

THE SCALE SQUADRON
OF
SOUTHERN CALIFORNIA



Founders of the
US Scale Masters Championships

SCALE DIMENSION

Official Newsletter of the Scale Squadron of Southern California



Warbirds & Classics
2024 Update
Page 9



Page 14
Engine Insights
Page 18
McDonnell XP-67 Moonbat



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



03 Commander's View

04 Leading Edge

05 May Meeting Notes

08 June Meeting Announcement

09 Warbirds & Classics Info

10 Safety Notes

11 May Squadron Day at OCMA

12 A Day at the Field

14 Engine Insights

18 Documentation: McDonnell XP-67 Moonbat

22 Upcoming Events

26 Who We Are

27 Join Us!

28 Membership Application

The Scale Squadron of Southern California

2024 Board of Directors

Commander

Mike Greenshields
mikegreenshields@gmail.com

Executive Officer

Eric Puchalski
roadkill1954@gmail.com

Treasurer

Tim Cardin
Tim.Cardin@CardinWest.Com

Secretary

Joni Whitsitt
whitsittjo@gmail.com

Board Members at Large

Larry Wolfe
copsmom98@aol.com

Joe Trama
joe.safepro@gmail.com

Jon Perry
jwperry77@gmail.com

Newsletter Editor

Eric Puchalski
roadkill1954@gmail.com

Mailing Address

PO Box 8074
Fountain Valley, CA 92728

On the Web at:

<https://www.ScaleSquadron.com>

On the Cover

1. North American P-51D Mustang "Twilight Tear" belonging to Tom Reiner on a high speed flyby.
2. Anand Patel's recently acquired Douglas C-47 Skytrain about to start its takeoff roll.
3. Khoi Tran's giant Focke-Wulf Fw 190D Würger on short final.



Scale Dimension is published monthly by The Scale Squadron of Southern California. Copyright 2024, all rights reserved. Reproduction in whole or in part of this publication is granted with acknowledgment of the origin of the information. This must include the name of the publication (*Scale Dimension*) and the name of the publishing organization ("The Scale Squadron of Southern California" or "The Scale Squadron"). This newsletter is published approximately one week before the first day of each month. We welcome all editorial submissions but assume no responsibility for the loss or damage of unsolicited material. Contributions and photographic material are welcome but must be accompanied by release of liability for the publication of potentially copyrighted material. TO AUTHORS, PHOTOGRAPHERS, AND PEOPLE FEATURED IN THIS NEWSLETTER: All materials published in *Scale Dimension* become the exclusive property of The Scale Squadron unless prior arrangement is made in writing with The Scale Squadron. SUBSCRIPTIONS: *Scale Dimension* is distributed at no cost to Scale Squadron members and newsletter subscribers. If you are not a member of the Scale Squadron but would like to subscribe to the newsletter, send your subscription request to the editor to get added to the distribution list. Be sure to include your name, email address, and a general outline of your interest in modeling. ADVERTISING: If you are interested in advertising in *Scale Dimension*, contact the editor for information on how to do that. DEADLINE: Contributions to the newsletter must be received before 20th of the month in order to be included in the next month's newsletter. DISCLAIMER: While every effort has been made to avoid mistakes, The Scale Squadron is not liable in any way for errors or omissions.

COMMANDER'S VIEW



Mike Greenshields
Commander

Squadron Members, Family, Friends,

WE ARE ON W&C COUNTDOWN!

The Team is making great progress! Preregistration is up. All the preparations are being made. Many of you have already signed up to help.

We *are* going to have a fun and a memorable weekend. Please plan to spend some time with your club that weekend and partake in the joy that is **Warbirds & Classics**.

And don't forget... you can order a t-shirt or get banquet reservations on the website even if you

are not flying at the event.

If you have any questions, concerns or suggestions about the event, don't be shy. Let me know.

Guys, there's still a lot to do to help event organizers **Randy Wilbur** and **Joni Whitsitt** get us ready for W&C 2024. But then... there's going to be a whole lotta fun!

Next up... I am really fired up about the next **Scale Master Qualifier** on **July 12-13**. It is local in Hemet and is just around the corner. So we all have six weeks to practice. I haven't decided which plane to fly in it yet. Fate may help me make that decision! I hope you are all thinking about which plane you're going to fly at the event.

Some of you have a long history of competing. Some of you have never competed. Don't let either of those things stop you. The "pros" are willing to help and the newly initiated will motivate the old guys I hope!

We'll get **Curtis Kitteringham** from US Scale Masters out to answer your questions.

I hope to see everyone at the June meeting, W&C 2024, and the Hemet US Scale Masters event!

Happy Summer and Happy Landings!

Mike Greenshields, Commander

Commander@ScaleSquadron.com



B-17 'Borate Bombers'

Post-WWII, the B-17 had a long and distinguished utilization in various roles, including search and rescue, cargo, transport, aerial photography, surveying, scientific research, film and media, etc. One special role was as an air tanker in the annual battle against forest and range fires fought in the U.S. each summer and fall. A total of 23 B-17s were utilized in the years between 1960 and the early 1980s as air tankers, or 'borate bombers' as the media liked to call them. Of those 23, eight were lost in accidents related to the dangerous job of flying low and slow over raging infernos on the sides of mountains and canyons. Despite the loss rate that approached 35%, the use of the B-17 as an air tanker helped ensure its longevity and survival into the 21st Century.



This issue marks my third year as Editor of the *Scale Dimension* newsletter. I've thoroughly enjoyed producing the newsletter for a number of reasons. But foremost among them is that it gives me an opportunity to spend time learning more about this terrific hobby of ours and the people who participate in it. I have learned more in the past few years of hanging out at Squadron meetings, OCMA Field, and, of course, Warbirds & Classics than I learned in all the years prior.

I'm looking forward to more years of enjoying the hobby, learning more about it, and sharing that knowledge with you.

