Stuka' parked together.

the patrolling Messerschmitt 108 dived down to meet the threat of the approaching enemy force. Thereafter all hell broke loose, the Allied fighters swooped into the attack driving off the strafing Me 108 and eventually shooting it down, the one sided air battle a foregone conclusion with the potent FW 190 grounded. In the Saturday battle the Allied forces were pushed back and had to break off the attack, the V-2 retreating to safety in order to fire another day. Sunday proved to be a different story when the attack caught the V-2 in launch mode. The V-2 was able to rise off the launch pad through the use of a petrol driven hydraulic power pack which produced around 3,000 PSI. Reaching around four metres the rocket was suddenly and spectacularly destroyed by an explosion, whether through malfunction or a strike by a stray bullet will forever remain a debate! It seemed it wasn't a victim of marauding fighters, although the Panther was certainly knocked out

by air strike.

After the smoke had cleared and a quiet (of sorts) descended over the battlefield it was clear that 'Victory in Europe' was just that little bit closer, and with ANZAC Day only hours away, it was perhaps time to reflect on the sacrifices made

by those who fought these battles for real, many of whom would not live to enjoy the peace.

Acknowledgments: Thanks to all of the Classic Fighters 2011 Committee, pilots, participants and photographers who have assisted with this article.



A surprise in 'Restoration Row' was John Saunders' Harvard, NZ1041, presented in the colours it wore during WW-II.



A unique event took place on the eve of the airshow when Graeme Frew hosted a Russian themed evening at the JEM Aviation hangar in an atmosphere of themed music, singing, uniforms, flags and of course vodka! At the appropriate moment, the hangar doors were drawn back to reveal the syndicate owned Yak-3, now a very advanced restoration, looking stunning in the mist and spotlights.

WARBIRD RIDES


1943 Curtiss P40 Warhawk flights - Dual Control Aircraft, N540TP



30 minute flight time \$1399
60 minute flight time \$2599

North American P51 "Mustang" flights N51GP

30 minute flight time \$1699
60 minute flight time \$2899

www.NorthBayAirMuseum.org



LOCATED IN THE HEART OF WORLD FAMOUS NAPA / SONOMA WINE COUNTRY !!

FLY WINE COUNTRY MAJESTIC PACIFIC COAST SPIRES OF THE CITY SAN FRANCISCO SKYLINE GOLDEN GATE BRIDGE SONOMA WINE COUNTRY NAPA VALLEY

NORTH BAY AIR MUSEUM

AT SONOMA VALLEY AIRPORT, 23982 ARNOLD DRIVE, SONOMA, CALIFORNIA, USA 95476 TEL: 707-934-5158

CALENDAR OF EVENTS

SOUTHERN HEMISPHERE

Email: marketingevents@shuttleworth.org

21 June 80th Anniversary of the Tiger Moth Fly-In, Watts Bridge, QLD, Australia. Contact: Craig Justo Ph: 0407 740 734 www.qvag.com.au Email: craig@aeroaspects.com.au

8-10 July Geneseo Airshow, Geneseo, NY, USA. www.1941hag.org Email: Office@1941HAG.org

19-21 Aug Wide Bay Australia International Airshow, Bundaberg, QLD, Australia. Web: www.widebayairshow.com.au Email: info@widebayairshow.com.au

9-10 July The Flying Legends Air Show, IWM Duxford, Cambs. UK Web: www.duxford.iwm.org.uk

27-28 Aug Festival of Flight 20th Anniversary, Caboolture, QLD, Australia. www.qvag.com.au Contact: Craig Justo Ph: 0407 740 734 Email: craig@aeroaspects.com.au

23-24 July Thunder over Michigan Airshow, Ypsilanti, MI, USA.. Web: www.yankeearmuseum.org Email: airshowpublicity@yahoo.com

3-4 Sep Ingham Wings & Wheels Airshow, Ingham, QLD, Australia. www.inghamwingsandwheels.com.au <coordinator@inghamwingsandwheels.com.au>

23-24 July Lista Warbird Airshow, Lista, Norway. Web: www.warbirdairshow.no

25-31 July EAA AirVenture Oshkosh 2011, Wittman Field, Oshkosh, WI, USA. Web: www.airventure.org Email: convention@eaa.org

NORTHERN HEMISPHERE

3 July Shuttleworth Collection Military Pageant Airshow, Old Warden, Beds. UK. www.shuttleworth.org

14-18 Sept. Wings over Gatineau – Vintage Wings Airshow, Gatineau, Quebec, Canada. Web: www.vintagewings.ca Email: events@vintageWings.ca

SUBSCRIBE NOW!

MR/MRS/MISS/MS: 5 ISSUES

ADDRESS: 10 ISSUES

.....

.....POSTCODE:.....

EMAIL:

MY CHEQUE FOR \$.....IS ENCLOSED

PLEASE CHARGE MY CREDIT CARD

BANK CARD VISA MASTERCARD

.....

NAME ON CARD:

CARDHOLDERS SIGNATURE:EXPIRY DATE:.....

COMMENCING ISSUE:.....

BUY BACK ISSUES AVAILABLE AT: NZ\$8.50, REST OF THE WORLD: US\$7.00, AUSTRALIA: A\$8.50

RATES(postage included):

Australia:

1YR. A\$44.00
2 YR. A\$84.00

New Zealand:

1YR. NZ\$44.00
2 YR. NZ\$84.00

Rest of the world:

1YR. US\$39.00
2 YR. US\$72.00

*** Because of a new bank credit card policy being phased in, Classic Wings may find it necessary to contact you to secure your three digit security code (on the reverse of your credit card) in order that the transaction may proceed.*



Couch Flying

DARWIN'S AIR WAR 1942-45

An Illustrated History Commemorating the Darwin Air Raids

By Bob Alford

ISBN: 978-0-9807713-

0-5

RRP: A\$55.00

Available from: Owen Veal, Aviation Heritage Centre, P.O.Box 37621, Winnellie, NT 0821.

Tel. 08 8947 2145

Email: ahsnt@bigpond.com



The revised edition of 'Darwin's Airwar' is now available after being completely rewritten with new material and photos from both Allied and Japanese sources. Following the opening of war with Japan, Darwin was soon to find itself in the line of fire as Japanese forces advanced unchecked. No fewer than 64 raids, beginning 19th February 1942, hit Darwin and its surrounds. After the initial shock had subsided retaliation was soon organized with the meagre forces then available with Lockheed Hudsons bearing the brunt of these and suffered large losses as a consequence. Desperate times followed with RAAF and RAF Squadrons defending the skies as best they could and counterpunching whenever possible. The hardships faced by the aircrew were not only in the day to day living, but the brief bursts of intense combat, where death could come at the hands of an enemy fighter, mechanical failure or as a result of capture following bail out. It wasn't until January 1943 until the first Spitfires arrived and things began to turn in the defenders' favour however accidents and poor tactics with the new type took their toll, whilst long periods of boredom could be just as deadly. Darwin's attacks ended in mid 1944 and it was time to carry the war to the enemy, the offensive operations beginning in earnest with RAAF Beaufighters and NEI B-25s being joined by B-24s in attacking shipping, installations and airfields-the former being particularly dangerous. As the Japanese were pushed back squadrons rotated out of the Darwin area to the Islands and on to eventual victory. The author has described all of the above in great detail, using extracts compiled by unit historians, combat reports and archives, and an excellent selection of photographs. Add to this extensive appendices and what we have is a comprehensive and very readable account of an often forgotten, but hugely important part of the Pacific War.

LVG C.VI at War

Windsock Data File No.138

By Ray Rimell

RRP: GBP 10.90

Available from: Albatros Productions Limited, 10 Long View, Berkhamsted, Herts, HP4 1BY, UK. Tel: 01442 875838

Fax: 01442 876018.

Web: www.windsockdatafilespecials.co.uk

E-mail: mail@windsockdatafilespecials.co.uk

Some 20 years separate this new monograph on the LVG C.VI and Peter Grosz's original effort describing this wonderful machine. A great deal of new information has surfaced in the intervening years, and despite the grounding of the Shuttleworth Collection's original aircraft, renewed interest has come about through the efforts of the French Memorial Flight's restoration of an original example and the airworthy reproduction that is being built alongside it. The publication features over 70 fascinating archive photos, three pages of stunning colour profiles, six pages of 1:48 and 1:72 scale drawings (together with 1:32 scale scrap views) plus over 70 exclusive full colour close-ups of an original C.VI and the aforementioned totally accurate reproduction being created in France. This highly-detailed, fully-illustrated study of the popular 1918 German two-seater offers unique and exceptional reference for WWI aero-enthusiasts and model builders alike. Exhaustive colour notes, model kit listings, reference notes and appendices complete the content. Especially for modellers of LVG C.VI kits, particularly the superb Wingnut Wings 1:32 release, this publication is the ultimate reference package.



53° Stormo

Osprey Aviation Elite Units 38

By Marco Mattioli

ISBN: 978-1-84603-977-5

RRP: GBP 14.99

Available from: Specialty Book Stores or Osprey Publishing, Ph: +44 (0)1206 256002. Web: www.ospreypublishing.com Email: ospreyandshired2c@tbs-ltd.co.uk

It is always nice to see the men and machines



of Italy's WWII Regia Aeronautica spotlighted, it for the most part being lost in the shadow of the major combatants. The 53 Wing and its squadrons come in for some detailed study both in narrative and illustration, as the CR.32/42, Fiat G.50, Macchi C.200, C.202 and Bf 109G battle in the skies over the French Front, the Balkans, in North Africa and the Mediterranean. Established in 1936 the 53° Stormo was one of Mussolini's longest serving and most famous fighter units and by war's end had claimed 350 victories- 22 pilots making 'ace' status. For this the Stormo paid with the lives of 75 of its pilots. The day to day combats are described through log book entries and firsthand accounts, the tangles with Commonwealth pilots over North Africa being particularly interesting. Under gunned for the most part against the likes of the Tomahawk and Hurricanes they faced, 53° Stormo pilots gave a good account of themselves, however by 1943 the increasing superiority of the USAAF formations battering Pantelleria and Sicily forced the Wing onto the defensive. The final battles saw the Macchi C.202s and Bf 109Gs clash with the American medium and heavy bombers and their P-38 escorts. Unfortunately for them, the Stormo received its new Fiat G.55 fighters a few days after the surprise signing of the Armistice by the Italian Government in September 1943, which ended the operational life of the unit.

SPITFIRE GUARDIANS DVD

A Simon Van Der Spoel Documentary

Narrated by Charles "Bud" Tingwell

Running Time: 60 mins

RRP: AU\$30.00 incl. P&P. Available from:

Web: www.etherealproductions.com.au

Email: sales@etherealproductions.com.au

It is amazing

what sitting in a

Spitfire can inspire people to do! In

Simon's case it was to track down and interview

surviving Spitfire pilots and ground crew from

across Australia who served with both RAAF and

RAF Squadrons. The human interest side of one

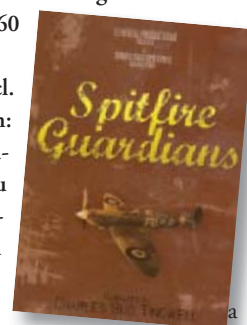
of the greatest fighters in history is the backbone

of this film and is a reminder that it is not machine

alone that makes a legend. Many Australians

joined the RAF and helped defend the mother

country from the Luftwaffe during the Battle



of Britain, however the archive footage used here is familiar and for me the more interesting section of the film is when RAAF 452 and 475, along with RAF 54 Squadrons are posted to Australia in response to the Japanese attacks on Darwin. The operational conditions could not have been more different! Recollections of having to sit at readiness in the sweltering cockpit for an hour, sweating copiously, and then having to scramble and have soaked flying gear freeze at altitude is not something easily forgotten. Following formation of 77 (RAAF) Sqd the role of the Spitfire shifted to ground attack whilst the development of better tactics to cope with the nimble Japanese fighters was also pursued during the push through Burma and on to eventual victory. There are some nice cameos featuring the Temora Aviation Museum's stunning Mk.VIII, but the real gems here are the old pilots. The 'mateship' built during the preceding years endures, as does the love for the Spitfire.



