

WARBIRD

D I G E S T



Jug from the Deep

From Flipping Burgers
to Flying Mustangs

Whispering Warbirds

Thirty Seconds Over Dayton

WARBIRD

D I G E S T

NUMBER 73 | SUMMER 2017

Front Cover Allied Fighters' amazing P-47D-28-RA Thunderbolt *Dottie Mae* flown by veteran warbird pilot John Maloney. This amazing restoration is the result of 52,000 man-hours by Mike Breshears' Vintage Airframes LLC. Warbird Digest brings you the full story beginning on page 16. *Photo: Jim Raeder*

Folio Butch Schroeder's beautiful recreation of a combat stock F-6D Mustang in the early '90s truly set a benchmark in the Warbird Industry. An instant hit when it first came on the scene back then, *Lil' Margaret* continues to inspire and awe today. Many owners/restorers have since emulated Butch's vision in creating ever more authentic restorations that are more truly representative of the aircraft as they were while in military service, and for that we all owe Butch a debt of gratitude. *Photo: James Church*

Back Cover Warbird Digest presents the June/July Bombshell, Heather, with the Cavanaugh Flight Museum's FG-1D Corsair. Photography courtesy of Scott Slocum of www.mybombshells.com. Look for a new Bombshell on the back cover of each new issue...unless, of course, there are too many objections 😊. *Photo: Scott Slocum*

Publisher **Tim Savage**
tim@warbirddigest.com

Editor **Gregory S. Morehead**
greg@warbirddigest.com

Associate Editor **Stephen Chapis**
steve@warbirddigest.com

Research Editor **James Church**
james@warbirddigest.com

Art Director **Steve Blakey**
steveb@warbirddigest.com

Staff Photographers **Paul Bowen,**
Lyle Jansma, Jim Raeder, Scott Slocum



Published Bimonthly by:
Vintage Aviation Publications, LLC
P.O. Box 1057
Huntington, IN 46750-1057 USA
Phone: (260) 440-3144
info@warbirddigest.com

COPYRIGHT NOTICE
WARBIRD DIGEST © 2017 (ISSN 1551-0646)
is published bimonthly by Vintage Aviation Publications, LLC, 442 N. Jefferson, Huntington, IN 46750-2745. Periodicals postage paid at Huntington, Indiana and additional mailing offices.

No part of this publication may be reproduced, translated, stored in a database or retrieval system, or transmitted in any form by electronic, photocopying, recording or other means, except as expressly permitted by publisher.

POSTMASTER: Send address changes to Warbird Digest, P.O. Box 1057, Huntington, IN 46750-1057.

SUBMISSIONS

Warbird Digest welcomes contributors to submit news items and photographs. Authors of feature articles are encouraged to submit a short summary of their proposed article for consideration by the editorial team. Warbird Digest may use contributed materials in either its print or digital media. Unsolicited submissions should include a self-addressed stamped envelope. If desired to have it returned. Electronic mail submissions are preferred. All photographs submitted to Warbird Digest will be copied and archived for possible future use with appropriate credit given. Publisher assumes no responsibility for unsolicited material. Detailed contributor guidelines are available at www.warbirddigest.com.

OPINIONS

The opinions expressed herein are the sole opinion of the author. They may not reflect the opinion of Vintage Aviation Publications, LLC. Every effort is

made to confirm the accuracy of the information presented, however responsibility for accuracy in reporting lies with the author. Statements made in Editorial content are made in good faith with no responsibility for actions taken due to Editorial content is accepted.

CHANGE OF ADDRESS

Subscribers: Please send change of address to Warbird Digest, P.O. Box 1057, Huntington, IN 46750-1057

Please note that it is the subscriber's responsibility to notify Warbird Digest of any change of address. Failure to send an address notification will result in delayed or missed deliveries. Warbird Digest is not responsible for missed issue copies due to address notification failure on the part of the subscriber.

PLATINUM FIGHTER SALES OFFERED FOR SALE

Over 65 Vintage Aircraft and Warbirds in Inventory



1945 North American TF-51
 "full dual control Mustang"
 s/n 44-63473 D-FUNN
 \$3,200,000 (Plus V.A.T. if applicable)



1945 Supermarine Spitfire XVI
 s/n SL721 C-GVZB
 €£1,695,000 (Plus V.A.T. if applicable)



1944 Hawker Hurricane Mk IV
 s/n KZ321 CF-TPM
 £1,695,000 (Plus V.A.T. if applicable)



1927 Ford Trimotor 4-AT-A
 Documented - Flown by Charles Lindbergh &
 Amelia Earhart
 s/n 10 N1077
 \$3,450,000 (Plus V.A.T. if applicable)



1931 Stinson 6000B Trimotor
 American Airlines First Plane
 s/n 5021 N11153
 \$1,350,000



1944 Goodyear FG-1D Corsair
 2015 Oshkosh Grand Champion
 s/n 92436 N72NW
 \$4,100,000

John Dibbs - Plane Picture Company

For complete specifications please visit our website or contact:

1800.210.1951



John Rayner
 AUS +61 418 311 686
 john@platinumfighters.com

Simon Brown
 USA +1 951 258 4205
 simon@platinumfighters.com



www.platinumfighters.com

12 DOTTIE MAE-JUG FROM THE DEEP

Waterlogged no more, this Thunderbolt restoration is a stunning example of the restorer's art

46 RED TAIL LEGACY

The legend lives on, in the air and on the pages of *Warbird Digest*

50 525MPH SLEEPER

Some hidden, as well as not so hidden modifications combine to make this jet a true hot rod

58 BUTCH SCHROEDER-FROM FLIPPING BURGERS TO FLYING MUSTANGS

The story of an unassuming man who accomplished some pretty great things



68 LIL' MARGARET'S LEGACY

Looking back on a trend-setting Mustang restoration

76 WHISPERING WARBIRDS

Have you ever heard of the Taylorcraft TG-6, or the Piper TG-8? *Warbird Digest* tells you all you need to know

88 THIRTY SECONDS OVER DAYTON

A decisive moment in history is commemorated, one more time



Anglia Aircraft Restorations Ltd's. magnificently restored Hawker Hurricane Mk. I P2902, G-ROBT is seen against the pastoral scenery that is Duxford. Recently completed by Hawker Restorations, Ltd., the aircraft is now based at the historic Cambridgeshire airfield. *Photo Job Savage*



We have some big changes to announce in this edition of *Warbird Digest*. The first change was probably readily obvious when you received it in the mail, the increased page count, and the higher quality of paper. Secondly, long-time subscribers may recognize my name from the early days of the magazine. I founded the magazine back in 2004 with the able assistance of James Church.

The magazine has changed hands several times since I stepped away from it in 2009 and has come full circle with my reacquisition of the title in May 2017. James has also rejoined the team as Research Editor, and Greg Morehead and Stephen Chapis also have agreed to remain on staff.

As we examined the marketplace and looked for where we could best serve the warbird industry and its enthusiasts, we have made some decisions as part of our effort to reinvent the magazine. In this issue, you will discover that the articles have become more in-depth and we are working with experts in various aircraft types to make sure we continue this new trend. It is also clear that trying to be a 'breaking news' magazine is very difficult in the age of the internet. Therefore, we will soon be launching a robust mobile application and web presence that will present timely news and information. The printed magazine will now include several pages detailing chronologically the news that has taken place since the last printed edition. Additionally, we are curtailing airshow coverage except in the case of the extremely significant events such as the Doolittle Raider reunion contained in this issue. We will continue to cover airshows and other events through our online presence. Our hope is that the print issue of *Warbird Digest* will become a publication that you refer to time after time as the historical record of the warbird movement.

Through our digital strategy we now offer the magazine in an online only format. Print subscribers will have access to this online content as well. Readers will also be able to purchase back issues to be delivered electronically. Print subscribers will also have access to special features on our website and mobile application.

There are a few of you who are receiving the magazine for the first time. If so, it likely means that you are an owner or operator of a warbird-type aircraft. Moving forward you will continue to receive this magazine free of charge. You can help us by affirming your interest in receiving the magazine by following the instructions that were enclosed in your magazine package. Simply returning the business reply card and indicating you wish to continue to receive the magazine will help keep our costs low so we can continue to deliver quality content to your door. If you are an advertiser who has products that warbird owners might find of interest you can be assured that *Warbird Digest* is the only magazine received by every registered warbird owner in the United States, from liaison aircraft to jet fighters...we have included them all.

Now on to this issue!

Spanning twenty-five years, we are pleased to provide restoration features on two magnificent fighters. In 1993 Butch Schroeder was the talk of the EAA Convention in Oshkosh, Wisconsin when he arrived with his F-6D, *Lil' Margaret*. In our opinion, he started the era of stock military restorations that continues to this day. That has culminated in *Dottie Mae*, Jack Croul's simply amazing P-47D, pulled from the depths of an Austrian lake and returned to the air.

We would appreciate any feedback you would like to offer on our new format and content. Please email me at tim@warbirddigest.com.

Tim Savage
Publisher





World Wide Coverage For Quality Warbird & Civilian Sales Since 1957

Warbird Inventory

Hawker Sea Fury MK.20

North American T-28B

North American T-28A

Boeing A75N1

Boeing E75

Boeing A75N1

North American F-51D

Stinson V-77

Hawker Sea Fury FB-11

North American T-28C

Siai-Marchetti SF-260

57 Piper J3C-65 (L-4)

Canadair T-33

Canadair F-86E

North American T-28F

Pilatus PC-7

To view our current extensive inventory on Warbirds, Civilian, & Projects, complete aircraft profiles, & an aviation event calendar visit us at: www.courtesyaircraft.com or call us at 815.229.5112



NOW HIRING SKILLED CRAFTSMEN

At AirCorps Aviation we are always interested in discussing our career opportunities with individuals who value quality and have a passion for producing great results. If you would complement the company's culture and team dynamics, please get in touch for details.



Apply now at AirCorpsAviation.com



AIRCORPS AVIATION

FULFILLING DREAMS THROUGH PRESERVATION OF HISTORICAL AIRCRAFT

SPECIALIZING IN RESTORATION, MAINTENANCE, FABRICATION & PARTS



RESTORATION

- Grand Champion: **World Class Restorations**
- Skilled craftsmen, experienced team & highly satisfied customers
- Proven ability to deliver
- Projects worked on in the **last 60 Days:**
P-51C Mustang (x3), P-47D Thunderbolt, P-51D Mustang (x6), P-40, Corsair, TBM Avenger & Japanese Zero

MAINTENANCE

- Progressive & annual inspections
- Engine changes
- Landing gear overhauls
- Component overhauls
- Heavy & standard annual service





AIRCORPS AVIATION

"We knew what your capabilities were, last February when we were hauling it home Erik Hokuf, Mark Tisler, David Hatfield, and I all took a piece of paper and wrote down a date and cost. We made the date and the cost was at the low end of everyone's number."

The work you do here is incredible and you are changing this business in a big way. I just want to say thank you on behalf of the CAF and Red Tail Squadron for getting us on the road next spring, otherwise we would have missed another summer."

- Doug Rozendaal | Upon successful return from flight for the Redtail P-51C, 2016



PARTS

- 7000+ Part numbers in stock
- PMA Parts
- AOG **warbird accessories** overhauled and in stock
- Find parts and more information at our online parts marketplace www.aircorpsdepot.com
- Can't find the part you need? We can help.

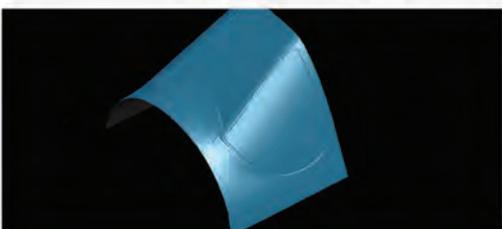
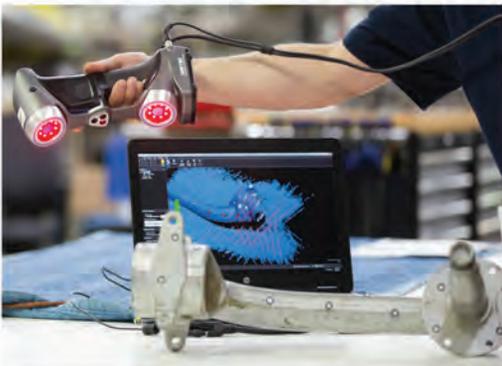
FABRICATION

- FAA/PMA quality system
- Specialize in small quantities
- **Complex sheet metal fabrication**
- Our capabilities: Heat Treat, Routing, Spot Welding, Riveting, Cast Acrylic Forming, Drop Hammer Forming, Sheet Metal Stretch Forming, Rubber Pad Forming, CAD Services, CNC Machining, CNC Turning, and 3D Scanning



PROUDLY BROUGHT TO YOU BY **AIRCORPS AVIATION**

AEROSCAN
Aerospace 3D Reverse Engineering



WE USE THE MOST ADVANCED 3D LASER TECHNOLOGY WHICH PROVIDES A HIGHLY ACCURATE SCAN

Originating from AirCorps Aviations need for reverse engineering so many parts, Aeroscan was created not only to service internal needs for restorations, but also for the larger aerospace industry.

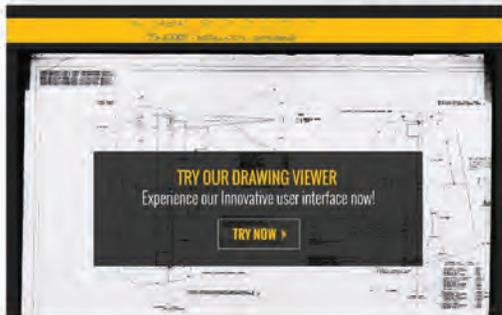
Aeroscan uses the **most advanced 3D laser scanning technology** for quick and highly accurate measurement data. This provides time and money saving solutions in otherwise lengthy or unreliable measurement efforts.

Typical applications for 3D scanning in the aerospace industry include:

- **Reverse engineering parts lacking drawings**
- Damage assessment
- **Corrosion inspection / measurement**
- Dimensional straightness / tolerance / wear check
- Propeller blade comparison
- Jig or Fixture measurement
- Cabin / interior retrofit or after market equipment

WWW.3DAEROSCAN.COM

If you have questions or need more details on a particular service, contact us.



PRESERVE & SERVE

WE BRING WWII AVIATION TO YOUR FINGERTIPS

AirCorps Library is a **collection of WWII and legacy aircraft resources** delivered to users through an innovative platform designed for online viewing. The **searchable drawings and blueprints**, as well as design, flight, maintenance, and restoration **manuals**, are all quickly accessible at high resolution.

We provide a cost-effective system for users to share resources that will help promote, preserve, and keep WWII and legacy aircraft safely flying through the 21st century. Resources include:

- **400,000+ Searchable** part drawings
- **500+** Technical manuals
- **Over 20 WWII** airframes

WWW.AIRCORPSLIBRARY.COM



TRADITIONAL & STATE-OF-THE-ART PRODUCTIONS OF INTERIOR & EXTERIOR AIRCRAFT MARKINGS

AirCorps Art's range of capabilities and **exacting detail** are evident in the award-winning restoration work for which AirCorps is known. Whether it's creating a **complete package** of markings, cutting a stencil, or pulling a placard from stock, our customers benefit from working with a premier production team who have access to an **extensive collection of resource** and tools. Our library of artwork spans hundreds of aircraft. What we offer:

- **Entire aircraft artwork**
- **2,000+** placards in stock
- Techniques: **etching**, engraving, laser cutting, screen printing, **water transfer**, stencils, paint masks, rubber stamps & stencils

WWW.AIRCORPSART.COM





JUNE 7TH

Grumman TBM-3E Avenger BuNo. 91726 N5260V owned by Jackson, Mississippi based John Mosely was successfully test flown by Mark Henley. This former Evergreen Aviation Museum exhibit had been trucked to Scott Glover's facility several years ago before Glover sold it to Mosely. Mosely undertook a major rework of the airplane over a six-month period. Look for the full story of this TBM in a future issue of *Warbird Digest*. *Photo: via John Mosely*



JUNE 7TH

Vintage Wings of Canada, Gatineau, Quebec announced the first flight of Supermarine Spitfire HF Mk.IXe TE294 C-GYQQ wearing the markings and serial number of Y2-K, a 442 Squadron RCAF Spitfire flown by Flight Lieutenant Arnold Roseland. Roseland was shot down and killed the very day MK304 arrived on squadron strength in Normandy. John Aitken performed the test flight after a nearly twenty year restoration program which started with volunteers at RCFB Comox before ownership was transferred to Vintage Wings. *Photo: Peter Handley/Vintage Wings of Canada*



JUNE 10TH

Supermarine Spitfire Mk.IX BR601 N601FF underwent its first flight in the United States with Elliot Cross at the controls. Restored at Biggin Hill in the United Kingdom for the Collings Foundation, it was shipped by sea to Florida where Gary Norville's American Aero Service, New Smyrna Beach, Florida reassembled the aircraft. *Photo: Paul Draper*



JUNE 11TH

Supermarine Spitfire PR. XIX PS890 F-AZJS owned by Christophe Jacquard was heavily damaged when the fighter overturned during its take off roll at Villette-Longuyon, a grass strip in Northeastern France with pilot Cedric Ruet at the controls. The extensive damage will require a long term rebuild and the aircraft is now reportedly in the UK. *Photo: Xavier Meal*



JUNE 16TH

Hawker Sea Fury T.20 VX281 G-RNHF underwent engine runs almost three years to do the day of its gear up landing at RNAS Culdrose, Helston, United Kingdom following work performed by Weald Aviation Services, at North Weald, Essex. It is anticipated that this Bristol Centaurus powered Sea Fury will return to the air in the near future. Owned by the Fly Navy Heritage Trust, the aircraft is loaned to, and operated by the Royal Navy Historic Flight. *Photo: Matt Smith*



JUNE 16TH

Aero Legend's Supermarine Spitfire Tr.9 NH341 G-CICK experienced a wheels-up landing at the Sywell Aerodrome, Northamptonshire in the United Kingdom. This aircraft recently flew for the first time after an extensive rebuild based on crash remains recovered from France, and conversion to Tr.9 configuration. There were no injuries to the two on board, and damage was minimal. Following an assessment by engineers from the Aircraft Restoration Company (who had performed the rebuild) of the aircraft's condition, engine inspection and propeller change, the aircraft was ferried to their Duxford facility five days later for further repairs. *Photo: Aero Legends*



JUNE 19TH

Hawker Restorations Ltd. completes restoration of Hurricane Mk.I P2902, G-ROBT at their new facility located at Elmsett Airfield, near Hadleigh, Ipswich United Kingdom. Built by Gloster in 1939, by May 1940 it was operational with No. 245 Squadron based at Drem, on Scotland's East coast, coded 'DX-R.' It was crash landed on the beach at Dunkirk following an engagement with two Bf-109s in 1940, and its remains were recovered in 1988. A successful test flight lasting twenty minutes was conducted by pilot Stuart Goldspink on behalf of owner Anglia Aircraft Resporations Ltd. *Photo: James Church*



JUNE 20TH

Goodyear FG-1D Corsair BuNo. 88303N700G took to the air at Breckenridge, Texas at the hands of Nelson Ezell following a lengthy an extensive restoration. Owned by Paul Allen's Flying Heritage and Combat Armor Museum, this significant combat veteran Corsair was restored by Ezell Aviation. Having flown with Marine Squadron VMF-115 in the southern Philippines in 1945 on close air support and combat air patrol missions, it has been completed in the markings it wore at that time. *Photo: Randy Malmstrom*



JUNE 20TH

Historic Flying Ltd's Hispano Buchon HA1112 Mil C.4K-102 G-AWHK received special temporary desert paint for the 2017 edition of the Flying Legends show at Duxford, Cambridge, in the United Kingdom. It represents Messerschmitt Bf109 E-7 "Black 8" of Luftwaffe Jagdgeschwader JG-27 flown by Leutnant Werner Schroer based at Ain El Gazala, Libya in April 1941. *Photo: James Church*



JUNE 22ND

Vintage Airframes LLC, Caldwell Idaho., completed the extensive restoration of Allied Fighter's Republic P-47D USAF Serial No. 42-29150 N47DM *Dottie Mae*. First flights were undertaken by John Maloney. See page 16 in this issue of *Warbird Digest* for the complete story on this aircraft. *Photo: Jim Raeder*



JUNE 28TH

Worldwide Aircraft Recovery began the disassembly of Lockheed EC-121K BuNo. 141311 at the former Chanute AFB, Rantoul, Illinois. Once part of the now closed Chanute Air Museum, the Yankee Air Museum in Ypsilanti, Michigan has rescued the *Connie*, which many thought would end up being scrapped. The Warning Star is very complete internally and will make an excellent display for Yankee's new museum complex. *Photo: James Church*



JUNE 30TH

John Lane and his crew from Airpower Unlimited disassembled Goodyear FG-1D 92095 N67HP at the Evergreen Air Museum in McMinnville, Oregon for shipment to Idaho. Once back at Airpower's Jerome, Idaho base, the airplane will be inspected and returned to airworthy condition for new owner David Prescott, of Albany, New York. *Photo: John Lane*

WD RESURRECTION REPORT



JUNE 30TH

Curtiss P-40M USAAF 43-5802 which has been resident in the United Kingdom since the mid-1980s as G-KITT, has been sold by Platinum Fighters. It is now registered as N40P with Warhawk LLC, Underwood, Washington. *Photo: via Hangar II*



JULY 1ST

Ken Dwelle performed the first post-restoration flight of Hawker Sea Fury WE820 N85SF at Auburn, California. Formerly known as *Critical Mass*, the Dwelle family has performed extensive restoration to return it from its racing configuration to a T.20. The complete story of this aircraft and its restoration will appear in a future edition of *Warbird Digest*. *Photo: Mark Loper*



JULY 2ND

Warbird pilot Mark Yaggie was lost in the off-field landing of T-28A USAF Serial No. 51-7606 N9103F near Moorhead, Minnesota. The aircraft was built as a T-28A, however it was later converted for the French L'Armee de l'Air by Sud Aviation with a Curtiss-Wright 1820 and become Fenec 136, it had last seen service with the Commando de Aviacion Naval Argentina. *File Photo*



JULY 3RD

North American North American P-51B USAAF Serial No. 43-24837 N515ZB *Berlin Express* successfully crossed the Atlantic with noted Mustang pilot Lee Lauderback at the controls. The rare P-51B was purchased by Dan Friedkin's Comanche Fighters just prior to the flight. A few days later, on July 8th it was damaged when the Malcom hood disintegrated during its initial airshow pass at the Flying Legends show at Duxford while being flown by pilot Nick Grey of the Fighter Collection. Fragments of the canopy struck the horizontal and vertical stabilizers, damaging them in the process. *Photo: Jim Raeder*



JULY 9TH

North American P-51D USAAF Serial No. 44-84847 G-TFSI *Miss Velma* experienced engine problems following the Balbo mass fly by at Duxford during the Flying Legends show. Pilot Marc Levy successfully executed a forced landing in wheat field immediately east of the airport. The aircraft was heavily damaged when the wing struck a post in the field and will reportedly be shipped to the United States for rebuild. *Photo: James Church*



JULY 10TH

Vintage Flying Museum's Douglas A-26K Counter Invader USAF Serial No. 64-17679 N4988N took flight for the first time since 2010 after an extensive overhaul and restoration at the Meacham Airport in Fort Worth, Texas. Special K, is the only K-model in civilian hands and has been restored by a dedicated group of volunteers. Look for more on this unique airplane in a future edition of *Warbird Digest*. *Photo: Lefty Brandon*



JULY 16TH

The Warbird world was rocked by the loss of noted pilot Vlado Lench and passenger Bethany Root in P-51D USAAF Serial No. 44-72086 N251PW *Baby Duck* in Atchison County, Kansas. Lench was one of the world's most experienced civilian Mustang pilots. *Photo: James Church*

JULY 25TH

Well known pilot/restorer Nelson Ezell and passenger Dustin Mayfield were seriously injured in the crash of *Hawker Fury* FB.10 N254SF at Breckenridge, Texas. The aircraft, owned by Joe Thibodeau, of Denver, Colorado, suffered power loss while performing what authorities called 'touch and go pattern work.' Unfortunately, the aircraft impacted trees on touchdown causing it to break up, resulting in heavy damage to the airframe. While the passenger was released from the hospital a short time later, Ezell's injuries were much more severe, and he was still undergoing treatment at the time this issue went to press. *Photo: Mark Morris*

AUGUST 8TH

The National Museum of the United States Air Force, Dayton, Ohio recently rolled B-17F USAAF Serial No. 41-24485 *Memphis Belle* out of the hangar for pressure washing prior to the application of new paint. *Memphis Belle* is schedule to be unveiled at the NMUSAF on May, 17, 2018 the 75th Anniversary of its 25th and final combat mission, on which it was sent to bomb the German submarine base at Lorient, France in 1943. *Photo: NMUSAF*



AUGUST 9TH

Boeing B-17G USAAF Serial No. 44-83785, N207EV was ferried from its former home with the Evergreen Aviation Museum, McMinnville, Oregon to American Aero Services in New Smyrna Beach Florida, on behalf of its new owner, The Collings Foundation. There, work will be done to prepare it to replace the foundation's other Fort, USAAF Serial No. 44-83575, N93012 *Nine-O-Nine* on the Wings of Freedom tour, which will then go in to deep maintenance. Work will include addressing the mandatory FAA Airworthiness Directive concerning the wing attachment points and spars. *Photo: Collings Foundation*

AUGUST 11TH

Kevin Hooley has obtained North American VB-25N USAAF Serial No. 44-86708 ex-N3682G. Surplused in 1959, by 1965 it was with Walter Soplata of Newbury, Ohio as part of his well known collection. In 1997, the late Steven Detch of Alpharetta, Georgia bought it along with Soplata's other B-25, but apparently did not remove it. In August 2017, it was recovered by Kevin Hooley and transported to Corning, New York for restoration to airworthy. Her center section is being restored by Tom Reilly. *Photo: Kevin Hooley*

AUGUST 15TH

The Commemorative Air Force Airbase Arizona has acquired the former Quonset Air Museum Grumman TBM-3E Avenger BuNo. 53914, a former sprayer that force landed in a Maine woods in 1972. It was recovered in 1991 by a CH-54 and brought to the museum where it underwent an extensive restoration. Quonset Point Air Museum closed on December 31, 2016 because their display hangar, of World War Two vintage needed extensive repairs and no funds were forthcoming. The TBM was trucked to Mesa, Arizona where it will be restored to flying condition. *Photo: Mike Rawson*



A

fter seventy years, Republic P-47 Thunderbolt *Dottie Mae* has returned to the air. Because of the historical significance of this recovery and restoration, we are breaking *Warbird Digest* tradition by revisiting the recovery and history of this 9th Air Force combat-veteran Thunderbolt which we first featured in 2010.

Only the best stories have sequels. History suggested the story of *Dottie Mae* ended in 1945, however, Brian Kenney, Bob Nightingale, Wolfgang Falch's Sandy Air Corp, and Jack Croul have all played a part in ensuring it was a tale to be continued. The odyssey that began during the waning days of World War Two was renewed sixty years later, and continues today.

