THE SLOW ROLL

CHARTERED #921

DECEMBER 2014

President—Frank Moskowitz
Vice President—Mike Peck
Treasurer—JB Bowers
Secretary—Lou Pfeifer IV
Editor—Bob Purdy K9JNB
rcbobsvf@aol.com

The Slow Roll is published by the Sun Valley Fliers by and for its membership to all others interested in the building and flying of radio control aircraft.

Inside this issue: Cover Photo by Joe Balabon of Joe Balabon P-40

THE PRESIDENTS CHANNEL

Frank Moskowitz

December Slow Roll Presidents Letter

Welcome to the December 2014 Slow Roll. It's time to reflect on the past year and think ahead to next year.

So, I will take this opportunity to do a little reflecting on 2014. First of all, I want to thank all of the members of the Club. We had a great year of **Flying** and **FUN**. We welcomed many new Club members and they have become friends. Our membership is very active and we shared many hours of flying, instruction and great conversation. We continued to make improvements to our field. Our hobby is changing and rules regarding what we fly, where we fly and how high we fly are in transition. 2014 was a year I will remember for the great contributions of our elected officials and board members and the many members that gave their time and finances unselfishly. I thank you all very much! I'm positive that Sun Valley Fliers Club will continue to be the premier RC Flying Club in Arizona

For those of you that haven't attended a club meeting in a while, December is the time to start. Please join us for the December 3rd club meeting. We will have many raffle prizes and the 50/50 could make you very happy $$$. You never know what might happen, and you don't want to miss it. Meetings start at 7:00 pm. Remember that you can purchase food prior to our meeting. If you want to eat I suggest you arrive no later than 6:15 pm. Location is Deer Valley Airport Restaurant. (7th avenue and Deer Valley Road).

I would like to close this month's article by wishing all a wonderful holiday season. Whatever holiday you celebrate, may it be filled with good health and happiness and the promise of a great new year. Enjoy your Holidays and start your projects for next year's fun.

Have fun out there!

Frank Moskowitz

President

SVF MEETING DECEMBER 3 @ 7 PM

Sun Valley Fliers General Membership Meeting Minutes – 11-5-2014

Meeting called to order by Mike Peck at 7:02 Pm. There were 40 members present

Executive members in attendance

- **Mike Peck – VP, Lou Pfeifer IV Secretary, J B Bowers –Treasurer**
- **Absent Frank Moskowitz**

Board Members in attendance:

- **Charlie Beverson, John Russell, Dan Bott, Ken Justice,**
- **Absent: Wayne Layne, Ron Thomas, Eric Stevens, Loren Counce Mike Smith**

Guests:

- None

Solo Pilots

- **Paul Brown Congratulations!!!**

Secretary's Report – Lou Pfeifer

- Minutes from the October meeting were approved as published in the Slow Roll.

Treasurer's Report – J B Bowers

- Repairs to the generator were completed.
- Runway expenses incurred this month.

Membership Director's Report – Mike Peck

- 287 members .We have 70 paid members as of now.
- **Please get your dues in NOW PLEASE!!!!**
- ***There will be a $10.00 Late charge for LATE RENEWALS!!!***

Safety Officer's Report – Ken Justice

- Please be aware to keep an eye out for snakes!
- Ken says the apparel will be ready to roll soon on the internet!

Old Business

- Thanks to **Dan Bott** and **Ken Justice** for their help with all their work with the FAA and Deer Valley tower.
- **Bob True** asked about giving up the 400 ft. limit. Was this too premature with this decision?
- **John Geyer says the 1/8 went well!**
- Still waiting for LOA to come back to SVF.
- We have signed the letter of Agreement. The board will discuss the outcome at the Board Meeting.
- **Stick to the 400 FT. Rule for now!!!!**

New Business

- **Runway project has been completed. Looks great!!!**
- Turkey fly in is on November 15. Please try to attend. Lots of prizes and help the Wounded Warriors at the same time!!!!!!!!
- **Tony Quist is trying to run the Winter War Birds set for Jan. 16-18**
- **Bob True** commented on safety infractions that were made at the 1/8 meet and is worried about having a double standard set. .
- **Mike Peck** says that **SVF SAFTEY RULES** do not apply to outside agencies that we rent the field to!
- **Bill Marhevka** asked about a scale helicopter landing so close to the netting and if it was safe landing in the dirt instead of on the runway?

Door Prize Winners:

- **Robert, Bill Marhevka, Tony Quist, Bob True, Bill Stiving, Andrew Schear, Ken Justice, Steve Meyers, Klein**

50/50 Winner:

- **Mr. Campbell**
- **The meeting adjourned at 7:47 pm**

Respectfully submitted,

Lou Pfeifer IV, Secretary

Notice to Members Who Have Not Renewed for 2015

This is SVF membership renewal time and ***all dues payments are due on or before December 31, 2014*.** This year the Board of Directors has voted to assess a ten dollar ($10.00) late fee for dues received after the end of the year. Renewal letters have been mailed to all members; so please, remember to pay by the end of the year. Mailed payments postmarked on or before Dec 31, 2015 will not be assessed the late fee.

As of November 16, 2015 we have completed processing the renewals of 130 of our 288 current SVF members. That leaves 158 of you that need to renew your membership by the end of the year to avoid paying the extra assessment.

Mike

2014 TURKEY FLY IN WINNERS

November 15, 2014

CD Choice Joe Balabon P-40

Harold Land Memrial Paul Sheffied Cri-Cri

Best Scratch Built Jeff Bean

Best Sport Plane Johnnie Russell Cub

Best Jet Charlie Beverson A-6 Intruder

Best Multi Wing Bob Bayless Tiger Moth

Best Multi Engine Tim Toutant B-

Best Rotary Wing Scott Okerstrom Helicopter

Best Scale Rick Marshall Spitfire

Best Aerobatics Gerhhard Gallifant Self Design

We had a total of 22 pilots and by keeping the expenses down a little better were able to raise about $500 for the Wounded Warriors. As usual, we had a wide range of models with some great examples of both building and flying. It was a relaxed and very safe event and I believe everyone had a great time.

2014 TURKEY FLY IN

November 15, 2014

CD John Geyer

Did a dust storm come up??

Tips for Getting Started with Electric Airplanes

by Gerry Yarrish

Today, more than ever we are enjoying a literal “Golden Age” of RC electric flight. The amount of quality motors, batteries, controllers and connectors is just about limitless as are the types and sizes of airplanes you can fly with E-power. Even though there are plenty of plug n play packages out there where you get everything needed in one box, the newcomer can find it difficult get started. Whether you are a beginner or an experienced RC pilot, if you’ve never experienced an airplane with clean, quiet electric power, there are some basics you need to know to be successful. Let’s get started.

Today, there are all types and sizes of electric powered models, take your pick.

The first thing that you need to understand with electric airplanes is you have to look at the entire power system as a whole. One that will work together for maximum power and efficiency for the plane you are flying. And with that, you have to understand how much power will be needed to fly your plane safely. Whether you’re flying a lightweight micro indoor flyer or a large 3D aerobatic plane, its performance is based on the amount of power it develops relative to its ready to fly weight. If you get an ARF model airplane, then everything will be included and you’re good to go, but if you are putting your plane together with separate airframe and power system components, then you have to know what will work together.

Power

Electric motors, propellers and battery packs along with a suitable electronic speed controller make up your power system. But you have to use the correct combinations of equipment for your system to operate properly. To determine the power of your model’s power system, you need to measure the voltage and current while the motor is running. The three important parts of the power formula are amps (A) , volts (V) and watts (W). But before we can talk about selecting power systems, we need to understand some very basic things about electric power.

Picking the proper electric motor and propeller is a very important first step.

A watt is the unit of electric power in the same way that horsepower is used to express power for an internal combustion engines. You produce a certain number of watts by moving electricity through a device that converts it to power. Movement of electricity through a power system is described by the term ampere (amp), and the force that causes it to move is the volt. The basic relationship between these units with the equation Watts = Volts x Amps (W=VxA.). The most important thing for modelers to understand is that you can produce watts by using a lot of volts and just a few amps or you can use a small amount of voltage and lots of amps. It all works together. What this means is you can use a small amount of battery voltage and a large propeller diameter/pitch size or a larger battery voltage and a smaller propeller depending on the requirements of your model. And to properly power our models we can use a simple rule called the “Watts per Pound Rule”.