**QUALITY AVIATION PUBLICATIONS
FROM AROUND THE GLOBE**

Many English & foreign language
titles in stock for immediate delivery

WORLD WIDE MAIL ORDER SERVICE

Orders can be placed by telephone, fax or email
We accept Mastercard, Visa, Bankcard
Bank cheques & money orders in AUD

Contact us for a free catalogue
Phone/fax 61 8 8357 4756 Mobile 0419 813 916
Email: aeroworks@iprimus.com.au
20 The Strand, Colonel Light Gardens, SA 5041, Australia

AeroWorks

BUILDING THE P-51

The Story of manufacturing North American's
Legendary WWII Fighter in Original Photos.

By Michael O'Leary

ISBN: 9781580071529

RRP: A\$63.60

Available from:

DLS Australia

Pty. Ltd. 12

Phoenix

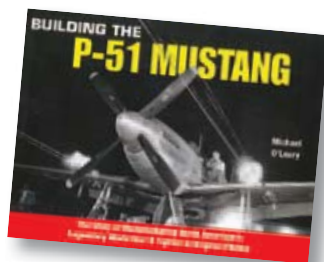
Court,

Braeside, Vic

3195. Ph.

03 9587 5044, Fax. 03 9587

5088 Email: orietta@dlsbooks.com



Renowned warbird photographer Michael O'Leary has teamed up with Specialty Press to produce an outstanding insight into the famous P-51 Mustang. Although the type has no shortage of coverage, there has been little that has dedicated itself solely to the design and manufacture of this war winning fighter –until now! The author takes an in-depth look at the men behind the masterpiece, performance data and costing. The Allison powered P-51s are thoroughly investigated, from engine detailing, through to tactical suitability and testing. There is even a look at how the aircraft were painted and crated for shipment –you want detail-you got it! The more numerous and highly successful Merlin P-51s come in for the same treatment with flight characteristics exposed and little known variations of weaponry and equipment described, such as the bazooka Mustang and the fitting of a rocket motor to try and catch the German jets. There are performance comparisons with contemporary US fighters and the Japanese Zeke detailed, a look at a couple of Mustang mysteries and finally the training (TF) aircraft, the light weight prototypes and the P-51H. For all the fascination that these subjects produce it is the incredible photographic coverage that this book will be remembered for-over 300 quality images from the author's personal archive, the USAAF and rare factory photographs, the latter just outstanding in clarity and detail. There is something here for everyone, and that includes anyone with an already extensive P-51 library. Whether you are an historian, enthusiast, modeller or pilot, this book is well worth investing in.

JAPANESE NAVAL AIR FORCE FIGHTER UNITS & THEIR ACES 1932-45

By Ikuhiko Hata,

Yasuo Izawa &

Christopher Shores.

ISBN: 978-1-

906502-84-3

RRP: GBP 35.00

Available from: Grub

Street Publishing,

4 Rainham Close,

London SW11 6SS,

UK.

Ph: 020 7924 3966 / 020 7738 1008 Fax: 020

7738 1009. Web: www.grubstreet.co.uk Email:

sarah@grubstreet.co.uk

This book is a companion volume to Japanese Army Air Force Fighter Units and Their



Aces, 1931-1945, published in 2002. As such it also represents a major updating and rewriting of Hata's and Izawa's earlier book of similar title, published some 20 years ago. The first section of the book looks at Imperial Japanese Naval Air Force (IJNAF) operations throughout this period, beginning with a detailed overview of the early combats over China which saw the devastating introduction of the infamous Zero in the summer of 1940. The book moves on to the Pacific War and the IJNAF's attack on Pearl Harbor, the Philippines and the advance though the Malayan Peninsula. These were heady days for the Japanese Air Forces with air superiority being quickly established, however fortunes changed dramatically at the Battle of Midway when despite the fighters claiming over 100 US Navy aircraft, no fewer than four of the IJN carriers were sunk-a staggering defeat for the previously triumphant Japanese. Nevertheless attacks continued and the air war became a battle of attrition over the Solomons and New Guinea. Success over Spitfires during the later attacks on Darwin was small consolation for the heavy losses suffered at Truk and the disaster known in the West as the 'Marianas Turkey Shoot' during the Battle of the Philippine Sea. From that time on the IJNAF was wholly on the defensive and with the Allied Forces securing islands and airfields closer to the Japanese homeland this defence became ever more desperate with large Kamikaze operations off Okinawa. The Home Islands came in for massive B-29 raids which the day and night fighters had trouble in combating, despite some individual successes. The second section of the book takes a look at the history and achievements of each unit involved, be it land-based or aircraft carrier-based. Section Three is dedicated to individual biographies of IJNAF aces, which makes for fascinating reading. As might be expected of such a work, prolific appendices provide detailed listings of all pilots known to have claimed five or more victories, listings of the graduation from training of all Japanese Navy fighter pilots, and of fighter pilot casualties. The book is profusely illustrated with photographs, maps and artist's side-view drawings and paintings of aircraft relevant to each of the units described.





History with Heart **THE REAL DEAL! Pt.2**

In our last issue we concentrated on this unique fighter-bomber's history and restoration in the U.K.. In this, the final of our in-depth look at the world's only genuine air worthy Focke Wulf Fw 190, we will trace the aircraft's final journey to flight and a new home with one of the world's finest collections.

'WHITE A' IN THE U.S.A. 'KRAFT EI' -THE 'POWER EGG'

The 'short nose' Fw 190A series was, in the main, powered by the 1,677 hp, 14 cylinder, BMW 801D-2 air cooled radial engine. This power plant introduced an engine management system called the Kommandogerät or 'brain box.' This was in effect a mechanical computer which set mixture, propeller pitch (for the constant speed propeller), boost, and magneto timing and this reduced the pilot's work load to use of the throttle control only. Despite over 61,000 of these engines being manufactured during WWII very few have survived and even less were available for a potential rebuild to air worthy. It was obvious from the internal damage sustained to

the overheated engine of 'White A' that donor parts would be required to rebuild it and fortunately the Flying Heritage Collection (FHC) had two additional 'fighter' BMW 801s as well as two 'transport' BMW 801 engines to call upon. The most obvious difference between the fighter and transport versions was in the weight of the crankshaft. The engine that came off this Fw 190 had very large counter weights on the crankshaft, making it quite heavy.

The loss report suggested 'White A' was lost to flak damage, however none was found when the airframe was inspected post recovery. Although not proven beyond a doubt, evidence does suggest that the aircraft came down through an act of sabotage. The engine had only recently been changed (5th July is stamped on the crankcase, however it is not determined what the significance of this date is – inspection or fitting to the airframe). The aircraft took off on the fateful mission two weeks later, so if the date referred to fitting of the engine to the airframe there are unanswered questions as to how things played out during the intervening two weeks.

When the engine was disassembled for the first time post recovery a blockage was found in the main oil line which could not be flushed

out. When a rod was pushed through the oil line, the blockage was freed, and was discovered to have been created by a piece of heavy, oil-soaked, flannel type fabric and it was clear that this had been responsible for bringing the aircraft down. The blocked oil line had caused the engine to overheat, and the starter gear shaft (which passes through the accessory gear housing and the impeller shaft on the blower) had sheared off. The starter gear shaft also drives the accessory gear case, so when the shaft sheared off, there was nothing left to keep the gears turning and the engine running.

RESURRECTING THE BMW 801

Vintage V-12's owner Mike Nixon describes this complex, and at that time, state of the art, power plant and the process of bringing it back to life.

"This project started with the 'White One Foundation's Fw 190F-8 BMW 801 engine arriving at my shop in Tehachapi, California. We were well along with the tooling; manual translating and overhaul of that engine when we were asked to test run the engine from the Fw 190A-5 for

Vulcan (FHC's parent company). When the engine arrived we discovered it had suffered some damage in transit, leading to meetings with Vulcan staff who, along with me, inspected the engine. After some discussion it was decided to take the engine back down to the crankcase and we then spent time developing a plan to action this. During the disassembly process we discovered a number of anomalies that had to be addressed if the engine was to reliably power the unique airframe it was to be fitted to.

When describing the makeup of this complex piece of machinery the crankcase assembly is as good a place as any to begin. The BMW 801 engine has a 4-piece crankshaft. The master rod assembly for the front cylinders is placed on the first (front) crank part, a second part is pressed on and a taper plug is pressed into the crankshaft with a force of 30 tons locking these two parts together. This assembly is installed into the centre case with the third part of the crank and locked together with a Hirth-coupling, tightened with over 10,000 foot pounds of torque. Then the rear cylinders master rod assembly and forth crankshaft part is installed with another taper plug, again with 30 tons of press. Add the front and rear cases with the cam and tappets and we have the heart of the engine.

The supercharger is located between the crankcase and the accessory case. The cooling fan, shaft and seal carriers are supported by high quality ball bearings in the casting along with two throttle valves. A common shaft that passes through the accessory case operates these valves. We were surprised that there were no seals on the shafts where they pass through the cases and as we found out later during the test running, a steady drip of oil would find its way to the exhaust stacks. The construction and design of the super-

charger was very compact, however the use of the main oil pressure to lubricate the bearings puts a heavy load on the seal rings. The drive in the accessory case has a spring damper that drives a two speed-clutching device to drive the cooling fan at the required speeds. The lower speed is through a one-way roller clutch that allows a fail-safe in the event the high-speed clutch fails.

The accessory case is of a fairly standard design and practice in its construction for radial engines, it also supports the mount for attaching the engine to the aircraft. The starter has a ring mounted to it that allows it to be placed in position and one hex drive on the case is turned to pull it into place. Once the wires are removed the starter is out in seconds and a replacement is on just as fast! Also located on the accessory case are the generator, hydraulic pump, RPM cable mount, gun synchronizers, fuel pump, fuel injection pump, and the command computer for the engine.

On the front of the engine is the reduction gear case and propeller shaft assembly. With this engine we have the planetary gear reduction assembly with the six timed planet gears, with the crankshaft driving the ring gear. The sun gear is on the propeller shaft and this shaft also supports the bearings for the cooling fan and the propeller pitch change gears. The pitch gears are a three layer planetary assembly that drives an exposed collar on the shaft which engages the pitch change gears on the propeller. When the collar is moved on the shaft the blades move to change the pitch angle. The control system for the propeller has a governor that operates a hydraulic motor to turn the gears for the collar as needed. There is another system that is electric which can override the hydraulic system and this is manually controlled by the pilot. When the oil is cold the system hunts



Inside of the fuel injection pump showing the roller plungers

Mike Nixon



The propeller pitch control unit with the hydraulic and electric motors.

Mike Nixon

for the proper RPM, so the electric system is used during the warm up cycle. The next item on the case is the magneto drive and timing adjustment device. Push pull cables called DUZ cables are used to adjust both the magneto and the propeller governors. Last on the case we have the return oil pump for the case and rocker covers.