Speaking of Founts of Knowledge...

Our own **Mike Greenshields** has been involved with all kinds of modeling for his entire life. Mike was encouraged in the hobby by his dad (John) so long ago that he can't remember ever *not* being a modeler. Mike also followed his dad into the hobby industry. John Greenshields was the general manager of Hobby People until he retired in the mid-1990s. Mike started working part-time at Hobby *Shack* as a teenager and worked his way up the management ladder until Hobby *People* shut its doors in 2018.

The bottom line is that Mike has a *gigantic* store of modeling knowledge and he's always willing to share it.

The April 2024 issue of *Model Aviation* magazine includes an article written by Mike that describes the basic care and feeding of small nitro and gas engines. I've included a copy of that article in this issue of the newsletter for your reading pleasure.

Check it out beginning on **Page 14**—I guarantee you'll learn something.

Warbirds & Classics

The 17th Annual Warbirds & Classics event is literally **right around the corner**. This centerpiece of the Squadron's annual calendar is only 17 days after the June Squadron meeting. Event organizers, **Joni Whitsitt** and **Randy Wilbur** are doing their usual spectacular job of getting everything organized but there is still plenty of room for Squadron members to help out.

This year, as in other years, there are lots of jobs to be filled and not enough volunteers to fill them. Since you're going to be at W&C anyway, how about loaning yourself to Joni and Randy for an



Eric Puchalski
Newsletter Editor

hour or two? Be assured that no volunteer has ever missed a minute of flying time due to helping out.

McDonnell XP-67 Moonbat

This month's documentation subject is one that I've been wanting to do for some time but wasn't able to find enough material to actually start a project. The XP-67 was a one-of-a-kind prototype that started out full of promise but due to a number of unexpected complications, ended badly. The design used a lot of aerodynamic features that wouldn't be seen again on any aircraft until well into the Jet Age. The first modeler to bring one of these to the field is going to steal the show for some time to come. Take a look starting on **Page 18** and see if you don't agree.

OCMA Field Schedule

OCMA President Tim Cardin recently sent out an email reminding everyone that the month of June is typically a busy one for Irvine Lake and James Event Productions. This year is no exception. Fortunately there will only a couple periods where OCMA Field itself will be impacted. Most every day in June is almost guaranteed to provide beautiful flying weather (despite the June gloom). But you should to check the OCMA website for possible interruptions before heading to the field.

I'll see you at the field!

A handwritten signature in black ink that reads "Eric Puchalski".

roadkill1954@gmail.com



MAY 2024 SQUADRON MEETING

Commander Mike Greenshields brought the meeting to order (as best he could, given the people in the audience) and dove right in to general business. First and foremost was a reminder that **Warbirds & Classics** is only six weeks away. All the bits and pieces are moving along and Mike feels this will be a terrific year. He took the opportunity to remind everyone that the event relies on the participation of pretty much everyone in the Squadron. He asked that everyone volunteer to work for a couple hours at *something*. **Event Coordinator Randy Wilbur** passed around a sign up sheet for that purpose.

A couple other topics were discussed and then we moved into **Show & Tell...**

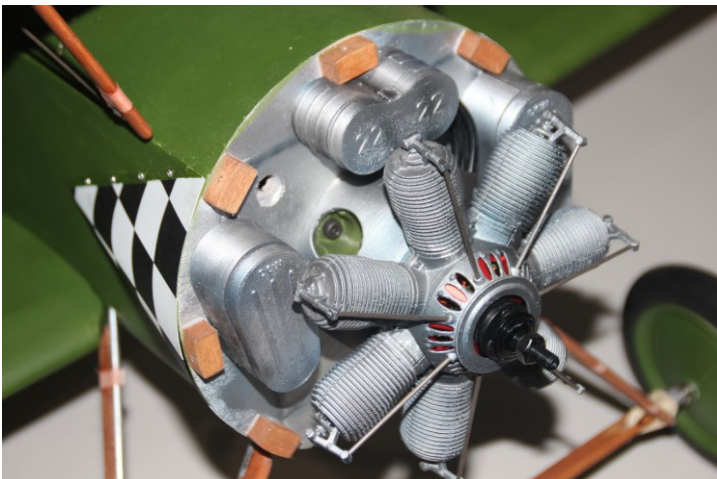
Jaime Colley brought not one, but *two* airplanes to show off. The first was a **Fairchild Republic A-10 Thunderbolt II** (AKA "Warthog") from E-flite. This is an ultra-micro that was originally powered by a two cell LiPo system which he upgraded to three cells. He's been flying the model for about three months now and he's very happy with the performance. The model included fixed landing gear with a steerable nose wheel. He replaced the wheels on the landing gear with clear plastic skids rather than try to install micro retracts. Jaime said he launches the airplane by hand and it lands just fine on the skids. Jaime has had the model for a while and has lots of flights on it.

The other airplane he brought is a **North American F-86 Sabre**, also from E-flite, which he'd only had for a couple of days as of meeting night. He hadn't flown it yet, but that was going to happen sometime later in the week. He said he has to fiddle with the battery location somewhat to correct the CG. The model includes stabilization electronics which should make it easy to fly despite its small size (17.4" wingspan, 6.0 oz flying weight). This model is also a BNF and also included steerable nose wheel and fixed landing gear.



May 2024 Squadron Meeting

Pat Driscoll brought along his **Thomas Morse S-4C Scout** that he's been working on for the past several months. He said the model is ready to fly at this point and he'll fly it as soon as he becomes a little more confident in his pilot skills. He described the process he went through for paint which included the purchase of a new airbrush. That was something of a random choice off the Internet. Similarly, he did some research into paint and colors and finally settled on Model Air, which offered the colors he needed. He applied the paint at very light coats; the basic green on the fuselage and wing required about five coats to get where he wanted it to be. Weight was also a challenge. As with most models of WWI-era airplanes, it turned out tail heavy. In the end he added approximately 1.3 lb under the cowl to finally get it to balance. The overall weight came in just under 7 lb. Pat did a terrific job with his dummy engine. This was 3D printed from files he found on the Internet and then painted to simulate aluminum.



