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PAGE 41 /

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CONTENTS

45

FEATURES

REVIEWS

DIGITAL CONTENT ICONS

Video | Additional Photos | Social Media/Conversation | Podcast | Downloadable Content/Plans | Additional Content

MODEL AVIATION
MAY 2020 / VOL. 46 / NO. 05

COLUMNS

AMA NEWS

ON THE COVER

The new E-flite Carbon-Z Cub SS has incorporated many changes from the original, beyond the obvious change of color from blue to orange, which allows this Giant Scale model to stand out in the air.

Learn more starting on page 41.

PHOTO BY RACHELLE HAUGHN.

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COVID-19 IMPACTS MODEL AVIATION

By Rich Hanson, AMA President | richh@modelaircraft.org

THE OUTBREAK OF the COVID-19 virus has had a dramatic effect on our nation and our society. To a lesser extent, it has impacted the aeromodeling community. By the time you read this, we'll hopefully be on the back side of the viral proliferation curve; however, as of today we're still anticipating a peak in the spread of the virus and new guidelines, restrictions, and precautions are put in place daily. It's important that we follow the Centers for Disease Control and Prevention (CDC) guidelines and adhere to local health authority and government directives.

All clubs should consider putting in place temporary rules necessary to protect their members and the general public.

This is not to say that we *can't* continue to participate in the hobby and enjoy our aeromodeling activities, but we need to consider our fellow hobbyists and club members and be attentive in practicing safe hygiene and preventative measures. The average age of our members falls within the vulnerable age category, making it imperative that we be vigilant in adhering to the current guidelines and restrictions.

The impact of the COVID-19 virus varies significantly across the country. Some areas have been severely impacted with thousands of infections, while others report only a handful of cases. It's important to follow local restrictions and directives. AMA clubs and members need to consider their individual circumstances when participating in model aviation activities. The following suggestions are offered to protect yourself and others while allowing everyone to continue to enjoy the hobby:

Hygiene

- Clubs should endeavor to provide hand-cleaning materials at club facilities or members should supply their own.
- Clubs should sanitize club facilities such as restrooms, kitchens, dining, and seating areas.
- All members should adopt good hygiene practices and social distancing when interacting with others.
- Members should not use communal cups or shared kitchenware. Bring your own or use packaged, disposable utensils.
- Members should frequently wash their hands in warm water for a minimum of 20 seconds, use paper products to avoid directly touching doors, club locks, refrigerators, etc., and avoid touching their mouthes and faces.
- Avoid personal contact such as shaking hands. A congenial wave, eye contact, and a friendly hello make for a great greeting.
- Clubs should consider suspending communal meals such as snacks, barbecues, and potlucks, and encourage members to bring their own food.
- If supplying food, clubs should ensure that food preparation complies with local health standards and is served using gloves, aprons, and hairnets to prevent contamination.
- Avoid sneezing or coughing over food or in the presence of others, and use a tissue or your sleeve to capture escaping droplets.
- If you have any COVID-19 symptoms (fever, cough, sore throat, fatigue or difficulty breathing), self-isolate and don't participate in club activities until you're clear of symptoms. If diagnosed with the COVID-19 virus, wait to go out in public until you're cleared by competent medical personnel.

Club Events

AMA has recently issued the following policy regarding aeromodeling events affected by the COVID-19 outbreak:

"Because of the administrative and insurance costs associated with issuing a sanction for an event, AMA policy does not offer refunds or credits for canceled or rescheduled events. Given the evolving situation

with COVID-19 and guidance from the CDC, AMA will be temporarily amending this policy for events scheduled through May 31, 2020. If a CD [contest director] or EM [event manager] cancels an event, AMA will allow sanctions, events ads purchased through the sanctioning portal, and insurance certificates to be rescheduled at no additional charge. Events must be rescheduled during the 2020 calendar year.

"We will make every effort to promptly reschedule the event to include updating the online event listing at www.modelaircraft.org/events. Because of deadlines with *Model Aviation* magazine, we cannot guarantee rescheduled events will be reflected immediately in the magazine. To reschedule your event taking place between now and May 31, 2020, at no charge, please email cpierce@modelaircraft.org or call (765) 287-1256, ext. 252, and provide the name of the CD or EM, event details, and new date change."

Visit **www.modelaircraft.org/covid-19** for the latest updates.

Clubs should consider postponing large events and postpone or cancel events that involve attendance by members from other clubs or the public occurring during the COVID-19 pandemic.

These suggestions are not exhaustive, and clubs should consider implementing other preventative measures as appropriate. All individual clubs face unique conditions within their respective communities. As such, they should make their own rules and policies based on their local circumstances; however, all clubs should consider putting in place temporary rules necessary to protect their members and the general public.

Safety is our primary focus. Whether it is rules regarding the operation of our model aircraft or the procedures relating to hosting events and meetings, our responsibility is to our community and the general public.

In the grand scheme of things, the saga of COVID-19 virus will be relatively short-lived and we'll soon be back to enjoying this great hobby that we all love.

FAA RECEIVED MORE THAN 50,000 COMMENTS

Jay Smith, Executive Editor | jays@modelaircraft.org

ON DECEMBER 26, 2019, the FAA released a proposed rule for remote identification (Remote ID) of UAS. Nothing in the 319-page document has yet become law, and we had the right to comment and share our concerns up until March 2, 2020.

Thank you to everyone who took the time to make their thoughts and concerns known to the FAA! I'm happy to say that the aeromodeling community spoke loudly and more than 50,000 comments were received.

It's time to get back to enjoying our hobby and building and flying model aircraft.

The FAA will have to review each of the tens of thousands of comments that were submitted. Although it will likely be a lengthy process before all of the comments are addressed and the FAA comments further, AMA will continue to protect our right to fly by working through Congress.

Back to What We Love

It's time to get back to enjoying our hobby and building and flying model aircraft. To promote that, if you are looking to add a new aircraft to your hangar, in this issue you will find a simple-to-build RC model. If Free Flight draws your interest, Bob Benjamin walks you through the process of building a kit.

Thank you as always for your support of our hobby, AMA, and *Model Aviation* magazine!

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Model Aviation is an official publication of The Academy of Model Aeronautics Inc., an associate member of the National Aeronautic Association (NAA). NAA is the official U.S. representative of the Fédération Aéronautique Internationale (FAI), the world governing body for sport aviation, and represents the U.S. at FAI meetings. NAA delegated to the AMA supervision of FAI-related aeromodeling activities such as record attempts, competition sanctions, and selection of U.S. teams for World Championships. (ISSN 0744-5059, USPS 087-930 Publications Agreement No. 40688541) is owned exclusively by The Academy of Model Aeronautics Inc., a nonprofit organization, and published monthly at 5161 E. Memorial Dr., Muncie IN 47302. Periodical rate postage paid at Muncie IN and at additional mailing offices. Canadian return address: Station A, PO Box 54, Windsor ON N9A 615

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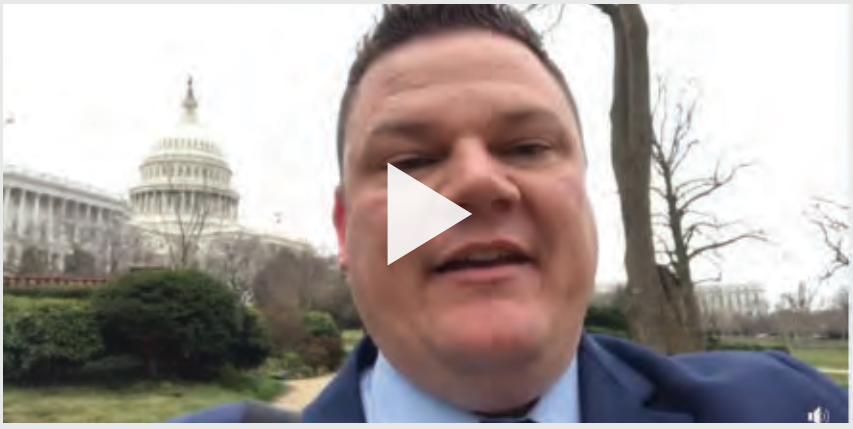
Arrows RC Husky 1,800mm PNP

Digital & web: See this robust aircraft in action at www.youtube.com/watch?v=9sLS07afZqw&feature=youtu.be.

New National Free Flight Society president on AMA Podcast

Web: Hear how Dave Lindley got involved in Free Flight. Visit www.modelaircraft.org/podcast.

NPRM comment period ends. What's next?



AMA Government Affairs Director Tyler Dobbs provided an update on what work AMA is continuing to do for the hobby now that the NPRM comment period is over. You can read more in "AMA in Action" in this issue and watch the video at www.facebook.com/modelaviation/videos/606542160078095.

Here's what AMA's Facebook page followers had to say:

Mark Radcliff: Great job Tyler!

Dave Hughes: Great job, Tyler! We at Susquehanna Valley Modelers thank you for your efforts!

Scott Huff: Keep up the good fight, Tyler. Thanks for all you are doing!

Bruce Leach: Thank you!

Johnnie Eug: Thank You!

RJ Monroe: Good work!

Christopher Webb: Good job Sir.

REMOTE ID COMMENT PERIOD HAS ENDED. NOW WHAT?

By Tyler Dobbs, Government Affairs Director | tylerd@modelaircraft.org

THE OFFICIAL comment period for the FAA's proposed rule on Remote ID has closed and we want to provide an update.

First, and most importantly, thank you for your unending support for model aviation and your commitment to advocating on behalf of our beloved hobby. Your comments made a difference. During the 60-day period, more than 50,000 detailed comments were submitted. We deeply appreciate your efforts, especially those who have gone above and beyond by submitting multiple comments and encouraging friends and family to submit as well.

Compared with previous FAA NPRM comment periods, this is an enormous number of comments, and we are overwhelmed with gratitude for your work on this important issue. All of your voices are critically important, and they make a difference. Thank you again for taking the time to participate in the Remote ID rulemaking process.

In addition to your many comments, AMA Headquarters submitted its own formal comment detailing how the proposed rule would impact our community and the changes we want to see in the final rule. If you are interested in reading AMA's full comment, it is available on AMA's Government Affairs blog at https://amablog.modelaircraft.org/amagov.