The cylinders are composed of aluminium heads and steel barrels with machined fins. The valves and seats are standard practice for the time. We did notice the lack of Stellite (designed for wear resistance) on the exhaust valves and seats. The pistons and rings were also standard practice with an extra scraper below the piston pin. The quality is excellent and the tolerances comparable to practices in the USA at the time. The choke on the barrels is identical to the Pratt Whitney engines of that era. The push rods and roller lifters were well made and fit is excellent. The cooling baffles were composed of two sides, a top which conformed to the cowling seal ring, and a lower ring to cover the mounting nuts. In between each cylinder are closing plates of different designs to allow the various hoses and DUZ cables to pass between the cylinders, however these were all missing and had to be reproduced. All of the

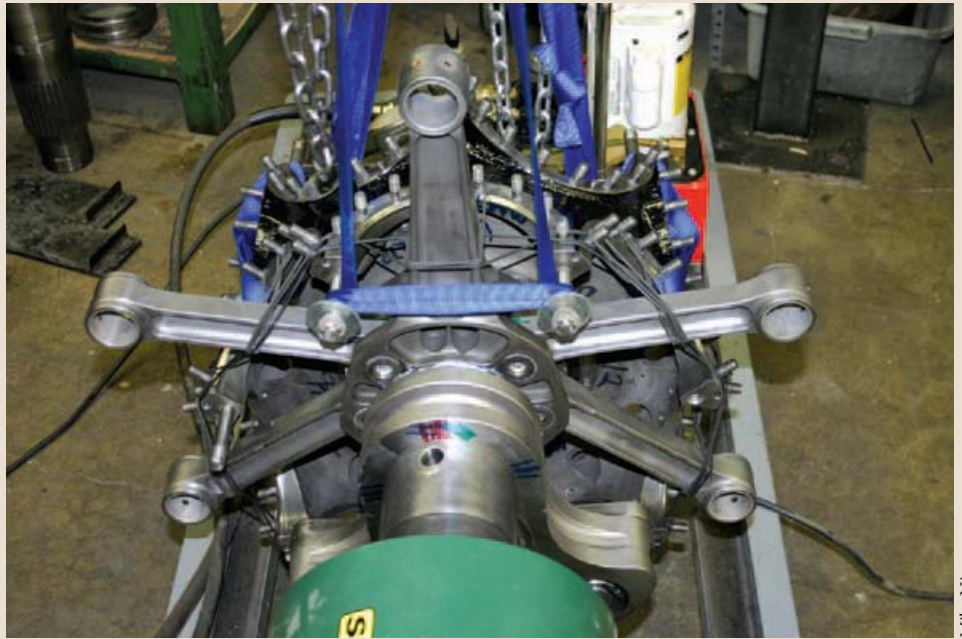
Kommandogerät –the complex command computer on the test rig.



Mike Nixon

rocker covers had drains for the oil to return to the pumps for the front and rear cylinder banks. The engine uses a Bosch twin magneto with dual points for the best performance. The extra point assembly allows the dwell angle between firings to be larger by closing as soon as possible after the primary point opens which gives a good spark at higher RPM.

The biggest challenges on this project were the fuel injection pump; the command computer and finding all the missing parts for the QEC (Quick Engine Change) to finish and test run the engine. The first of these is the injection pump. The pump that arrived with the engine had been damaged and all the calibration settings had been lost so we had to pick through a number of other pumps to find one that was serviceable and rebuild it. The pump has a three-lobe cam, driving 14 roller lifters that drive the plungers of the pumps. The outer barrels of the pumps are adjustable, changing the amount of fuel delivered for



Hydraulic pressing of the crankshaft together using some 30 tons of pressure.

Mike Nixon



The original engine attached to the remarkably intact aircraft as it arrived in the UK.

Right: Comparison once the engine had been stripped and rebuilt. The large brownish cylinder is the oil filter.

each cycle. The plungers are ganged together by a ring gear driven by the mixture-adjusting arm and have a 100 degree range of rotation that goes from idle cut-off to full power. The fit and tolerances on the plungers to the barrels are so fine that if you hold the plunger in your hand for a moment it will not fit the barrel until it cools!

With the engine we received a partially finished test rig for the pump and the computer. We finished the rig and added the necessary instruments and flow testers and calibrated the pump. We had the three main test points for the pump and tested each of the 14 assemblies and fine-tuned each until they all matched the cali-

bration chart. We then had to match the pump to the computer with the chart that has the data for altitude and temperature at the different power settings. The command computer (Kommandogerät) was the most difficult part of the engine to both understand and get to function. The computer takes input from the pilot to operate a power-lever that goes from 0 degrees to 90 degrees for the power applications and back to -20 degrees to idle cut-off for stopping the engine. The computer operates the throttle valves with the boost regulator to give the engine a given boost for each degree of movement of the power lever. When the boost reaches one atmosphere of pressure the mixture is changed from lean to rich and the boost is reduced slightly. As the lever is advanced the boost continues to rise. If the engine is not able to achieve the boost needed due to higher altitude, the computer shifts the supercharger into



Mike Nixon

via Mark Sheppard

the higher speed for more boost. The computer also adjusts the RPM for each position of the lever. Another regulator that senses the pressure and temperature of the compressed air coming out of the supercharger adjusts the fuel mixture. The magneto timing is coordinated with the mixture regulator and starts retarded, then advances to 36 degrees and at higher power reduces to 22 degrees. The computer has its own oil pump, filter and regulator to supply oil at pressure to operate all the servos and power assists for the various regulators. The system operates much like the power assist steering on our cars. The regulators make a small low energy movement and the servo multiplies it to a large high-energy movement to operate the various controls of the engine. We spent a number of months getting the various components to work on the test rig before it was installed



Mike Nixon

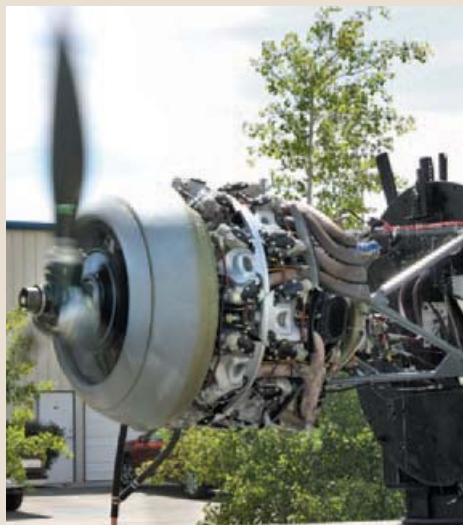
The BMW attached to the custom built test stand where it would stay for three weeks and undergo 10 + hours of run time.

complex and a lot of parts were missing. Eventually we were able to fit the cowlings and all the closing seals and at this point we had no other option but to test run the engine.

The test running of the engine started with fitting a custom mount between the engine and our test truck. Getting the wiring sorted out we discovered that the electric drive for the propeller was a later type without the motor reversing relays. We sorted that out and finished the wiring and instruments and then installed the cooling fan and the propeller after we obtained the reference marks for the propeller angles. Testing the fuel system and the magneto switches for shutdown followed- it is not good to have an engine that won't stop when you desire it to! Finally we started pumping the oil into the various pipes as noted in the manuals. The tank and the engine lines have external fittings to pressure fill the system. During winter operations the German mechanics would drain the oil on shutdown and the next day the oil was heated and put back into the engine under pressure just before running the

engine. As we were pumping the oil in we discovered that the plugs in the oil cooler were missing and the oil was running out onto the ground, and if that was not bad enough, we then discovered metal shavings and carbon sludge in the clean oil. As we were close to running I made new plugs and then installed a temporary external filter system in the line from the cooler to the engine. We also removed the cooler and cleaned most of the junk out of it.

Finally the big day arrived and we moved the test rig outside and prepped for the first runs. I did the cranking check to clear the cylinders. Then with the fuel injection pump off I primed the engine and cranked with the mags on and got the required pops out of the front and rear rows of cylinders to prove the cam timing. Then, following the manual with the power lever advanced to ¼ and the fuel system on for two minutes to purge the vapour out of the pump, I cranked the engine with the mags on. As the boost coil works through the P-lead wires the engine lit off on the third blade and as the oil pressure turned on in



Mike Nixon

The engine fires up on the test stand, one of more than twenty such instances.

on the engine. The mounting ring for the engine is also the oil tank for the computer and they have to be installed as a pair.

The last major item to sort out was the QEC as all the oil system, exhaust, fuel system and wiring are involved. As we had not been involved in the original disassembly of the engine we had to do a lot of research to find all the diagrams and photos of the many components. We started with the oil tank/cooler assembly and rigged it to the engine and then made and installed the dozens of hoses and lines to plumb the oil system. The oil system is unusual in that the hot oil from the engine is plumbed to the tank, and then goes to the next pump to go through the oil cooler at the front, and then back to the next pump and through the oil filter, after which it is used to lube the engine, and the process starts over. Add all the oil drain lines, breathers and sense lines and you start to fill up all the available space. We then made the lines to connect the engine to the aircraft as the ones supplied were for a later model and 6 inches too short. The exhaust system was



Mike Nixon

Mike Nixon in the hot seat as testing the engine in the airframe begins at Case Grande.

the computer, the RPM's took on a mind of their own. At 1400 RPM I killed the magneto and rethought the ¼ throttle setting. Trying again with the power lever at the idle stop I got a much tamer start. As we went through a number of runs we discovered that the power lever set the boost and not the RPM when the oil was cold. Keeping the prop in manual made the power changes much easier. The engine oil pump has a temperature controlled pressure regulator that keeps the oil pressure at 180/200 PSI until the temps get to 60C and then the pressure drops to 120/130 PSI.

That little drop is good for a minor heart stoppage if not expected and I make sure the pilots are expecting it! We did a number of runs on the engine over the first two days and then shut down to have the oil cooler properly overhauled. At that time we installed the cowls and thereafter completed the 'run in' hours and the power runs- whilst the final runs took place at night to check the exhaust colours.

Upon installing the engine we discovered that part of the VDM propeller pitch change mechanism was missing and as this was not shown in the

parts book we had to reverse engineer a replacement. I did the first engine runs in the aircraft in October and finally, in December, Steve Hinton did the first flight.

In summary I found this project to be the most challenging of any I have done in the last 40 years. If I would do anything different, it would be to have been involved from the very start and been able to understand the many components and their relationships. That, and overseeing the translating of the manuals, would have saved a lot of time and expense."

TESTING AND FLIGHT

On 27th March, 2007 the Fw 190 arrived at the Gosshawk Unlimited facility at Casa Grande, Arizona from JME in England. Dave Goss describes what happened next.

"Up to this point the aircraft had been restored to where it was ready for the engine and propeller installation and systems testing, followed by licensing, test flights and painting of the aircraft. Before the engine arrived from Tehachapi the aircraft was assembled and systems testing began with the swinging the landing gear numerous times. This was followed by the testing of the flap system and the horizontal trim system. The fuel tanks were filled and fuel boost pumps tested. These tests were performed with the Jeff Nelson and Custom Connections. In fact Jeff's help continued until the aircraft was delivered to FHC's museum at Paine Field, Everett, Washington on 21st April, 2011. After some minor repairs and adjustments to these various components, which are to be expected after any overhaul, let alone with a complete restoration of a sixty seven year



Connie Goss

Weight and Balance. This is when the aircraft's weight is within limits and the center of gravity is within the allowable range (both stated in the type manual) and both will remain so for the duration of flight.

old aircraft, the Focke Wulf was ready for engine arrival which occurred in July 2010.

Once the engine arrived, and with the assistance of Mike Nixon, we hung the engine and propeller and after connecting the power plant

components and fabricating some additional fluid lines, we started the engine and performed a half dozen runs with and without cowlings.

Following the engine runs and a taxi test, a weight and balance was performed by ATW of



Jim Larsen

Steve Hinton at the controls on one of the first test flights-the first time an original Fw 190 had taken to the skies in some 65 years!

