

Page 18
Eric P's Stinson SR-9 Project Page 14
USAAC Colors \& Markings


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## INSIIDE THIS ISSUUE

03 Commander's View<br>04 Leading Edge<br>05 Safety Notes<br>06 May Meeting Notes<br>09 May Meeting Announcement<br>10 A Day at the Field<br>12 Warbirds \& Classics 2023<br>131978 B-17 Air Races<br>14 USAAC Colors \& Markings<br>18 Eric P's Stinson SR-9 Project<br>22 Documentation: Airco DH. 5<br>26 Upcoming Events<br>30 Who We Are<br>\section*{31 Join Us!}<br>\section*{32 Membership Application}

## On the Cover

1. Moe Lwin's beautiful General Atomics MQ-9 Reaper just touching down.
2. Sung Oh and his North American P-51D Mustang at the top of a victory roll.
3. There's no mistaking Brian Young's


Lavochkin La-7 as it races by in a high speed pass.

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#### Abstract

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## COMMANIDBR'S VIBIV



## Mike Greenshields

 Commander
## It's the Final Countdown!

Warbirds \& Classics 2023 is just a few weeks away and I hope you're getting ready!

For the event itself, there's a bit of last-minute work. The main one is field prep work and setup. Randy Wilbur and Tim Cardin will let us know what needs to be done, but I'm guessing there's not too much. The field is overall looking pretty darn good!

Randy and Joni Whitsitt are really doing the heavy lifting on prep work, entry packets, food prep, etc. But the "things" we need are almost done: Pilot numbers, event t-Shirts, event stickers, awards, etc. are all done or almost done. We've got tons of great and interesting prizes (and a few surprises) for the raffle thanks to so many of our good members and industry friends!

So... what's left? Joni will tell us all about it at the Squadron meeting Monday night but the usual army of volunteers is needed on the days of the event. So I hope you've left some time open that weekend to help out.

And, of course, we hope you enter and fly in our event!!! Have that plane ready, and let me know you're flying so that we can make sure you get time to fly! Also, don't worry if you did not get a
reserved pit area. There will be a fair amount of first come, first served pit areas if you don't have anyone to share with.

Go get a plane, get preregistered on the website, get your banquet tickets and at-shirt too... and let's have some fun!

Thank you all in advance for all the hard work that's coming. With that said, we're in great shape and it's going to be one of the easiest events we've ever hosted.

## W\&C Builders' Wing

If you signed on for the W\&C Builders' Wing, I hope you've been making great progress on your project.
The last time we reviewed the entire list of Builders' Wing participants, it looked like this:

- Mike Greenshields - Piper PA-28 Cherokee \& Partenavia P. 68 (maybe)
- Steven Penn - Biplane Project
- Tim Cardin - Composite ARF P-47 Thunderbolt
- Larry Wolfe - Apache or Panther
- Eric Puchalski - Stinson SR-9 Reliant
- Gordy Truax - Hellcat
- Ed McCormick - RAF S.E.5a
- Jaime Colley - Fokker D.VIII
- Steven Penn - Sopwith Pup
- Joe Trama - TBM Avenger or Bates Bearcat
- Wayne Spani - Aeronca L5, Schneider DFS 10814 SG-38 Schulgleiter, or Buhl LA-1 Bull Pup
- Rob Hahn - Grumman F-11 Tiger micro glow EDF

I hope you'll provide an update on your project at the next Squadron meeting on Monday 06/12/2023.

$\cdot$


Mike Greenshields, Commander
Commander@ScaleSquadron.com

## IBADING BIDEE

Welcome to Summer-so they say! Summer officially begins on the longest day of the year (the summer solstice) which falls on June 21 this year. However, with the record-breaking winter we had, followed by a month of SoCal May Gray, and now June Gloom, it's a little hard to believe summer is here.

But the weather at OCMA Field has been pretty good and there have still been a lot of great flying days. Regardless of where you fly, I hope you've been able to get out and enjoy a few days.
Personally, l've been up to my elbows in my Stinson SR-9 Reliant project and haven't been out to the field much or off on any field trips. I assume that'll change after July when Warbirds \& Classics 2023 is over.

## Warbirds \& Classics 2023

We're in the final countdown for Warbirds \& Classics 2023. The event will be held the weekend of Friday, June 7 through Sunday, June 9 at OCMA Field. Joni Whitsitt and Randy Wilbur will be contacting everyone to round up volunteers. Contact either of them if you want to jump in and help out. Just a reminder that this is the Scale Squadron's flagship event so anything you can do to help make it come off without a hitch would be welcome. (See Page 12 for more details.)

## Military Markings

I'm not a big fan of filling space in the newsletter with copies of articles from other magazines but I'm making an exception this month. Since we're on the cusp of Warbirds \& Classics 2023 I
thought it would be a good time to share a terrific resource that l've used for years when laying out markings for my military models. It was originally published in Model Airplane News $(04 / 1998)$ and covers the major markings used by the USAAC up through 1947. It doesn't hit on the victory marks, fine nomenclature, nose art, etc. but it will definitely answer all your questions about national identification markings. Check it out on Page 13.

## Field Safety

OCMA Safety Officer Dave Kadonoff provides a timely reminder about the wildlife we see around the field. Take a look at his column on Page 17 for some tips on how to avoid any potentially unhappy encounters with the non-humans who call the area home.


## Eric Puchalski

## Newsletter Editor

## Documentation

I should tell you that I spend a lot of time researching particulars about any airplane I intend to build as a scale model. Over the years I've accumulated an enormous collection of photos, plans, 3 -views, articles, etc. relating to hundreds of airplanes. With this issue I'm going to take a swing at a new regular feature for the newsletter. I'm calling it simply "Documentation." Its purpose is to make you aware of some airplanes that you don't see every day but might be worth modeling. Don't expect to find enough information to actually build a scale model (although some of you certainly have the talent). The intent is to provide enough information to pique your interest in a possible scale project. l'll be doing this every month and the subjects will often be a bit obscure since, after all, you don't have to look very far to find everything you need to build a P-5 1 Mustang or J-3 Cub.
I'll be interested in feedback on a couple things: First, what do you think of the idea, and second, what aircraft should be documented in future newsletters?
See Page 22 for the first installment on the Airco DH. 5 WWI fighter. Please let me know your thoughts one way or the other.
I'll see you at the field!

roadkill1954@gmail.com

## Of Snakes \& Spiders \& Other Wild Beasties...

Summer is here and the wildlife is out. Well actually the wildlife never left, I'm talking about the non-flying natural wonders that inhabit the foothills and mountains in which we fly! There are certainly cute bunnies, song-singing birds, squirrels, deer, voles, moles, and a variety of fish.

