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December 2022

THE SCALE SQUADRON OF SOUTHERN CALIFORNIA

Founders of the US Scale Masters Championships

SCALE DIMENSION

Official Newsletter of the Scale Squadron of Southern California

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Founders & Proud Supporters of
The U.S. Scale Masters Championships

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The Scale Squadron of Southern California

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On the Cover

1. **Louis Van Tilborg** greasing another landing after a great flight with his **Focke Wulf Fw 190 Butcher Bird**.
2. **Martin Boost** on a gear pass with his 60" **Viper Aircraft ViperJet** EDF.
3. **Alex Martinez** about to lift off with his **Yakovlev Yak-11**.

COMMANDER'S VIEW: STATE OF THE UNION

Mike Greenshields
Commander

State of the Union

Squadron, it's the end of the year, the final article for 2022, and I am feeling like a State of the Union might be in order. At our last board meeting, we had a fairly spirited conversation about the state of our club and our hobby for the purposes of figuring out the path our club collectively should consider taking in 2023. And, now that we have a board for 2023, I guess it would be a good idea to give it a bit of consideration.

But first... We lost some good friends this year. My dad, **John Greenshields**, on Christmas day 2021, soon thereafter **Larry Klingberg** followed by our Club Commander **Sam Wright**. Then **Ed Woodson** and finally, our friend **Karl Swope**. I want to recognize these amazing club members and friends and once again wish their friends and families our sympathies. Each of them are sorely missed. Blue Skies.

In the last 60 days I've been trying to make up for five years of good intentions in my garage, working on no less than *seven* airplanes. Fun stuff. I am so incredibly motivated by *your* enthusiasm for building for the 2023 season. Nearly half of the club has committed to at least trying to finish a project in time for the 2023 Warbirds & Classics event. ***AMAZING!***

Our membership is up, our participation is up, the Show & Tell is as good as it's looked in some time, and I think we're really making a continued comeback after being forcibly shut down by COVID for seemingly forever. And now we're working outings and encouraging participation at other events as a club for 2023. I can already tell you we've got tons of good stuff on the horizon.

We are also blessed with several great fields not to far from us. OCMA Field, the associated member-field is awesome. Tons of great pilots, great planes of all sorts, and a beautiful and well maintained field. And if that doesn't suit you, there's the Trabuco Flyers, PVMAC, and a little farther, Valley Flyers at Sepulveda basin, Whittier Narrows, and other great club fields like the Victor Valley club in Hesperia (My dad's former home field.)

All great clubs and great fields. I just wish some of them were in view of the non-modeler.

On the other hand... I have heard of two serious clubs talking about restructuring or even considering disbanding. Clubs that were, not that long ago, leading the hobby in their respective areas. The Weak Signals Club closed what I'm going to call the "real" Toledo Show. There are no more AMA shows, and only one attempt at bringing back a hobby show to SoCal, and it has to be a "multi-focused show" to gather enough attendees to pay to be a show.

Further, have you tried to buy anything in our hobby? It's 99% online ordering if you want serious airplane stuff. There are a few stores but they are few and far between and all just shadows of what they once were in the model airplane hobby. What I really want is almost never what is really available. Sig has nothing in stock right now, there are very few kit makers, and getting building supplies is like pulling teeth. Tower is fine if you want a foamie or an RTF. But, god forbid you actually want a new balsa kit. Almost none exist and the ones that do are stupid-expensive (200 bucks for a replica of a **Falcon 56**???). Certainly this is some pretty bad news as a whole.

Commander's View: State of the Union

OK, stick with me, I really do have a point.

After all of this "perspective," what does that mean to us? All of this is an interesting comparison. But really, hasn't every club been through this? The Garden Grove R/C Club (precursor to the Orange Coast R/C Club) had 650 members in the early to mid 1970's. Imagine how they felt after experiencing year after year of decline. Comparison is always risky and misleading. Instead, I hope that we can look at this and our future in 2023 this way:

I believe we're at a major fork in the road. Do we give up? Do we just stop? We could. But after seeing the last couple of club meeting Show & Tells, watching so many people passionately pursue this hobby, and seeing the tens of thousands of people on social media sharing their undying passion for our hobby, I think I know the right choice—especially considering the massive enthusiasm in this club for our hobby, and it puts all of this in perspective.

I can't make choices for you or any of our board members, but here's the choice I suggest: The choice I am making. Let's focus on what we *can* do, what we *can* build, the events we *can* attend, the places we *can* go, and the friends we will continue to make along the way. The Scale Squadron is about Scale Modeling and in 2023 we can all do that with wild abandon.

I will be un-worried about what other clubs do or what other hobby companies do and I will work on having a great time with whatever we do at the Scale Squadron and at our local flying fields like OCMA Field since we are so freaking blessed to have so many good ones. And, here's what I ask... *RENEW YOUR MEMBERSHIP WITH THE CLUB, BUILD, FLY, MAKE FRIENDS, HAVE FUN, ATTEND EVENTS!* Together, let's make 2023 a banner year for scale building and flying at the Squadron. If we do this together, I expect 2023 will be fun, rewarding, and will be a banner year for the Squadron. Don't let anything stand in the way! If we all find our "joy," our "chi," you can expect good things to happen; things we haven't even considered. The future is actually open and endless. It may not look the same, or look the way we expect, but there are endless possibilities for our special club.

And before I step off my hobby soap box... ***THANK YOU!*** Thank you for the dedication to club activities, thank you for showing respect for our lost friends, thank you for doing your part at Warbirds & Classics, THANK YOU for your enthusiasm for the hobby, the building and the sharing of your next project—the Builders Wing is growing strong!

We'll see you at the Banquet on December 12th where we will share great food and great stories with valued friends (and we'll get some free stuff too!). *Please confirm your attendance with Joni*. (See the flyer elsewhere in this issue for her contact information.)

I wish you a joyous, wonderful, Merry Christmas and Happy New Year!

Mike Greenshields, Commander
Commander@ScaleSquadron.com

Don't Forget: The 2023 Scale Squadron Christmas Dinner is Monday December 12!

The Christmas Party is right around the corner and as always, it's free to all paid Squadron members and one guest. There will be a hosted bar with the usual assortment of soft drinks and adult beverages, and lots of great food from **Stonefire Grill**. The location is the **Green Valley Adult Clubhouse** (our regular meeting place) and festivities begin at **6:00pm**.

If you haven't already done so, be sure to check in with **Joni Whitsitt** (whitsittjo@gmail.com, **714-397-4046**) and let her know if you're bringing a guest.

See You There!

EDITOR'S NOTES

Welcome to December! It looks like another year is in the bank and another year to look forward to is right around the corner. Unfortunately, circumstances have kept me out of the field (and *away* from the field) this past month and I'm a little short on fancy photos of everyone out enjoying their airplanes.

So, in the spirit of the Scale Squadron's renewed effort to focus on building, I'm offering an extra dose of tips and techniques in this issue. I hope you find something to help you get past that particular roadblock that's keeping you from making progress on your project.

When I took over the editor duties 18 issues ago, I promised myself that I wouldn't just pass along copies of articles from other magazines and newsletters. For this issue I decided to break that rule because I found a couple things that were just too good *not* to pass on. On **Page 7** you'll find an article about how regular people like us can make **spoked wheels** in any size we want without having to spend a month's Social Security check. I also stumbled across an article by scale master **Graeme Mears** showing how he made **built-up truss ribs** for his large models (**Page 11**). Given Commander Mike's effort to get the Squadron back to building, I thought these were a couple places that seem pretty daunting at first but they actually have some pretty clever and practicable solutions.

Take a look—you'll thank me some day.

Annual Christmas Party

I hope you've freed up your calendar for **Monday, December 12** and I'll see you at the **2023 Scale Squadron Christmas Party**. See **Page 6** for details and contact **Joni Whitsitt** to let her know that you plan to attend and whether you will be bringing a guest.

Thoughts on 2022 and 2023

Commander **Mike Greenshields** has a lot to say this month in his *Commander's View* column. It's a terrific read for anyone but especially for those who are feeling a little out of sorts about the state of our hobby. I suggest you check it out and apply some of Mike's thoughts to your plans for next year.

OCMA Spark of Love Event

Unfortunately, I missed the **OCMA Spark of Love** event on 12/03/2022. (This was formerly the **Toys for Tots** event.) It's the first time in several years that I wasn't able to attend but sometimes that's how things work out. In any event, I've spoken with a number of people who were there and they said the turnout was great and a huge pile of toys was collected. I understand OCFD actually sent out a couple trucks to pick up the toys. That must have been an amazing sight. Good thing they didn't decide to land a helicopter on the runway or there would have been a lot of R/C pilots pretty annoyed about having to go find their models out in the brush!

