THE SLOW ROLL

CHARTERED #921
Since DEC. 1974

OCTOBER 2011

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

IMAA Chapter 782

Inside this issue: Cover Photo by Joe Balabon showing Tighe O'Meara P-51..... History on Model Avaition/ LeRoy Cox…..... 3 SVF members photo……AMA Alert …….. Gate/Key Form…... …..Novice Building Part 2……..SVF Hall of Planes……. 3 Event Flyers……....Prez report…. B'Days & Treasurer Report …….*MANY GREAT VIDEOS…A MUST TO SEE* the AAF Museum.....*Much more, enjoy*

NOTICE **SVF MEETING October 12, 2011**

THE PRESIDENTS CHANNEL

Frank Moskowitz

OCTOBER 2011 SLOW ROLL PRESIDENTS LETTER

Welcome to the October 2011 Slow Roll.

I hope by now that all our members have noticed how nice the grounds look at the field. As I have mentioned in previous letters; all members need to practice good maintenance while on-site. Picking up cigarette butts, empty water bottles, etc. If you see weeds… pull them. We all need to chip in. That also includes adding a few bucks to your membership renewals. The extra maintenance dollars really help our field quite a bit. Every little bit helps.

I would like to clarify an issue that has come up regarding our "Spotter Rule". While it is true that the letter we had everyone sign (in exchange for the key) states that Park Flier models and Helicopters are exempt from the rule, the "rule" we were referring to was the "penalty involved" if you fly without a spotter. We never retracted our original club rule that states:

***PILOT SPOTTER**: All SVF members and guests are required to fly with a Spotter assistant by their side. The Spotter's primary goal is to look out for full scale traffic and a secondary function is to watch out for the safety of the pilot while he/she is attentive to flying his or her aircraft and to assist the pilot in avoiding traffic that may constitute a risk of midair collision, runway access co-ordination, emergency procedures, etc. Spotters must be AMA members.*

Helicopters typically fly one at a time so they are not the issue. But Park Fliers (airplanes under two pounds) do fly while others are flying. While they do not pose a problem regarding our 400 foot rule, they still can be involved in a mid-air and for that reason we require all pilots to have a spotter. We have posted the rules in this edition of the Slow Role for those that need a reminder. The rules are also posted at each flight station on the metal signs.

Remember this month is the **One Eighth Air force Fall Scale Model Fly-In which will be October 22nd and 23rd**. Visit their website http://www.oeaf.org/smf/ for more information on this event. We can still use some volunteers for kitchen duty. Please contact me if you are interested in helping out that weekend.

The Eleventh Annual Electric Turkey Fly-In is Saturday November 12th. See the flyer in this edition of the Slow Roll. If you want to help at this event, please talk to John Geyer about what positions he needs filled.

One last note is that **Ken Justice** is still the guy to go to for hats, jackets and T-shirts. We will be seeing cooler weather come in real soon. So if you want to order a windbreaker or jacket, now is the time to do it.

I hope to see some more members at our next club meeting **Wednesday October 5th at 7:00 pm. Location is Deer Valley Airport Restaurant. (7th avenue and Deer Valley Road).** Remember in order to use the room free of charge each month we need to purchase some food items off the menu. So **arrive a little earlier** and enjoy some of their great food choices. The Club meetings get better every month. For added fun we have show and tell. We will always have more than one raffle prize and the 50/50 could make you very happy $$$. You never know what might happen, and you don't want to miss it.

Have fun out there!

Frank Moskowitz

President

NOTICE!

SVF MEETING

OCTOBER 12, 2011

7:00 PM @ D V AIRPORT

Sun Valley Fliers Club Meeting Minutes
Date, September 7, 2011

The meeting was called to order at 7:01 PM by President Frank Moskowitz and there were approximately 28 members in attendance.
Guests: There were no guests this month.
New Members: Welcome to Connor Burns our newest Sun Valley Flier!
New Students: Instructor **John Geyer** has two new students that he is working with.
New Solo Pilots: None
Secretary's Report: **Bruce Bretschneider** is still on vacation, The August Secretary's report was provided by Mike Peck and published in the Slow Roll. It was moved, seconded and approved to accept it as published.
Treasurer's Report: **Gene Peterson** indicated the Treasurer's report had been published in the Slow Roll, and it was moved, seconded and approved to accept it as published. Gene also reported that 30 new chairs have been added at the field.
Safety Report: **Ken Justice's** report centered on the accident that was reported by Frank Moskowitz and Ken Justice in the September Slow Roll.
Old Business:
1. **Vice-President John Geyer** reported that about 208 members had signed the written rule change agreement and had been issued gate keys to the flying site. There are about 87 more members that still need to sign and get their key, but many of these appear to be either winter visitors, and the rest are inactive flyers.
2. We still need new Instructor Pilots. If you would like to participate in this vital function within our club contact **John Geyer, Howard Kennedy, or Frank Moskowitz**.
3. The project that Frank Moskowitz is heading up to run electrical service to the Heli-Pad and Ramada is moving forward and should be completed this month.
1. The Sun Valley Fliers and the One Eighth Air Force are co-hosting the One Eighth Air Force Scale Fly-In at the SVF field on October 22nd & 23rd 2011. Event set-up will take place on Friday, the 21st and many out-of town participants will be arriving, but the field will be available for open SVF flying as well.
New Business:
1. The club made $4,000.00 on the airplanes that Tom Lewandowski donated and **Tony Quist** brokered for the club. (Thanks Tony!) This will allow the pit paving project to move along more rapidly – the current plan is to have the paving completed in time for the OEAF Fly-In, weather and contractor commitments permitting.
2. The Sun Valley Fliers will host their annual charity Electric Fly-In on November 12th this year. **Gene Peterson,** our new SVF CAMAC representative, is working to have the date added to the CAMAC calendar.
3. Community Affairs: **John Geyer** reported that nothing is going on right now with the summer-time heat, but as fall approaches, we will once again be contacting community groups such as the Cub Scouts and Boy Scouts to arrange introduction to r/c modeling events.
Door Prize Winners:
Val Roqueni - Fuel **Cameron Markwart** – Foam Padding **Ken Justice** - Fuel **Pete Dickinson** – Voltmeter **Bob Bayless/Charlie Beverson** - Fuel **Steve Miller** – Clevis Installation Tool **Ron Thomas** - Fuel

50/50 Winner: Ron Thomas won **$40.00**. Congratulations, Ron.
Show & Tell:
1. We had no Show and Tell this month.

Adjournment: The meeting was adjourned at 7:32 PM by President Moskowitz.
Respectfully submitted,

John Geyer
for Bruce Bretschneider, Secretary

$ TREASURERS REPORT $ with *Gene Peterson*

Treasurer's Report October 2011

Well, the summer is almost over and flying and sweating can hopefully be done at different times. Been a hard summer as there didn't seem to be any breaks with a few days of monsoon rains and cloudy days and of course we have to mention it was the hottest August on record and the most days over 110. Isn't record breaking fun……!!!.

