

REPLICA

THE OFFICIAL PUBLICATION OF THE
NATIONAL ASSOCIATION OF SCALE AEROMODELERS
February 2021



The National Association of Scale Aeromodelers (NASA) is an organization founded to promote all forms of scale aeromodeling competition, and is the host of the Academy of Model Aeronautics (AMA) Scale Nationals as the A.M.A. Special Interest Group (SIG) for Scale Aeromodeling in the United States of America.

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Visit the NASA Website for more about the organization, scale competition, news, tips or to contact us.

www.nasascale.org

Hello NASA members and guests

The Cape Coral Seahawks hosted their second annual Cape Coral Classic NASA Scale contest January 16-17 2021. It was a huge success and they are planning for next year now. We had 22 pilots and 24 airplanes.

The conditions on Saturday morning were very windy, however we decided to fly one round because of the forecast was for stronger winds later in the day. The first round went fine with only two team entries deciding not to fly. The result was 22 flights no problems or catastrophes. Sunday was a perfect day we flew 3 rounds and awards were presented about 4:30. The club's judges did a fantastic job and they were happy to donate their time and expertise. Thanks to the club and officers for putting on a very successful NASA event. There are photos of the winners and crew in this newsletter.

The scale modelers up north in my area are in building mode now that the snow is flying.

The NASA raffle plane has been selected and tickets are available on line now. This years raffle is loaded with super goodies. With the uncertainty of indoor events this coming year I would suggest you visit nasascale.org often to get up dates of cancelations and additions to our events.

Please renew your membership. We rely on this money to continue our support of scale modeling by our involvement with the AMA as a special interest group and making money available for local clubs to sponsor a NASA Scale event. Plus you will receive a very nice discount coupon package with your membership. There is a re-up or new member form in this newsletter or you can renew on-line. Check out our Facebook page and if you have a favorite picture of one of your projects please send it to the site.

The contest calendar is updated on the web site as the clubs apply for their sanctions. Remember in order to receive a grant from NASA certain things have to be used. You can find the items and requirements on the web site.

Back to the shop now . Hope to see you next year at a NASA event.

Mike Barbee

NASA President



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SECOND PRIZE

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THIRD PRIZE

DA 85



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DRAWING TO BE HELD AT THE NASA SCALE CLASSIC ON SEPT 18, 2021

Playing Catch Up.....

I am not sure where January 2021 went, but it flew by me and I am late in getting this issue out to you all. I “, so, hoping this is one of those instances in this newsletter.

For those of you that are or were editors, it is a struggle to get articles and photos from members, but we try to make the newsletter worth reading.

This issue features all the photos from the Cape Coral Scale Event last month. While I do not have captions, names or title of the awards, it is good to see so many happy faces and many you will recognize. Here on the West Coast and especially California we are still on a lock downs of sorts and no events yet. Several are scheduled for this summer and late summer and I hope they hold.

I also re-published the Custom Gas Can article by Gerry Garing. Last issue some photos did not get to me and I thought the article was worthy of a reprint with all the details as this may be something you wanted to try, but did not know how.

That being said, I am always looking for articles to help our scale activity, so please do not hesitate to send me anything that you would like to see in the newsletter scale related.

Note also the NASA Big Raffle is posted here and tickets are available. I am excited to see the quality of the raffle items and like you hope I am the winner. In either case it is the sole fund raiser for NASA to continue to hold competitive events and at the AMA Headquarters for the NATS.

So I encourage you after reading the newsletter go on-line and order your raffle tickets. You can click on this link and go straight to the order page. <https://www.nasascale.org/nasascale/raffle/>

I am very receptive to articles, NASA event dates, scale builds, techniques and photos of your latest project for the NASA newsletter. Send me what you have and I can do the magic for insertion into the newsletter.

The photo above is my latest project, a Tempco Globe Swift. I had Vics RC redo 30 year old molds for the fuselage, and cowls. yes two cowls and canopies for the stock version and the speedster version with the sleek nose in the photo and sliding canopy. Jerry bates was kind enough to CAD the wood wings up to eliminate the foam cores. Gear is from Down and Locked. More as I move forward and of course would love to see what your working on.

Stay healthy, and don't forget those raffle tickets.