Eric Puchalski
Newsletter Editor

Happy Holidays & Looking Forward to 2023

I'm not going to try to top Commander Mike's message in his column this month. But I'll pile on with a hope to see a lot more building in 2023 and a lot fewer excuses as to why that's not possible. If there's *anything* I can do to help inspire the building movement, just let me know. I'm always privileged to be invited to people's shops (including yours) to take a look at what they doing. And I'm always happy to sit and talk airplanes and turn that into a write-up in this newsletter. If you have something in the works or are *thinking* about putting something in the works, please let me know and let's have a conversation.

Happy Holidays!

Eric

roadkill1954@gmail.com

It's Time for the 2022 Scale Squadron Annual

Christmas Dinner!

Date: **Monday, December 12, 2022**

Location: **Green Valley Adult Clubhouse** (our regular meeting place)

6:00pm – Mixer

7:00pm – Dinner (catered by Stonefire Grill)

8:00pm – Awards Presentation & Raffle

2022 has been a tough year for the Squadron in a number of ways, but there were a lot of high points as well. Come join us for some Food, Fun & Frolic while we celebrate the past year & make plans for 2023.

Remember that the Christmas Party is free to all paid Squadron members and one guest. There will be a hosted bar with the usual assortment of soft drinks and adult beverages.

We'd like to know how many to plan for so please RSVP to **Joni Whitsitt** (whitsittjo@gmail.com, **714-397-4046**) or your favorite Board member.

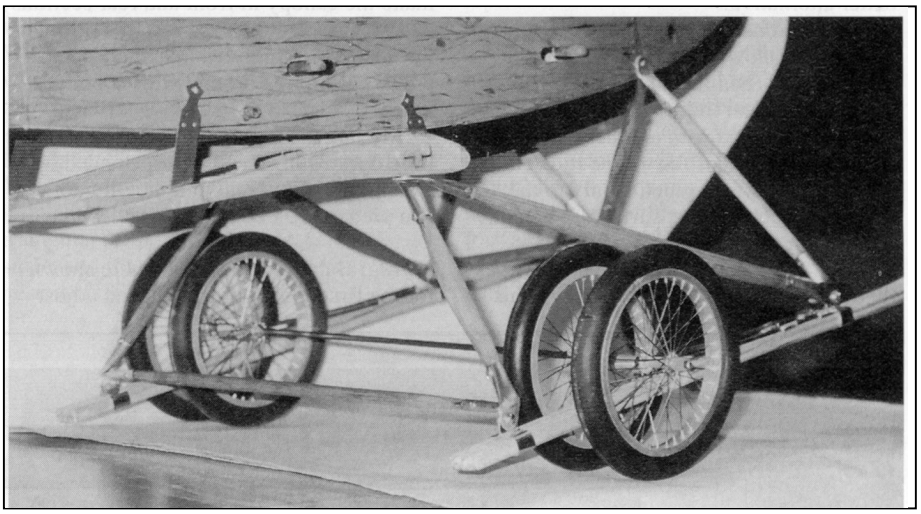
WIRE WHEELS FOR ANTIQUE AEROPLANES

*[**ed. note:** This article first appeared in* Model Aviation *magazine in 09/1998. The technique impressed me as one that would provide pretty good results without requiring complicated tooling, welding equipment, or anything that most of don't already have in our shop. I've yet to complete a set of wheels using this method but I've taken a couple runs at come up with some pretty nice prototypes. I'm convinced that it's a terrific way to add some great detail to a model when those Williams Bros. "Vintage" wheels just don't provide quite the right effect.]*

by Alex Morton

I love building models of antique aeroplanes ("airplanes" were not invented until about 1920). The nostalgia and stories connected with these oldies is quite fascinating. Nothing looks more graceful than a vintage model flying about at the local field, with spectators watching as if in a time warp.

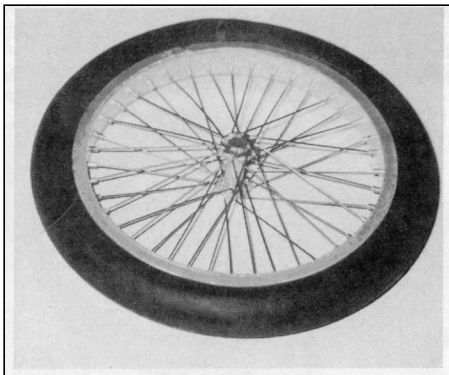
I'm in my 65th year of building models, and for some reason, when I built a JN4-D2, I just naturally bought the wire wheels for it, because they looked so overwhelming to make.



I recently completed a scratch-built 1:6-scale Handley-Page Type E circa 1910, and a 1:6-scale 1912 Albatross Warpwing Taube Biplane. Since I'm a perfectionist, this mandated scratch-built wire-wheels—two for the HP and four for the Warpwing. Several companies offer wire wheels, but my "scratch-built mentality" overruled!

One day I made up my mind that I was going to conquer the problem; here are the results.

A description of the 40-spoked wire wheels: Twenty .020 music wire spoke-pairs are soldered to the hub flanges and to brass eyelets captured but not soldered to the rim. The spokes are held in place by tension, just like full-scale wire wheels. The rubber tire is car heater hose, fitting snugly on the rim sans glue. True Indicated Runout (TIR) of the wheel, when constructed as I suggest, will be about .032 inches. Not too bad for a home-brew wire wheel!



"I made up my mind that I was going to conquer the problem, and here are the results," says the author.

If you choose to build, limit the size of wheels from about three inches to 15 inches in diameter.

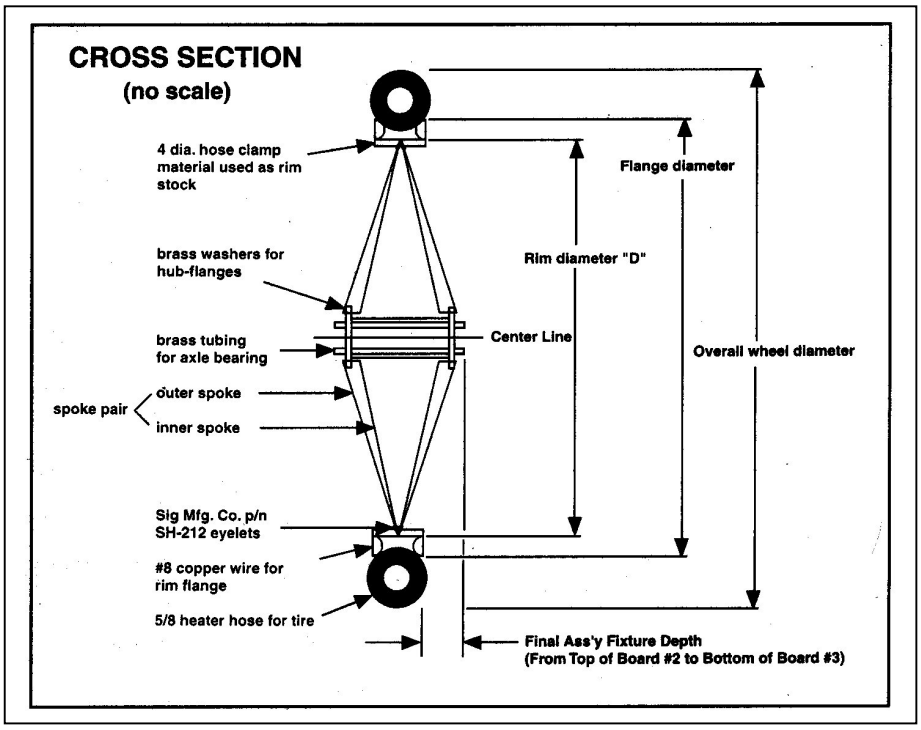
Not too much is required in the way of sophisticated tools (since I have none). If you possess a coping saw or band saw or saber saw, needle-nose pliers, wire cutters, various-size drill bits, drill motor (or hand drill), soldering iron, propane torch, rule, pencil compass, and a protractor, you're in business. The fixtures for this project are easily made from common lumber.

A drawing shows the concept of the design; design your wheel similarly. Using a 3/4-inch-thick board about two inches larger than the finished wheel, draw lines with a ball-point pen from the center of the board outward to the edge at nine-degree increments, using a protractor, until 40 lines have been drawn in a full circle (for a 40-spoke wheel. For other even-numbered spoked wheels, divide 360 degrees by the number of spokes.)

Rim Construction: Using this board, measure the rim diameter (D) and cut a fixture with this diameter. Save the circular cutout for later use.

The material for the rims was a challenge to me. I have no sheet-metal tools except a pair of tin snips. Necessity is the mother of invention! In the sheet-metal section of the hardware store I found some four-inch-diameter steel clamps (used to hold an exhaust hose to a clothes dryer) that were close enough in width to what I needed for the rims. If you're not that lucky, you'll have to buy some stock and cut it to the correct width, or have the local sheet-metal shop do it for you.

Cut and trim a length of the strap for a clean butt joint inside the fixture. Make it an accurate fit—everything is built around this key piece! Silver-solder the butt joint while in the fixture.