Second, please know that there is still a long road ahead. In fact, there is a lengthy bureaucratic process that the FAA must complete before a final rule is announced, including a review of each of the tens of thousands of comments you submitted. When a final Remote ID rule is announced, there will be a significant time period before that rule goes into effect and everyone must comply. The entire process will probably take several months, or even years. Rest assured that we will keep you updated along the way.

Third, and finally, the fight for a better Remote ID rule is not over. AMA has already begun meeting with AMA members and members of Congress regarding the proposed Remote ID rule and will continue doing so into the future. Please see the following list of congress members involved in recent meetings.

During the next several months, while the FAA is reviewing your comments, we will be coordinating closely with other groups that have a similar viewpoint as AMA on the rule. We will continue to meet with our allies in Congress about the importance of model aviation and the need to protect our community. In the future, we might ask for your help contacting these members of Congress, so please continue to keep an eye on our advocacy website and social media.

Representatives

- Jesús "Chuy" García (Illinois 4th Congressional District)
- Sharice L. Davids, (Kansas 3rd Congressional District)
- Sean Patrick Maloney (New York 18th Congressional District)
- Diana DeGette (Colorado 1st Congressional District)
- Rick Larsen (Washington 2nd Congressional District)
- Dina Titus (Nevada 1st Congressional District)
- Raul Ruiz, M.D. (California 36th Congressional District)
- Colin Allred (Texas 32nd Congressional District)
- Donald M. Payne Jr. (New Jersey 10th Congressional District)
- Greg Stanton (Arizona 9th Congressional District)
- Julia Brownley (California 26th Congressional District)
- Paul A. Gosar (Arizona 4th Congressional District)
- Pete Stauber (Minnesota 8th Congressional District)
- Rob Woodall (Georgia 7th Congressional District)
- Rodney Davis (Illinois 13th Congressional District)
- Ross Spano (Florida 15th Congressional District)
- Steve Cohen (Tennessee 9th Congressional District)
- Angie Craig (Minnesota 2nd Congressional District)
- Eleanor Holmes Norton (District of Columbia)
- Garret Graves (Louisiana 6th Congressional District)
- Greg Pence (Indiana 6th Congressional District)
- Committee on Transportation and Infrastructure (Majority Members)

Senators

- Senator Michael F. Bennet, Colorado
- Senator Cory Gardner, Colorado
- Senator Kyrsten Sinema, Arizona
- Committee on Commerce, Science, and Transportation

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PAGE 5 - 04/2020

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ITEM 62915/60600 shown

COMPARE TO GRACO $299 MODEL: 262800 — SAVE $134

14242861

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WOW! SUPER COUPON — SAVE 93%
MULTIPURPOSE SCISSORS
- Stainless steel blades
- Jar and bottle opener

Gordon Customer Rating ★★★★½

LIMIT 3

COMPARE TO CUISINART $5.99 MODEL: C77-SHR8B

~~94¢~~ WOW! 39¢

ITEM 36872/62507/63520/47877 shown

14244583

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SUPER COUPON — 20% OFF ANY SINGLE ITEM*

14239068

Limit 1 coupon per customer per day. Save 20% on any 1 item purchased. *Cannot be used with other discount, coupon or any of the following items or brands: Inside Track Club membership, Extended Service Plan, gift card, open box item, 3 day Parking Lot Sale item, compressors, floor jacks, safes, storage cabinets, chests or carts, trailers, welders, Admiral, Ames, Atlas, Bauer, Central Machinery, Cobra, CoverPro, Daytona, Diamondback, Earthquake, Fischer, Hercules, Icon, Jupiter, Lynx, Poulan, Predator, Tailgator, Viking, Vulcan, Zurich. Not valid on prior purchases. Non-transferable. Original coupon must be presented. Valid through 6/25/20.

SUPER COUPON — Customer Rating ★★★★★
HEAVY DUTY FOLDABLE ALUMINUM SPORTS CHAIRS
- Folding side table
- 3 side pockets

YOUR CHOICE OF COLOR $19.99 NEW ~~$29.99~~

BLUE ITEM 56719 — GREEN ITEM 63066/62314 shown

SAVE 50%

COMPARE TO COLEMAN $39.99 MODEL: 635394

14250179

LIMIT 4 - Coupon valid through 6/25/20*

PREDATOR — SUPER COUPON
6.5 HP (212 CC) OHV HORIZONTAL SHAFT GAS ENGINE
Customer Rating ★★★★★

NOW $99.99 ~~$119.99~~

ITEM 60363/69730 shown

ITEM 68121/69727 CALIFORNIA ONLY

COMPARE TO HONDA $329.99 MODEL: GX200UT2QX2 — SAVE $230

14252634

LIMIT 2 - Coupon valid through 6/25/20*

HARDY™ — SUPER COUPON
POWDER-FREE NITRILE GLOVES PACK OF 100
Customer Rating ★★★★★

12¢ PER PAIR

AVAIL. IN SM, MED, LG, XL, XXL

- 5 mil thickness

SAVE 59%

COMPARE TO VENOM $14.97 MODEL: VEN4145

NOW $5.99 ~~$7.99~~

ITEM 37050, 64417, 61363, 68496, 68497, 61360, 61359, 68498, 64418 shown

14253542

LIMIT 4 - Coupon valid through 6/25/20*

U.S. GENERAL — SUPER COUPON
30", 5 DRAWER MECHANIC'S CART
- 15,000 cu. in. of storage

Customer Rating ★★★★★

YOUR CHOICE OF 7 COLORS

NOW $199.99 ~~$239.99~~

Side tray sold separately.

COMPARE TO Snap-on BLUE-POINT $830 MODEL: KRBC10TBPES — SAVE $630

ITEM 64031, 64722, 64033, 64721, 64059, 64720, 56429

14257222

LIMIT 1 - Coupon valid through 6/25/20*

PITTSBURGH AUTOMOTIVE — #1 SELLING JACKS IN AMERICA — SUPER COUPON — Customer Rating ★★★★½
RAPID PUMP® 1.5 TON LIGHTWEIGHT ALUMINUM FLOOR JACK
- Weighs 33 lbs.

NOW $59.99 ~~$79.99~~

COMPARE TO K TOOL $151.42 MODEL: KTI63094 — SAVE $91

ITEM 64552/64832 64980/64545 shown

14263321

LIMIT 2 - Coupon valid through 6/25/20*

HaulMaster — SUPER COUPON — Customer Rating ★★★★★
18" x 12" MOVER'S DOLLY
- 1000 lb. capacity

COMPARE TO BUFFALO TOOLS $22.99 MODEL: HDFDOLLY

~~$10.99~~ SAVE 65% NOW $7.99

ITEM 60497/62399/63095/63096/63097/63098 shown

14265515

LIMIT 4 - Coupon valid through 6/25/20*

CENTRAL PNEUMATIC — SUPER COUPON — Customer Rating ★★★★½
3 GALLON, 100 PSI OIL-FREE AIR COMPRESSORS
Air delivery: 0.6 CFM @ 90 PSI

YOUR CHOICE $39.99 ~~$54.99~~

HOT DOG ITEM 69269 97080 shown — PANCAKE ITEM 61615/60637 95275 shown

SAVE 59%

COMPARE TO PORTER-CABLE $98.62 MODEL: PCFP02003

14276053

LIMIT 2 - Coupon valid through 6/25/20*

SUPER COUPON
7 FT. 4" x 9 FT. 6" ALL PURPOSE/WEATHER RESISTANT TARP
Customer Rating ★★★★½

NOW $2.99 ~~$4.99~~

COMPARE TO BLUE HAWK $8.78 MODEL: BG8X10-Y — SAVE 65%

ITEM 69115/69121/69129/69137/69249/877 shown

14289265

LIMIT 4 - Coupon valid through 6/25/20*

SUPER COUPON
SOLAR ROPE LIGHT
- 16 ft. of white LEDs

NOW $7.99 ~~$12.99~~

SAVE 75%

COMPARE TO HAMPTON BAY $32.97 MODEL: 84130

Customer Rating ★★★★★

ITEM 63941/62533/64625/68353 shown

14298689

LIMIT 4 - Coupon valid through 6/25/20*

COVERPRO — SUPER COUPON
10 FT. x 17 FT. PORTABLE GARAGE
Customer Rating ★★★★☆

NOW $169.99 ~~$199.99~~

COMPARE TO SHELTER LOGIC $290.75 MODEL: 76377 — SAVE $120

ITEM 62859/63055 62860 shown

14299765

LIMIT 1 - Coupon valid through 6/25/20*

drill master — SUPER COUPON
80 PIECE ROTARY TOOL KIT

SAVE 69% — Customer Rating ★★★★☆ — ~~$9.99~~ NOW $6.99

COMPARE TO PROFESSIONAL WOODWORKER $22.76 MODEL: 51832

ITEM 63235/63292/97626 shown

14303120

LIMIT 4 - Coupon valid through 6/25/20*

drill master — SUPER COUPON
18v, 3/8" CORDLESS DRILL/DRIVER KIT WITH KEYLESS CHUCK
Includes one 18v NiCd battery and charger.

Customer Rating ★★★★½

~~$19.99~~ NOW $16.99

COMPARE TO BLACK+ DECKER $59.99 MODEL: GC1801 — SAVE 71%

ITEM 68239/69651/62868/62873 shown

14323004

LIMIT 4 - Coupon valid through 6/25/20*

Apache MODEL 2800 — SUPER COUPON
ULTRA-LIGHT, CRUSH-PROOF, WEATHER-RESISTANT LOCKABLE CASE
Customer Rating ★★★★★

- 11-7/8" L
- 9" W
- 5-5/16" H

NOW $21.99 ~~$27.99~~

Case contents and locks not included.