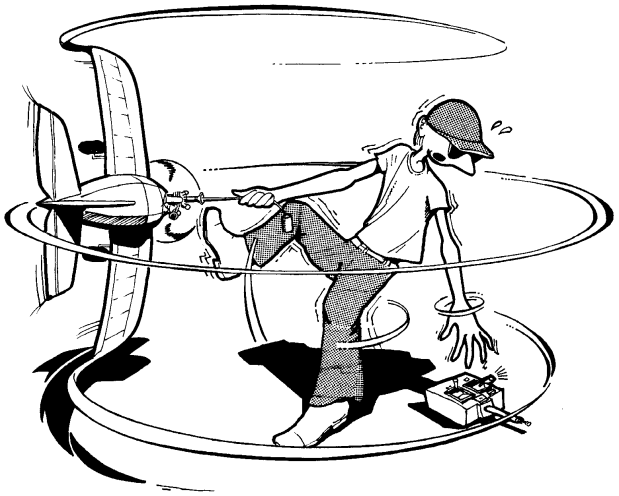
Member ship dues notices ARE IN THE MAIL….. It's that time again. Please let me know if there is a problem with your renewal. Couple of members moved into the elite "Senior" group If you are sponsoring a Junior and that person is not an immediate family member, you might want to check to see that the renewal gets sent back as it would go to the Junior Member with the address we have on file. …

Have a nice October flying and see you at the field.

Regards, *Gene Peterson, Treasurer*

OCTOBER 2011 SVF BirthDay Boys

First name	Last name	Member type	Dob
Robert	***Purdy***	**Senior**	**10/01/1935**
George	**Metro**	**Senior**	**10/01/1943**
Craig	**Guest**	**Regular**	**10/01/1966**
Dean	**Brox**	**Regular**	**10/02/1973**
Mike	**Milner**	**Regular**	**10/02/1952**
Warren	**Folkerts**	**Regular**	**10/03/1956**
Cecil	**Walters**	**Lifetime**	**10/03/1940**
Bruce	**Bretschneider**	**Senior**	**10/05/1940**
Warren	**Fertig**	**Senior**	**10/10/1940**
Steve	**Miller**	**Regular**	**10/16/1952**
Lee	**Piester**	**Senior**	**10/17/1938**
Paul	**Steinberg**	**Regular**	**10/17/1951**
Danny	**Mattox**	**Regular**	**10/18/1993**
Tim	**Nelson**	**Regular**	**10/19/1946**
John	**Wolcott**	**Regular**	**10/20/1972**
Ken	**Rhoads**	**Regular**	**10/22/1950**
Ken	**Justice**	**Regular**	**10/22/1951**
John	**Mullins**	**Regular**	**10/24/1952**
Scott	**Stemen**	**Regular**	**10/26/1960**
John	**Mangino Sr.**	**Senior**	**10/27/1942**
Keith	**Hoffman**	**Regular**	**10/28/1956**
Neil	**Wallis**	**Regular**	**10/29/1969**
Robert	**Ritchey**	**Regular**	**10/30/1955**
Howard	**Buxton**	**Senior**	**10/31/1937**



FIELD AND SAFETY RULES

In Addition to AMA Safety Codes

1. **LICENSE REQUIRED:** Persons wishing to fly at the SVF Field must possess a valid AMA license in his or her name. Operators of turbine powered aircraft must be able to produce the proper AMA turbine waiver.

2. **FREQUENCY CONTROL:** Any transmitter being used for flying or maintenance must be accompanied by the proper frequency identification pin. 72 MHz users must post their AMA cards on the frequency board prior to flight operations taking place. 2.4 GHz Spread Spectrum users must post their AMA cards on the metal rod located on the fence of each flight station. **No exceptions are permitted.**

3. **LEGAL RADIOS:** 2.4 GHz spread spectrum transmitters and fixed frequency transmitters that operate on radio control frequencies currently allowed by the Federal Communications Commission (FCC) & meet 1991 narrowband specifications.

4. **POWERPLANT STARTUP:** All powerplant starting and running must be at the designated flight stations with the prop or jet wash towards the runway. All pilots should have an assistant hold aircraft during powerplant start up on the flight line. Engine break-in is not allowed under the Ramada's or at any flight station.

5. **400 FOOT ALTITUDE LIMITATION:** All SVF members and guests will not fly a model aircraft higher than approximately 400 feet above the surface. Occasionally a model's maneuver or aerobatic flight may require a higher altitude than the limit of 400 feet specifies. As a safety precaution, we will always exercise the "SEE & AVOID" rule. This means to lower the altitude of your aircraft below the 400' limit safely and immediately.

6. **PILOT SPOTTER:** All SVF members and guests are required to fly with a Spotter assistant by their side. The Spotter's primary goal is to look out for full scale traffic and a secondary function is to watch out for the safety of the pilot while he/she is attentive to flying his or her aircraft and to assist the pilot in avoiding traffic that may constitute a risk of mid-air collision, runway access co-ordination, emergency procedures, etc. Spotters must be AMA members.

7. **FLIGHT LINE PERSONNEL:** Personnel who have no direct contribution to the flight operation of aircraft shall remain within the spectator area; defined as under the Ramada and/or areas south of the fences.

8. **TAKEOFF/LANDING DIRECTION:** Shall be established by an East - West traffic pattern as determined by the prevailing wind direction. Takeoffs, landings, dead stick conditions and aircraft retrieval from the runway and surrounding areas shall be **'called' loudly**, to give ample warning to other flyers.

9. **FLIGHT STATIONS:** All Pilots while flying from the main runway shall stand at one of the five flight stations at the spot designated to the right of and behind the barrier netting, behind the white line.

10. **PROPER FLIGHT LOCATIONS:** All aircraft operations shall take place north of the southern edge of the runway. All maneuvers shall be performed north of the asphalt, over the dirt. The runway itself and the airspace directly above it is for takeoffs and landings only. The white line in front of the pilot's stations is the absolute "Deadline". It extends east and west to infinity and must not be crossed under any circumstance. Park flyers, light electric aerobatic models, helicopters, rotary wing and sailplanes that may not fly a conventional flight path are encouraged to fly south of the wash, or west of the helicopter ramada and hover pad. Use of Hi-Starts or launch winches will normally be in these areas. No flying of any kind is permitted over any part of the parking lot or ramada. Central frequency control applies to all aircraft flown at the SVF facility, regardless of location.