But we have to keep our eyes open and alert to rattlesnakes, mountain lions, (I saw one once several years ago), coyotes, bobcats, and of course black and brown widow spiders in the porta potties. They can hide on or around the pottie and door handles, and we have seen them on the fence by the pilot stations. Do be aware!
But the thing about the rattlesnakes is that planes have no discernible preference for their place of impact. Often, that impact point is in the field beyond the slope, the swampy area, or the forest behind us. Trekking into those areas, (don't forget to let the rangers know you are out there), can be hazardous. We highly advise that you never go out alone to retrieve a plane or parts. Getting bitten by a snake would take a fairly long time to get a response from medical personnel. And other than spiders, all wildlife, including snakes have the right of way. They cannot be harmed in any way. The rangers will relocate a snake to another area when appropriate, but just as we cannot harass birds or any other wildlife, snakes are off limits as well.
Always carefully check the latrine before entering or opening the door handle and walk carefully onto the field scanning in front of you to remain safe and healthy.
Stay alert and stay healthy!

Dave Kadonoff, OCMA Safety Officer kadonoffd@yahoo.com


Coyote: Generally shy \& not dangerous to humans unless you're walking a small dog.


California Tarantula:
Most active during mating season in September \& October but always around. Several species of tarantula live around the field.


Black Widow Spider -
Found in dark, dry places near the ground like porta-potties, under the picnic tables, next to the RR ties, at the base of bushes, etc.


Brown Widow Spider: Similar to black widow but more numerous in SoCal \& not as toxic.


Mountain Lion: Rarely seen but not always shy of humans. Report any sightings.


Turkey Vulture: Not a threat to humans but your airplane may be at risk if you fly through their thermalling area.


Bobcat: Very shy \& not dangerous to humans unless babies are nearby.


## MAY 2028 SOUADRON MBETING

Commander Mike Greenshields brought the meeting to order (well, as much "order" as can be expected from this group) and worked everyone through the regular orders of business. Highlights of the regular meeting included an update on preparations for Warbirds \& Classics 2023. This included the traditional request that anyone who has an hour or two to kill leading up to and including the weekend of July 7, 8 \& 9, should contact Joni Whitsitt or Randy Wilbur (or any Squadron board member) to get on the list of volunteers. There will be a weekend field cleanup day a couple weeks prior to the event and all members will be notified of that.
Then we got to what everyone was really there for... Show \& Tell!

Ed McCormick showed the benchtop airplane stand he recently acquired from R/C Plane
Stands. He's very happy with the stand but, being Ed, he thought it could be improved. Pretty much everything in Ed's workshop is on wheels to allow things to be moved around within the limited space he has available. So he added wheels to the airplane stand as well to make it easier to store in the shop and load in his van. As an added plus, the wheels drop right into the space between the folded down seats and the van floor so no wheel chocks are required.


Dave Kadonoff described how he's been trying to attach a muffler to a an engine so it will a) stay on, and b) not leak greasy exhaust all over his airplane. (The engine is one of the less expensive types that produces a lot of vibration which can be isolated from the fuselage but not the muffler.) He showed how he's using Permatex Right Stuff high-temperature gasket maker to take care of the leaks. To keep the mounting screws in place, he's using Loctite SF 7088 primer and \#272 thread locker which will probably do the job nicely but requires proper precautions to use.


Jaime Colley showed some parts from a de Havilland DH. 89 Dragon Rapide that he had scratch-built sometime around the end of the 1980's. The model has been in storage for a few decades and Jaime decided it's time to revisit it using 21 st century technology.
He's not sure if this is a rehab or a rebuild project. The fuselage and other parts he has from the original are still serviceable but he thinks it might be interesting to see if he can reduce overall weight using modern motors and batteries which produce the same power as those from the 1980's but at half the weight. This, combined with Jaime's knowledge of 3D printing, should allow him to build a lighter airframe with the same overall dimensions.

He still has the original plans he designed and produced on tractor-feed paper using a dot-matrix printer way back in the 20th Century. He'll probably follow the same basic design but will use methods he's improved on during an additional 30+ years of modeling.


Eric Puchalski brought in one of the the wing panels for his Stinson SR-9 Reliant project. After whining a bit about the parts count and challenges with getting everything to line up, he shared some more useful information like how he made a simple jig for the ribs and doublers to make sure everything aligned properly and how he discovered that nylon dental syringes can be used to apply epoxy as well as glue.
He's working on both wing panels in tandem so when one is done, the other will only be about 10 minutes behind. Next steps will be to install leading edges (which will be a bit complicated due to the compound curves) and sheeting (which also have to bend three directions at once). Then it's on to the fuselage.
There is still a lot of work to do and not much time but there's a reasonable chance the model will fly at Warbirds \& Classics this year. (See the full update on his progress on Page 18 of this issue of the newsletter for more details.)


Joe Trama showed his Curtiss P-40 Warhawk that's just about ready to fly. Joe has been working on this model (off and on) for quite a while. He acquired it as a Top Flite "almost ready to cover" (ARC) kit and covered it with $3 / 4$ oz. fiberglass cloth and West System epoxy resin. He was happy to get the ARC version since he wasn't impressed with the ARF camouflage finish that Top Flite offered by default.
The colors are Testors paint; olive drab for the top and aircraft gray for the bottom. Markings and nomenclature are from Callie Graphics. Joe upgraded the landing gear with Robart pneumatic main and tail wheel retracts and is really pleased with how nicely they work.
After adding a Warbird Pilots WWII pilot, a very nice cockpit kit provided by Top Flite (\& a bucket of other details) Joe has produced a terrific model.
(See the May 2023 newsletter for more details on this amazing model.)


Paul Lee brought a couple models but the highlight was the Consolidated B-24 Liberator fuselage and the story that came with it. Paul doesn't normally fly EPF models but in this case he made an exception. It seems his father-in-law served on a B-24 during WWII and when this model came to his attention, Paul picked it up. He then discovered that Callie Graphics offered a markings package for an aircraft nicknamed "The Dragon and His Tail." As it happens, this is the same aircraft his father-in-law served on in WWII! That pretty much sealed the deal. He ordered the marking set from Callie \& the rest is history.
In the real world, "The Dragon and His Tail" was salvaged after WWII and after a couple changes in ownership, is still in operation.
Paul is looking forward to completing the assembly of this model and showing it at Warbirds \& Classics in July.