Watts per Pound

This categorization is a loose, flexible way to estimate the amount of power needed for a specific size airplane while giving the performance required for safe flight. The rule is really just a guideline to determine how many Watts of power are needed per pound of airplane weight and is expressed as W/lb.

50W/lb. or less. Very lightweight micro RC and slow flyers.

50 – 75W/lb. Sport powered sailplanes and gliders, basic trainers, lightweight scale planes, Vintage RC and RC Assist Free Flight designs.

75 – 100W/lb. – Basic sport flyers, intermediate aerobatics. scale low-wing designs and medium size warbirds.

100 – 150W/lb. – Advanced aerobatics, pattern flying, 3D planes, larger warbirds and EDF jets.

150 – 200 plus W/lb. Unlimited 3D aerobatics, warbirds and large jets.

–Fast Fact: *746 watts = 1 horsepower*

Batteries and Charging

Having a quality multi-type battery charger is an important part of the electric modeler’s workshop.

Compared to the NiMH and NiCad (nickel metal hydride and nickel-cadmium,) battery packs we used just a few years ago, the new generation of lithium Polymer (LiPo) battery packs (often referred to as Li-poly) have totally altered our definitions for power and flight duration. Where the older types of batteries offered 1.2 volts per cell, (1V under load), Lipo cells offer a nominal voltage 3.7V per cell and they provide much larger capacities along with an impressive weight saving. More voltage and more capacity and lighter wing loadings have really improved our airplane’s flight performance.

C-Ratings

LiPo batteries must be charged carefully and with chargers designed specifically for LiPo battery packs. Though there are many new Lithium battery packs on the market with extreme charge and discharge ratings, for the best longevity of your packs you should use a 1C charge rate. (1 times the capacity of the battery) Example: 3.3A for a 3300mAh battery capacity.

Lipo battery packs are the most common used today. It is important to pick the correct one for your model’s power system.

As with most things in RC, extremely high performance RC Lipo batteries with very large capacity ratings have become very popular. Some of these high performance packs have very high charge and discharge ratings up to 5 to 15C charge rates and 45C (continuous) and 90C (burst) discharge ratings.

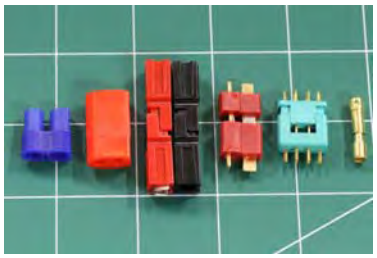
Safety Warning: Because of their internal chemistry, extreme care is required when using and operating LiPo battery packs. Overcharging a LiPo battery can cause the pack to burst and vent violently and can cause the pack to catch fire. As for over discharging, most ESCs

allow you to set a low voltage cutoff or use the default which varies by manufacturer. 3.0v is the absolute minimum anyone should use as allowing Lipo cells to go below this voltage will damage them. As with any high-energy electrical equipment and battery packs you should always carefully follow the manufacturer's instructions for proper use.

Fast Facts: LiPo Packs

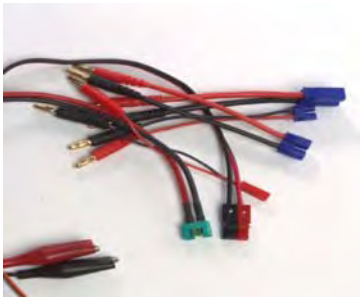
- Unlike other types of batteries, lithium polymer batteries can be stored for one to two months without significantly losing charge.
- Lithium batteries should not be trickle charged
- Typical maximum and minimum voltage for Lipo cells should be 4.23V and 3.0V volts per cell respectively.

Connectors Like airplanes, battery connectors come in several styles and ratings.



Connectors are an important element in any electric power system, and you'll find them in between motors and ESCs and between the ESC and the battery pack. The most important thing to remember is to use the proper size connector for the battery and power system being used. Most of the battery manufacturers today include connectors already attached to the power leads or at least include them in an accessory bag. Using a low quality connector or one that's too small increases resistance in the wiring and this translates to heat and lose of power. As a rule, you should use as few connectors as you can to maximize efficiency. Many experienced modelers will eliminate the connectors between the motor and ESC by soldering the power leads directly together.

Adaptor cables help you manage your battery cha



Most brand name electric equipment has its own brand and type of connector and you need to use the matching type to charge your battery packs. You can however, simplify your life by switching all of your battery and ESC connectors to a generic one. This will then allow you to mix and match battery packs between airplanes and you can use the same charger to service your battery packs. If, the charger has the proper settings to match your packs. The most common at Deans Ultra T-configured connectors and Anderson Powerpole (APP) (also referred to as Sermos connectors). The Deans require soldering and some heat shrink tubing, while the APP connectors can be soldered or crimped onto the power leads with a special crimping tool.

Glossary:

Ampere (Amp): The standard unit of electric current. The current produced by a pressure of one volt in a circuit having a resistance of one ohm.

Battery Eliminator Circuit (BEC): – A circuitry that allows the battery that runs the motor to also power the receiver and the servos. This is often built into the ESC

Brushed Motor: The traditional type of electric motor where brushes make contact between the rotor and the stator. The touching of the brushes essentially creates the timing and current to make the motor spin correctly.

Brushless Motor: Type of electric motor used in RC electric aircraft. Brushless motors are much more powerful than traditional brushed motors, and are commonly used in electric aerobatic aircraft. They can be inrunner or outrunner motors.

Current: The flow rate of electrical energy. Measured in Amps

Capacity: Is a measure of how long you can draw a specified current from a battery. It is measure in Amp Hours (Ah), or more commonly for the scale of equipment used for electric flight, mill-Amp Hours (mAh).

Electronic Speed Controller (ESC): The thing that controls how much current is given to the motor and hence how fast the motor runs. Often they have a BEC (see above) built in. There are two main types – brushless and brushed.

Horsepower (HP): A measure of the rate of work. 33,000 pounds lifted one foot in one minute, or 550 pounds lifted one foot in one second. Exactly 746 watts of electrical power equals one horsepower.

Inrunners: Get their name from the fact that their rotational core is contained within the motor's can, much like a standard ferrite motor. They run inside the can.

KV: A rating for brushless motor that equals a 1000 RPM per volt. So a 5KV motor would spin at 55,500rpm approximately if you applied 11.1 volts (3s).

Li-Po: Stands for lithium-ion polymer battery. These are the most modern kind of battery pack being used in electric aircraft. They provide enormous amounts of power for their size, especially when used in conjunction with a brushless motor.

mAh (Milliamp Hour): A measure of a battery's total capacity. The higher the number, the more charge a battery can hold and usually, the longer a battery will last under a certain load.

NiCD: Abbreviation for nickel cadmium. They are a form of rechargeable battery cells used in radio control gear as well as motor battery packs. NiCDs are being used less and less these days, as NiMH and Li-Po batteries take over.

NiMH: Abbreviation for nickel metal hydride batteries, they are the successors to NiCDs with much better performance and up to 3 times the capacity for an equally sized battery. Only Li-Pos top NiMHs.

Outrunner: The other type of brushless motor, where the outer shell, or 'can', of the motor rotates with the shaft. The extra inertia produces more torque, so outrunners are more powerful than inrunners and rarely are geared.

Power: For electric models this is a product of voltage and amps and is measured in watts.

RPM (Revolutions Per Minute): The number of times an object completely rotates (360 degrees) in one minute

Voltage: A unit of electromotive force that, when applied to conductors, will produce current in the conductors. Voltage is

also referred to as electrical pressure.
Watt: The amount of power required to maintain a current of 1 ampere at a pressure of one volt when the two are in phase with each other. One horsepower is equal to 746 watts. Watts are the product of volts and amps.

A power meter is a handy piece of equipment to have to check how your airplane power system is operating.