Revised: July 21, 2011

AMA and aeromodelers everywhere outraged at terrorist's plan to attack Pentagon, Capitol with RC model converted into a UAV

M U N C I E - The Academy of Model Aeronautics is shocked and outraged by the actions of a 26-year-old Massachusetts man arrested this week on federal charges for his intent to use an RC model airplane reconfigured as a UAV, similar to a military drone, for an explosive-laden attack on the U.S. Capitol and Pentagon. The suspect is not an AMA member nor has he been confirmed as being a model aviation enthusiast.

"When an otherwise safe and wholesome hobby becomes the focal point in a planned terrorist attack, we are as outraged as all citizens," said AMA Interim President Mark Smith. "Like all Americans, we appreciate the professionalism of the FBI in this case. The AMA's 143,000 aeromodelers throughout the country pledge to keep a vigilant eye in their communities on any suspicious activity involving RC aircraft."

To read the FBI's affidavit on the case, go here. To read the media release from the Department of Justice, go here.

Rezwan Ferdaus, a U.S. citizen from Ashland MA, and a physics graduate from Northeastern University, was arrested after lengthy monitoring and a sting operation by the FBI this week. Ferdaus had acquired three RC jets, an F-86 Sabre and two F-4 Phantoms, plus explosives and cell phones wired like IEDs. He kept them in a storage facility to work on. It isn't known at this time if Ferdaus was able to fly the airplanes or if he had assistance. The public, according to the bureau, was never in danger.

Though Ferdaus' plan was to convert a commercially available model aircraft into a GPS-guided unmanned aerial vehicle, there is a strong distinction between a hobbyist's model aircraft and UAVs designed for commercial or military use. "Modelers everywhere are outraged by the literal highjacking of model aircraft for such a nefarious purpose," said Rich Hanson, AMA's Government Relations and Regulatory Affairs representative and former Vietnam helicopter pilot. "Our 143,000 members follow a strict safety code, always fly within site, and remain clear of frangible property or people. When we hear this sort of item and activity labeled as a 'model' we are concerned that our recreational and educational hobby is being misrepresented."

To date, the FBI has not released photos of the actual RC airplanes, only photos such as below of models that are "similar." "The public will see these photos and think 'model" when it is the internal configuration, capabilities, and use of the plane that defines it," continued Hanson.

This subversive plot has also been condemned by the National Aeronautic Association. "The Academy of Model Aeronautics and its 143,000 members are the embodiment of education, professionalism, hobby pursuit, and friendly competition in the United States," said Jonathan Gaffney, president and CEO. "While this individual has never been associated with the AMA or modeling, we have the utmost confidence in AMA to work with the authorities in any way possible to assist in this investigation."

The Academy of Model Aeronautics is celebrating its 75th year in 2011. For generations it has posted what is arguably the safest record in all of aeronautics while providing a hobby and sport which has been the incubator of numerous luminaries in aviation and aerospace.

SVF MEMBERS PAGE

Photos by SVF Members

Altitude and Model Flight Procedures

The Sun Valley Fliers Club Field is located in Class "D" Airspace. This puts our flying area under the control of the Deer Valley Airport Tower. Recently our field has experienced some unfortunate incidents involving full-scale aircraft. Because of these your SVF Board of Directors has decided to comply with FAA Advisory Circular 91-57, which basically states that you will not fly a model aircraft higher than approximately 400 feet above the surface. Therefore, we have instituted the following new safety rules for flying at our field:

400 Foot Elevation Procedures

All SVF members and guests will not fly a model aircraft higher than approximately 400 feet above the surface.

All SVF members and guests are required to fly with a Spotter. The exception will be Park Flyer Models and Helicopters.

Occasionally a full size aircraft will fly overhead. As a safety precaution, we will always exercise the **"SEE & AVOID"** rule. This means to lower the altitude of your aircraft below the 400' limit safely and immediately. Your Caller and/or Spotter should always be on the alert for approaching aircraft

Occasionally a model's maneuver or aerobatic flight may require a higher altitude than the limit of 400 feet specifies. In this instance, complete the maneuver and bring aircraft back down to the normal flight levels. This procedure is superseded by the approach of any full size aircraft.

Spotter Rule Enforcement

It is very important that a spotter informs the pilot of a model aircraft about any full scale aircraft that can see us. It doesn't matter if it is flying over our field or adjacent. We have to stay down if a full scale aircraft is anywhere near us. The full scale aircraft has no idea where the RC plane is going.

To avoid a nonchalant attitude to this new rule, enforcement will be required.

The first infraction of the new spotter rule would result in an immediate one day suspension of flying privileges. A second infraction would result in a 30 day suspension (reviewed by the board) and a third offense would be loss of membership (reviewed by the board).

We will require all members to sign this letter stating that you read and agree to these new rules. Once signed and returned to a board member, you will receive a new gate key. We will remove the combination lock from the gate in favor of a key lock system.

I agree to abide by the above in addition to all the rules and regulations of the Sun Valley Fliers.

Signature_____ Date_____

Printed Name_____ AMA#_____

TO GET A KEY PLEASE PRINT OUT FORM, SIGN IT AND A KEY WILL BE GIVEN TO YOU IN PERSON

SVF PILOTS HALL OF PLANES

Ken Justice **1/3 scale Balsa USA Sopwith Pup Balsa USA Kit, Zenoah G-62 Gas Engine, 110" W.S., 34#, Futaba/Hitec**

My Nephew Scott Lee, visiting from Orlando and a veteran Pup RC pilot and WWI Aviation History Buff, flew the maiden flight on Monday. The one photo also has my Brother-in-law Cleve Lee in it as well, as he was visiting and helping out also.

Scale Plans Building for the Novice: Part 2

Jerry Bates

Tools Required for Cutting it Yourself

If you choose to cut out the parts yourself there are a few tools and techniques that will make the experience a more agreeable task. All of these tools mentioned have value outside of this hobby because they can be used for other projects around the house too. The primary power tools needed are:

A ¼-inch electric drill with drill bits from 1/16-inch diameter to ¼ inch. $25+
A small electric scroll saw and selection of blades. $80 to $200
A combination disc and belt sander. $80 to $150
A handheld rotary tool. $40+

Power Tools

First thing to do after buying a power tool is to read all the literature provided before setting it up and turning it on. It is much better to be bored with the details than to take a trip to the emergency room. Safety first—fun later!

Most of us already have an electric drill so we won't take any time with that item.

The electric scroll saw is one of the hobby's most valuable tools and is a "must have" for any level above ARF's. There are several quality scroll saws on the market. Perhaps the most noteworthy are the Dremel products. Check out the Lowe's or Home Depot stores for this and other manufacturers. You will be using the scroll saw to cut out all your major parts like ribs and formers. Look for a saw with a minimum 12-inch distance from the back of the blade to the neck; more is better. Some scroll saws include a small circular sander attached to the side. These sanders are good for small parts but are not quite large enough for items like ribs and large formers.