## NONTHINY MBETING NGIT



We're right on the cusp of Warbirds \& Classics 2023 so expect some up-to-the-minute information about the event and what to expect. Also, be sure to bring along the projects you've been working on for the W\&C Builders' Wing-we'll want to see how far you've come. Keep in mind that visitors are always welcome so don't be shy about bringing someone. And remember that anyone with anything for Show \& Tell will receive a raffle ticket for special prizes to be raffled off at the Squadron Annual Banquet in December.
Meeting location is the Green Valley Adult Clubhouse. The address is:

## 17250 Los Jardines West

Fountain Valley, CA 92708

## Directions from the South:

$\rightarrow$ From I-405 North, exit at Euclid
$\rightarrow$ Turn Left onto Euclid at the offramp
$\rightarrow$ Turn Left onto Slater
$\rightarrow$ Go past Los Jardines East
$\rightarrow$ Turn Right at the light onto Los Jardines West The Clubhouse is on the right about a half block past the school on the left.

## Directions from the North:

$\rightarrow$ From I-405 South, exit at Brookhurst North
$\rightarrow$ Merge onto Brookhurst and turn Right onto Slater
$\rightarrow$ Turn Left onto Los Jardines West The Clubhouse is on the right about a half block past the school on the left.

## A DAY AT THE FIBTAD

Moe Lwin flew his unusual \& nicely done General Atomics MQ-9 Reaper \& wowed the crowd. Moe built the model entirely from plans he downloaded \& printed on his Bambu Lab 3D printer. He completed the model in February \& has been flying it since March. Moe says it's very stable \& flies like a glider with wheels. Landings are a bit of a challenge due to that big prop I the back.


Glen Hackler (of RC Plane Stands fame) brought out his new North American P-51D Mustang from Hangar 9. The model is only about a month old \& this was its first flight. Out of the box the electric retracts didn't work so Glen just locked them in the extended position. The first flight was a little wild but everything ended well. Glen will do a little trimming \& adjusting before trying again.


## A Day at the Field

This Republic P-47 Thunderbolt belongs to Gary Hamilton who flies it with authority. It started as a Top Flite ARF but about 12 years ago Gary refinished it in fiberglass \& added a ton of surface detail including 5,000+ rivets, panel lines \& much more. The model was originally built as the bubble top "D" variant but Gary rebuilt the top of the fuselage to produce the earlier razorback version.


Sung Oh brought out his North American P-51D Mustang \& put it through its paces. Sung says the model is from Hangar $9 \&$ it originally was equipped with mechanical retracts but he's replaced those with electrics. Power comes from a DLE 20 which provides plenty of power. He's had it for a couple years, it's very easy to fly \& it's one of his favorites.


## WARBIRIDS \& CHASSICS 2023

## It's Just Around the Corner!

Friday, July 7 through Sunday, July 9, 2023
The 16th annual Warbirds \& Classics event is almost here. We have three weeks left to get ready for this fly-in. Event coordinators Randy Wilbur and Joni Whitsitt will be contacting Scale Squadron members to talk about how you can help. We will need all the assistance we can get over the weekend. Yes, many hands make for easy work. Now that that's out of the way, let's look at the good stuff.

## Raffle Items \& Food for the Masses

Event organizers (Mike Greenshields, Joni Whitsitt and Randy Wilbur have come up with some very cool items for this year's raffle. We will have two planes out of Sam Wright's garage, a beautiful ARF twin from Larry Wolfe, two wood kits from Steve Penn and much, much more.
We will have food for Friday, Saturday, and Sunday lunch. A pilot's social on Friday evening and a BBQ dinner for the traditional Saturday Banquet will round out the event festivities. One should not go hungry at this event!
Tim, Frank and Randy have been working their collective butts off to make sure the field is free of weeds and looking great. Please do your part when you are out there and pick up your trash and anything else you might see laying around. (old rubber bands, pieces of airplane, Velcro, broken fuel line, etc.)

## No Excuses, Just Be There!

The out-of-towners have paid their entry fees and are eager to take part in this really big show. Now is your time to sign up and join the fun. These events are what we all need to get our scale interests flowing.
We look forward to another wonderful show and to seeing all of you out there. Let's make it memorable again..

## A Few Things to Keep in Mind

- This is a Scale Model Flying Event. So, Scale airplanes only. We're not picky, we just want an actual scale model. What we love to see is your latest scale project.
- The standard pattern is in effect so no hovering or other freestyle or 3D type flying.
- Helicopters are allowed as long as they are scale and can fly the same pattern.
- Formation flying is allowed. Please work with our CD and Airboss to ensure you have the space and other traffic is cleared.
- AMA membership is required and checked, OCMA safety regulations apply. FAA registration number must be visible on your plane somewhere.
- You must have a fire extinguisher in your pit area. Every pilot must have his or her own and it must work.
- NO TURBINES. We'd love to have you but it's just not allowed by OC Parks.
- NO SMOKE. The Fire Marshall or Park Ranger will think it's a fire and send fire trucks. That would be bad for everyone.
Obviously we can't control the weather but early July in the area is usually fairly calm winds, no rain, warm but not smokin' hot weather (high 70's to 80's usually)

If you have questions about any of this, just contact your favorite Squadron Board member.
See You at Warbirds \& Classics 2023!

## TIIE 1978 B-17 AIR RACBS AT RBNO, NV

[ed note: Commander Mike Greenshields forwarded what looks like a magazine article and a couple photos of what appear to be two B-17 Flying Fortresses racing against each other at the 1978 Reno Air Races.
The two aircraft involved were "Sentimental Journey," a B-17G based at the Arizona Wing of the Commemorative Air Force (Confederate Air Force in 1978) and "Texas Rangers," a B-17G operated by the CAF Gulf Coast Wing.

Based on the article that Mike found, the race was not an authorized CAF event and it looks like some of the CAF headquarters staff were not pleased. I was unable to find much information about the actual race but I did confirm that both aircraft were at the 1978 Reno Air Races, so who knows?
There was no mention of the race in the 1978 official race results.]

The following report was received from the Arizona Wing:

ARIZONA WING HEADQUARTERS
6 September 1978
CAF HEADQUARTERS
P.O. Box CAF

Harlingen, Texas 78550
Dear Col. Nolen:
Reference is hereby made to your Memo relative to an alleged B-17 Air Race last year in Reno, Nevada.