Sam NASA REPLICA Newsletter Editor

FYI SCALE STUFF

Digging through my vast scale book collection I ran across this gem of a reference and humor book by Jim Newman from Flying Scale Models, a Carstens Publication. Remember that great magazine? The book is still available from Wind Canyon Books for \$15.00

https://www.windcanyonbooks.com/product_info.php?products_id=1860

All 95 pages are filled with 3-Views and a story of the aircraft tagged with a caricature of the aircraft. I am still glad I have my copy.



RC Fixed Wing Scale Rules Proposals

by Jeffrey Pike

I proposed five new rules changes for consideration by the AMA this March. They are as follows:

RCFWS21-03

A two-point deduction for any maneuver is which gyros or any other automated flight correction or control was used.

Keep the events as a sport rather than a flying robot contest by limiting automated flying such as the use of gyros, GPS during maneuvers or any other preprogrammed electronic flight control. I understand that jets require at least rudder gyro to be safe.

I suggest levelling the "flying sky". Electronic flight correction or programming should be outlawed or at the very least penalized. Using electronic correction or guidance undermines the flying competition and will eventually make null the flying portion of our competitive sport. The rules state that if anyone touches our radio during a flight round, that round is disqualified. Why should electronic flight assist not be a cause for disqualification as well or at least a scoring penalty. Maybe a two-point penalty for every maneuver in which flight assist was used. In this way using flight direction assist electronics, if you point the airplane in the correct directions, call the maneuver correctly you will get at maximum eight points. This seems fair since all of the bumps and turns that normally would cause most of the downgrades are being eliminated by the gyros rather than the pilot.

I have heard users of gyro flight assist say that they have, and can win without the gyros, thus I challenge them to stop using them. I witnessed a model flown by a team pilot fly a horrible first round and then fly near perfect subsequent rounds to discover later that the improvement was due to a gain adjust on the gyros.

RCFWS21-04

A contestant entered into OPEN Class may not enter EXPERT, SPORTSMAN or DESIGNER Class in the same contest.

This would OPEN (pun intended) the class competitively to intermediate builders rather than the second airplane of experts.

RCFWS21-05

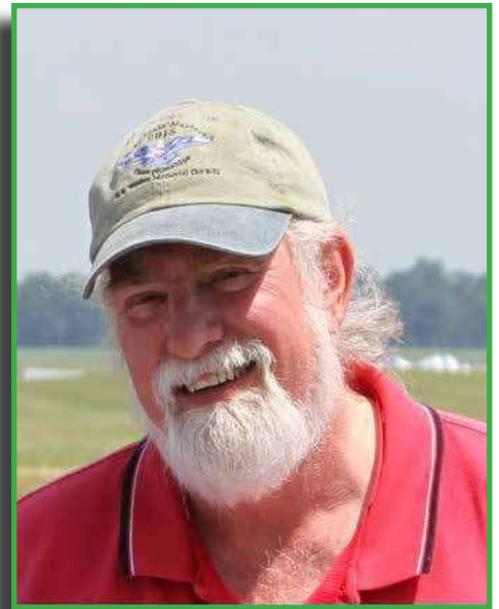
Create a new Class called UNLIMITED in which all special waiver (turbines) or Large Model Program models must be entered.

Propeller and models less than 55 lbs. cannot compete with jets and large model airplanes. Having a separate class for these fast and large models will encourage most other modelers that want to compete but do not have the resources to build jets or large models. I have been competing for the last several years at many contests across the country and have observed the inability of smaller models to compete with jets and large models. The jets and large models fly better than their smaller counterparts.

RCFWS21-06

Change the minimum score deduction from 0.5 to 0.1.

A figure 8 among many other maneuvers could easily have 1 to 20 minor deviations that normally would score between a 7 or 8. At half point deductions 4 minor deviations would be an 8. With a half point system judges must ignore and/or pick and choose which deviations are assigned deductions and which deviations are given a pass. I have developed a judging guideline "Standard Deductions for Typical Deviations", used to train judges, standardize scoring and create higher definition between scores. This requires at a minimum a 0.2 differential. Also, having but one decimal place keeps the scoring complexity the same with only two significant digits required during tabulation. For the last several years, at 6 to a dozen contests a year including the NATS and the NASA Scale Classic, my wife and I have been keeping score using a program I developed. This year we kept score at TOP GUN as well. The flight scores have been seldom below 8.0 points. Using a .5 minimum deduction results in only 5 possible scores between 10 and 8 creating low resolution and many ties. Using a .1 scoring deduction the possible scores between 10 and 8 are 21. This would allow for the accounting of minor deviations without