The combination belt and disc sander will be used to smooth out the parts you cut with the scroll saw. The same stores mentioned above will be your first stop for shopping this tool. Look for a tool with a 4-inch-wide belt and a 6-inch-diameter disc. We will get into its use a little later.

Another handy tool is the handheld rotary tool. They are available with myriad attachments and bits. My two favorites are the carbide ball-and-drum sanders and the large-diameter fiber-reinforced, cut-off wheels produced by Robart and available from Tower Hobbies. The carbide sanders are great for hollowing out balsa blocks and trimming the insides of the fuselage formers to reduce weight of the model. The cut-off wheel is great for cutting music wire and trimming hard to reach parts. You will find so many other uses for it you won't know how you did without it. My two favorite brands are Dremel and Ryobi. Check the previously mentioned stores for pricing and availability.

After you have been building from plans for a while you will want to acquire a band saw. A 9-inch tabletop, two-wheel unit will be just fine for our type of work. Don't bother with a discount priced three-wheel unit. The wheels of a three-wheel unit are too small and exert too much force on the thin blades. They have a habit of breaking very easily and always in the middle of a cut. You will be using the band saw for your outside cuts and the scroll saw for your inside cuts. Check the previously mentioned stores and Sears for several good band saws in the $100-price range.

Hand Tools

There are several hand tools that you will need when cutting out and constructing your model. The most common among these is the "hobby knife" or X-Acto knife. You will need what is called a #1 handle and #11 blades. Tower Hobbies has a great selection from the basic knife to a three-knife set to fit the full range of available blades. Remember: like all knives, never cut toward yourself. If you are cutting against a straightedge, use a metal straightedge and keep your fingers well away from the cutting edge. Another important tip when using the hobby knife is to replace the blades often. Pressing down with a dull blade and dragging it through the wood is an open invitation to disaster.

Okay, a couple of other safety tips: if you drop the knife, back away from the table quickly. Never try to catch it. These knives have an uncanny way of hiding under things on the worktable and rolling off the table to stick in your foot. To alleviate the problem I put a pencil eraser cap on the end of the knife.

Other important items are sanding blocks and sanding paper. You can make your sanding blocks from various sizes of 1-inch x 3-inch and 2- x 4-inch wood and cover them with sanding papers cut to suit. A better method is to have an assortment of the aluminum sanding bars available from Tower Hobbies. They also sell sticky-back sanding papers to fit.

A couple of metal straightedges for cutting straight lines with your hobby knife will be a big aide as well. I

like to have a 12-inch and 18-inch long one available. Most office supply stores sell cork-backed stainless steel rulers that are perfect for this use. Again, keep your fingertips back from the cutting edge when in use.

A builder just cannot have enough clamps to hold things together. There are numerous kinds and sizes of clamps available in hardware stores. You may wish to purchase these at a later date, but for now let me suggest some more economical solutions. You will find that wooden clothes pins can be used for areas of model construction. Also, a collection of various sizes of rubber bands will be useful.

Another item you can't have too many of is pins. Regular straight pins will work fine but "T" pins sold by hobby suppliers have the advantages of being easier to push in place and remove after use. A box of each of the three sizes offered by Hobbico and available from Tower Hobbies should do the job.

Workbench

You will need a work area to build your model. Most important will be a table or bench where you can leave your project laid out during construction. This can be anything from a custom-built workbench to a folding table. Your work surface must be smooth, flat, and warp free or you will build these misalignments into your model.

A simple workbench can be made from a 36-inch wide, flush face, solid core, wood door. You can support it with sawhorses or a frame and legs fabricated from 2 x 4s. Give the surface several coats of polyurethane paint to make clean-ups easier. You will need to prepare the surface so you can pin to it. I found a sheet of ½-inch by 4-foot by 8-foot sound deadening-board (Hushboard by Georgia-Pacific) at the local building supply store that has worked great. Cut it to the size of your worktable and hold it in place with small finishing nails on about 12-inch centers around the perimeter. I painted the surface of mine with a couple of coats of white exterior latex house paint.

Laying Out the Plans

Lay your plans on the work surface and hold them in place with thumbtacks at the corners. You should cover your plans with something transparent that glue will not stick to. The old method was to use waxed paper. Unfortunately, the new waxed papers are no longer very resistant to the glues we use. A better material is the clear plastic paint drop cloths available at hardware stores.

Adhesives and Solvents

There are literally hundreds of various adhesives on the market. It can be very confusing trying to find the right product for use in modeling. We require adhesives that are both strong and light. Most adhesives for household use are not appropriate for model construction. To be on the safe side it is best to purchase them from a hobby shop or hobby supply house. Even at that, there are still many choices to make. To avoid some of the confusion, we will use just three types of adhesives, and only one kind of each for this article. Once you become familiar with the benefits and drawbacks of the available alternatives you can use your judgment in selecting your favorites. The adhesives mentioned below are available from Tower Hobbies.

Selected Adhesives and Solvent:

Epoxy: We will be using a two-part epoxy adhesive for those areas that require a very structurally sound joining of parts like the firewall. We will use what is called 30-minute epoxy. It will provide sufficient working time to allow the parts to be aligned and clamped in place before setup. Choice: Pacer Z-Poxy, 30-Minute 8 oz.

Cyanoacrylate: Generically called "super glue" or "CA" glue, this will be our primary construction adhesive. CA is available in several viscosities but we will be using what is termed as "medium" or gap-filling CA. Choice: Pacer Zap-A-Gap CA+ 2 oz.

Aliphatic Resin: This glue is generically known as "white glue" but the glues provided by the hobby supplier have additional characteristics for greater strength and are lighter and easy to sand. We will be using this adhesive for joining sheets of balsa and planking to the airframe. Choice: Great Planes Pro Wood Glue 4 oz.

Spray adhesive: You will be using this product to attach portions of you plans to the wood and pieces of wood together temporarily to cut out the parts for you model. My favorite is 3M 75 Repositionable Adhesive.

Solvent: A general solvent for use in cleanup of epoxy, CA, and the spray adhesive is acetone. It is available from Lowe's or Home Depot. Aliphatic resin can be cleaned up with a damp cloth before it dries.

Safety

Safety precautions should be taken when using any of the previously mentioned products. If you experience a physical reaction to any of them you should discontinue there use immediately. If you have a reaction from using CA or epoxies you can substitute aliphatic resin glues. For areas requiring a stronger joint I would use

high-strength aliphatic resin glue. Just be sure to clamp the parts together like in the firewall areas to ensure a secure joint. I would suggest using Titebond III Ultimate Wood Glue in these areas.

Fillers and Primer

Materials for filling voids and making fillets for you model are available in several types and used for various applications. Some of these fillers have structural characteristics and others are used to provide a smooth surface in preparation for priming and painting the model.