Upon reviewing the aforementioned memo, we saw no real need to offer new evidence regarding the final outcome, since this incident was investigated a full year ago!
I regret that I am forced to enclose only a Xerox copy as the original was mailed directly to Col. Culpepper during October of last year.

We consider this matter a closed affair, in line with the findings of our investigation herein attached.
Sincerely,
CONFEDERATE AIR FORCE
Col. Michael Clark
Arizona Wing Leader
home of SENTIMENTAL JOURNEY


## USAAC COLORS \&\& MARKINGS

[ed note: The following was originally published in the April 1998 edition of Model Airplane News. It's a terrific study of USAAC markings from pre-WWI through 1947. It's been duplicated here from the original article and will provide guidance for anyone wanting to produce an accurate USAAC color scheme on a model of that era.]


Text and illustrations by JIM NEWMAN


Under-wing lettering for most trainers wal 24 inches tall. Though the above photo clearly shows the angled cor ners of the letters, there were times when the lettering was rounded by manufacturers.

## U.S. ARMY PAINT SCHEMES

Paint schemes and markings on military aircraft varied considerably as the years passed, often seemingly without any real logic behind the changes. This has led the writer to wonder if markings and camouflage are similar to fashion-subject to the whims of those in power at the time. However, it is known that, on both sides of the Atlantic, departments exist wherein a team of color specialists concocts mixes of paint that supposedly render aircraft difficult to see or, when applied in carefully "designed" patterns and combinations, distort the outline sufficiently to make the observer wonder if he really saw what he thought he saw! Yes, camouflage does work, as long as the aircraft to which it is applied remains over the background for which the scheme was designed, and this hardly ever happens.

The following notes offer some guidance as to the changes in colors and markings as the years progressed. Be advised that when building a scale model, one should work according to some kind of specific documentation, i.e., photographs, drawings and descriptions of the type of aircraft being modeled, because there were always some deviations or exceptions to the schemes mentioned.


- Pre-1918. Aircraft supplied to the U.S. Army Air Corps by U.S. manufacturers prior to WW I were generally devoid of any paint scheme. They generally had just a clear-doped-linen finish. Because the raw, un-doped fabric was a very pale oatmeal color, the clear-doped fabric took on a translucent, grayish-cream look and, in model fabrics, the Antique Super Coverite very closely approximates this.
Exceptions: aircraft supplied by foreign sources retained the factory paint scheme applied. The British deHavilland 4 retained its dark green top, sides and fin (including the fuselage underside). Wings and stabilizer had clear-doped undersides. The French Nieuport was all silver. SPAD fighters had tan and dark green camouflage sides and upper surfaces with clear-doped undersides.
- 1918. The Army Air Corps standardized the color scheme. Until 1927, the order was olive drab upper surfaces. The vertical surfaces and fuselage undersides had clear-doped finishes, although sometimes, the fuselage sides were given a protective

eqat of pale ceeann. The bottoms of wings ad horizontal stabilizets were cleardoped.

The olive drab, of "OD" ans it became common'ly known, of that era was vastly different frow the OD of today and of that offered by current model-covering materials that are uex of a brown shade. The early OD had a definite greenish look to it and closely matched the Olive Qrab FS 34087 published is the Federal Standard ( FS ) 595 dated March 1, 1956; if you have a copy with that date on it, you

$\mathrm{C}=$ Rudder chord at widest point
had better keep it under lock and key, because it's priceless. Examination of good photos of that time produced from glass-plate negatives show the paints to be anything from matte to semi-matte.

- 1927. The military deveioped concerns over air-to-air colfisions. The army specified that wings, horizontal tails, fins and rudders must be finished in Chrome Yellow FS 3358-a semi-matte color close to Cub Yellow or FS 33538. Struts and landing gear were also finished in OD.
- 1928. The army took delivery of its first afl-metal aircraft-the Ford Trimotor-

STAR IN CIRCLE DETAIL

and specified that alt transport aircraft were to be defivered ia natural metal. But iu (935, the Northrop Co delivered a painted A-17 aircrath, and they remained painted until 1936.

- 1936. The army specified a gloss Light Biue FS 15102 (ANA, 501) for all fuselages except the metal-skinned machines, which were to be supplied in natural metal. The new metal-skinned Northrop $\mathrm{A}=13 \mathrm{~A}$ was an exception and was painted gloss Light Blue. The natural-metal finish on other metal-skinned machines was retained until 1941. Other exceptions were: Ryan PT-16,
$-20,-20,-22$ with natural-metal fusefage, chrome yellow' wing, stabilizer and tin.
- 9940 . Many obsolescect combat aircraft were relegated to training duties and were required to be painted silver overall or to remais in natural metal with silver-painted fabric surfaces. New aircraft were te be delivered in OD with the undersides in Neutral Gray FS 36173. (The Twin Beech C-45 was the only transpert aircraft remaining in blue and yellow, but it eventually changed schemes, with many special-purpose schemes as WW II escalated.)


Above: at the Ayan Aeronautical Co. plant in San Dlegn, CA, a huge number of Ayan PT-IT army fraíners and WR-1 Navy frainers awalf shipment to training units throughout the country. Círca 1936, natural-metal fuselage, chrome yellow wings, stah and fli. Rudder has blue leading edqe with 13 red and white horizontal stripes.

Leftr the Northrap A-17 carries the Army-specifled gloss blue fuselage that wast retained untili 1941. Note the early whife-sfar-ín-bilue-circie insignía with red center markings.

## U.S. ARMY AIR CQRPS COLORS AND MARKINGS

- 1941. The night-fighter schems was adopted for the converted Douglas A-20. if was matos black overall. Later, Her P-61 and the F-82 were painted gloss black overall. The B-29 remained in natural metal and was used at night; its underside was painted gloss black witt a wavy demarcaticn line afong the fuselage side.
- Early 1942. The blue-and-yellow scheme was deleted from all training aincraft, and silver overall was madk standard fer these types; although many did survive the War still in their blue and yellow.
- May 1942. For air operations in North Africa, OD was replaced by Desert Sand ES 30279, which is seen ou P-40s and soume B-24s. The neutral gray undersides were replaced by Azure Blue FS 32231.

Planes delivered frem Britain did not follow these color schemes. They were operated in their original Dark Earth FS 30118 and Dark Green FS 34079 RAF camouflage; British markings were painted

red at the trailing edge. Note: the blue was considerably lighter thare the Insignia Blue of 1941 and varied considerably tiu shade owing to non-standardization.