Marana, Arizona. It was then time to get the 190 licensed, the procedure of which was performed with the help of DAR Bill Pratt and the Scottsdale FSDO. These two entities walked us through all the necessary steps. The paperwork done, the day of truth arrived on 1st December, 2010 when the world's only original airworthy Fw 190 took to the skies being piloted by the able hands of Steve Hinton from Chino, California. The first flight lasted about twenty minutes without any major problems, although we did seem to have a nagging brake problem. The brakes would fade by

the time Steve taxied back to the Gosshawk ramp. After re-arc-ing the brake shoes and adjusting the shoe clearances, the brake problem appears to have been solved.

Steve performed four flights, varying in length, during which time he performed systems checks and various flight manoeuvres to determine the safety and reliability of the aircraft. After these four flights, we built a paint booth in our hangar, and with the guidance of curator Cory Graff, from the FHC museum, Don Copeland and his crew at Arizona Aeropainting came and per-

formed their magic and painted the 190 in her Eastern Front colours (This is described in detail in the following section of the article). After the painting was completed, Steve again came to Casa Grande and performed two more test flights and thereafter signed off the aircraft as safe with no unfavourable characteristics.

The aircraft was thereafter disassembled over a period of five days for shipping to Seattle on 13th April and loaded onto a flatbed truck, and upon arrival was reassembled by the same team”

PAST TO PRESENT

Allocated to 4/JG54, the aircraft's original factory camouflage was soon painted over with a three colour combination somewhat haphazardly applied, in order that the 190 would have effective camouflage over the terrain which it would fly - the forests of Northern Russia.

At the beginning of July 1943, 4/JG54 was in action again following a short rotation back to the Reich and when the newly formed IV Gruppe reached Russia in the middle of July, 4/JG54 were subordinated to it. As the 10th Staffel (Squadron) of IV Gruppe (Group) carried white numbers, it was decided white letters would be applied to the aircraft of 4/JG54, as they were to act as a semi autonomous ground attack unit. Consequently a white 'A' was applied to the fuselage of 1227 in lieu of the common numbering system.

Cory Graff of the Flying Heritage Collection describes the painting process that sought to return the aircraft to its 1943 look.

“The paint scheme on the Flying Heritage Collection's Focke Wulf Fw 190 A-5 is unusual in that unlike the traditional grey over grey paint schemes of the aircraft operating over Western Europe, this Fw 190 was partly covered with Russian forest colours to make the aircraft blend in



Period photos of JG 54 Grünherz (Green Hearts) Fw 190s operating in the northern sector of the Eastern Front during the summer show the variations in camouflage - not surprising when they were field applied.



better while it flew missions over the northern sector of the Eastern Front.

After this aircraft came down its green and brown top coat helped keep it hidden for many

years in the wilderness. The scheme was dutifully copied by the FHC in the last months of the aircraft's restoration process.

Working chronologically, the first coats on the Fw 190 were those applied by the Focke Wulf factory in 1943. The belly of the lost aircraft carried RLM 76 - a light grey. Since many shades of RLM 76 are found on German aircraft, the final colour was determined by matching actual skin pieces from the wreck. On top of this base coat, various factory stencils were applied in black and red. Only those stencils on the lower portions of the aircraft survived, the upper stencils obliterated by subsequent further applications of paint. The national insignia and swastika on the tail, applied at the factory, were laid out with tape, white first, and then the black 24 hours later, after the first



Cocooned inside a custom built paint booth, painting of the aircraft gets underway with Don Copeland of Arizona Aeropainting LLC on the spray gun.

two coats of white had dried. We had started out with stencils but found that it was very difficult to get everything to line up correctly, especially over the compound curves of the aircraft's fuselage. Good old tape worked best to fill in the straight lines for the black crosses. The aircraft's werk nummer (serial number), however, was applied with a stencil high up on each side of the vertical tail.

As the Fw 190 moved east during 1943, it acquired the five yellow recognition panels applied to nearly all German aircraft operating over Russia. Quickly sprayed before the aircraft joined a combat squadron, the yellow covered the underside of the nose, bottom of the rudder, and the lower outer panels of each wing. As well, a yellow band encircled the fuselage near the tail. We followed suit, applying the next coat of markings to the newly-restored aircraft.

Without the use of masking, most of this work was replicated on the aircraft by a skilled painter in a makeshift paint booth in Arizona. In fact, this was a new experience for our man, Don Copeland of Arizona Aeropainting LLC, with the spray gun. He'd spent most of his career working hard to never, ever get overspray on an aircraft! Now, we were asking him to work like a hurried



Cory Graff

spots, the ground crews set out on their own - developing a pattern unique to this Focke Wulf.

Studying images of the wreck revealed that, in 1943, painters masked previous coats and artwork in some places and lazily shot around other sections. Nowhere is this illustrated better than on the aircraft's vertical tail. The werk nummer was carefully but quickly masked off and painted around, leaving the black numbers with a grey background showing through like a win-



Cory Graff

The Order of Things - why paint the insignia near the beginning of the process? Unlike a model kit, where the decals go on last, the Fw 190 had its paint applied in a similar fashion to that applied during the war. Factory colours first (including insignia), paint applied during transit, and finally camouflage and code applied at squadron level. Each layer blends with, and sometimes oversprays the next. It's much easier to mask the insignia (as it was done in the field) than to protect the entire aircraft from overspray while painting the white background of the crosses and swastika.



Cory Graff

mechanic in the field, shooting the lines by hand without hours of prep work.

Finally, it came time to coat the fighter's top surfaces with camouflage. When the Fw 190 flew with JG 54, a mix of Russian forest colours covered much of the aircraft's factory greys. Using skin pieces from the actual wreck as a guide, a dark green, bright olive, and mid-range brown were mixed to the shades observed on the downed aircraft. Some of the sections of colour followed the grey sections underneath, however in other



Cory Graff

dow amidst the camouflage. Around the aircraft's swastika, the painters 'winged it' - shooting close with no tape or paper and letting the greys underneath show through. We followed suit. The aircraft's individual identity within the staffel, white 'A,' went on over the forest colours. Each colour took a day to dry and in many places four

or more shades covered one another, touched, or overlapped. Beyond that, the paintwork had to be done in its chronological order -factory, transit, and then squadron paint. After finishing work which included touch-up, clean-up, and finishing the first aid kit symbol on the side of the fuselage, the newly painted Fw 190 was rolled outside for

a photo shoot in the bright Arizona sun following some 80 man hours of work. Although paint applied in 1943 would have been a flat finish to cut down on reflection, it was decided to give this aircraft what is known as an 'egg shell' finish, this basically a semi glossy finish which allows it to be far more easily cleaned"



Jim Larsen

POSTSCRIPT

After arrival and assembly at Everett some finishing in the form of adding the aircraft's armament was undertaken. And for those who are sticklers for authenticity-yes the FHC plan to fit a dummy bomb to the restored under belly ETC rack in the long term!

The wonderful machine now joins the other historic aircraft of the Flying Heritage Collection in the display hangar and come this (northern) summer, the only surviving original Focke Wulf Fw 190 A-5 will again take to the skies during the FHC's Fly Day events.



Jim Larsen



via FHC

Just over two decades separate these photos. A remarkable discovery and an equally remarkable restoration!



Connie Goss

Acknowledgments: This in-depth two part article would not have been possible without the generous help of Adrian Hunt and Cory Graff (FHC), Bruce Gordon, Mike Nixon, Dave & Connie Goss, Mark Sheppard & Jim Larsen.

The Flying Heritage Collection

Paine Field, 3407 109th Street SW,
Everett, WA 98204.

Web: www.flyingheritage.com

Hours: 10:00 a.m. - 5:00 p.m.
Seven days a week from Memorial Day to Labor Day. Six days a week, Tuesday - Sunday, the rest of the year. Closed on Thanksgiving and Christmas.

The Last Mystery Aeroplane was a

STINSON L-5 'SENTINEL'

WE TAKE A LOOK AT THE FLYING JEEP AND ITS PRESENCE 'DOWNUNDER'!

By Dave McDonald and Graham Orphan.

The L-5 played an important and often overlooked role during World War Two and was renowned for its versatility and rugged qualities—just what was needed for the multitude of tasks it was required to carry out. Appropriately nicknamed the 'Flying Jeep'—this was a reflection of its lack of creature comforts and the fact it could accomplish what was asked from it with little fuss or fanfare. The type carried out photo reconnaissance, resupply, evacuation of wounded, message courier, VIP transport, and artillery spotting - its short take off and landing capabilities allowing this to be done from even the most rudimentary landing strips.

The L-5 was essentially developed from the commercially successful Stinson 105 Voyager, six of which were purchased in 1941 by the USAAF for testing. This followed an invitation by General 'Hap' Arnold to various aircraft manufacturers to submit existing designs for field trials in order

that a suitable multi-purpose observation aircraft could be found to meet the needs of the Army. Designated as YO-54s, the Voyager's 100hp Franklin O-200-1 engines proved to be underpowered, however the excellent aerodynamic qualities and relatively simple maintenance and construction of the Voyager meant it was chosen, but not before it underwent a major redesign. Although a large number of Voyager components were retained, the resulting aircraft was substantially different in both appearance and structure. The refinements included the substantial stiffening of the slotted wings to cater for the expected greater aerodynamic stress, whilst the new lengthened fuselage featured tandem seating and 'greenhouse' windows which increased the all important visibility. The fin and rudder were enlarged and the undercarriage featured long-stroke main gear oleos and a telescoping oleo-damped tail wheel in order that it could withstand the stresses of improvised landing



Darren 'Mory' Mortrean

strips. With the modifications requiring minimal changes to the factory tooling and assembly line, production was able to begin quickly. Designated 'Model 75', the prototype was tested with various engine configurations before the 185 horsepower six-cylinder Lycoming O-435-1 was finally selected. This provided a maximum speed of 130 mph (209 km/h) a range of 437 miles (704kms) and a service ceiling of 15,700 ft (4,785m). Impressed with the result the USAAF placed an initial order for 275 aircraft and with the war pressing, waived the usual evaluation period. Production aircraft were designated 'Model 76' but this was changed to reflect the types purpose, becoming the Stinson O-62 ('O' for Observation). A further designation change was enforced later in 1942 and the O-62 was thereafter referred to as the L-5 ('L' for Liaison).

Some 3,800 examples were built in Wayne, Michigan, by the Stinson Division of the Consolidated-Vultee Corporation and they served on the battle fields of both Europe and the Pacific. As war progressed Stinson produced a number of variants including the L-5B which had a deeper fuselage to carry a stretcher; the L-5C was equipped with a reconnaissance camera; the L-5E had improved control surfaces; and the L-5G had a more powerful 190-hp Lycoming O-435-11 with a controllable pitch propeller. This was the final production version and was redesignated the U-19B during



C W Filire

The pre-war Stinson HW-75 (105 series) Voyager provided the basic wings and tail group for the L-5. Two 105s were flown in Australia pre-war. Both survive but neither is presently in flying condition.



The last of the Indian Stinsons to come to Australia was imported by John Markham of Perth who had it restored with the group of L-5s rebuilt at Coolangatta towards the end of the 1990s. This aircraft is now owned by Warwick Henry (seen here) who flew it right across the continent to base it back in Queensland.

its final service days. The U.S. Navy and Marine versions were identical to the Army models but were known as the OY-1 (Liaison) and OY-2 (Ambulance), while British Lend-Lease aircraft were known as the Sentinel I (L-5) and Sentinel II (L-5B).. The aircraft later returned for service during the Korean War as well, until superseded by the Cessna Bird Dog. Several soldiered on thereafter in both the US and foreign, mainly Asian, service, however by the late fifties most had been retired. Thereafter several hundred found their way into the civil sector and were impressed into even more diverse roles-anything from crop spraying to banner towing. There was really nothing the venerable L-5 couldn't take on and do an outstanding job at in the process!