COMPARE TO PELICAN $237.63 MODEL: 1400 — SAVE $215

ITEM 63926 64551 shown

14327043

LIMIT 3 - Coupon valid through 6/25/20*

PITTSBURGH AUTOMOTIVE — SUPER COUPON
12v, 150 PSI PORTABLE INFLATOR
Customer Rating ★★★½☆

NOW $6.99 ~~$9.99~~

ITEM 4077/63109/63152 shown

COMPARE TO CUSTOM ACCESSORIES $26.49 MODEL: 59008 — SAVE 73%

14330469

LIMIT 4 - Coupon valid through 6/25/20*

CENTRAL PNEUMATIC — SUPER COUPON
3/8" x 50 FT. RETRACTABLE AIR HOSE REEL
Customer Rating ★★★★½

NOW $59.99 ~~$79.99~~

COMPARE TO KOBALT $99 MODEL: SGY-AIR184 — SAVE $39

ITEM 69265/62344/64685/93897 shown

14331365

LIMIT 1 - Coupon valid through 6/25/20*

SUPER COUPON
36" PICKUP AND REACH TOOL
Customer Rating ★★★★½

- 36" reach
- Easy grip

SAVE 86% — NOW $1.99 ~~$3.29~~

COMPARE TO ARCMATE $15 MODEL: 32S

ITEM 94870/62176/61413 shown

14345198

LIMIT 4 - Coupon valid through 6/25/20*

PORTLAND SUPER COUPON

14", 9AMP ELECTRIC CHAINSAW

Customer Rating ★★★★★

NOW $39.99 $49.99

SAVE 50%

COMPARE TO CRAFTSMAN $80.74 MODEL: 071-45247

ITEM 64498/64497 shown

14346562

LIMIT 2 - Coupon valid through 6/25/20*

GREENWOOD SUPER COUPON

1-1/4 GALLON HOME AND GARDEN SPRAYER

Customer Rating ★★★★★

$13.99 NOW $9.99

SAVE 28%

ITEM 61280/63145/63124 shown

14354329

LIMIT 4 - Coupon valid through 6/25/20*

TAILGATOR SUPER COUPON

900 WATT MAX. STARTING 2 CYCLE GAS POWERED GENERATOR

Customer Rating ★★★★½

NOW $109.99 $124.99

ITEM 63024/63025 shown

COMPARE TO POWERSMART $126.10 MODEL: PS50

SAVE $16

14359703

LIMIT 1 - Coupon valid through 6/25/20*

BUNKER HILL SECURITY SUPER COUPON

WIRELESS SECURITY ALERT SYSTEM

Customer Rating ★★★★½

NOW $9.99 $14.99

COMPARE TO FIRST ALERT $32.99 MODEL: SFA600

SAVE 69%

ITEM 61910/62447/93068 shown

14361615

LIMIT 4 - Coupon valid through 6/25/20*

Kenway SUPER COUPON

12v LED MAGNETIC TOWING LIGHT KIT

Customer Rating ★★★★★

NOW $22.99 $34.99

ITEM 64282

SAVE 46%

COMPARE TO BLAZER $42.65 MODEL: C7300

14367150

LIMIT 3 - Coupon valid through 6/25/20*

FRANKLIN SUPER COUPON

17 FT. TYPE IA MULTI-TASK LADDER

Customer Rating ★★★★★

- Versatile - 24 configurations
- Safe + Secure + Stable
- Super Strong - Holds 300 lbs.
- Weighs 34 lbs.

$139.99 NOW $109.99

COMPARE TO LITTLE GIANT $298.99 MODEL: XE M17

SAVE $189

OSHA/ANSI COMPLIANT

ITEM 63419/67646/62514/63418/63417 shown

14379871

LIMIT 1 - Coupon valid through 6/25/20*

PITTSBURGH SUPER COUPON

18 PIECE SAE AND METRIC T-HANDLE BALL END HEX KEY SET

LIFETIME WARRANTY

Customer Rating ★★★★½

NOW $12.99 $16.99

ITEM 63167/63166/96645 shown

COMPARE TO HUSKY $32.10 MODEL: HTHKSM14PCN

SAVE 59%

14389369

LIMIT 3 - Coupon valid through 6/25/20*

Haul Master SUPER COUPON

3/8" x 14 FT., GRADE 43 TOWING CHAIN

Customer Rating ★★★★★

- 5400 lb. capacity

NOW $19.99 $39.99

ITEM 40462/60658/97711 shown

COMPARE TO MIBRO $64.99 MODEL: 426920

SAVE 69%

14395204

LIMIT 3 - Coupon valid through 6/25/20*

PITTSBURGH SUPER COUPON

16 OZ. HAMMERS WITH FIBERGLASS HANDLE

LIFETIME WARRANTY

Customer Rating ★★★★★

YOUR CHOICE $2.99 $5.49

SAVE 70%

COMPARE TO KOBALT $9.98 MODEL: 62742

TYPE	ITEM
CLAW	69006/60715/60714/47872
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New Products that are ***Worth a Closer Look***

THE DAWN OF THE DRONE

THE DAWN OF THE DRONE, by Steve Mills, is a fascinating, impeccably researched look into the history of drones. We often consider drones a recent invention—four-motor aircraft that compete in intricate tasks such as navigating gates, speed, and courses, or carrying cameras to record landscapes and locate lost aircraft, track forest fires, or find lost children—but the history of the drone goes back more than 100 years.

In March 1917, the British Royal Flying Corps (RFC) launched its first unmanned aircraft that responded to radio commands from the ground. Developed less than 20 years from the date of the first manned, heavier-than-air aircraft flights, the first drone was a full-scale military aircraft with the purpose of flying without the risk of danger to life and limb. The "back-room boys (and girls)" of World War I military aviation, military service, and other professionals invented the first drones.

As has often been the case throughout history, the impending war was the catalyst for innovation and projects designed to protect human life and help provide security for the nations becoming embroiled in the impending war.

Prewar airplanes were barely manageable when controlled by pilots in the aircraft; however, officials believed that machines could be built that were controlled by pilots on the ground. It was often reported that the life expectancy of a pilot posted to the front in WW I was "just a few weeks."

The book delves into reasons why the RFC project, which occurred so soon after the development of both heavier-than-air flight and radio communications, was sheathed in secrecy at a time when most of the population had grown up during the reign of Queen Victoria, and most could recall seeing the first electric lights, and the motor car was a novelty.

The RFC project drew from innovators of the time, including Charles Rolls (of Rolls-Royce fame), who died in an airplane crash in 1910; Archibald "Archie" Montgomery Low (a major innovator in the invention of drones as well as "Televista," the early progenitor of television); and Guillermo Marconi, the pioneer of long-distance radio transmission. (Seriously, who knew that digital TV was first conceived in 1880?)

The Dawn of the Drone includes a convenient list of abbreviations and acronyms, a patent list, bibliography, list of people involved in the project, and an "Endnotes" section that briefly details the information that is found in each chapter.

This book contains personal information and interesting background on many of the people involved, and a huge amount of once-classified information. It is a fascinating glimpse into the people who were involved and the situation in which they found themselves.

It is a must-read for history buffs and a fascinating look into life and technology of 100 or more years ago and the intrepid innovators of that time.

SOURCES:

The Dawn of the Drone
Casemate UK
www.casematepublishing.co.uk/the-dawn-of-the-drone.html

New Products from the **Modeler's Mall**

Peregrinus 2-meter F5J Glider @ $495 + S&H from ICARE-ICARUS

890 ch. D'Anjou Unit 1, Boucherville QC J4B 534, Canada; Tel.: (450) 449-9094;
Website: www.icare-icarus.com

ICARE is pleased to introduce the Peregrinus 2-meter F5J electric thermal glider in either a cross-tail or V-tail version.

With a wing that is molded over the foam core construction and based upon proven AG airfoils, the Peregrinus is built using the latest full carbon-fiber molding techniques, leading to a lightweight, sturdy airframe that is designed to provide great handling and forgiving flight characteristics. It allows a pilot to work small, low-level thermals with confidence, but is also well-suited for slope flying. The low weight is a great thermal indicator, while the thin airfoil allows speedy cruising across sink.

The carbon-fiber fuselage is high-pressure molded and includes the trimmed canopy. The V-tail is removable, while the cross-tail version comes apart with the fin and elevator and is able to be removed at the same time for ease of transportation. The control surfaces are actuated by installed pushrods to allow for precise control of the elevator and rudder, and the aileron and flaps are live hinged for extra durability.

All parts are prefinished. The two-piece wing is nicely painted in the mold and joins the fuselage by a carbon-fiber rod. Premade servo wells only require servo installation. A hardware package and instructions complete the kit.

Inquire with ICARE-ICARUS about the variety of colors that are available, as well as complete combo packages and setups.

RDX2 Mini AC Dual Balance Charger @ $79.99 + S&H from Hitec RCD

9320 Hazard Way Ste. D, San Diego CA 92123;
Tel.: (858) 748-6948;
Website: www.hitecrcd.com

Hitec's RDX battery charger line offers an array of efficient, sleekly designed chargers for all discerning hobbyists—including the new RDX2 Mini AC Dual Balance Charger.

This two-channel charger features independent circuits that allow the user to charge two batteries simultaneously, regardless of chemistry or capacity. With a powerful, combined 100-watt charging output and 5-amp current, the RDX2 Mini offers the punch needed to charge two- to four-cell packs at an affordable price.

The convenient, front-loading design has the balancing and XT60 ports readily accessible for ease of operation anywhere. It also includes absorbent glass mat (AGM) and cold-charge modes to safely and easily charge conventional lead-based and AGM batteries in cold conditions.

The RDX2 Mini also features a user-friendly LCD interface; stores 10 battery memory charge and discharge profiles; has terminal voltage control; a built-in balance connector; balance, standard, fast, and storage modes for all lithium battery chemistries; re-peak charge mode and delta-peak sensitivity for NiMH/NiCd batteries; an optional temperature sensor for NiMH/NiCd charging; two built-in XT60 connectors; and a smart ventilation fan.