FAA can regulate RC aircraft

In a much anticipated decision, the National Transportation Safety Board ruled that the FAA has the power to hold drone operators accountable when they operate remote-control aircraft recklessly. In 2011, the FAA had fined aerial photographer Raphael Pirker $10,000 for operating his Ritewing Zephyr in a reckless manner on the University of Virginia campus. An administrative law judge with the National Transportation Safety Board, which hears appeals of Federal Aviation Administration enforcement actions, sided with Pirker earlier this year, saying the FAA hasn't issued any regulations specifically for drones and therefore can't determine their use.

But the FAA appealed the decision to the four-member safety board, which said Tuesday that the small drone is a type of aircraft that falls under existing rules and sent the case back to the judge to decide if it was operated recklessly. "It's a huge win for the FAA, and signals it's not going to be the Wild West for drones, but a careful, orderly, safe introduction of unmanned aircraft systems into the national airspace system," said Kenneth Quinn, a former FAA general counsel

WHAT'S UP???

Mike Peck presenting Solo Certificate to Paul Brown with instructor Steve Myers.

Dave with his depron Raptor

SVF Bob Bayless doing his best this time of year

SEASON GREETINGS

Swiss Seller To Restore Remaining 'Battle of Britain' Aircraft

by Elaine Kauh | November 13, 2014

Six fighter planes that were part of a collection of warbirds sold to a dealer in August will be restored and sold by Boschung Global Ltd. of Switzerland, the company said Thursday. The fighters, a version of German Messerschmitts, operated in World War II and were last flown for the making of the 1969 film "Battle of Britain." When the film was completed, stunt pilot Wilson "Connie" Edwards received the fighters and other warbirds used in the movie in lieu of payment. Since then, the aircraft sat in a hangar in Texas for more than 40 years until Wilson put them on the market. The six airplanes, which Boschung referred to as Messerschmitt 109 models, were part of nine in the collection that are known as Buchons, a Spanish-built version of the German aircraft.

Wilson's sale of the full collection, which also included a 1943 Spitfire that flew in World War II, was conducted by Platinum Fighter Sales. Since then, private buyers have acquired most of the airplanes, Boschung said. For example, two of the Messerschmitts, including the original factory two-seat model, will be operated by Swiss airshow company 46 Aviation SA. "The deal with former movie stunt pilot Wilson 'Connie' Edwards was certainly no ordinary sale! It took several months and, in many respects, was an incredibly interesting project. The transaction was carried out seamlessly thanks to the assistance of Platinum," Paul Boschung said in Thursday's statement. The company said it will restore the aircraft to original factory condition.

VIDEO 4:04

http://www.youtube.com/watch?v=GmPw1GEpveU

Fascist Flattops

THE ONLY ACCOMPLISHMENT OF AXIS AIRCRAFT CARRIERS *GRAF ZEPPELIN, WESER, AQUILA AND SPARVIERO* WAS TO TIE UP MORE THAN 100,000 TONS OF VALUABLE STEEL NEEDED FOR THE FASCIST WAR EFFORT

FULL STORY
http://www.vintagewings.ca/VintageNews/Stories/tabid/116/articleType/ArticleView/articleId/460/Fascist-Flattops.aspx

Enjoy the above and many other stories from this great web site from Canada

SEASON GREETINGS

19 Builder's Essentials

The old saying that "Anything is easy if you have the right tools" is particularly true in modeling; the proper tools will simplify any job. There are so many great tools, though, that it can be a challenge to know which to choose. The hardware and tools here will help you with your next project, whether it's a quick-building ARF or a complete scratch-build.

DREMEL STYLUS CORDLESS ROTARY TOOL **PHOTO # 1**

This new, innovative Dremel tool offers a contour-grip design with the latest in lithium-ion battery technology. This tool feels almost like an extension of your hand and allows precise control. This is a tool that gets a workout on every project we do, and it's equally valuable in the workshop and as a field-box tool. With the tremendous variety of materials it can cut, the Dremel Stylus is one of the most versatile tools around.

K&S TUBING CUTTER & BENDER **PHOTO # 2**

Whether your plane runs on gas or glow, you will need to cut and bend tubing for it. The K&S Cutter can cut tubing of up to a 5/8 inch diameter without crimping it. The easy-to-use bender works well on tubing of up to a $^{3/16}$-inch diameter and allows you to bend it without crimping it.

DU-BRO E/Z THREADER **PHOTO # 3**

Tired of nursing your sore fingers after you've threaded on all the clevises? Then this tool is just what you need! It makes installing swivel ball links, nylon clevises and cup-style ball links quick and easy.

GREAT PLANES EASY-TOUCH HAND SANDER & CONTOUR MULTI-SANDER **PHOTO # 4**

Sanding is never fun, but the Easy-Touch Contour Multi-Sander and Hand Sander make the job much easier. We use three of each size, one for each grit: coarse (80), medium (150) and fine (180 or 220).

MIDWEST PRODUCTS EASY MITER BOX **PHOTO # 5**

This miter box offers many features that make cutting balsa and other woods a simple job. It can handle material as wide as 2 inches and as thick as 1/4 inch. It enables you to make straight cuts as well as angled cuts of 22.5, 30, 45 and 60 degrees. The best things about this miter box are the three cam clamps that hold the material firmly in place while you're cutting.

HANGAR 9 Z-BEND PLIERS **PHOTO # 6**

A Z-bend is probably the easiest way to make a solid connection on at least one end of a pushrod (save the other end of the pushrod for an adjustable connector). These Z-Bend Pliers make this and many other jobs considerably easier.

DU-BRO KWIK-HINGE SLOTTER KIT **PHOTO # 7**

This slotting kit takes the hassle out of cutting or reopening hinge slots. Included in the kit is a center guide that fits any type of hinge and helps you achieve perfect alignment slots.

CASTLE CREATIONS CASTLE LINK ESC PROGRAMMER **PHOTO # 8**

We bought this programmer because we were tired of programming ESCs with stick movements and listening for the beeping patterns. Working from a computer, you select each of the functions from the dropdown menu. After you've selected all of the information, you transfer it to the ESC via a USB line. What could be simpler?

GREAT PLANES C.G. MACHINE **PHOTO # 9**

The most important way to guarantee a successful first flight is to balance your plane properly. For this important step, we rely on the Great Planes C.G. Machine for all but the largest airplanes. This tool is easy to use and is much more reliable than balancing the plane by picking it up by its wingtips.

GREAT PLANES PROP REAMER **PHOTO # 10**

This is an essential tool. It seems as though whenever we use new props, the hole almost always has to be enlarged. The only sure and safe way to do this is with a prop reamer such as the one from Great Planes. Using a hand drill or a drill press means that you run the risk of off-centering the hole and rendering the prop useless. This will never happen with a prop reamer.

GREAT PLANES BUILDER'S TRIANGLE SET **PHOTO # 11**
A squarely built plane will fly well and true. At some point, every ARF that you build will require the rudder to be squared up with the stabilizer. This tool simplifies that task.

H.P. PILOTS 3D PRO THROW METER **PHOTO # 12**
The manuals for every plane we build have recommended control throws listed, and this meter is an easy way to set the throw of any control surface. The plane does not have to be sitting level, either; just clip the throw meter to the trailing edge of the control surface, level the gauge and adjust the throw with your radio's endpoint adjustment or pushrod connectors.

CHARGER RC BEVELING TOOL **PHOTO # 13**
If you like to build flat foamies, you will love this tool. With one simple pull across any control surface, it makes a clean, perfectly beveled cut that is ready for hinge tape.

GREAT PLANES DEAD CENTER ENGINE MOUNT HOLE LOCATER **PHOTO # 14**
This tool is just the ticket for marking the exact location of the mounting hole in an engine or motor mount, but we also like to use it to mark the locations of the servo-mounting holes and for other critical hole placements.

MIDWEST PRODUCTS EASY CUTTER ULTIMATE **PHOTO # 15**
Sometimes, we modelers need only a quick trim on a stick of balsa, and one way to do this is with a hobby knife. A much more accurate and cleaner method of cutting sticks of balsa, however, is to use the Midwest Easy Cutter Ultimate. Set the fence on the cutter at the angle of the cut, and make as many repetitive cuts as you need.