As Allied forces closed in on the final bastions of the Third Reich during the spring of 1945, elements of the American Army pushed through Austria. They advanced toward what they believed was a POW camp, but as they entered the gate even the hardened combat veterans were emotionally unprepared for the sights they encountered. The Ebensee Concentration Camp provided slave labor for tunnel construction in the mountains, for which 8,500 people were sacrificed

It was May 8, 1945, and the men of the 511th Fighter Squadron (FS) were briefed for their last mission of the long war. They were to fly twenty aircraft (five flights of four) through the Alps, across Lake Traun, to the labor camp. It was to be a moral building flight to let the prisoners know their liberation was soon at hand. In fact, the Air Corp was unaware that U.S. ground forces had already reached the camp. *Dottie Mae* was assigned to Lieutenant Larry Kuhl who'd flown 39 missions in his Thunderbolt,

—“Dottie Mae”— A Jug from the Deep

Mark Sheppard and *Warbird Digest* Staff



Photo: Jim Raeder



however on this mission his aircraft was assigned to squadron mate Lt. Henry Mohr. Lt. Mohr was flying as wingman to Lt. Eastman in Yellow Flight. Lt. Eastman shared his recollections:

“We left Kitzingen around 09:00hrs and maintained approximately 220-mph on our flight to Ebensee. The later portion of the flight through the Austrian Alps was uncommonly beautiful. As we approached Ebensee, I noticed a few tall stacks within the town. These stacks and the fact Henry (Mohr) elected to fly lower than the rest of the flight made ‘buzzing’ the town at very low altitude unsafe – so we maintained a couple of hundred feet until over the lake. After crossing the shoreline and moving out over the lake we, as had been planned, broke formation, fanned out then dropped down to within a few feet of the water. A small sailboat was in view a bit to the right of my intended flight path. The boats occupants apparently thought they were about to be run over and proceeded to jump overboard. It was, at the time, somewhat comical. I then saw out the corner of my eye a commotion to my right so I pulled up a little and looked over. I saw Mohr’s aircraft bounce up from the water and come down again, hit the water and begin to sink. We circled the crash site and saw Mohr thrashing about in the water and watched the plane sink out of sight. We headed home to Kitzingen and reported the crash at the debriefing”.

It seems Yellow 2 had to go wide to miss a chimney stack over the town of Ebensee. With the other three heading across the lake, Mohr was trying to catch up and return to his position when disaster struck. Flying at 230-mph, the propeller touched the water and was damaged. The P-47 hit the water in a cloud of steam and spray, becoming airborne again before coming down onto the lake surface. There was little time for *Dottie Mae* to float, she was already on her way down as Mohr was trying to get out. In the water, he did not have a Mae West or a dinghy but the parachute pack

1 An interesting photo of *Dottie Mae* taken on March 2, 1945 whilst at Ophoven, Belgium. Interestingly, USAAF Serial Number 42-29150 has a replacement lower cowling. Note that the Varga nose art has new ‘legs’ chalked out ready for painting. Just visible in the background is a P-51 of the 370th Fighter Group which shared the airfield. *Photo: Swiggum*

2 Lt. Henry Mohr was at the controls of *Dottie Mae* on May 8, 1945 when he struck the waters of Lake Traun. *Photo: Allied Fighters Collection*

3 *Dottie Mae* on January 24, 1945 in the snow of St. Dizier, France, just prior to taking off with mission leader Captain Belfield at the controls. The ground crew is turning the prop through to ensure there was no hydraulic lock before the starter is engaged. The Thunderbolt is carrying cluster bombs on the wing racks. *Photo: Joe Thomas*

4 The side scan sonar image of ‘29150’. The distinctive shape of the Thunderbolt’s tail group and wings were a dead giveaway that the team had finally located the elusive wreck site. *Photo: Allied Fighters Collection*

5 A picture taken of the gun shrouds by the underwater remotely operated vehicle. *Photo: Allied Fighters Collection*

6 42-29150 on the surface and covered in fine white silt. The red stripes on the tailplane and the high-speed impact damage to the fuselage are clearly visible. The damage to the leading edge where the straps are attached was due to the unexpected weight of the aircraft due to mud. *Photo Ursula Falch/Sandy Air Corp*





1 & 2 Completely above the surface of the water for the first time in sixty years! A crane was used to lift the Thunderbolt clear of the surface and onto a dock. The damage to the engine cowling and belly is clearly visible, the result of a 230mph crash landing on the lake. *Photo: Ursula Falch/Sandy Air Corp*

3 The Austrian authorities required that the .50 caliber machine guns be removed. The gun bays were still full of ammunition. *Photo: Ursula Falch/Sandy Air Corp*



initially kept him afloat. Gradually this became waterlogged and he began struggling to stay afloat.

Two girls broke into a boat shed and procured a rowing boat and proceeded to row to the crash site. A boy in another boat followed. By this time Mohr was at the point of drowning, his parachute pack had sunk and he was going under with it. At the same time his young rescuers arrived and thrust an oar into the water, which Mohr immediately clung to before losing consciousness. It is not clear whether the three pulled him into the boat or held him on the side, but Mohr remained unconscious. On the shore, he was taken to a German hospital where he became the last MIA of the 9th Air Force, at least for a few hours. He was liberated later and sent to an American military hospital as the war in Europe ended.

Dottie Mae became the last P-47 combat mission loss in the ETO and this ironically led to its survival. During the summer of 1945, a large part of the surviving P-47s were unceremoniously scrapped, although the surviving P-47s from the 511th FS were flown to an airfield near Paris and delivered to the French. Its loss on May 8th has meant *Dottie Mae* is undoubtedly one of the most historic P-47s in existence.

Sixty years later Brian Kenney funded Sandy Air Corp's recovery of *Dottie Mae*, P-47D K4-S, USAAF Serial No. 42-29150, from Lake Traun (Traunsee) in Ebensee, Austria. The project started out as an initiative of the D-Day Museum (now the National Museum of World War Two) in New Orleans, according to Wolfgang Falch, the man behind Sandy Air Corps, "We were approached in the summer of 2002 about finding the P-47. They had gotten a letter from a member of the 405th Fighter Group (FG) detailing the crash. We started the investigation alongside my sister, Ursula Falch, a professional historian. After verifying the lake and the approximate location, later she found the local eyewitnesses who helped us a lot. The D-Day Museum provided funds for the first search and then stepped out since the risk that we would not be able to find the airplane was high, given a 35-foot-deep layer of mud at the bottom of the lake. Now they were looking to get rid of the salvage rights and the responsibility, so we took over at our own risk. A 1955 treaty between the U.S. Government and Austria transferred all abandoned military property on their soil to the Austrians. Ownership was then transferred to Sandy Air Corps by the Austrian Government in 2002."

Seeking a new backer for the recovery, Falch eventually got in touch with Brian Kenney who agreed to fund the project. Bob Nightingale, a fixture in the warbird movement at Chino Airport in California was tapped to manage the recovery for Kenney. He picks up the story of the long search

and recovery process. “The fact that there was a Thunderbolt in the lake wasn’t a secret, it was just that no one knew exactly where it was. The D-Day Museum in New Orleans originally planned to finance the search for the airplane. They hired Wolfgang of Sandy Air to look for it, but before things really got underway they decided to pull the funding. So, Wolf was looking for someone else to finance the search. That is where my friend Brian Kenney came into the picture. Brian agreed to provide the funding and asked me to go over there and be part of the search and hopefully the recovery. Now, at this point no one knew anything about the airplane. We knew it was a P-47, but no one knew the serial number or the history. From the start Brian and Wolf made a deal that if he wanted to keep the airplane after the recovery he could buy it at an agreed upon price.”

“Wolf put all the logistics together, permission, permits, etc. He had deep diving people and all the equipment necessary to find the airplane. I was there from the very beginning and over a period of about two years I probably went back and forth to Austria a dozen times. There was a lot



4 Mounted on a transportation frame, the fuselage is carefully loaded into a container with only inches to spare. A second container carried the wings and tailplane. *Photo: Ursula Falch/SAC*

5 The fuselage of '29150 safely unpacked at Brian Kenney's facility. Note the black cowling band which is thought to be 1944 black theatre markings applied to all natural metal ETO Thunderbolts prior to assignment to the 511th Fighter Squadron *Photo: Brian Kenney*



1 & 2 Seen here are the wings and their gun bays shortly after arrival in Chino, California. The team was careful not to disturb the original nature of the fighter while they sought a buyer. *Photo: Brian Kenney*

that went on, for example, we started out searching the wrong end of the ten-square mile lake. Finally, after over a year and a half we found two eye witnesses that saw it crash on the east side of the lake. So that is where we went and started our search with the side scan. That is when we found it. I was on the boat with the Sture Helmquist, the sidescan sonar guy, the skipper of the boat and Wolf. We spotted the airplane on the sonar upside on the lake bottom. We immediately knew it was a Jug because of the distinctive shape of the wing. We broke out in celebration with some alcohol,” chuckled Nightingale.

“Wolf had to take the sonar operator back to Munich to catch a flight back to his home in Sweden. I stayed on the boat and put the submersible remotely operated vehicle (ROV) on the bottom to see if we could find it. The Jug was 220 feet deep and down there the lake is pitch black. With the lights on the ROV I could probably only see 8 to 10 feet in front of me. When I put it in I just went off in a direction, it could have been any direction, but fortunately, I ran right into the tail of the airplane. There it was with the fishing nets hanging on it, an anchor hanging off one side, and one of the horizontals broken off. On the tail, I was able to see the serial number and once that information got around people were able to trace the serial and start pulling the history together, but we still didn’t know it had nose art or anything else. I was able to fish the ROV around for a couple hours looking at this and that but eventually I lost the ROV after I got it tangled up in some debris.”

“I came back to the states to put together a dive team and a process of how I was going to pull it up. Because there had been several airplanes pulled out of deep water where they had mistakenly tried to lift it from the tail, I needed to devise a different approach. I knew that using the tail for the lifting point was a problem because there was so much mud in these underwater airplanes. The Jug in combat condition weighed 14-16,000 pounds with everything on it, armor, and guns, etc., so it is a pretty heavy airplane. When we took this one out of the water it weighed 26,000 pounds. There was that much mud and debris in it. We found as the mud dried after we lifted the airplane out of the water that it had what I call ‘tree rings’ in it. From the amount of debris between each layer of mud we could tell whether each winter or spring had resulted in a big runoff or little runoff of water into the lake. It was just like reading a tree...’well they must have had a lot of rain this year, but they didn’t have much that year.’ It was really kind of neat and that is just one of the neat little sidelights from this adventure.”

“After I had my plan together I went back to Austria with some deep-sea divers. They videotaped the whole wreck site and recovered my ROV, which we shipped back to San Diego for repair. To start the recovery, I put



airbags under the fuselage tie downs and inflated them. Not with a lot of air but just enough air to make the airplane buoyant. I didn't want to lift from that point because as we discussed we knew there was a lot of weight back there. On the other airplanes that they did that with the tails broke off and they lost the airplane. One of them was a rare Focke Wulf Condor. I didn't want that to happen so I was being really careful about the tail."

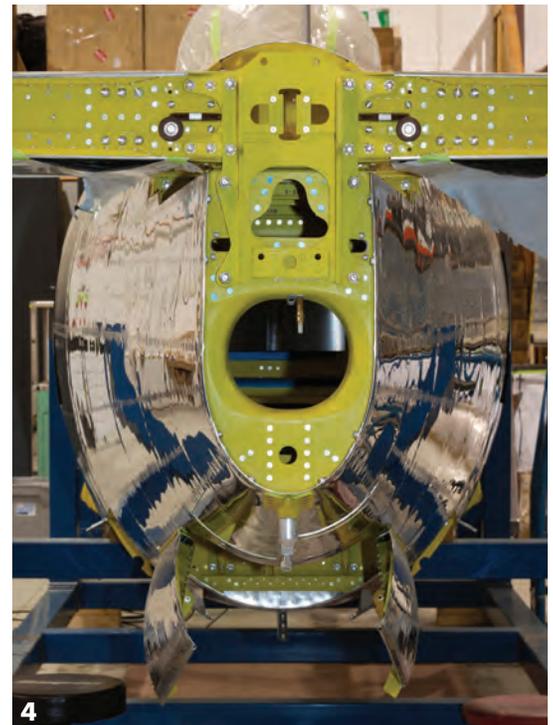
"Next we cleared a little of the silt from under the wing and wrapped a nylon lifting sling that was probably six inches wide, around the wings. The sling came to a single point at the belly of the airplane, which in this case was closest to the surface since it was lying upside down on the lake floor. This sling was then attached to a one-inch cable, which was on a hoist that was on pontoons that had an opening in the center of the deck. We inched the airplane off the bottom this way."

"The point at which we lifted most of the weight was at the two wing roots. I figured that was the strongest point on the Thunderbolt. Fortunately, when I had been back in the States, Alan Wojciak (Klaers Aviation) had given me access to their Jug. Alan was one of two people outside of the team that knew I was doing this recovery. John Maloney was the other. Alan let me take a good look at the wings, look at the lift points and other possible places to attach so I knew how and where to lift. With his help, I was able to determine in my opinion the best place based on my experience."

"When we discovered the wreck, the propeller was on it. It was buried in the silt with just the blades sticking out. There was maybe three feet of the blades, where they were bent protruding from the bottom. As we began to lift, the prop separated and stayed stuck in the muck."

"As we brought the airplane off the bottom the silt started to slide off revealing more and more. When the side of the fuselage came into view I could see the bottom of the painted *Dottie Mae*. And I said "oh, this has got something on the nose", and as we brought it up higher and the silt continued to fall off, there was the nose art. That was the first time we knew there was any nose art on the airplane."

"We brought the airplane up to the bottom of the barge, and went



3 The initial installation of the Thunderbolt in the jigs at Vintage Airframes. With fuselage upright, the remarkable preservation of the olive-drab anti-glare panel is evident. *Photo: Jim Raeder*

4 First item to be rebuilt was the tail group, and it is seen here shortly after completion and installation. The level of craftsmanship is immediately apparent. *Photo: Jim Raeder*



1



2

1 The fuselage was split down the center and placed in two separate jigs for reconstruction. Photo: Jim Raeder

2 Corrosion and dirt were encountered throughout the airframe. Photo: Jim Raeder

across the lake at a very slow rate of speed. We had a big old German outboard motor on it that was probably a tank engine and it just lugged along. It took us eight hours to go across this three-mile-wide lake. I didn't think I would ever get to the other side! At daylight, we finally got to the other side of the lake and to the town of Traunkirchen where there was a dock and the equipment we needed. Once at the dock we used a single crane to drop a line down to the Thunderbolt. We then took the weight onto the crane and took the pontoon platform apart from around the airplane. Once we got the area clear we lifted it clear of the water. Once all of the Jug's weight was on the crane and it was out of the water we were able to determine what it weighed. 26,000 pounds."

"Once we had it out of the water the Austrian police were there and they told us we could not disassemble the plane until we first removed the weapons. There were eight 50. caliber Browning M2 machine guns and 1700 rounds of ammunition still onboard. The Austrians told us that all they wanted were the barrels and the firing pins, and that we could have the rest. Yeah, we could have, but I couldn't bring it to the States without paperwork and permits from the Bureau of Alcohol Tobacco and Firearms (ATF), which we didn't have. I told them I was sorry, but as much as I would have liked to have them, I knew I would get to the docks in Los Angeles and the next thing I knew the airplane would belong to customs. It wasn't worth the risk, so we didn't bring the guns back," mused Nightingale. The guns would remain in a small museum in Austria.

Nightingale continued, "We got the guns cleared out and everything done to satisfy the Austrian authorities and then we disassembled it and loaded it in containers. All of this was over a period of two days. On the first day we pulled the Jug off the bottom and the next morning we were at the dock. Two days after arriving at the dock it was in containers and loaded on trucks headed to a German port. We had all the proper permits

but it was still our plan to get it out of there as soon as possible to prevent somebody from coming along and saying, ‘Oh no. We own that airplane and you can’t take it out of the dock.’ As you know that has happened to several recoveries in other parts of the world. So, we wanted it out of there as soon as possible and that is exactly what we did and we didn’t have any trouble with anybody...and it came home.”

At the end of July 2005, the P-47 was being held at the docks in California waiting from clearance from U.S. Customs and ATF. Following release on August 1st, the two containers were unloaded at Trojan Aircraft Services Inc, Brian Kenney’s facility at Chino, California. Immediately visible was that the airframe had a hard calcium covering, a legacy of the sixty years in the lake. While this took a while to clean off it no doubt helped to protect the airframe. As it was cleaned off it started to show the remarkable preservation of the markings, artwork and stenciling. Examining *Dottie Mae*, Nightingale found the main fuel tank was full of water, but 80 gallons of Avgas was still located in the auxiliary tank. In 2007, they righted the airframe. It was the first time in sixty-two years that *Dottie Mae* sat upright.

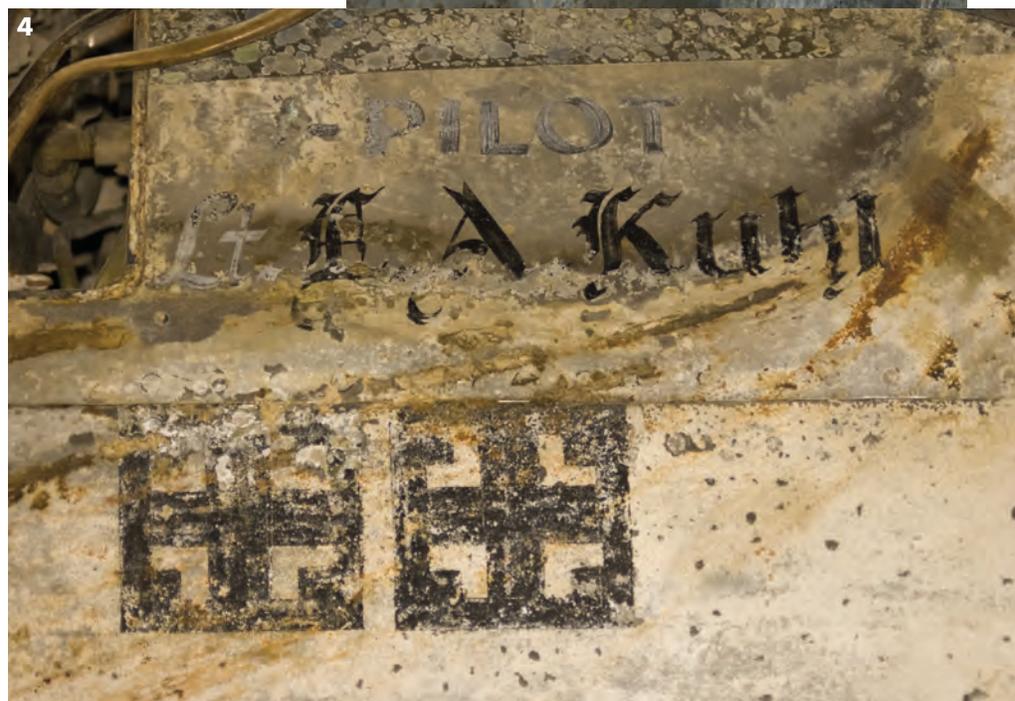
Despite significant interest, Kenny and Nightingale were not in any hurry to sell the rare Thunderbolt once it was safely stored at Chino. Nightingale picks up the story, “Brian and I decided we didn’t want to sell it to somebody that was going to butcher it up so we were very selective on where it was going to go. We decided we were going to be very specific about who we wanted to sell it to. It had to be somebody who was interested in the history of it, somebody who was capable of rebuilding it and somebody who wanted the airplane to be as it was. I had the fighter locked up in a hangar for two and a half years before we sold it. I didn’t take anything off of it, I didn’t open it up except for maybe a couple of panels because I didn’t want to disturb anything. I wanted it to be original so whoever restored it could document it exactly the way it was.”

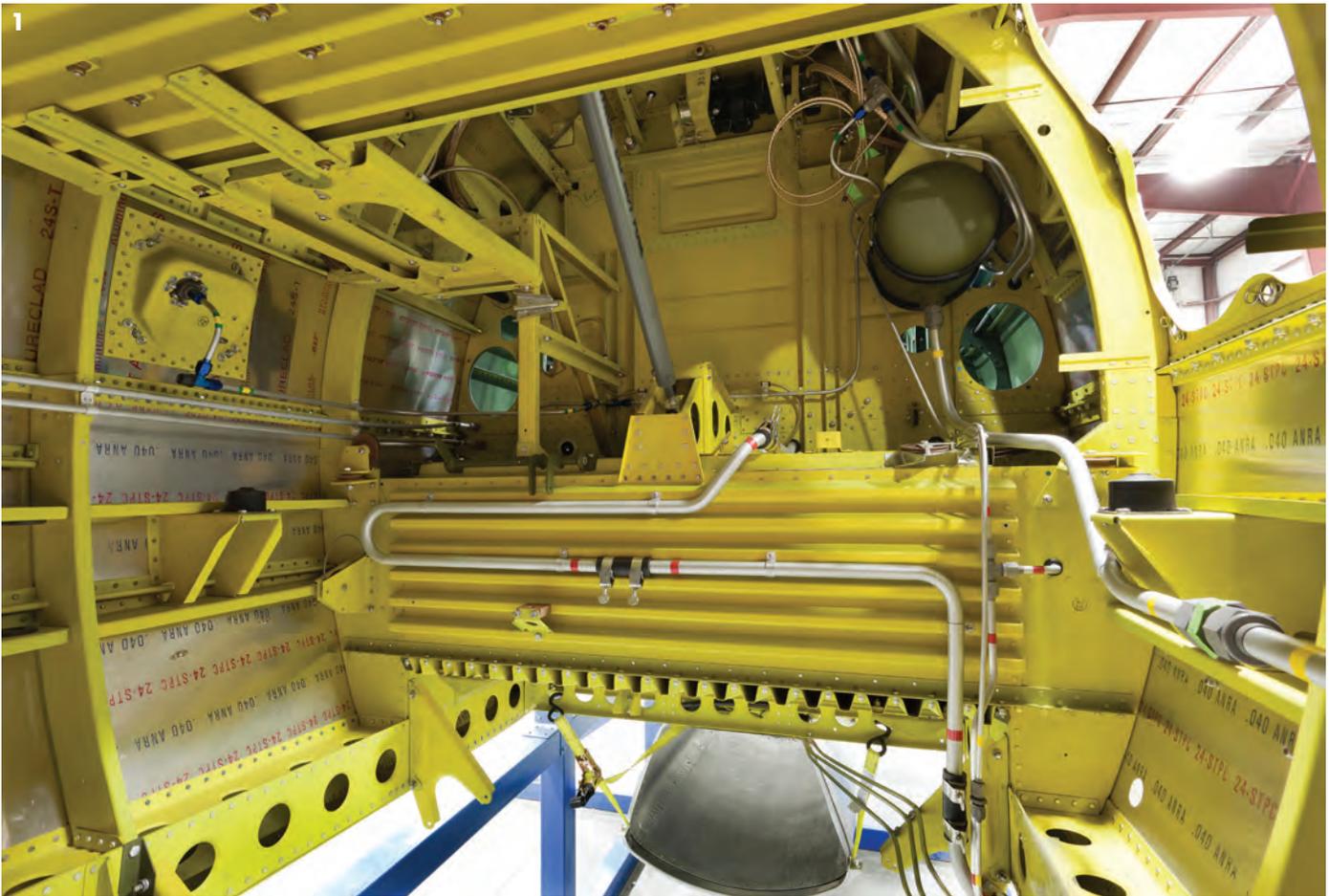
Around the time the airframe arrived in Chino, Jack Croul of nearby Newport Beach, California, heard about the project. Croul is well known for his collection of historic racecars and is also a student of history and aviation. In a sense, he helped shape both while serving as a 33-mission lead navigator in B-17 Flying Fortresses of the 96th Bomb Group, 8th Air Force, based in Snetterton Heath during World War Two. Croul had enlisted the

3 Combat damage and the resultant field repairs were found throughout the airframe. Shown here is one such repair. Photo: Jim Raeder



4 The 405th Fighter Group used a distinctive stylized text for personal markings, and the pilot’s name, Lt. L A Kuhl is visible just below the olive drab glare panel. The colored rings are the silt marks where *Dottie Mae* sat inverted on the bottom of the lake. Photo: Ursula Falch/SAC





help of the late Jeff Harris, also of Newport Beach, to form Allied Fighters Inc. and to build a team of restoration experts. The company's mission was to find, build, maintain, and fly historic warbirds. By 2007 Jack had purchased or restored Lockheed P-38L Lightning, USAAF Serial No. 44-26981; a North American P-51D Mustang, USAAF Serial No. 44-73420; and P-51D Mustang, USAAF Serial No. 44-74202. The Mustangs would later move on to new owners.

By the end of 2008, Croul, Jeff Harris and Mike Breshears had convinced Nightingale and Kenney that they were up to the task. Nightingale recalls, "Mike, Jeff, and Jack, fit the bill for what we were looking for. They told us what they wanted to do and Brian and I decided, 'Okay, you are the new owners.'" Croul and the entire team involved in its restoration were acutely aware of the historical significance of K4-S. It is the only known P-47 Thunderbolt survivor from either the 8th or 9th Air Force in the European Theatre of Operations, as well as being a combat veteran with at least 90 missions under its belt – truly historic.

K4-S was transported up to Mike Breshears' Vintage Airframes, LLC facility at Caldwell, Idaho. Breshears had formed the company in 1999 to undertake aircraft restoration and maintenance, specifically warbirds. He was instrumental in the restoration of Allied Fighters' second Mustang and gained a reputation with the organization for quality and detail. Breshears started doing metal work in the United States Air Force as a sheet metal mechanic. "I stayed in the Air Force for a while but when I got out, I realized I always enjoyed doing sheet metal work and kind of excelled at it. So, when I got out of the military I just continued on. I found myself getting more and more contracts and Vintage Airframes just kind of evolved from that. I started out working on some T-6s and a Zero project owned by John Sterling. (Sterling had recovered three A6M3s from Tarao in the Marshall



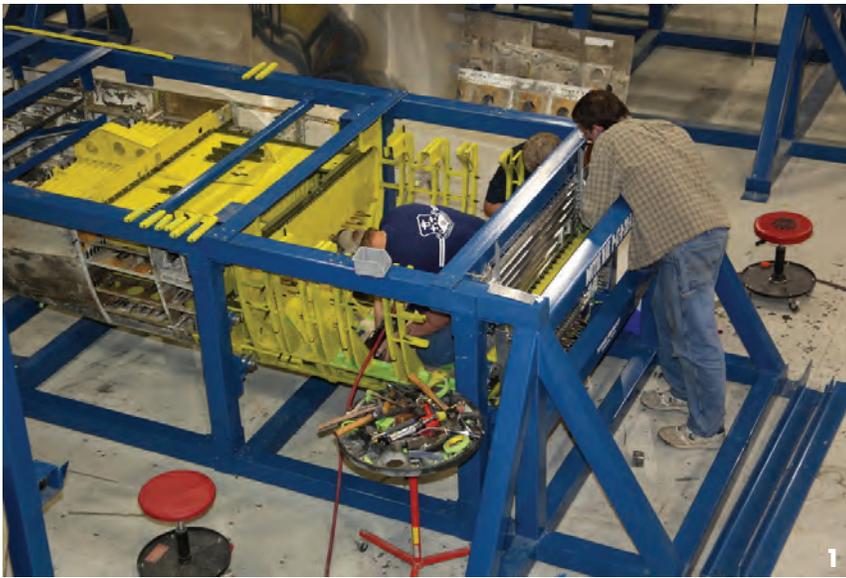
1 The incredible level of detail exhibited inside the fuselage. The replacement skins were duplicated as they were found, replicating manufacturer markings, notations and finishes. The fuselage exhibited both primed and unprimed skins. *Photo: Jim Raeder*

2 Each individual skin was documented and the original aluminum mill markings were applied. Thus there are a variety of manufacturers marks evident in the structure. *Photo: Jim Raeder*

3 Looking aft towards the tail. The original turbo supercharger was restored and is functional. *Photo: Jim Raeder*

Islands in the 1990s and Manufacturer Number 3318 is currently under restoration to fly with Legend Flyers in Seattle, Washington). Eventually, I started working for Paul Allen's Flying Heritage Collection on their B-17E (USAAF Serial No, 41-9210 N12355). Jeff Thomas who was working with them at the time was friends with Jeff Harris. Harris had asked Thomas who he knew that could build some flaps for Allied Fighters' first Mustang and I was suggested. They hired me and they liked my work enough that they gave me *Swamp Fox* to rebuild. From there it just snowballed," recalls Breshears.