With advent of the 'warbird', several have been returned to their former glory much to the delight of both enthusiasts and owners - its popularity seeing a specialist group, the 'Sentinel Owners and Pilots Association', being formed in 2002.

SOUTHERN SENTINELS

The Stinson L-5 has had a relatively limited association in Australasia, with little more than a dozen becoming Australian owned and none re-

corded as having operated in New Zealand, and certainly not under 'Kiwi' ownership. The type was used by the U.S. Army in Australia during WW-II, and in particular, in New Guinea which was under Australian administration during that conflict, the L-5 serving in large numbers during the campaign against Japanese forces. The remains of a number of L-5s are known to still exist in what is now Papua New Guinea and Irian Jaya, where these aircraft were lost in service or left disassembled at abandoned airfields.

One L-5 was trialed for the Royal Australian Air Force and flew in the RAAF as A38-2. That aircraft (s/n 42-99129) was effectively a 'hand-me-down' from the USAAF. This machine was operated by No.37 Sqn. for nine months before being returned to the USAAF in February, 1945.

In late 1945 aviation was reverting to many important peace-time roles and surplus military aircraft began to be retired and in some cases scrapped, or for those with utility applications, redirected towards civilian flying roles. Australian



The 'Flying Jeep' is captured with its ground-bound name-sake in this promotional photograph staged during early WW-II. The undercarriage leg fairings seen here were shortlived once the aircraft entered service.

San Diego Air & Space Museum



Many Stinson L-5s failed to survive their wartime service. These examples are thought to have been molested by strong winds at their base in the South West Pacific Theatre.



Many L-5s that did survive military service during WW-II found themselves back at the front during the Korean conflict, as is the case with these two L-5Bs, both looking a little tired for their long years of service.

operators purchased some 25 surplus USAAF C-47s, three of which were destined to serve with QANTAS. In the hold of these aircraft came at least four L-5s that all subsequently joined the Australian Civil Aircraft Register. Three of these aircraft survive today. These were followed by two subsequent imports during the early post-war period. These comprised VH-ALQ (s/n 42-99477) which operated between 1947 and 1955 when it was retired from use near Mt. Isa, Qld., and VH-CSA (s/n 44-17739) which operated for only three years before being withdrawn from service and stored near Lae, in Papua New Guinea.

One of those early arrivals that traveled in the hold of the QANTAS C-47s became VH-BFR (42-99465) remains in outstanding airworthy condition in Queensland. For about a quarter of a century, it was the sole flying L-5 in Australia. This aircraft had been rebuilt to flying condition by Howard D'Alton, who could be considered the first serious Australian devotee of the type in modern times. Howard also held most of VH-BGQ (s/n 42-99470) to assist in the rebuild of VH-BFR, along with the wings of a Stinson 108 Voyager which were used on VH-BFR. The aircraft was finished in a metallic blue/white colour scheme with false wood-grain instrument panel and velour upholstery, as was fashionable at the time. Several years later, in 1977, Howard sold



Howard D'Alton completed L-5 VH-BFR (42-99465) in an attractive civilian scheme when he restored the aircraft in Tasmania during the early 1970s. The same aircraft appears at right in more appropriate livery!



Another colourful civilian scheme was worn by this Philippines registered L-5B when it arrived in Australia in 1977. It is now restored and flying as VH-CDF 'GRUMPY', seen at the top of the opposite page.

VH-BFR along with VH-BGQ to Malcolm Long, the quietly spoken enthusiast who would become the 'Patron Saint' of the L-5 in Australia and who, with Ron Lee and Malcolm's sons Mike and David, would ultimately effect the largest single restoration initiative directed towards the Stinson L-5 anywhere in the southern hemisphere (if not the world).

Two years after acquiring VH-BFR, Malcolm imported another Stinson, this being the all-red L-5B (s/n 44-17643) which arrived from the Philippines in 1979. Several years later, Malcolm acquired yet another from that same source, this being an L-5E (s/n 44-17782) which arrived in 1985.

Easily the largest influx of L-5 arrivals since the war era occurred in September 1991 when no fewer than four L-5s and L-5Bs arrived from India. These had been purchased and imported by another accomplished Australian warbird pioneer, Randal McFarlane. These machines came with a significant spares holding including numerous Lycoming O-435 engines with which to power the aircraft when they returned to service. In 1993, this entire package was purchased by Malcolm Long to add to his gathering stable of 'flying jeeps' and this led to the beginnings of the significant restoration initiative alluded to earlier. The aircraft comprised two L-5s (VT-CDL and VT-CHN) and two L-5Bs (VT-CCO and VT-DPL).



Brad Hurley

Brothers Brad and Jeremy Hurley, both commercial pilots, jointly own this L-5BVH-CDF 'Grumpy'. This aircraft spent most of its post-war life as a civilian aircraft in Philippines where it wore a bright red colour scheme (see previous page) before it was brought to Australia for restoration.

side of the restoration that would ultimately see several more L-5s appear in Australian skies, all of them restored to the same 'factory fresh' standard. This term is used carefully, as all observers of these restorations were quick to note that like all of Ron's projects, the aircraft are inclined to look like 'time-capsule' or 'new-old-stock' machines once completed, with that standard military finish and definitely no unoriginal 'gloss' to be seen anywhere.

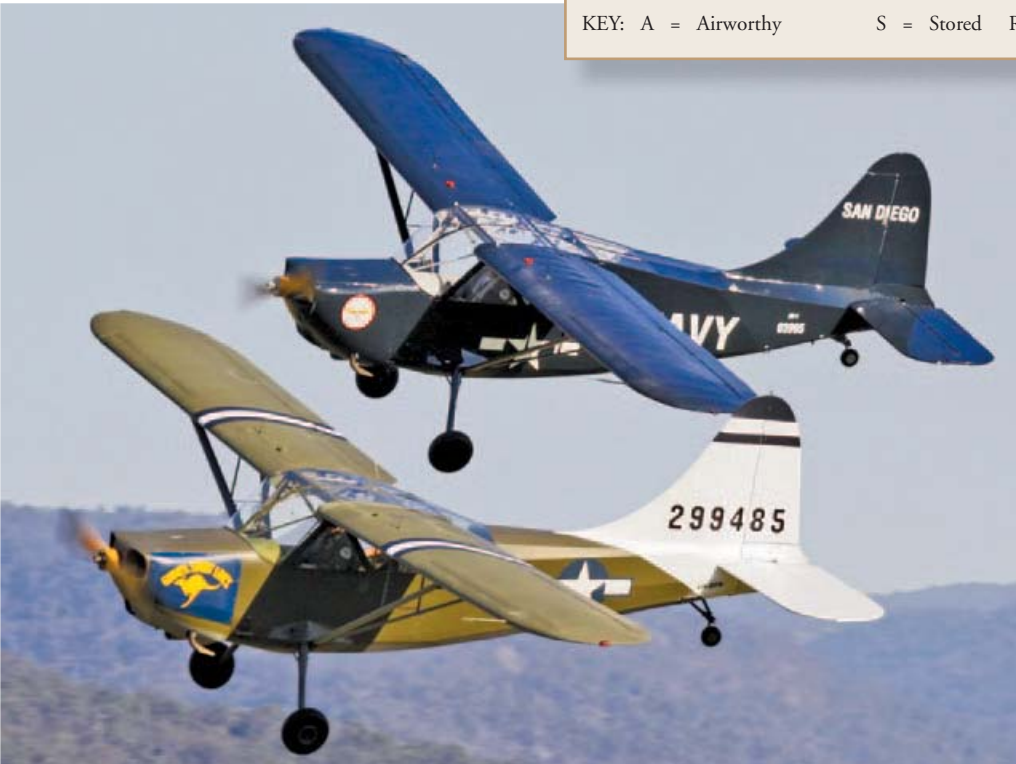
During the course of the restoration of the former Indian airframe at Coolangatta, another initiative was underway that would see a further Indian L-5 'refugee' head to Australia. This machine was L-5B VT-CRO (s/n 42-99645) which

Malcolm established a workshop in what had been the Air Gold Coast hangar at Coolangatta Airport at the southern end of Queensland's tourist Mecca, the Gold Coast. Here the plan was to rebuild a batch of L-5s in concert, taking advantage of the resulting 'economies of scale' that would evolve when numerous identical tasks are carried out together. Legendary aircraft engineer and pioneering restorer Ron Lee, himself a dedicated L-5 owner and long time associate of Malcolm through earlier joint efforts on aircraft restorations, would manage the nuts and bolts

AUSTRALIAN L-5S

MODEL	CIVIL REG.	C/No	S/No	FORMERLY	OPERATOR	STATUS
L-5	-----	76-1370	42-99129	A38-2	USAAF/RAAF	U/K
L-5	VH-BFR	76-2744	42-99465	-----	S. Searle, Qld.	A
L-5B	VH-CDF	76-2380	42-17643	RP-C945	B & J Hurley, Vic.	A
L-5E	-----	76-4069	44-17782	RP-C84	Long collection, Qld.	S
L-5B	VH-CCO	76-2178	44-16890	VT-CCO	Michael Long, Qld.	A
L-5	VH-BGQ	76-1706	42-99470	-----	Ron Lee, Qld.	R
L-5B	-----	76-1880	42-99639	VT-DPL	Ron Lee, Qld.	S
L-5B	VH-BEN	76-3312	44-17025	VR-HEO	Sid Beck, Qld.	S
L-5	VH-NLR	76-1572	42-99331	VT-CDL	Dave Wiltshire, Vic.	A
L-5	VH-CHN	76-1613	42-99399	VT-CHN	John Hitzke, Qld.	A
L-5	VH-BOE	76-949	42-98708	VH-BEE	N.A.	U/K
L-5	VH-ALQ	76-2751	42-99477	-----	N.A.	U/K
L-5E	VH-CSA	76-4026	44-17739	-----	N.A.	U/K
L-5	VH-CRO	76-1886	42-99645	VT-CRO	W. Henry, Qld.	A
L-5E-1	VH-NOY	76-4393	Bu. 03995	44-18115	S. Searle, Qld.	A

KEY: A = Airworthy S = Stored R = Restoration U/K = Unknown



had been secured in the early 1990's by John Markham and (with a Tiger Moth VT-DHW, c/n 84750), was shipped to John's home near Perth, Western Australia. The L-5B was subsequently transported to Coolangatta to join the restoration party underway with Malcolm and Ron. By the end of the 1990s, five perfectly restored Sentinels had emerged from the restoration hangar at Coolangatta and taken to the air. These included four former Indian airframes and one recovered from the Philippines in 1979. In the meantime, the stalwart VH-BFR had been retired so that it too could make its way through the restoration process.

At around this time, another figure was to enter the exclusive world of 'downunder' Sentinels

The first and the last. The earliest Australian L-5 restoration VH-BFR, is seen with the latest, this being the L-5E-1 (OY-1) VH-NOY, both machines now owned by L-5 devotee Steve Searle who bases them at his fabulous 'Wirraway Station' airfield.

Darren 'Morty' Mortram



John Hitzke chose to complete his L-5 in the colours of a USAAF B-17 'American Beauty' on which his uncle served as a co-pilot during WW-II, hence the 'Little American Beauty' nose-art. A fitting tribute!



Captured at the Watts Bridge Memorial Airfield near Esk, Qld., is Mike Long's L-5B, VH-CCO, which is normally based at Coolangatta Airport on Queensland's Gold Coast.