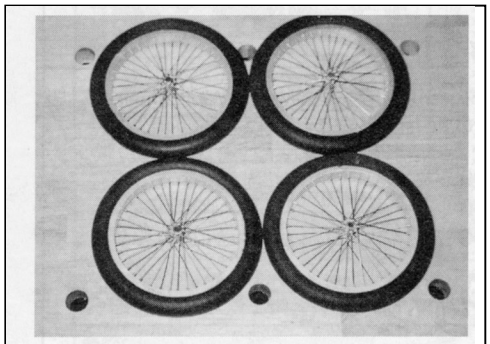


Remove the rim and wrap it with a single layer of masking tape. Draw a line on the tape midway from the rim edges to mark the spoke line. Place the rim on the circular cutout that you saved earlier, sanding for a snug fit if needed. Using the lines on the cutout, mark and lightly center-punch every nine degrees on the spoke line.

Drill the 40 holes with a clearance drill for the brass eyelets to go through. Punch and drill one hole midway between and slightly outboard two spoke holes with a 2-56 clearance drill for the air valve. Remove the masking tape. Rid all drilled holes of burrs, using fine emery cloth.

Heat the #8 copper wire with a torch, and with one end of the wire in a vise and the other in pliers you're holding, heat the wire until you feel it relax as you stretch it straight. The heat removes the temper and the wire straightens out very easily. Work your way along to the other end.

Wind the wire around a tin or glass jar that's slightly smaller in diameter than the "rim flanges" of the wheel. Cut off just enough to wrap around the rim at the edge. Solder the wire to the edge of the rim, making a close butt joint where the two ends meet. Repeat the process for the other flange.



Wheels have 40 .020 music wire spokes. Tires are made from automobile heater hose cut to length and glued with CyA.

When the soldering is complete, file the outer edge of the copper wires to almost a 1/2 cross-section. Complete the process on a flat surface first with 100-grit sandpaper, finishing with 220-grit.

Get a pot from the pantry and fill it with enough water to cover the rims; add roughly a teaspoonful of automatic dishwasher detergent granules. With the rims in the solution, bring to a boil on the stove. Hard-boil for three minutes, liberally agitating with an acid brush. This degreases the assemblies of all flux, etc., which is corrosive. Rinse the rims in clear, warm water and blow-dry with a heat gun.

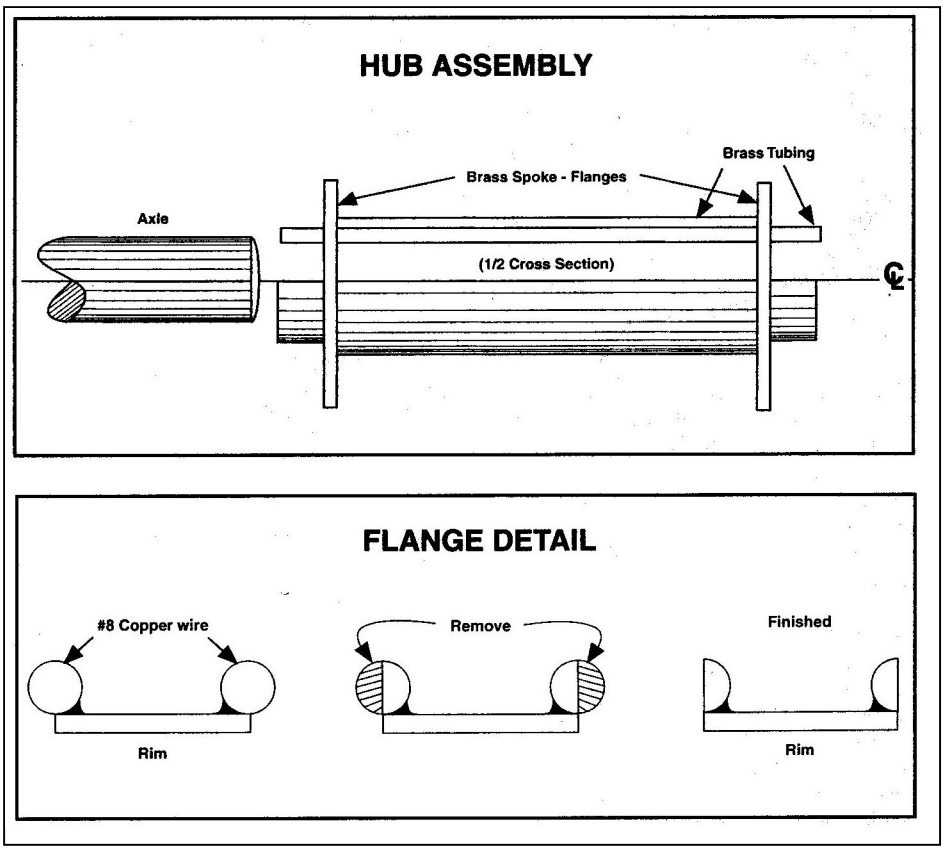
Painting the Rim: Use high-temperature (1,200 degree) spray paint of your choice (I used aluminum) to paint the rims according to the can instructions, with this exception: disregard their curing process and place the rims in the oven on end, across the wire shelf, and cure at no more than 300 degrees for one hour. Any hotter and you might melt the solder.

Spray a pair of 2-56 x 1/4 screws and the modified nuts with dull black paint. Fit the 2-56 hole in the rim drilled earlier with the painted 2-56 x 1/4 screw and modified nut, which serves as a very convincing tire valve!

Hub Assembly: Two brass tubes are used for strength; the larger diameter provides a perpendicular mating surface for the spoke flanges, while the smaller provides a bearing surface for the axle.

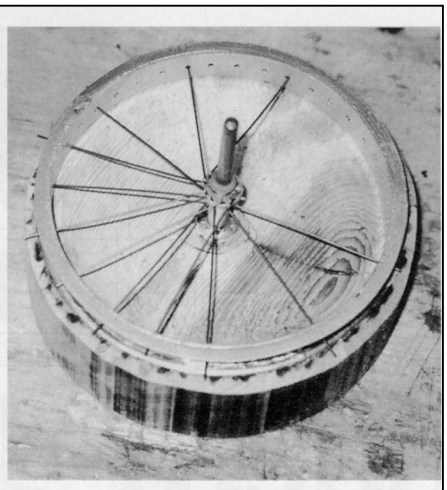
For the spoke flanges, purchase brass washers with an inner diameter that matches the outer diameter of the smaller brass tubes. The number of holes in each washer is 1/4 the total number of spokes. To calculate the angle between spoke holes: 40 spokes/4 = 10 holes. 360 degrees/10 holes = 36 degrees/hole.

Place one washer at a time under the screw and snug it up to prevent movement. Mark the location of the 10 holes, remove the washer, and lightly center-punch the 10 hole locations. Return the washer to the fixture and snug down. Using a #50 bit, drill the 10 holes. Clean up the drilled holes with emery cloth. Repeat for the number of wheels you're making. Two spoke flanges are required for each wheel.



Cut the two pieces of brass tubing to size and fit together with two each 10-hole spoke flanges on either end to form the hub assembly. The spoke holes in the flanges must be aligned when the assembly is soldered together. This can be done by placing the assembly on a piece of axle stock clamped to the edge of the bench.

Thread pieces of soft wire into two spoke holes 180 degrees apart in one flange, threading them through two other matching holes in the other flange. Bend the wire over as you tighten the flanges against the tubing. This arrangement holds the flanges perpendicular to the axle with spoke holes in line and tight up against the shorter but larger piece of tubing.



Spoke insertion in progress. Drill press will be required to assure correct axle position and snug fit for axle stock.

Now you are ready to solder the hub together; use a 100-watt iron. After the assembly is soldered, snip and discard the two temporary soft wire holders.

Now make another hub assembly. Clean both assemblies immediately, just as you did the rims.

Spoke Construction: The spoke-pairs are .020 music wire. Bend to 107 degrees, leaving 1/8 excess at the rim end. Note: The bottom of the U should be about 1/16- 3/32 inch. Preform about 45 spoke-pairs for a pair of wheels (Murphy is alive!).

Final Assembly Fixture: How you build this final fixture depends on the full-scale wheel you're duplicating. Draw and cut the holes for boards #1, #2, and #3. If you choose Option A, cut and assemble the four fixture pieces. For Option B, leave out board #3.

On board #4, draw the same diameter you drew on board #2. This serves as a guide for assembly, to assure the wheel will run true. Draw a set of lines from the center 90 degrees to each other. These will serve as reference lines for the first spoke-pair below.