In February 2009 *Dottie Mae* was in Idaho and the tear down commenced. Initially it was envisioned that Vintage Airframes would complete all the airframe restoration and the fighter would be transferred to Allied Fighters to complete the system installation and certification. With the untimely death of Jeff Harris in March 2013, that plan changed and the Idaho team would complete the entire project.



1 Just how far the fuselage was disassembled is demonstrated in this photo of the lower fuselage in the jig early in the rebuild.
Photo: Jim Raeder

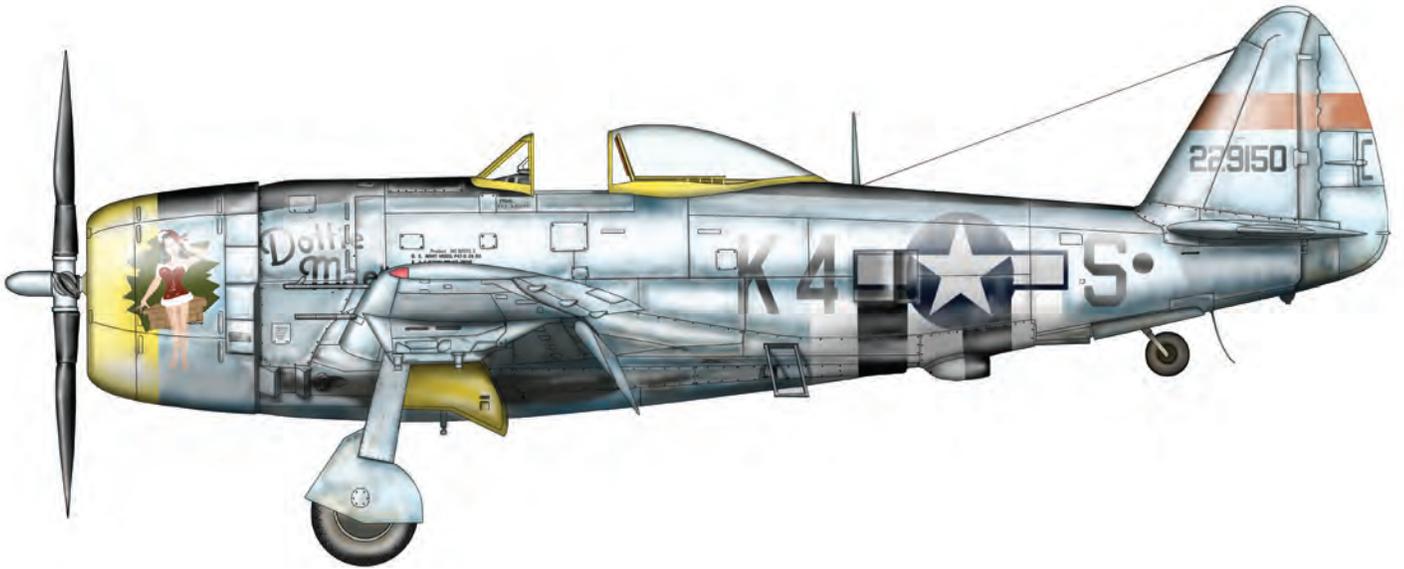
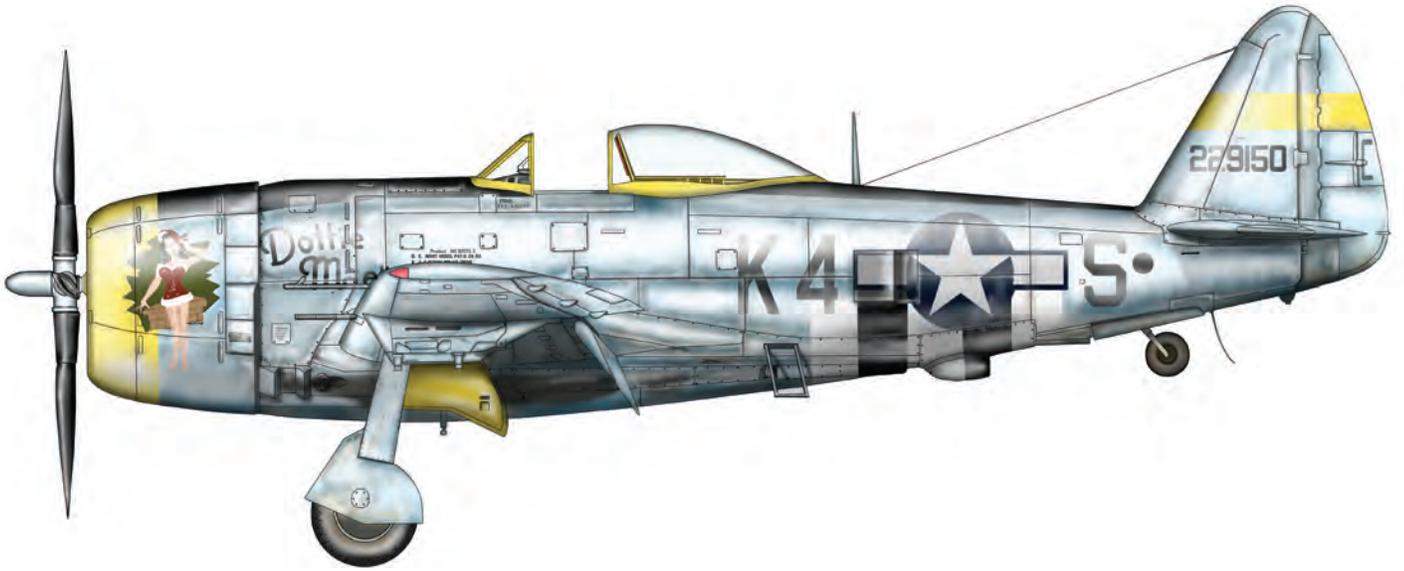
2 & 3 Before and after photographs of the cockpit. While the cockpit was intact and well preserved the instruments were not salvageable and NOS units were located for the restoration. *Photo 2: Ursula Falch/SAC. Photo 3: Jim Raeder*

The series of profiles by artist Kjetil Aakra presented on the following page represent the appearance of *Dottie Mae* at different stages of its assignment to the 511th Fighter Squadron, of the 405th Fighter Group, as the personal aircraft of Lt. Larry Kuhl from the time it was first taken on charge in mid-December of 1944, until its eventual loss on May 8th, 1945. Subtle changes to the paint scheme occurred along the way, including the removal of the long-redundant remnants of the 'D-Day' invasion stripes from the aircraft's lower surfaces, and the change in color of the tail band from yellow to red.

With the arrival of the Thunderbolt blueprints in 2010, Breshears set about to construct the jigs necessary to rebuild the airframe. The principle jigs were the tail cone, upper and lower main fuselage, port and starboard wing, tailplanes and fin. While the jigs were under fabrication, the Jug remained in storage awaiting its return to glory.

The initial plan was to restore K4-S back to stock condition though not to "factory fresh." The goal was to retain the patina of operational conditions it would have exhibited during the winter of 1944, the Battle of the Bulge, and through war's end. This approach would have required the "weathering" of the new skins in order to match the original wartime panels, and to give it a used look. Therefore, the restoration criteria developed was to use original parts where possible, NOS (new old stock) next, and remanufactured last. Where remanufactured parts were substituted they would be marked as such for anyone examining them in the future. This is much the same process as national museum collections such as the National Air and Space Museum implement, albeit on static aircraft. This may be the first time an airworthy restoration was treated with such diligence.





Illustrations: Kjetil Aakra



Photo: Jim Raeder



Photo: Jim Raeder



1 Dottie Mae's former pilot Larry Kuhl and Jack Croul discuss the victory markings found under the cockpit during the cleaning process. *Photo: Jim Raeder*

2 An original waterslide decal on the recovered Dottie Mae. Breshears and his team recreated and applied 147 waterslide decals during the project. *Photo: Jim Raeder*

3 The original Varga noseart as applied to the left upper cowl section. This section has been removed for preservation. *Photo: Brian Kenney*



Vintage Airframes began the restoration by focusing on the fuselage. The first sub-assembly that was deconstructed, cleaned, repaired, and restored was the tail cone. It quickly became apparent that there was going to have to be a change of plan with regards to the restoration. The original hope was that a significant portion of the original skins would be retained. In the end, it was decided that new skins would be required and the tail cone ended up 90% new. As each skin section was riveted in place it was protected by plastic film to prevent damage, but it was agreed that no polishing would take place with the hope that the skins would begin to build a natural patina.

Breshears quickly found that the most challenging portion of the project was going to be a lack of availability of parts. "There are just no original parts left for this airplane so we really had to build anything that we needed."

The main fuselage structure was constructed of two halves, split along the horizontal axis. The upper portion retained the sedimentary tidemark on the skins where it had laid inverted for 60 years. To remove the calcium deposits, industrial quantities of white vinegar and water were used to clean the aluminum skins and airframe. Along the way a new chemical was located that did the same job far better than the original solution. In fact, this substance cleaned off the calcium without effecting the aluminum or paintwork. It was during this cleaning that a significant discovery was made. Under the pilot's name, Lt. L. A. Kuhl, were two German victory crosses not previously known to exist. Though not air-to-air victories, research has revealed the date and circumstances under which these ground victories were claimed.

On April 16, 1945, 405th FG P-47s were returning from an attack on Magdeburg. On the outskirts of the city, Lt. "Red Dog" Reidel noticed something on the ground and realized they were over an enemy airfield with dozens of aircraft. The 405th FG had a field day claiming 69 destroyed and 48 damaged, with the 511th FS claiming 39 and 18 respectively. Lt. Kuhl, flying K4-S, claimed 3-0-1 (3 destroyed and 1 damaged) that were confirmed in the squadron records. The aircraft types included He-111, Ju-88, Fw-190, Bf-109 and a single Me-262. It is unclear why only two "victories" were painted on K4-S, though it appears the pencil marks were there for the third to be added.

On the first of May 1945, K4-S undertook a mission to the southeast of Munich. The twelve P-47s of the 511th FS flew between the deck and



German flak fragments found inside the aircraft during the tear down. While the aircraft was repaired multiple times in combat conditions, little time was taken to recover the fragments scattered throughout the airplane. The first priority was returning the Jug to combat status. *Photo: Jim Raeder*



1 Vintage Airframes' well organized and equipped shop. The cowling, shown in its jig, is known to be one of the most complex parts of the Thunderbolt to recreate due to the many compound curves it incorporates. Photo: Jim Raeder

15,000 feet. Although there was no recorded contact, it seems K4-S was hit with a round to the rear fuselage, hitting the supercharger. K4-S was laid up in one of the former Luftwaffe hangers at Kitzingen where she had her supercharger replaced. On May 2nd, Larry Kuhl took her on a 50-minute test flight on what was to become his last flight in K4-S. Just six days later the Jug would be at the bottom of a lake.

Fortunately, the upper part of the fuselage was in very good condition and included the cockpit, windshield, and bubble canopy, which all survived the ditching and recovery. This allowed the discovery of the kill markings, which adds tremendously to the story of this Jug. The lower fuselage had borne the brunt of the damage from the high-speed ditching. Most of the lower skins had been ripped off exposing the main air duct and exhaust pipes between the engine and supercharger.

A significant wartime repair was also found on the left lower fuselage between the front and rear wing spar connection points. It was repaired with patches, but some of them were sans rivets, still being kept in place with clecos. A few chunks of flak were also discovered still resident in the fuselage, which may be the remaining evidence of the May 1, 1945 combat damage.

During the cleaning and disassembly, it was noticed that a high proportion of the bottom fuselage skins as well as the wings had noticeable areas of corrosion. Though a few holes had been formed, much of the corrosion was in the mating surfaces between the structure and skins. The underlying structure suffered less corrosion than the skins. Since the Jug was inverted the bottom skins were upwards and exposed to falling silt from the surface. The inverted portion of the airframe was at the bottom of the lake and seemed to have been less affected. The skins protected in the silt seemed to have fared considerably better.

While in the jigs Vintage was careful to only remove small portions of the skin at a time to maintain the proper alignment of all the pieces.



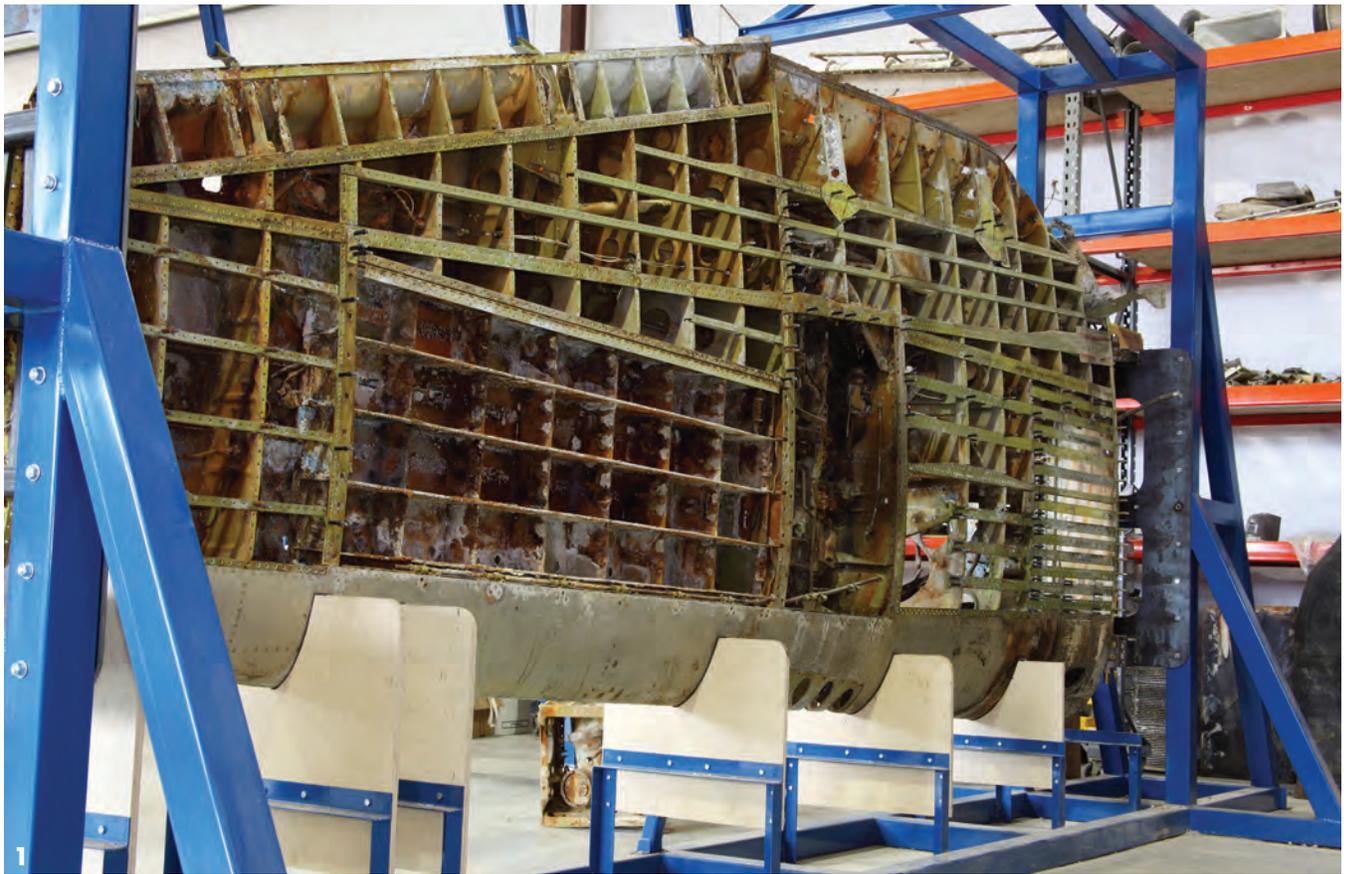
As skins were removed, the relatively intact structure was disassembled in stages as well. Each piece was cleaned and repainted in with authentic zinc chromate. In the end, it is estimated that 50-60% of the original structure was reused. Each piece was finished with the applicable June 1944 mill markings, which designated alloy type, as well any Republic specific stenciling or stamps as applied at the Evansville factory. “The mill markings are different today. Today’s 2024T3 aluminum was known as 24ST. We were able to document each piece of aluminum and its original mill and corresponding markings as we removed them. So, we stripped off the markings and restamped Alcoa and Pureclad markings exactly as they were originally. In addition, by the time we were done duplicating the inspection stamps we had over 300 and 147 waterslide decals that were also applied”, according to Breshears. In an even greater effort to preserve this P-47’s unique history, grease pencil marks and writing left behind by Republic inspectors or line workers was replicated or preserved where able.

As various parts of the Jug were disassembled interesting artifacts continued to be found, including two sets of leather pilot’s gloves, two vials, one containing morphine and one iodine from the first aid kit, and a damaged map in the map case which was still readable in places. As other components were removed, they were tagged and soaked in the aforementioned vinegar bath. After cleaning they were assessed for reuse. Items such as the oxygen bottles were still serviceable after restoration. The plywood seat back and seat pan were water soaked and delaminating so new wooden components were fabricated to attach to the metal frame. NOS overhauled instruments were installed and a new bubble canopy was sourced. It originally had been hoped that the original canopy could be salvaged, but it had suffered extensive staining and crazing after five months of combat and sixty years of immersion. “We were able to get



2 Multiple structures were underway at any given time. Shown above is the left wing and tail feathers coming together with multiple clecos in place holding skins to the rebuilt structure. *Photo: Jim Raeder*

3 Dottie Mae’s original gear legs were found to be salvageable. They were rebuilt and fly on the plane today. *Photo: Jim Raeder*



1 & 2 The very complex structure of the Thunderbolt wing is exposed for the first time since it left Republic's Evansville factory in 1944. Each and every rib and stringer was removed, inspected, repaired, primed and reassembled. *Photo: Jim Raeder*

one of the last Thunderbolt canopies that Dick Evan's had blown before he passed away. He had done two and John Muszala had one left over from when he rebuilt Jack Erickson's P-47", said Breshears.

As can be imagined, the original radios were corroded beyond repair when removed from the airplane. Therefore, original equipment radios of the same model were sourced and returned to working condition and installed in *Dottie Mae*. For operation in the modern air traffic control environment, a Becker COM radio and transponder were installed in the map case and cannot be seen when the case is closed.

A topic of great discussion as the fuselage was restored was how to deal with the skins that had historic paint on them. The engine cowl with its distinctive nose art was removed for preservation and display early in the project. For the remaining markings, it became a question of 'which is more important, preserving the original skins on the airplane, or preserving the original paint by replacing the skins with new?' After consulting with museum personnel and historians around the world the consensus was the original markings should be preserved as is for historic posterity rather than attempting to reuse the skins which would have required touching up the paint. So, skins such as those that contained the script *Dottie Mae* and the names of the ground crew were removed intact in sections for preservation and new skins substituted.

With the fuselage complete it was time to move onto the wings. Once the wings were placed in their jig, a number of repair patches from combat damage became evident once the wings were fully accessible. More corrosion than expected was found, particularly around the gun ports and the shell ejection chutes where cordite tended to accumulate.

The wing was gradually disassembled and as the skin was removed the inner structure was assessed. A number of the ribs had damage from shrapnel that was not visible until disassembly. In the field under combat conditions, minor flak damage was generally repaired by replacing or



2

patching the skin but the underlying structure did not necessarily receive the same attention. Like the lower fuselage shrapnel was found in the wing structure as well.

Once the wing was apart, it was determined that it was necessary to have new spars fabricated before reassembly. Breshears had to go across the world to source the spars, “Rob Greinert in Australia is building a Thunderbolt, and he had several sets of spar caps machined and I was able to obtain a set from the same source, bring them back to Idaho and do the finish forming work here.” With the spars complete the wings were built back up in the jigs starting with the rear spar then moving forward until attaching the leading edge. During this process, the undercarriage pivot point casting was removed, inspected, overhauled, and reinstalled. The original landing gear legs were also found reusable and they were overhauled and installed. Two significant pieces of the wing were missing

3 By mid-2016 *Dottie Mae* was starting to look like an airplane again. Photo: *Jim Raeder*



3

when *Dottie Mae* was recovered from the lake. The flaps were ripped from the airplane when it ditched, so new units were constructed.

No combat veteran Thunderbolt would be complete without its 'teeth', so eight replica .50 caliber Browning M2 machine guns were fitted in the gun bays, since the original guns were left in Austria. A NOS gun camera was also installed. The original blast tubes were fitted over the guns, which still exhibit the dents and nicks from combat in 1945.

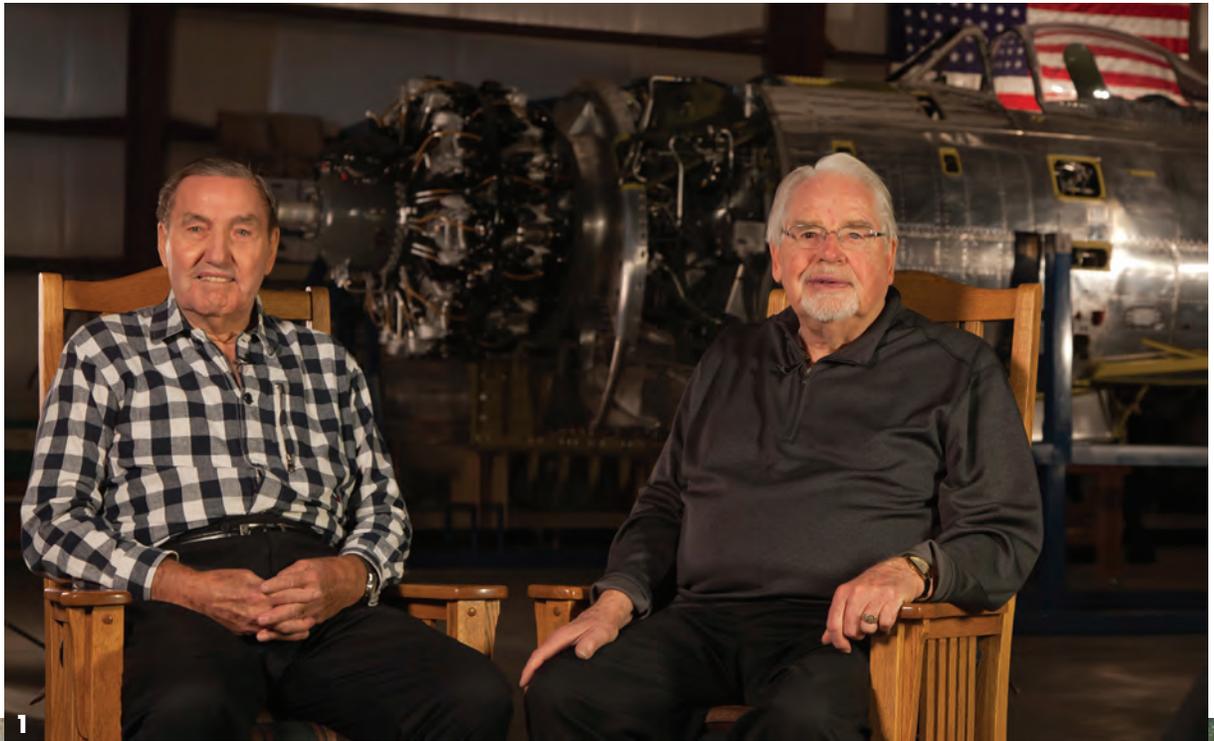
While the structural rebuild was ongoing, *Dottie Mae's* systems weren't being ignored. During the disassembly of the fuselage the original turbo-supercharger was removed, cleaned and overhauled before reinstallation. The original 18-cylinder Pratt & Whitney R-2800-59 was shipped to Ray Anderson's Anderson Aeromotive, just a short 200 miles away from Caldwell in Grangeville, Idaho. The front case of the engine had separated from the power section when the propeller departed during recovery, but it was hoped the major portions of the engine could be rebuilt. The initial tear down was promising as the engine still contained oil and a cursory inspection revealed the parts to be in good condition. Unfortunately, however, the sixty years underwater had taken its toll and there was significant pitting and corrosion found during closer examination.

The decision was made to prepare the original engine, likely with only 300 hours of total time since new, for static display and source a new engine core from Anderson's extensive stocks to be rebuilt. At present,

1 *Dottie Mae's* pilot Larry Kuhl and armorer Leonard Hitchman are reunited with their old stead for a documentary video. Photo: Jim Raeder

2 Applied at the factory, the original serial number block survived five months of combat and sixty years of immersion. Photo: Brian Kenney

3 405th Fighter Group airplanes had the crew's names on the right side of the fuselage opposite of the pilot's name. Photo: Brian Kenney





Anderson likely has the largest remaining stock of R-2800 parts. While the engine could not be saved, the original oil coolers were overhauled by Pacific Oil Coolers and reinstalled. A Hamilton-Standard propeller was installed because an original Curtiss Electric prop could not be located. Breshears recently located the proper unit, “I found a Curtiss Electric from David Arnold over in the U.K. We had it shipped over and we are still waiting for it to be finished up. When we first started this project Jeff Harris was looking for the correct Curtiss Electric propeller but the dash number for the P-47 is real tough to find because it has blades that have an asymmetrical shape to them. Eventually, Harris gave up and had a Hamilton Standard built up for the airplane, but we are really happy we found the right type.”

By the spring of 2017 *Dottie Mae* was a complete airplane, ready for the finishing touches. Most of the factory standard stencils had been applied during the restoration of each major component, and the standard national insignia had also been applied. It was time to turn the essentially factory fresh Jug back into *Dottie Mae*.

The engine cowl and canopy received a coat of yellow to designate the aircraft was part of ‘C’ Flight of the 511th FS as did the vertical fin and tail feathers. When originally delivered to the ETO *Dottie Mae* had the standard black bands on the tail used on all Thunderbolts for quick identification, but these were later overpainted in yellow. Sometime in 1945 red bands were also applied over the yellow. The team at Allied Fighters is still unsure why these were applied as generally red bands were there to designate the aircraft was part of ‘A’ Flight in the 511th FS. The 511th FS code of ‘K4’ was applied as well as the individual aircraft letter ‘S’. The black dot aft of the individual aircraft was code as also recreated, even though the reason it was applied is still unknown. In some cases this designated an aircraft as a war weary ‘hack’, an aircraft relegated to second

4 (L to R) Mike Breshears, Jack Croul, Larry Kuhl, and Bob Nightingale in front of the left wing of *Dottie Mae* at the start of the restoration. Photo: Jim Raeder

5 In a level of detail believed to be a warbird restoration first, the location and color of each rivet was recorded and the exact pattern was then duplicated in the finished restoration. Photo: Jim Raeder





1 The original engine had suffered too much damage from 60 years underwater and so was replaced with another R-2800 which was rebuilt by Anderson Aeromotive. Photo: Jim Raeder



2 The firewall forward restoration exhibits the same level of detail as the remainder of the fighter. Note the stamped inspection marks on the oil tank. Photo: Jim Raeder



3 While the team was unable to bring the original Browning machine guns home with *Dottie Mae*, they were able to salvage the original blast tubes. Restored and reinstalled it is surely the only American World War Two combat aircraft that flies with any portion of its original factory armor package. Photo: Jim Raeder

line duty, but *Dottie Mae* was still a combat ready aircraft. In other cases, it was to differentiate it from a second aircraft in the squadron with the same individual aircraft identification letter. This occurred frequently late in the war when squadron rosters were increased beyond 26 due to the surplus of aircraft and trained pilots. This seems to be the most plausible scenario since there was a second K4-S in the squadron by May 1945, a P-47D-30-RE assigned to 1st Lt. Walter A. Grabowski who joined the unit in February 1945.