Hangar Rash

During construction your model will receive “hangar rash.” That is a term used to describe the dents and dings the airframe receives in the shop (hangar). Simply dampening the dent with water and applying heat to the dent with an iron can remove most hangar rash. Set the iron on high or “cotton.” The steam produce by the application of the iron will raise the wood fibers and remove most dents.

Follow up by sanding the repair lightly with a sanding block to bring it level with the surrounding area. If the wood fibers in the dented area have been broken (these are called “gouges”) you will not be able to completely remove the dent with this process and it will need to be filled and sanded.

Gouges

To repair gouges and voids in the airframe I recommend a lightweight filler-putty like Hobbico HobbyLite Balsa Colored Filler available from Tower Hobbies. The same product may be used to fill voids in strip-planked areas also. The product is also good for making small fillets like where the fin and stabilizer meet with the fuselage. Use this, or a similar product, for all general repair work on the airframe prior to priming and painting.

Structural Fillers

Structural fillers are used in areas to fill voids and produce fillets to increase strength of a joint. Some of the areas can be around the firewall or in the areas for retract installation.

A mixture of epoxy and a special filler compound may be used. I recommend Great Planes Milled Fiberglass or Prather Micro Balloons mixed with 30-minute epoxy for this application.

General Fillers

A great filler for things such a wing fillets and large fillets for the fin and stabilizer is lightweight automotive body putty. Stay away from the products sold in hardware stores. These are normally general-purpose fillers and are very heavy and hard to sand. The best product I have found is Evercoat Rage Gold. It is very light and sands almost as easily as balsa. Check with an automotive paint store for availability. Use this product on your model after you have glassed it and before the first application of primer.

Base Primer

I like to use acrylic lacquer primer on my models. It is light and sands very easily. My favorite is DuPont 30S gray primer available from automotive paint stores. This primer is compatible with the widest range of finishes for your model including, dope, lacquer, urethane, enamel, and epoxy. Do not use the spray can primers found in hardware stores and do not use enamel-based primers. I use a compressor and spray gun for application. Most automobile paint stores have the acrylic lacquer primer in spray cans.

Spot Putty

After you have primed and sanded you model for the first time you will inevitably find some low spots. If you have primed with automotive acrylic lacquer primer, you can use lacquer-based non-shrinking spot repair putty for these areas. They are also available from automotive paint stores.

Cutting Out Your Model

There are a lot of sophisticated methods used by professionals to cut out these parts. Some shops make templates of the parts for reuse so they can make parts in the future. Some of the methods used include handheld and CNC routers, special equipment for cutting notches and other repetitive cuts, and laser cutting. We are going to discuss basic methods for use in the home workshop.

This is going to sound like a lot of work but actually it is not. It just takes a lot of words to describe the processes involved. These processes will become more like a fluid motion after you get the hang of them.

Procedures

The first to do is cut out the parts from the plans with a pair of scissors. If you do not wish to cut out your plans then have a Zerox copy made of these parts. Stay about 1/8 inch outside of the part outline when cutting them out. Do not cut out the holes inside the parts or the notches in the parts for stringers, etc. Use a felt tip pen to make certain the part numbers are on the paper parts. Place all the paper parts in a container like a shoebox so they don’t get misplaced.

Now we will affix the paper patterns to the wood. Let’s start with the balsa wood ribs. We will assume the ribs

are 3/32-inch thick balsa and the wing requires two of each rib. Lay out the patterns on a sheet of 3/32-inch by 3-inch by 36-inch balsa. For large models you may need four-inch wide by 48-inch long balsa to get the parts to fit. You may even need several sheets of balsa for all the ribs. Shuffle the patterns around until you get as many to fit on the wood as you can with little waste. Keep a minimum of a quarter inch between each part. After establishing the layout you can affix the patterns to the wood with the 3M 75 adhesive. Never use 3M 77 adhesive for this process as you may not get the patterns and stacked wood apart. Spray a medium coat of adhesive on the back of the pattern and apply to the wood surface.

Affix another sheet of balsa to the back of the one with the rib patterns. Apply a light coat of 3M 75 adhesive to the face of each sheet of balsa. Wait about 30 seconds, then, stack the balsa sheets, adhesive face to adhesive face, together. Lay the sheets on a smooth, flat surface, and apply medium pressure to them to ensure they are firmly stuck together. Use a piece of 2 x 4 to do this. Do not press too hard or you will distort the soft wood.

If you are doing a straight-wing model like a Cub where you will need multiple ribs of the same size, you can cut the balsa sheet to the required length and stack them for multiple cutting. Do not cut more than six ribs at one time. Make several copies of the pattern and cut several stacks of ribs. The reason for doing this is because of the equipment we are using. The scroll saw blade is very small and flexible. As the stack of wood gets get taller, it will become more difficult to cut a stack where all ribs are the same size.

Cut the individual parts out of the sheet. You may need to separate the parts into smaller groups or individual ribs that will fit the size of your scroll saw. Use your X-Acto knife for this. Drill a ¼-inch diameter hole through the part in the center of the area(s) that need to be removed like lightening holes, etc. Drill slowly with a sharp bit to avoid making a mess of the part. Place a piece of pine wood beneath the part and press the part firmly against the wood when drilling. A brad point bit is best for this job. Clean up the areas around the holes after drilling to maintain a smooth surface where the part is to be placed on the scroll saw table.

Next job is to cut out the areas to be removed inside of the individual parts. Remove the upper end of the scroll saw blade and slip the part over the blade, through the drilled hole, pattern side up. Reconnect the blade and you are ready to cut out that area. Cut slowly from the hole toward the line on the pattern then follow the line all the way around. You may need to cut the area out in sections to avoid interference with the scroll saw neck. Remove the part and cut out the remaining internal areas in a similar manner.

Next we will cut around the external part lines. You do not need to stay very close to the outline. I like to stay from 1/32 inch to 1/16 inch toward the outside of the outline. Don't cut out the notches in the parts yet either.

Now we have all the ribs cut out. Next job is to sand them to shape. We will use the 6-inch disc sander for this. Make sure the sanding table and the disc sander are 90° to one another. Place the stacked ribs on the sanding table and slowly sand them to the edge of the lines on the pattern. This makes for a much smoother part than can be cut on the scroll saw.

Next we go back to the scroll saw and cut out the notches in the perimeter of the rib pattern outline. Carefully make plunge cuts on each side of the notch. You can remove the remaining wood in the notch by making a few plunge cuts between the first two and using the scroll saw blade like a sander by moving the part back and forth until you have cleaned it up to the bottom of the notch. Check the cut out notch for fit with the intended size spar or stinger.

Peel the pattern off the part, and separate the parts. Mark the parts with the numbers shown on the plans and place them in a box to keep them all together.