reducing the score to below zero. TOP GUN uses .25 deductions as a minimum, but it only increases the possible scores between 10 and 8 to 9 discrete scores and because it requires 3 significant digits, the level of tabulation complexity is increased by 50% resulting in a 5 hour job becoming 7.5 hours. I have tested my proposed system at four contests in 2019 with much success. Using my "Standard Deductions for Typical Deviations" handbook and the accompanying PowerPoint Presentation, I was able to train many new judges who did an excellent job at their first contest. The score levels remained as expected but with a much higher resolution. This eliminated the scoring ties that often occur when using .5 minimum deductions. It also eliminated the large number of 10s that have been the norm. With my system, the maneuver must really be perfect to score a 10.

RCFWS21-07

A model previously entered into Expert, Sportsman, Team or Designer Class at the NATS of any other national contest may not be entered into Open class.

This would OPEN (pun intended) the class competitively to intermediate builders rather than the second airplane of experts and not allow a contestant to "purchase" the static score of a champion.

I encourage your feedback. jeffreykeithpike@hotmail.com

Jeffrey Pike

NASA MEMBERSHIP PERC

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These are 1 time coupons for NASA Members only so don't hesitate to renew your membership, invite a friend or join as a new member.

Don't forget the great NASA Raffle when your on the website to renew. You can also purchase your raffle tickets there.



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NATIONAL BALSAL - SHORT KIT
PHOTOPACK DOCUMENTATION

THIRD PRIZE
DA 85

TICKETS:
1-\$5 3-\$10 7-\$20 20-\$50
DRAWING TO BE HELD AT THE NASA SCALE CLASSIC ON SEPT 18, 2021



RED STICK CLASSIC

RC SCALE CONTEST

April 9-11, 2021

Baton Rouge Radio Control Club - Kissner Field - Erwinville, LA

AMA Sanctioned with the following events:

Designer Scale

Contestant designed, scratch built and flown replica (full static)

Expert

Contestant built from a kit or plans and flown experienced competitor replica (full static)

Sportsman

Contestant built from a kit or plans and flown entry level replica (full static)

Open (Advanced)

ARF or purchased replica (full static)

Team Scale

Built by one and flown by another not an ARF (full static)

Fun Expert

Any semi-replica, built by anyone flown by experienced competitor (5 point static)

Fun Novice

Any semi-replica, built by anyone, flown by entry level competitor (5 point static)

One entry can be made in - Designer, Expert or Sportsman, plus an additional entry in Team, Advanced and/or Fun for a total of four possible entries. The entry fees are; \$35 for the first event and \$20 for each additional event.

Primitive camping is available (no hookups)

Hotels are available in Port Allen Hwy 415 at I-10 just west of the Mississippi River

Kissner Field is located on Hwy 190 just east of Erwinville

A map can be found at www.batonrougerc.com under the contact us tab.

More information about Kissner Field and the Red Stick Classic can be found on Facebook

FB Baton Rouge RC Club and FB Red Stick Classic

[NASA Scale Classic Qualifier](#)

[Scale Masters Nationals Qualifier](#)

Saturday Evening Fellowship Dinner (good Louisiana food)
Children's activities

Practice flying begins Thursday April 8. Registration and Static Judging will be Saturday April 10 at 8:00 a.m. Optional Registration and Static Judging are Friday afternoon April 9.

CD Jeffrey Pike – jeffreykeithpike@hotmail.com – 225 337 2037

PHOTO REVIEW CAPE CORAL CLASSIC

JANUARY 16-17, 2021

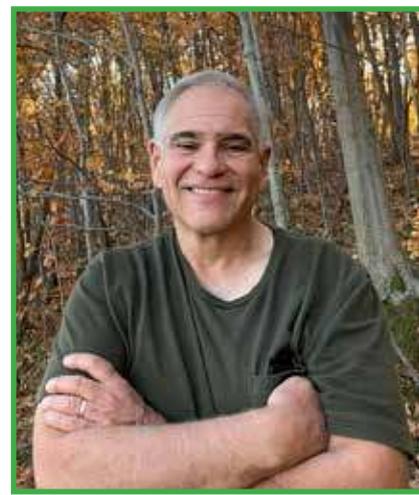




Custom Fuel Tanks

BY GERRY GARING

Making a fuel tank is not difficult and can be done in a few hours if things go well. The question then iswhy would one want to make a fuel tank since inexpensive and leak free commercial tanks are available in a variety of sizes?