This nice stock L-5 was another of the batch of four brought from India in 1991 and subsequently restored by Malcolm Long's team at Coolangatta. This aircraft belongs to Victorian, Dave Wiltshire.

when Steve Searle became involved in the world of vintage aviation and struck a lasting friendship with Malcolm Long. Since both were based at Coolangatta, it wasn't long before Steve was bitten by the L-5 bug and subsequently acquired two of the aircraft that had been through the restoration mill at Coolangatta. This however was not enough for Steve who set about adding another machine to the growing stable of L-5s based in southern Queensland. Steve managed to purchase a rare Stinson OY-1 from the USA in project form and once again a pile of rubble made of tubing and timber appeared on the floor of the familiar Coolangatta hangar. After the completion of the batch of L-5s already taken through the facility, there was considerable experience on these aircraft to be found on the airfield and this time, the restoration was undertaken by Malcolm's sons Mike and David who by now, operated a major maintenance facility at Coolangatta. There was no question that the experience in hand paid dividends and the boys sailed through the restoration to produce one of the most striking looking restorations yet completed on an aircraft from the Stinson Model 76 family. With all of the other Australian L-5s now flying in U.S. Army olive drab, the gleaming dark blue beauty certainly stood out as being a 'different' specimen altogether!

Sadly, Australia lost its greatest L-5 advocate in November 2007 when Malcolm Long passed away after a short illness. He had made a great difference on many fronts, but in the area of preserving the Stinson L-5 series, Malcolm's is a lasting

Brad Hurley

Brad Hurley

legacy. To date, some 15 members of the Stinson L-5 family have called Australia home for any extended period. Of those, seven are now flying, all of them pristine restorations and all with the caring hands of the Long family having contributed to their current condition. Four L-5s have been lost in the passage of time, one of them in PNG and another, likely returned to the USA soon after the war. Two are asking to be found in some remote parts of Australia whilst another resides as a derelict in a northern Qld museum. Two are still being restored and one of these is well advanced.

So for an aircraft that had a relatively small history in Australia with just four evident in the country at the end of 1945, it is quite impressive that nearly twice that number now fly as pristine restored warbirds, over 65 years later! We do know that interest in these robust little machines continues to grow so let us hope that the Australian branch of the L-5 community also continues to grow and keep these machines well represented 'downunder'.

ACKNOWLEDGEMENTS

We'd like to thank Craig Justo; Brad Hurley; John Hitzke; Warwick Henry and James Gray for their help in preparing this feature.



The Next Teaser...

Well thanks to all who entered our last 'Mystery Aeroplane' quiz. As can be expected, we had a few suggestions of similar 'L-Birds' produced by Cessna, Taylorcraft etc., but most seemed to know the L-5 reasonably well. The first two correct entries drawn both have had some experience with the L-5. Our Congratulations to Bill Tromblay of Wisconsin, USA who is restoring a former USCG L-5 (we'll run something about this a little later) and Bryan Cox of Tauranga, New Zealand who encountered these machines in Japan at the end of

WW-II when he was a Corsair pilot based there with the RNZAF. Well done to both of our very qualified entrants and to all who sent in their entries!

This next mystery machine is a monoplane from the 1930's era that appeared in various parts of Europe, mostly in the training and communications roles and has served in both peacetime and military capacities. Combining welded steel tube and timber construction the whole machine was fabric covered. Is there a 'downunder' connection. Yes, but a fleeting one! Have fun with this one! Regards, GMO



Australia's Great Warbird Fly

RAAF Air Pilgrimage by Matt Grigg

Few Air Forces around the world can claim 90 years of active service, a milestone achieved by the Royal Australian Air Force (RAAF) on 31 March 2011. Discussions had commenced over 12 months previous about how best to celebrate this auspicious occasion. With the birthplace of the RAAF, Point Cook, still in operation as the world's longest continually operational base, it was without question that this site would feature in the celebrations.

Historically aware members of the RAAF proposed a flying journey, which became known as the Air Pilgrimage and would be organised with assistance from the Antique Aeroplane Association of Australia. Commencing at Temora on 28 March with an atmospheric dinner in the main hangar of the Temora Aviation Museum (TAM), the pilots and crew of around 60 ex-military, vintage and classic aeroplanes had gathered from around the country. Most were privately owned but the TAM, RAAF Museum, and the Royal Australian Navy Historic Flight also provided aircraft.

The Pilgrimage was planned to visit former wartime training bases over several days, the first being Temora, then Tocumwal and Ballarat before culminating at Point Cook. Visits to both Tocumwal and Ballarat provided the opportunity for thousands of school children to be inspired by the array of aircraft on display, from Spitfire, Mustang, Wirraways and Hudson, through to Tiger Moths and Austers. The RAAF Roulettes aerobatic team also performed at these locations.

Arrival at Point Cook on 31 March marked the successful completion of this flying adventure, notable for the linkage between the RAAF and civilian operators, and for the lack of incidents along the way. A formal dinner in the majestic Officer's Mess celebrated the RAAF's birthday in style, attended by all living Chiefs of Air Force. As Pilgrimage participants retired to their accommodation quarters, thoughts turned to the next significant milestone – the centenary of the Australian Flying Corps in 2014. Planning has already commenced in order to make this event another one to remember.



Wirraways of the Temora Aviation Museum and Steve Searle's Wirraway station pair up with Scott Taberner and Paul Bennett at the controls. Photo by Lara Taberner



Peter Hallen

Air Pilgrimage starting point was Temora which was a major Tiger Moth training base during World War Two.



Peter Hallen

A star wherever it goes, Temora Aviation Museum's magnificent Spitfire Mk. VIII was a welcome participant on the Pilgrimage and at Echuca.



Peter Hallen

Sydney based Roy Fox went to the effort to change the colour scheme of his lovely Dragon Rapide to represent an example operated by the RAAF.

The popular 'Plastic Parrots' of Matt Denning (in the foreground) and Matt Henderson, made an interesting contrast with their 'first and last' colour schemes.



Lara Taberner

Great Vintage & Airshow Week!!

2011 National Fly-in by Matt Grigg

The third appearance of Antique Aeroplane Association of Australia at Echuca, Victoria, was thankfully blessed with blue skies and light winds, a vast contrast to the 2009 event! It is always pleasing to see a row of pristine Tiger Moths facing a similar number of Austers, while nearby, rests a variety of classic American types such as Piper and Stinson. Cessna was well represented by a unique line-up this year, with all six of Australia's flying Cessna C195 aircraft in attendance along with two exquisite examples of the earlier C37/C165 Airmaster.

For those with a particular inclination towards ex-military aeroplanes there was a veritable smorgasbord on offer. No fewer than 15 Yak18Ts and 52s parked along the northern line, not far from the four Harvards/Texans, including Steve Death's recently completed restoration. Two Wirraways and three Winjeels represented a time when Australia built aeroplanes. On the main hardstand resided Spitfire Mk.VIII, Mustang, Yak 9, P-40N and P-40F, each displaying fighter technology of WW-II while the Lockheed Hudson bomber presented a sight that is unique worldwide.

The glamour of the 1930s was well represented by the British de Havilland Dragon and Rapide, and the American Lockheed 12, Beech 17 and Stinson SR-8C Reliant. The latter two aircraft were among the five radial engines that were flown across from Western Australia for the event, highlighting that the AAAA is truly a National organisation.

Visitors turned their eyes skywards on the Sunday to watch the airshow, featuring many of the participating aircraft including formation aerobatics from the Southern Knights, and the RAAF Roulettes in their PC9 aircraft.

The weekend was a resounding success for the AAAA, with aircraft numbers aided by good weather and the Air Pilgrimage. Next year's National Fly-in will be at Cowra, NSW, over the March 23-25 weekend.



Grand Champion Award at Echuca went to Ben Merkenhof's outstanding Boeing Stearman, fresh off restoration by Panama Jack's Vintage Aircraft Company at Jandakot. Photo by Jon Davison



Judy Pay's very rare Pacific Theatre veteran Curtiss P-40F made another welcome visit to Echuca.



Chris and Lorraine Shine brought their outstanding Beech 17 from Western Australia for the National Fly-in.



This pristine J-3 Cub was flown in both events by Kenny Love and daughter Rebecca.

The very impressive fighter line-up included Mustang, two Kittyhawks, Spitfire and Yak-9 – top shelf V-12s!!



Rare in other countries, the former RAAF Auster Mk.III is a popular model with Australian enthusiasts.





For many decades there were just two examples of the Cessna C-190 / 195 series based in Australia. These popular tourers are now represented by seven examples, six of which were at Echuca for the AAAA National Fly-In. Photo by Peter Hallen

SNIPPETS - LATE NEWS - SNIPPETS - LATE NEWS

PO-2 PERFECTION

After some eight years of rebuild, the Shuttleworth Collection's Polikarpov Po-2, G-BSSY (ex YU-CLJ, ZK-POZ) returned to the air on 8th February and made its much anticipated public debut at the Spring Air Show held on 1st May. Built in 1944 this aircraft was one of 30 which were handed over to the Yugoslav Air Force post war. Sold into the US in 1994, it thereafter spent some time at Omaka, New Zealand, where it was made serviceable and a single short flight was made before it went to Old Warden and the Shuttleworth Collection in 2003.



Brian Marshall



SYWELL SENTIMENT

Following six years of restoration the Sywell Aerodrome (Northampton) based Be.2 replica, G-AWYI, flew again in the early evening of 11th May. The flight which lasted just under 20 minutes revealed excellent handling characteristics -along with a few minor snags, such as an oil leak and an over-rich mixture setting which will be sorted out over the upcoming test flights.

For pilot Matthew Boddington, it was a particularly special moment -making the first flight, from the same airfield and in the same aeroplane that his late father Charles Boddington had done on its 'first' maiden flight back in March 1969.

SKYTRADE

The company with 50 years of provisioning experience

Comprehensive stock of unused airframe and engine spares for DHC-1 Chipmunk, DH 82A Tiger Moth, Gipsy Major 1 and Gipsy Major 10

Without us you would be grounded!

Skytrade International Ltd
 Upcott Barton • Nomansland • Tiverton • Devon • EX16 8NT • England
 T: 1884 860202 F: 1884 861610 E: skytrade@btconnect.com

FHC B-25 READY

B-25J Mitchell, 44-30254, N41123, has been completed by Aero Trader, Chino with the application of its new paint scheme, that of the 490th Bomb Squadron aircraft. Known as the 'Burma Bridge Busters' the Squadron became one of the most specialized bombardment squadrons of the Pacific War and destroyed 191 major bridges in Burma, Thailand, and southwest China - these achievements cost the squadron 185 crew members killed in action. By the time these words are read magnificently detailed bomber will have joined the Flying Heritage Collection's fleet at Everett and will be displayed to the public on the 16th July and 24th September.



William Hamilton



Tony Clarke

SKYRAIDER COLOURS

Kennett Aviation's North Weald based Skyraider, BuNo 126922, G-RADR was rolled out wearing its new colours at the airfield's Open Day on 5th June. The aircraft is finished in the original colours it wore whilst flying some 70 missions serving with VA-155 in the Korean War flying off the USS 'Princetown.'

TIGER MOTH PARTS
GIPSY MAJOR ENGINES & PARTS

BUY, SELL AND EXCHANGE
 We have a large stock of original and used Tiger Moth parts and Gipsy Major engine parts as well as complete engines ready to install.

Bill Finlen
 Tiger Moth Parts
 PO Box 2069,
 Milton, Qld. 4064
 AUSTRALIA

Ph & fax: (+ 61) 7 33671317
 Mobile: (+61) 438 789 479
 info@tigermothparts.com
 www.tigermothparts.com

*Remember,
 things don't always go
 according to plan!*

SOFTIE 
EMERGENCY PARACHUTES
 THE PROFESSIONALS CHOICE
from Para-Pernalia, Inc.