Randy Wilbur had an interesting story to tell (doesn't he always?) about his starter motor that he's been using for a few years. Initially it was powered by three 6-volt gel cell batteries wired in series to provide 18-volts. Although a bit on the heavy side, that setup worked about as well as it needed to until the batteries gave up the ghost. He replaced them with two 12-volt gel cell batteries which worked even better than the triple 6-volt arrangement. (Although the extra voltage did burn up one of the power buttons.)

One day at the field he ran into Ed McCormick who asked him why he was dragging two big batteries around when he could be using a single LiPo. Randy didn't have a good answer for that. So he rewired the starter to use a single LiPo in place of the two 12-volt gel cells. While he was at it, he added some wood bits to the handle to provide a better grip. All in all, he's very happy with the changes and thanked Ed for his insight.



APR & MAY 2024 SQUADRON MEETING NOTES

April 8, 2024

Commander, Mike Greenshields called the meeting to order at 7:08pm. Mike welcomed everyone and led the Pledge of Allegiance. Mike asked if any new members or visitors in attendance. He noted that **Randy Wilbur**, Contest Director for Warbirds & Classics was in attendance and was going bring the members up to date on the event later.

Treasurer’s Report: Tim Cardin read the Treasurer’s report and said the club has money in the bank.

Warbirds & Classics Event: Randy Wilbur and Mike Greenshields gave an update: 20+ pilots registered so far; at this point, inside pits are reserved, a few outside pits are open; t-shirts are ordered and the cost increased to \$20.00 a shirt this year; food for Saturday taco lunch and Saturday night banquet are confirmed. The food for Friday is cheeseburgers, polish sausage, and hot dogs with chips and a drink. Randy needs a couple of volunteers to help cook on Friday and Sunday lunch time. Tim Cardin said he can get the club some help from OCMA for cooking on Friday. Joni has the Friday appetizers confirmed. Randy needs help for the parking, he will pass around a volunteer sheet. If you can help, please sign. We need donations for the raffle too. Joni has the raffle tickets.

Upcoming Events: Mike reported that PVMAC is having **Wings Over Chino**, a two-day event on Friday, April 19th and 20th. Joni and Randy plan to attend and pass out flyers for our W&C event. Tim Cardin reported on **Warbirds Over Arizona** event with 105 pilot in attendance. Gordon Truax announced an upcoming event at **Planes of Fame**.

Squadron Fly Day: Joni announced Squadron Fly Day for April will be Sunday, April 21st at OCMA Field from 10:00am to 2:00pm. Joni is fixing hot dogs and polish sausage sandwiches with chips, water, donuts too.

Break: 7:43pm to 7:55pm

Show & Tell: **Pat Driscoll** talked about paint and covering he did on his Thomas Morse S4C Scout.

Dave Kadonoff purchased a Cricut machine and showed off his solution which he prints on vinyl paper markings and transfers to his models.

Larry Wolfe brought the upper wing from his Spad XIII.C3 . He showed an upper aileron as well as an uncovered aileron.

Ed McCormick is finishing his Douglas SBD-5 Dauntless. Ed plans to install a Supertigre .90 two-stroke engine for power.

John Wencil brought a partially framed 1.6 scale Messerschmitt Bf 109 that he is building.

Randy Wilbur brought in a T-6 Texan. Randy said he has made some progress working on the plane the last few months.

Members in Attendance: Gordon Truax, Connie DeJong, Randy Wilbur, Joni Whitsitt, Mike Greenshields, Tim Cardin, Chris Madsen, Jerry Thompson, Larry Wolfe, Dave Kadonoff, John Wencil, Ed McCormick, Joe Trama, Ron Grater, Pat Driscoll, Mark Puchalski.

April Minutes: Motion to approve minutes by Dave Kadonoff, seconded by Larry Wolfe.

Meeting Adjourned: 8:45pm

[ed note: The detailed meeting notes from the May meeting weren’t available when the newsletter was being put together. The following is a list of subjects we talked about. The detailed notes will be published next month.]

May 13, 2024

Commander Mike Greenshields called the meeting to order, welcomed everyone, and led the Pledge of Allegiance. From there, the meeting proceeded along the following general agenda:

- a. Introduction of new members and visitors
- b. Treasurer’s Report. (Tim Cardin said we have money in the bank.)
- c. Tim talked about the County trailhead ribbon cutting ceremony later in the month. For now, all trail use will be docent-led and there will not be many of them. Regardless, public activity at the trailhead will be increasing from here on out.
- d. Tim also mentioned that the old operations building will be taken down sometime in May.
- e. Warbirds & Classics 2024 event organization and planning is all OK and event will be successful based on current registrations.
- f. Need more W&C volunteers.
- g. Show & Tell
- h. Approval of April meeting minutes.
- i. Meeting adjourned.

MONTHLY MEETING NIGHT

**Monday
June 10, 2024
7:00pm**

The June 2024 Meeting is On!

This will be our *final* Squadron meeting before Warbirds & Classics 2024. There will be lots of discussion about items that remain to be checked off. You won't want to miss this final opportunity to get your questions answered and lock in your plans to be part of the fun.

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:

- 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.

We're Down to the Wire!

Friday, June 28 through Sunday, June 30, 2024

The 17th annual Warbirds & Classics fun fly is happening just two weeks after our June Squadron meeting. Everything that can be done up to this point has been done: food, t-shirts, raffle, awards, PA system, banquet night, pilot pits, parking, and even Porta Potties have been accounted for and are in good shape. **All we need now is volunteers. Help! Help! Help!**

Food booth, parking, raffle, setup, and clean up. These are not tough jobs if we all pitch in. Since you're going to be at the event anyway, why not volunteer to help out for an hour or two to make sure something doesn't get missed in the shuffle? During the event, organizers **Joni Whitsitt** and **Randy Wilbur** will be everywhere at once and you'll have no trouble finding them. They will make sure that no matter what you're able to do, it won't interfere with your flying time.