- January 1918 to August 1919, USAAC adopted the red, white and blue roundels, especially on the wat fromt in Europe. Within the U.S., many aircraft retained the star, but some carried a mixture of the two


Hece, an all ellve ctral P-4U weerte the star-and-plue-eircle insignia with rew center painted ever. The nese and tall numbets were probabry yellow, to may 194z, ter air operationt in Nerth
 side wat alse replaced with Axure Btue FT 35231.
peer with a circle and star. RAF code letters and serial numbers were ofte:a retained. Some Britishn aircraft, e.g., the Hurricane and the Spittire, were delivered In RAF desett camoutlage of Dark Earth FS 30118 and Middle Stone FS 30266 with the Azute Blue undersides.

- 1944, Camouflage was deleted, except for on liaisou types' (L-4, L-5, etc.), helicopters and night fighters.


## THE MARKINGS PROGRESSION

= May 19, 1917. U.S. Army Air Corps adopted the star in a blue circle with an red dot in the center. This was applied inboard of the ailerons and ran the full chord of the upper surface of the tope wing and the lower sucface of the bottou wing. Three stripes of equal width were on the rudder-blue at the leading edge, white in the center and
markinge well into $\mathcal{T}(9)$. This was primanly caused by repairs and the swapping of components between aircraft. It was not unusual to see one aircratt carrying roundels and stars-even ou opposite wings! The order of the vertical rudder stripes reversed with red now at the leading edge and blue at the trailing edge.
: After 1919. Aircraft returned to the star in a circle.

- Late 1926. A patteru of 13 alternating red and white rudder striper was adopted, along with a single blue vertical rudder stripe.
- End of Februaty 1941. Thete was i majoc change to the national insignia. The red-and-white tail striper weve deleted frow the rudder of combat aircraft. A white star on an Insignia Blue F8 38044 disk was
applied to cash side of the fuselage-top of left wing and underside of right wing. Un-camouflaged aircraft retained stars oa the top and bottom of both wings.

A curious reason was given for the asymmetric applicaticon of the wing stars. It was feared that enerny pilots would use them as ranging marks based on the distance between the stars. Having been involved with gun-sight trials, the idea of using national insignis for ranging caused me ne end of mirth, because most gun sights were calibrated in terms of the target aiveraft wingspans, not the distance between crosses or "meatballs," which could vary! It was obviously some high-ranking officer's muddled thinking that was caused by combat fatigue and aggravated by too many hours flying a heavily armed desk.

- Early 1942. Red-and-white tail stripes were defeted from alf aircraft.
- End of May 1942. Red dot deleted from the center of the star.
- Until Jubie 1942. Aurcratt that wers not camouflaged continued to carry stars of both wings.

- May 1947 to April 1943, Some aircraft operating out of England and ia North Africa carried a 2 -inch-wide circle of Yellow FS 3358 surrounding the dark blue background of the star.
- Early 1943, Asymmetric application of wing stars was adopted for all typer of aircratt.
- June 194.3 te c 7 September 1943, A white bar was added to each side of the dark blue disk, and the whole insignia was outlined in Insignia Red FS 30109 (the same dull ted that had beeu adopted for the center of the RAF insignia).

The white balr was ut centered in the circle but wes aligned with the upper edge of the horizontal points of the star.

- IT September 1943. The red outline was painted over with the Insignia Blue FS 32044.
- 1947. A Red FS 3 [ 136 bar was added to each white bar.


## LETTERING

- 192t te eud of May 194z. "U.S. ARMY" was writted in large letters across the underside of the bottow wing:



4 rare Republic TP-47C Thunderbolt ftwo-place trainer version) is dressed with the blue-andwhite stār-ando-bars insignia. The overall finish is ollve drab whth a neutral gray underside.

## OFFICIAL LETTERING STYLES


(From USAF Manual T.Q. 1-1-4 Exterier Finished Insignia \& Markings Applicablie to USAF Aircraft)
Width of letters $=2 / 3$ height M \& W width $=$ height Stroke thickness $=1 / 6$ height Space between letters $=1 / 6$ height Space between wards $=2 / 3$ height
ou biplanes and across the underside of monoplane wings (see illustration for proportions). Oa most trainers, lettets were 24 inches tall; black letters on gray, silver or yellow. Many aircraft still carried this lettering until well after 1942. Although the illustration shows letters with angled corners, some manufacturers applied letters with rounded corners, so check your reference photos!


Here, a B-25 Mitchell bomber displays the typicat star-and-bars U.5., insignia with red painted around the Insignia.

Tecfinical data was carried uu a panel that was low on the fuselage's left side; depending on the type of aircrati, it was below of forward of the cockpit. Lettering


Example of rounded letters applied by some manufacturers


## Often seen variations from the official specifications,

In these variations, the letter C with the extended ends, the $T^{\prime}$ and $Z$, without the $45^{\circ}$ comers, are more pleasank to view than the official stylea! Gheck your documention.
described aircratt type, serial number, fuel and oil requirements, etc., and was, at most, f inch tall. Cettete were black, white,


Am all-sifver Aeronca L-16A with thin red stripes adted to the whtte bacs et the U.s. insignia-circa 1947.
or yellow on blue, on they were black: white, or yellow on OD.

The above material is frem a variety of sources so, again, the author urges builders to check aircraft being modeled against reliable references such as photographs. $\pm$

# BRIC P'S SR-9 BBIANT BUIIND - PART 3 

[ed. note: This is the third in a series of articles where I'll show my progress on my Stinson SR-9 Reliant. With Warbirds \& Classics 2023 only about 30 days off it'll be touch-and-go as to whether it'll be ready. See the April newsletter for the first article in the series.]

## by Eric Puchalski

When I last checked in (May 2023) I'd successfully completed the initial framing of both wing panels (Photo 2). This past month has been spent on filling in the remaining parts of the wings. It seems like I've been throwing more and more wood at this thing and it just keeps wanting more! I've mentioned the high parts count in this model a number of times but it's worth mentioning again. I should also mention that it occurred to me recently that not only in there a seemingly infinite number of parts but they're all different. My earlier decision to build both wings in parallel makes even more sense now since I can add a part to one panel and while the skill is still fresh, I can add the corresponding part to the other panel.
I should also mention that the plans don't exactly match the spacing on some of the parts. For example, the rib spacing between the number one and number 15 rib is about $3 / 8$ " off between the plan and the die cut parts. I decided to use the spacing on the die-cut spar to override the plans and build this wing from the number one rib (at the fuselage) out and see what happened.