The final artwork tasks were passed to artist Jeff Devey. It was up to him to replicate the large free hand writing of *Dottie Mae* on the left side of the fuselage as well as pilot Lt. L.A. Kuhl below the windscreen. On the right side Devey recreated the names of the crew chief, assistant crew chief, and armorer. Devey's careful freehand work is indistinguishable from the original.

A pause in the application of the artwork was necessary because *Dottie Mae* was ready to fly. The first flight took place June 22, 2017 at Caldwell, with John Maloney at the controls. Most of the team was present for this celebratory return to the air, but noticeably absent, but certainly not forgotten was Jeff Harris, who had spearheaded the initial efforts at Allied Fighters but sadly passed away unexpectedly in 2013.

Following a series of test flights, it was time for Devey to step back in to apply the complicated nose art. The original nose art 'Santa's Little Helper' was based on the December 1945 Vargas calendar the troops began to receive in the winter of 1944, which was around the same time this P-47 arrived at the 511th FS. The original writing and artwork was applied by S/ Sgt. Samuel L Kitschenbaum, who was a radioman with the 511th. By all accounts he was responsible for a significant amount of the artwork on 511th aircraft, and his writing style is visible in photographs of a number of aircraft from the unit. With the help of wartime photos, the original cowling, and a copy of the original calendar Devey faithfully duplicated the nose art, which was completed on July 13, 2017.

Nightingale, who was there from the beginning, looks back at the entire project, "I wouldn't have missed it. I went in knowing nothing except it was a P-47 laying on the lakebed. What it has grown into is absolutely incredible. It is probably one of the most historic World War Two planes in existence now, let alone flying. What Mike Breshears has done is just incredible: retaining 55% of the original material while returning the Jug to flight. This thing is just unreal and I can say I don't think anything out there can match it. If *Dottie Mae* had been recovered twenty-five years ago who knows how it would have ended up. I know it wouldn't have been restored like this. The desire to perform this level of restoration wasn't there and Mike has set a new level for people to match. He doesn't like to talk about himself, but let me tell you about how far into the details they went to get this restoration right. When he opened up the fuselage he found that in various sections different colors of anodized rivets had been used. Blue, yellow, gray, etc. Those locations and patterns were documented and photographed and then rivets where anodized to match those colors and reinstalled according to the photos."

Nightingale is hopeful that there will be more opportunities for restorations like *Dottie Mae* in the future. "There are 11,000 crash sites in Europe. A lot of them are obviously not recoverable, but I bet out of that number there are still some to be found. The Germans liked to put things in lakes and if you are flying around the Alps and you have an engine problem, what are going to do? Put it into a mountain or a nice lake? You aren't going to land in a riverbed, if you can get to a lake. That is where I would go."

Not only was the recovery and subsequent restoration special to

Nightingale, it was also the people he met along the way, especially veterans like pilot Larry Kuhl. “He is just a super neat guy and he has followed the project along the way. I quickly learned not to use the name *Dottie Mae* when talking about the Jug with him. I call it K4-S. The relationship between the real *Dottie Mae* and Larry didn’t end well. He calls it “*Dottie Mae* the tramp,” laughed Nightingale. “I was able to give a little piece of the airplane back to him in the form of the flare pistol. After they removed the machine guns the Austrian police asked me if there were other weapons in the airplane and I told them no because the flare pistol isn’t a weapon unless you stick it in someone’s gut. So, I took that from behind the pilot’s seat and put it in a shadow box and gave it to Larry.” Kuhl is still living and at the time of this writing was due to see his old mount take to the skies again.

The Vintage Airframe and Allied Fighters’ team aren’t quite done, as they are continuing to source additional items to round out the wartime *Dottie Mae*. A NOS drop tank has been found and replica M64/43 500lb general-purpose bombs were installed shortly after the initial test flights. Most significantly, and likely the first time this has taken place on a restoration, there is also a plan to put in place the visible wartime repair patches to completely replicate how *Dottie Mae* looked the day she dropped into the lake. That is incredible attention to detail. Oh, and remember that 80 gallons of fuel they found in the Thunderbolt once it arrived in California? It was saved, and soon a few gallons of the fuel from the last combat mission will be added to *Dottie Mae’s* new fuel tanks. You don’t get more authentic than that.

Allied Fighters isn’t resting on its laurels with the completion of *Dottie Mae*. They have tasked Vintage Fighters with the restoration of another combat veteran in the form of Grumman F6F-3 Hellcat BuNo. 00825 which served with VF-37 on U.S.S *Sangamon* (CVE-26). 🇺🇸

4 The team that made it happen (L to R) Mark Collins-Falcon Fabrication, Randy Brown-Tooling/Sheet Meet Fabrication, Stan O’Krackel-Tooling/Sheet Metal Fabrication, Dean Symonds-Systems, Bob Nightingale-Recovery Expert, John Maloney-Pilot, Jack Croul-Owner Allied Fighters and *Dottie Mae*, Mike Breshears-Owner Vintage Airframes, LLC
Photo: John Raeder



COST EFFECTIVE WARBIRD RESTORATIONS

Cactus Air Force LLC. was established in 1976, our nation's Bi-Centennial year, with the restoration of our founding aircraft, North American T-28A Trojan s/n 49-1676. Since that time, we have gathered a highly experienced restoration crew that can handle the most challenging of aircraft projects. With over 40 aircraft restorations accomplished to date, from L-4s to A-26s, The Cactus Air Force team of professional and seasoned mechanics and personnel can offer the most cost effective means for the restoration of warbird type aircraft.

Our Team offers vast experience with round motor, along with flat and turbine engines. We have determined through the years that not all warbird projects can justify the million-dollar restoration price tag that our competitors charge, and therefore offers a cost effective alternate with fair and reasonable prices to complete your project.

In addition to aircraft and helicopter restoration, we also offer the same cost effective service for the restoration of historic military land vehicles and watercraft. Our restoration experts have years of experience with Halftracks, Armored Cars, Trucks, Jeeps, Artillery, Patrol Boats, etc. to compliment and enjoy with your aircraft. Period restorations of WWII, Korea, Viet Nam and Gulf War vintage equipment are our specialty, again with reasonable prices.

Below is a partial listing of aircraft which we own. These icons of U.S. History are faithfully restored and maintained in their original configuration and participate in many West Coast air shows and events, with a keen attention to honoring our military veterans.

OV-10 Bronco
AH-1G Cobra
A-26C Invader
F-86F Sabre
T-33 Shooting Star
T-28A Trojan
T-6G Texan

C-23B+ Sherpa
L-19 Bird Dog
O-2A Skymaster
CH-46E Sky Knight
UH-1B Iroquois
T-41(A)(B)(C)
T-34A Mentor
S2F Stooft

HU-16 Albatross
C-1A Trader
OH6A Cayuse
L-4A Grasshopper
TBM-3E Avenger
BT-13A Vibrator
PT-17 Stearman



For further information on our capabilities
phone 775-888-2090 or go to www.cactusairforce.com





Dottie Mae Pilot Larry Kuhl

An Interview with **Mark Sheppard**

Too often warbird articles are sterile of personal stories from the pilots who flew them as young aviators. Usually this is because the stories have been lost through time and mortal attrition. The story of *Dottie Mae's* restoration offers a gift of insight through the recollections of its wartime pilot, Lt. Larry Kuhl. His candid thoughts about the past are a treasure for anyone wishing to understand the men who flew for their country in machines of war.

Do you recall your first flight, aircraft type, how long, and how much did it cost? My first ride in an airplane was in a post WWI biplane flown by a man who had been in aviation almost from the beginning. It cost me \$5.00, which was a lot of money in those days. At the time I was working in a factory for .50¢ an hour. My first training flight was in a Piper Cub on December 22, 1941. I soloed after about 8 hrs of instruction on March 23, 1942.

What was your training after graduation from cadets? What were your initial combat assignments? After graduation I was sent to Tallahassee, Florida for overseas training in the P-40 where I shot ground and air gunnery. I was then shipped overseas about May of 1944. I was sent to Goxhill, England for P-51 transition. After that I was sent to the Cherbourg Peninsula to the 363rd Fighter Group for combat duty. I only started one mission with that unit but it was aborted due to weather. The unit was then changed to Tactical Reconnaissance. I then transferred on September 6th, 1944 to the 511th, which was located at Picauville, a tar paper strip on the peninsula. I didn't fly the P-47 until the unit went to St. Dizier. I flew 10 local training flights in the Jug before my first combat mission on October 2nd, 1944.

Do you know why you moved to the 511th Fighter Squadron flying P-47s? I didn't want to fly around with a camera and no guns!!! Checking my log book I see where I flew 10 times with the 363rd Fighter Group, 382nd Fighter Squadron, which consisted of 5 Training flights, start of 1 combat mission and 4 flights from LeMans and Paris to visit my sister. The squadron was shut down for change of mission so they let me make the personal flights.



1 Lt. Larry Kuhl with Joe Thomas on the left and Leonard Hitchman on the right. Bomb load was one 500lb. General Purpose bomb on each wing with a 150 gallon drop tank under the fuselage. *Photo: Kuhl*

2 A twenty-one year old Larry Kuhl, taken at St. Dizier, France. Whilst there, Larry and four other pilots decided to build a house, instead of being billeted in a tent. *Photo: Kuhl*

3 A photo of the 511th Fighter Squadron officers and pilots on a rainy in St. Dizier, France. Fourteen of the thirty-two pilots in this photo few Dottie Mae. Larry Kuhl was not in the photo, as he thinks he was viting his sister who was a nurse at an evectuion hospital in Normandy. *Photo: Kuhl*



Did you ever fly a P-47 Razorback as well as the P-47 Bubbletop? The first P-47 I flew was a razorback. I didn't get the bubble until the present K4-S was assigned to me. It had much better visibility for combat but had one drawback. It was prone to rudder lock. That's when you push in a rudder and it stays in. I had that happen once and I nearly went in before I got it back out. They made a modification with an additional fuselage fillet in front of the fin but K4-S didn't have the modification.

The artwork on K4-S was painted by S/Sgt. Samuel L Kirschenbaum of the communication section of 511th FS. Can you recall how the artwork was decided upon? He asked if I would like a drawing and wanted to know what name to use. We had lots of stuff going on then and I probably was very negligent in not thanking him for the excellent work. He picked the artwork from a 1945 Vargas calendar and used other months for other unit airplanes. Mine was the December 1945 pin up.

Who was Dottie Mae? There was a famous WASP called Dorothy 'Dottie Mae' Nichols. Is the P-47 named after her? No, the artwork was named after my first wife and should have read 'Dottie Tramp'. When I got my divorce the judge awarded me custody of the two children. He also said, "I recommend you stay away from that woman." My mother lived with me and looked after the children until I met Pat a couple years later. Pat and I were married and she took over the job of raising them. We just celebrated our 57th anniversary. The kids have left and we are leading a great life.

What were your scariest flying moments during World War Two? We had lousy training for instrument flying in cadets. Our instructors used to spend the period sitting at an auxiliary field because they hated to teach it. The two cases I had of disorientation in the clouds were probably the most scary. Operationally, we had a lot of times when you could hear 88mm's exploding and occasionally when holding too long a burst, a gun would cook off. A few times I was concentrating, working tracers down a train in a marshaling yard, and nearly ran into an overpass.

How important were the ground crew to you? Were S/Sgt. J. Thomas, Sgt. E. Bergstrom, and Sgt L. Hitchman the team who were assigned K4-S. Joe was my crew chief with Ed as his assistant with Hitch as the armament sergeant. As for aborts etc, you only have to have the engine miss a beat when behind enemy lines to develop an appreciation for the ground crew. I think they did their job under extremely difficult conditions. Until we got to Kitzingen with hangers, all of the work was done outside. I don't recall having to abort a mission so the maintenance had to be excellent. I never had to return early with a sick engine. I recall never having a jammed gun or landing with a hung bomb.

Can you describe one or two of your more vivid memories of combat experiences in the P-47? The first mission I flew was on the wing of an experienced pilot who made a lot of turns, and I could see flack burst out of the corner of my eye and realized that had we gone straight they would have hit us. I quickly learned to

just keep turning and changing altitude. I dropped a 500lb bomb next to a tank in the Battle of The Bulge and rolled it down the side of a hill. I thought those boys must have had an interesting ride. That mission also involved diving through holes in a low overcast to strafe German columns and I almost hit the ground.

Do you recall any combat missions in which you flew in direct support of ground forces, in which you directly attacked enemy positions engaged with American troops? Practically all our missions were in support of ground forces. I enjoyed knocking holes in Autobahn bridges and strafing trains. I never tried to aim at any individual and on a couple occasions just shot over their heads to shake them up. I remember one time, when I was following another pilot on a run against a gasoline truck moving down the highway, the guy ahead of me set the back end on fire and the driver jumped out and was running down the highway. I shot over his head and I'll always remember the picture of him running with his long overcoat out behind. I don't know why he didn't just jump in the ditch - guess he thought the truck was going to explode.

Did you feel fear instantly when danger presented itself, or did things happen so fast that the sense of fear came later? Your guts were always tight, but you knew if you let fear take over things would turn out bad. Fortunately I never got hit and was always able to get back to the field. Originally, after debriefing they passed around a shot of gin to soothe the nerves but that didn't last very long, which wasn't important to me as I don't like gin.

Can you remember the small sensations of flying in the P-47? The smells, the noise, etc, etc? I can't remember anything special about the P-47 except it was the first big radial engine aircraft I flew. Taxing and alignment on the runway was a problem until you got the tail up. A crew member rode the wing for narrow taxiways, to direct us. Training after cadets was non existent. We just got in and flew. My sister was a nurse in an evac hospital not too far from St. Dizier. On one of my original orientation flights, ten hours in all, three of us in trail buzzed the hospital and did a barrel roll off the deck. Shows a lot of confidence in youth, but I do remember looking back when the last guy was upside down and thinking "hope he gets all the way around".

We recently found two 'kill' markings painted on the side. Squadron records confirm you were awarded three destroyed and one damaged from the April 16th, 1945 mission to Magdeburg. Can you recall why only two 'kills' were painted on the side? I don't remember anything about those markings and was not aware they were there. I vaguely remember we ran across some airplanes parked under trees on a grass field and making a firing pass. My log book shows the damage but sounds like a wild claim to me.

Do you recall having any feelings about losing "your" airplane when Lt. Henry Mohr crash landed? When Lt. Mohr returned to the squadron did you give him grief over it, or did he apologize for losing "your" airplane? I was disgusted that he was assigned my airplane on the last mission of the war and that he put it in the water. What disturbed me the most was that I was now assigned to an old "Razorback" P-47. It's strange how the mind works. I remember one mission in someone else's airplane when 88mm were exploding close and I got some shrapnel holes in the cowl and he was all ticked off at me. No, Hank didn't apologize. In 1991 at our retiree convention in Las Vegas I asked what hitting the water felt like? He said you see that block wall over there, run just as fast as you can into it and that's what it felt like.

How did you feel when you told that 'your' P-47 had been recovered from the lake in Austria? Mark contacted Mike Langdon of the reunion group who called me, and I was astounded. Quite some time before that I received a letter asking for donations to pay to fish the bird out. I guess all former members of the 405th Fighter Group got the same letter. I thought it was a wild idea.

I would like people to realize war is a dirty business that destroys a lot of people. I'll always remember the mission, when at the briefing one of the pilots was telling me about his wife and personal life. We took off and were climbing over the Rhine when an 88mm burst a couple hundred feet under his airplane. He gradually rolled over and went straight into the ground from ten thousand feet. All that was left of this human being was a hole in the ground, and when we got back to base just a little chalk dust at the base of the black board. 🌸



Picture of the first K4-S *Little Audrey* which served with the 511th Fighter Squadron between April and November 1944 taken at Picauville, France during July 1944. Note individual aircraft code letter S on cowling.
Photo: Thomas



- ♣ Over 30 years Experience Repairing V-1710s
 - ♣ We provide FAA Approved Repairs, Alterations and Parts for "Limited" & "Experimental/Exhibition" Aircraft.
See our Website for complete listing and descriptions.
 - ♣ FAA Form 337's Issued for all Major Repairs/Alterations
 - ♣ Complete Cylinder Bank Restoration Facility
 - ♣ Calibrated V-1710 Dynamometer for Run-in and Testing
- Bud Wheeler, President
724-539-0241

There is a Difference!

Visit us at www.aceallisons.com



San Antonio, Texas 210-735-9467

300 Fredericksburg Road
San Antonio, Texas 78201-6305

**Radial Engine
Accessories and
Carburetors**

Overhauls & Repairs

(210) 735-9467

FAX (210) 735-2819

sales@aeroaccessoriesinc.com

www.aeroaccessoriesinc.com



NEED A CUSTOM FUEL TANK?

EMAIL DETAILS TO: JIM@EMCCUSTOMSHOP.COM

We have completed thousands of custom projects spanning over 34 years. Keep 'em Flying!



EMC

EAGLE
MANUFACTURING
CORPORATION

855.97EAGLE
EMCCUSTOMSHOP.COM

EAGLE MANUFACTURING CORP DBA EAGLE TECHNOLOGIES CORP

Created by an aviator, for aviators...

The World's Only Hard Shell Leather Flying Helmets[®]



*Kevlar hard shell protection
Range of leather colours
Authentic look and bespoke fit
Outstanding noise attenuation*

Ivan and Sandy Campbell



ivan@campbellaeroclassics.com ph: +64 (0) 3 312 8008
www.campbellaeroclassics.com © 2012 Campbell Aero Classics

RED TAIL



LEGACY

By Greg Morehead

Just forty miles east of Montgomery, Alabama is historic Moton Field, where African-American aviation cadets received primary flight instruction from 1941 through 1945. These men would later be popularly known as the Tuskegee Airmen. The National Park Service now operates a poignant remnant of the Tuskegee experience: two aircraft hangars and several base structures preserved 75 years after they were abuzz with determined young black men learning to fly.

Above Moton field, on April 7, 2017, the Commemorative Air Force's (CAF) P-51B Red Tail Mustang flew in formation with a Red Tail F-16 from the 100th Fighter Squadron of the 187th Fighter Wing, Alabama Air National Guard. Doug Rozendaal led in the Mustang as Ray Fowler tucked his Viper in tight. The rare flight was made possible through the support of the Alabama ANG, the CAF, and local government officials. Following the flight, Fowler introduced squadron mate Colonel Will Sparrow, who said, "We learned only two percent of aviators are African American. Major Rich Peace and I, with broad support, created the Red Tail Scholarship Foundation. Even though we've just begun, we already have one success story, a Tuskegee University student who recently earned his pilot's license with the dream of joining the military and becoming an astronaut." 🇺🇸





Photo Credit: Official US Navy Photograph

FM-2 Wildcat on combat air patrol over USS Santee (CVE-29) during the Leyte invasion. - October 1944



**When keeping aviation history alive is what you're about.
From past to present we have you covered.**

PO Box 183 Addison, TX 75001 | Office: 972.250.0400 | Fax: 972.250.0401 | WWW.LGAINSURANCE.COM

 Like us on Facebook

The Queen of The CVE's and the Invasion of Leyte.

One of the longest campaigns of World War Two, the New Guinea Campaign lasted from 1942 – 1945. Japan had easily conquered the majority of the northern reaches of the island, but had run out of steam during the Papuan campaign and failed to capture Port Moresby on the southern most part of the massive island. A strategic blunder by the enemy, the Allies then went on the offensive in a series of campaigns that gave them control of most of this strategically important island. This would be a fatal blow to the Japanese presence in the Pacific. It should be noted, that like much of the Pacific campaigns fought by the Japanese, disease and starvation claimed more enemy lives than actual battle action.

In 1944 during the closing phase of the campaign, *USS Santee* (CVE-29) fueled and provisioned near Espiritu Santo in April then sailed to the Solomons. Her air group took part in destroying 100 enemy aircraft and tearing up enemy airfields before departing to the Admiralties. Arriving at Seeadler Harbor, she took on fuel and food; then sailed again for Hollandia. From May to June, she added to her current complement of aircraft with 66 Corsairs and 15 Hellcats. In early June, her division steamed north for Kwajalein. By August, *Santee* reached the newly won Guam. Her 81 aircraft became the first planes to operate from the re-conquered island.

After training, she sailed in early October reaching Philippine waters a few weeks later. Her gunners shot down one enemy plane during a morning attack, and her aircraft downed two more. On the 25th she launched five Avengers and eight Wildcats for an attack against Japanese surface units more than 100 miles to the north. But at 0740 a kamikaze crashed through the flight deck severely damaging the hangar deck below. 15 minutes later an enemy sub would launch a torpedo that struck the ship causing flooding of several compartments and creating a 6-degree starboard list. To note: this and the attack on the *USS Suwanee* (CVE-27) 30 seconds later, are generally considered the first deliberate kamikaze attack of the war. After emergency repairs less than two hours later, *Santee* was once again combat ready having never been out of formation.

Between October 18th and 27th, her planes shot down 31 Japanese aircraft and sank one 5,000 ton ammunition ship, in addition to damage inflicted by strafing during their 377 sorties. At the end of the month, she returned to anchor in Seeadler Harbor for temporary repairs. Underway again by early November, she steamed to Pearl for more repairs. She then took on almost 100 Marines for transport back to the U.S. *Santee* completed the year undergoing repairs to battle damage and general overhaul. 🌸



525 mph

By **Stephen Chapis**

DURING ITS 5-year racing career at Reno, Joe Gano's L-39, *Pipsqueak*, won two Jet Gold Championships, turned the first 500mph+ lap for an L-39, and set a course record for L-39s that still stands today. Though it was banned from competition in 2011 for being too fast, *Pipsqueak* still holds the title of "World's Fastest L-39".

Although this story revolves around a 1974 Aero-Vodochody L-39 Albatros, it cannot be told without introducing the two men behind this incredibly fast jet- Dave Cannavo and Joe Gano. Dave, quiet and unassuming, got his first aviation job, cleaning the underside of airplanes, at 6 years of age. His father ran a charter business, Aero Taxi, at Cross Keys Airport, New Jersey and in those simpler days Dave was flying Twin Beeches by the time he was 12 and soloed a Bonanza at 15. Over the next decade Dave acquired multiple pilot and maintenance ratings and flew and worked on everything from a Cessna 310 to a Falcon 900. In addition, he says he and his father had toys too, like Globe Swifts, T-6s and a P-51.



S L E E



Joe Gano and Dave Cannavo join up with the photo ship over Delaware Bay near Dover AFB, Delaware, on October 23, 2016. In 2003, when Joe asked Dave to find him a jet that could win at Reno, he found this L-39 (c/n 0105) sitting in the corner of a hangar in the Czech Republic. Knowing others who were looking for a newer model would forsake it, Dave turned the dusty jet into a pylon burner. *Photo: Stephen Chapis from an A36 Bonanza owned and flown by Dan Haug.*

P E R



1 Though *Pipsqueak* has been banned from competition since 2011, it still makes one awesome Sunday flyer. Here Joe and the author cavort in the crystalline autumn skies over the Delaware Bay. Photo: Stephen Chapis

Long before the Internet and social media, the main medium for buying and selling airplanes was *Trade-A-Plane* and it was in this publication that Dave's father saw a small ad for an Aero-Vodochody L-29 Delphin for sale in the Czech Republic. This was in 1990, just after the November 1989 'Velvet Revolution' where the Czechs ousted the Communists, but the Iron Curtain still stretched from Stettin in the Baltic to Trieste in the Adriatic. To make a long, albeit interesting story, short Dave traveled to Prague and ended up making a deal whereupon he would deliver a DC-3 to the Prague Aviation Museum in Kbely in exchange for three L-29s and a MiG-21.

Although he didn't know it at the time, this deal set Dave on a path to becoming the Go-To guy for people looking to get into ex-Eastern Bloc warbirds and in 1995, he sold his share of Aero Taxi, established Aero Enterprises (Aero), and has continued to import everything from Yak-52s to MiG-29s. In 2006, along with Warbirds of Delaware owner Joe Gano, Dave purchased Red Eagle Avionics from its founder Mark Bedrosian. Red Eagle performs a considerable amount of work on general aviation and corporate aircraft, but on the warbird side Red Eagle works hand-in-hand with Aero at creating customized Eastern Bloc aircraft, including some of the hottest jets ever to compete at Reno.

Joe Gano joined the United States Air Force in 1965 and after graduating from flight training he was assigned to the 525th Fighter Interceptor Squadron, *Bulldogs*, at Bitburg Air Force Base, West Germany flying the Convair F-102 Delta Dagger. Although this Century Series fighter was in the latter half of its service career, the Delta Daggers and pilots of the 525th were at the very tip of NATO's spear in 1966. Although Joe never saw combat he came extremely close on August 21, 1968, while patrolling the border between East and West Germany and Czechoslovakia. Joe picked up a pair of bogeys on his scope that were headed directly for West German airspace. Joe's flight was cleared through the Buffer Zone and ADIZ, and cleared to arm their missiles. He and his wingman were salivating at the possibility of getting a shot at some Czech pilots that had gotten a bit too aggressive. What Joe did not know at the time, and what GCI controller elected not to tell his flight, was that in the overnight hours the Soviet Union and three Warsaw Pact nations had launched Operation *Danube*, the invasion of Czechoslovakia, and that those MiGs were being flown by Russians. History may have read differently if the MiG's had not turned back just before they came within missile range.

After he left the Air Force Joe became a very successful businessman and in 1993 purchased the L-29 that Dave had imported from Czechoslovakia three years prior. Joe put over 400 hours on the aircraft before he turned it over to Dave in 2004 for conversion to the Rolls Royce 601 Viper engine. The Viper has twice as much thrust (3,700lbs) as the stock Motorlet M-701 turbojet and gives the Viper L-29 a 0.73:1 thrust-to-weight ratio, which





Joe and his crew chief, Davey Moyer, taxi in from a Sunday morning flight out of New Castle County Airport (KILG) in New Castle, Delaware. Joe designed the Red Arrows-inspired scheme himself, which highlights the lines of the Albatros quite well.
Photo: Stephen Chapis

2 During his tour in the USAF, Joe flew F-102s with the 525th FIS at Bitburg AFB, West Germany. He was airborne on August 21, 1968, when the Soviets invaded Czechoslovakia and was cleared to arm his missiles when a pair of bogeys approached the West German ADIZ. Luckily, the Soviets turned back. *Photo: Joe Gano*

3 The men behind the dominant L-39 Pipsqueak. Joe Gano (L) flew F-102s in the USAF in the late '60s and later became a successful businessman. Dave Cannavo (R) has been flying since he was 12 and holds multiple pilot and mechanic ratings. He is the mastermind behind the fastest jets ever to turn laps at Reno. Dave owns Aero Enterprises and he and Joe co-own Red Eagle Avionics, both located at New Castle County Airport, Delaware. *Photo: Stephen Chapis*





1 In February 2005, at his private airstrip in Townsend, Delaware, Dave began transforming #0105 from Czech trainer to American air racer. The jet won back-to-back Jet Gold Championships while still fitted with tip tanks. *Photo: Davey Moyer*

2 In 2007, rule changes at Reno allowed for certain modifications in the Jet Class. Dave removed the tip tanks and designed a set of winglets. Available from Aero Enterprises, these are the only winglets designed for both one-G cruise and maximum G performance. *Photo: Davey Moyer*

3 Dave drew up several winglet designs, but this was the first one he actually fabricated. As the old adage goes, "If it looks good, it'll fly good." *Photo: Davey Moyer*

4 Though *Pipsqueak* carries 52 less gallons than a stock L-39, the Aero Enterprises winglets give it the same range as a stock L-39. In addition to the increased fuel efficiency, the roll rate is reduced from 5 seconds to 3.5 seconds. *Photo: Stephen Chapis*

enables the Viper to hit Mach tuck in level flight and purportedly gives it the capability to out-climb and out-turn the A-10 Warthog. However, the saga of the Aero Vipers is beyond the scope of this article.