And remember to bring friends, family, neighbors, and the nearest Scout troop when you come out to join the fun. There is always plenty of parking and no charge to spectators. There will be a lot to see and experience during the day and at night, and your invited guests will thank you for a long time to come.

See You There!

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. You know... no Ugly Sticks with Air Force markings, etc. What we'd *love* to see is your latest scale project!
- ◆ AMA membership and FAA registration are required and you will be asked to show your 2024 cards at registration.
- ◆ We will fly a standard pattern so no hovering or other Freestyle/3D type flying.
- ◆ Helicopters are allowed as long as they are scale and fly the same pattern as the fixed wing models.
- ◆ OCMA Field safety regulations apply.



- ◆ Formation flying is allowed. Please work with our CD and Air Boss to ensure you have the space (no more than five pilots at a time)
- ◆ OCMA Field is an FAA FRIA flying site so a Remote ID transponder is not required in your model but you must have an FAA registration number on your model 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, send fire trucks, and that would be bad for everyone.

Obviously we can't control the weather but late June in that area is usually fairly calm winds, no rain, warm but not smokin' hot weather (high 70s to 80s usually).

If you have questions about any of this, just contact your favorite Squadron Board member.

See You at Warbirds & Classics 2024!



SAFETY NOTES

by Dave Kadonoff

Face the Music!

I am continually amazed by how many people inadvertently place themselves in harm's way and without even thinking or worrying about it. As we would likely agree, the most dangerous place to be at the field is in front of an airplane (*any* airplane!) unless the engine is definitely not running or for electricians, the battery is in your hands! Yet I watch in utter astonishment at how many people walk in front or stand in front of their plane as they are taxiing it into the engine kill zone after a flight. Planes can go stupid for a variety of reasons, and it is simply foolhardy to stand in front of a running propeller. Stay to the side and then walk around the plane to turn it off or disconnect the battery.

But wait! You have to get dangerously close to the runway to do that!! Did you bother to look for any planes that were landing or making a high-speed pass? Often, no. I have seen people bending over their planes, butts to the runway, with planes flying by. I need to lose weight, but field surgery is ill-advised. Same goes for crossing the field to get to a plane. Don't walk diagonally to your plane. Stay on the safe side of



the fence for as long as you can while you walk towards your plane. The fence is there for your protection. *Use it!* And use a spotter *standing at the pilot stations* to keep an eye on you and to update those who are flying.

Stay alert and stay healthy!

Dave Kadonoff, OCMA Safety Officer

kadonoffd@yahoo.com



Shredded Seminole

On the night of August 26th, 2001, at Parafield Airport, north of Adelaide, Australia, Doctor Luis Isabel, a 50-year-old surgeon, was preparing for a flight home when he discovered that the battery to his single-engine Piper Saratoga was dead.

Satisfied the handbrake was on, he neglected to use chocks or locate another pilot to take the controls. On the doctor's first attempt to hand-start the propeller he felt a "huge surge of power" as the engine started.

The plane shot away from him, and taxied forward. After being knocked down by the Saratoga, Isabel was hanging on to the tail of his aircraft trying to stop it. He watched in horror as the Piper shredded through several surrounding aircraft—hoping that, any minute, the engine would stop. But, unmanned for over 150 yards, the Saratoga sliced through four Piper Warriors, before turning sharply right and



plowing into a Piper Seminole, virtually destroying it and spewing out hundreds of gallons of avgas.

Amazingly, no one was hurt in the incident. The Saratoga's wild ride ended, just 25 yards from the airport's fuel tanks.

MAY SQUADRON FLY DAY @ OCMA FIELD



01: Mike Greenshields totally focused on flying his Sundowner Formula I racer that he acquired from Sam Wright's collection.

02: Mike's Sundowner.

03: Just some of the folks who showed up to take advantage of the weather and the opportunity to get in some quality stick time.

04: Dave Kadonoff either flying his FPV drone or doing grip exercises with his portable Peloton.

05: Randy Wilbur getting some pro help from Tim "The Engine Man" Cardin before putting his T-6 Texan in the air for the first time.

06: Joni Whitsitt and Randy Wilbur finally getting to sample their terrific cooking.

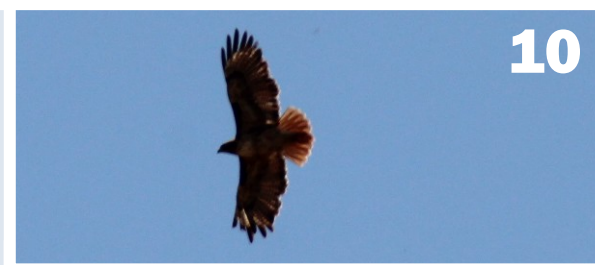
07: Khoi Tran getting his giant Focke-Wulf Fw 190D Würger ready for a flight.

08: Jaime Colley and Pat Driscoll discussing whatever it is really smart engineering types discuss when they get together. But the discussion probably centers on airplanes.

09: Anand Patel rolling out his C-47 Skytrain for flight.

10: One of our local red-tail hawks just hanging around showing the humans how it should be done.

11: Pat Driscoll's very colorful Tiger III. (Pat disavows any responsibility for the color scheme—he said it came that way from the previous owner.)



A DAY AT THE FIELD

Anand Patel acquired this Douglas C-47 Skytrain from a friend about three months ago. The original model is from FMS but Anand redid the paint scheme to match that used by C-47s during the D-Day invasion. Anand says the model is not overpowered and is a very realistic flyer. He has several flights on the model and plans to bring it to Warbirds & Classics in June.