E-flite Air Tractor 1.5m BNF Basic with AS3X and SAFE Select @ $269.99 + S&H from Horizon Hobby

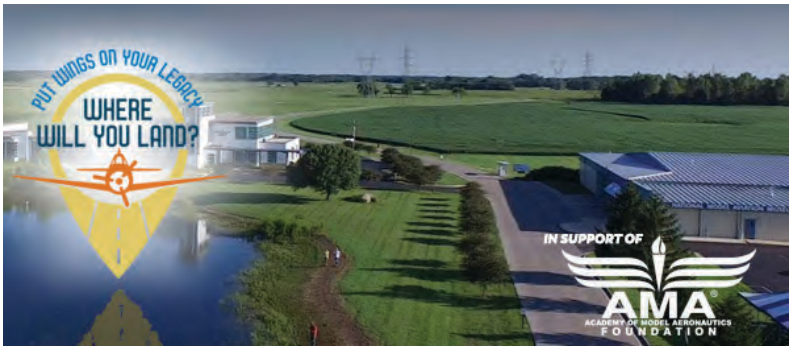
4105 Fieldstone Rd., Champaign IL 61822;
Tel.: (800) 338-4639;
Website: www.horizonhobby.com/content/e-flite-rc

Founded in 1978, Texas-based Air Tractor is a leading manufacturer of full-scale aircraft built for agricultural, firefighting, and other utility applications. The aircraft can be found working in more than 30 countries. Factory finished in the familiar, highly visible yellow and blue trim scheme, the E-flite Air Tractor 1.5m offers a superb scalelike appearance that you'll be proud to show off.

The perfect scale, low-wing model for intermediate to experienced RC pilots, the E-flite Air Tractor's specially tuned outrunner motor and three-blade propeller are matched to a 50-amp ESC to provide fantastic flight performance using 3S 2,200 to 3,200 mAh LiPo batteries, or install a 4S battery for more power and unlimited vertical without the need for modifications or upgrades.

Easy to take off, fly, and land, the Air Tractor has optional-use SAFE Select flight envelope protection and the unmatched stability and locked-in feel of the exclusive AS3X technology. Robust landing gear with oversize tires allow for operation from a variety of surfaces, and optional EDO-style floats with steerable rudders or optional scalelike skis for flying from snow are available. The factory-installed LED landing, navigation, and strobe lights are fully functional.

No glue is required for assembly. The wing and stabilizer are easy to install and are removable. A full-range five- to six-channel Spektrum DSMX/DSM2-compatible transmitter, 3S 11.1-volt or 4S 14.8-volt 2,200 to 3,200 mAh LiPo battery with EC3 or IC3 connector, and a compatible LiPo charger are needed to complete the aircraft.



WHERE WILL YOU LAND? CAMPAIGN LAUNCHES

THE AMA FOUNDATION is excited to offer model flying supporters a unique opportunity to leave a lasting legacy through its new Where Will You Land? campaign.

Money raised through this campaign will directly benefit the AMA Foundation Endowment Fund. This fund will create a long-term solution to support programs related to education, student scholarships, the National Model Aviation Museum, AMA's International Aeromodeling Center (IAC), club grants, and other related programs.

One day, this fund will provide the necessary capital for annual growth needs, allowing the AMA Foundation to focus on supporting future AMA projects.

Your passion, enthusiasm, and generosity are greatly appreciated and will help us fly into the future. As part of this campaign, we ask you to put wings on your legacy by considering one of the naming opportunities that are available at the IAC in Muncie, Indiana. These include putting your name on a flying site, building, or another option of your choosing.

You can learn more about the program at www.modelaircraft.org/land.

AMA Thanks Its Lifetime Supporters!

The Academy of Model Aeronautics recently welcomed Life Members Brian E. Dye, Mesa AZ; Kevin A. Lewis, San Jacinto CA; Lyle C. Miller, Charlotte NC; and Horace A. Smith, Boynton Beach FL. For information about becoming a Life Member, contact AMA Headquarters at (800) 435-9262.

—AMA Membership Department

REGISTRATION FOR THE 2020 NATS IS OPEN

MAKE PLANS NOW to attend the 2020 Indoor and Outdoor Nats. Online registration is open for the annual event.

The Indoor Nats is scheduled for May 27-31 in Springerville, Arizona, at the Round Valley Dome. The Outdoor Nats is planned to take place at the International Aeromodeling Center, in Muncie, Indiana and is scheduled to begin July 12 and run through August 5.

If you've never competed in the Nats, 2020 might be your year! This year, the $50 basic registration fee is waived for first-time Nats participants.

Visit www.modelaircraft.org/nats for more information about the Nats and to register.

FORMER DISTRICT XI VICE PRESIDENT PASSES

MICHAEL "MIKE" MOSBROOKER, a former AMA District XI vice president, has passed away.

Born June 17, 1938, in North Dakota, Mike moved with his family to Los Angeles at age 5, which was when he started building model airplanes. He earned a degree in applied mathematics from California Polytechnic State University and later a master's degree in nuclear physics from the Naval Postgraduate School.

Mike served for 20 years in the U.S. Army, retiring

as a lieutenant colonel. He earned multiple decorations, including the Legion of Merit, six Bronze Star Medals for Valor, and the Defense Meritorious Service Medal.

After building his first static model, he moved on to Free Flight, Control Line, and RC. As a member of five clubs, he served as president, secretary, treasurer, webmaster, and newsletter editor.

Mike was an AMA Leader Member and a contest director in Washington State. He served as an AMA District XI associate vice president and was elected as that district's vice president in the fall of 2011, serving in that position until roughly mid-2014.

Mike passed away March 3, 2020. He is survived by his wife, Helen, a daughter, two sons, two stepchildren, a brother, three grandchildren, and six step-grandchildren.

HALL OF FAME MEMBER PASSES

AN AMA LIFE MEMBER and AMA Model Aviation Hall of Fame inductee has passed away.

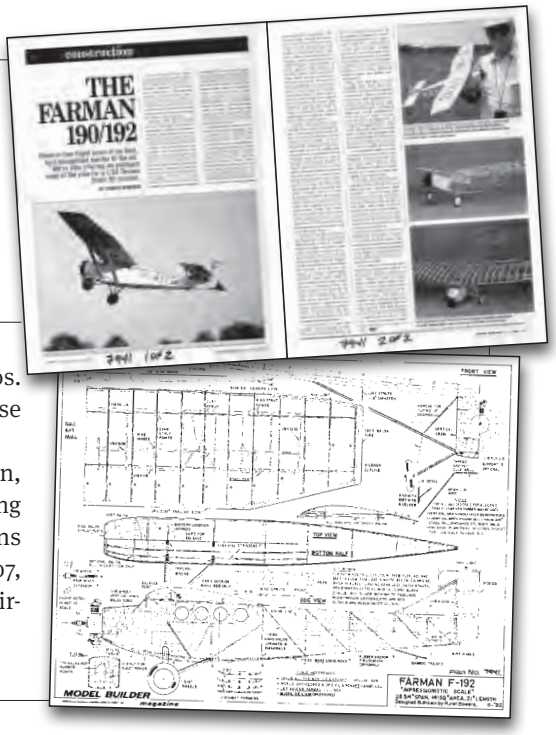
Richard "Dick" Allen died February 11, 2020, at the age of 91. He was inducted into the hall of fame in 2011.

According to his AMA History Project autobiography, Dick began flying RC in 1951. He competed in his first Nats in 1953, where he tied for third place with Walt Good. In subsequent Nats, Dick finished first and second in many RC events.

In 1954, Dick helped found the Aeroguidance Society (AGS) in New York, and served as its first president. He later designed model airplanes including the Lancer (with Ralph Jackson), the Stark Shark, Junkers J-10 Tin Donkey, the Mini MAX 1200Z, the Miles Sparrowhawk, and the Mousseler. Many of his construction articles were published in modeling magazines.

In addition to being an AMA Model Aviation Hall of Fame member, he received the Trailblazer award for designing and contracting an access road to the AGS club flying field in 1976. Dick also received the Dr. Walt Good Lifetime Achievement Award in 2003 and the Vintage R/C Society Hall of Fame award in 2005.

Build a High-Wing Replica of a French Monoplane



AMA PLANS SERVICE houses all plans formerly sold through *Model Builder* magazine, Bill Northrop's Plan Service, and the *Scratch Builder's Almanac*. There are more than 1,000 plans in the collection.

Master Free Flight Scale pilot Hurst Bowers designed the Farman F-190/F-192, a high-wing replica of the full-scale French monoplane built in the 1920s. The 29-inch airplane is designed to use a HiLine electric motor.

You can order plans for the Farman, plans number 7941, for $5 plus shipping and handling by calling AMA Plans Service at (800) 435-9262, extension 507, or via email at planservice@modelaircraft.org.

The White Mystery. National Model Aviation Museum, photo by donor, 2000.35.01.

History Preserved

THE WHITE MYSTERY

By Claire Aldenhuysen

RC IS ONE OF the most recognized types of model aviation; however, what many people don't realize is that RC has been present in the hobby for more than 80 years.

The 1930s were a hotbed of creativity in the hobby, with modelers seeking out new and inventive ways to fly. RC is contemporaneous with many aeromodeling innovations in other disciplines, including Free Flight (FF) and Control Line (CL). Carl Goldberg's FF Zipper prototype debuted at the 1938 Nats, and Roy Mayes' CL Inverted flew a year later.

RC is particularly important in the development of aeromodeling because of its unique nature of allowing pilots to remotely control their aircraft. Before RC was introduced to the hobby, pilots were unable to control the flights of their airplanes unless they were physically tethered to the aircraft. RC opened up a number of possibilities and new opportunities to push the boundaries of flight.

In 1936, the newly formed Academy of Model Aeronautics announced that an RC event was being added to the national aeromodeling contest in Detroit. However, the contest was a bust—there wasn't a single entry!

The following year, the competition had six entrants: Chet Lanzo, Patrick Sweeney, Elmer Wasman, Walt Good, Leo Weiss, and B. Schiffman. Every one of the airplanes was scratch-built and unique and were huge! The aircraft had wingspans of 8 to 14 feet and weighed anywhere from 6 to 16 pounds. The controls ranged from rudder only to inclusion of not only rudder, but ailerons, elevator, and engine.

The first contestant to compete was Patrick, whose aircraft—which had been built in only a month—had a 10-foot wingspan and weighed 9 pounds. More than half of its weight consisted of the radio and batteries. Its only control was the rudder, which was built from a spring-wound alarm clock. His flight started off well, but its center of gravity caused it to rapidly tilt into a sharp climb, ending in a crash after 5 minutes of flight time. Despite the crash causing him to refrain from another flight, Patrick is still credited with the first attempted RC flight in a national contest.

Next to compete was Elmer, with the White Mystery—so named for the mysterious wind-driven propeller with a function known only to Elmer. The White Mystery had an extremely complex control system, which makes the revelation that it flew for the first time that day even more impressive!