Since the early days of giant scale, I've recycled many 16 oz and 32 oz. paint thinner cans with screw caps by simply soldering 2 or 3 brass tubes.

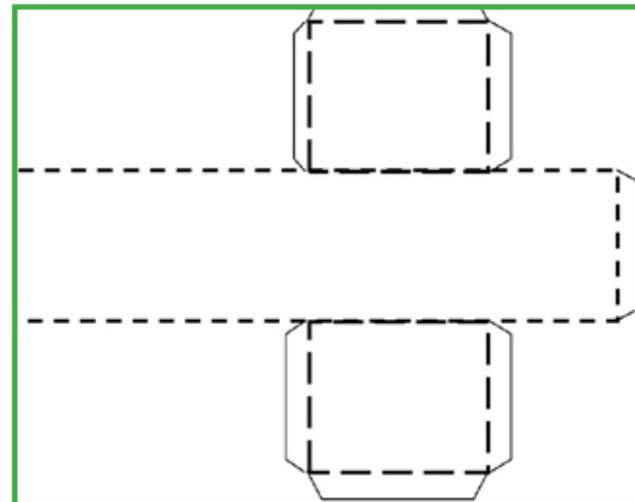
Such was the plan for my latest completed project which is a 36% Piper Vagabond. I wanted the interior as scale as possible which means no fuel tank, servos, batteries etc. in view.

I planned to use a metal can under the seat since fuel draw is not a problem with a gas engine. When it came time to do so however, I found the can took up too much space which meant moving everything else rearward resulting in a possible CG problem with such a short nose moment. Much like a Cub, the tank is clearly visible under the instrument panel. I

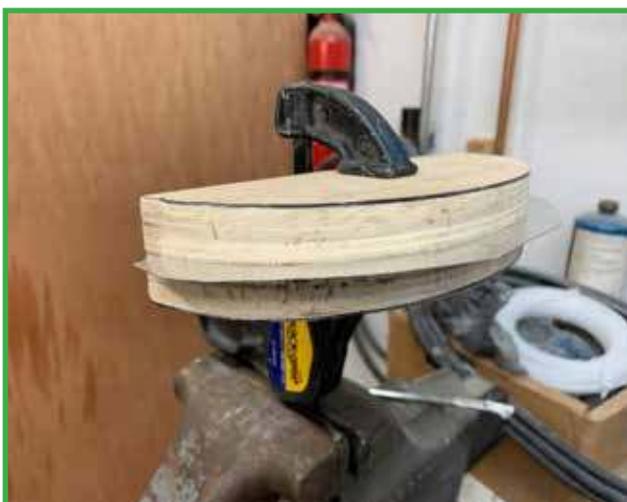
got to thinking that a functional tank in place of the foam dummy one would solve the problem.

A little internet searching provided inspiration and useful suggestions. Here's how I did it. I used empty gallon cans for the thin, light, and easy to work sheet metal. Wear gloves and BE CAREFUL when cutting and handling. This stuff is as sharp as an Exacto blade. I managed to make these tanks without injury so just handle with care. The two main considerations when planning the tank are the shape and fuel capacity. Most tanks are simple geometric shapes, and the volume can be easily calculated with some simple math. I cheated and did a quick sketch with Solidworks which calculates the volume for you.

Next step is to create a pattern that can be folded and soldered. Think of a simple box that is folded together as shown in the sketch. Include an overlapping tab where the sides meet for strength and a basis for a leakproof joint. Proof the concept with poster board which can then be used as a template for laying out the metal. The project becomes more complicated if the tank includes curves. The metal is so thin that it hardly qualifies as sheet metal work, but the same principles can be used.



The ends of my tank create half a cylinder. With traditional thicknesses of sheet metal, a shrinker/stretcher would be used to simultaneously create flanges and curve the metal. This is much too thin for a shrinker, so we'll create the flanges on the end pieces by working the metal over a wooden buck as shown in the photos.