DU-BRO TRU-SPIN PROP BALANCER **PHOTO # 16**
Balancing your prop is an absolute necessity; it saves wear and tear on the plane and on the motor. One of the best ways to do it is with a Tru-spin prop balancer. This tool can handle props, spinners and rotor heads of any size and results in a precise balance every time.

GREAT PLANES ACCUPOINT LASER INCIDENCE METER **PHOTO # 17**
It's always a good idea to check your plane's incidence; a correct incidence will improve its flight performance. A tool that makes this job a snap is the AccuPoint Laser Incidence Meter; it's easy to set up even when the plane is not on a level surface — a great tool to have.

MIDWEST PRODUCTS HOBBY & CRAFT RULER **PHOTO # 18**
Modelers often have a stack of balsa sticks of various sizes, and when we need a piece of a certain size, we reach for the Hobby & Craft ruler. It has slots for measuring thicknesses of up to 1/4 inch and holes for dowels of up to 1 inch in diameter. Oh yeah, it even has an 8-inch ruler on one side. Sweet!

ROBART SUPER STAND II **PHOTO # 19**
Working on a fuselage can be a pain; it often won't stay in one place but instead wants to roll around. Thank goodness for the Super Stand II! It holds the fuselage firmly — with or without the wing on — without damaging it.

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A Few Days Before Christmas

Why A German Pilot Escorted An American Bomber To Safety During World War II

Benjamin Preston

Once in a while, you hear an old war story that restores your faith in humanity. Usually it involves a moment of quiet in the midst of chaos; some singing or the sharing of a few condiments. But how many of them take place in mid air?

This is the remarkable story of a crippled American bomber spared by a German fighter pilot. After the two planes' pilots had a mid-air moment of understanding, it didn't seem likely that they'd ever see one another again. Only they did, and became closer than brothers.

Here's how it all went down.

It was a few days before Christmas in 1943, and the Allied bombing campaign in Germany was going at full tilt. Second Lieutenant Charlie Brown was a freshly minted bomber pilot, and he and his crew were about to embark upon their first mission — to hit an aircraft factory in northern Germany.2

Brown's B-17F Flying Fortress, dubbed Ye Olde Pub, was typical of American heavy bombers of the time. Along with an 8,000-pound bomb capacity, the four-engine plane was armed with 11 machine guns and strategically placed armor plating. B-17s cruised at about 27,000 feet, but weren't pressurized. At that altitude, the air is thin and cold — 60 degrees below zero. Pilots and crew relied upon an onboard oxygen system and really warm flight suits with heated shoes.

As Ye Old Pub approached Bremen, Germany, German anti-aircraft batteries opened up on the formation. Unfortunately for the pilots and crew of Ye Olde Pub, one of the anti-aircraft rounds exploded right in front of their plane, destroying the number two engine and damaging number four. Missing one engine and with another throttled back due to damage, Ye Olde Pub could no longer keep up with the formation.

B-17s were known for being able to soak up a lot of bullets and anti-aircraft flak and still make it home, but that came at a cost. The armor plating protecting crew and vital areas of the plane was heavy and affected cruise speed. Although armed with a number of heavy machine gun turrets, there were still areas of the aircraft that were vulnerable to attack by enemy fighter planes. The U.S. Army Air Corps addressed this problem by placing many planes in staggered formation that allowed bombs to be dropped while multiple planes could cover the defensive gaps of other planes in the formation with overlapping fields of fire.

The drawback to this arrangement was that individual planes couldn't take evasive maneuvers (they'd risk damage from friendly bombs or machine gun fire), and stragglers were completely open to attack by enemy aircraft. Think about a small group of quick, agile cowboys chasing a herd of buffalo. They're both dangerous to one another, but if one lumbering buffalo leaves the safety of the group, there's not much hope for it.

Things went from bad to worse for Brown and his crew. Falling behind the formation, Ye Olde Pub weathered merciless attacks from 15 German fighters. The bomber's machine guns got one of them, but the damage they sustained was immense. The tail gunner was killed and four were injured, including Brown, who caught a bullet fragment in his right shoulder. The only defensive guns left in service were the top turret and the nose gun, and the bomber's hydraulics and oxygen systems had also been knocked out. The plane went into a spiral, plummeting earthward.

What happened next is according to the memory of Brown, who told interviewers years later that his mind was a bit hazy at the time; his shoulder was bleeding and he needed oxygen.

I either spiraled or spun and came out of the spin just above the ground. My only conscience memory was of dodging trees but I had nightmares for years and years about dodging buildings and then trees. I think the Germans thought that we had spun in and crashed.

Ye Olde Pub was spared further harassment by enemy fighters. Somehow, he and the co-pilot managed to get the plane flying level again at about 1,000 feet of elevation.4

On the way out to the sea, Ye Olde Pub passed a German airfield. Lt. Franz Stigler, a Luftwaffe fighter pilot just in from shooting down two B-17s, saw Ye Olde Pub limp by. Naturally, he scrambled to give chase. But what he saw arrested any aggression he may have had. As he told interviewers in 1991, he was aghast at the amount of damage the bomber had sustained. Its nose cone was missing, it had several gaping holes in the fuselage. He could see crew members giving first aid to the wounded, and most of the plane's guns hung limp, unmanned as they were.

I saw his gunner lying in the back profusely bleeding….. so, I couldn't shoot. I tried to get him to land in Germany and he didn't react at all. So, I figured, well, turn him to Sweden, because his airplane was so shot up; I never saw anything flying so shot up.

Stigler kept his distance, always staying out of the line of fire of the two guns still in service, but managed to fly within 20 feet of the bullet riddled B-17. He tried to contact Brown with hand signals. His message was simple: Land your plane in Germany and surrender or fly to Sweden. That heap will never make it back to England.

A bewildered Brown stared back through his side window, not believing what he was seeing. He had already counted himself as a casualty numerous times. But this strange German pilot kept gesturing at him. There was no way he was going to land the plane, but the pilot stayed with him, keeping other attackers off until they reached the North Sea. When it was clear that Brown wasn't staying in Germany, Stigler saluted, peeled off, and flew out of Ye Olde Pub's nightmarish day.

When Franz tried to get me to surrender, my mind just wouldn't accept that. It wasn't chivalry, it wasn't bravery, it was probably stupidity. My mind just didn't function in a clear manner. So his choice then was to kill us or try to get us to go to Sweden, since we wouldn't land.

The bomber made it back to England, scarcely able to keep 250 feet between itself and the ground by the time it landed in a smoking pile of exhausted men and shredded aluminum. Years later, Brown would say that if Stigler had been able to talk to him, offering the land in Germany or fly to Sweden ultimatum, he probably would have gone to Sweden. But Ye Olde Pub did make it, and Brown got a much needed stiff drink handed to him when he got off the plane.

The incredulous debriefing officer, wowed by Brown's story, went off to tell the brass what had happened. He recommended Brown's crew for citation, but the glory was short-lived. Brass quickly decided that word getting out about a chivalrous German fighter pilot could endanger the lives of other crews if it caused them to let their guard down. All details of Ye Olde Pub's first mission were classified Secret.

Stigler was never able to speak of his actions that day, as it would have meant certain court martial. He flew many more missions, though, becoming one of the world's first fighter jet pilots. By the war's end, he was one of only about 1,300 surviving Luftwaffe pilots. Some 28,000 had served.

After the war, Charlie Brown returned home to West Virginia and went to college, returning to the Air Force in 1949 and serving until 1965. Later, as a State Department Foreign Service Officer, he made numerous trips to Laos and Vietnam. But in 1972, he hung up his government service hat and moved to Miami to become an inventor.

Stigler finished the war amidst ruin. Anti-Third Reich post-war authorities in Germany were unimpressed with his exemplary service record, and the economy was wrecked. He subsisted on food stamps and work as a bricklayer's helper for a while, but moved to Canada in 1953. There, he enjoyed success as a businessman.