This 102" Focke-Wulf Fw 190 Würger was flown by **Khoi Tran** who did a great job despite some landing gear issues. Khoi said the model was built by someone else from a Meister kit about 15 years ago and Khoi has owned it for three years. Power comes from a DA-85 which flies the model with authority. He has about 10 flights on it and he really likes the way performs.



A Day at the Field

Randy Wilbur flew his **North American AT-6 Texan** for a first flight. He was still tweaking the engine and didn't want to risk overheating problems so he flew it without the cowl. He's finishing this model that was started a couple builders ago. It's built from a Top Flite kit. When Randy acquired it there was still a lot of building to do but it's pretty close to being "finished" now.



Tom Reiner has been flying his **North American P-51D Mustang** for about six years. The basic model is a Top Flite ARF but Tom upgraded several components including retracts from Sierra Giant Scale and a DLE-55 that he recently rebuilt. The model has an 84.5" wingspan and weighs in around 22 lbs. ready to fly. Tom has lost track of the number of flights he has but he says it's "lots."



ENGINE INSIGHTS

Sometimes the answer is fresh fuel. At \$25 to \$40 a gallon, it's a good idea to take really good care of your fuel. If the lid is tight and the fuel has been stored out of the sun and off the floor, it can be stored indefinitely.

Know Your Carburetor

Generally, most carburetors today are of the two-needle variety. The main needle valve adjusts the overall flow of fuel to the carburetor and the low-speed needle valve adjusts and refines the fuel flow as the carburetor barrel closes. For these needle valves, turning them clockwise blocks the fuel flow, making the engine run leaner (less fuel). Unscrewing them (counterclockwise) increases the fuel flow, making the engine run richer.

Needle-valve settings: Regardless of manufacturer recommendations, fuel must flow through the carburetor. To make sure the fuel will flow, I always start

06-07. In SH 32 and 37 engines, there are two O-rings to ensure a good seal around the base of the carburetor, but the O-ring must be compressed and engage with the case. Push the carburetor down slightly with your thumb while tightening the cinch bolt.

08. The gasket between the intake manifold and case must not leak. When the gasket is bad, the intake sometimes misaligns. Here, it's tight and in line.



by connecting a piece of fuel line to the carburetor needle and blowing through it.

On a dual-needle carburetor, blow through while it is set at a high speed (the barrel open). Close the needle and then open it (richen) until you can begin to hear air flow. Repeat the process with the low-speed needle (the barrel open approximately 25%). Close the idle needle until you don't hear air, and then richen until the air starts flowing again. That's usually a rich setting, but the engine will still run.

Air bleed for idle: Some engines use an air-bleed hole to control the air/fuel mixture for low speed. This is typically found on the front of the engine. Start with the screw blocking the hole no more than 40% or 50%. If you can't hear air no matter what you do, something is blocked. Remove the barrel and push air or fuel through the carburetor fuel jet.

Is it drawing fuel? Put some fuel in the tank, cover the carburetor opening, and turn the engine over.



Does it draw fuel from the tank into the carburetor? If it doesn't, look for leaks and try richening the low-speed needle by one turn.

Glow Plug

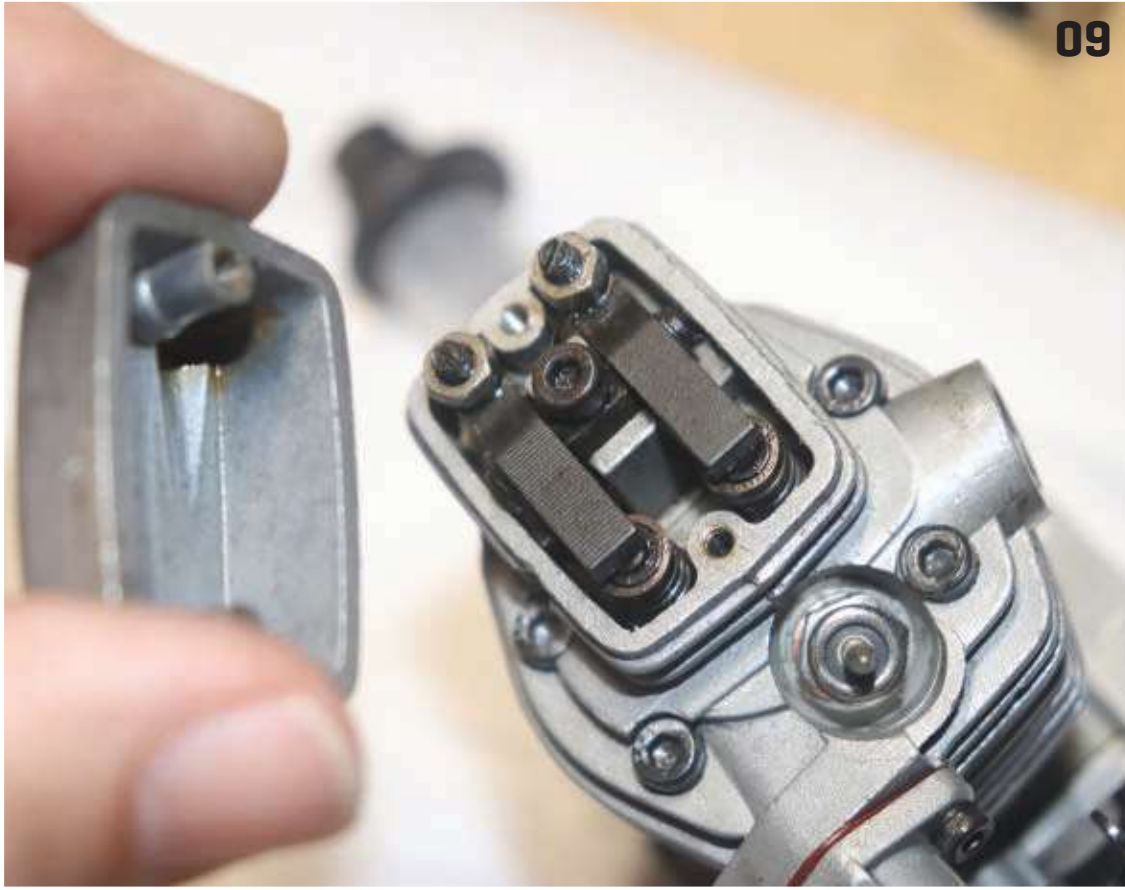
Just because a glow plug glows does not mean that it's good. It might not be working correctly. The coil could be damaged but not entirely broken. If you can't get the engine to idle or to clear out at full throttle (or even start), try a new glow plug. I know they can be expensive. SH does its best to make affordable plugs, but regardless of cost, if it's bad, it's bad, and the engine will not run with a bad one.