Round the edge of the wood slightly to not create a sharp bend. You can see in the photos how the excess metal bunches up. The trick is to push the excess away from the bend line. Metal moves when formed so allow a little extra material and work the tab a beyond the final width. Tap the metal gently using a sliding motion away from the bend to nudge the metal down over the lower buck. Make the tab oversize and trim to the final width.

Once the tank is folded and assembled, it is time to solder it all together. Ordinary plumbing solder and Nokorode flux works well. I use an 80-watt soldering iron with a chisel tip. Clean the metal, flux the joint, and apply heat to the metal



until it melts the solder and draws it onto the joint. Don't heat the solder directly. Clean excess flux from the can.

I like tanks to be serviceable, so I include a screw cap for the outlet to the carb. I cut the cap, including a flange, from the donor can then solder it to an oversize hole in the tank. Punch, rather than drill, holes for the vent and fill lines and solder in place. Pressure test the tank for leaks by sealing the lines and submerging the tank warm water.

The heat will pressurize the tank enough to create bubbles if there are any leaks. There is no need for excessive pressure since operationally the tank is not pressurized. Remember fuel is drawn from the tank while the vent line equalizes the pressure.

Clean the inside the tank with soapy water to remove any flux. Some alcohol will mix with remove any

remaining water. Pour out the alcohol and swish the interior with light oil to prevent corrosion.

A final thought on tank capacity. The Vagabond is powered by a DA 70 and this tank is only 16 ounces.... well below what most would recommend for an engine this size. However, with the exception of take-off, the plane is flown at partial throttle. I found a typical contest flight uses about 10 ounces of fuel which leaves plenty of reserve. As they say, results may vary, especially for full throttle pilots.



Columbus Scale Classic

9th Annual

August 14th & 15th 2021

AMA Sanction AA # 10166

CD Mike Barbee

mabarbee@aol.com



AMA Scale Classes



511 RC Sportsman Sport Scale

512 RC Expert Sport Scale

515 RC Designer Scale

522 RC Team Scale

521 Open Class

Beginner, Beginner Class Scale

~ Pre-Registration is ENCOURAGED E-mail Please ~

WMAA Flying site Dinneen Field

Alum Creek State Park

Flying Starts 10 am Saturday, 8 am Sunday

Static Judging 8 am Saturday

See the best scale models in the area

5th ANNUAL NORTHEAST SCALE QUALIFIER



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NEW LOCATION!

info at: www.nasascale.org

July 16-18, 2021

Hosted by the Binghamton Aeros

binghamtonaeros.wildapricot.org

Chenango Bridge Airport, 247 Airport Road Binghamton N.Y. 13901

GPS Coordinates 42.19174, -75.84130

Mentors & Judging Seminars for First Timers!



515 RC Designer Scale

522 RC Team Scale

512 RC Expert Sport Scale

520 RC Fun Scale Novice & Expert

Turbines Welcomed All Classes!

Awards to 3rd Place

GRAB BAG!

1st Entry-\$30.00-2nd Entry-\$10.00

RAFFLES

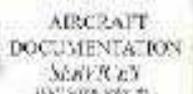
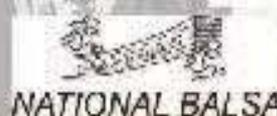
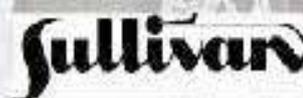
Early Arrival on Friday July 16

Contest Director: Danny Carozza - 914-380-2302

aeroplanart@aol.com

OVERNIGHT STORAGE

Campers Welcomed - No Hookups - Food & Lodging Within a Few Miles





Application for Scale Contest NASA Sponsorship

NASA will provide \$250.00 and 100 raffle tickets to each AMA sanctioned club that hosts an all scale AMA sanctioned contest providing the following stipulations are met.

- This application must be completed and returned to the NASA Contest Coordinator.
- AMA rules for scale competition and scoring must be followed.
- The contest must include all AMA Scale RC and/or Control Line Scale events.
- The contest must span at least two consecutive days.
- The application must be received two months in advance of the contest date.
- An electronic copy of the contest flyer must be provided with the application.
- NASA Score sheets must be used during the event. (www.nasascale.org).
- The contest results must be submitted to the NASA CC with 30 days of the contest.