In late 2003, when Joe realized they had started racing jets at Reno, he decided to enter an L-39 'Albatros' and asked Dave to locate a suitable aircraft. Joe had one stipulation- he wanted to win. In his 25+ years of dealing in former Soviet Bloc aircraft Dave has an extensive network of connections around the world and travels to Europe quite often. During a trip to the Czech Republic in winter 2004/2005 Dave found a dusty L-39 sitting forlornly in the corner of a hanger. This jet turned out to be the fifth production aircraft (c/n 0105) built in 1974. Dave's experience told him that an L-39 of this vintage would not be of interest to most U.S. customers, who prefer the newer aircraft built in the mid-80s. However, it would make a perfect air racer for Joe because Dave knew this early production model was lighter than the newer aircraft.

The L-39 arrived in Delaware in February 2005, and Dave immediately began transforming the jet into an air racer. This early model was already 2,000 pounds lighter than later L-39s, but Dave lightened the aircraft further, and as Joe explains, Dave had a few other tricks up his sleeve, "The key was that it was number 5 off the line and was already light, but Dave had some ideas on how to modify it within the rules. These were ideas the other guys did not think of, like adjusting the angle of the horizontal stabilizer to maximize lift at high speeds. It was a well-balanced aircraft and all within the rules." Once the jet was complete, Dave test flew it and applied the Red Arrows-esque paint scheme that Joe designed. The eye-catching jet was dubbed *Pipsqueak*.

When Joe parked *Pipsqueak* on the ramp at Reno 2005 nobody really paid any attention to the middle-aged Albatros, including John Penney who was slated to fly the aircraft. No one came around after Penney qualified the jet in second place at 447.248mph. Joe explains what finally caught everyone's attention, "Nobody paid attention to us until after Heat 1, where there were six or seven L-39s running together with John a half lap ahead! The next morning there were guys crawling all over the airplane with tape measures and the rulebook. They asked us, 'What the hell did you do to this thing?!' I just smiled because it was all because of Dave." Penney dominated the Jet Class all weekend. He averaged 456.316mph in Heat 2 and took the Gold on Sunday at 454.190mph. Joe, Dave, John, and the entire Aero team proved that old jets rule!

In 2006, the Penney/*Pipsqueak* duo once again dominated the Jet Class. Penney improved on his '05 qualifying performance with an average of 468.788mph. His best average of the week was 484.602mph in Heat 3A and best lap of 486mph. In the Jet Gold race on September 17, Penney easily won the championship race at a Jet Class record speed of 470.195mph. In just two years *Pipsqueak* went from a dusty, forgotten jet to a two-time National Champion. Like true racers, Joe and Dave began looking for ways to make *Pipsqueak* even faster so they could go for the three-peat in 2007.

Due to rule changes that allowed competitors to modify their jets, Dave designed a set of winglets to replace the drag-inducing tip tanks. These winglets dramatically improve aircraft performance and handling in all flight regimes, including cruise, aerobatics, formation, and of course pylon racing. They also increased the 360 degree roll rate from 5 seconds to 3.5 seconds, but Joe says a lot of that came from simply removing the dead weight of the tip tanks themselves.

In October 2016, Dave explained how he designed these highly efficient winglets, "Originally, we raced it with the tip tanks because the rules did not allow for any changes, but we pushed for some changes and they allowed it. So we took the tanks off and designed the winglets in my shop and used an old wing to build them up. The shape is pretty much self-determined because I did a ton of research and could not find any data on winglets except 1G, high-altitude cruise flight. There was nothing on winglets that would work under G or anything else." Joe added, "Some guys have copied the Airbus winglets, but they don't help much in racing because they were designed for 1G cruise performance." Dave continued, "We sort of, intuitively you might say, designed them so they would look right, which goes to the old saying, 'If it looks good it'll fly good.' I drew up several different shapes, but this is the first one we actually manufactured."

The Aero Enterprises L-39 Winglet is the only L-39 winglet flight tested both for maximum high G performance and to ensure optimal airflow for maximum fuel efficiency at cruise and maximum power. This was highlighted on a two-ship cross-country where Joe and Dave flew with a stock L-39 with tip tanks. Dave explains, "Even though it [*Pipsqueak*] does not have tip tanks it still has the same range, on less fuel, as a stock L-39 because of the efficiency of the winglets. On a trip from Reno to Wendover, which is about 300 miles, we each took off with two people on board and all the fuel we could carry. When we landed we had the same amount of fuel as the other jet." That says a lot for the aerodynamic efficiency of the Aero winglets. Dave says that the winglets can be installed on any L-39 and that they will pay for themselves in fuel cost savings within 2 years.

Reno 2007 was the year of the fast jets. Engine modifications and new types were allowed for the first time, which enabled Joe, a rookie, to enter his Viper-powered L-29. John Penney qualified at 493.904mph, the best yet for *Pipsqueak*, but it was only good enough for fifth place. Penney was

5 It took just eight months for L-39 #0105 to go from pieces in Delaware to a race-ready jet in Nevada. Photo: Davey Moyer

6 *Pipsqueak* won back-to-back Jet Gold Championships in 2005 & 2006 and just missed a three-peat in 2007 by 2.5 seconds. This performance was achieved with the stock Ivchenko AI-25TL turbofan, which produces 3,792lbs of thrust. Photo: Davey Moyer

7 *Pipsqueak* was a fast jet right out of the box. In it's Reno debut in 2005 John Penney took the Jet Gold at 454.190-mph and backed up that performance with a second championship at 470.195-mph. Photo: Stephen Chapis



...no one paid any attention until Joe turned the Lotarev loose and announced his presence with authority by laying down a scorching 524.668mph lap!

at the controls during Heat 1A, when the race was terminated after the fatal crash of Brad Morehouse's L-39 on the first lap. For the next races Penney had to switch over to flying *Rare Bear*, and Curt Brown took over as pilot of *Pipsqueak*. Joe laughingly says, "John told me he got me a replacement pilot for *Pipsqueak*. A guy named Curt Brown. I didn't know Curt Brown from Adam!" Then Joe found out that John could not have picked a more qualified pilot than Curt Brown.

In 1974, Brown graduated with a degree in Electrical Engineering from the United States Air Force Academy. During his career he flew A-10s from Myrtle Beach AFB, South Carolina and Davis-Monthan AFB, Arizona. He graduated from the USAF Test Pilot School in June 1986, selected as an astronaut in August 1987 and made six flights aboard the Space Shuttle. He served as pilot aboard STS-47 (1992), STS-66 (1994), and STS-77 (1996), and moved into the left seat as the Commander for STS-85 (1997), STS-95 (1998), and STS-103 (1999). During his career he logged 6,000 hours in jet aircraft and 1,383 hours in space. In Curt's first race (Heat 3A), a cut pylon on lap four cost him the victory. In the Jet Gold he finished 2.5 seconds behind Rich Sugden's T-2 Buckeye. However, his average speed of 486.261mph was the fastest to date for *Pipsqueak*.

For 2008 Joe swapped rides with Curt. It was the beginning of a three-year trend where *Pipsqueak* was getting faster, but still chasing Curt and Mike Mangold in the Vipers. In qualifying, Joe laid down the first 500mph lap for an L-39 when he qualified third at 502mph. In Heat 1A he split the Vipers by finishing second behind Brown and several seconds ahead of Mangold who was given a 24 second penalty for two pylon cuts. In Heat 2A, 3A, Silver, and Gold Joe would finish on the third step of the podium with speeds in the mid to high 480s, with a fastest yet race speed of 489.910mph in the Silver race. In Heat 4A on Saturday, *Pipsqueak* took the checkered flag in its only race outside the top 3 when Joe missed the podium by a scant 0.734 seconds.

Up to this point, *Pipsqueak's* back-to-back championships in 2005 and 2006 and near three-peat in 2007 had been achieved with its stock Ivchenko AI-25TL turbofan. This engine makes 3,792lbs of thrust, which gives the L-39 a maximum speed of 466mph @ 16,400ft. Determined to return *Pipsqueak* to the winner's circle for 2009, Joe instructed Dave to install a Lotarev DV-2 turbofan, which produces 4,850lbs of thrust, from the L-59 Super Albatros. The factory alleges this conversion is not possible, but Dave made it work in a big way. Dave talked recently about the engineering that went into this one-of-a-kind conversion, "Since the L-59 was an outgrowth of the L-39 and knowing Russian mentality, I figured they didn't change much in the L-59. So during one of my trips to Europe I took some measurements and sure enough the DV-2 slid right into the L-39. The electrical,

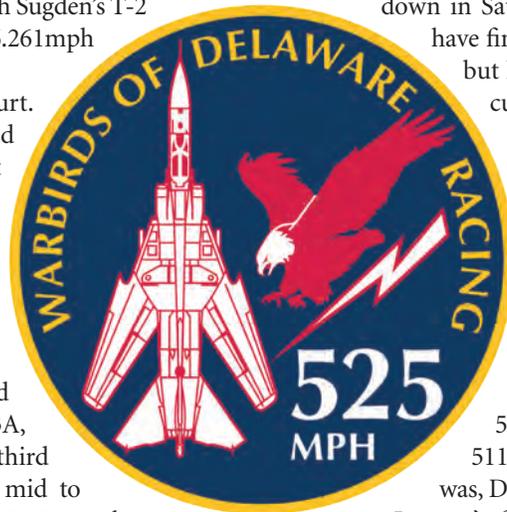
hydraulic, and bleed air connections came through the firewall in the same place, but they routed to different locations on the DV-2. As for the engine mounts, the load bearing forward mounts were the same and the aft mounts only needed to shift 1" aft." With this new engine and further tweaks to the airframe *Pipsqueak* would be faster down in the weeds in a near constant 4G turn than at L-59 at altitude in level flight.

Given the straightforward nature of the DV-2 conversion, *Pipsqueak* did not look any different when Joe landed at Stead for the 2009 races. It was the ultimate sleeper, so again, no one paid any attention until Joe turned the Lotarev loose and announced his presence with authority by laying down a scorching 524.668mph lap! This speed was a full 10mph faster than Mangold's Viper, but still far behind Brown who set a new course record of 538.052mph in Gano's Race 77 Viper. Unbeknownst to Joe at the time this qualifying lap would be the fastest *Pipsqueak*, or any L-39, would ever fly around the pylons. Sans Heat 1B, Joe's flying was smooth, fast, and consistent. In three out of the five races he averaged over 500mph, with the fastest, 510.607mph, being laid down in Saturday's Heat 2A. In Heat 1B, Joe could have finished second (behind Brown of course), but he cut pylon 1 on lap 2 and incurred the customary 12-second penalty.

Reno 2010 was more of the same in the Jet Class; the top three qualifying positions were occupied by the Cannavo/Aero-prepped jets of Curt Brown (543mph), Mike Mangold (519mph), and Joe Gano (514mph). Brown's 543mph lap set a course record that still stands today. *Pipsqueak* ran better than ever. Joe's four race average speed was 501.543mph, with a best ever race speed of 511.691mph in Heat 2A. As fast as *Pipsqueak* was, Dave says the jet was being held back by the

Lotarev's finicky mechanical fuel controller. If the L-39 was going to legitimately challenge the Vipers and take its third Jet Gold title, this issue had to be resolved.

In the months leading up to the 2011 races Dave and Joe were preparing for an epic battle between *Pipsqueak* and the Vipers. They had made progress on resolving the fuel controller issues and were convinced that it would be the break out year for *Pipsqueak*, but with four Cannavo-tuned Vipers entered it would not be easy. However, it was a battle that was not to be. Due to an incident with one of the Vipers during PRS, the Reno Air Racing Association decided to ban the remaining Vipers and *Pipsqueak* from competition for 2011. Six years on, the ban remains in place. Could 2011 have been the beginning of an era where Joe Gano & *Pipsqueak* would dominate the Jet Class much the way Darryl Greenamyre & *Conquest 1* dominated the Unlimited Class in the 1960s & 70s? We will never know. What we do know is that *Pipsqueak*, the world's oldest flying L-39, is still the world's fastest L-39. 🇺🇸







AAAF

4786

AAF SPEC. PROJ. NO.
U.S. ARMY F-GO-2587
SERIAL NO. AAF 44-1147H
CHECK WEIGHT 200 LBS
SERVICE THIS AIRPLANE
LOAD 100/170 INCL.
AVAILABLE T.O. 01-2-1.411
CHECKED BY: [unclear]
DATE: [unclear]
SUITABLE FOR AIRCRAFT



N



Butch's award winning T-6G, USAAF Serial No. 49-3144, N55897 seen in flight near Danville, Illinois. Photo: Schroeder Family

Flipping Burgers to Flying Mustangs

Many warbird enthusiasts know the name Henry "Butch" Schroeder and recognize him as the caretaker of North American

F-6D *Lil' Margaret*, but over the years Butch has owned a variety of warbirds. This quiet, humble, unassuming man set the warbird world on its ear, so to speak, when he debuted *Lil' Margaret* back in 1993. Arguably, this aircraft was the tipping point that began the stock restoration revolution in the warbird community and became the benchmark for the high standard of restorations we see today. *Warbird Digest* sat down with Butch to talk about his 40 years of operating warbirds and how he is now passing the torch to his son.



1

1 Butch's first Mustang was this tall tail Cavalier conversion, USAAF Serial No. 45-11159, N30FF. Acquired in 1980, he would own this aircraft for the next fifteen years. *Photo: Schroeder Family*



2

2 Butch, along with his Father, Butch Sr. and Mother Lucille, proudly display the trophy the restoration of T-6G USAF Serial No. 49-3144, N55897 garnered in 1991 as 'Reserve Grand Champion Warbird' at Oshkosh. *Photo: Schroeder Family*

With forty years of warbird ownership under his belt, you wouldn't blame Butch Schroeder if he carried himself like a hot shot fighter pilot, after all the man has owned and flown two of the best fighters of World War Two, the Republic P-47 Thunderbolt and two North American Mustangs. However, those that know him find him quiet, humble and approachable and willing to share his passion with anyone who asks. His upbringing in the working-class town of Danville, Illinois has served him well throughout his life.

Butch's father, Henry Schroeder I, was a World War Two fighter pilot flying the P-47N when the war ended just before he was shipped overseas to participate in the invasion of Japan. Henry came home and started a family and eventually opened a fast food restaurant, in fact, the 57th Burger Chef, in his hometown of Danville. For those not familiar Burger Chef was neck and neck with McDonalds for dominance in the fast food burger business into the 1970s, eventually growing to over 1200 stores before the parent company of Hardee's stepped in and bought the company in 1982. Eventually, the name Burger Chef would disappear as well as most of the franchised stores.

Butch started working at his father's Burger Chef in 1960. He takes up the story, "I don't ever remember my dad asking



3 At Oshkosh 1993, several World War Two pilots stopped by to see *Lil' Margaret* and were very impressed with what Butch had accomplished. *Photo: Schroeder Family*

4 The anticipated reunion 1993 of *Lil' Margaret*, Clyde East, and Clyde's wife Margaret Ann (the a/c's namesake) was a special occasion for Butch. *Photo: Schroeder Family*



me, 'Is this what you want to do?' It was just expected. I made 65 cents an hour. We got paid once every two weeks and the big deal was, who is going to make a \$100 check, out of two weeks work. You had to work a lot of hours to make \$100, but my dad showed me how to make money."

When Burger Chef was sold and their franchise agreement expired, the Schroeder's rebranded the restaurant as Schroeder's Drive In and kept on going. In all, Butch spent 48 years working in the business. "It obviously, let me do a lot of things that I've gotten to do and I'm very fortunate. Along the way I have had three great kids. I have been through a couple marriages, sometimes it takes a while to get it straight," grinned Butch. "In fact, I can credit the restaurant for introducing me to my wife... she used to work for me when she was sixteen years old."

Flying and airplanes was in Butch's blood from an early age. Not only was his dad a fighter pilot, but his uncle was a troop glider pilot in the war, he explains. "After the war my uncle had a grass strip on his farm on some diverted acres, which was land the government would pay a farmer not to grow crops on to keep prices up. He had a J-3 Cub and he would take me out flying. He and my dad used to fox hunt in the winter because there was a bounty on foxes...and they would take the J-3 out and shoot at them out the door. He shot the propeller once..."

Butch started taking flying lessons in 1968 in a Cessna 150. "After the 150 I remember moving up to the 172, and I thought, this is just like a rocket ship! Next, I flew a Piper Arrow to get my retract rating, but flying these types of airplanes didn't really fulfill me. It's like there was something not quite right and so I quit flying."

It is hard to get aviation out of your system and with his dad's military flying experience even doubly so. The passion was

there, however Butch just hadn't found the right outlet yet. "Back then I was always reading *Trade-A-Plane* and I heard of this guy up in Fort Wayne named John Dillely that had a P-51 Mustang in his garage that he was restoring. He was associated with a company operating up in Northern Indiana that had purchased some Canadian Mustangs. He was working with them but also doing his own Mustang. I remember I told a friend of mine about it and he drove up there, found the place and looked in the window, and there was a Mustang. I was never able to do anything with it and that is a good thing because if I had gotten my hands on a Mustang at that time and tried to fly it I would have killed myself."

It wasn't long before he came across Mark Clark with Courtesy Aircraft. "In 1977 I went up to visit Mark and he took me for a ride in a T-6 that was for sale. While I was flying, my sister started talking with a woman from Bloomington, Illinois that had three T-6s. They had gotten them from a cloud seeding operation up in North Dakota, and they were for sale. We made a deal in the middle of winter and I bought one. Mine was the worst one of the bunch because it had been caught in a hailstorm. Well, I was not qualified to fly the airplane so I flew with an ex-Air Force instructor in Bloomington. I could take it off and fly it around but landing was a different story. Fortunately, a friend of mine that was the same age as I am was an aviator in the Army. He flew all the tail wheel airplanes the Army had at the time. He got checked out in the T-6 and we brought the airplane home to Danville, where I flew it with him. It probably took about 60 hours to the point that I could think I was okay. That's where it got started. That is what fulfilled my desire for flying...I guess flying a piece of history is what finally did it."

It wasn't long before a pony entered Butch's life. In 1980 Ward Wilkins from nearby Linton, Indiana had purchased a Cavalier modified P-51D from Don Plumb (P-51D USAAF Serial No 45-1159, *North American Maid*). "I ended up buying the airplane from Ward. Back then there weren't any schools to speak of, like Stallion 51 that you could go to for training in the Mustang. There may have been one, but I can't really recall. So, Ward worked with me to get checked out in the airplane. After my first take off, I thought, 'what have I gotten myself into', and then after flying it around I thought 'Man, this is kind of nice' My next thought was 'crap, I have to put this thing back on the ground.' It was probably the best Mustang landing I ever had. Today I would totally disagree with what I did.... but it was a different time."

Butch hadn't owned his Cavalier Mustang for too long when he started hearing rumors of other warbirds stashed around the countryside. "Once I had a flying Mustang I started hearing stories of others around. First, I heard about a Mustang around Terre Haute, Indiana but in a barn, then one up in Valparaiso, Indiana because at one-time someone had messed around with P-51s up there." Neither panned out. Butch continues, "At the time Burger Chef had a headquarters down in St. Louis, Missouri and I had to go to various meetings there. I was always asking people if they knew of any airplanes stashed around. I kept hearing this story of a Mustang in a garage in the area. At the same time, John Dilley was hearing the same thing."

"About that time Dwight Simms, a Sea Fury owner from Mattoon, Illinois called me and told me the then Confederate Air Force was having their first airshow in St. Louis. I asked him if they were picking up any expenses, and he said no. I said, 'well, I tell you what, if these guys know where this Mustang in a garage is at and will take me to see it, I will come at my own expense. They had seen the airplane so I told them I didn't want to step on any toes if they were interested in acquiring it. After a day or two at the airshow they took me meet this man (Bill Myers) who owned the Mustang. Sure enough, there it was. The fuselage was sitting in the garage and the wings were sitting in the backyard but it was basically all there. I started talking to him and shortly thereafter a friend of mine and I went down there to sort everything out and make a deal with him. I think his wife was happy to see it go!"

The Mustang turned out to be a very rare F-6D photo reconnaissance version of the P-51D that had not flown since 1949. Mike Coutes obtained the aircraft surplus from McClellan AFB, California in 1952 and according to Butch it was placed in his backyard where it was used for his children to play on. It changed hands several times before ending up with William "Bill" Meyers of St. Louis in 1966. He moved it to Boston, Massachusetts before moving back to St. Louis. Along the way he gathered a few additional parts for the airplane. It took Butch five pickup truck loads and four car trailer loads to get everything home and then the restoration work started.

By 1981 most surviving Mustangs had long been civilianized. Butch knew he had something special in this unconverted airframe and determined to return it to its wartime condition. "The airplane was an completely original. The wings still had all the military markings on them. The fuselage was complete, but while it was in service it had gone through a service depot where they took all camera stuff out and patched over the wholes inside

the fuselage," said Butch. So, while the airframe was essentially complete, most of the original military equipment had been removed, including all of the special camera equipment unique to the F-6D variant. One of the major projects would be to locate this missing equipment. Butch would end up traveling the country locating the parts. Fortunately, for Butch he was the first to really be interested in creating a stock Mustang. Many owners were still removing the bulky military gear when he started the project.

"I remember going out to AeroSport at Chino, California where they did a lot of Mustang work at the time. I walked in there and it must have been a little chilly that day. They had one of those pot belly stoves and sitting on top of it was the pilots rear protective armor plate from a Mustang. What they did was after they plated their hardware they were using it to bake it. That was their stove top and that's the armor plate that is in my airplane now. They were still taking the stuff I needed out of airplanes. They had a pile of wing gun ports out back..." chuckled Butch.

Another trip took Butch to Fort Collins, Colorado where he visited with Darrel Skurich. Butch describes his first impression. "I went up to his hangar and on the door, there's a sign that says, 'No trespassers. Trespassers will be shot, survivors will be prosecuted.' And I walked in there, but he was very, very nice to me and he gave me some of the F-6 parts that I was looking for that he taken out of something. At that time, they had a lot of the Whittington brother's airplanes stored there. I went in the back and there were three Bearcats sitting there in the hangar and sitting out back in the weeds was the black fuselage for the P-82 that I think ended up with Tom Reilly."

Butch counts himself fortunate that he was able to buy many New Old Stock (NOS) Mustang parts from folks like Brian O'Farrell, who purchased the remaining Dominican Air Force P-51Ds and their spare parts inventory. The result of his Latin American purchase was a warehouse full of parts, many still in the NAA packaging, which O'Farrell let Butch dig through. Butch is grateful for O'Farrell's willingness to help, "I am fortunate, I think I was one of the few people that got to do down to Miami and see the airplanes and the parts. I saw all the airplanes sitting disassembled in one warehouse and in another warehouse, were all these spare parts. All brand new North American stuff you would never find today. He allowed me to go through and pick whatever I needed. He hardly let anybody get in there, but I just happened to be one on of the lucky ones and I went down there a couple of times."

Most of those sources of parts have dried up over the years but the F-6D was restored early enough that Butch didn't have to rely on new fabricated airframe parts for the most part. The most difficult pieces to obtain were those that related to the camera installation. There do not appear to be any surviving NAA blueprints for the specialized photo reconnaissance installation in the F-6D, which made the process even more difficult. On multiple trips to California Butch expanded his contacts. He found the original camera port hole glass and the complex round fairing with Dennis Schoenfelder. The damaged round fairing was sent to the late John Neal of Griffin, Georgia who was a master with sheet metal and he was able to straighten it and return it to its original condition.

While Butch was gathering parts for the F-6D project he was restoring his T-6G. As Butch relates, it didn't start out as a full-blown restoration, "We bought the T-6 and we just flew it.



1 & 2 Butch's Father had flown P-47s in the USAAF in the closing stages of World War Two. The acquisition of USAAF Serial No. 44-90471, N47DA in 1994 allowed him the opportunity to fly another type his Father had flown in the service. Butch celebrates with his parents after completing his inaugural flight in the aircraft. *Photo: Schroeder Family*

It had no paint on it, it just had the big N-Number down the side. I gradually started to make it better. I remember having the instrument panel at home in the garage, stripping it and repainting it. Then we put USAF markings on the outside of the airplane, then we decided to replace the hail damaged leading edges. We had some problems with the prop so we took it off, then we had some engine trouble and it came off...it just kind of snowballed." Snowball it did, and the end result was being awarded the 1990 Reserve Grand Champion Warbird at the Experimental Aviation Association Convention in Oshkosh, Wisconsin.

A Danville teenager by the name of Mike Vadeboncoeur had been helping Butch with his various aircraft and he dug in deep when the T-6G project took off and when F-6D came into the picture. Vadeboncoeur would stay onboard for the entire eleven-



Not many can boast of having owned outstanding examples of both the P-51 Mustang and P-47 Thunderbolt. Butch has been fortunate enough to do just that. *Photo: Paul Bowen*

year restoration of the Mustang taking time out to attend the Spartan School of Aeronautics. The exposure that Butch gave Vadeboncoeur led to a career working on warbirds, and the eventual launch of Midwest Aero Restorations Ltd in Danville. One of the world's premier Mustang restoration facilities. Working with Butch on the F-6D was a great primer for a future career in warbird restoration.

Vadeboncoeur can't say enough about Butch and credits him as the one that jumpstarted his career. "I was fortunate enough to meet Butch around 1977-78 after a local EAA meeting where my Dad introduced me to him. Butch was kind enough to allow us to see his AT-6G Texan. It was a dreary foggy night but I'll never forget the tour of the Texan that night. He casually mentioned maybe taking me up for a ride sometime. That was it! I was hooked."

"I found myself trying to be near the airport as much as possible hoping the ride would happen. One day it did and as they say the rest is history. I kept in contact with Butch through High School and after High School while attending Spartan College in Tulsa, my mission on evenings and weekends was to find miscellaneous parts for him around aviation rich Oklahoma. While I had an opportunity to work on warbirds with Butch some before college, I know that because of my association with him it helped me get hired at a restoration facility while attending school. Too good to be true!"

"After completing Spartan I moved back to the Danville area and continued to help Butch with his Mustang project in my spare time. A couple of years later with an engine problem in the Texan, Butch offered me an opportunity to leave my solid job at the University of Illinois and come to work full time. This was risky but at a good stage in my life. I was not yet married, had no kids and my heart was really with the warbirds."

"Butch also took a risk letting this young kid work on his aircraft, but we had a great working relationship and complimented each other from a skill standpoint. I learned so much from Butch working for him over those years. He drove into me that just because no one would see some part of the airplane you still didn't allow any short cuts! Butch is an 'attention to detail guy' and loved that trait and adopted it in my own life and business practices. Butch's vision of warbird restoration is what started and ultimately launched my career! I will of course forever be grateful for that relationship and trust. Butch ultimately checked me out in the Texan and as long as I took care of it and put gas in it, I was allowed to treat it as my own. In some way, I felt it was mine because of the tremendous amount of time I had spent with it! Not too many years, later Butch also was kind enough to let me fly his first Mustang, *North American Maid*, N30FF. After saving some money and flying initially with the late Doug Schultz and later with Lee Lauderback in the early Stallion 51 days, I soloed N30FF. My fondest memory to date was when Butch and I went out as a two ship with me in the *Maid* and Butch in *Lil' Margaret*. We flew a bit of formation and made pass at a local friend's grass strip and back to Danville. It is hard to believe some of the opportunities I've had come my way over the years and again I am forever grateful for the chance Butch took on a young local kid who was on the outside of the fence always wanting to be a part of the warbird scene."

With the Texan done, it was time to double down on the F-6D. The gathering of parts continued, but so did the restoration, and by 1993 the F-6D emerged as *Lil' Margaret* the mount of World

War Two fighter ace, Clyde East who flew with the 15th Tactical Recon Squadron of the 10th Tactical Reconnaissance Group. When the airplane debuted at the EAA Convention it was the talk of the field. It was one of the first Mustangs that was entirely stock and didn't have a back seat. To top it off, it was an extremely rare photo-recon version with all the goodies.