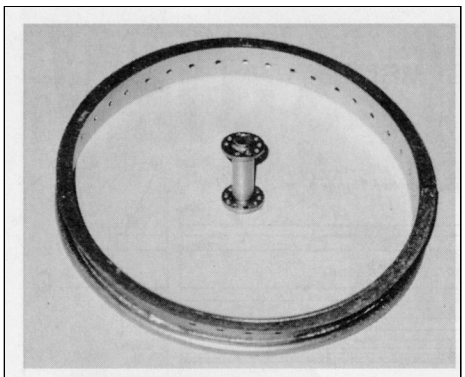
Completed rim, ready for addition of tire. Trim excess spoke material as close to eyelets as possible.

An important note: For the wheel to run true when finished, it is vital that the axle hole be centered and perpendicular to the rim. Drill a snug fit for axle stock; this is possibly the only step where a drill press is essential). Fit the hub assembly on a short piece of axle rod into this hole. Place the rim on the fixture and temporarily secure with tape.

Spoke Insertion: With the rim and hub assembly firmly in place, insert one spoke-pair into the spoke flange. With long-nose pliers, grasp the inner spoke and place it in the 9 o'clock rim hole (rebend the inner spoke straight if it has become distorted during this operation). The outer spoke goes into the hole at 12 o'clock.

Insert the second spoke-pair in the very next clockwise hole on the spoke flange. Place the second inner spoke in the fourth hole clockwise of the first inner spoke; the second outer spoke into the fourth hole clockwise from the first outer spoke; and so on until you have inserted 10 spoke- pairs.

An eyelet goes onto each of the 20 spokes. Seat them in the rim holes. (Do not cut off the excess spoke length at this time!) Apply flux to the spoke flange. Solder the spoke-pairs to the flange one spoke-pair at a time so as to not heat up the whole flange. After all 10 spoke-pairs are soldered to the flange, you may snip off the excess spoke material just as close to the eyelet as possible.



Rims for the author's wheels were fashioned from steel clamps used to hold exhaust hose to a clothes dryer.

With a cotton swab soaked in flux, wet the top of each eyelet and spoke. (You soldering experts, hold your breath; I'm going to break a rule, but the results are good!) Using just a dab of solder applied to the iron tip, place the tip on the eyelet/spoke assembly, and presto! that dab of solder will wick all the way into the eyelet surrounding the spoke. One spoke finished! Repeat for the other 19 spokes.

Remove the axle and tape and carefully lift out the half-finished wheel. Turn the wheel over, reinsert the axle, tape the assembly down, and you're on your way. Repeat the process for the other 10 spoke- pairs. You now have a strong music-wire- spoked wheel! Repeat all this for the number of wheels needed. Clean immediately as you did the rim.

You now have pristine (but naked) spoked wheels. Let's clothe them!

Tire Construction: Purchase some heater hose (try an auto or hardware store) that has the outside diameter of the intended tire (5/8 for mine). Using acetone and a cloth, wipe off any printing. Use a green scouring pad to rough the tubing until uniformly dull. This step should leave you with pure black tubing. Wrap it around the rim and cut it off. For cutting length, mate only at the bottom edge (when glued together, the inside diameter of the tire becomes just a bit smaller than the rim) providing a perfect snug fit!

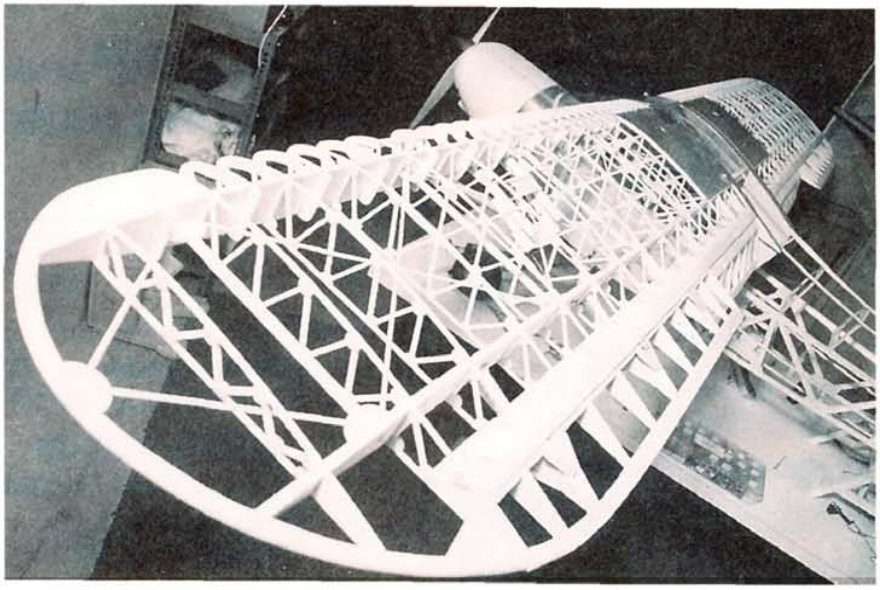
Remove from the rim and cover one end with thin cyanoacrylate (CyA) glue. Carefully line up the two ends and mate, holding together until bonding occurs. Nothing will pull the joint apart!

Roll the tire over the rim. Repeat the whole process one more time, and presto! you have a beautiful set of home-brew wire wheels for all your buddies to envy as your antique aeroplane sits there on the apron ready for flight.

When they ask how you made them, say "very carefully."

HOW TO MAKE BUILT-UP TRUSS RIBS

*[**ed note:** Here I've shamelessly reproduced an article from the 11/1997* Model Airplane News *magazine describing a technique for making built-up truss ribs. I've always wanted to try building ribs using a method like this and I figured, who better to learn from than **Graeme Mears**?*



SEVERAL YEARS ago, I scratch-built a 1/3-scale Super Cub from Charles Richard Plans. The plans called for built-up ribs in the wings. This was my first scratch-building project, and I was a little unsure of whether or not I wanted to take on all that work. However, Charles had built a number of these Cubs; he had one on landing gear and one permanently on floats. Considering this, I decided to try my hand at building the wings exactly the way the plans called for. Well, to my surprise, it was not nearly as much work as I had anticipated!

Make Built-Up Truss Ribs

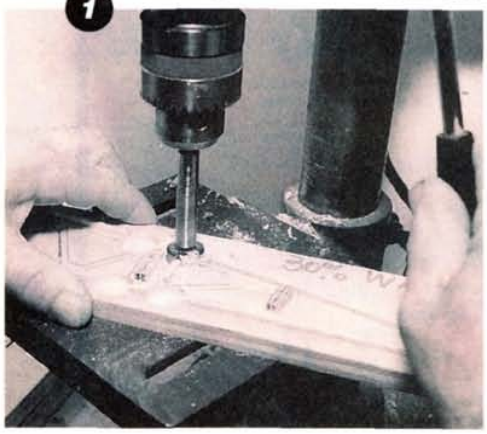
by GRAEME MEARS

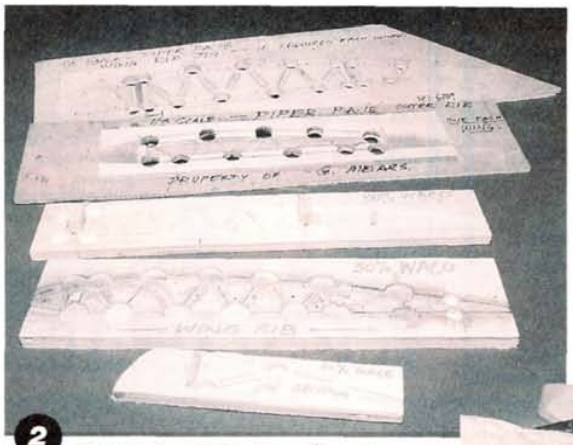
It's easier than you think!

You may ask, "Why go to this extra work?" First of all, you have a much stronger rib without adding weight. Then, once you have built all the ribs, the wing builds very quickly over solid spruce spars. A scale constructed wing is easy to straighten at any stage after construction by means of the cross-wiring. With the cross-wiring system, it was always a problem for me to get the wires through holes drilled in solid ribs; not so with truss ribs.

Preparation is very important if the construction process is to go efficiently. Currently, I am building a 30-percent-scale Waco UPF-7 biplane from my own plans. The only materials used in these ribs are 1/8-inch square spruce and 1/64-inch ply for gussets.

Working on jig, showing the gusset areas being relieved with a Forstner bit.



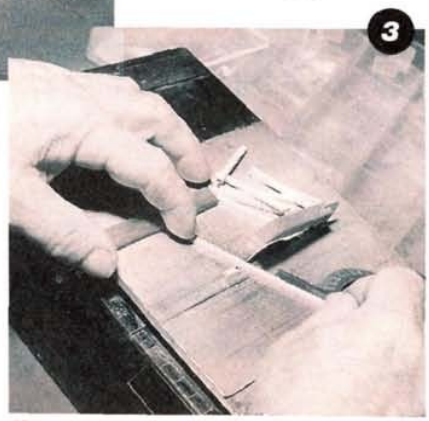


Various wing rib jigs for my 1/3-scale Super Cub and 30-percent Waco UPF-7.