Reliable
Comfortable
Lightweight

Our record speaks for itself:
 Softie Emergency Parachutes
 saved 4 lives in 1999
 Read the stories on our website at:
 www.softieparachutes.com

Para-Pernalia, Inc.
 International: 360-435-7220
 Fax: 360-435-7272
 e-mail: info@softieparachutes.com
 www.softieparachutes.com
 19124 59th Dr. NE, Bldg. 4
 Arlington, WA 98223 USA

*Para-Pernalia Inc.
 Thank You!
 Kelly R. Neil*

Jim Larsen



OZ SPIT SALE

Following four years on display, hybrid Spitfire MK F. Vc, LZ 844 was removed from Queensland Air Museum, dismantled and loaded into a container which departed Caloundra on 11th May. Purchased by a British collector (along with the remains of Spitfire TE 566) from owners Aviation Australia, they will both be rebuilt to air worthy standards in the UK.

TWO SIX TWO TAXI

On 4th May test pilot Wolfgang Czaia conducted a high speed taxi run with 'White 3' which included getting the nose wheel off the ground. A first flight is due as we go to print.

NMUSAF PLEDGE

The Air Force Museum Foundation, Inc. announced its acceptance of a US\$10 million pledge from the Lockheed Martin Corporation. The pledge, which is the single largest dollar gift the Foundation has ever received, will be used to help construct a new 200,000 square-foot building to house the Museum's Space Gallery, Presidential Aircraft Gallery, and Global Reach Gallery featuring cargo and tanker aircraft.

SKUA ENGINE SURFACES

The recovery of the Bristol Perseus XII engine of Skua L2896 was completed on 28th April following the failure of several earlier attempts due to technical problems. The engine was raised from a depth of 372 meters and was accomplished by the ship 'Gunnerus' belonging to the NTNU's Institute of Marine Technology. The task of planning and performing the operation was done by students from the Institute coordinated by Klas Gjølmesli. The substantial wreck of L2896 was raised on 8th April 2008 (see Issue 65) however the engine which broke off during the aircraft's ditching was not discovered at that time. Thanks to Birger Larsen

Klas Gjølmesli



Via Roberto Yáñez

RAPIDE COLOURS

The Fundación Infante de Orleans (FIO) Dragon Rapide, G-AEML, has been painted in Iberia vintage livery as EC-AAV. Shown in pub-

lic for the first time on 4th April, it's not clear when the aircraft will return to the air again, however it is thought a renewal of its Certificate of Airworthiness is currently being sought.



Martina Wellman



Martina Wellman

SKYHARBOUR RESPRAYS

Two more stunning aircraft were rolled out of the paint shops of Sky Harbour Aircraft in Goderich, Ontario, Canada in March. Jerry Yagen's PBY-5A Catalina, N9521C, had arrived

for respray in October 2010 and joining it on the ramp was P-51D Mustang, N201F owned by Doug Matthews of Florida. Finished in the markings of Capt. Joseph H. Joiner's 'Rebel' of the 336th FS, 4th FG, 1944-45, the fighter went on to win the grand prize for WWII era aircraft at 'Sun 'n Fun.' Thanks to Doug Fisher

REICHENBERG RESTORATION

With only a handful of survivors, the piloted version of the infamous 'Doodlebug' is a rare beast indeed. The Headcorn, Kent based Lashenden Air Warfare Museum is currently well into returning their example to wartime condition. This Fi 103R-4 was initially captured at the Danneburg V-1 factory in 1945 and was subsequently displayed at the German Aircraft Exhibition at Farnborough in late 1945. Thereafter the Fi 103R-4 passed through a number of Army Bomb Disposal units until discovered by the mu-



seum in 1970 stored outside in a very poor condition. The bottom of the cockpit had corroded through, the back of the aircraft was broken and it was due to be scrapped. Acquired by the museum, temporary repairs were affected to buy time until the funds and expertise were available to carry out a proper restoration. The Fi 103R-4 moved to Geisenhausen near Munich in November 2007, where restoration is being carried out by Axel Kuncze and his team at Auktionshaus fur Historic Technik, the only restoration shop specialising in restoring the V-1 and its derivatives. Work to be carried out includes replacing the non original nose cone, whilst the complete tail unit has had to be rebuilt as this had suffered badly over the years.

The wings have to be recovered with ply as this had rotted but all the internal structure has been salvaged and re-used. The canopy and seat have had to be re-made as the originals were missing. It is fitted with its original instrument panel, with the correct period instruments. The restoration of the Reichenberg should be finished in August this year. It will then go to Berlin's DTM for one year before returning to Lashenden permanently. Some 4,000 pounds is still required to complete this project, so if you can help please visit www.lashendenairwarfaremuseum.co.uk or email: lashendenairwar@aol.com
Thanks to Trevor Matthews

CZECH RELICS FOUND

An unexpected find by a tractor driver near the Czech village of Budejovice has turned up substantial parts of Me 262 jet fighters. Two engines and sundry parts were uncovered from a shallow burial pit - part of wartime Me262 assembly plant. The Jumo 004 engines seem to have not been installed on an airframe and have survived relatively well. Upon conservation they will be displayed at the Ceské Budejovice airport. More relics, this time the substantial remains of an Fw 190, have been recovered in Otin, St Bohemia. At a depth of seven meters the propeller, the dam-

aged cockpit, armament and engine parts were discovered, all well preserved in the soft mud. The fighter was shot down on 24th August 1944. The pilot, Hubert Engst, bailed out and survived with burns.

Staying in that part of the world, in our previous edition we announced that the SARO Cloud amphibian had gone on display at the National Technical Museum, Prague. This is incorrect as it has actually returned to display at the Kbely Aviation Museum after a long period of storage there. Thanks to Evžen Vsetecka



LIFE'S A BEECH!

After 15 years of restoration the port engine of 1951 Beech 18 G-BKRN has been fired up for the first time in 30 years. A major milestone in returning her to flight, the team is working on firing up

the second unit shortly. The aircraft is finished in the colours of a JRB-3 based at Dunkeswell from 1943 to 1945. Meantime work goes on with T-6G, G-TOMC and Harvard II, G-CCPM - the former serving with the French in Algeria and the latter the only MK.II on the UK register. See www.beechrestorations.com for more information. Thanks to Ben Brown

PETER HOUGHTON

The New Zealand warbird community have lost a close friend and popular member with the passing of Peter Houghton on 10th May. For many members of the NZ Warbirds Association, Pete was the face of the organisation for the past decade as he held the role of General Manager and as Vice President for many years as well.

I first met Pete in 1995 when I engaged him to ferry our newly acquired ex-SAAF Harvard from Auckland to Blenheim so that I could commence my type rating. He had been recommended for the flight as being a very experienced Harvard pilot as evidenced by his role on the Roaring Forties aerobatic team.

As years passed I spoke with Pete regularly as liaison between NZWB and Classic Wings magazine, and also as the 'Go-to guy' for arranging NZWB aircraft to support flying events we've organised. Pete's service on 16th May included a 'missing man' formation by the Harvard team as a fitting tribute to a good keen man.

We will all miss that deep gravelly voice at the other end of the phone.

GMO

YOUR INDISPENSIBLE RESTORATION & MAINTENANCE PROVIDERS

SPIRIT OF FLIGHT CENTER
COLORADO

A Tribute to Aviation History



Aviation
Artifacts,
Memorabilia,
Engines, Parts,
Uniforms, Gift
Shop and much
more...

www.spiritofflight.com

Featuring the efforts of
www.warbirdrecovery.com



**WARBIRD PARTS
& MEMORABILIA**

WWII Aviation items FOR SALE.
Armament, clothing & headgear,
oxygen equipment, parts for
specific aircraft and much more!

Warbird Parts and Memorabilia 2710 Clark Road
Tampa, FL 33618 USA

Jay Wisler
Phone & Fax: Phone: (813) 968-5048
Fax: (813) 968-4078
Hours of Operation: Weekdays 9:00 AM - 5:00 PM EST

www.warbird-parts.com

Croydon
AIRCRAFT COMPANY LTD

The Restoration, Repair
and Maintenance
Facility for Vintage
and Classic Aircraft

Flight Training, Air Charter and Type Conversions on
DH82A, DH83, DH89, DH90 & DHC-1

Croydon Aircraft Company Ltd
Old Mandeville Airport
No.6 RD. Gore, New Zealand.
Ph ++64-3-208 9755 Fax ++64-3-208 4288
After hours ++64-3-208 5181 Colin Smith
www.croydonaircraft.com

**Warbird Information
Exchange**



A Warbirds
Resource Group

*Serving The Warbird Enthusiast
Community Since 1996*

www.warbirdsresourcegroup.org

**Complete stock of P51
& TF51 Mustang parts**

"You break-um we make-um"

Manufacture • Buy • Sell • Trade

CHINO AIRPORT, 7000 Merrill Ave.
B120-12, #43, CHINO, CA 91710
PH: (909) 597-6960, Fax: (909) 597-7550.
Email: pioneeraerosvc@aol.com
www.pioneeraerosvc.com



 **Stewart
Systems**

We offer a complete line of
Revolutionary Aircraft Coatings for:

Fabric - Metal - Composite - Wood

STC Approved for all Dacron and Polyester Fabrics

Also approved for repairs over all other systems

Our High Performance Catalysed Coatings are Waterborne

Our Aircraft Fabric Covering process is People-Safe

Our Safe-to-use products are EPA compliant,
Non-hazardous and Non-flammable

Contact Mark Rollison at
Stewart Systems New Zealand
45 Gunns Rd, RD8, Waimate 7978
Phone: 03 689 1121
Email: sales@stewartsystems.co.nz
www.stewartsystems.co.nz

**Vintage
V-12'S, INC.**

Specializing in
World War II
Aircraft Engines

Overhauls, Parts and
Worldwide Service For:

- MERLINS
- ALLISONS
- GRIFFONS
- DB 601
- DB 605
- BRISTOL CENTAURUS

Buyers of Engines, Parts,
Tools and Manuals of the
Above Listed Engines.

**OFFERING OVER
30 YEARS
EXPERIENCE**

Mike Nixon, President
P.O. Box 639
1582 East Goodrick Rd.
Tehachapi, CA 93581
United States
(661) 822-3112
FAX (661) 822-3120

REPLICORE

New Zealand Ltd

Manufacturers of copper and brass radiators and oil coolers engineered to original specifications for warbirds aircraft

Manufacturers of copper tube cartridge cores engineered to original specifications for warbirds aircraft



Website: www.replicore.co.nz
 Phone: Nick 64-9-436-5734
 Fax: 64-9-436-5734
 Email: nick@replicore.co.nz
 Postal Address:
 Box 576, Whangarei 0140
 New Zealand

Build and fly your dream... A FULL-SIZE V-12 Spitfire!

Carefully engineered for ease of construction yet robust enough to comfortably carry an Allison V-12 up front.

Join the dedicated enthusiasts who are building this design around the world so that they may too realise the dream of owning and flying one of history's great aircraft, but at an affordable price.



'MAKING HISTORY FLY'

Contact: RUSS HARMUTH
 SPITFIRE AIRCRAFT COMPANY Ltd
 2411 Rancho Paradiso
 Avery, CA 95224, USA.
www.spitfireaircraftco.com

Ph: **1 209 795 9378
 fax: **1 209 795 7853
 800 304 7371 (within USA)
 e-mail: russac@comcast.net

ACE Allison's

There is a Difference!