The White Mystery placed third after a brief flight characterized by a stall that was caused by the inclement weather and its tail-heavy design. The White Mystery can be seen today in the National Model Aviation Museum's gallery, on display with two other historically significant replicas from this contest.

Third to fly was Chet, whose aircraft weighed just 6 pounds—2 of which were attributed to the radio equipment. His hard work and precision flight earned him first place. The batteries he used had a remarkably short lifespan, clocking in at merely 2 hours of use! He obtained the tiny, short-lived batteries from a company in Cleveland that produced them for weather balloons. In 1984, Chet built a replica of this aircraft and donated it to the National Model Aviation Museum.

The latter three competitors did not actually fly in the contest—the rapidly worsening weather grounded all three. A replica of one of the entries can be seen today in the National Model Aviation Museum, alongside Chet's 1937 replica and the White Mystery.

The Big Guff, a large orange and yellow aircraft built by Bill and Walter Good, unfortunately didn't see any airtime that day, but is still a significant model in the history of RC aeromodeling. The original Big Guff is housed at the Smithsonian National Air and Space Museum in Washington, D.C.

More information about this contest and the White Mystery can be found in the April 1986 issue of *Model Aviation* (https://library.modelaviation.com/ma/1986/4), as well as the National Model Aviation Museum blog (http://amablog.modelaircraft.org/amamuseum/2014/05/20/restoration-of-the-white-mystery).

A much older Elmer poses with the third-place trophy that he won in 1937. National Model Aviation Museum, photo by Fred Mulholland, 1994.11.01.

Elmer Wasman (L) and Fred Mulholland (R) pose with the restored White Mystery in early 2000. National Model Aviation Museum, photo by donor, 2000.35.01.

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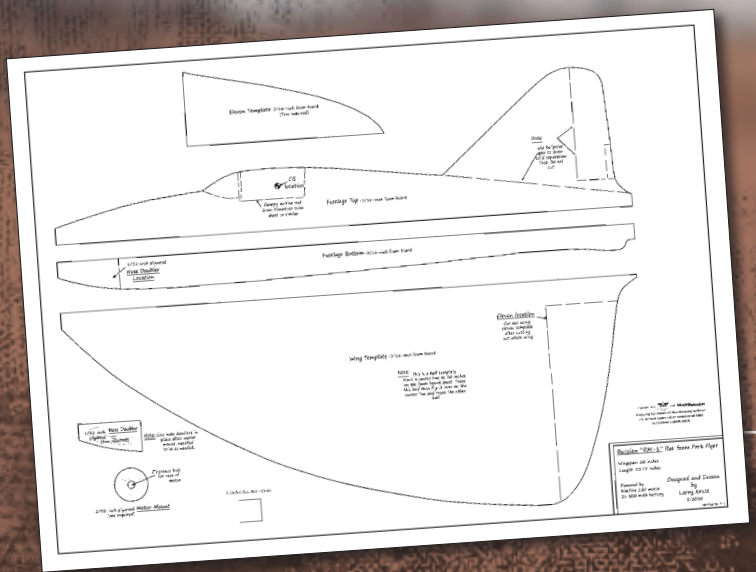
RM-1 SUPERSONIC FIGHTER

Build a Soviet X-Plane

By Larry Kruse
Photos by the author
aircats@att.net

01



DOWNLOAD PLANS!

Visit www.ModelAviation.com to download Plan No. 1119 for free!

In the aftermath of World War II and the discovery of proposed advanced aircraft designs that never made it into production, those that occurred in Germany were the most frequently published. At the same time, because of the political climate of the day, little was known outside of the USSR about what the Soviets were doing along those same lines. However, the decades after the war have revealed some extraordinary thinking and unexpected advances that were being made.

One of those involved was Aleksandr Moskalev (sometimes spelled Moskalyev), a brilliant young designer who, in the 1930s, was decades ahead of his peers in conceptualizing what it would take to break the sound barrier in an aircraft. His postulates centered on a wing shape and overall aircraft configuration that would minimize the air pressure that builds up in front of a wing surface as the airplane travels faster.

As Daniel Russ, the publications editor of the Civilian and Military Intelligence Group newsletter, wrote, "His idea was to see if creating a plane without a tail would make it easier to traverse the speed of sound. It was probably the first attempt to do this. It was the first record of delta-wing fighters that would fill the skies of the world 40 years later."

Accordingly, Moskalev began working on a series of airplanes clustered under the acronym of "SAM" that were labeled either numerically or by special names such as the SAM Sigma 4, which was notable in 1934 as an early, tailless, delta-wing design. Although the Sigma 4 was intended as a rocket-powered airplane, suitable rocket engines were still 10 years away, so Moskalev decided to place twin piston engines inside of the wing.

Continuing to refine the delta-wing concept for another decade, it was not until 1944 that Moskalev was given permission by the governing Zhukovsky Central Aerohydrodynamic Institute (TsAGI) to develop the RM-1 (SAM-29), intended as the first supersonic fighter. It was renamed the PM-1 and the construction order was signed by the People's Commissar of Aviation Industry, A.T. Shakhurin. However, in early January of 1946, Shakhurin was "repressed" by the Stalin administration and the order for the PM-1 construction was annulled, marking the end of the RM-1 effort and Moskalev's brilliant design.

The later specifics of this most unusual and potentially important airplane are murky, with much of it lost in time and the lack of historical data. What remains is a goodly amount of conjecture and several purported three-views existing in books such as *Soviet X-Planes* by Gordon and Gunston, and an entertaining YouTube video titled, "Secret Russian Aircraft of WWII."

The model offered here is true in planform and fuselage profile to one of the three-views in *Soviet X-Planes*. That does not suggest that it is anything more than what I choose to call "conjecture scale," and was done as a simple, flat foamie "study model" because I wanted to see how it would fly.

It is a far cry from any scale representation of the proposed RM-1, but it is an easy model to construct and a surprisingly good flier. Although it is not rocket propelled, it still looks cool in the air, and you barely notice the propeller spinning away up front.

Preconstruction Notes

Like several of the flat foamies that I have had published in *Model Aviation* and *Park Pilot* (the Avro Vulcan, the Lippisch P.13B, and the MayBee), this airplane is constructed from two sheets of inexpensive Dollar Tree foam board with the paper left on. Take a little time and sort through the store's selection to find the most warp-free pieces. Do not be tempted to use a more expensive foam board because the weight will seriously impact the way the RM-1 flies. Weight is always an enemy, even in a simple project such as this one.

Other basic components I used included a RimFire 250 motor with a 7 x 5 APC Slow Flyer propeller; a 12-amp ESC; my trusty Futaba T6J radio system; two 7-gram servos; a 2S 500 mAh battery; a piece of 1/32-inch plywood for the motor mount and nose doublers; two 14-inch pieces of .047 music wire for the pushrods; and hook-and-loop material for the battery mount. Hinges were made with Du-Bro Electric Flyer Hinge Tape, and control horns and pushrod standoffs were of the Du-Bro micro horn variety.

Building the RM-1

If you've gathered the materials and components, construction will move along quickly because there are few parts and nothing tricky in the assembly process.

The full-size templates can be attached to lightweight poster board with 3M Spra-Ment or a similar product and cut out. The required pieces can be traced onto the foam board with a soft lead pencil. Avoid using a pen because it leaves ink traces that are hard to remove from the poster board.

A large, self-healing cutting mat is a useful surface

01. The unique planform draws attention in the air, while still being exceptionally stable and is able to handle wind from 5 to 7 mph.

02. The wing plans feature a half template that is placed along the centerline that is drawn on the foam-board sheet then flipped over to draw the other half. After the wing is cut out, the two elevons are separated from the main panel.

03. The lower right side of the airplane shows the ESC held in place with double-sided tape. The receiver is attached by hook-and-loop material and the servo is hot glued to the bottom of the wing.

04. The lower left side of the fuselage shows the 1/32-inch plywood doubler, the hook-and-loop strip for the battery mount, and the second 7-gram servo that is hot glued to the bottom of the wing.

to place under the foam board as you cut it. Any #11 sharp hobby blade will work well to cut out the pieces, although it might have to be sharpened or replaced during the cutting process. Foam board has a way of quickly dulling edges. I've had good success using #11 disposable scalpel blades.

Note that the wing template is a half-template and requires a line drawn the length of one of the foam boards at 10 inches. Trace half of the wing, flip the template over, and draw the other half before cutting around the outside only.

The two elevons can be traced onto the wing blank and separated from the full wing after it is cut out. Now draw a bottom centerline on the wing blank to help position the bottom of the fuselage.

The fuselage top and bottom can be traced onto the foam. Go ahead and cut out the outside profile of both pieces. Use a long straightedge to cut the bottom of the top piece and the top of the bottom piece, making a concerted effort to keep the cutting blade perpendicular to the mat. Both of those surfaces must be straight and square to avoid inducing any warp or curvature to the wing.

After the foam parts are cut out, you can gently true up the edges with fine sandpaper that is wrapped around a block or a T-bar sander to smooth everything out. You might want to cut out the two 1/32-inch plywood nose doublers and the plywood motor mount at this time so you won't have to interrupt the assembly process later.

On this project, several glue types are available, including hot glue, which I have used extensively in the past. In this case, I wanted to minimize the weight as much as possible, and hot glue is heavy. I used Beacon Foam Tac on the RM-1 for most joints with good success. It will probably be my glue of choice for future projects.

As many know, hot glue forces you to work fast and accurately before the glue sets up. Foam Tac allows more accuracy over a longer working time by placing a bead of glue on each of the parts to be joined, pressing them together, separating them for about 10 seconds, and then putting them together again. You do have a small amount of time after that to tweak the pieces into the final position and hold them there, or to brace them into position as the glue cures. I was very pleased with Foam Tac and used it to join everything except the motor mount to the fuselage.

As the plans show, there are only five pieces of foam in the airplane. Start by gluing the bottom of the fuselage to the bottom of the wing, placed carefully along the longitudinal line drawn previously. Position the piece so that the bottom of the wing is flat and level and the fuselage bottom is held at a 90° angle to the wing.