BUILDING A RIB JIG

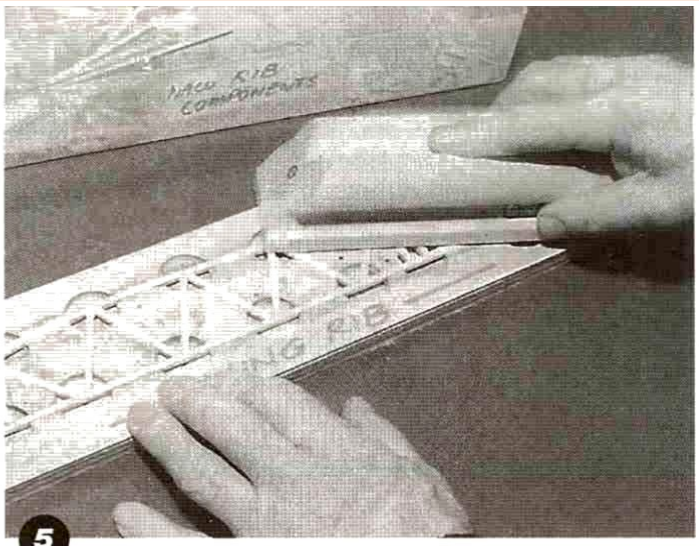
I took a photocopy of the wing rib from the plans, and after checking that it was accurate in size to the plans, I stuck it to a piece of 3/32-inch aircraft plywood with 3M 77 spray adhesive. Then I used a scroll saw to cut very accurately around the outside rib line. I now have the inside and outside of the rib shape. The female (outer) piece is then glued to a flat piece of 1/2-inch plywood. The male (inner) part of the rib is then sanded back 1/8 inch to the inside line of the top and bottom capstrips on the power belt sander.

Next, cut out all the areas where the 1/8-inch square truss members will go. Number the parts as you do this because you end up with a jigsaw puzzle. With the aid of pieces of the 1/8-inch spruce as spacers, glue all the pieces of the puzzle onto the 1/2-inch plywood base. It's also necessary to have a small section of the front and rear spars glued into place at the correct locations. Now, to prevent the ribs from being glued to the



Mini table saw set to mass-produce wing-rib parts.

4 Apply thin CA to joints prior to sanding the top face of rib. Note the compartment box in background that holds all the components in order of application.

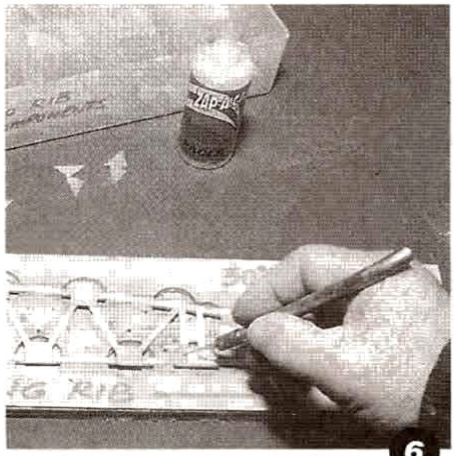


5 Sand the top face of rib prior to installing the first set of gussets.

jig as they are built, I relieve all the areas where there will be gussets with a Forstner bit (photo 1). Be careful that you don't take too much of the essential parts of the jig away at this stage. Now the jig is finished (photo 2).

PREPARING FOR CONSTRUCTION

I now make several of the individual components and catalogue them in a compartment tray. If you analyze the 1/64-inch ply gusset shapes carefully, you will find common dimensions, and you can generally cut long strips of the ply, then snip the pieces to size and shape in a paper guillotine set up with a gauging fence. Remember, these go on both sides of each rib, so make plenty! I set up my mini table saw using the fence and miter guide to accurately mass-produce the 1/8-inch square spruce truss members (photo 3). I make about 40 at a time. The long, 1/8-inch square spruce capstrips will need to be soaked in water so the sharper curves (at the leading edge) can be made without breaking the strips. Now we are ready to make a rib.



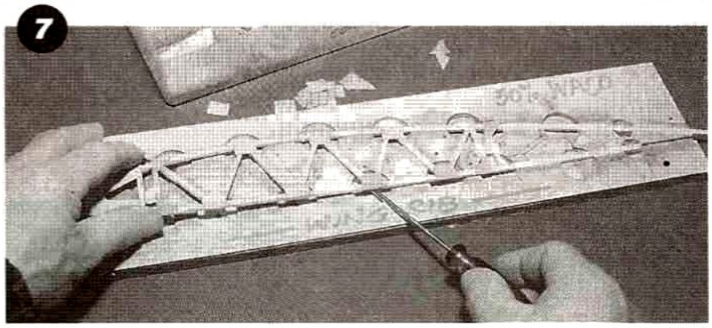
6 Attach the first set of gussets with medium CA.

CONSTRUCTING THE RIB

It is a very good idea to coat the jig with PVA (mold release) to help prevent the rib part from becoming glued to it. Next, place all the 1/8-inch square spruce parts in the jig, making sure that everything meets accurately and is flat. Apply a very small drop of thin CA to each joint (photo 4) to hold things together while you are sanding the top rib face (photo 5). With sanding complete, we can glue all the 1/64-inch ply gussets in place with medium CA (photo 6). Be careful to keep the CA off the jig! Carefully place a flat board on top of the rib, separated with waxed paper, and weigh the rib down. Leave it a few minutes to cure. When the glue has cured, remove the partially finished rib from the jig (photo 7). Now place the rib face down on a flat surface and sand the underside flat (photo 8A). When you are satisfied, add the rest of the gussets to the second face. When everything has fully cured, trim and sand the excess gusset material back to the capstrips (photo 8B).

You have just finished your

7

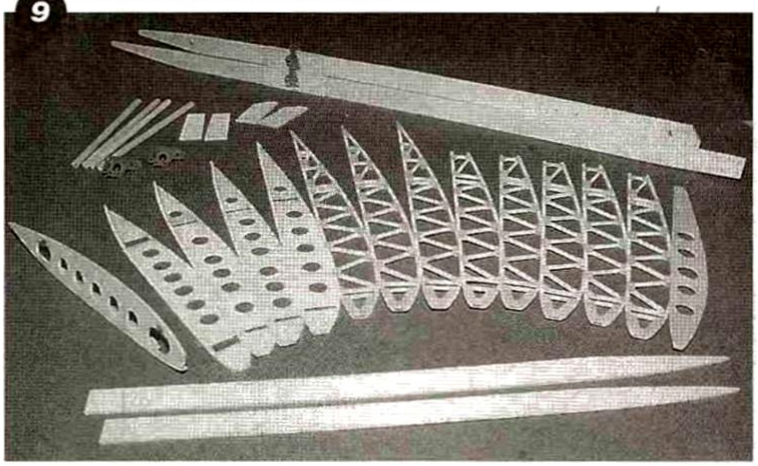


Carefully remove the partially finished rib from the jig using a small screwdriver.

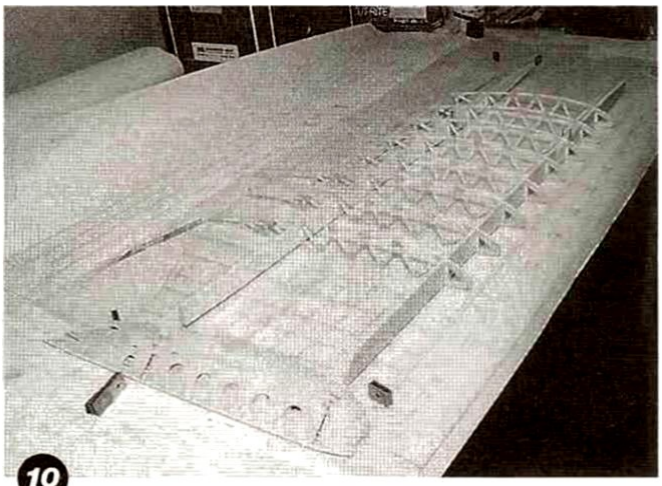
8A Sand the other side of rib with a sanding bar.

8B Trim and sand to remove all excess gusset material.