Many years went by without either man ever thinking much about what had happened on that day in 1943. But in 1986, then retired Colonel Charlie Brown was asked to speak at a big combat pilot reunion event called Gathering of the Eagles. Someone asked him if he had any memorable missions during World War II. Brown thought a minute, then dredged up the story of Stigler's salute which had been buried somewhere in the dirty corners of his mind for decades. Jaws dropped. Brown knew he would have to try to find the man who had spared his life.

After four years of searching vainly for U.S. and West German Air Force records that might shed some light on who the pilot was, Brown hadn't come up with much. So he wrote a letter in a combat pilot association newsletter. A few months later, Brown received a letter from Canada. It was from Stigler. "I was the one," it said.

When they spoke on the phone, Stigler described his plane, the salute; everything Brown needed to hear to know it wasn't a hoax.
From 1990 to 2008, Charlie Brown and Franz Stigler became like brothers. Introduced by the bond of that first powerful meeting, their friendship was cemented over the years. The two men remained close throughout the rest of their lives, dying within several months of each other in 2008.
There are so many parts of that beautiful story that could have turned out differently. In any event, Stigler probably wouldn't have shot Brown's crippled plane. He was a veteran pilot with an iron sense of right and wrong; a man who would never kick another while he's down.
But what if Stigler had been executed for his disloyalty? What if Brown had landed in Germany or hadn't made it across the North Sea? What if Stigler had stayed in Germany and never learned how to speak English? Yes, things could have been different, but that chance encounter in 1943 was destined to become a chance encounter again in 1990. But more importantly, it's proof to the rest of us that something great done now can change your life much, much later.
Adam Makos just wrote a book about the Brown-Stigler rendezvous — A Higher Call: An Incredible True Story Of Combat And Chivalry In The War-Torn Skies Of World War II — which goes into much greater detail about the two men behind an amazing occurrence.
Photo credit: YouTube; Wikipedia

VIDEO
http://www.youtube.com/watch?v=nNmypZ9lv94#t=184

Building an F-104 Starfighter in 20 minutes — Video

VIDEO **http://www.youtube.com/watch?v=sBNXOnnAM7E**

ARIZONA WORLD WAR II ARMY AIRFIELDS

Williams AAF Field

History

During March 1941, some citizens of Mesa, Arizona were actively working on obtaining an Air Corps facility located near their city. One of the sites seriously considered for the new airfield was on the Gila River Indian Reservation located near Chandler, Arizona. At the time, the land on which Williams would eventually be built was vacant and not used for agriculture due to a lack of irrigation. It had no homes or farms and was essentially desert with a few Indian ruins scattered on it. On their own initiative, the city of Mesa began to acquire rights to the property that was divided among 33 different owners. Agreements were made for a railroad spur line, along with the appropriate electric, water, telephone and gas services.

The hard work paid off with the announcement in June 1941 that the War Department had approved the site for an Army Air Corps base. Construction of the new base started on 16 July 1941, and initial construction was completed in December, making the base operational.

As of 10 December, the airfield had no name and a debate ensued on what to call the new base. It was initially named **Mesa Military Airport**. the name was changed October 1941 to **Higley Field**, the base being in the proximity of the town of Higley, Arizona. In February 1942, the growing military airfield's name was changed to **Williams Field** in honor of Arizona native 1st Lt Charles Linton Williams (1898–1927). Lieutenant Williams died on 6 July 1927 when his Boeing PW-9A pursuit aircraft crashed near Fort DeRussy, Hawaii.

As a flying school, numerous runways and auxiliary airfields were constructed. The main airfield consisted of three concrete 6000' runways aligned NE/SW, ENE/WSW and NE/SW. A blacktop landing area 5500'x1430' was aligned E/W to the south of the main field and a 4100'x 1350' blacktop landing area was aligned E/W to the south of the main field. Known auxiliary airfields were:

- Gilbert Field (Aux #1) 33°23′14″N 111°40′26″W
- Redeveloped in the 1970s. Today housing development S of US 60 in Gilbert, Arizona.
- Rittenhouse Field (Aux #2) 33°15′29″N 111°31′03″W
- Postwar used by USAF as an Air Force Auxiliary Field. Today used occasionally by Arizona National Guard, adjacent to suburbs of Gilbert, Arizona
- Casa Grande Field (Aux #3) 32°57′18″N 111°45′58″W

Today Case Grande MAP, Case Grande, Arizona

- Goodyear Field (Aux #4) 33°14′36″N 111°54′47″W

Today Gila River MAP, SW of Chandler, Arizona

- Cochise Intermediate Field (Aux #5) 32°02′33″N 109°54′15″W

Built in the 1930s, Abandoned in the 1950s, today agricultural field, no remains

- Coolidge AAF 32°56′09″N 111°25′36″W

Was auxiliary until 1944, turned over to Air Transport Command in May 1944

- Cutter Field 33°21′11″N 110°40′03″W

Emergency landing field

- Ajo AAF 32°27′10″N 112°51′41″W

Transferred from Luke AAF, June 1943. Part of the Gila Bend Gunnery Range

- Gila Bend AAFAF 32°53′15″N 112°43′12″W

Transferred from Luke AAF, June 1943. Part of the Gila Bend Gunnery Range

- Gila Bend #6/Williams AAF #4: 32°43′11″N 112°51′14″W
- Gila Bend #6/Williams AAF #5: 32°49′05″N 112°54′54″W
- Gila Bend #6/Williams AAF #6: 32°53′05″N 112°48′59″W

World War II

Williams Army Airfield - Main Gate 1942

During World War II, Williams Field was under the command of the 89th Army Air Force Base Unit, AAF West Coast Training Center. The flying organization was the 38th (Bombardier and Specialized Twin- and 4-Engine) Flying Training Wing. Twin-engine training would ultimately turn out thousands of P-38 Lightning pilots, however they learned their twin-engine flying skills flying the Beech AT-10 Wichita at Williams. By July 1942, there were 79 AT-10s assigned to the field, however the hot, dry climate of Arizona tended to dry out the wood and glue of the wooden AT-10s, causing at least 10 flying cadets to lose their lives in crashes. Training with the AT-10 was stopped and the aircraft were flown to more humid locations. They were replaced by the Cessna AT-17 Bobcat twin engine trainers, however the AT-17 was seen as "too easy to fly" and were replaced by the more demanding Curtiss-Wright AT-9. By January 1943, almost 200 AT-9s were at the airfield.

The RP-322 training version of the P-38 began to arrive also in early 1944, and by May, the flying school was involved in four courses of instruction. By far, the largest course was a single-engine advanced course where cadets received instruction on the AT-6 Texan. Graduates advanced to the twin-engine AT-9, then on to the RP-322. This training was intended to prepare pilots for photo-reconnaissance missions. Another course was given to experienced pilots who were transitioning to twin-engine aircraft, also in the RP-322. Later, a night fighter training program was established for pilots on the RP-322 for later transition to the P-61 Black Widow at Hammer Field, California.

By late 1944, there was an ample supply of twin-engine pilots in training and by late 1944, the single-engine T-6 training was discontinued. Williams then began to offer four-engine training with B-17 Flying Fortress bombers in December. Its students would be experienced pilots who were transitioning to the large four-engine bomber. The B-17 pilot training ended in April 1945, graduating 608 officers for the Flying Fortress program.

The training mission of the base also conducted flexible gunnery training, and radar observer training.

After the United States entered the war, the Army Air Forces also developed a pilot training program for the Chinese Air Force. The Air Corps conducted most of the training for the Chinese at Luke, Williams, and Thunderbird Fields in Arizona. Training the Chinese presented some special challenges. Because of their small stature some students could not reach all the controls. That problem was usually solved through the use of extra cushions and occasionally by switching them to another type of airplane. A bigger problem was the language barrier. It took all the interpreters the Air Force could muster to support the training programs for the Chinese. In the end, 3,553 Chinese received flying and technical training, including 866 pilots.