The fuselage top can be glued in place next, but you will have to elevate the wing slightly more than the depth of the fuselage bottom in order for it to clear the work surface. The top of the wing must also present a flat and level surface for the fuselage top piece to be attached, particularly because it includes the airplane's rather large rudder and fin.

After the fuselage top and wing joint are dry, square up the nose juncture and epoxy the 1/32 plywood circular motor mount in place. Five-minute epoxy works well for this. Be sure to keep the small relief circle in the center of the mount clear of epoxy so the rear of the motor can seat properly. The motor mount should have a 0-0 thrustline when the epoxy is cured. You might need to keep checking and tweaking it as the epoxy hardens.

The 1/32-inch plywood nose doublers are installed with either Foam Tac or epoxy. After they set, I used hot glue to make a fillet all the way around the backside of the motor mount to reinforce the fuselage/motor mount joint. Squeezing a puddle of hot glue onto a scrap of foam board then applying the fillets with a toothpick worked well for me.

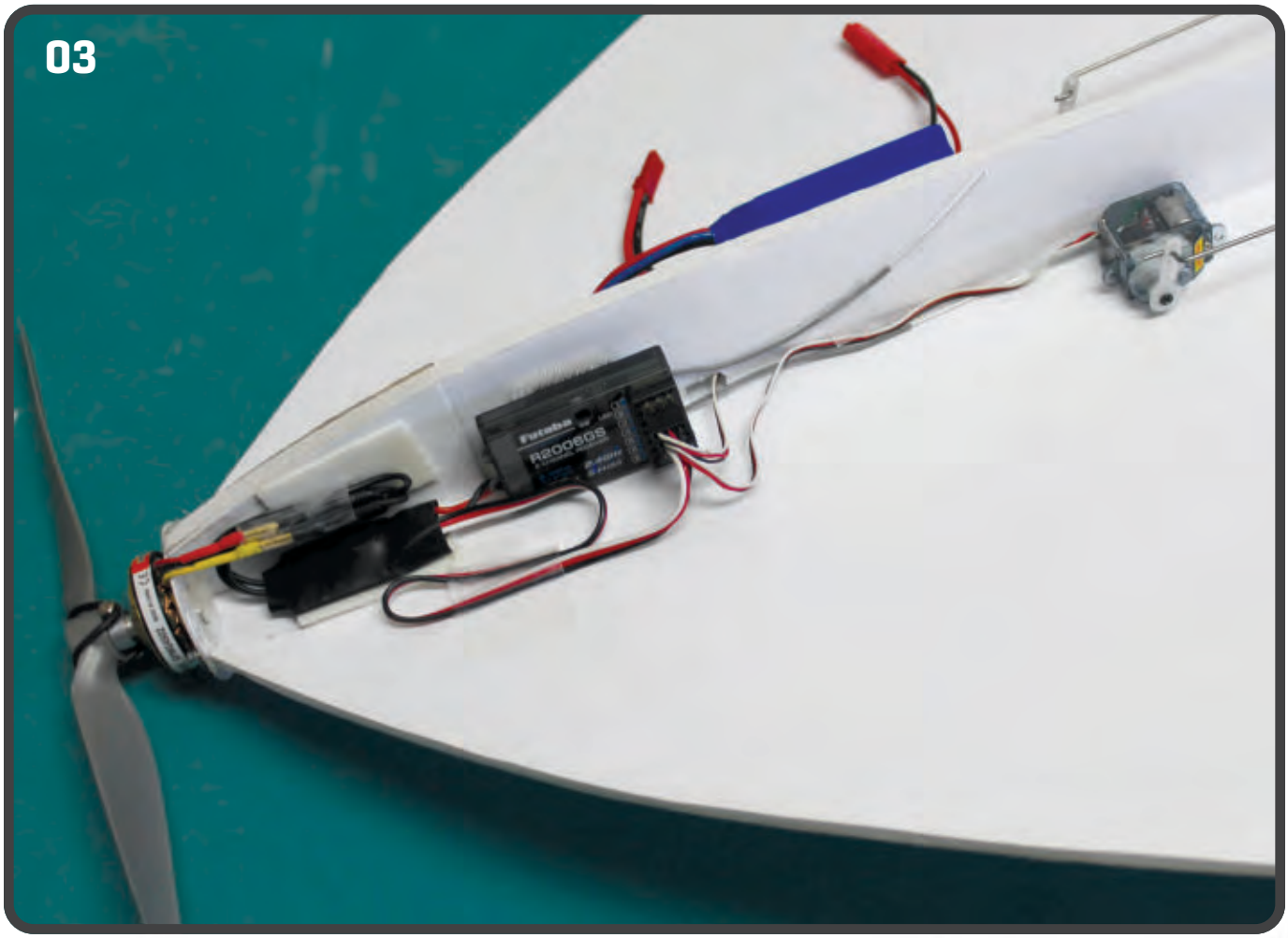
The leading edge (LE) of each elevon needs to be sanded to a chisel shape with the angle on the bottom. Hinging the surfaces was done with 1-inch Du-Bro Electric Flyer Hinge Tape and is a simple process. Working with one elevon at a time, butt the wing and the elevon together top side up. The chisel shape of the elevon LE should face down.

Cut a length of hinge tape roughly an inch shorter than the length of the surfaces to be joined. Gently lay it lengthwise over the two surfaces, keeping them touching along their seam. When it's placed to your satisfaction, press the tape down smoothly to avoid any wrinkles or creases. Now cut three 2-1/2-inch pieces of tape and place

At a Glance

Specifications

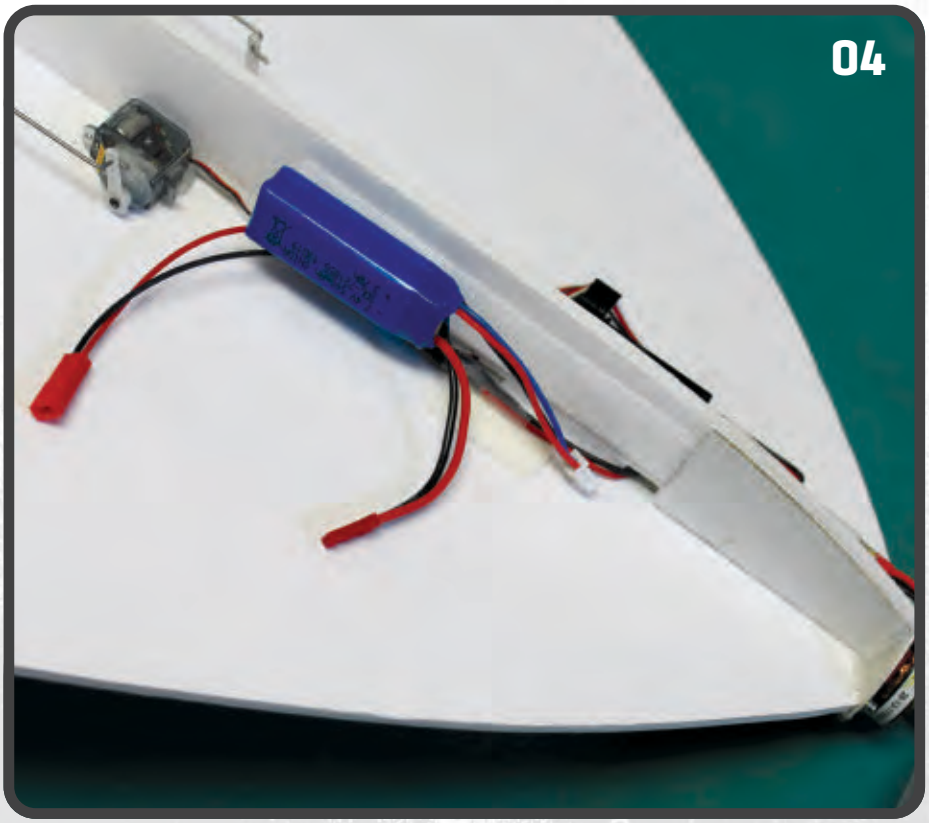
Model type: Flat foam park flyer
Skill level: Intermediate
Wingspan: 20 inches
Length: 25.75 inches
Wing area: 297 square inches
Weight: 6 ounces
Wing loading: 2.91 ounces per square foot
Power: 28-13 1,750 Kv outrunner
Propeller: 7 x 5 APC SF
Battery: 2S 500 mAh LiPo
Radio equipment: Futaba T6J transmitter/Futaba R2006GS receiver
Flight duration: 5 to 7 minutes, depending on throttle management



them off to the side.

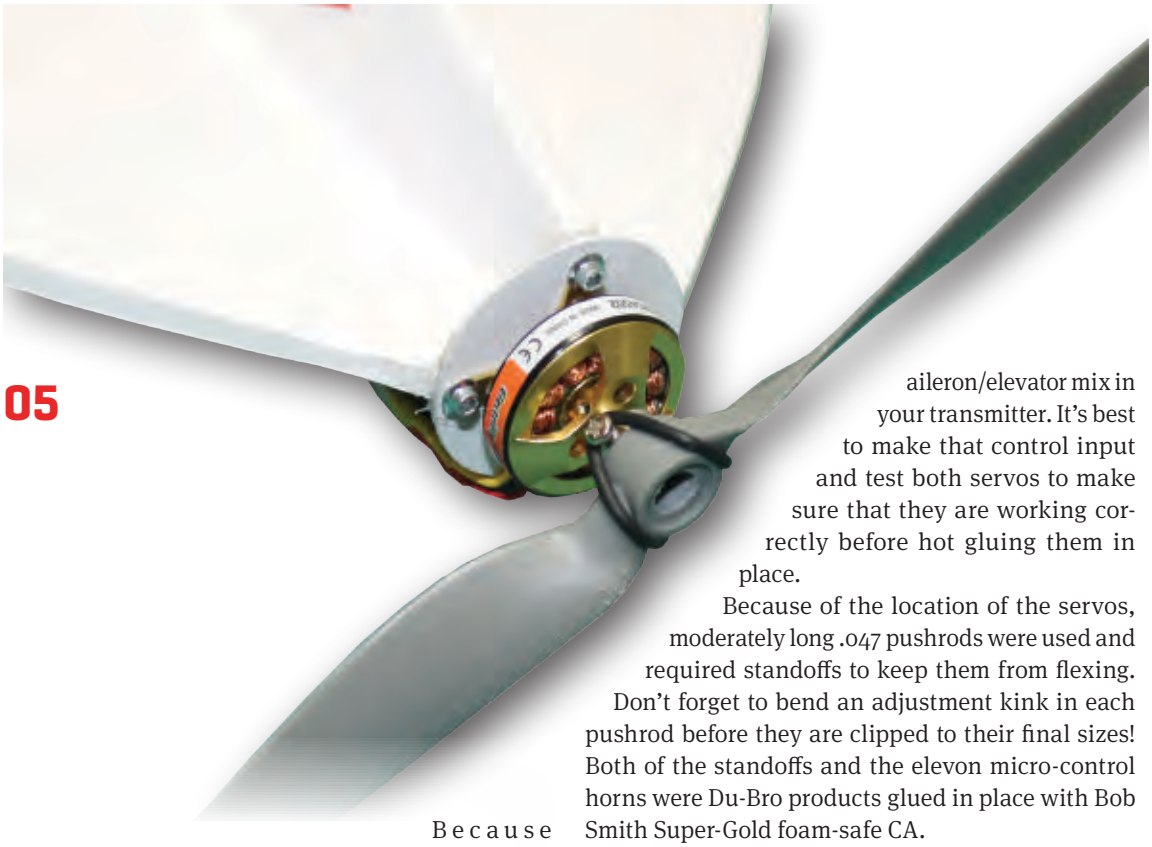
Fold the two surfaces you just joined back over each other (keeping the edges even) and apply the short pieces of tape perpendicular to the joint. Space them out so that they support the surfaces equally and rub them into place.