## Filling in the Empty Places

In looking at the design for the leading edge of the wing, I wasn't crazy about a couple things. First off, the plans call for the leading edge sheeting to be wrapped over the leading edge spar and then sanded to shape (Figure 1A). l've never had much luck with this method which always seems to leave a rough edge where the sheeting feathers into the leading edge. I prefer to butt the LE sheeting into the leading edge and then shape the LE to match the airfoil (Figure 1B). I made this change, which sounded like a good idea at the time but later discovered that all those compound curves in the sheeting would have been much easily accomplished if I had only followed the plans. But I got through it and I'm pretty happy with the result. There was a lot of extra fitting and shaping of sheeting but overall, I think it was worth the extra time.
The plans also call for bending the leading edges around the wing tips and at the point where the wing joins the fuselage. To accomplish this, the plans would have me make a bunch of cuts in the leading edge strip to get it to bend around the curves (Figure 2). I'm not a big fan of compromising the structural integrity in critical areas so I chose to build these two areas up with laminated 3/32" balsa strips (Photo 3).

Photo 1: Left wing panel plan. The yardstick gives an idea of the overall size of the model.


Photo 2: Left wing panel with the major parts installed \& begging for more wood.


Figure 1: Leading edge as designed is shown in 1A while 1B shows my preferred method for building leading edges..


Figure 2: Plans showing location of cuts in leading edge to bend leading edge material aroujnd curves.


The wings use cardboard tubes installed in the wing roots as guides for the wing joiner bar. The ends of the tubes are supposed to be hardened on the ends with CA. Since I don't use CA, I improvised and used thinned Ambroid instead (Photo 4). The result was some pretty rock hard ends on the cardboard tubes for the wing support. (And for those of you who didn't grow up in the 1960s, you would thin Ambroid with acetone.)

## Glue Day

So, one fine day it was Glue Day. That's the day when I go back and add a second coat of glue to all the joints on the wings and anything else that needs to be sanded. Glue Day comes the day before Sanding Day. Sanding Day is when I try to get rid of all the extra wood and make all the shaped parts look more or less like they're supposed to. l've found it's a good idea to second-coat the glue joints before doing massive sanding since parts tend to snap off easily when attacked by a sanding block. Given all the parts, there were a lot of glue joints, but eventually everything was coated with a second coat of glue.
That all worked out great but there were a number of areas on the wing that needed epoxy rather than white glue or Amdroid. I started on the first wing panel using the traditional method of epoxy and acid brush and quickly became very bored. There are a lot of joints and the work I was doing wouldn't win any awards for craftsmanship. So I started thinking there must be a better way to do this that will leave a result that doesn't look like a bunch of taggers just left an underpass in East LA.
I've been using nylon syringes my whole life to apply glue to joints and it finally dawned on me that that might work for epoxy as well. So I mixed up a batch of 30 minute epoxy and moved it to a syringe (Photo 5). I had to open the hole in the syringe a little bit larger than I normally use for glue but it worked surprisingly well. I'm very happy with the result. You can see in the photos one wing that was done using the acid brush method and it looks OK (Photo 6, upper) but when you look at the other wing you can see a couple of things (Photo 6, lower). First off it looks much neater and tighter. But using the syringe also allowed me to put the epoxy exactly where I needed it without using more than was necessary-something you can't really control with a brush. This reduces the amount of epoxy needed to glue the joints and with the long nozzle on the syringe, I'm able to get epoxy into nooks and crannies that I would not have been able to reach with a brush. The process of reinforcing the epoxied joints went very quickly using this method. All in all, this looks like a technique I'll be using more.

Photo 3: Laminated leading edge curve in place of cut and bent section shown on the plans.


Photo 4: Wing tube guides ready for installation in the wing panels.


Photo 5: In a stroke of genius, I finally figured out that epoxy can be applied as easily as other glues.


Photo 6: Here's the best I could do with epoxy \& an acid brush (upper photo) vs. using a regular glue syringe (lower).


## Sanding Day

I hate Sanding Day! It's a lot of hunching over the workbench with different sanding blocks and grinding away at joints and parts to make everything line up perfectly before putting on the sheeting, cap strips, and other surface parts. Fortunately, the overall parts fit for the kit turned out to be pretty good and not much actual sanding was required.
The trailing edge required a lot of attention to get it shaped properly so I taped off the top of the ribs so I wouldn't inadvertently send them flat (Photo 7). But everything else was finally scoured into submission and it was time to add another couple handfulls of wood in the form of sheeting and cap strips.

The good news is that my new sanding table (see Scale Dimension, March 2023) worked like a champ and kept most of the balsa dust out of my nose.

## Sheeting \& Cap Strips

Most of the sheeting went pretty easily, with the exception of the upper leading edge. This went on in three pieces but I followed the same procedure for all three. The sheeting has to follow a pretty complex double curve across its face and the leading edge. I decided to do the gluing in two stages. Stage 1 meant soaking the sheeting in Windex and gluing the very front of the sheet to the leading edge spar. Then after an hour or so I glued the rest of the sheet into place (Photos 8-10).

About this time I discovered that there are a couple degrees of washout built into the wings. This meant extra care was needed with the sheeting to make sure I didn't inadvertently undo that.
At this point, I thought I'd finally received permission from the instructions to build the ailerons. But then I realized that l'd skipped a step-installing cap strips. From past experience l've learned that skipping any step in the instruction manual is done at your own peril. And it turns out that without the cap strips, it wouldn't have been possible to shape the tops of the ailerons or the flaps. So I went back and added cap strips to the outer ribs in the panel so I could build the ailerons (Photo 11).

## Next Steps

As of this writing, I have yet to make the ailerons and flaps, finish sanding everything to its final shape, install servos for everything, and rig navigation and landing lights. That's just to complete the wing. I still have that big ol' fuselage to put together. Having gone through my rework attempt on the original fuselage, I'm already sort

Photo 7: Tops of the ribs are taped off during sanding so I wouldn't inadvertently sand them flat.


Photo 8: Sheeting the inner top of the leading edge. At this point, the sheeting is shaped and glued only to the leading edge. The spring clamps force the rest of the sheet into a curve that will be easier to glue as a second step.


Photo 9: Outer wing sheeting glued in place. All that fancy trimming around the laminated LE could have been avoided if I had only followed the plans and wrapped the LE sheeting around the LE.