Postwar era

T-33 Jet Trainers at Williams AFB, June 1949

After the end of the war in September 1945, most of the temporary training bases were put on inactive status and eventually closed. This was particularly true for bases like Williams that had sprung up overnight and were built with temporary wooden structures. However, Williams was an exception and remained open after World War II.

In early 1945, the first P-80 Shooting Star jet pilot school was opened at Williams. Army Air Forces Training Command was re-designated as Air Training Command, and in 1946 all flight instruction was integrated into a new consolidated program The P-80 jet fighter pilot transition and fighter gunnery schools at Williams Field remained; however, the gunnery school existed only to fulfill research obligations.

Fighter gunnery training was reestablished in early 1947. The new program studied the use of fighter gunnery, bombing, and rocketry equipment. Students flew P-51 Mustangs, P-47 Thunderbolts, and beginning at midyear, P-80 Shooting Stars. The gunnery school, however was again discontinued on 1 June 1948 and moved to Las Vegas AFB, Nevada.

By early 1947 the AAF had sped up its conversion to jet aircraft. However, the training program was handicapped by the fact that no twin-seat jet aircraft trainers yet existed. Putting untrained jet pilots into a single-

Phoenix–Mesa Gateway Airport

The airport was built in 1941 and opened in 1942 by the United States military as **Williams Air Base**. It was a flight training field during World War II.

In 1948 Williams became the first jet training base, and in 1966 it was the first site of the Undergraduate Pilot Training (UPT) program.[7]

The 1991 Base Realignment and Closure Commission recommended closing the base as its operating costs were too high; the base closed in 1993.

Logo using airport's former name

As the base was being shut down, it was decided that, with the growing traffic at Sky Harbor International Airport in Phoenix, an alternative airport would be needed. The runway was expanded to accommodate airliners and the facility opened in 1994 as Williams Gateway Airport. Bids began for some airlines to begin flights almost immediately.

In 2004 charter airline Ryan International Airlines began MD-82 flights to Bullhead City International Airport in Bullhead City, Arizona, next to Laughlin, Nevada and many resorts.

In recent years, the airport has again become a center of flight training. Several large flight schools now take advantage of the flying weather in the Phoenix valley.

On July 31, 2007 the low-cost Las Vegas-based carrier Allegiant Air announced plans to open a focus city at Phoenix–Mesa Gateway Airport, connecting the Phoenix area to 13 cities. Service commenced on October 25, 2007, with cities being added until November 21, 2007.[4]

In a press release on September 17, 2007, the Williams Gateway Airport Authority governing board approved a name change for Williams Gateway Airport effective October 15, 2007 to **Phoenix–Mesa Gateway Airport**.

VIDEOS and Websites Links

Click on to view video, website

Pearl Harbor WEBSITE
https://www.pearlharboroahu.com/

Fantastic Old Timer RC Movie 3:39

http://www.youtube.com/watch?v=FXDHguHIJuk

KISS in Iraq 4:55
http://www.youtube.com/embed/5MtdIO23MKM

Team Schaerer Synchro Aerobatics 3:38
http://www.youtube.com/watch?v=LRGr2mvkkp8&list=UU1QF2Z_FyZTRpr9GSWRoxrA#t=12

Giant Scale RC Christen Eagle
http://www.youtube.com/watch?list=UUMQ5IpqQ9PoRKKJI2HkUxEw&v=GDI-BPRKJH0

Emirates A380 First 3C-Check 1:52
http://www.youtube.com/watch?v=3hLXP1R8y6o

The Last Carthaginian WEBSITE
http://www.vintagewings.ca/Home/tabid/40/language/en-CA/Default.aspx

TU Delft—Ambulance Drone 3:22

https://www.youtube.com/watch?v=y-rEI4bezWc&app=desktop

FREE large piece (45" x 65") of tempered glass? It is available to a good home.

Bruce Bretschneider 623-334-4760 brucebr1@cox.net

SVF Website Buy & Sell items.
http://www.sunvalleyfliers.com/classifieds/classifieds.htm
My thanks to those who passed this info on.

Zipping at FL 730 - Flying the "hottest" 104

by Walt BJ, retired USAF F-86, F-102, F-104 and F-4 pilot

Hokay. Sit down, lean back, open a cool one, and here it comes.

It was in 1967 and Paul Da San Martino and I were sent up to Tyndall AFB in the Florida Panhandle to do some fighter affiliation with a U-2 to test its new self-protection device. We got to fly the missions because we both had full pressure suits, a USAF modified version of the Navy Mark IV. Very comfortable compared to the old partial pressure MC3 and MC4s, even comfortable enough to perform air combat wearing them, something that was not true of the MC3/4 suits. Anyway the U2 was up at his operational altitude for the tests and we made numerous intercepts, playing the enemy for him. His device didn't particularly bother us and we deduced from what we could see on our radar scopes that our ASG14 radars were not sophisticated enough to be bothered. I don't know how familiar you are with the ASG14 but it's a modern analog to the RAF AI 10 used in WW2. Basically, it is a spiral scan search radar with no angle track capability. Just find him on the scope, turn toward him to fly him to the center and go get him. You know when he's dead ahead (on boresight) because then he paints as a circle around the center of the scope - the circle's radius is his range. The set can, however, lock on and track a target in range from 10 miles on in. The pilot has to keep the target directly ahead, as I said, since there is no angle track capability at all. It can, when locked on, feed range to the computing gunsight; effectively, too, I might add. Range shows up on the sight; miles when missiles are selected, feet when guns are selected.

A side comment on intercepting U2s. We had been doing this from some time in our F104As with the original J79-3B engine. The mission was fuel-critical; a five minute delay meant every thing had to go just right or we'd be low on fuel for the required IMC approach. The installation of the J79-19 engine (a slightly modified -17 engine) increased our excess thrust about 25%, so we expected an improvement but were uncertain as to how much. We were pleasantly surprised.
The first time we ran an intercept on a U2 at his operational height in the Dash 19 bird, we had no data to plan from nor did the FSQ7 SAGE computer. To make things simple and sure I had the controller roll me out 35 miles behind the U2 at 38000 (tropopause that day). Catching the U2 would be no problem since the overtake at attack speed would be in excess of M1.2. I went to max AB and followed the controller's steering. I was mostly looking out for him since often the U2 emitted a wisp of a contrail. Then at 18 miles I saw a contact at 12:00 on the radar. (20 miles was the only range selection in search) and glanced at the gauges. I was now doing M1.8 at 58000, and I was most impressed since the old 3B would have still been way below that struggling to get to M2.0. I completed the intercept, getting a tallyho at about 2 miles, and pulled off the target with about 1000 pounds more fuel than I'd ever had left with that old engine. One caveat I should add - we frequently had much colder than standard OAT over Homestead (HST) at 25N latitude - as cold as -75 Celsius. That does help even the Dash-19's performance. I remember seeing the E/M diagram for the -19 bird - can't find out who's got one nowadays but I do remember the -19 Zipper peaked at 1300 Ps.

SAGE is 'Semi Automatic Ground Environment' - a giant dinosaur of a dual computer that could calculate 600 intercepts simultaneously. Each SAGE system covered roughly a 600 mile square. Many ground radars transmitted data to it - it integrated the inputs and solved each intercept every two seconds. The commands were transmitted to the interceptors by data link. There were two dials, one target altitude, the other commanded altitude, and a data-link command steering dot on the scope. A small circle was positioned on the scope where the computer thought the target would be. It was accurate enough even for the 104A's 'spinscan' radar. I liked SAGE and data link after the bugs were gone - it was nice and quiet; the only voice communications were for safety. It even worked pretty good! Never as good, though, as an expert GCI controller who knew the ropes of fighter v fighter combat. For example: "BJ, Dave here - he's 20 port 15, turning hard into you.....hard port 140; he'll be 12 o'clock for 10, 10,000 high..."- But to compare SAGE with what we have now - well, the core RAM was 100 Kilobytes! It was vacuum tube design, using a lot! of twin triode tubes, and used ferrite core memory. The beast required 15 tons of air conditioning to keep it from overheating. I think NADGE is a son of SAGE. The SAGE building was five stories high and almost a perfect cube of grey cement. It looked like Stalinist architecture minus windows.