Leaks

Every engine has gaskets and/or O-rings, which is pretty much like saying every engine is eventually going to leak or suck air (depending on where the gasket failure is located). Unlike your car engine, the leak is rarely a damaged head gasket. It's usually just a loose screw. Always check for loose head bolts and the backplate (rear engine cover). If you find a loose screw, you probably found a leak.

Make sure that the O-ring seal between the carburetor and engine case or intake is engaged and not leaking. On two-stroke engines that use a cinch bolt, push on the carburetor when you are tightening the





cinch bolt to make sure that the O-ring is engaged.

On four-stroke engines, if the carburetor and the intake manifold are misaligned, this can mean that the intake manifold gasket is failing or is misaligned and leaking. On a friend's engine, the intake manifold gasket had a leak. He sealed the gasket with a bit of high-temperature RTV silicone and reassembled it. Everything aligned and the engine worked.

Throughout the years, people have asked about the gasket, or lack thereof, on the valve cover. On many of our model engines, the valve cover is not sealed and will slightly leak oil. That is normal. Don't seal the valve cover. Leave it as it is.

The valve lash on a four-stroke engine needs to be set properly. If it is too tight, the valves never close. If it is too loose, everything rattles and bangs and the engine will not run right. Set the valve lash to the correct manufacturer's settings.

Here's the pitfall: If you push the feeler gauge into the gap, it can push the valve so that it's really open. We recommend that the piston be positioned at top dead center (the top of the compression stroke), and then loosen the valve adjustment screw.

Place the feeler gauge, and then tighten the adjustment screw until the arm just touches the gauge without pushing on it. You should be able to feel the

rocker arm move, but that movement should be minimal. If there's no play in the rocker arm, the lash is too tight and will cause the engine to run poorly.

At this point, if the engine doesn't run, it's a deeper mechanical investigation. On a used engine, there could be a damaged ring, sleeve, or piston. The crankshaft could be bent and bearings might be damaged. Four-stroke engines could have a worn camshaft, damaged or leaking valves, etc. These are topics for another time.

Breaking in a New Engine

These little engines have amazingly tight tolerances, and breaking them in is the only way to finish a perfect fit. Each manufacturer has a recommended process. These vary according to the design of the engine, ring, piston, sleeve materials, and many other factors. I highly recommend that you do not cut the process short and that you follow the manufacturer's directions.

What can you expect from a proper break-in? At first, the engine might be hard to start or it will quit running unexpectedly. This is usual behavior. This is no indication of the quality of the engine. Break-in running is sometimes inconsistent; however, after the engine starts to break in, you will find that the needle

09. On most four-stroke engines, including this Magnum engine, the valve cover has no gasket and might leak a little. This is normal. The oil just means that the top of the engine is getting the lubricant it needs.

10



10. Adjusting the valve lash sometimes feels as though you need four hands. The author recommends mounting the engine and having the right size screwdriver and open-ended wrench to adjust the screw and the cinch nut with the feeler gauge. Make sure that you can feel play in the rocker arm. If you can't, the valves will not close all the way when the engine warms up.

valves will begin to take a setting, the top end will begin to smooth out, and high idle will become consistent.

When the engine runs reliably, we recommend a few final flights to finish breaking it in. In the air, the engine will be leaner and cooler while running at a higher rpm. It is after this point that you can finally bring in idle and transition. A reliable idle will drop a couple-hundred rpm and transition will become smooth without over-leaning the low-end needle.

ABC (or ABN) vs. Ringed Piston

Ringed engines tend to not demonstrate any compression when they are cold. The engine will turn over fairly freely. According to the type of ring used, it could feel as though it has no compression at all. Compression comes as the engine warms up and/or has more oil in it.

ABC (or ABN) stands for an aluminum piston/brass sleeve that is either chrome or nickel plated. Nickel is softer and breaks in a little faster. Chrome tends to be slower to break in because it's a harder plating, but it will last longer.

On an ABC or ABN construction, there is no ring. Instead of the ring expanding to fit the sleeve, the sleeve is tapered on an ABC or ABN engine, creating an interference fit at the top dead center. As the engine

comes up to running temperature, the sleeve expands a greater amount than the piston. The piston then wears slightly to cause a perfect fit between it and the sleeve. Because of this taper, the engine will feel tight at the top dead center. That "pinch" is not only normal but also especially desirable on an ABC engine. That tight fit will lead to a more powerful engine.

Tuning an Engine

Tuning a traditional glow engine that runs on alcohol or nitro is vastly different from tuning a gasoline-burning engine. That is important to know if you're used to running a gas engine, such as a DLA or running an SH gas engines, such as the GF9 (9cc).

Many types of glow-engine carburetor designs have an odd feature. If the low-speed needle is too lean, the engine will not run at all. In others, if the low-speed needle is set too lean, the carburetor will not close. It's very important to start with the low-speed needle being set rich. If nothing is starting or the fuel isn't flowing, the first thing I do is unscrew (richen) the low-speed needle at least one turn.