At Oshkosh that year he received the highest of compliments from a couple of old Mustang jocks. Butch relates the story, "I had the airplane roped off and Chuck Yeager comes up to the airplane and stops to read the sign. I asked him if he wanted to take a closer look. He climbed up in the airplane and when he sat in the seat he was very complimentary. After a few minutes, he climbed down and walked away. A few minutes later he came back with Robin Olds. Olds climbed up in the cockpit, and sat down. He said, 'this is the way they actually were, this is the way a Mustang is supposed to be restored.' I took a lot of pride in the fact that these aces were transported back in time by my Mustang."

The Mustang deservedly was awarded the Grand Champion Warbird award at the end of the convention. It was a tipping point for the warbird movement and there would be no turning back, although there would be the occasional 'hot rod' fighter that would come along the way, the trend had decidedly turned to stock restorations with an ever increasingly level of research and detail.

With the F-6D and the T-6G finished, Butch started to think about what would be his next project. He had previously obtained Fairey Firefly AS.6 WD833 with the intention of doing a nose to tail restoration but decided to let it go shortly after the Mustang was finished. Since Butch's dad had flown the P-47 Thunderbolt it naturally seemed like a good fit. At the time, large portions of the David Tallichet collection were being liquidated. He initially made an offer on USAAF Serial No. 45-49385, N47DF. Butch takes up the story, "He also had an FG-1D Corsair (BuNo. 92132, N3466G) that was for sale. I made an offer of a million dollars for both airplanes, but they turned it down, as I think the Thunderbolt already had an offer. I still ended up with the Corsair but really wanted a P-47, so I kept looking." Tallichet had another P-47 (USAAF Serial No. 44-90471, N47DA) that was being restored at the Air Heritage Museum in Pennsylvania which Butch would obtain in late 1994. "I didn't tell my dad I had purchased the Thunderbolt and he and my mom were out here working on something with me when it arrived on the truck. I had it stop away from the hangar and put a sign on it with his name and had the driver pull up in front of the hangar. I had him out here when the truck arrived with it. I put a little sign on it with his name. It was a special moment."

Around the same time as the Thunderbolt restoration started, Butch sold his original Mustang and it would eventually be destined to be restored into a TF-51D and today flies as 'Mad Max' N51MX with Lou Horschel in New York. The P-47 needed a bit of work to make airworthy when it arrived, and the cockpit was completely restored. While at Air Heritage it had been painted as the mount of 56th Fighter Group ace David Schilling's famous *Hairless Joe*. The paint scheme was left intact and it continues to operate in this scheme today.

When the Thunderbolt was finally flight worthy, Butch was having a hard time getting authorization from the FAA to fly it. "I was up at Oshkosh the summer we finished the airplane. I ran into Connie Bowlin who asked why we didn't bring the Thunderbolt," recalls Butch, "She really wanted us to bring

it up, but I told her I was having problems getting a Letter of Authorization to fly it. The FAA Director was on site and she tracked him down to get things moving. Randy Sohn rode with me in the T-6 and was then able to issue the letter. A couple guys with Mustangs flew me down to to pick up the airplane. So my first take off in the Thunderbolt was a flight to Oshkosh where I made my first landing. Talk about an intense environment for a first flight..." After about 80 hours of operation it was time for the Thunderbolt to find a new home and she left for the Erickson Collection in Oregon in 2010.

As the Thunderbolt was being finished up, Butch hadn't given up on the aforementioned Corsair, but the timing just wasn't right according to Butch. "It was a very original airplane with an original engine, I think it had a Studebaker built Pratt & Whitney R-2800 in it. It was just an old and tired airplane. We started working on it, but Mike had started his own company and was pretty successful, so I decided to let it go."

He dabbled in jets a bit with the purchase of a Lockheed T-33 (USAF Serial No. 51-4271, N271AP) out of a technical school in Chicago. Butch set out to restore the jet much like his F-6D. "It was a very original airplane that had essentially been parked in the back of the hangar at the tech school. I think they cut the wing off the other one that they had but they didn't touch this one. The great thing was that T-33 parts could be purchased by the truckload for the price of one P-51 part," grinned Butch, "I had a whole hangar of T-33 parts here that went with the airplane when I sold it." Ironically, and unfortunately, after passing through another owner this Shooting Star is now perched in a park in Huntington, Indiana, the location of the offices of this magazine.

The airplanes have brought a lot of joy to Butch over the years, but his eyes light up when he starts discussing his son, Jay and his involvement with the airplanes. Jay attended the University of Illinois studying aviation, and is currently flying Learjets for Bombardier. Growing up around his dad and the airplanes it was almost inevitable that he would catch the bug, much like his dad caught it from his own father. "When he showed interest in flying the warbirds we started out in the T-6. We flew together some, but I knew I wasn't going to be the one to check him out so I sent him down to St. Louis to Greg Vallero and let them work it out. He went through his program and got checked out. He came back here and he is all ready to go. I am out here at the hangar doing something and he was kind of antsy and I told him to just go fly it. I probably made him nervous because he knew what would happen if he put a scratch in it", Butch laughed.

After a few years of experience in the T-6, Jay felt he was ready to transition into the Mustang, but his dad made sure he took a different approach than he himself had 35 years before. "I told him

the only way that he was going to fly the Mustang was if he went to Stallion 51 and received the full checkout. And that about killed him, because he had to pay for it himself and it was something like \$30,000 for nine hours. But, if this was something he wanted to do he needed to earn it and he needed to be safe, and secondarily protect my investment. Stallion 51 was the only way it was going to happen," explained Butch. "We drove down to Florida together and arrived a day early so he could relax, and he did great, although he was a bit nervous on the final day when he was scheduled to fly with Lee Lauderback, but Lee said he did just fine."

Now that Jay is flying the Mustang and the Texan Butch expects him to pitch in with maintaining the airplanes and explains why. "A belief of mine is that if you're going to be involved in owning something like this then you have to have some mechanical understanding of the airplane. You can't be just a great pilot, it is important that when something happens you be able to think through what the problem might be."

Jay's interest and involvement in warbirds at the age of 28 has given Butch hope for the future of the warbird movement which is something that concerns many of the long-time operators. "Last year when Jay took the Mustang to Oshkosh for the first time the Mustangs on either side of him were flown by guys in their twenties. It takes an awful amount of money to own these airplanes now. When I bought *North American Maid* I think I paid \$135,000 for it and I had to borrow money. It was just something I wanted to do. It gets us going, I guess. I can't say 100% that the younger guys will take an interest but I think the interest is still there."

Having passed the keys of the Mustang to his son doesn't mean that Butch has hung up his spurs. He still has one more airplane he wants to own and fly. During his service in the USAAF his dad flew the Stearman, BT-13, T-6, P-47, P-51, B-25 and the P-40. The P-40 is the one airplane that Butch still needs to check off the list and he explained that the P-51 may leave the stable in exchange for a Warhawk in the near future. In the meantime, Butch is at his hangar nearly every day, maintaining his Mustang or T-6G or busy working on the restoration of a number of classic Corvettes. On an especially good day he gets to see his son fly the Mustang.

Butch sums it up pretty well, "I have had a great life and have gotten to do a lot of things that others have not had the opportunity to do. I have met a lot of great people in the warbird movement, and was involved when so many of the World War Two pilots were around...and now my son has followed in my footsteps. You can't really ask for more."

Or maybe you can. As we finished up the day, Jay pulled me aside to let me know that in his opinion he had the best dad in the world. In the end, maybe that is Butch's greatest accomplishment. 🌟

1 While project hunting, the opportunity to purchase FG-1D Corsair BuNo 92132, N3466G was too good to pass up, even though it wasn't on his 'want list' at the time. Besides the aircraft mentioned in the article, over the years Butch also owned a BT-13 and several T-28s. *Photo: Doug Fisher collection*

2 Sadly now relegated to guarding a park in Huntington, Indiana, this T-33 was a project Butch had obtained from an aviation trade school in Chicago, Illinois that he had hoped to restore to airworthy condition, and he had also acquired a substantial amount of parts to accomplish that task. After passing to a new owner, it eventually wound up in the park. As if to add insult to injury, it now carries the aircraft's registration number on the tail. *Photo: James Church*

3 Passing the torch. Butch and his son Jay with the immaculate *Lil' Margaret*. *Photo: Greg Morehead*





Lil' Margaret's

WARBIRD DIGEST looks back on the trendsetting restoration of Butch Schroeder's ultra-stock North American F-6D Mustang *Lil' Margaret*, an award-winning restoration that made many in the industry rethink how warbirds should be restored when it burst onto the scene in 1993. The methodical and faithful effort to recreate as accurate a replica of what a wartime, stock Mustang should look like as possible, caused many of those involved in the industry to take notice, and thankfully began a trend that many restorers and owners have emulated over the years. In the intervening years that followed, many such restorations have followed, with each one striving to set the bar even higher.

Admit it, we have all had the dream of one day locating that 'Holy Grail' of warbirds, the 'barn fresh,' never-been-touched, one owner, only been driven on Sundays, stored in a garage project that hasn't seen the light of day for eons. Henry 'Butch' Schroeder of Danville, Illinois, like many of us, shared that dream. Already owning an airworthy Cavalier modified F-51D Mustang, he had always harbored the notion that he would someday like to accomplish a nose to tail completely stock Mustang restoration done to the highest standards and to include as much original equipment as possible, giving it the look, inside and out, of a true wartime aircraft. Something that at that point in history, had not yet been done. The Cavalier (USAAF Serial No. 45-11559 N30FE, *North American Maid*), though a great aircraft to operate in the modern arena of civil

LEGACY

By James Church

Groundbreaking, breathtaking, and everlasting, the result of one man's vision to restore an iconic Mustang to stunning wartime configuration set the standard nearly twenty-five years ago and continues to inspire today.



Photo: Paul Bowen

1 Your basic garage find, basket case Mustang project. This was the sight greeting Butch when he first arrived at Bill Meyers' garage. Photo: Butch Schroeder

2 Many truck and trailer loads were required to haul it all back to Danville. Photo: Butch Schroeder

3 The recovery crew, from left to right: Butch Schroeder, Judy Hackey, Joe Davis, Steve Schultz, Nick Kuchefski, Kevin Gallagher, Molly Schroeder, and USAAF veteran B-17 ball turret gunner Red Hill. At the time, bell bottom jeans were in fashion.... Stock Mustang restorations were not! Photo: Butch Schroeder

4 Restored gun bay, showing replica .50 caliber Browning machine guns, solenoids, ammunition feeds, and instructional placard. Photo: Mike Vadeboncoeur

5 The completed cockpit of N51BS represented the true appearance of a combat ready Mustang more than any other had at that point. Photo: Mike Vadeboncoeur

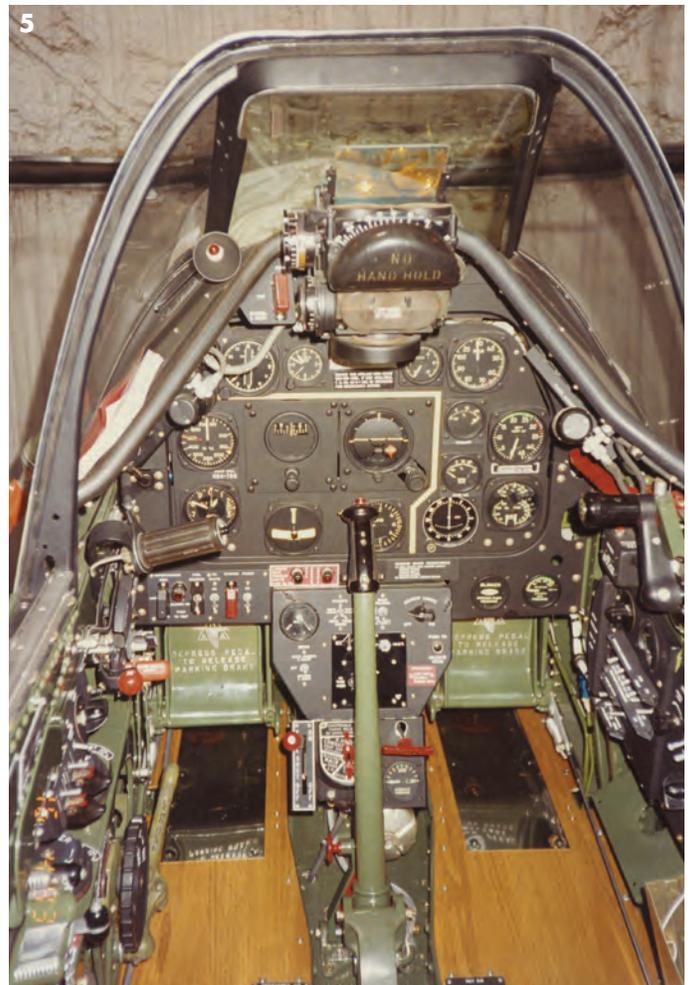
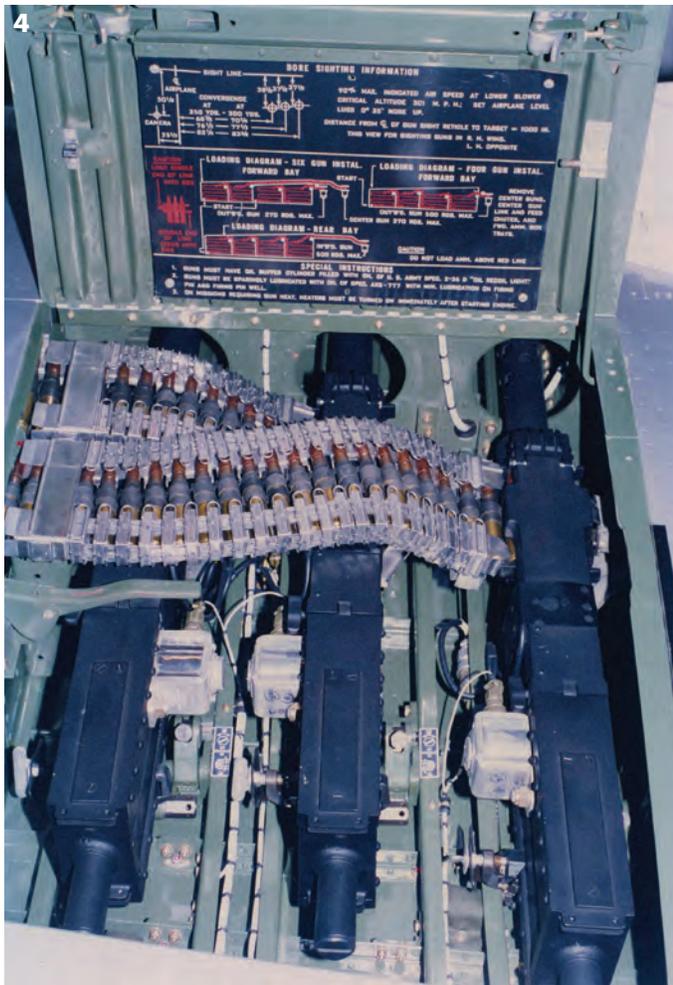


aviation, just didn't properly represent those flown by the young pilots of World War Two in the arena of aerial combat. The trend at that time had been more to make pseudo restorations that saw the removal of as much of the bulky, heavy military equipment as possible to make them more user-friendly to operate, while giving only a somewhat outwardly appearance of a wartime aircraft. Upon hearing rumors of such a project stored in a garage in Baldwin, Missouri just outside of St. Louis, he knew he had to check it out.

What he found was a nearly complete, and very rare F-6D photo reconnaissance variant that had been in hibernation since being sold in a military surplus sale in 1949. The aircraft (F-6D-25-NT USAAF Serial No. 44-84786) was estimated to be about eighty percent complete, with the majority of it having been safely stored in owner Bill Meyers' garage and basement. Some components, including the wing assembly, had been stored in the backyard of his residence, leaving them exposed to the elements. After inspection, Butch knew he had found what he was looking for, and a deal was struck that saw him become the proud new owner of one very challenged, though extremely viable project. It took five trailer loads to get it all back home to Danville, where over the next ten years, a stunning transformation would take place that would see it emerge as *Lil' Margaret*.

Built as a P-51D-25-NT, 44-84786 was one of the 136 aircraft taken from the production line at North American's Dallas plant and set aside for conversion into an F-6D, per contract number AC-2400, factory charge number NA-124. This involved the mounting of the cameras, ports and associated gear, thus modifying it to the photo reconnaissance version. First delivered to the United States

Army Air Force on June 8, 1945, it was initially assigned to the 3rd Air Force, and was based at Key Field, Mississippi, where it served with the 347th Base Unit. Its net assignment, on September 8, 1946 saw it serving with the 363rd Reconnaissance Squadron of the 69th Tactical Reconnaissance Group, then based at Brooks Field, Texas. Further assignments saw it stationed at Kelly Air Force Base, Texas and Hobbs Air Force, New Mexico. After a depot overhaul with Air Material Command at Pope Air Force Base, North Carolina, it was redesignated as an RF-51D and returned to service on July 18, 1946. Its last unit assignment being to the 10th Reconnaissance Squadron of the 69th Tactical Reconnaissance Group, again at Pope Air Force Base. '786 was then sold by Air Material Command in 1949, after being deemed surplus to requirements, at one of the legendary auctions held at McClellan Air Force Base that saw the liquidation of much of what was thought to be at the time, the Air Force's redundant stocks of Mustang airframes. Events in Korea beginning only a year later would show that they were perhaps premature in disposing of so many of them, as they would be called into action once more in that conflict, and the high attrition rate they were to suffer as a result of their use in the ground attack role drained the already depleted inventory to nearly critical levels. Initially it was bought by someone with the intention of supplying it to the nascent Israeli Air Force, which at the time was shopping around the world for various aircraft types to include in its inventory. In the event, it was destined never to leave its country of origin. As was often the case, mainly due to the aircraft more often than not being acquired necessarily through dubious circumstances due to import restrictions, attempts to smuggle it out of the country fell through. This saw it eventually purchased in the 1950s by Mike



With all new skins in place on the fuselage, the polishing process could now begin. On a sunny day, it was wheeled out into the daylight to inspect progress. Photo: Mike Vadeboncoeur



Coutches, who was well known for decades for buying and selling dozens of Mustangs. For whatever reason, he decided to hold on to this one, and eventually placed it in the backyard of his home in Hayward, California for his no doubt very grateful children to play on for the next several years. Though this may have seemed an ignominious fate, it no doubt assured it remained in relatively complete, stock condition to become the conduit allowing Butch's future vision to become a reality. Bill Meyers was the next owner, who bought in 1961 with the intention of restoration in mind. Though Meyers' intent was there, the means were not and the project became stillborn, remaining dormant until 1981 waiting for Butch to discover it.

What followed was an epic ten-year restoration that called on the talent, skill and knowledge of many individuals. In the very limited confines of a Danville T-hanger, some initial inventorying and work began shortly after arrival. It wasn't until the restoration of Butch's immaculate T-6G (USAF Serial No. 49-3144A N55897) was completed in 1990, however, that work began in earnest. Though internally most of the structure was found to be sound, several of the fuselage longeron extrusions were replaced with new units produced by John SeEVERS, and a distressed former in the tail cone that had seen several attempts at repair over the years was also replaced with a new part provided by Jerry Beck of Tri-State Aviation. Bob Young of Young's Airframe Repair, along with his son Dave did a lot of the structural work and repairs, which included replacing much of the external skins.

Dave Young, who now works with Mike Vadeboncoeur and the other artisans at the well-known Danville based Midwest Aero Restorations, creators of several award winning restored Mustangs, cut his teeth working on warbirds with Butch, and says he owes his eventual choice of a career to him. "I've always been around airplanes and liked them, but starting with Butch and Mike definitely peeked my love of airplanes and warbirds in particular." After leaving High School, and while attending a local Community

College, Dave wasn't really sure where he wanted to go in life until joining the project. "Prior to my involvement with the restoration of this aircraft, the only experience I had in the field was working with my Dad, who had started his own sheet metal business, Young's Airframe repair, following a lengthy career honing his metal skills working as a civilian contractor for the United States Air Force at nearby Chanute Air Force Base. He did a lot of the sheet metal work for Butch on this project and during that time, my brother and I did all the bucking for him. Once I started doing this kind of work, I just fell in love with it. There was just something very satisfying about being able to take something apart and restore it and see it come back to life. I had always liked history, and had a particular interest in World War Two, so to be able to work on something from that period was just incredible. Starting with Butch definitely had a huge impact on the direction of my life."

With the structural restoration gaining pace, the mammoth task of searching for original equipment to install in the aircraft began. A young Mike Vadeboncoeur, who began working on the project early on with Butch, and who had previously assisted with the rebuild of Butch's T-6 noted: "It was fairly complete of course but he did have to hunt down a lot of the original military gear for the gun bays and the camera equipment. That was the big challenge." Many hours were spent on the phone chasing leads and track down those items and all the other gizmos and trinkets required to make this a Mustang like no other. Things like a complete AN/APS-13 tail warning radar unit, with its antenna array, power supply, transceiver and warning light were sourced, as was a working K14 gunsight and N-1 gun camera. These items, along with many similar bits and pieces that in the past would have been considered superfluous and would have incurred a penalty due to the weight they would have added to an airframe, were just some of the items Butch was determined were required in order to complete his vision.

The process of tracking down all these items was a long and

laborious one that added considerably to the overall time required to complete the restoration, but to Butch this was a true labor of love and he was determined to see the project through, no matter how much time would eventually pass. A full set of replica .50 caliber M2 machine guns were found and installed in the fully restored gun bays in the wings. To them were attached a complete set of functioning firing solenoids, feed chutes, gun warmers along with complete links of (deactivated) rounds. Really cool stuff, but without an empty gun bay, where would Butch now store his luggage? Install a custom fuselage side entry door and storage area for this purpose as was all the rage and an accepted practice at the time? Heavens no, this aircraft would need that space, and that normally reserved for a jump seat, to install an original (though placarded as not useable) fuselage reserve fuel tank and a full complement of original radios. How about the protective cockpit armor plating? Sure, replicas could be made of lighter weight materials, but again, in the effort to strive for perfection, no compromises to authenticity were made and the original pieces were restored and installed.

As already mentioned, some of the more difficult items to trace were those related to the camera installation that makes the F-6D the unique aircraft it is. The external camera port in particular posed a problem. At some point in its military career, these ports had been removed and faired over. None came with the project, so the search was on. Dennis Schoenfelder supplied one that had been removed from an ex-Israeli Air Force airframe, but it was not in the best of condition and so it was sent to the late John Neel at Georgia Metal Shaping. John, a very gifted fabricator who is sadly no longer with us, was not only able to produce a new fairing using the old damaged part as a pattern, he was also able to straighten out the original unit to like new condition. In the end, the newly fabricated item was used and the straightened unit has since been passed on for eventual use on another project. The internal camera gear, mounts and associated wiring and controls proved just as difficult to locate, as was the information on how to install it all. Finding the right method of routing the rudder and elevator trim cables, rerouted out of necessity due to the camera installation proved fruitless, and as the original cables were not included with the aircraft, this provided for more than a bit of head scratching until they were finally able to get it figured out. For the most part things went smoothly, though, and when it came time to mount the restored wing and fuselage together, all were relieved to find that the four attachment bolts that hold it all together lined up perfectly. After the wing and fuselage were mated, a milestone moment for sure, items like the radiator, engine and prop could finally be stalled, binging ever closer to being a complete aircraft once again. Something it had not been since some time in the 1950s. No doubt this was a source of much joy for Butch and his crew after so many ours of effort expended on the restoration up to that point, and there was at last light at the end of the tunnel.

A Packard V-1650-7 Merlin that had been built during the war, run on a test stand and then crated as a spare was sent to Fort Wayne Air Service, of Fort Wayne, Indiana for rebuild. Mike Zolman of FWAS did the tear down, inspection and reassembly of the engine using new seals and very few new parts as it was in such good condition. The crew at FWAS, with several Mustang restorations under their belt, proved to be a wealth of knowledge and assistance throughout the entire project from its inception, and such was again the case when it was time to install and test run the engine. Zolman and FWAS boss and guru of all things Mustang John Dillely travelled to Danville to ensure everything went smoothly. It did, and on the first attempt it lit off and ran

perfectly. Before *Lil' Margaret* took to the air for the first time, the engine only had 6.7 hours total of ground and test running on it, and it is the engine that remains in the aircraft to this day.

With the engine in and run, a myriad of final details needed to be added. All the wing and tail surface fairings, with the exception of those fore and aft of the mainplane, were found in original, from the factory new condition, still in their original paper wrapping. The four missing fairings were fabricated by Dennis Schoenfelder, and a newly formed dorsal fin was provided by John Neel. All these were then trimmed to fit and installed, bringing the Mustang ever closer to flight.

When it came time to choose a paint scheme, it was that of Captain Clyde B. East, an ace who flew with the 15th Tactical Reconnaissance Squadron, 10th Photo Reconnaissance Group as part of the 9th Air Force in Europe from January 1944 right up to the closing stages of World War Two as the enemy was being chased across the continent back to their homeland. East's wartime exploits, along with the unit and personal markings applied to his mount made for a very attractive paint scheme and so the choice to finish N51BS (as the aircraft was now registered) as *Lil' Margaret* an easy one. The fact that East was still alive at the time, and was thus able to see Butch's tribute to him, made it all the more special and meaningful. Though tasked with taking aerial pictures needed to aid the allied advance, Captain East managed to nonetheless engage the enemy successfully on several occasions and was able to down no less than 14.5 enemy aircraft in the process, even capturing one of his unfortunate victims (a Heinkel He-111 he downed on April 8, 1945 near Dresden) crashing on film using the Mustang's oblique mounted camera! Born in Virginia on July 19, 1921, he had originally trained with the Royal Canadian Air Force, graduating in 1942, before joining the United States Army Air Force that same year. Sadly, Mr. East passed away on July 30, 2014.

When the day finally arrived for *Lil' Margaret* to take flight, John Dillely was again on hand and was the one chosen to have the honor of taking her aloft or the first time. Dillely had performed numerous test flights on Mustangs over the years, and was the obvious choice to handle the piloting duties. June 17, 1993 dawned with storm clouds on the horizon, and initially didn't appear to be a day that would bode well to accomplish a first flight, adding to the apprehension already felt by those present. Thankfully the skies did eventually clear, and at 17:01Hrs, Dillely lifted off in what was the most authentic restoration of a Mustang (or any other Warbird for that matter) accomplished to that date. The flight went perfectly, and those that had taken part in what had been nearly 10,000 hours of effort involved in the project could rest easy and take a moment to reflect on what they had achieved. Besides a glitch with the radio (somewhat fittingly, the only modern piece of equipment in the entire aircraft, and perhaps therefore the one item that one would expect NOT fail), the aircraft performed flawlessly, and Dillely had nothing but praise for everyone involved. The relief on everyone's face was evident, as there were smiles all-around. In an ironic twist of fate, which at times seem strangely common in such stories, John Dillely had nearly bought this very aircraft from Mr. Meyers way back in 1968, though he and the owner could not come to an agreement on the asking price... the princely sum of \$12,000.00! Fate would decree nearly 25 years later that man and machine were brought together once more.

The following day, Butch was finally able to lift *Lil' Margaret*, the culmination of many years of aspiration and perspiration, into the air for what would be his first flight in the magnificent creation he had envisioned all those years ago. It had been a long-held dream realized, but there was one more hurdle to overcome.