Fuselage formers are cut out using the same method used for the ribs. Cutting the plywood parts will require use of a blade designed for plywood and hardwood. Try to cut close to the outline of the aircraft ply or birch ply parts to keep the amount of sanding needed to bring the part to finished outline to a minimum. A small square or draftsman angle template can be used to check parts like the firewall for accurate 90° corners.

Conclusion

Your level of skills will increase rapidly during this process of cutting out the parts. You will develop methods and shortcuts to make this work faster and easier. You will become familiar with the use of the tools, there advantages and draw backs for accomplishing certain tasks, and how additional tools can help in making the tasks easier.

You now have the hard work out of the way so we will move on the lighter subjects.

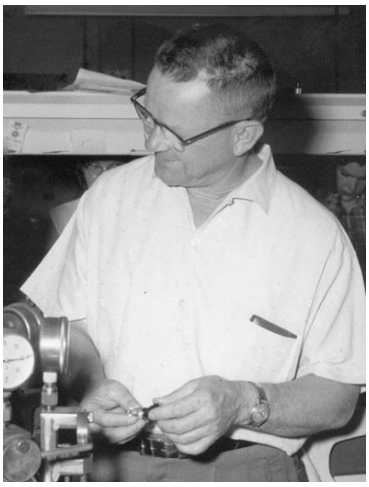
Stay tuned for "Part 3: Building Your Model"

SVF MEMBERS PAGE

Photos by SVF Members

SVF MEMBERS PAGE

Photos by SVF Members



Leroy Cox

1906——December 1981

Leroy Cox developed an early interest in mechanical devices while working around his father's bicycle shop in Placentia, CA. Once out of school he spent 20 years as an electrician, running his own electrical business part time. Efforts to branch out into a photography equipment business were unsuccessful due to shortages of materials caused by World War II.

In 1944, he came up with a superior design for a wooden popgun and produced it on a small budget it his garage with the help of neighborhood women as his workforce on an initial investment of $2200. Like some of his later products, its success was based on the fact that it was better built than the existing competition. Sales took off rapidly and the product was a success; however, the renewed availability of metal for toys at the end of the war meant that wooden toys were soon to be a thing of the past. Cox recognized this and along with a friend, Mark Mier came up with a design for a metal model racecar to take advantage of post-war America's fascination with cars. By August 6, 1946 he and a crew of 20 people were turning out 1500 unpowered model cars a day.

A fire that totally destroyed the factory on August 7th brought an end to production after 4 months. The destruction was almost total and there was no insurance, but they still had orders on hand, so he did some fast talking and bought a nearby vacant lot. A military-type Quonset hut was set up in 4 days, and by October 15th he was back in business filling orders for Christmas. He even managed to double his production capacity with the emergency change.

He introduced the Cox Thimble Drome *Champion* racecar in 1947. This model was not a pull toy but included a handle and cord that attached to the side so it could be swung around in circles at high speeds. The 9-1/2" long metal car had rubber tires and an attractive paint job, adding to its success. The $4.95 car ushered in the start of the popular fad of tether car racing and the "Thimble Drome" name was soon to be applied to future products as well.

Cox noticed that customers, fascinated with the realism of the Champion racecar were installing engines from model aircraft in it. He contracted with Cameron Brothers model engine company for a .25 cubic inch engine that could be installed in the Champion using a direct drive. The confined cockpit area dictated vertical cooling fins rather than horizontal as was the convention. A later engine called the "Doodle-Bug" was similar but smaller with a displacement of .099 cubic inches, and a larger .19 engine was also developed. By 1948 he was ready to introduce a ground-breaking engine powered racecar. It was the first under $100—WAY under $100—at only $19.95. Sales that year were over $500,000 for cars with and without engines. He also developed and sold his own brand of Thimble Drome racing fuel.

In 1949 the company added a smaller car called the *Special*. The .045 cubic inch engine was made up from a piston, rod, cylinder and head from the Mel Anderson Company but produced in his own factory so he could better control the quality of production. Other engine manufacturers at the time were experiencing quality problems because often they could not afford produce all the parts themselves. They would source out production of certain parts to others and then do the final fitting and assembly themselves. Cox recognized that in order to get high production quality and consistency he wanted, he would have to control all production himself and even designed the manufacturing equipment needed to do so. Eventually the entire racecar and engine were made within his own facility, although he later outsourced production of plastic parts for some products.

1949 saw a rapid decline in the popularity of tether cars, but engines were still in demand in the rapidly increasing model airplane market. Cox spent the next year working on an engine that would overcome some of the problems (hard starting, lack of dependability) that plagued existing engines. He felt a better running, easy to start, high quality engine would bring many more people into the model car and airplane hobbies and came up with an .049 cubic inch glow engine called the Thimble Drome "Space Bug" that hit the market about October, 1950.

CONTINUE

This engine featured a glow head with built-in coil of Cox's own design, but the main advance was the steel piston and cylinder that were machined to very close tolerances for the time. The compact crankcase was cast aluminum and attached to a large cast aluminum gas tank which was mounted to the firewall with four screws. Inside the tank was a reed valve fuel induction system. The Space Bug sold for $6.95. With the heavy tank removed it was called the "Thermal Hopper" and also sold for $6.95. The "Space Bug Junior" featured a plastic tank and sold for $3.95. An engine review in *Model Airplane News* magazine in 1953 sparked a new wave of enthusiasts.

Cox offered their first complete airplane in 1953. The Thimble Drome TD-1 was a U-control model weighing 10 ounces and had an aluminum wing that was 24-1/2" long. The plastic body was 18" long, and it sold for $19.95 ready to fly including an accessory kit with a Skyon control reel, battery wires, connecting clip, control lines, filler hose and finger guard.

By the time the engine was winning almost all the ½-A flying contests and a new factory was built in Santa Ana, CA where 250 people were employed. In 1955 they introduced the second generation .049 engine which was called the *Babe Bee*. The engine now featured a spun aluminum tank in place of the cast tank and a signature black glow head and cylinder. The engine initially sold for $3.98, but you could also buy it mounted in several different plastic U-control plane. It had a spring starter making it easy for even a novice to start properly.

Cox later introduced the *Pee Wee*, which was an exact scaled down copy of the *Babe Bee* displacing .020 cubic inches. Interestingly, despite the smaller size it put out almost as much power as the larger engine. It was billed as "The World's Smallest Model Engine" and sold for $3.98. These two engines were to remain in continuous production for well over 50 years, a remarkable achievement in itself.

For 1961, Cox took the line of reed valve sport engines and expanded it to include contest or high performance engines. They had engine designer Bill Atwood come up with a front rotary valve induction system to increase RPM and came up with what was called the *Space Hopper**. The new method was applied to four engines for 1961 release: the .010, .020, .049 and .15 cubic inch models.