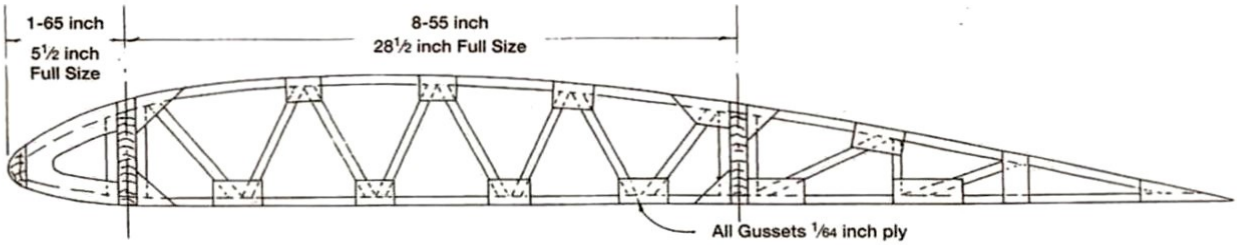
PHOTOS BY GRAEME MEARS

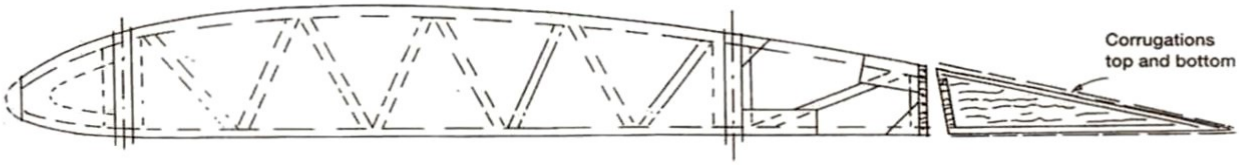


9 All of the completed ribs and other components that make up the bottom wing of the 30-percent Waco.

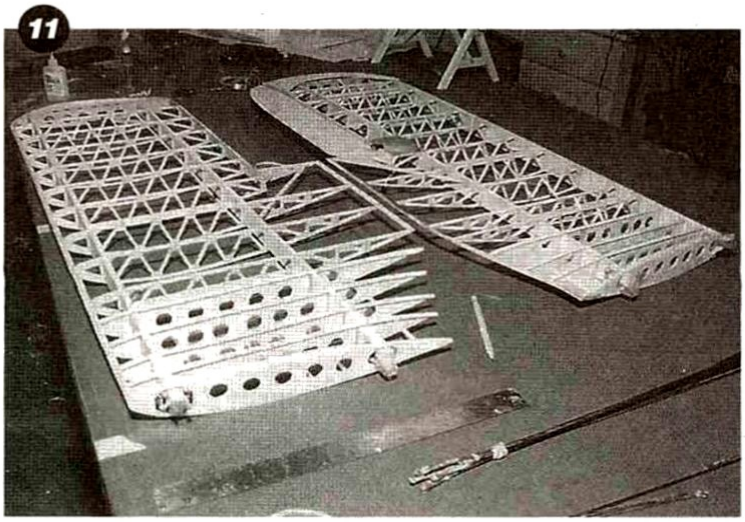


10 Waco UPF-7 wing during final assembly.

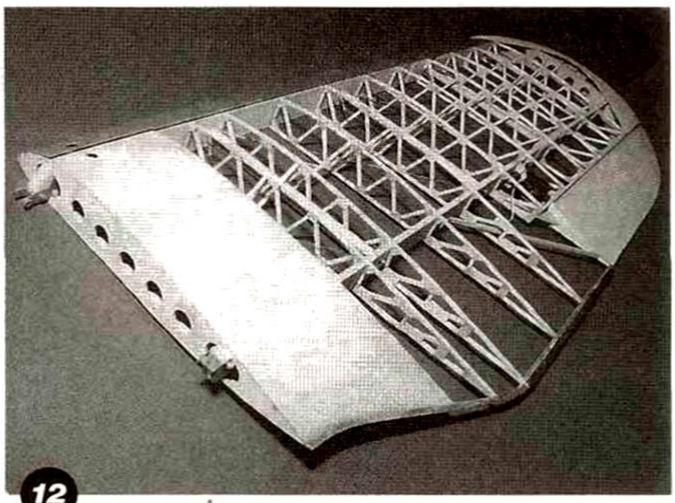




first scale truss rib! It takes about 20 minutes to make a wing rib this way. Obviously, if you are building a Stinson Reliant, where all the wing ribs are different sizes, this method would involve a tremendous amount of work, but for aircraft with a constant-chord wing, it is not as much work as it may appear (photo 9). Some ribs in a scale wing will also be sheathed with a full web of plywood—usually those ribs at the end of a wing panel. Once all the ribs for your wing panel have been made, assemble the ribs and wing spars over the plan and finish building your wing (photo 10). Once it's finished, you may find it hard to cover all the beautiful woodwork. For a scale model builder like me, who is a bit over the edge, there is a great deal of satisfaction in knowing that, underneath, the surface is as scale as it can be.

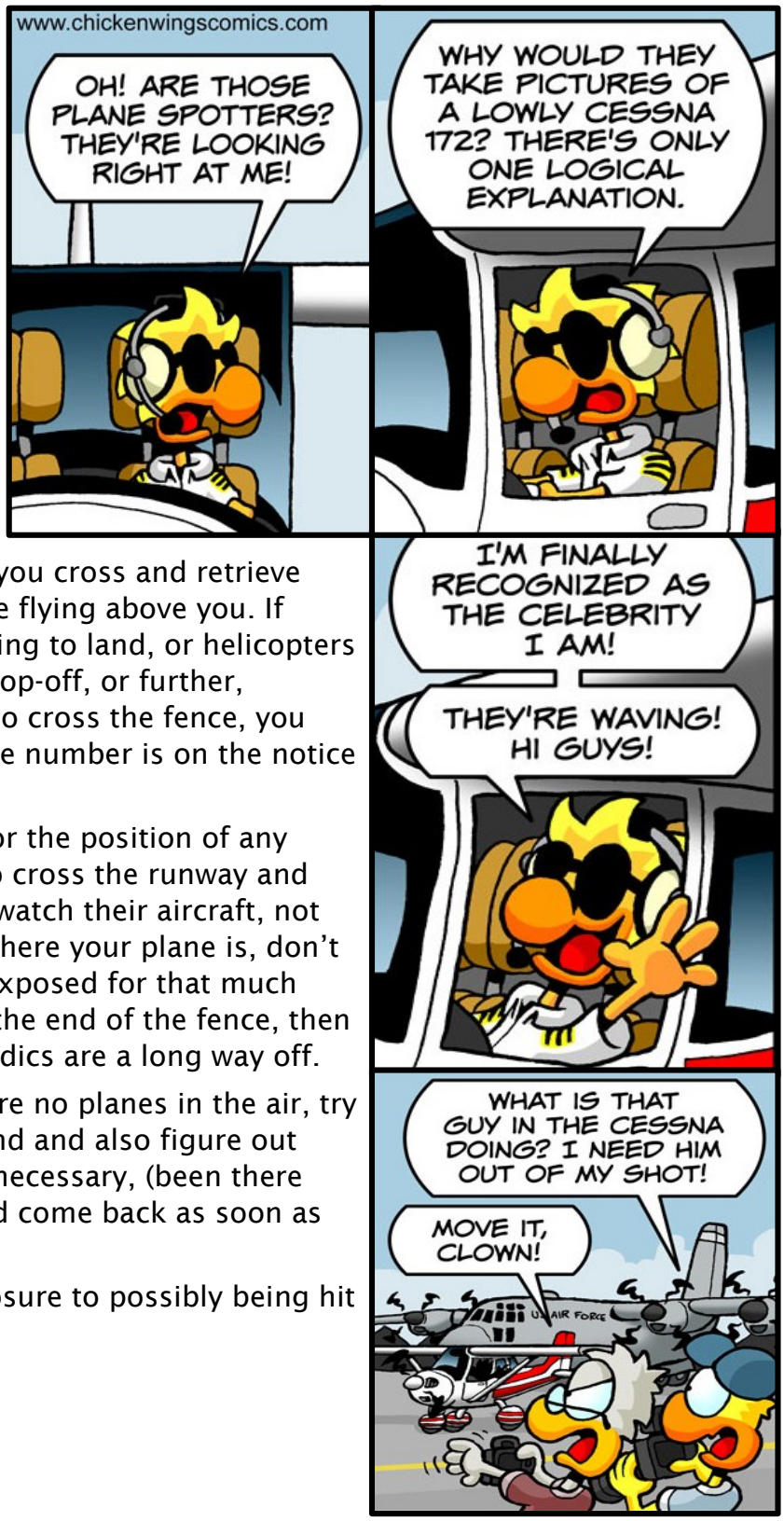


11 Waco UPF-7 wings (bottom right ready for covering; left partially complete).



12 Another shot of bottom right wing (view of top side).

by Dave Kadonoff



Flying In a Safe Environment

Don't chance that retrieving a downed aircraft might leave you down as well! Planes end up disabled or stuck along the length of the runway as well as beyond the runway into the field, past the flats and into the trees and that's a long way to go to get your plane! Getting across the runway is just the first safety hurdle.

Younger kids tend to run across the runway on a whim to recover their precious plane. This is very dangerous to say the least. Keep that in mind when you bring family and friends out as spectators. We really encourage you to find someone to be a spotter to keep flying pilots updated on your whereabouts as you cross and retrieve your plane. If you're on the flats, planes will be flying above you. If you're off to the right or left, planes approaching to land, or helicopters may be the challenge. If you're out past the drop-off, or further, rattlesnakes may be lying in wait. If you have to cross the fence, you must call the rangers and leave a message. The number is on the notice board.