E/M is Energy Maneuverability, a concept developed in the early 60s by John Bond, a fighter expert who was also one of my 86 instructors at Nellis. P/S - a combination of kinetic (velocity) and potential (altitude) energies. The units are in feet per second - 1300 Ps means that theoretically the airplane can generate a climb rate of 1300 fps or about 78000 fpm/400 mps. One uses the aerodynamic and other limits of the airplane under consideration to generate lines of equal P/S. Left margin is stall speed, top line is combat ceiling, right margin is redline or if you're game enough absolute speed attainable. Now superimposing one aircraft over a dissimilar one immediately reveals the good and bad zones of each with respect to the other. Naturally we carefully examined the 104 and the F4 against the MiG17/19/21 and 23. Since the 104A could exceed the 710 CAS redline speed by a very wide margin I don't doubt the bird could reach that 1300 state - I seem to remember that was below 30,000 but at M 2.0. I never exceeded the 710 limit by much-saw 750 a couple times (once at about 100 feet above sea level) and have had friends without kids reach 850 plus. I, on the other hand, being married with two daughters, had a modicum of discretion. I have zoomed many times from 38-42000 and M 2.0 and seen the altimeter stop while still

going up. (Our standard 3-needle altimeter had a mechanical stop at 86000). I estimate we were topping out at between 90-95000 depending on how slow one arced over the top. I always floated over the top with about a tenth of a G max on the airplane and the IAS down around 125 or so. I always handled the controls delicately in that situation so I never had a problem. Sometimes I would go to zero G and release a pencil in front of me and use that indicator to maintain a true parabolic flight path. Since the pencil was in free flight, just keeping it apparently motionless in front of me let me maintain the same ballistic flight path - no lift being generated meant no stall was possible, no stall meant no problem. Come to think of it I was flying formation 'around' that pencil.

Climb profiles - we normally used standard profiles because of the programming of the SAGE computer. Military - 350/.9; AB 450/.9. Once at commanded altitude we flew at the speed commanded by SAGE. Profile 1 - AB climb, AB cruise to target. Profile 2 - AB climb, military cruise. Profile 3 (normal one) Mil climb, 'liner' (max range) cruise - normally about .87. I have flown a max energy climb a couple times. Attaining 600 KIAS ASAP after TO then maintaining 600 to crossover to M 2.0. This 'profile' was devised by us to get a fighter to a place in space in minimum time for intercept or to provide cover for an asset under attack/harassment. Our environment there in S. Florida had a need for that option. But we never had to use it.

Time to go home back up at Tyndall when the U2 system test was over it was time to go home. I looked at Paul and suggested "Let's wear our p-suits and go home at high altitude." He was all for it and so we filed for Homestead, doglegging south into Warning Area 168 to avoid civvie traffic and incidentally not boom anyone. I did a little dash-one research and fiddled with my E6B a bit and came to the conclusion FL730 was attainable at M2.0 and would give us an IAS we could comfortably fly at. I filed the IMC clearance for a TAS of 1150 TAS which certainly raised the eyebrows of a C119 aircraft commander standing next to me at the clearance desk. We suited up, got our clearance, and took off. We climbed in military to the tropopause. There I called Miami Center and got clearance to accelerate for the M2.0 climb on up to FL730. We went into afterburner, my throttle back a shade from full, to give Paul a little slack out there in loose wing. Arriving at 2.0 fairly quickly I started the climb, maintaining 2.0. We leveled at 73000 on the altimeter and eased back to about 3/4 AB to maintain 315 IAS, on the good side of max L/D. I called "Level Flight Level 730" to Miami Center and he came right back with "And you weren't lying about your true airspeed, either!" I chuckled to myself, envisioning the vector arrow simply jumping across his radar scope at 20 miles a minute. It was a standard Florida day, bright sun, some towering cumulo-nimbus scattered about, the tops well below us, lots of puffy white cumulus, even further below. The sky overhead was noticeably darker than down on the deck, yet not as dark as it got at the apex of a zoom climb. Our motion across the dark blue Gulf of Mexico was perceptible. We were burning about 100 pounds of fuel a minute and covering 20 miles a minute and the TACAN mile-meter was really counting down, a tenth of a mile (smallest division) clicking past every third of a second. Coming up on the coast, still about 275 miles from Homestead AFB (HST), I raised my fist, jerked it back to signal to Paul 'out of AB', nodded my head for execution, and eased the throttle slowly back to idle. Paul was out in loose wing, staying right with me. (He was an ex-TAC F-100 type with lots of fighter time and a skilled and aggressive pilot). We held 315 KIAS all the way down the descent and hit the initial for runway 05 about 10 miles out of Homestead. I think we burned less than 200 pounds or so of fuel all the way down to 1500 AGL. What a great flight and what a great view of the world from up there. Not as different as the view is up around 90000 on a zoom climb but still visibly darker overhead with more white haze on the horizon than at 35-40000. The curvature of the horizon was faint but discernable. It was odd to look way down and see contrails along the airways.
Oh, yes, we did have the J79-19 engines installed - that made the U2 intercepts and the XC really pieces of cake! To my present-day sorrow I threw away the clearance sheet and my navigation card and then compounded that error by turning in my full pressure suit when I transferred from ADC to TAC - it was on a hand receipt and I realized later I could have kept it and no one would have been the wiser. It was tailored personally to me and would fit no one else and would have made a damn fine souvenir of some awesome flights. But I will always remember the great times flying the Zipper - and the rare flights like the ones I just described.

Thanks for listening - Walt "BJ" Bjorneby - 104ever!

Walt BJ (Bjorneby, Walter): Was born in Alaska, was always interested in flying, enlisted in the USAF in August 1951, went through airborne radio school, applied for Aviation Cadets, made corporal working on aircraft radios, and was finally accepted, starting class in January 53. Flew Piper Cub (108 hp), T6, T28 and T33. I got my wings on April 28 1954. Then off to F-86F school at Nellis AFB - great challenge as there were no 2-seaters. First flight was solo chase and then they turned us loose for 8 solo unsupervised flights! I had gun camera film of 3 Sabres (all classmates) ahead of me as we flew in trail along the bottom of the Grand Canyon - unfortunately during one of many moves I lost it. Nowadays such a case of 'flying indecency' would result in a noisy court-martial! I was fortunate enough to spend all but four years of my officer career flying fighters. (Those four years were spent at desks in USAFE and Germany!) I flew in nine fighter squadrons, which is rather rare, spurning three higher headquarters assignments to stay in the cockpit. I valued flying fighters more than promotion. Every now and then I buy a lottery ticket (whenever the dollar amount at chance exceeds the odds against winning) hoping to win enough to buy my own 104.

So far - no dice. Hals und Beinbruch!

Specifications:	**F-104A**	**F-104A-19**	**F-104G**	**F-104S**
Engine:	J79-GE-3B	J79-GE-19	J79-MTU-1K	J79-GE-19
Weight: zero fuel	12,562 lbs	12,562 lbs	14,760 lbs	14,900 lbs
Weight: take-off clean	20,000 lbs	20,600 lbs	21,700 lbs	21,700 lbs
Thrust: Military	9,600 lbs	11,870 lbs	10,000 lbs	11,870 lbs
Thrust: Afterburner	14,800 lbs	17.900 lbs	15,600 lbs	17.900 lbs
Thrust/Weight Ratio:	0.74	0.87	0.71	0.82

That means that the F-104A with the J79-GE-19 engine was by far the hottest F-104!

Note: those are average numbers from various references.

The -19 engine is visually slightly longer with a more complex nozzle than the -3B. A nozzle lock system was installed. Two extra suck-in cooling air doors were added. The trunnion mounts are a stronger steel alloy. The trunnion mounts are the horizontal mounts roughly at the engine's center of balance, they are short cylinders sticking out right and left just like the trunnion mounts (elevation pivots) on black powder muzzle-loading cannon. In fact, they serve the same purpose and look very similar. They take the thrust and weight/gravity loads and transfer them to the airframe. There's another mount at the top front of the compressor to stabilize the engine and another still to take torque loads, but the trunnion mounts are the strongest by far. BTW my big Webster's 3rd dictionary says it's from the French, "trognon", meaning stump (what's left of a tree after it's cut down).