*Bob Beecroft notes, "The front rotary induction engines were the *Tee Dee* series I think is what is meat here."

The .010 had no fuel tank so it could be used with light, thin-wall brass tanks. It could turn up to 30,000 RPM and sold for $7.98. (It was sometimes offered with a brass tie clip in case the user wanted to wear it to work instead of use it to power an airplane—a testament to its tiny size.) The .020 sold for $6.98, the .049 for $7.98 and the .15 for $12.98. These engines have sold in huge numbers and brought the company a lot of financial success.

The slot car fad did not go unnoticed by Roy Cox, and in 1962 they established Cox International in Hong Kong to meet this demand. However, the sudden collapse of the slot car fad in 1967 left the company with a cash flow problem. At this same time Roy's wife died and he experienced health problems, so he sold the company in 1969 to Leisure Dynamics, Inc. who continued production of the engines until the company was purchased again by Estes/Centuri in 1996. The company celebrated its 60th anniversary in 2005.

Leroy Cox died in December, 1981. His company over the years produced so many engines (sometimes over 1 million a year) that it is said their total output exceeded that of all model engine manufacturers in the world put together. That is quite a remarkable achievement, and many modelers today got their start with his products.

Marketing successes

Early Disneyland visitors in late 1950's may remember the flying circle near Tomorrowland where young pilots gave demonstrations of U-control aircraft hourly, doing some fancy flying and teaching others how to fly. Cox managed quite an advertising coup when he got his aircraft and employees chosen for these demos, seen by hundreds of thousands of visitors to the popular amusement park. The "Flight Circle" had previously been manned by flying club members initially and then by the Wen-Mac company, but Cox's reputation as a more reliable manufacturer got them the into this premium space starting in the summer of 1958 until it closed in 1965. The young flyers would sometimes fly two or three aircraft at a time or bring people from the crowd in to try their hand at flying Cox aircraft. Tether cars ran in circles and powered boats also ran in a pond. For more on the Flight Circle at Disneyland CLICK HERE.

continue

Cox employees gave hourly flight demonstrations in the Flight Circle in Disneyland's Tomorrowland from 1958 to 1965. The second photo shows Lee Heinly, one of the Cox pilots, at the display after the last show in 1965. Behind him is the model boat pond. (Click on a photo to view a larger image.) Photos courtesy of daveland-web.com. Second photo thanks to the CoxPilot, Lee Heinly.

Roy was also well attuned to what the public wanted, and was always ready with the right product at the right time in history. However, the basis of his success in each product he offered was quality. His engines were successful because he insisted on standards of production excellence not previously achieved by other manufacturers, despite the large numbers of engines he produced. He developed his own manufacturing and testing equipment to achieve this level of excellence. It is claimed that piston/cylinder tolerances of over 25 millionths of an inch (0.0000025") would result in rejection.

Roy Cox was also one of the first hobby manufacturers to exhibit at the Nurenberg Toy Fair and the first American company to have a booth there. This gave his company world-wide exposure and resulted in exporting his engines to over 50 countries.

More sources of information on Cox products and history

For a more complete discussion of the development and specifications of various Cox engines see http://en.wikipedia.org/wiki/Cox_hobbies. This site includes diagrams of how the engines work and photos of the various glow heads.

Additional information from the Cox museum can be found at http://www.mh-aerotools.de/airfoils/cox_frameset.htm. This site from Germany has quite a collection of Cox specs and details and is probably the most complete source on Cox products and history available.

An article about Leroy Cox including a photo of him from *Mechanix Illutrated*, November, 1958 can be found at http://www.mh-aerotools.de/airfoils/documents/cox_model_man_mi_november%201958.pdf.

The famous Cox Tee Dee .049 and .051

The Rare Cox RR1

A Cox Tee Dee .05 RC

Cox Black Widow

Cox Thimble Drome Thermal Hopper

Cox Venom with Galbreath/Nelson Head

Cox Babe Bee (left) Golden Bee (right)

Cox Medallion .051

Cox Conquest 15 Free Flight/Control Line Engine

Cox .049 Surestart R/C throttle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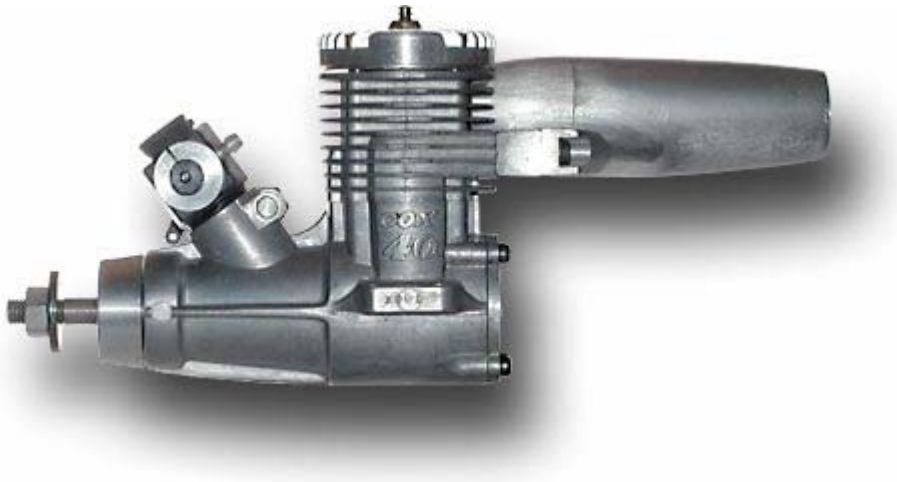
COX
40

FINISH

District X ramps up its online presence

District X Vice President Lawrence Tougas invites all AMA members to visit its revamped website. "Our website keeps members informed about district events," says Lawrence. " I also use it as an expansion of the monthly *Model Aviation* column. The website is a natural place for additional information. Think of it as super-sizing the District column." He also urges members to visit the website's blog, including expanded August and September columns, information about the upcoming Helicopter Scale Masters, a great idea to add membership to your club, and to find out about a wonderful woman who is doing a lot to promote modeling to youth. Click on the link below. The blog is at the top of the page.

http://www.ama10.org/dx2/Site_Name/Welcome.html

FOAMIE COMBAT

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FROM THE PITS

With D. Pits

D., I read some were in one of your columns it was mention that the wire spools are an eye sore and should be destroy. WELL I have to agree because they are still there. With the OEAF event coming up that will bring flyers from all over it would be nice to clean/trash them away and have our field looking good again. Are the Wisk brooms that are laying in the dirt any good or can we the members throw those away. How about those Disc that lay around. Water bottles are starting to show up on the field empty or with some water in them. I wanted to mention this and would like to help in any way. L.T.