- ▲ Over 30 years Experience Repairing V-1710s
- ▲ FAA Approved Parts and Processes for "Limited" and "Experimental/Exhibition" Aircraft
 - Approved Chrome Cylinder Liners
 - Approved Modern Pistons, 6.65 & 6.00 Compression
 - Approved Improved Piston Ring Pack
 - Approved Improved Coolant Pump Seals
 - Approved Improved Distributor Shaft Seals
 - Approved Modern Sparkplugs
 - Approved Modern Seals and Gaskets
 - Approved Cadmium Plating
 - Approved Late Model Valve Springs
 - Approved Renewed Silver Plated Main & Rod Bearings
 - Approved Replacement Ball & Roller Propeller Bearings
- ▲ FAA Form 337's Issued for all Major Repairs/Alternations
- ▲ FAA Certificated Mechanic
- ▲ Repairs done in Strict Compliance to 14 CFR Part 43
- ▲ Complete Cylinder Bank Restoration Facility
- ▲ Largest Allison Parts Inventory in US
- ▲ Calibrated V-1710 Dyno for Run-in and Testing

Bud Wheeler, President
 PO Box 995
 4686 Route 982
 Latrobe, PA USA, 15650
 724-539-0241
 724-539-2644 FAX
aceallisons@comcast.net
 Visit us at www.aceallisons.com





H.A.S.
 Custom Metal Works

136 Blackett Street
 Deniliquin NSW 2710
 Australia
 Telephone 03 5881 2484
 Mobile 0439 479 555

- Wheeling Specialist •
- Metal Forming •
- Fabrication •
- Aeronautical •
- Automotive •
- Restoration & Tooling •
- Prototyping •

Paul Howman
 Email: hascustommetal@bigpond.com

FLEET 16B FINCH



EPITOMISING THE ESSENCE OF ANTIQUE FLYING, THIS DELIGHTFUL OLD MACHINE IS RELUCTANTLY OFFERED FOR SALE TO MAKE ROOM FOR ANOTHER BIPLANE. VIRTUALLY IDENTICAL IN SIZE TO A TIGER MOTH, WITH 160HP UP FRONT, IT HAS IMPRESSIVE PERFORMANCE COUPLED WITH LOVELY HANDLING. INCLUDES Y-80 SELF-STARTER. BRAKES AND TAILWHEEL SO IS USER FRIENDLY FOR MODERN AIRPORTS. FITTED WITH NEW 406 MHZ ELT. ENGINE IS KINNER R-55, 160HP, 290 SMOH, AIRFRAME TT 1681 HRS. SENSENICH WOODEN PROPELLER WAS NEW IN 2007.

CURRENT NZ CoFA - FRESH ANNUAL. SEEKING OFFERS.

WILL CONSIDER JOINT OWNERSHIP OPTIONS BASED AT OMAKA AIRFIELD, BLENHEIM, NEW ZEALAND.

CONTACT GRAHAM ORPHAN, PH 03 578 9609
021 683 954, EMAIL: cwd@cwd.co.nz

UNOBTAINIUM?



Monosoupape Pump

**....NOT ANY MORE!
WE CAN MAKE IT FOR YOU**

After years spent developing and fine-tuning specialist machining capabilities, Classic Aero Machining Service is proud to be able to offer comprehensive machining service to the vintage and warbird aircraft industry. We can build anything from the smallest part to an entire operational WW-I aero engine!

Classic Aero Machining Service
Phone 021 411 063 (+64 21 411 063)
Fax 03 579 3519 (+64 3 579 3519)
email tony@cams.net.nz
www.cams.net.nz

BAE 167 STRIKEMASTER

Excellent example of the reliable and low maintenance side x side jet trainer and ground attack aircraft. We have sold one example recently, but here is a second chance. This aircraft had new wings and tail group fitted before being retired from RNZAF service. Has recent immaculate paint.



FOR SALE

NEW STOCK COMING!

BELL P-39 AIRACOBRA PROJECT

Even rarer is the Airacobra fighter, with just a couple of examples flying worldwide. This comprehensive project is missing very little and thus will provide an excellent opportunity to put together a very originally fitted out Airacobra. Inviting expressions of interest.

NANCHANG CJ-6A

Factory overhauled Nanchang CJ-6a, just over 20 years old with approx 3,000 hrs total time. To be available in N.Z. with new western radios, TXP, ELT, new upholstery etc. and a fresh CoFA. Call for details.



CLASSIC AIRCRAFT SALES LTD

Graham Orphan
PO Box 534, Blenheim, New Zealand

www.classicwings.com/sales.htm
email: graham@cwd.co.nz

Ph: +64 3 578 9609
Cell: +64 21 683 954

FOR SALE: 1956 Beech Twin Bonanza D50, N93MS with right wing cabin door (no airstair door), six seats (two rows of three seats across). 5,100 TT. Fresh annual. Contact Art Harrison, ph U.S. (515) 468 1015 or email <ifrrat@aol.com>

FOR SALE: 1929 Great Lakes biplane NC822K freshly restored with 160 hp Warner 10 SMOH. Believed to be oldest surviving Great Lakes. Contact Art Harrison, ph U.S. (515) 468 1015 or email <ifrrat@aol.com >

FOR SALE: Oldest remaining Piper Apache – s/n #4, incorporating parts of the previous three examples. Complete but now very tired and needing TLC. Contact Art Harrison, ph U.S. (515) 468 1015 or email <ifrrat@aol.com >

WANTED: Parts and assemblies for Stampe SV.4 series biplane. All items of interest. Also seeking a source of Metric aircraft hardware. Please advise Tom Filipcevic c/- email <tabby_tiger@bigpond.com>

FOR SALE: Percival Proctor MkV 1948. TT 1196 hours, Engine Gipsy Queen II 96 hours TSN, Propeller De Havilland variable pitch, 3695 hours TSN, 96 hours TSO. 24 volt system, Becker VHF. Located Masterton NZ. Ph John after 1830 hours #64 6 304 9142 or email: batonrouge@orcon.net.nz

FOR SALE: Very Historic Kiwi Aircraft: AVRO 504K ZK-ACN A201 "JOYBIRD"

This Aircraft is regrettably offered for sale along with a Life Time Collection of WW! Aircraft & Engine Parts, Huge Selection of AGS, BA, & BSF Hardware, Instruments, Propellers, Rotherham Pumps, Constantinesco Gear, etc, etc. Please email ANTIQUEAEROWORKS@YAHOO.COM or ph 027 6998636 for Full Inventory List for both AVRO 504K & WW1 Spares. \$55,000.00 e-mail <antiqueaeroworks@yahoo.com >

WANTED: Large scale aircraft models such as retired R/C scale etc. for hangar display. New Zealand locations would be preferable. All eras of vintage aircraft through to jets are of interest. What have you? Dave Baldwin, <dr.dave@flyingdoctor.co.nz >.

FOR SALE: C.A.C. Winjeel Center Section - ex RAAF Museum. Tidy unit, \$3000. Ph Rob Greinert 0434 474738

FOR SALE: 1943 Vultee BT-13 Warbird, 95% complete, many new parts/panels, new propeller, engine 350 hours to run, spare engine, manuals, reluctant sale. P.O.A WILL SEPARATE. Chris, Queensland, ph 0407036346 richos54@bigpond.com.au

WANTED: Bristol Cherub carburetor and/or parts there-of. Any assistance in finding such an item will be greatly appreciated! Stan Smith, N.Z. ph. (09) 426 3735 or (0274) 775 475 or email <smith@magic.gen.nz >

LASER CUTTING SERVICE: Do you need precision and consistency for a complex wood cutting task? Startup team with CAD/laser cutting ability seeks small project (like a control panel or frame/wing components) to help develop processes for future business. Pay for materials and postage and we'll cover the rest. rongotai.aircraft.co@gmail.com or phone NZ (021) 362 955.

WANTED: Illinois Historical Museum (USA) is looking for any donation of Aircraft anywhere in the world. Call Steve Bartkowski 708-863-3090 or mail to: Illinois Military Museum PO Box 848, Bedford Park, IL 60499, USA

WANTED: P-40 parts plus Allison engine any mark considered - still looking! Contact Graham Orphan at any of the Classic Wings addresses/numbers on Page 3, or e-mail cwd@cwd.co.nz

WANTED: Old aircraft photos. Don't throw out those old black and white or colour photographs. We are actively working to expand our in-house library and are keen to acquire photographic collections of all sizes. Please contact Classic Wings magazine at any of the addresses on page 3.

Classified advertising space is available on this page for \$30.00 (your currency) per 30 words or part thereof. Payment with your copy please, no invoices will be sent. Cheques and credit cards accepted.



NORTH AMERICAN TRAINER ASSOCIATION

FOR A QUARTERLY MAGAZINE
DEDICATED TO THE RESTORATION,
PRESERVATION AND SAFE FLYING OF ALL
NORTH AMERICAN AVIATION TRAINER AIRCRAFT
YALE, T-6, SNJ, HARVARD, T-28, P-51, B-25
\$50.00 USA & CANADA - \$60.00 ALL OTHERS
VISA/MASTERCARD ACCEPTED

SEND TO:
NATA

25801 NE HINNESS RD.
BRUSH PRAIRIE, WA 98606
360-256-0066
360-896-5398 fax
natrainer@aol.com
www.NorthAmericanTrainer.org

SYNDICATE HOTLINE

FOR SALE: Share in Ardmore based ex-USN T-28C Trojan. Well run syndicate, excellent entry level warbird offering high performance at modest cost. \$45/month and \$100/hour plus fuel. NZ\$14,000. Phone *64(0)21 226 9022 <greg@urbanwireless.co.nz>

FOR SALE: P-51 Mustang and Winjeel share for sale. Sold separately with P.O.A. Based at Caboolture, QLD. in established Joy Flight Operation. Serious enquiries only to fd7@me.com

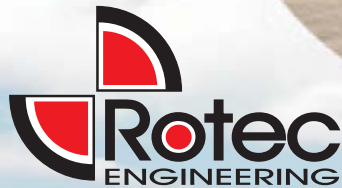
FOR SALE: Share in Nanchang & Tiger Moth syndicate 'The Real Flying Club'. Best of both worlds. Well run group for 16 years, with well maintained aircraft, based at attractive Omaka, NZ. Email: <cwd@cwd.co.nz > or <cjaviator@gmail.com >

FOR SALE: Share in Yak-9V fighter syndicate. Based Omaka, N.Z. syndicate welcomes NZ and internationally based members in ownership consortium. Yak-9V is essentially a Yak-11 with V-12 power, offering full dual control in a V-12 fighter with attendant training; adventure flying opportunities, and solution for 'medically challenged' pilots! Aircraft completion expected 2013. Entry NZ\$12,000 to secure your place. Total share price based on \$40,000 for each of 18 members. <cwd@cwd.co.nz > or <cjaviator@gmail.com >

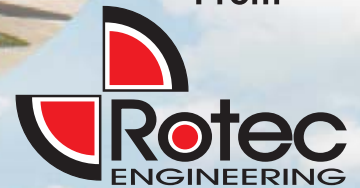
Radial Engines



110 HP
7 Cylinder
Radial
From



150 HP
9 Cylinder
Radial
From



Rotec R2800 Powered Nieuport 28

Phone: (03) 9587 9530 Email: RotecAdmin@bigpond.com Web: www.RotecEngines.com

Jabiru Liquid Cooled Heads



- HEAD TEMPS 85 -100C
- KITS AVAILABLE NOW!
- REACH EXPECTED TBO
- NO MORE RETORQING OF HEADS
- LIQUID COOLS AT 30 X THE RATE OF AIR!
- ENGINES 2200, 3300, 5100 HYDRAULIC OR SOLID LIFTER



Phone: (03) 9587 9530 Email: RotecAdmin@bigpond.com Web: www.RotecAeroSport.com

TBI FUEL INJECTION

- Over 1000 Units Sold
- Simple & Reliable
- Develops More Power
- Easy Set up 65-250HP
- Throat Sizes 34, 40, 48mm
- Metered Fuel Delivery
- Fully Aerobatic
- Pilot Mixture Control
- Suitable For Jabiru, Lycoming, Continental,
- Subaru EA81, VW, Rotax & many more



Phone: (03) 9587 9530 Email: RotecAdmin@bigpond.com Web: www.RotecTBI.com