Walt "BJ" Bjorneby

Editor; Our thanks to Mike, one hot F-104 pilot

Easy Shop Tips

BOX REMIX

One organizational aid I use in my shop is a system for keeping unused servo arms matched to the servos they fit. I use or re-label the servo box by using the label that came with the box or make a new one with my label maker. You can tape one side of the box and lid so they stay attached. Now there is no more confusion as to which servo arms go to which servo when I need them.

SAVED BY THE BOWL

When working on a project with a lot of small screws, bolts and nuts, I do so over a small 4- or 8-inch diameter magnetic bowl. These are available at car part stores or Harbor Freight. When I accidentally drop these small parts, they are pulled right into the bowl and not on the floor, where they are never to be seen again.

POWER TAGGING

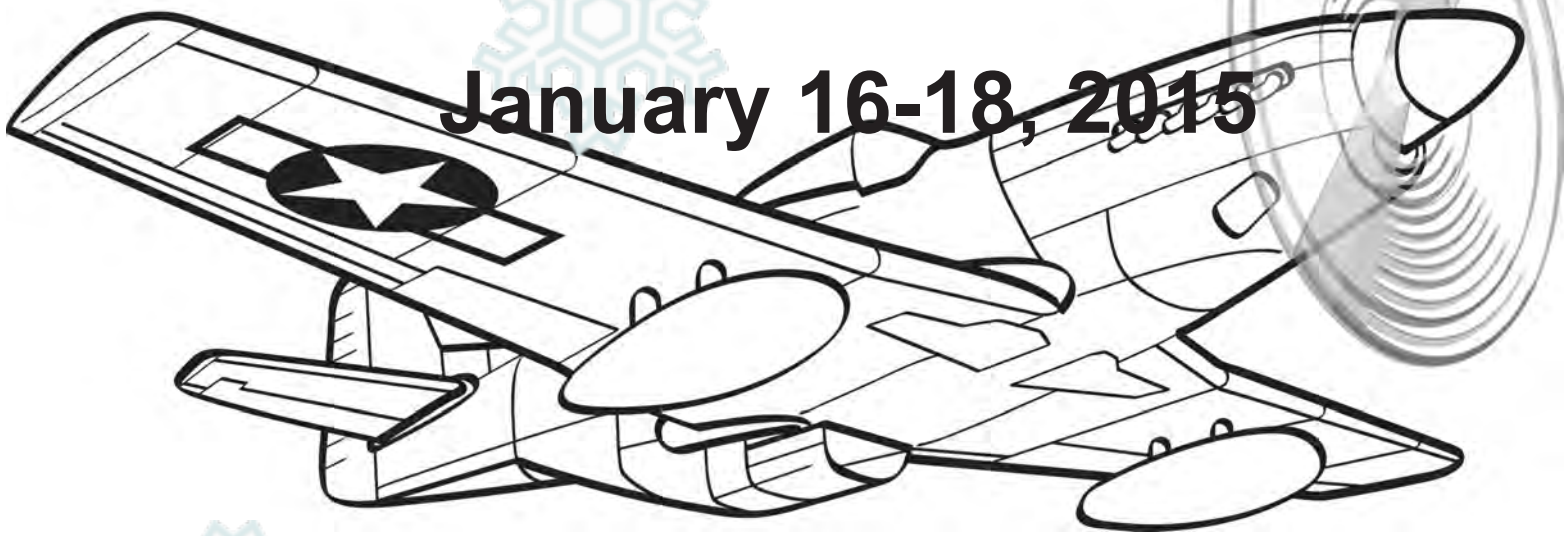
Here is a simple way to know whether or not your battery packs are charged. Since most of my battery packs already have Velcro attached, I decided to incorporate labels that will stick to the Velcro. I make the labels by printing on plain inkjet business cards so that I can have four labels per card. Once cut out, I can stick on part two of the Velcro to the back of the label. Now it is easy for me to see if my battery has a full charge, storage charge or is discharged.

HANDY HINGE GLUE SPREADER

Many of today's 3D foamie airplanes utilize contact adhesive as a hinge material. However, spreading the glue can be a messy job. A single-edged razor blade makes an excellent spreading tool, but sometimes it can be difficult to use in tight places. By attaching a wooden clothespin to the razor blade, it's easier to get into tight spots and creates a clean hinge line. number of hobby-related ideas we receive, we can neither acknowledge each one, nor return unused material.

3rd Annual

Winter Warbirds



January 16-18, 2015

Military Aircraft of all eras in military schemes are welcome to fly.
Park fliers will only be flown before or after normal flying hours.
Landing fee is $30. AMA membership required
Flying awards for all eras of aircraft
Static awards for kit built, ARFS, and craftsmanship.

Hosted by Sun Valley Fliers
Cave Creek and Jomax RD in North Phoenix, AZ

Registration forms can be found at http://www.sunvalleyfliers.com

JANUARY 2015 SVF Birthdays Boys

First name	Last name	Member type	Dob
Les	Baron	Senior	01/01/1947
John	McClelland	Senior	01/04/1950
Brett	Crowther	Regular	01/05/1973
Kenneth	Melbye	Senior	01/06/1948
Alexander	Vidales	Junior	01/11/1997
Johnnie	Russell	Senior	01/12/1940
Kent	Story	Senior	01/13/1947
Leo	Chandler	Regular	01/15/1953
Norman	Pilcher	Senior	01/16/1940
Robert	Beaubien	Regular	01/17/1966
Vic	Pietkiewicz	Senior	01/18/1944
Zach	Zhang	Junior	01/18/2005
Steve	Peterson	Senior	01/26/1943
Carey	Dicksion	Regular	01/28/1965
Tony	Mastrangelo	Regular	01/30/1969

Happy New Year

DECEMBER 2014 SVF Birth Day Boys

First name Last name	Member type	Dob
Archie Dicksion	Senior	12/02/1938
James Osborn	Senior	12/05/1941
Louis Bennett	Senior	12/09/1944
Bernie Frank	Senior	12/15/1929
James Talmadge	Senior	12/15/1949
Brad Schrimsher	Regular	12/16/1962
Peter Boland	Senior	12/17/1948
Stan Von Drashek	Senior	12/18/1925
Rodrigo Moreno	Regular	12/18/1960
Dan Bott	Senior	12/19/1948
Ronald Topel	Senior	12/19/1937
Martin Jones	Regular	12/19/1967
Jim Schneck	Senior	12/20/1942
Kyle Ponsler	Regular	12/20/1983
Joel Lieberman	Senior	12/22/1937
Bill Marhevka	Regular	12/22/1963
Wayne Frederick	Senior	12/25/1937
Allan Flowers	Senior	12/27/1941
Richard Mills	Senior	12/27/1946
Michael Van Heemst	Junior	12/28/2000
Vincent DiFabbio	Regular	12/29/1955
Gary Schlegel	Senior	12/29/1949
Tighe O'Meara	Regular	12/29/1978
Phil Roszak	Regular	12/30/1959
Lindsay Duerden	Regular	12/30/1958

THE SLOW ROLL

Club Officers 2014-2015

Frank Moskowitz, President
Mike Peck, Vice President
JB Bowers, Treasurer
Lou Pfeifer IV, Secretary
Ken Justice, Safety Officer

Walt Freese,
Website Supervisor
Please check your Membership list for Phone numbers.

Board of Directors

Charlie Beverson '14-16
Loren Counce Jr. '14-16
Dan Bott '14-16
John Russell '14-16
Ken Justice '13-15
Wayne Layne '13-15
Ron Thomas '13-15
Mike Smith '13-15
Eric Stevens '13-15

Sun Valley Fliers

SUN VALLEY FLIERS
P.O.BOX 31816
PHOENIX,AZ. 85046-1816

WWW.SUNVALLEY FLIERS.COM

40 SUN VALLEY FLIERS ARIZONA **YEARS**

AMA CHARTERED #921

SINCE DECEMBER 1974

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