Hi L.T., I wish you had mention on how long you been a SVF member. You mention to *have our field looking good again.* **At some time in the SVF club we had clean up days and normally we had a good showing of members to help. That was maybe 2-3 times a year. That would really be great to have the members donate 1 day out of the year to help. *BUT* a lot of times we pick the wrong days for clean ups or members feel their dues will pay to hire a landscaping outfit. Yes, that would be great but to have the painting, landscaping, runway repairs, etc. would involved many different companies. Many times the club has went out side the membership to have work done. Maybe, just maybe the Board will come out to ask for our help before the OEAF event. *WILL YOU HELP? I WILL!***

***Hey L.T. kidding aside is that L**ove **T**rash**?**

Remember the SVF Meeting for October is OCTOBER 12, 2011

VIDEOS and Websites Links

Click on to view video, website

Air Museum GREAT!!! Have to see this!
http://www.nmusafvirtualtour.com/full/tour-pkg.html

Space Shuttle Discovery 360VR
http://360vr.com/2011/06/22-discovery-flight-deck-opf_6236/index.html
AT6 ACCIDENT 1:22
http://www.youtube.com/watch?v=_xeMRRvyA9Q
CF18 15:00
http://www.youtube.com/watch?v=B0yQlO6ZaUE&feature=player_embedded
Making RC TURBINES 5:04
http://www.youtube.com/watch?v=I3jE-PXV-68
Sonic Liner 4:24
http://www.youtube.com/watch?v=zSw61RMZqYA
Bumblebee 1 6:33
http://www.youtube.com/watch?v=yH32NHRYG60
Russian afterburner 1:39
http://www.youtube.com/watch?v=pS6LCDmvM5U&feature=player_embedded#!
SVF Friday group 17:09
http://www.youtube.com/user/BFTomorrow
Model Airport 2:54
http://www.youtube.com/watch?v=4_06qrFnvnw&feature=player_embedded#!
Spitfire & P-51 Flying 3:47
http://www.ferociousfrankie.com/video1.html
Grinding The Crack 3:30
http://www.youtube.com/watch?v=TWfph3iNC-k&feature=player_embedded
RC JWM Model YAK-130 10:32
http://www.youtube.com/watch?v=IzJablEAGW8&feature=related
AMA Dist. 10 Website
http://ama10.org/dx2/Site_Name/Welcome.html
H1 Racer in flight! 4:20
http://www.youtube.com/watch?v=Utj_tG0Mbv4&feature=player_embedded

SVF Website Buy & Sell items. NEW ITEMS
http://sunvalleyfliers.com/classifieds/classifieds.htm

My thanks to those who passed this info on.

History on Model Aviation

We came across an interesting article on ***LeRoy COX.*** In future Slow Rolls we'll bring out names in the industry you may heard of or mention around the field, yet to young to know about them. We welcome any articles that are related to history of model aviation.

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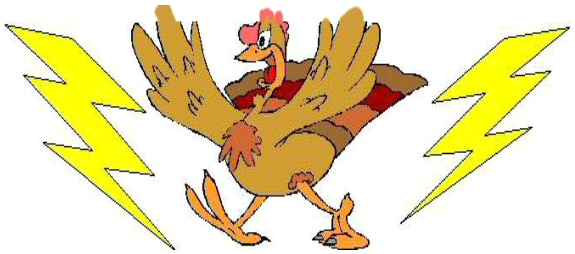
S V F  S V F

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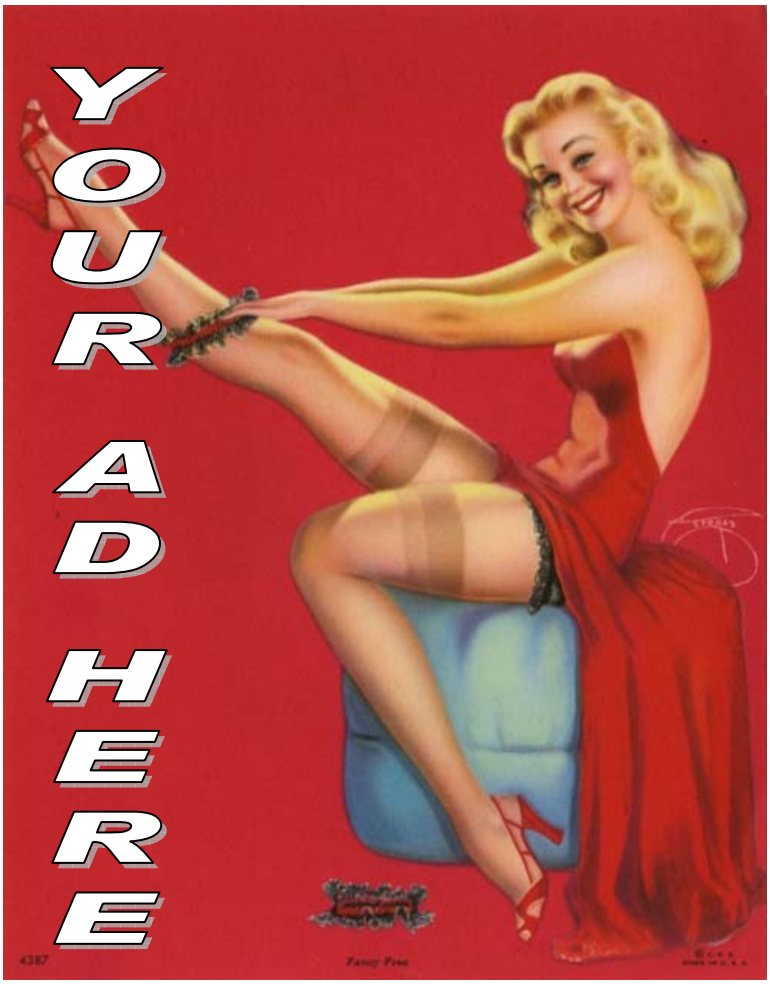


Please help in keeping your field clean.

Please trash partial/ empty water bottles, etc.

Next month Issue

Will be the November Slow Roll and we hope to have a lot of photos from the OEAF event. Will you be there??

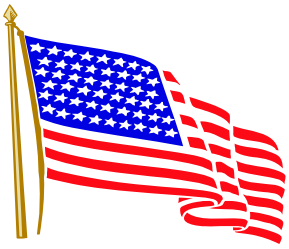
Would you like to be notified when the SLOW ROLL new issue is available? Give Gene your e-mail address.
AZ49ER@COX.NET

Hope you will enjoy it. Bob *rcbobsvf@aol.com*

This Month Issue

The OEAF event this month. NOV. is the SVF TURKEY ELECRTIC fly in.

Some good VIDEOS to watch. *GOOD stuff in this issue, MORE photos so enjoy!* Send those articles and photos in and for the SVF HALL of PLANES.! *Remember to **ZOOM** the **PDF** page to see more.*



THE SLOW ROLL

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