You can then flatten out the surfaces. Flex the elevons several times to make sure that the joint moves easily then smooth the tape pieces again to remove any bubbles or wrinkles. Treat the second elevon joint the same way and that will finish the RM-1's basic construction.



Power and Control Installation

Surprisingly, placement of the power and radio components on this model is not particularly critical because its center of gravity (CG) is located at 39% of the root chord. There's room to maneuver, but everything should be placed as much as possible ahead of the CG location, which nominally falls at 10 inches aft of the front of the motor mount.



05. The RimFire 250 motor that the author used was screwed to the motor mount. He made sure that there was no downthrust or side thrust. The O-ring prop saver is the appropriate propeller mount for the belly-lander.

06. Static 3/4-view shots show the unique planform and compact structure of the airplane.

07. The relatively long elevon pushrods require standoff support to keep them from flexing under loads. Both the elevon control horns and the standoffs are Du-Bro products.

Because the center of the 2S 500 mAh LiPo battery I used ended up 6 inches back from the front of the motor mount, there's room to adjust its location during test flights. You can roughly determine placement of your servos, ESC, receiver, and battery by just laying out the components on the top of the wing and test-balancing the aircraft each time you shift them around.

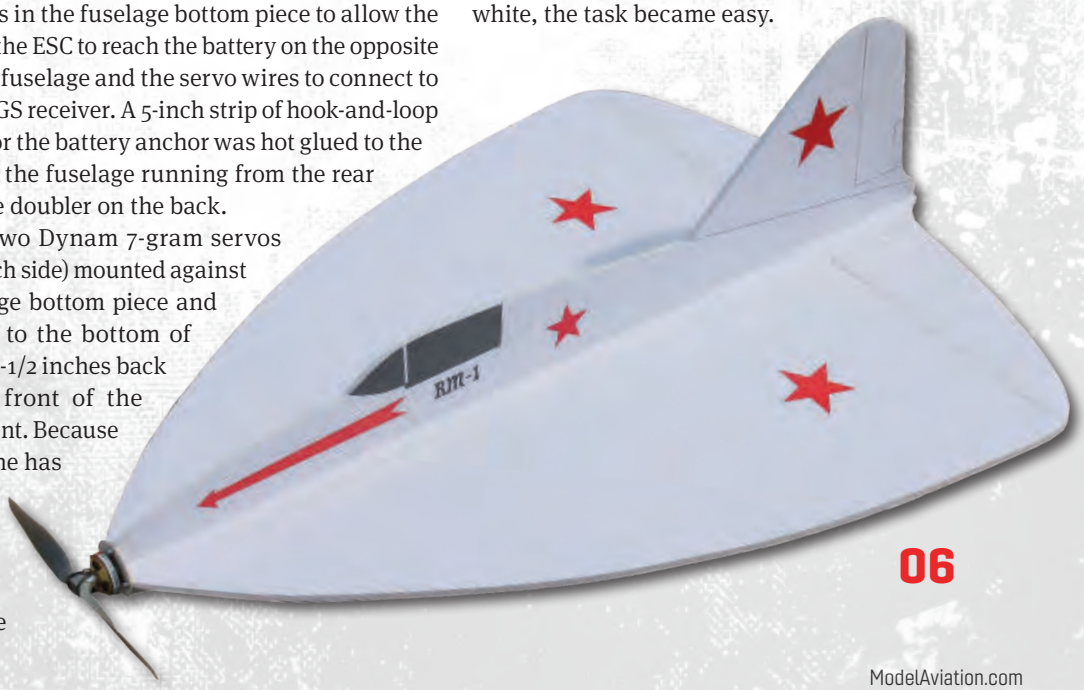
The RimFire 250 (28-13 1750 Kv) motor and the 7 x 5 propeller assembly was screwed into the motor mount with screws long enough to penetrate the foam. I cut small holes in the fuselage bottom piece to allow the wire from the ESC to reach the battery on the opposite side of the fuselage and the servo wires to connect to the R2006GS receiver. A 5-inch strip of hook-and-loop material for the battery anchor was hot glued to the left side of the fuselage running from the rear of the nose doubler on the back.

I used two Dynam 7-gram servos (one on each side) mounted against the fuselage bottom piece and hot glued to the bottom of the wing 8-1/2 inches back from the front of the motor mount. Because the airplane has elevons, you will need to activate the aileron/elevator mix in your transmitter. It's best to make that control input and test both servos to make sure that they are working correctly before hot gluing them in place.

Because of the location of the servos, moderately long .047 pushrods were used and required standoffs to keep them from flexing. Don't forget to bend an adjustment kink in each pushrod before they are clipped to their final sizes! Both of the standoffs and the elevon micro-control horns were Du-Bro products glued in place with Bob Smith Super-Gold foam-safe CA.

Finishing the Model

After the construction was complete, I was faced with giving the model some character with a color scheme and details. That problem was compounded because the airplane was never actually built, so it had no color scheme or details to replicate! However, because I had always been enamored with the all-white winter camouflage scheme used by Russia in the 1940s on MiG-3s and Ilyushin Il-2 Shturmoviks, and because the airplane was already foam-board white, the task became easy.



The only things that required painting were the motor mount and the two nose doublers. One of my club members, Dan Nicar, does some outstanding vinyl cutting and was kind enough to cut the red stars to my specifications. I finished the model with a printing font from my computer and a MonoKote canopy. Control surface lines on the rudder and fuselage separation lines were inked in.

The RM-1 in the Air

Having mentioned that weight is the enemy, I was happy to find that this model weighs an even 6 ounces, which certainly contributes to its fine flying characteristics.

Immediately after finishing the airplane, I waited for a calm evening, shortly after sundown, to at least try the model in my front yard. I set the low rates at 70% with 25% exponential.

At less than half power, with two clicks of up-elevator and an underhanded release, the little airplane made a full circle at approximately waist high and landed at my feet. The next evening, I managed to get to our local flying field shortly before sundown, after the wind had dropped to roughly 5 mph.

I applied a little more power with the same elevon setting and an underhanded launch resulted in a full 5-minute flight that proved how stable the aircraft was, and yet how maneuverable it could be.

Subsequent photo flights the next morning, in the hands of two additional club members, Leonard Baker and Harold Anderson, showed what a solid performer Moskalev's planform proved to be—more than 75 years from what might have been.

SOURCES:

***Model Aviation* online**
www.modelaviation.com

Du-Bro
(800) 848-9411
www.dubro.com

Secret Russian Aircraft of World War 2
www.youtube.com/watch?v=c6EzOKrua90

Soviet X-Planes
www.amazon.com/Soviet-X-Planes-Yefim-Gordon/dp/1857800990

RimFire
(800) 338-4639
www.greatplanes.com

Futaba
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www.futabausa.com

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Civilian and Military Intelligence Group
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EXTR


01
Hacker
Brushless Motors


02

BRUSHLESS MOTOR DESIGN

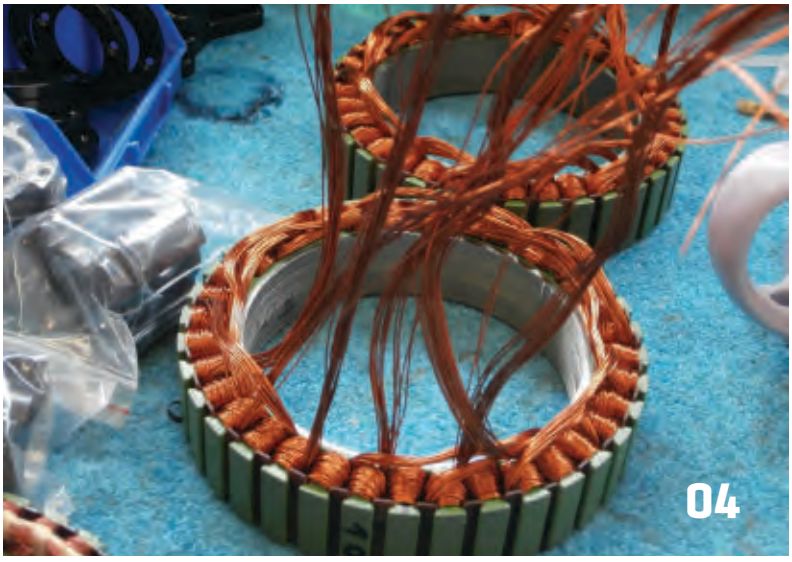
A conversation with Rainer Hacker

By James Wang
Photos by the author
heloeditor@gmail.com

Hacker is a German company that is world famous for making high-quality, reasonably priced brushless motors. Most Hacker brushless motors are designed for RC airplanes, and the rest are for RC cars, model helicopters, and industrial applications. I use Hacker motors in my airplanes and helicopters.