It had been the intention all along to take the completed Mustang to the annual Experimental Aircraft Association's show held in Oshkosh, Wisconsin to see how it would fare being judged against other contemporary Warbird restorations of the era. Leading up to this, many further tasks of detailing the airframe had to be accomplished to prepare it for the event, which would also be the aircraft's first public outing. Tasks like airframe stenciling, final polishing, and paint touch up were completed at this time, as was the addition of drop tanks and the installation of the gunsight. On arrival, the aircraft created quite a stir, as one would imagine. All the effort was to payoff, as Butch was awarded the coveted Grand Champion Warbird award. The judges had been thoroughly impressed at the amount of work and research that had gone into the restoration, which went above and beyond anything they had seen to that point. Items like the rocket rails, drop tanks and diamond tread tires were things that they felt really set it apart, and everyone knew at that point that there had been a paradigm shift in the way warbird restorations of the future would be carried out, as the standard had been raised so high.

The icing on the cake, however, was perhaps the glowing praise received from several of the attending aces who had actually flown the type in combat, and were amazed that someone had strived to replicate a Mustang that mirrored those they had taken into combat during the war. High praise indeed, and that alone proved that Butch had accomplished what he had set out to do, and *Lil' Margaret* stands as a testament to one man achieving his dream of honoring the men who fought and died in these machines in hostile skies.

One cannot tell the complete story of Butch and *Lil' Margaret* without also conveying the effect it had on some of those involved with the restoration, and the impact it had on their future

careers. Mike Vadeboncoeur, who went on to start his own shop, Midwest Aero Restorations at Danville as a result of the success and notoriety of that aircraft in particular, holds Butch and his philosophy on how warbirds should be restored in very high regard, and credits Butch with being instrumental in getting his start in the industry. He recently told Warbird Digest: "Butch's vision for bringing these airplanes to a more original condition by installing original military hardware and components really paved the way for us to do the same and I think it challenged me to look forward to how we could expand on what we had done on *Lil' Margaret* with future projects." Many award winning rebuilt Mustangs have since passed through Midwest Aero's doors, and all have obviously benefited from the lessons learned while restoring *Lil' Margaret*. Mike continues: "I wouldn't be here today doing restorations had it not been for Butch taking a chance on me as a youngster. I of course am grateful for the opportunities that have come along due to my years early on working with Butch." Dave Young, very much Mike's 'right hand man' at Midwest Aero also holds Butch in very high regard and cites: "I believe Butch's vision to take *Lil' Margaret* back to stock condition set a new standard in the Warbird movement. There was an emphasis on originality and quality. Since *Lil' Margaret* I believe the quality of restorations has continued to improve as we continue to learn more and find new ways to make the restorations even more original. With every new project, we ask ourselves what we can do next to make it even better. This started with Butch's vision to take the restorations of these aircraft in a totally new direction." Perhaps that then is the lasting legacy of Butch and *Lil' Margaret*. Besides having a truly marvelous restoration to his credit, that one project continues to inspire those who rebuild aircraft today to ever higher standards, and will no doubt do so well into the future. 🇺🇸

1 With the wing and fuselage mated, the engine, a freshly overhauled Packard built V-1650-7 Merlin overhauled by Fort Wayne Air Service, of Fort Wayne, Indiana could be installed. Photo: Mike Vadeboncoeur

2 The research into recreating the accurate markings on *Lil' Margaret* and their proper application was a time consuming process. Photo: Mike Vadeboncoeur

3 Mike Vadeboncoeur, Butch Schroeder and Dave Young pose with the prestigious 'Grand Champion Warbird' Trophy awarded to *Lil' Margaret* at the EAA convention, Oshkosh in 1993. Photo: Mike Vadeboncoeur



Whispering



W

hen restored warbirds make demonstration flights, the scene is punctuated by smoke, noise and dramatic power; however, in June 2017 at the Western Antique Airplane and Automotive Museum (WAAAM) in Hood River, Oregon, a small crowd witnessed something quite different when a pair of restored warbirds whispered through the air. There were no guns or bombs on the wings, no smoke, nor roaring radials or crackling Merlins. After a few minutes of almost silent flight, the Taylorcraft TG-6 and Piper TG-8 gliders rolled to a stop on the grass — the first time these types had been in the air together for over seventy years.

Warbirds

By Ken Scott



Photo: Lyle Jansma

Not many people remember the TG-5, TG-6 and TG-8 training gliders of World War Two but these unusual little airplanes served in both the Army and Navy and made underappreciated contributions to the war effort. The United States Army, impressed by German glider operations in Europe and Crete during the early stages of the World War Two, decided they'd better get a glider operation of their own up and running. They acquired several civilian gliders, but almost immediately ran into problems. Gliding and soaring in the USA had remained the province of a small cadre of enthusiasts so American gliders were built in very small numbers. Many were custom built, which posed a problem for military planners. Since it was almost impossible to design a training program when no two trainers were alike, the Army requested designs for a training glider from Aeronca, Piper, and Taylorcraft. In less than two weeks, all three had new airplanes ready.

All three adopted the same approach. They simply took military airplanes they were already producing — the Aeronca L-3, Piper L-4, and Taylorcraft L-2 and modified them by removing the engine and adding an extension to the forward fuselage that held a seat and controls. The resulting designs had three seats in tandem, allowing an instructor to handle two students at a time. They revised the landing gear, added spoilers to the wings and rigged up a control system. This answered the military's need for a rudimentary glider that could be built quickly at very little cost. The Army ordered 250 airplanes each of the newly designated Aeronca TG-5 ("TG" for "training glider"), Piper TG-8, and Taylorcraft TG-6.

When the TGs went into service, the Army quickly found an unexpected advantage. Civilian gliders were simply too efficient. They were slick, low-drag airplanes designed for sport soaring and had glide ratios of 20 or 30:1. The military combat gliders under development were not soaring airplanes; they were just boxcars with wings. At best they could glide at 9 or 10:1 — almost exactly what the draggy little TG gliders could manage.

Training in the TGs was far more realistic for pilots who would soon transition into airplanes like



At least a couple hundred TGs survived the rigors of training young men who had never sat in an airplane at high-density altitudes. After the war, since TGs could be converted back into the powered airplanes from which they were derived, a number of them were sold into the civilian market. They usually went for \$200 to \$400.

the Waco CG-4. Training bases were established around the country, with three of the largest in Twentynine Palms, California; Wickenburg, Arizona and Ft. Sumner, New Mexico. Enlisted men were recruited as pilot trainees and made their first powerless flights in the front seat of a TG. Many went on to fly, and die, in combat gliders in Europe and the Far East.

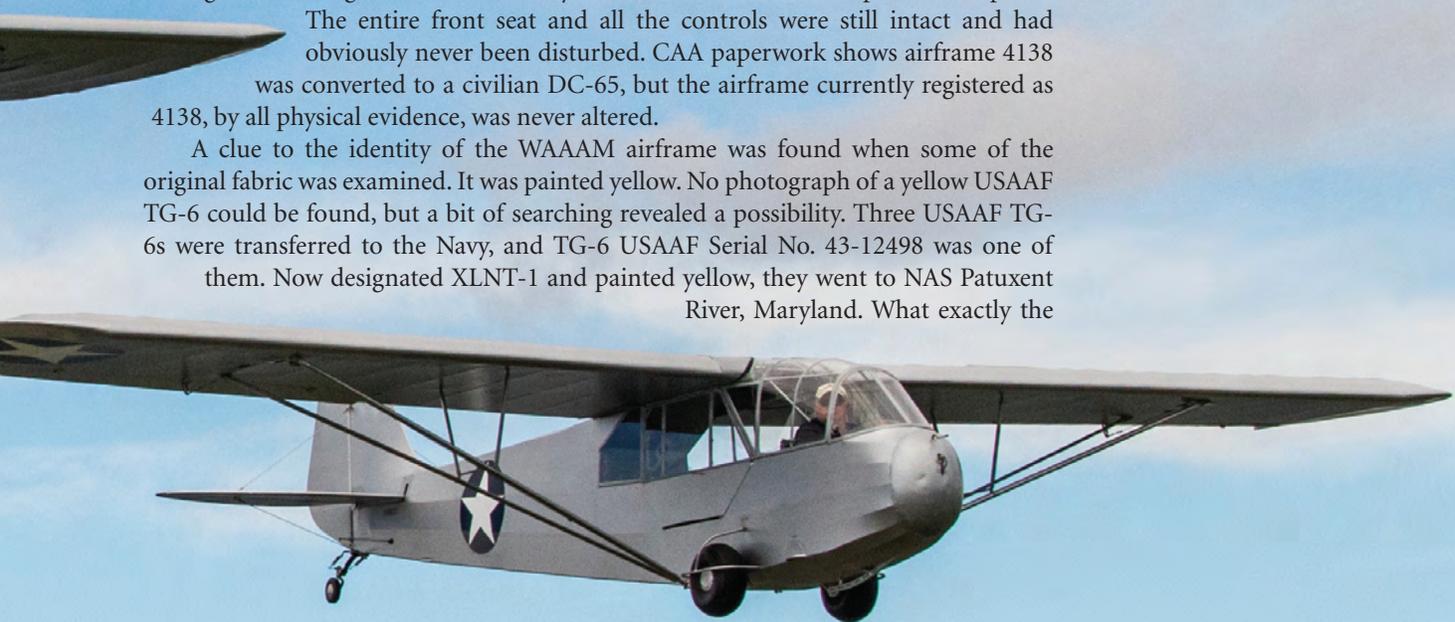
At least a couple hundred TGs survived the rigors of training young men who had never sat in an airplane at high-density altitudes. After the war, since TGs could be converted back into the powered airplanes from which they were derived, a number of them were sold into the civilian market. They usually went for \$200 to \$400. Many years after the conversions and scrapping, only a handful of original TGs survive in museums today. Only the rare examples at WAAAM actually fly.

The history of WAAAM's TG-6 is a bit convoluted. The confusion and mystery are the result of a disagreement between documents and physical evidence. The archive maintained by Terry Brandt, WAAAM founder and President, shows a Taylorcraft serial number of 4183. There certainly was a TG-6 with that number. It was listed on the CAA Aircraft Inspection Report dated June 13, 1942, as a G-100 (evidently Taylorcraft's internal designation for the glider) and given the civilian registration NX39177. It weighed 627 pounds and was rated for a gross weight of 1,200. By November it had been fitted with position lights and a 6-volt Willard battery, adding 11 pounds. In December 1942, Taylorcraft sold the airplane to the Army Air Forces and it was shipped to the Material Center at Wright Field in Dayton, Ohio.

After the war, 4138 was sold to K.L. Alstad of Denver, Colorado. The War Assets Corporation collected \$205.00 from Mr. Alstad and he received a Taylorcraft ST-100 Glider, then registered as N427992. The military serial number is listed on the sales form as 43-12498. From there it went to Park Region Aviation Inc. in Fergus Falls, Minnesota, and was converted into a powered airplane and registered as a Taylorcraft DC-65. After several owners, it ended up in Brandt's collection. That all seems straight forward, except when Tom Murphy, Brandt's right-hand man whom Brandt had tasked with returning the TG-6 to flying condition, got into the airplane he discovered the fuselage was all original. It had certainly never been converted to a powered airplane.

The entire front seat and all the controls were still intact and had obviously never been disturbed. CAA paperwork shows airframe 4138 was converted to a civilian DC-65, but the airframe currently registered as 4138, by all physical evidence, was never altered.

A clue to the identity of the WAAAM airframe was found when some of the original fabric was examined. It was painted yellow. No photograph of a yellow USAAF TG-6 could be found, but a bit of searching revealed a possibility. Three USAAF TG-6s were transferred to the Navy, and TG-6 USAAF Serial No. 43-12498 was one of them. Now designated XLNT-1 and painted yellow, they went to NAS Patuxent River, Maryland. What exactly the



Robin Reid flies the Taylorcraft TG-6 with WAAAM's chief pilot Ben Davidson on his wing in the Piper TG-8. Both companies took very similar approaches to modifying their two-seat tandem powered airplanes into three-seat gliders. Neither is roomy, but the Piper in particular seems to have designed the front seat for elves. Luckily, TG performance lends itself to short flights. *Photo: Lyle Jansma*



Flying gliders in close formation calls for special skill, but Reid and Davidson make it look easy as they fly along the Columbia River Gorge near Hood River, Oregon. Photo: *Lyle Jansma*



Navy used them for is uncertain, but they were probably involved in the Navy's glider program at Pax River, which included flying-boat gliders towed by PBVs.

Once started, the restoration moved right along. Tom explained, "The fuselage was rusty and covered with dirt, but I was delighted to find that it was completely original. Even the wood and canvas seats were still there. Everything in the control system and brake system was still bolted in the airplane. The only things missing were the canopy frames."

Tom acquired TG-6 drawings from the Smithsonian on microfiche, bought a microfiche reader at the Boeing surplus store, and made the parts he needed. He recalled, "I made the canopy frames exactly to factory drawings and they fit the fuselage perfectly. That's not the case in every airplane, believe me, and it was even more surprising on this one, because as I got deeper into the restoration, I found evidence that our airplane was the factory prototype — the very first TG-6. Either the stock airplane was so accurate that they could draw up plans and make parts that fit, or the engineers came out and measured the parts that fit and made the drawings from them. Whichever, it worked seventy years later."

The original wings were long gone, but that wasn't a significant problem. Thousands of Taylorcraft L-2s had been built and the TG-6 used a stock L-2 wing. Tom found a set of wings without difficulty, and using the plans for the L-2M, which had spoilers identical to those on the TG-6, he modified the wings to accept them. Luckily, he didn't need to make the actual control surfaces. "When I saw the plans, it jogged something in the back of my mind. I went digging through the huge pile of airplane junk that we'd accumulated and believe it or not, found an original set of spoilers and wing root fairings for the TG-6."

The restoration, which was completed in 2009, is as close to historically correct as Tom could produce. Nicopress fittings were made according to the factory drawings; stenciling inside the cockpit was recreated from period photos; and although modern fabric was used to cover the airframe, Tom used the same nitrate dope that would have been standard in 1942. After WAAAM's chief pilot, Ben Davidson, made the first flight of the restored airplane in 2009, it was placed on display in the museum. The restoration shop then turned its attention to the Piper TG-8.

Terry Brandt had acquired two TG-8s: Piper numbers G-129 and G-184, the 129th and the 184th airplanes built for the 250 aircraft order. They joined the USAAF as Serial Nos. 43-3137 and 43-3192 respectively. After G-184 was selected for restoration, WAAAM's restoration team, aided by a group of volunteers and headed by Jakonah (Jay) Matson-Bell, stripped, repaired and recovered the aircraft.

According to Jay, "The airplane was largely intact when we started the restoration. Tom Murphy had cleaned up the fuselage by sandblasting all the old rust and filth off. He made a few minor weld repairs, primed it and then turned it over to our WAAAM shop. I put a crew of volunteers on the job and I can't say enough about them. They labored for months, steadily working through all the small problems and puzzles that come with old and almost forgotten airplanes. The wings are just J-3 wings but of course Piper put spoilers in them for use on the TG-8. We had the original spoiler boxes, made of .012 spot-welded steel, but they were badly corroded. We couldn't find steel that thin, so I made new boxes of .015 steel. The cable that actuates the spoilers is strung through the cockpits, above the occupant's left ears. We did a woven splice on it to keep steel splinters out of pilots' fingers. I was amused to find the spoiler return springs were exactly the same as the springs on the rudder pedals. Piper was in a hurry when this airplane was designed!"

"All in all, the restoration wasn't that difficult. At least we didn't have to worry about an engine! About the only pieces we fabricated from scratch were the tow hook release and the "anti-fouling device," which is the hoop you see around the landing gear that's supposed to keep a loose tow cable from wrapping itself around the landing gear."

During the summers, the second Saturday of the month is an "open day" at WAAAM. Old airplanes, old cars and even old steam tractors are moved out and driven/flown/operated. June 10, 2017, was declared "glider day." Several antique sailplanes were pulled off the museum floor and the TG-6 and TG-8 went along with them. (Almost all WAAAM's display airplanes are kept in flying condition.) A slow procession moved

them to the end of Hood River's runway 25, where a pair of Piper Pawnees awaited.

What were they like to fly? One pilot who has flown them both and has vast experience in a wide variety of aircraft is Robin Reid. He is probably the only man who's been current in the DeHavilland DH-88, a Curtiss Jenny and a Boeing 747 at the same time. He described the characteristics of the two gliders, "About four years ago I had the chance to fly with WAAAM's chief pilot, Ben Davidson, in the museum's just-finished TG-6 glider. Having instructed many hours in Taylorcraft L-2s I jumped at the chance to fly the TG-6. We released at 3000-ft and proceeded to chase the tow-plane back to Hood River. The TG-6 flew very much like an L-2. The only issue was a loss of directional stability after landing. The TG-6 has two main wheels and brakes, but it also has a large forward cockpit area ahead of the wheels. We elected to land with a 3-4 knot quartering tailwind and as we were slowing to a stop, the TG-6 decided she wanted to turn into the wind. Stick was full back and full rudder and some braking was applied but her mind could not be changed and we did a gentle 90-degree turn. Ben and I decided this was one aircraft that you do not land with a tailwind!"

Reid had the chance to help WAAAM with the restoration of their next glider project. He continued, "Recently the Museum finished the restoration of a Piper TG-8 Cub glider. Tom Murphy had completed most of the major repair work before his retirement from the museum in 2015. The TG-8 sat dormant for a few years while Tom's replacement, Jay Bell, completed other projects. Even though Jay is still in his twenties, his talents

rival those twice his age. Last year, Jay and his crew of volunteers resumed work on the TG-8. One of my local flying buddies, Jon Borchers, along with my two boys and I, started helping on the restoration during the Museum's work parties. Work progressed quickly. The only deviation from the original was using a Poly-fiber covering process (fabric generously donated by Consolidated Coatings). New leather seat cushions were obtained from Don Jones at a considerable discount.

"Our goal was to fly both the Cub and Taylorcraft at the museum's vintage glider meet on June 10, 2017. As the deadline drew closer, Jon, the boys and I spent extra days traveling to Hood River to help Jay and his crew. Early in June, the Cub was finished and the Hillsboro FSDO issued her airworthiness certificate. She scaled in within eight pounds of her original weight.

"The Wednesday before the event, the Cub was scheduled for a test flight. When Ben asked me if I wanted to test fly it, I jumped at the chance. As we waited for the tow plane, the wind came up to about fourteen knots and the Cub started bobbing around like a cork in the ocean. It was apparent that the Cub was more "tippy" on the gear than the Taylorcraft. With tow plane ready, I squirmed into the front cockpit. I'm not that big and I had my thin flying shoes on, yet amazingly I still needed to remove the front seatback cushion. It's definitely tighter than even the normally snug front seat of a J-3.

"The Cub glider uses the throttle as the tow release. After a release check was performed, with the rope hooked up, canopy closed and all checks completed, it was time to get the show on the road. I waggled the Cub's rudder and Ben signaled back and





1 The Western Antique Airplane and Automotive Museum in Hood River, Oregon houses well over a hundred airplanes, mostly pre-World War Two civilian types. Many are the only remaining examples of their kind. Amongst the airplanes are rare cars of all kinds, powered by steam and gasoline engines. A few rare tractors round out the mix. Almost everything is kept in top running order. The Hood River airport itself has a historical connection to warbirds — it's named after Hood River's mayor, AVG (Flying Tiger) and Republic test pilot Ken Jernstedt. *Photo: via WAAAM*

2 After hundreds of hours of restoration work by a crew of volunteers, the TG-8 fuselage awaits its wings and "anti-fouling" tow-rope guards around the landing gear. Although a modern covering system was used, the color and markings are as original as it was possible to make them. *Photo: via WAAAM*



3 The TG-8 wings were nothing more than J-3 Cub wings with spoilers installed. A volunteer readies the restored wing skeleton for the aluminum leading edge skins. Because the TGs were not intended for aerobatics and the wings are strut-braced, the actual wing structure is very light. *Photo: via WAAAM*

4 When restorer Tom Murphy pulled the TG-8 fuselage out of the pile, after sixty-five years of indifferent storage, he found the original canvas seats still in place. Despite records indicating this airframe had been converted to a powered Cub, it was obvious that the airplane was really an untouched glider. The steel tubing was rusted and filthy, but still intact and useable. The WAAAM crew cleaned and primed every bit of it into better-than-new condition. One of the few brand new parts in the restored airplane is the tow hook, built from scratch by Jay Bell. *Photo: Lyle Jansma*



“All in all, the restoration wasn't that difficult. At least we didn't have to worry about an engine!”

1 The cramped confines of TG cockpits meant that tall glider pilots were rare. An airspeed indicator, altimeter, slip/skid ball and compass were the only instruments necessary. *Photo: Lyle Jansma*



2 Museum founder Terry Brandt and restorer Tom Murphy have combined to preserve hangarfuls of rare airplanes, ranging from an absolutely original barn-find Jenny to the oldest Boeing still flying. *Photo: Lyle Jansma*

3 Here we see preparations underway to launch the Taylorcraft TG-8 and Piper TG-8 for our photo flight. Soon both would be attached to their towplanes and launched into the skies over the scenic Oregon countryside. *Photo: Lyle Jansma*



started the take-off roll. After rolling only fifteen feet, the Cub wanted to fly and the right wing started to rise, so I lowered the wing while easing the stick forward in order to hold her on the ground until we gained a little more speed. The controls by this time were nice and solid and I lifted off. With the Pawnee in a stable climb, the Cub had no trouble staying in position. The only unnerving part was having to put my 'throttle hand' under my leg so that I would not instinctually reach for the throttle and inadvertently pull the tow release!

"At four thousand feet, I released and started feeling her out. I soloed in a J-3 and have instructed in them for many years, so the handling was immediately familiar. Steep turns, wingovers, slow flight and stalls were pure J-3. The spoilers were adequate but not overly effective. Sink rate worked out to about seven hundred feet per minute.

"Only three and a half minutes after release I was down to about fifteen hundred feet and started setting up for the landing. My checklist was completed (not much to check) and I passed the end of the runway at about seven hundred feet. The Cub glider was settling like a typical Cub, at about sixty miles per hour and about half spoilers. Knowing I had a stiff breeze for landing, I turned base a little early. Boy, was I glad I did; her penetration was pitiful! I closed the spoilers and dropped the nose. After re-established on path, I was able to continue the approach with half spoilers to a normal Cub-like wheel landing, except that your butt's much closer to the ground! The 800:4 tires are small and there are no landing gear legs. The axle is bolted to the bottom of the fuselage. With the stiff wind, the ground roll was less than two hundred feet. It was a new experience for me. I've landed a Cub with the engine stopped many times, but I have never made a landing in a Cub with no engine!

"The following Saturday Ben and I flew a photo flight with the two TGs and this time I was back in the Taylorcraft. The first big difference was how much easier the Taylorcraft was to get into. The Cub was airborne about fifty feet sooner than the Taylorcraft. We climbed to 4,000 ft to give us some time to form up on the Fournier RF-5 motor glider, our camera plane.

"After releasing we quickly formed up and started a left 360 with me on the outside. Once we were stable, I needed to crack just a touch of spoiler to match the Cub's descent. After about three 360s with the camera plane, we had the pictures and it was time to enter the pattern. The wind was blowing about twelve knots so I kept my base turn in close. The spoilers on the Taylorcraft were much more effective than the Cub's. Landing was much like the Cub's but with a slightly faster touchdown speed. The speed allowed a nice, controlled 180 degree turn onto the taxiway.

"Both TGs had pluses and minuses. The Taylorcraft is more spacious and has more effective spoilers. The hand-holds on its wingtips are a big advantage in ground handling. The Cub, on the other hand, felt a little more directionally stable. I think the Cub would perform a little better with three people on board. So, which one is my favorite? The one I am flying at the time! I can't wait until WAAAM finishes their Aeronca TG-5!"

Right now, the TGs rest quietly in WAAAM's large indoor display area. You can stand in front of them, read about their place in aviation history, and think about the young men who trained in them. Soon after they mastered their skills in peaceful, serene American skies, they were overseas flying un-armed wooden airplanes in heavy combat, with no alternative but to land on whatever lay beneath, then fight their way home. As one general noted, "The 'G' on a glider pilot's wings stood for 'Guts.'" 🇺🇸





MEN

By James Church

In the annals of the history of the use of military aviation in armed conflict, the 'glory boys' who flew the fighters and bombers tend to get the lion's share of the accolades, and are generally touted as those who did the most to win the various conflicts in which they participated. During World War Two, in particular, where the art of aerial warfare played a decisive role in that conflict's outcome, the exploits of many of those who took to the air in order to defeat the axis forces in other types of combat aircraft go mostly unheralded in the history books. Sadly, the exploits of the Combat Glider Pilots of World War Two in particular have always been relegated to remain the shadows of their powered-flight brethren, though their actions often required no less skill or bravery. In fact, the Glider Pilot's job in most cases required them to make skillful precision landings in oftentimes enemy held territory, where intense ground action was almost assured. If the prospect of returning to friendly lines did not present itself, these pilots sometimes picked up a rifle and joined the fight. All this if they were able to survive the initial landing, which many did not.



'D-Day,' the invasion of Northern France by allied forces on June 6, 1944 saw the largest use of the Combat Glider force. It was during the early morning hours before the main thrust of the sea-born invasion took place that saw what Air Chief Marshall Leigh-Mallory, commander of Aircraft, Allied Forces called the action of one British glider pilot 'One of the greatest feats of flying of the war' due to the accuracy and precision with which it was carried out. In an effort to secure a vital bridgehead over the Caen Canal, the Airspeed Horsa glider piloted by S/Sgt. Jim Wallwork DFM (and those that followed behind him) landed within yards of the bridge the force was sent to capture, allowing a small team of infantry (members of the famous 'Ox and Bucks,' the Oxford and Buckinghamshire Light Infantry, led by Major John Howard) to overwhelm the defending German forces with relatively minimal losses completely by surprise. The fact that this was accomplished in the darkness of night (at 12:16 Hrs, nearly 6 hours ahead of the beach landings), with little in the way of visual aids to assist in judging their approach to the miniscule and obstacle-riddled landing zone, make this feat all the more impressive. Such skillful and heroic actions which were common amongst the 'G' Men are but a footnote in the recorded history of that conflict.

It was the Germans who first proved the concept of glider-born infantry assault, and it was well-suited to their 'Blitzkrieg' type of warfare, as events would soon prove. During their invasion of Belgium, on May 10-11, 1940, a stunning victory was accomplished through the use of the concept that proved unequivocally that it was a useful way to wage war and could not be ignored. In a stunning surprise attack, heavily fortified and defended Fort Eben Emael was overrun by infantry landed by gliders within the Fort's grounds and within 20 minutes, the main defending force had been overrun, and the fort's fate was sealed. All this, with the loss of only 6 killed of the attacking force. This and other successful uses of glider born infantry made many Allied Commanders take

Some statistics on USAAF glider operations during World War Two

Casualties, both in training and in combat operations were, as might be expected, high. As noted on the World War Two Glider Pilot's Association's web page, 'At the height of the glider program, the American Combat Glider Pilots numbered less than 6,000. 211 of them died in combat, approximately 636 were wounded, and another 146 died in the line of duty (in non-operational accidents), mostly during training flying their dangerous aircraft. The casualty rate of 987 glider pilots, 16.4% of their total number, and roughly 20% of the number who flew in each combat mission, was one of the highest of any combat specialty of the war. Military doctrine typically holds that 10% or more casualties are unacceptable. All will render a unit ineffective for further combat. The glider pilots routinely sustained far more than that number in almost every mission.' Though their overall numbers were not great, the contributions made by the 'G' Men to win the Allied war effort should never be underestimated.

notice, and a program was thus instigated to form their own glider force.

In what was to be an all-volunteer force, nearly 6,000 glider pilots were trained in the United States alone, in a program that only ran from 1942-43. It was felt that, unlike other types of combat pilots, the glider force required only a finite amount of pilots due to their very limited use in what would be only special circumstances. The United States Army Air Forces instigated what it called the Combat Glider Training Program in late 1941, but the main thrust of the program didn't begin until the following year. Initially, the gliders used in training were, out of necessity, a hodge-podge of civilian types, requisitioned from private sources. It soon became clear that a specific type of training glider type was required that accurately mimicked the lumbering flying qualities of the larger Combat Glider types (namely the Waco CG-4A in most cases).