Upon NASA review of this application the Contest Director will be notified regarding approval by the NASA CC. Contests previously sponsored will have priority. Applicants will be notified of conflicting dates and allowed to resubmit. Once the annual sponsorship budget limit has been reached NASA will not accept new applications for the current year, however applications can be submitted for subsequent years.

Name of the Contest _____

Name of the Club _____

Name of the CD _____ AMA # _____

Name of contact _____

Contact Address _____

City _____ State _____ Zip _____

Email _____

Telephone _____ Cell Phone _____

Date of the Contest _____ AMA Sanction # _____

Contest Location _____

Return this application to the NASA S/T at jeffreykeithpike@hotmail.com

Return your contest results to the NASA S/T listed above.

Upon completion of all the above stipulations NASA will submit a check to the host club via the contact.

The check must be payable to the order of the Official Club Name (no individuals allowed).

Revised November 20, 2020

12” to the Foot!

By Stan Alexander

This has been on strange year for most of us and quite frankly I'll be glad when 2020 is over! Late last year 2019 we lost Ed Terry, former NASA President. We've also lost Skip Mast, Steve Sauger and now on October 6th this year we lost the last of the "Michigan Gang" Cliff Tacie. All 3 had different kinds of cancer. I counted all three of these men as friends, especially Cliff.

If you have a chance you should take a look at the AMA website and check out their bio sheets, listed under the museum section. Cliff represented the USA in 3 World Championships, ran the Scale Nationals for several years and educated a number of us on how to fly a scale model, both with his flying skills as well as giving subtle guidance when asked. As I said on the NASA face book page he was a true gentle giant of a scale modeler and Cliff always had a motto to – "keep it simply scale".

They are all missed, and will definitely be remembered. You can go to that site and find bio sheets on most of the members of the NASA RC and CL Scale Hall of Fame also. Great reading about fantastic modelers.

While you are there on the AMA site you might go to the plans section also under the museum heading. Check out the services there from AMA. If you have a set of plans that you want to enlarge or reduce you can always contact Greg Prater and make it happen.

Also while at AMA this coming summer check out the aviation/model aviation library at the back of the museum. There you can find many, many published books on full scale aviation and individual types of aircraft as well as information on models as well.

One of my favorite stops is the engine show cases in the museum itself. Just about anything you can imagine and many that you have to say What the heck?

Dayton- also remember this, the USAF Museum at Dayton is only about an hour away from AMA's Headquarters, a great day trip at least. Check it out and take some guys with you to have a look see. The museum has been renovated and the lighting has been upgraded as well.

So here's hoping that you stay safe and healthy for the rest of this year!

Fair Skies & Tailwinds



CLIFF TACIE 1945-2020

Here with his 1/4 scale Piper Cub built from a SIG kit. He started building as a youngster and continued throughout his life completing over 30 aircraft. He recently flew at several local clubs, but during the years had competed locally, nationally, and internationally, flying in Paris, France, and Oslo, Norway. His skill as a master RC builder and flyer was recently featured in "Model Aviation" magazine



Clayton "Skip" Mast

Skip's last C-130 is much larger and electric-powered. At 1/12-scale, it has a 130" wingspan and weighs 38 pounds. Power comes from four Turnigy SK35045 motors turning 14x10 props.

This rare photo from the Top Gun Invitational in West Palm Beach, Florida at the Polo Club



Steve Sauger 1930-2017

Steve featured here with his beautiful Fairchild 24. All of Steve's models were scratch built!

Steve served in the U.S. Air Force as a Radar Operator, honorably discharged. He spent his career as a draftsman for Chrysler, but his true passion was airplanes. He was an accomplished pilot, flying instructor, and world-class RC model airplane builder and flyer.



The USA Scale Team from 1986

Cliff Tacies Italian Sai Marchetti 81 in this photo.

Left to Right

Mike Gretz, Cliff Tacie, Steve Sauger, Julie Able, Ron Sears, Dolly Wischer and Skip Mast.. This should jog your memory and history as these were all well known scale modelers.

Ron Sears with is Stearman PT-17.

Ron also competed on the USA Scale Team and in the group photo above.



Temco Globe Swift GC-1B designed nein 1940 by R.S. Pop Johnson.



Corbin Miller at the Top Gun Invitational in West Palm Beach with his scratch built Globe Swift. Corbin went on to win Top Gun with this model..