But, stop before crossing the runway, look for the position of any models in flight, and yell that you are about to cross the runway and yell when you have cleared the runway. Pilots watch their aircraft, not you and your location. And depending upon where your plane is, don't cross the runway diagonally leaving yourself exposed for that much longer. Walk on the near side of the fence, to the end of the fence, then look and then call out your intentions. Paramedics are a long way off.

When you get to your aircraft, unless there are no planes in the air, try not to dawdle out there. Pilots are trying to land and also figure out when it's clear to land. Take a garbage bag if necessary, (been there more than a few times), collect the carcass and come back as soon as reasonably possible.

Remember, the key is to minimize your exposure to possibly being hit by an aircraft and to call out your intentions!

Stay alert and stay healthy!

Dave Kadonoff, OCMA Safety Officer
kadonoffd@yahoo.com

NOVEMBER 2022 SQUADRON MEETING

Commander **Mike Greenshields** kicked things off with the usual general information and business items (which you can read about in the meeting minutes, so I won't cover it all here). But he did want to remind everyone of the upcoming **Squadron Christmas Party** and asked that everyone make every effort to attend. This is always a fun event and it offers a terrific opportunity to get together and talk airplanes, meet the spouses that make this all possible, and enjoy some *great* food (and hosted bar!).

Nominations for Squadron board positions came next and, since there weren't any, we took a motion to roll the 2022 board into the 2023 board. It will come up again at the Christmas party when a final vote will be taken.

An important correction from last month: **Larry Wolfe** donated an F-82 Twin Mustang ARF that was reported to become a Christmas party raffle prize. That is not the case. The F-82 will be raffled off at the 2023 Warbirds & Classics event next summer.

There was an unusually large number of folks with things to share, so Show & Tell took a bit longer than usual. Here's how that went...

Ed McCormick – J-3 Cub: Ed brought in this partially-built Sig kit that needs a new home. The 48" wing is complete while the fuselage and empennage are almost done and ready for covering. Ed is trying to find someone who will finish the model. Contact Ed (ed88mac@gmail.com) if you think you're that guy (or gal).

Ed McCormick – RAF SE-5a: Ed also showed his SE-5a and talked about some of the challenges he's overcome in the final stages of the project. He said the Zenoah G-38 is a tight fit but his yoga training helped a lot in getting it maneuvered into position. It's been fully assembled and he expects it to come in at about 20lb.

Jon Perry – Cessna 182 Skylane: Jon has been working on this model for a while and has had mixed success so far. This is an ARF from CMP that uses a fiberglass fuselage and built-up wing. The original kit provided basic wire main landing gear that Jon replaced with something a little more sturdy that he built from scratch. He's much happier with the new mains.

Based on prior experience with CMP models, Jon anticipated that CG would be a problem. He was right and after a bit of research, he was finally able to sort it out.

Another head-scratcher was the windshield, which didn't want to be installed, but Jon finally convinced it to behave and it looks great.

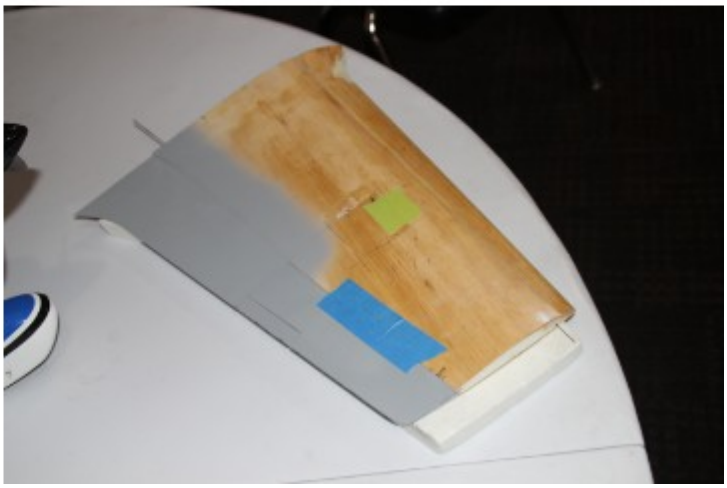
Power comes from an O.S. 46FS nitro burner with a Pitts-style muffler. He doesn't expect power to be a problem.

The model is pretty much complete and will be ready for a first flight any day now.

Larry Wolfe – Grumman F-9F Panther: Larry has been working on this model for a while now and it's a great demonstration of how patience leads to slow, but amazing progress. This night, all he brought along was one wing panel but that was enough to spark a ton of discussion.

Larry is a stickler for detail and a proven master of providing elegant solutions to intricate problems. Each wing of the Panther incorporates four moving parts: a leading edge flap, trailing edge flap, aileron, and "flappette" (sort of a sub-flap that functions as part of the TE flap in certain configurations). All in all, it's a very busy wing that has provided some interesting linkage and programming challenges. Larry has figured out a way to manage both the leading and training edge flaps from a single servo.

The finished model will be one piece and will be powered by a 90MM EDF. He expects it to move along in the 130MPH range.



Mike Greenshields Personal Squadron: Mike can't be burdened with making a decision about which airplane to build so he's gone ahead and started work on *all* of his favorites. This night he showed the **Flite Streak** 1/2A C/L model, **Piper PA-28 Cherokee**, 48" **Partenavia P-68 Victor**, and a 48" electric-powered glider that Mike couldn't remember the name of, but it sort of looks like an old Bird of Time and he couldn't resist the call.

The Flite Streak will be powered by something in the 1/2A class (but probably not electric), while the Cherokee will take something in the .07 range. The Bird of Time wannabe came with an electric motor arrangement that impressed Mike a lot and he'll use that. The P.68 will take a pair of motors but he hasn't picked out specific hardware yet.

Mike mentioned that he has limited building space but he loves to build. So building smaller models makes a lot of sense for him. He expects to fly most of these at the 2023 W&C event.

Jaime Colley – Fokker D.VIII: Jaime came prepared to show how to build an airplane from scratch in the 21st century. He designed his Fokker D.VIII from a set of dimensioned 3-views. He explained how the wing is built up from laser-cut ribs and foam sheet. The fuselage is built as a box and uses a couple lite ply formers with a foam skin. All surfaces are sanded, blended, and filled with Sherwin-Williams lightweight spackle. After sanding, everything was coated with Minwax Polycrylic finish which he says dries very hard and provides excellent protection for the exposed foam parts.

Jaime then went on to describe how he used his Cricut cutting machine to make templates to paint the classic German lozenge pattern on the fuselage and wing.

The motor mount was printed on his 3D printer and is the same design as the one he used on his recent Sopwith Camel resurrection project.

Tim Cardin – Republic P-47 Thunderbolt: Tim brought along the fuselage for Ed Woodson's P-47 (Tim hadn't yet figured out how to get the rest of the parts in his truck) and talked about the progress he'd made since October. He's had the completed model at the field for taxi tests, which resulted in a punch list of 30+ items. Most of these had been resolved by meeting night.

Tim was *very* pleased with the look and feel of the model during the taxi tests and is expecting great things when it comes to finally getting the wheels off the ground.

In these final stages, he has a much better idea of what the finished model will be like. The **Moki 250cc 5-cylinder radial** will definitely not have any trouble pulling the 54lb model around.

Paint is complete, graphics are applied, and most of the small nomenclature is complete. First flight could be any day now.

Inaugural Builder's Wing of Warbirds & Classics

At the July Squadron meeting, Commander Mike Greenshields floated the idea of some kind of special recognition for pilots who bring handmade models to Warbirds & Classics. That idea has been fleshed out a bit and will be discussed in more detail at subsequent meetings. We're calling it the **2023 Builder's Wing of Warbirds & Classics** and it's open to any Squadron member who *builds* a scale model airplane. The purpose here is to get back to the roots of what the Scale Squadron was, and still is: the *building* of scale model airplanes.

Here are the qualifications:

1. It needs to NOT be finished yet. So, an airplane that was NOT finished before the last event but is flying before the 2023 event.
2. It needs to be built from a kit, plans, or scratch.
3. You don't need to have started it, but YOU need to have done the majority of the building and finishing of the plane
4. ARFs or BARFs do not qualify. This needs to be a kit or scratch model. BTW, ARFs that are really not ARFs, like Composite ARF, are just fine. Why? If you've ever built a CARF kit, you will agree that a wood airframe would be easier to build and finish.
5. No foamies (all foam airframes). Foamies have been part of the hobby for decades but they are not in the spirit of this effort.
6. Buying someone else's built airplane is great, but it does not count here.
7. **The BIG ONE**: We are hoping that you will commit. Put your name down on the official signup sheet (started at the October meeting) and then bring in your model every month. Share your plane, share your progress, get your fellow club members to help you if you run into a challenge.