Set the high-speed needle. Run the engine at full throttle (a fully open carburetor barrel). Slowly lean the needle until the engine reaches peak rpm and then slowly richen the high-speed needle a click or two at a time until the engine drops 250 to 500 rpm.

Mike Greenshields is an active second-generation modeler who flies regularly with the Scale Squadron of Southern California at the local Orange County Modelers Association flying field. He is currently the club's president. He was the product manager, and later the vice president of Hobby Shack/Hobby People between 1997 and 2017.

During that time, he worked with Magnum Engines (both Thunder Tiger Corp. and Sanye Precision Machinery Co.), as well as several other engine manufacturers, including Force engines and SH/Golden Lion. Mike was deeply involved with all product support and customer service throughout his career at Hobby Shack.

Today, he is the importer and US distributor for SH Aircraft Engines from Taiwan and sells that product and other hobby supplies through his website, Mike Goes Flying, listed in "Sources."




The exhaust should be oily and the engine should run smoothly.

Set the low-speed needle. This is where it gets tricky. On most glow engines, the low-speed needle affects transition and idle. This makes it different from gas engines. To get a good setting, run the engine at the slowest rpm at which it will run. It doesn't matter how slow—just as slow as it will go.

Have it run at that rpm for at least 30 seconds then quickly advance to full throttle and watch the exhaust. If it "dies," it's too lean. If a pile of exhaust smoke comes out, and then it accelerates, the low speed is too rich. Repeat this process of checking full throttle by running it at idle and testing the acceleration until the idle is at roughly 3,000 to 5,000 rpm and acceleration is smooth and reliable. From there, the idle will come in and you should achieve the correct idle rpm for the engine.

The smaller the engine, the higher the idle. What you're looking for is the highest idle that will still allow the airplane to stop when taxiing. On my 1/2A

Cherokee, with the SH07, idle is approximately 5,000 rpm. The taxi is controllable and easy and the airplane stops on its own. On my Ugly Stick, the SH .55's rpm is roughly 2,800. In both cases, the airplane will stop when idling.

I hope this helps you enjoy your glow engine. Model engines are amazing machines and it can truly be a blast to fly with one. 

11-12. A peek into the back of the carburetor shows different spray bar styles. In both cases, if the low speed needle is too lean, the entire fuel flow will be cut off.

SOURCES:

SH Engines/Mike Goes Flying
service@mikegoesflying.com
www.mikegoesflying.com

DOCUMENTATION: XP-67 MOONBAT

The **McDonnell XP-67 Moonbat** was a prototype for a twin-engine, long-range, single-seat interceptor aircraft for the USAAF. Although the design was conceptually advanced, it posed many serious engineering problems and never approached its expected level of performance. The project was canceled after the sole completed prototype was destroyed by an engine fire.

McDonnell started work on the XP-67 in 1940 and the first XP-67 was ready for ground trials on 12/01/1943. It quickly became obvious that it was seriously underpowered and it wasn't until the middle of 1943 that a re-engined prototype was available and flight-tested. After lots of testing and modifications things were looking good until an engine fire resulted in the total loss of the first prototype. The second prototype was still in the very early stages of construction and USAAF leaders decided to pull the plug on the project. They felt that performance of the Moonbat wasn't sufficiently better than aircraft that were already in use.

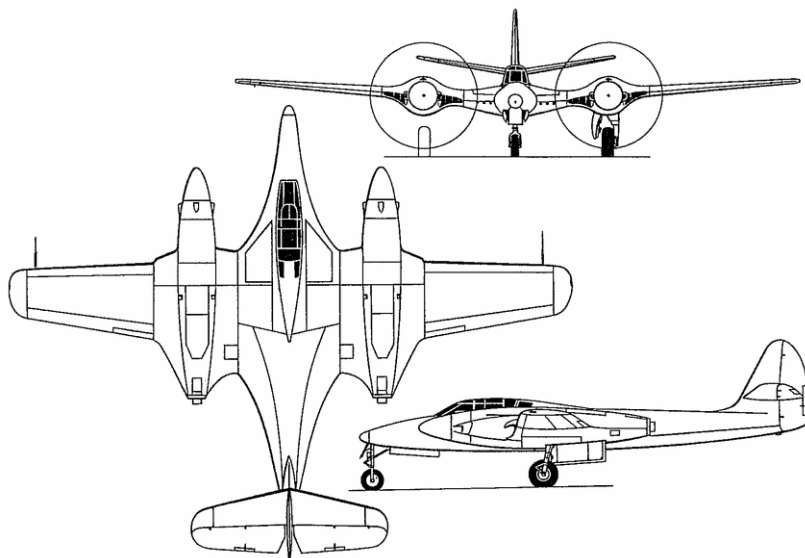
Several armament configurations had been considered (including a 75 mm cannon!) before the configuration of six 37 mm cannon was chosen. Power came from two Continental XIV-1430-1 inverted V-12 engines, fitted with turbosuperchargers

Why You Should Consider This Airplane

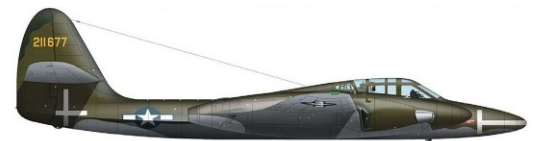
Although it never went into production, the Moonbat has a terrific story. It's a legitimate WWII warbird and it would have been interesting to see it in action. All those blended surfaces give it a sleek and futuristic look.

Despite all it has going for it in the looks department, it doesn't appear to have been modeled very often and I only found one set of plans. So it's a pretty sure thing that you'd be the only one at the field with one.

Let the Editor know if you'd like more details.