To fill this requirement, contracts were signed with several pre-war civilian aircraft manufacturers to produce such a glider, in the quickest manner possible due to their urgent need. The simple solution, it was found, was to take existing powered aircraft types already well established in production, and convert them into gliders suitable for the purpose.

The Aeronca Aircraft Corporation, of Middleton, Ohio were first to prove the concept. In answering the Army's contract placed with them on July 8, 1942, they successfully adopted their L-3 observation aircraft by removing the engine, adding a fuselage extension with provision for three

crew, a streamlined nose, enlarged vertical tail surfaces, lowered undercarriage, and a tow hook. Amazingly, the prototype XTG-5 was delivered only two days after the contract was signed, and the delivery of the required 250 examples ordered per the Army contract commenced a short time later beginning on July 22nd. An additional three were provided to the United States Navy for evaluation.

The Taylorcraft Company were next into the fray, delivering their first example, the TG-6 (there was no prototype, the first example thus being the first of the production run), a conversion of the company's L-2 on August 2, 1943. Sporting similar changes as the Aeronca design, the Taylorcraft version was also equipped with lift spoilers, and was the only variant to be equipped with the provision for radio gear. Again, 250 were delivered to the Army, and a further three were delivered to the Navy for evaluation purposes.

Piper Aircraft Inc. joined the effort and soon produced their entry, the TG-8. Deliveries began on September 11, 1943, and again there was no prototype, with the first example being the first of the production run. This was, of course a conversion of their L-4, itself a militarized observation version of the company's well-known pre-war J-3 'Cub.' A feature that TG-8 included which the others did not was the addition of hydraulic breaks that could be operated by any of the three crew members. Like the Taylorcraft examples, the Piper was equipped with lift spoilers. As with the others, 250 were delivered to the Army, with a further three to the Navy.

All variants used the existing side-lowering door of their original design for the two rear occupants, while a lifting plexiglass hood was provided for access for the third, front seat occupant. Solo flight was conducted from the front seat only on all versions. Only aerial launches were possible, which made things difficult at times, as the demands of the war effort dictated that there was rarely sufficient surplus of types which could be released for use as tow aircraft.

Models of all types were offered for civilian ownership following the cessation of hostilities. With their lack-luster (by design) handling qualities, understandably few were bought with their intended purpose in mind. There was, however, a market for them, albeit relatively minor surgery would be required in order for them to be of use. It was soon discovered that with some basic modification and rework, these types could be returned to the powered types they were originally converted from in the first place, and many were duly thus transformed. It is perhaps due to the number that were so converted, and that there was no ready market for them in glider form that so few survive in original condition today. Though a few exist in museums, a quick check of the FAA database shows that currently there are only three Piper TG-8s registered (with only one lying), and only one Taylorcraft TG-6 listed as operational. There are no Aeronca TG-5s currently registered. This makes them amongst the rarest of Warbirds, and the sight of these precious two airworthy examples should instill a sense of awe at the sacrifices of our nation's 'G' Men to all who are fortunate enough see them take flight. 🌟

Thirty Seconds OVER DAYTON

By Stephen Chapis

On April 18, 2017, at precisely 14:18hrs, eleven B-25 Mitchells over flew Memorial Park at the National Museum of the United States Air Force (NMUSAF) where the last surviving Raider, 101-year-old Lieutenant Colonel Dick Cole, along with Raider families, Air Force dignitaries, including Chief of Staff of the United States Air Force General David L. Goldfein, were assembled to commemorate the 75th Anniversary of the Doolittle Tokyo Raid. This moving and uplifting ceremony capped off four days of flying and camaraderie.

In 2012, when 20 B-25s touched down on the historic runway of the former Wright Field at the NMUSAF to celebrate the 70th Anniversary of the Doolittle Raid, it was billed as the last reunion and the last great gathering of B-25s. However, today's society can't let an anniversary that ends in a "0" or a "5" pass without a celebration or a commemoration and with the passing of 94-year-old S/Sgt. David J. Thatcher, the gunner/engineer on Plane #7, the famous *Ruptured Duck*, on June 22, 2016, it would allow Lt. Col. Cole to make one final toast to not only S/Sgt. Thatcher, but all the Raiders.

Once again Grimes Field in Urbana, Ohio, hosted the participating B-25s in the days leading up to the anniversary. A few aircraft arrived on Thursday, but most came in on Friday, especially those with the Living History Flight Experience (LHFE) exemptions because when the public started to show up on Saturday morning, rides began in earnest. While LHFE holders often compete for rides, at the Doolittle events the B-25 community agreed to give rides taxi style in which a passenger purchases a ride from a particular crew, but when one B-25 was full the waiting passengers were routed to the next available aircraft. For those not looking for a ride there was plenty to see and do. The Champaign Aviation Museum was open for tours and there were crews on hand at most of the B-25s selling their aircraft related merchandise and answering questions from the public. Merchandise and rides were an important source of revenue to everyone because there was no sponsorship money available for fuel, rental cars, or hotels. Each participating aircraft and volunteer went to Urbana on their own dime.

On Sunday as some crews were making preparations for the short flight down to Dayton the next day, LHFE exemptions continued to fly passengers throughout the day. *Warbird Digest* took the opportunity to speak with some of the crews about what the event meant to them. The newest B-25 to



On Saturday, April 15, 2017, *Warbird Digest* put together a quick photo flight out of Grimes Field with four B-25s from the dozen that gathered to honor the 75th Anniversary of the Doolittle Raid. From front: B-25J 44-30734 *Panchito*, Delaware Aviation Museum Foundation, flown by Paul Nuwer and Calvin Peacock; B-25J 45-8835 *Betty's Dream*, Texas Flying Legends Museum, flown by Alan Miller and Warren Pietsch; B-25J 44-30823 *God and Country*, Mid-American Flight Museum, flown by Scott Glover and Matt Bongers; B-25H 43-4106 *Barbie III*, Cavanaugh Flight Museum, flown by Duane Carroll and Ben Wilson with crew chief Caleb Carpenter. Photo: Greg Morehead from A36 Bonanza owned by Scott Slocum, and flown by Bernie Vasquez.





1 Just after sunrise on Tuesday, April 18, 2017, in what was reminiscent of the famous mass takeoff scene in "Catch-22," the ground trembled under the rumble of 22 Wright-Cyclones as 11 B-25s began taking off at 0745hrs for the short flight to historic Wright Field adjacent to the NMUSAF in Dayton, Ohio. Photo: Ron Kaplan

take to the sky, the PBJ-1J *Semper Fi* from the Southern California (SoCal) Wing of the CAF, took the unofficial award for farthest distance traveled. Mike Hohls said, "Larry Kelley told me about this event at ICAS and it was a no brainer we were going because during the 70th Anniversary we were of course still working on the airplane, we looked longing at the event because we wanted to be there so badly." The Doolittle commemoration was just one event in what was actually a two-week road trip for the *Semper Fi* crew. They made stops and gave rides at the War Eagles Museum in Santa Teresa, New Mexico and the CAF Wing in Olathe, Kansas, where *Semper Fi* was joined by the Missouri Wing B-25 *Show Me*. Hohls continued, "Olathe was great. It was a reunion of North American Aviation workers, so there were a bunch of Rosies out there and they told us stories about how they built these airplanes during the war. This has really been a great event, I think this is the first time most of our guys have attended a Doolittle anniversary."

In contrast to the newcomers from the SoCal Wing, most of the attending crewmembers from the Yankee Air Museum (YAM) in Belleville, Michigan, are seasoned veterans of Doolittle celebrations. Bob Laird, who readily admits he has been in awe of the Raiders since he was a little boy, talked about the history of the YAM B-25, "It was originally built as a B-25D and destined for England under Lend-Lease, but it was diverted to North Africa where it was attached to the 340th Bomb Group (BG) of the 12th Air Force. It flew eight combat missions from Corsica after which it went to the British and then the Canadians." *Yankee Warrior* arrived at YAM in 1989 where it was restored over the course of seven years.

With each passing year the ranks of the Greatest Generation grows thinner and as we enter the years when we commemorate the 75th anniversary of the events of World War Two, any encounter with a veteran is one to be cherished. With a number of veterans in attendance over the weekend,



Bryan Heim and Bob Farmer of *Living History Group Magazine* interviewed nearly a dozen, two of which had a connection with two of the participating B-25s. Scott Glover reunited Thomas Bristol, a tail gunner and Purple Heart recipient who flew 54 missions with the 1st Air Commandos, with Cavanaugh Flight Museum's B-25H *Barbie III* while Larry Kelley flew Mike Haddock aboard *Panchito*. Haddock was part of 41st Bomb Group (BG), the same group as the original *Panchito* and was on the last mission the 41st flew on August 9, 1945 and saw the mushroom cloud over Nagasaki.

On Sunday evening pilots and co-pilots who would be making the flight to Wright-Patterson AFB on Monday morning adjourned to a quiet room within the Champaign Aviation Museum to brief with Larry Kelley, the event organizer, and David Enger and David Thomas from the NMUSAF for the next morning's early flight. Out on the ramp, airport personnel and B-25 volunteers worked until after dark getting the aircraft lined up for the 0745hrs departure.

When crews began arriving at Grimes at 0600hrs Monday morning, there was hardly a hint of light on the eastern horizon, but dozens of photographers and spectators were already milling around, taking in the awe-inspiring sight of a dozen B-25s (11 flew to Dayton) parked nose-to-tail, wingtip-to-wingtip on the Grimes ramp. Approximately 10 minutes prior to engine start, all crewmembers were strapped into their aircraft and a motionless hush fell across the ramp. At the appointed time aboard *Panchito*, co-pilot Paul Nuwer slid his window back, looked back at the #2 engine and yelled, "CLEAR!" Larry Kelley engaged the starter and brought the R-2600s to life and within seconds the peaceful morning air was permeated by blue smoke as the staccato rumble of 22 Wright Cyclones enveloped the crowd. Larry Kelley released the brakes and eased the throttles forward to taxi towards the runway, followed by *Barbie III*,

2 Chief of Staff of the Air Force, General David L. Goldfein, and last surviving Raider 101-year-old Richard Cole (Lt. Col. USAF, Ret.) enjoy a light moment at the Doolittle Raid Memorial prior to commencement of the wreath laying ceremony in Memorial Park outside the NMUSAF. *Photo: Bryan Heim*

3 A member of the USAF Color Guard prepares to post the colors to open the ceremony that commemorated the 75th Anniversary of Doolittle's Tokyo Raid. *Photo: Bryan Heim*

4 At the 14th Doolittle Reunion in 1959 the City of Tucson donated the now-famous silver goblets to the Raiders. Hennessy donated a bottle of 1896 Very Special cognac, which was stolen in 1970, but replaced by Air Force Academy cadets in 1971. A replica of the original bottle is displayed with the goblets. *Photo: Bryan Heim*

Miss Hap, Betty's Dream, and so on, until all 11 aircraft were lined up for departure. Forty five seconds before 07:45hrs, Kelley pulled onto Runway 20 and held the brakes as Nuwer brought the power up and right on time, *Panchito* began its takeoff roll. Not unlike when the Raiders launched from *USS Hornet* (CV-8), there was no formation join-ups over the field. After taking off at 45-second intervals each B-25 proceeded directly to Wright-Patterson's historic Wright Field runway adjacent to the NMUSAF.

Not only was there a crowd to see the B-25s off from Grimes, there were also hundreds of cars stopped on Harshmann Road and Colonel Glenn Highway around the perimeter of the museum grounds. As each B-25 touched down they rolled to the end, pulled off, and shut down on the taxiway and run-up area until the last aircraft landed, at which point the aircraft taxied onto the runway and parked. *Panchito*, as flight lead, parked in the center of the runway, while the remaining aircraft parked on either side of the runway at a 45-degree angle in a pattern similar to the take-off arrangement on the deck of *Hornet* on April 18, 1942. Before the public was allowed on the field, crews posed for photos with their individual aircraft and finally they gathered in front of *Panchito* for one all-inclusive group photo.

That evening, after the museum closed, the B-25 crews, B-1B crews and personnel from the 34th & 37th Bomb Squadrons (from 28th Bomb Wing at Ellsworth AFB, South Dakota), Air Force officials, representatives from Hennessy, and invited guests gathered in the Carney auditorium for a series of presentations. After a few remarks by Rodney Williams, Chief Marketing Officer of Moët Hennessy USA, Larry Kelley, and Melinda Liu who read remarks by long-time business manager for the Raiders Tom Casey, the main speaker of the night, Zheng Weiyong, took the podium. Weiyong is an independent Chinese researcher from the town of Quzhou, which was known as Chuchow, where the Raiders intended to land, in 1942. Like many Chinese today, Weiyong is passionate about the history of not only the Raiders, but also the Hump pilots and AVG, all of which helped the Chinese take the fight to the Japanese during World War Two. He has published two books on the Raid in China and hopes that they will be published in English in the near future.

In his two decades of research, Weiyong has collected diaries, memoirs, government records, publications, and research materials from the United States, China, Japan, and former Soviet Union. Most importantly, Weiyong has visited all 15 Raider crash sites in China, collected pieces of eight B-25s, and visited villages to interview people who were there on the day the Americans fell from the sky. Thanks to the PowerPoint English translation, Weiyong's Chinese language stories held the crowd's rapt attention for nearly 30 minutes as he shared stories of the intense bravery of the Chinese people and the atrocities committed by the Japanese as a result.

Naturally, he first spoke of the search for the crash site of Doolittle's B-25 and showed wartime photos of the office residence of He Yangling, Director of the West Zhejiang Administration, located on Tianmu Mountain where Doolittle and his crew were photographed with Zhao Fujii, Sheng Hong, and Yangling in front of the steps of the residence. The residence stills stands today, seemingly untouched by the passage of nearly eight decades. Locating Yangling's residence was easy, but locating the wreckage of Doolittle's B-25 proved quite difficult. Even after Weiyong located the correct mountain it took four trips up Tianmu Mountain before he located the site on October 16, 2016. Using a metal detector, he actually found a few small pieces of the B-25B USAAF Serial No. 40-2344.

In researching the wreckage of Plane 12, B-25B USAAF Serial No. 40-2267 *Fickle Finger* piloted by Lt. William M. Bower, Weiyong met Wang Muye, who was just four years old when the injured S/Sgt. Omer A. Duquette walked into the village on April 19, 1942. The first villager Duquette met was Wang's older brother, Wang Mu-shou, who brought the "weird looking stranger" to his mother's house where he was given shelter and food. The next day a grateful Duquette was escorted to a small town, but as he left he gave young Wang Muye a small pulley with "LS-808" imprinted on the side. Believed to be a small piece of *Fickle Finger*, it is a





During the festivities at Grimes, Larry Kelley took Mike Haddock, who was in the same bomb group (41st BG) as the original *Panchito* and saw the mushroom cloud over Nagasaki, for a reunion flight. Photo: Greg Morehead



cherished toy from Muye's childhood that he still has today.

The most famous story to come out of the Doolittle Raid, due to Ted Lawson's book "Thirty Seconds Over Tokyo" and the movie by the same name, is the that of the *Ruptured Duck*. Using Lawson's book as a guide Weiyong set off on what he called a "field trip" to visit the beach near the village of Dasha on the small island of Nantian, the school where Lawson's crew met the guerilla captain "Charlie", and ultimately Linhai Enze Hospital where Lawson's leg was amputated by Lt. (Dr.) Thomas R. White, who volunteered to go on the Raid as a gunner aboard Lt. Donald Smith's Plane 15, B-25B USAAF Serial No. 40-2267 TNT.

Then Weiyong talked about horrific reign of terror the Japanese wrought upon the Chinese population for assisting the Raiders. Among the first to feel this wrath were the villagers in Dasha. On April 20, the nearby Japanese garrison learned that the villagers in Dasha helped the Americans and a number of villagers were arrested, tortured, and murdered, but none admitted to helping Lawson's crew.

As if rape, torture, and murder were not bad enough the Japanese also waged chemical warfare by spreading plague, anthrax, cholera, typhoid, and paratyphoid through fleas, spray, and direct contamination of water supplies. Although exact numbers are impossible to calculate, it is estimated that over 250,000 Chinese civilians were slaughtered for assisting the Raiders. This is a burden that the Raiders carried for the rest of their lives. Despite today's sometimes tense political relations between the United States and the People's Republic of China, Weiyong empathically stated that even today the Doolittle Raiders have a special place in the hearts and minds of the Chinese people and the legacy of what the Raiders did 75 years ago is being handed down to a new generation thus ensuring the story of the Doolittle Tokyo Raid will endure for generations in China just as it will in the United States.

After a resounding applause for Weiyong's presentation, those assembled moved into the World War Two Gallery for a reception sponsored by Moet Hennessey. At the end of the night, Larry Kelley emceed the presentation where Lt. Col. Cole presented each B-25 with an engraved plaque commemorating its participation in the 75th Anniversary event as



well as a 30-year-old bottle of Hennessy cognac with the aircraft name and nose art engraved in the bottle. In addition, each crewmember on each aircraft received a special commemorative “B-25 Participating Air Crew” patch and coin. Naturally, the presentation took place at the Doolittle exhibit in front of RB-25D USAAF Serial No. 43-3374 that was converted back to a B-25B by North American Aviation in Inglewood, California. Once it had been painted to represent Doolittle’s B-25 it was delivered to the museum on April 22, 1958, by none other than Dick Cole!

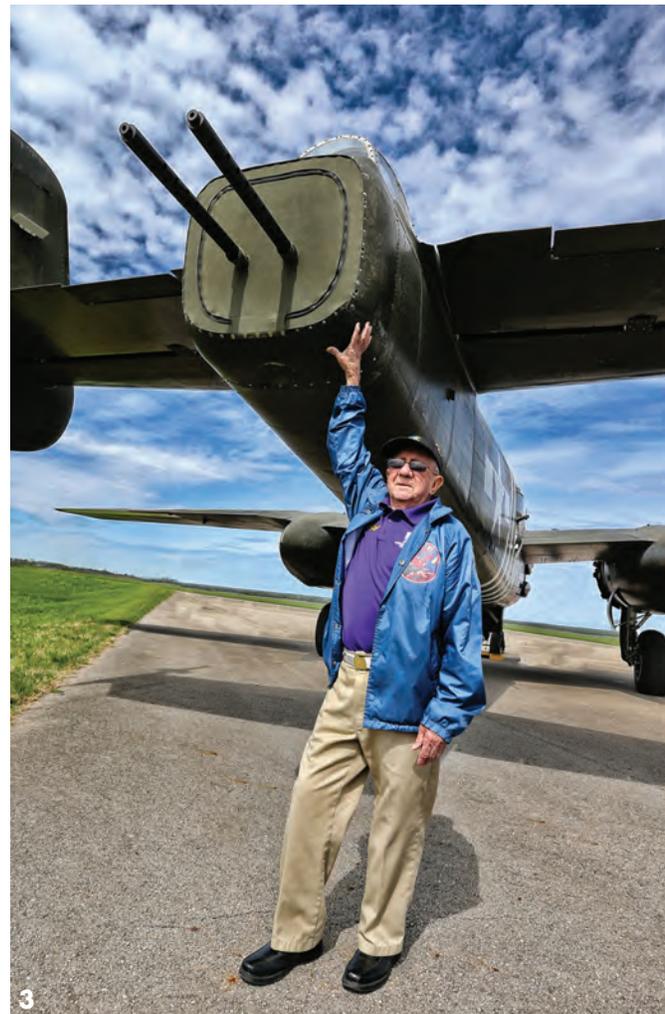
At 09:00hrs on Tuesday, April 18, inside the museum Lt. Col. Cole, Jeff Thatcher, Larry Kelley, Gen. Goldfein, and Raider families gathered for the private and time-honored Raider ceremony- the roll call and toast to the dear departed Raiders. At the front of the room flanked by two uniformed Air Force Academy cadets stood the wooden case that houses the 80 silver goblets. All but two were upside-down. The ceremony began with the roll call starting with the crew of Plane 16. As each name was called, Lt. Col. Cole answered with a forceful, “Here!” because if one Raider is present, they are all present. Afterwards the bottle of Hennessy cognac was opened and poured into Dick’s goblet by the white-gloved cadets. Once Dick raised his goblet and presented the traditional toast, he turned David Thatcher’s goblet upside down and returned it to its place in the cabinet. After the ceremony, Larry Kelley told the author, “If someone can witness that ceremony and not be moved to tears, they do not have a heart”.

The public was allowed back on the field for a few hours in the morning, thus giving them a final chance to see the B-25s up close and perhaps buy a t-shirt. One father took his son out of school for a day and used frequent flier miles to fly into Dayton from Oahu! The pair journeyed 4,400+ miles on a 14-hour flight to the NMUSAF, to see 11 B-25s and witness the last surviving Raider lay a wreath at the monument that pays tribute to what he and his fellow Raiders did 75 years to that day. There is no more powerful statement of the draw and mystique of warbirds and the rapidly fading veterans who flew them.

Just before the airfield closed at 12:45hrs Gen. Goldfein visited each crew to thank them for coming to the event and helping preserve this important moment in the history and legacy of the USAF. When Larry Kelley and Paul Nuwer began their take-off roll in *Panchito* at 1345hrs there was still an endless line of cars filing onto the museum grounds. Once the last B-25 was airborne they all departed the area to form up for their pass over the park. After the main flyover the lead formation consisting of *Panchito*, *Miss HAP*, *Betty’s Dream*, and *Barbie III* returned to perform a Missing Man. As the roar of the Mitchells faded into the distance the ceremony got underway with the keynote speech delivered by Gen. Goldfein, during which he likened the Raiders courage and willingness to stand and fight for freedom to the courage of our founding fathers who on July 4, 1776, used a quill pen to stand up to imperial rule and declare independence.

To close the ceremony a pair of Air Force Academy cadets place a wreath at the foot of the Doolittle Tokyo Raid Memorial, after which the always eerie “Taps” was played and as the final note lingered across the park the serenity of the moment was shattered as the 28th BW B-1Bs *Raptured Duck* (USAF Serial No. 86-0099) & *Rage* (USAF Serial No. 86-0115) screamed overhead at very low-level at 0.90 Mach, pulled into the vertical and disappeared thus signifying the passing of the heritage and legacy of the Doolittle Raiders to the airmen of today’s Air Force Global Strike Command who carry on the Greatest Generation’s commitment to Service Before Self.

Before jumping into his rental car to catch an airliner home Larry Kelley, still beaming with obvious pride in his fellow B-25 operators, said to the author, “The crews made this event happen. They dug deep into their own pockets to personally cover the huge operating costs of their aircraft so that they could pay their respects to the Raiders. That is what being a warbird operator is all about.” Indeed, as the crews made their way home by either car, airliner, or B-25 each carried with them the joy of new and renewed friendships, great memories that will last a lifetime, and a distinct pride that by spending thirty seconds over Dayton they stepped up to honor the legacy of Doolittle’s Tokyo Raiders. 🇺🇸



3

1 1st Lt. Alyn Bell Jr., a 13th Air Force B-25 pilot, was one of the honored World War Two veterans who made the trip to Southwest Ohio to witness the sights and sounds of a squadron’s worth of B-25 Mitchells. Their shared memories added great meaning to the event.

Photo: Bryan Heim

2 One of the most photographed B-25s on the ramp at Grimes Field was *God and Country*, a fairly new B-25 on the warbird scene from Mid America Flight Museum in Mt. Pleasant, Texas. *Photo: Bryan Heim*

3 Thomas Bristol flew 54 missions as a B-25 tail gunner with the legendary 1st Air Commandos, in which the original *Barbie III* was assigned. He flew 54 missions and was awarded the Purple Heart.

Photo: Bryan Heim



Sunrise at the historic runway at Wright Field on April 18, 2017. The 11 B-25s that flew to Dayton were arranged in much the same way the Raider's aircraft were prepared for take-off from *USS Hornet* (CV-8) on that morning 75 years before.
Photo: Bryan Heim





2018 WARBIRDS

Pin-Up Calendar



\$21.95 | **ORDER YOURS TODAY!**

Purchase online: www.MyBombshells.com
Phone orders: **214.274.5501** Call for volume discounts.

Sun Air Parts

PRATT & WHITNEY ENGINES

Complete stock of parts, tools, and accessories.

Complete Cylinder Assys In Stock With New Pistons Installed

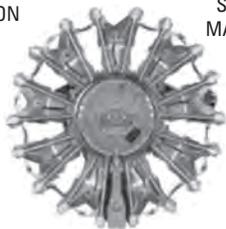
O-TIME ENGINES IN STOCK

R985/R1340. R1340 GEARED
COVINGTON, AERO RECIP & TULSA

R1830-92, -94, -75
R-2000-7M2 • R2800

PRECISION, AERO RECIP, GLOBAL
AIRMOTIVE & ANDERSON

WE BUY PARTS,
INVENTORIES,
AND USED ENGINES



R985/1340 TOP OH
TOOL KIT \$250
TIME RITE KITS \$325
R985 TITANIUM
NO BLOW GASKETS
ENGINE MOUNTS
SPARK PLUGS

NEW R1340 CAMS, FUEL PUMPS
OHC MAGNETOS • CARBS
STARTERS • GOVERNORS
MANUALS • PARTS BOOKS
COMPLETE OHC
CYLINDER ASSEMBLIES
R985/R1340/R1830/R2800

PH 661-257-7780 • FAX 661-257-7710



CALL FOR BEST OUTRIGHT PRICES

26007 Huntington Lane • Valencia, CA 91355 • sales@sunairparts.com

Goss Hawk

UNLIMITED

Vintage/Warbird Aircraft Restoration & Maintenance

T-28, P-51, Fw 190, T-6, B-17, L-29, PB4Y-2, Me 262,
Stinson V-77 and a wide variety of other aircraft

46 Years Aviation Mechanic Experience
20 Years with Champlin Fighter Museum



3184 N. Rockwell Ave., Casa Grande, AZ 85122

Phone: 520-423-2622 | Fax: 520-876-5155

Dave Goss, President | info@gosshawkunlimited.com

www.gosshawkunlimited.com



Huge
Inventory
of T-28
Parts

Trudeau

WARBIRD ENTERPRISES T28 Parts, LLC

Florida's Maintenance Facility for all Warbirds
Specializing in T-28 & T-6

Jamie Trudeau - A&P/IA

Phone: 941-505-0088

Fax: 941-505-0063

28000 Airport Rd. Unit A-4
Punta Gorda, FL 33982

E-mail:

janet@trudeauwarbird.com

jamie@trudeauwarbird.com

parts@trudeauwarbird.com

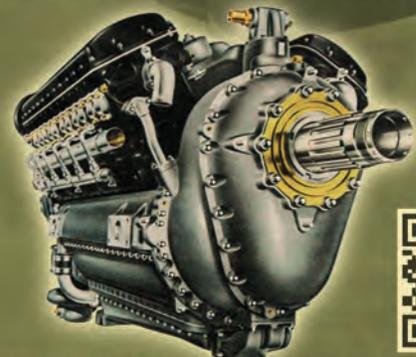
- ✦ Annuals & Pre-Purchase Inspections
- ✦ Heavy Repair & Maintenance
- ✦ Complete Sheet Metal Shop
- ✦ Complete Machine Shop
- ✦ Fabric Repairs and Recovering
- ✦ Modification, Restoration & Refinishing
- ✦ Over 37 years Warbird & GA Experience

Visit Us Online at: www.trudeauwarbird.com



EXPERIENCE KNOWLEDGE CRAFTSMANSHIP

Offering over 40 years experience
specializing in high-quality vintage
WWII aircraft piston engine restorations,
parts and worldwide services.



WWW.VINTAGEV12S.COM



Heather