## Eric Puchalski's SR-9 Reliant Build - Part 3

of familiar with things that might bite me on the butt with that. So, other than the parts count, I'm hoping that will go pretty quickly.
I'm still cautiously optimistic that the model will fly at Warbirds \& Classics 2023. But I'm 100\% positive that there will still be lots scale details to be completed. I've spent a lot of time on these wing panels but it feels like the worst is over and it should be downhill from here.
I remain totally impressed by the overall size of this model (Photo 12). I'm learning new skills and remembering things that l'd forgotten. Overall, it's a lot like building any other kit except a lot larger. I sometimes wonder if this is what Dr. Frankenstein was thinking when he was assembling his monster. I'm looking forward to the next stages.

I'll keep you posted.


Photo 11: Cap stripper's paradise! It's a little hard to see all the pins required to hold all those strips in place but this part went very smoothly.

Photo 12: Missing ailerons, flaps \& a fuselage, but you get the idea..


## DOCUMBNTATION: AIRCO DIH. 5

The Airco DH. 5 was a British First World War single-seat biplane fighter aircraft. It was designed and manufactured at British aviation company Airco. Development was led by aircraft designer Geoffrey de Havilland as a replacement for the obsolete Airco DH. 2 .
The DH. 5 was one of the first British fighters designed with the improved
Constantinesco gun synchronizer, which allowed a forward-firing machine gun to fire through the propeller faster and more reliably than the older mechanical systems. It was also one of
 the earliest biplanes with a marked "back-stagger" of its wings. By the time the DH. 5 was fielded, it was already inferior to other fighters in service and thus both unpopular and unsatisfactory with the pilots of the Royal Flying Corps (RFC). The type was quickly withdrawn from service once supplies of the Royal Aircraft Factory S.E. 5 permitted.
So, what's not to love about this airplane? It's one of dozens of WWI aircraft that were designed on a napkin and implemented in a very short amount of time. Like most front line fighters of its time it was a test bed for advanced technologies and it was already obsolete by the time it got to the front lines.
And who can resist that reverse-stagger wing? (Could this have been the inspiration for the famous Beechcraft Model 17 Staggerwing of later years?)
Let the Editor know if you'd like more details.




## Documentation: Airco DH. 5



## UPCOMING BVIMNIS

## Special Note Regarding Events

A list of upcoming scale events that are easily reachable from Southern California is included here. We encourage everyone to participate in as many of these events as possible in order to show support for clubs that have gone through the same difficulties that the Scale Squadron has experienced recently. Remember that when you attend any of these events, you are an ambassador of the Scale Squadron. Be sure to mention your affiliation with the Scale Squadron and represent us well! (Also, bring back lots of photos and get them off to Eric Puchalski so they can be included in the next newsletter.)

| Date | Host \& Location | Event \& Summary |
| :--- | :--- | :--- |
| Various <br> Dates in <br> 2023 |  <br> locations | U.S. Scale Masters 2023 Regional Qualifiers <br> U.S. Scale Masters has published their Regional Qualifier schedule <br> for 2023. Events will be held in several states and BC, Canada. A <br> complete schedule is provided on the next page. |
| Jul 7-9, <br> $\mathbf{2 0 2 3}$ | Scale Squadron of SoCaI <br> Irvine, CA | Warbirds \& Classics 2023 <br> World-famous scale fun-fly. All types and sizes of anything that <br> looks like a model of a full-scale prototype (no turbines or <br> drones). \$40 pilot fee for any number of models. RV dry camping <br> available with reservation. Fun, Food \& Frolic! |
| Oct 12-15, <br> $\mathbf{2 0 2 3}$ | Tri-Valley RC Modelers <br> Santa Maria, CA | 10th Annual Central Coast Giant Scale Fly-In <br> Landing fee \$50 for the full event or \$30/day. Includes <br> 2.5+ days of flying on a giant runway \& lunch on Saturday; 3 |
| Nights dry camping parked on asphalt only \$100; AMA |  |  |
| membership required; Epic pilot's raffle on Saturday; World |  |  |
| famous Santa Maria style BBQ Saturday night; Indoor bathrooms |  |  |
| \& shower available on site; Lodging, restaurants \& grocery |  |  |
| nearby; Turbines, 3D \& Night flying approved! |  |  |

## Errors \& Omissions:

If you note any errors in any information in this list or the flyers on the following pages, please contact Eric Puchalski or any of the members of the Scale Squadron Board of Directors. If your club is hosting a scale-themed event that's not on this list, contact Eric to get the event added to the list. If you have flyers, an informational website, or online registration page we would be happy to include that in this section as well.


# 譕 <br> <br> U.S. SCALE MASTERS ASSOC. 

 <br> <br> U.S. SCALE MASTERS ASSOC.}
(National Chairman: Curtis Kitteringham - cak11@cox.net)

## 2023 Regional Qualifiers Schedule

Jan 14-15 "Cape Coral Scale Classic" - Cape Coral, FL (www.rseahwks.org)
Mar 31-April 1 "Gunsmoke" - Mesa, AZ (www.oeaf.org) (www.azmodelaviators.com)
Apr 26-30 "Top Gun" - Lakeland, FL (www.franktiano.com)
May 19-21 "2023 Spring Opener" - Othello, WA (www.nwscale.org)
June 16-18 "Mint Julep Scale Contest" - Rosewood, IN (www.rosewoodrc.com)
June 23-25 "Field of Dreams Scale Rally" - Redmond, OR (www.nwscale.org)
July (pending) "British Columbia Scale Classic" - Kamloops, BC (www.nwscale.org)
July 6-9 "AMA Scale NATS for R/C" - Muncie, IN (www.nasascale.org)
Aug 4-6 "Silver Hills Scale Rally" - Athol, ID (www.nwscale.org)
Aug 25-27 "NWSAM Championships" - Wenatchee, WA (www.nwscale.org)
Sep (pending) "Fall Scale Classic" (pending) WA (www.nwscale.org)
Sep (pending)"Max Ficken Texas Scale Championships" - Ft. Worth, TX (www.flygsw.org) (dates pending) "USSMA 42nd National Championships" - (location pending)

## Scale Modelers, Pilots ® Fans!



Paved 600 ft Runway, Friday Night Party, Saturday Night Banquet (Blake's BBQ), Reserved Pit Areas, On-Site R/V Parking \& More! In Support of USMC Semper Fi \& America's Fund ENTRY FEE: $\$ 40.00$ per Pilot (Scale Aircraft Only) Includes 3 Days of Flying, Friday, Saturday \& Sunday Lunch.