Documentation: McDonnell XP-67 Moonbat



UPCOMING EVENTS

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
Jun 27-30	Scale Squadron of SoCal OCMA Field Irvine, CA	Warbirds & Classics 2024 World-famous scale fun-fly for all types & sizes of anything that looks like a model of a full-scale prototype (no turbines or drones). Awards given. Newly paved 600' runway. Friday night early bird party, Saturday night banquet, on-site lunch, overnight dry camping & vendors. Giant raffle with proceeds going to the Semper Fi Fund. Pilot fee covers any number of models. Fun, Food & Frolic!
Jul 12-13	Hemet Model Masters	SoCal USSMA Qualifier This will be a low key qualifier leading up to the USSMA Championship on Oct 10-13, 2024 with the Hemet Model Masters as the host club. The goal is to qualify and improve contestants scores.
Jul 24-28	Tri Valley RC Modelers	12th Annual Central Coast Giant Scale Fly-In Giant Scale until 1700. Jets, 3D and Night flying. FRIA & altitude waivers. Landing fee \$40 (includes pilots' raffle and lunch on Saturday) Dry camping \$15 per night or \$50 for all four nights. 500X50 runway, shade canopy. Santa Maria BBQ Saturday eve.

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.

If You Ever Start Thinking You're Having a Bad Day...



Scale Modelers, Pilots & Fans!

Public
Welcome!

FREE for
Spectators!



AMA Sanction No. 15703

17th Annual Warbirds & Classics Scale Fly-In

OCMA Field (Irvine, CA)

Paved 600ft Runway, Friday Night Party, Saturday Night Banquet (Blake's BBQ), Reserved Pit Areas, On-Site R/V Parking & More!

In Support of USMC Semper Paratus & America's Fund

ENTRY FEE: \$50.00 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](mailto:rwilbur@videotecheng.com) (rwilbur@videotecheng.com)

- ◆ Saturday Night Banquet
- ◆ Pit Reservations: \$25.00/pilot (OK to share)
- ◆ AMA membership required
- ◆ FAA UAS registration required & must appear on plane
- ◆ No Turbines
- ◆ No Hovering or 3D flying

Friday-Sunday, June 28-30 2024

U.S. SCALE MASTERS

PLACEMENT

PRECISION

REALISM

NEW
COMPETITION
CLASSES
FOR 2024

"OPEN CLASS"
IS BACK!*

"SoCal Qualifier"

SCALE CONTEST

July 12-13, 2024
HEMET, CA



Pilot's Fee: \$40

Free for Spectators!

Early Registration and Practice on Friday

Static Judging on Saturday at 8:30am

Flight Rounds Start 9:30am Saturday & Sunday

Lunch Provided on Saturday

Turbines Allowed w/waiver

AMA Required For All Pilots

600ft x 72ft Paved Runway

Overnight Dry Camping Available

Hotels & Restaurants Ten Minutes Away!

145x18 Covered Pavilion

**"Open Class" - some docs needed

- 30 static points max*



"Keeping The Dream Alive"



Beginners Welcome!



Further Details at
U.S. SCALE MASTERS
www.usscalemasters.org

C.D./ Contact: Curtis Kitteringham
cak11@cox.net
(760) 807-5519

Hosted by
HEMET MODEL MASTERS
www.hemetmodelmasters.net

WE'RE
BAAACK!



IN SANTA
MARIA!



TRI-VALLEY RC MODELERS

12TH ANNUAL GIANT SCALE FLY-IN

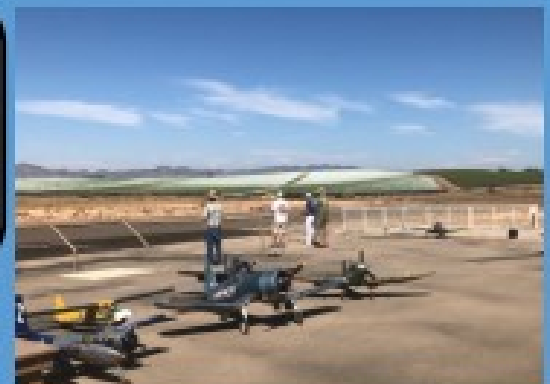
July 24 - July 28 2024

Galloway Memorial Field, Santa Maria, California

OPEN TO GIANT SCALE, NON-SCALE BIG BIRDS AND TURBINE JETS. NO CONTESTS, NO JUDGING, JUST FIVE DAYS OF FUN FLYING! 500 x 50 FOOT ASPHALT RUNWAY WITH WIDE OPEN AIR SPACE!



**MANY THANKS TO
SANTA MARIA ELKS
RECREATION
FOR THE USE OF THEIR
EVENT CENTER
FACILITIES!**



**LANDING FEE: \$40.00 FOR FULL
EVENT or \$20.00/DAY**

**RV DRY CAMPING: \$50.00 FOR
ALL 4 NIGHTS OR \$15.00/NIGHT**

Galloway Memorial Field is located in Santa Maria, CA, just off US 101. The surrounding area is free of trees, buildings and other obstacles. Large shade structure.

**1200 FOOT ALTITUDE WAIVER,
RID WAIVER,
AND NIGHT FLYING!**

**OPEN FLYING AFTER 5 PM
AMA MEMBERSHIP REQUIRED**

**SANTA MARIA BBQ SATURDAY
NIGHT!**

**MONSTER PILOT'S RAFFLE
INCLUDED IN LANDING FEE**

**FOR MORE INFORMATION OR TO REGISTER, CALL OR TEXT CHUCK BARNES
(805) 886-7921 OR EMAIL TO CDBARNES10@COMCAST.NET**

2023 PILOTS



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 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* section 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 email. 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.

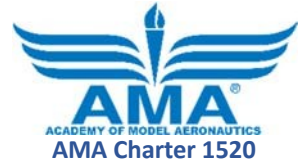


SCALE SQUADRON OF SOUTHERN CALIFORNIA

THE SCALE SQUADRON
OF
SOUTHERN CALIFORNIA



MEMBERSHIP APPLICATION



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.