Registration for the Builder's Wing opened in October, 2022. So dust off a couple of those old projects and get ready to show your stuff.

See you at Warbirds & Classics 2023!

*For more information, contact **Mike Greenshields**.*

Martin Boost showed off his **Viper Aircraft ViperJet** EDF. This is a model of a two-seat homebuilt turbojet. The 60" model weighs in at about 16lbs. Martin loves low and *fast* flybys and the ViperJet provides a great platform for that kind of flying. He says it's a handful to fly but well worth the effort. Power comes from a 90MM fan and 12S battery and the model has been clocked at 160MPH.

Unfortunately, I didn't get any photos of **Frank Baker's General Dynamics F-16 Fighting Falcon** in the air. But this airplane looks as good on the ground as it does in the air. Frank said the E-flite model has a 1:1 thrust ratio so performance is outstanding but it handles nicely so the pilot workload is pretty low. The wingspan is about 40" and overall weight is right at 6lb. ready to fly.

Alex Martinez' flew his **Yakovlev Yak-11** and says it's a terrific airplane. He acquired it a couple months ago from Hobby King and has several flights on it. It's been clocked at about 120MPH on a 6S battery. He was very impressed that *everything* was included except the transmitter. He had a little trouble keeping the canopy in place with the factory-supplied hardware but that was easily solved with a couple rare earth magnets.

Alex Martinez also brought out his **Fokker D.VIII** but was unable to fly it due to carburetor troubles. This five-year-old ARF has seen lots of flights but still looks like it just came out of the box. Alex says he keeps up the maintenance because it's a lot of fun to fly and he likes to make a good impression with it. Flight characteristics are like a trainer but breezy days with a crosswind can make for "interesting" landings and take-offs.

MONTHLY MEETING NIGHT

Monday
December 12, 2022
7:00pm

The December 2022 Meeting is On!

As always, the December meeting will be the **Annual Squadron Christmas Party**. There will be a *teenie* bit of official business (election of Board officers) but no Show & Tell. See **Page 6** for details about the party. Every paid-up member plus one guest is welcome.

A high point of the Squadron Christmas Party is always the **Show & Tell Raffle**. Anyone bringing something to the monthly meeting for Show & Tell will receive a raffle ticket for their trouble. Here's where that all pays off! The only condition on the raffle is that winners must be present at the party. So hire a babysitter and ***Let's Party!***

Meeting location is the **Green Valley Adult Clubhouse**. The address is:

17250 Los Jardines West
Fountain Valley, CA 92708

Directions from the South:

- From **I-405 North**, exit at **Euclid**
- Turn **Left** onto **Euclid** at the offramp
- Turn **Left** onto **Slater**
- *Go **past** Los Jardines East*
- 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:

- From **I-405 South**, exit at **Brookhurst North**
- Merge onto Brookhurst and turn **Right** onto **Slater**
- Turn **Left** onto **Los Jardines West**

The Clubhouse is on the right about a half block past the school on the left.

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 counter-part.

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.

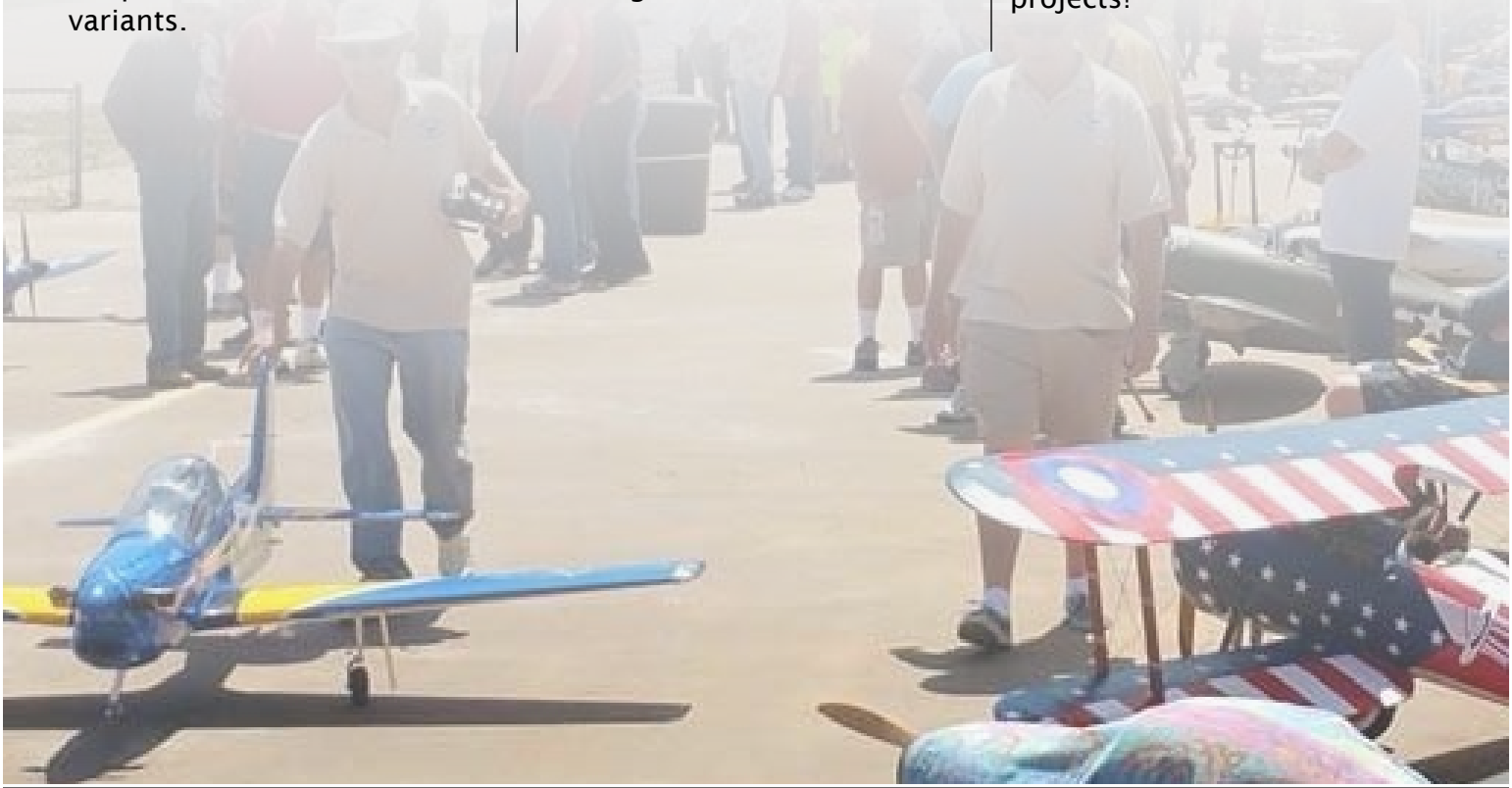
On the other hand, not everyone wants to make a scale masterpiece. That's OK, too! Whatever pleases you is what counts. Whether you are kitbashing, volunteering at charity aviation events, or making molds from scratch for Scale Masters or AMA National Championship competition scale aircraft, Scale Squadron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



JOIN 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 SOUTHERN CALIFORNIA

THE SCALE SQUADRON OF SOUTHERN CALIFORNIA

MEMBERSHIP APPLICATION

AMA ACADEMY OF MODEL AERONAUTICS
AMA Charter 1520

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.

NEW ☐ RENEWAL ☐ Recommended by _____ DATE _____

Name _____ Spouse _____

Address _____ City _____

State _____ Zip Code _____--_____ Email _____Birthday _____

Home Phone _____ Work _____Ext _____ Mobile _____

AMA#_____ FAA _____ USSMA _____ FCC/Ham _____ EAA _____

MODELING INFORMATION

Years in R/C _____ Modeling Level: New ☐ Intermediate ☐ Expert ☐ Need Help ☐

Interest Area: WW1 ☐ WWII ☐ Golden Age ☐ Civilian ☐ Vintage ☐ Jets ☐

Private or Commercial Pilots License & Type Rating _____

Are you interested in Scale Competition? Yes ☐ No ☐ Would Require Assistance ☐

How did you hear about the Scale Squadron? _____

GENERAL INFORMATION

Meeting Preferences. Check all areas that you would like to see at the monthly meetings

How To ☐ Videos ☐ Guest Speakers ☐ Scale Techniques ☐ Scale Contest Prep ☐

Your Ideas _____

Would you be willing to assist at Scale Squadron Events? Yes ☐ No ☐ Maybe with Help ☐

Registration ☐ Gate ☐ Flight Line ☐ Judging ☐ Scoring ☐ Cooking ☐

Comments

_____

NOTICE: This information is only for the Scale Squadron Data Base and will not be shared or sold to any outside agencies. Your information may be used in a Scale Squadron Membership Guide available only to paid members.