Event T-Shirts Available Online \& at the Event.
Registration: www.ScaleSquadron.com Contest Director: Randy Wilbur (rwilbur@videotecheng.com)
$\bullet$ Saturday Night Banquet: $\$ 25.00 /$ person $\quad$ FAA UAS registration required \& must appear

- Pit Reservations: $\$ 25.00 /$ pilot (OK to share) on plane
- AMA membership required
- No Turbines
- No Hovering or 3D flying


## Tri-Valley RC Modelers



October 12th - 15th 2023

## New Cuyama Airport - 3380' x 60' Runway!

The skinny:

- Landing Fee: Only $\$ 50$ for the full event (or $\$ 30 /$ day). Includes: 2-1/2+ days of flying on a giant runway \& lunch on Saturday;
- 3 Nights Dry Camping only $\$ 100$, parked on asphalt;
- Proof of current AMA required;
- Epic Pilot's Raffle on Saturday.


## More skinny:

- World Famous Santa Maria Style BBQ dinner on Saturday night;
- Indoor bathrooms \& shower available on site;
- Lodging, restaurants, \& grocery stores nearby;
- Turbine jets, 3D, \& Night flying approved!

Please call Chuck Barnes at (805)886-7921 or email him at CDBarnes10@comcast.net to register for this event.


## WHO WR ARE

## Advancing \& Promoting the Hobby of Remotely Controlled Scale Miniature Aircraft

Many people from all walks of life find it fascinating to produce a miniature working replica of a full-size object, be it a doll house, sailing ship, or operating steam locomotive. In our case it is our passion for flying machines that motivates Scale Squadron members.
Today as scale modelers we pursue nearly every possible aviation subject with the confidence that not only will our project be successful, but that it may well outperform that of its full-scale counterpart.
Squadron members delight in the pursuit of authenticity for scale projects. This requires research and documentation of specific aircraft and their variants.

Many of the flying replicas thus created are of Museum Quality and our members take to the skies with these flying miniatures regularly and successfully.

On the other hand, not everyone wants to make a scale masterpiece. That's OK, too! Whatever pleases you is what counts. Whether you are kitbashing, volunteering at charity aviation events, or making molds from scratch for Scale Masters or AMA National Championship competition scale aircraft, Scale Squadron is a club that embraces all facets of scale aviation $\mathrm{R} / \mathrm{C}$ modeling and the related community.

Scale Squadron Club Meetings are held on the

## second Monday of each month at:

Green Valley Adult Clubhouse 17215 Los Jardines West Fountain Valley, CA.

Meetings start at 7:00PM and last about 2 hours.

Our meetings throughout the year include the usual club business as well as Member Show \& Tell, Modeling HowTos, Aviation and Industry presentations, and good ol' time social gathering to help enlighten and encourage our membership to push the boundaries in the art of Miniature Aircraft Replication. Visitors are always welcome.
All members and visitors alike are encouraged to bring their latest scale models and projects!

## JOLN US!

## Membership Requirements

Membership in the Scale Squadron is open to all Academy of Model Aeronautics (AMA) members who are interested in safe formal and informal flying, including the research, building, and flying of Scale R/C Miniature Aircraft.
Membership Annual Dues are $\$ 30.00$ covering January 1 through December 31. Membership begins after verification of your current AMA membership card, your FAA Small UAS Certificate of Registration, and receipt of Scale Squadron membership dues.
The Scale Squadron Board reserves the right to deny or delay new membership approval.

## Membership Benefits

Membership in the Scale Squadron includes:

- A subscription to the Scale Dimension monthly online newsletter.
- Squadron membership card and name tag.
- Advance notice of scale aircraft events.
- Annual Holiday Banquet for members and one guest.


## Membership Meetings

Meetings are the second Monday of each month at 7:00pm. The December meeting includes the Annual Holiday Banquet and raffle drawings for anyone who presented a topic at any of the monthly meetings.
See the Who We Are secion of this issue for details on the meeting location.

## How to Join

If all this sounds like something you would like to be a part of, you can join us in a couple ways:

1. See the last page of this issue for a membership application. Fill out the form and submit it along with the required supporting documents.
2. Use the Online Form on the Squadron's website to provide basic information and pay the membership dues. A copy of the online form will be sent to you via amail. Print this out and submit it with the required supporting documents.

## How to Submit Your Application

All membership application submissions must include:

- A hard copy of the membership application form
- If the membership dues were not paid online then include a check for $\$ 30.00$ made payable to "Scale Squadron." Dues are not prorated if you join after January 1.
- A photocopy of your AMA membership card
- A photocopy of your FAA Small UAS

Certificate of Registration
Mail these to:

## Scale Squadron Membership

PO Box 8074
Fountain Valley, CA 92728
You will receive your membership card and instructions for how to obtain your key to the OCMA field by return mail in about a week.

## SCALE SQUADRON OF SOU'THERN CALIFORNIA

## THE SCALE SQUADRON

SOUTHERN CALIFORNIA


## MEMBERSHIP APPLICATION

Membership in the Scale Squadron is open to all AMA members who are interested in safe, formal, and informal flying, including the research, building and flying of Scale R/C Miniature Aircraft. Membership Annual Dues are $\$ 30.00$ covering January 1 through December 31. Membership begins after verification of your current Academy of Model Aeronautics (AMA) Membership Card and receipt of Scale Squadron membership dues. Membership in the Scale Squadron includes a monthly newsletter and Squadron name tag. Meetings are the second Monday of each month at 7:00pm.


## MODELING INFORMATION

Years in R/C Modeling Level: New $\square$ Intermediate $\square$ Expert $\square$ Need Help $\square$ Interest Area: $\quad$ WW1 $\square$ WWII $\square$ Golden Age $\square$ Civilian $\square$ Vintage $\square$ Jets $\square$

Private or Commercial Pilots License \& Type Rating $\qquad$
Are you interested in Scale Competition? Yes $\square$ No $\square$ Would Require Assistance $\square$
How did you hear about the Scale Squadron? $\qquad$
GENERAL INFORMATION
Meeting Preferences. Check all areas that you would like to see at the monthly meetings
How To $\square$ Videos $\square$ Guest Speakers $\square$ Scale Techniques $\square$ Scale Contest Prep $\square$

Your Ideas $\qquad$
Would you be willing to assist at Scale Squadron Events? Yes $\quad \square$ No $\square$ Maybe with Help $\square$
Registration $\square$ Gate $\square$ Flight Line $\square$ Judging $\square$ Scoring $\square$ Cooking $\square$

Comments