A Blind Hole Locator:

by Gerry Garing

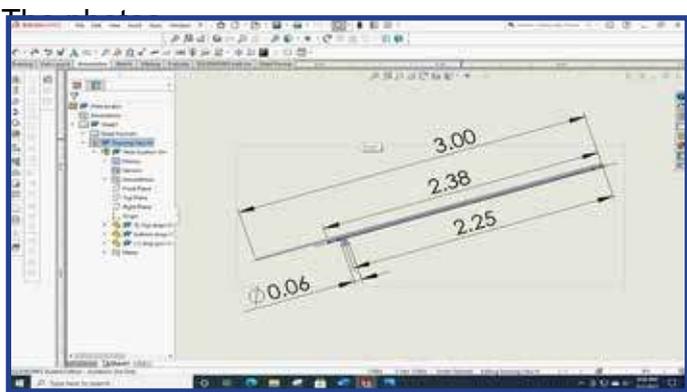
There are times when dealing with scale model building challenges that the answer can be found by following full-scale building techniques. I encountered such a situation during the construction of my Piper Vagabond. I needed to precisely locate screw holes in the sheet aluminum cowl boot which fastens to the steel tube frame structure. Trying to simultaneously drill through both the sheet metal and tube is not likely to turn out well. The solution is a tool called a blind hole finder.



Here's how it works. The blind hole finder has one strap with a locating pin and a second strap with a hole placed directly above, and in line, with the pin. The strap with the pin is placed under the sheet metal with the pin inserted into the hole. Using the hole as a guide, drill through the sheet metal. Since the strap's hole and pin are aligned, you can't go wrong.

The accompanying pictures should help visualize the process. The drilled and tapped holes can be seen in the upright tube on the frame picture. The sheet metal is cut to shape and taped in place on the frame. Spread the locator so that the top strap is over the piece to be drilled and the pin is in the underlying hole. Drill the first hole, remove the locator, and insert a screw to keep the sheet metal in place as the rest of the holes are drilled. It's just that easy.

The tool is easily made in a few minutes. Mine uses two 1/4" wide pieces of 0.020" steel. The two pieces are soldered together about a half inch at one end. It helps to tin the mating surfaces of the straps before soldering them together. A 1/16" hole is drilled through both pieces at the other end. A short length of 1/16 music wire is soldered into the bottom hole. Allow the pin to temporarily extend a little above the bottom strap to help make a secure solder joint. Also, a thin piece of aluminum between the two straps will keep the solder away from the top one. Slightly spread the two straps and use a cut off wheel to grind the pin flush between the two straps. The bottom pin should be only long enough to seat securely in the hole. That's it!



The left photo shows the dimensions for the tool and the photo on the right, the mounted cowl on the scale model.





NASA MEMBERSHIP APPLICATION



NATIONAL ASSOCIATION of SCALE AEROMODELERS

ABOUT NASA

NASA is the AMA (Academy of Model Aeronautics) a Special Interest Group (SIG) for the United States. Nasa promotes and encourages scale competition for all types of scale aeromodeling. NASA produces Regional Contest and National Contest along with providing sponsorship to new and existing AMA Sanctioned Club Scale Contest. These are also qualifying events for the NASA Annual National Scale Contest.

AMA NATIONAL CHAMPIONSHIPS

NASA is the Official Host for the AMA Scale National Championships (NATS) held at the AMA Headquarters in Muncie, Indiana. Events are offered in both R/C and C/L Scale.

THE REPLICA NASA NEWSLETTER

The NASA Newsletter is published 6 times a year for paid membership. The newsletter features new sources of documentation, building tips, contest updates and results along with scale news, FAI information, 3-Views and other scale aeromodeling information for our membership.

NASA WEBSITE

The NASA website is a great source for scale aeromodelers for building tips, documentation, contest information, and more. Visit the website to join or fill and mail the form below: www.nasascale.org

SELECT ONE BELOW:

ONE YEAR MEMBERSHIP _____ USA Includes emailed REPLICA Newsletter \$20.00 USD

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RAFFLE TICKETS _____ Quantity _____ CORPORATE SPONSOR _____ AMOUNT \$ _____

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NAME (Last) _____ First _____ M.I. _____

ADDRESS: _____ ANA# _____

CITY _____ STATE _____ ZIP CODE _____ NASA # _____

EMAIL ADDRESS _____ PHONE _____

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Jeffrey Pike NASA Secretary/Treasurer
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