The Hacker Turnado Series of motors are the company's best-selling helicopter motors. They are designed for 500- to 700-class electric helicopters. The Turnado A50 Long Stator versions can develop 4,000 watts (5.4 hp) of power and cost roughly $200 each.

Rainer Hacker founded Hacker Motor in 1999. His passion is designing brushless motors, and he personally leads the design at Hacker Motors. I first met Rainer 20 years ago at the International Toy Fair in Nuremberg, Germany. We became friends and I have visited his factory a few times.



01. Rainer Hacker, and the author, at the Hacker factory near Munich. Hacker produces more than 100 different brushless motors.

02. Hacker keeps a healthy inventory that includes motors, ESCs, servos, and accessories.

03. This stator is made of many laminated sheets and each sheet can be as thin as 0.2 mm. Hacker uses the best stator material from Japan to minimize eddy current.

The Hacker research and development center is located 25 km northeast of Munich Airport in Germany. During my last visit, Rainer graciously spent a few hours explaining the intricacies of designing and manufacturing brushless motors. Besides developing motors and controllers for RC hobby use, Hacker partners with other companies to provide customized motor solutions for automotive, electric-powered vertical takeoff and landing aircraft, and other industries.

James Wang: *Hello Rainer. I'm glad to see you again. Can you start by telling our readers how you got started in the motor business and what your modeling experience is?*
Ranier Hacker: It's very nice to see you, James. I started flying models [when I was] 8 years old. Roughly 20 years ago, while engine-powered models were the mainstream of modeling, I decided, "Why not fly electric?" I built a 3.5-kilogram Adriana sailplane and powered it with a brushed motor. The motor was getting so hot that I had to cool it by spraying it with Freon. There was no speed control; it was switched on by contacting copper posts together for full power.

I investigated and identified that the brushes in brushed motors are part of the limitations. I remember from my technical training that there were such things as brushless motors. At this time, there was no internet and I was working for my father in his grocery store.

During my free time, I went to the library at the University of Munich to do my own research on brushless motors. Twenty years ago, the US company Aveox was one of the pioneers in making brushless motors for RC hobby use. Aveox was making "sensored" brushless motors. Robbe in Germany also had some brushless motors; however, I wanted to build high-performance "sensorless" brushless motors.

This was a pioneering time and there was a lot of room for new motor improvements and experimentations. I knew Harald Konrath, who was the founder of Kontronik, and Harald was knowledgeable about ESCs. He and I both flew F5D Pylon Racing RC models 20 years ago. I built brushless motors for Harald to use, and he would build ESCs for me. The market is big and we are not competitors. It is good to push each other and learn from each other. Customers always need to have another choice.

JW: *Is motor designing a black art?*
RH: There is a science in motor designing. We use a special computer simulation program developed in Germany to do calculations first. Motors are becoming bigger and more powerful, and we have to be able to calculate and predict the performance before we build a motor.

Just having a computer tool does not mean the computer can do all of the work in designing a motor.

Tremendous experience and judgment are required.

I am an avid guitar player. If you give someone a guitar, it does not mean he or she can immediately play music. The person needs to learn to control the strings, practice hard, and put in feeling.

We receive new ideas from customers every day. We are constantly learning from customers, and the learning never stops. We combine customer input with our own judgment, and then decide which knobs to turn to improve motor performance. Computer simulation is a great tool, but only a tool. Experience takes years to develop.

I have an engineer who helps me run the computer simulation, then I advise him what to tune. A computer might generate unrealistic results and tell you to make a 1-foot long motor to provide the torque you asked for.

JW: *How have motor requirements changed throughout the years?*
RH: Many things have changed in the last 20 years. In the past, it was just to make magnets better and improve the skill in winding the wires, but now we learn about new applications and new technical requirements from customers.

Mobile phones are good examples. Mobile phones have existed for many years. They were invented for talking, but users demanded more capabilities. People wanted [a] touch pad, texting, a camera, video, memo, and internet features. This brought the mobile phone to the age of a smartphone. We began our business years ago by focusing on motor performance, but now we must also focus on applications.

JW: *An electric motor seems to have an infinite life. What can cause an electric motor to fail?*
RH: In theory, only the ball bearings in the motor might not last forever, but modern industrial bearings can last thousands of hours.

We also make motors for automotive factory use. In three or four years of continuous usage, these motorized robots have assembled 1 or 2 million screws and the only maintenance to these industrial motors was to replace the bearings.

JW: *Can the magnets in the motor fail?*
RH: Neodymium magnets can work [in temperatures] up to 85° Celsius without any problem. They start to demagnetize at above 150°. I recommend that the maximum temperature the outside casing of a brushless motor should reach is 70°.

After a motor run, one should be able to touch the motor casing with the fingertip for 2 to 3 seconds without getting burned. Usually, there is no worry about the copper coating melting because the wires are double coated and can handle up to 210°.

JW: *A few years ago, there was a magnet shortage around the world. How did that affect the hobby motor business?*
RH: [The] majority of the magnets in the world are produced in China. In the last few years, the price of magnets has increased six times, but the price of our motors has not increased because motors are not made only from magnets. The price of magnets today has dropped to only double of that from few years ago.

JW: *What is the difference between an outrunner and an inrunner brushless motor?*
RH: Most RC helicopter motors are outrunners, because they provide excellent torque. In an outrunner motor, the motor casing spins and magnets are glued to the inside wall of the motor casing. The extra inertia from the spinning motor casing helps with torque.

For inrunner motors, the motor casing does not spin; the magnets are mounted on a rotor that sits in the center of the motor. Inrunner motors have lower inertia and can spin very fast—even up to 50,000 rpm. They are popular for on-road RC race cars.

JW: *Can you please explain to our readers what a stator is?*
RH: [The] stator is the iron core that the copper wires are wrapped around (for outrunner motors, the stator looks like an octopus with short arms). The purpose of the copper winding is to use electric current to generate magnetic flux. The magnetic flux then pushes and pulls on the neodymium magnets to cause the motor to spin. The copper wires are wound in loops around the stator poles to generate a focused pattern of magnetic flux.

The iron stator helps confine and concentrate that electromagnetic flux. For an electric motor to oper-

04. Copper wires are wound around the stator to produce magnetic flux.

05. Hacker balances each outrunner casing in order to produce a smooth-spinning motor. These are finished industrial motors.

ate, the direction of the magnetic flux must constantly reverse direction thousands of times a minute. A stator is made from a special iron material where the molecular structure inside the iron is able to reverse direction and realign rapidly.

High-quality stator material allows the internal molecules to change direction quicker. An iron-nickel (NiFe) alloy is a typical stator material. Currently, Japan manufactures the best treated iron material for motor stator use. Good stator iron is expensive, requires a special manufacturing process, has gone through the right hot-cool cycle, is stable with temperature, and has no oxygen inside. We buy our stator material from Japan then stamp it to the shape we need in Germany.

JW: *Why is the stator made as a stack with many thin sheets, roughly 0.2 mm thick, rather than made as a big, thick, solid iron block?*
RH: Using a lamination of many thin sheets to make a stator stack and separating each thin sheet with an insulation coating will help reduce "eddy currents" inside the stator. Eddy currents are swirling currents induced inside a conductor to oppose any change in magnetic flux.

Eddy currents are generated in the stator every time the magnetic flux changes direction and want to oppose change. When we force a change, we force the kinetic energy of the currents in the stator to convert to undesirable heat. The shape and thickness of the stator sheets are influenced by the performance requirement of the motor. This is where experience comes in.

Depending on the application, the winding method, wire thickness, quality of stator, and grade of magnet will all impact motor performance and efficiency. There is also more to a motor than simply efficiency. The motor must fit the application. A Porsche and a tractor may both have a 300 hp engine with the same efficiency, but their operating environment and design requirements are different.

JW: *A motor with a higher Kv (rpm per volt) rating will have higher, steady rpm for a given voltage. Is it true that if we want more torque and better acceleration we should use a motor with a lower Kv? How do you control the Kv when designing a brushless motor?*
RH: When designing a new motor, Kv is controlled by the number of stator poles and wire turns. We have to explain what the poles and turns are. If you look down from the top of a stator, on an eight-pole motor, a wire has to wind around eight arms as each wire goes around the circumference of a stator.

We may use many wires, but if each single wire wraps around each pole twice, then that is a two-turn motor. In general, fewer poles give higher motor rpm, and more poles give more torque. Only two turns give a higher Kv and higher rpm, and more turns give a lower Kv rating and more torque.

JW: *The Turnado A50-10L V3 and the Turnado A50 Edition 530 V3 motor both have 530 Kv. Why does the Limited Edition 530 V3 motor use a few thick copper wires while the standard Turnado A50 V3 motor uses many thin wires?*
RH: It is not always the thicker the wire, the better. To use many thin wires or few thick wires depends on the application. For example, we could make a motor with 90 thin wires or with 10 thick wires. In some cases, thicker wires could be worse. That is why we make many different motors.

The wires in the Limited Edition 530 V3 motors are wound by hand, and the standard Turnado A50 wires are wound by machine. If we find something we can do better, we always want to offer the best value for the customer.

JW: *What does "timing" mean for brushless motors, and why can changing the timing setting in the ESC change the motor power?*
RH: Let's use a combustion engine as an analogy. If a spark plug ignites every time that the engine piston reaches the top dead center, the engine timing is 0°. However, an air-fuel mixture needs time after the spark ignition to reach a maximum burn. Therefore, the engine designers need to advance the timing to ignite the

air-fuel mixture before the piston reaches the top dead center.

For electric motors, timing means how early the electromagnet (stator) should be energized to pull the motor shaft forward. A magnetic field likes to remain at status quo. There is a time delay between when the current changes direction and when the magnetic flux changes direction in the stator; remember eddy current and stator material.

Advancing an electric motor's timing will start changing the current direction earlier. There is an optimal timing for each motor design and stator material. If the optimal time for a particular motor is 10° and you set the ESC at 5°, it will not hurt the motor. You will likely achieve slightly less torque and a lower Kv.

It is safer to set the ESC to a lower timing. If the optimal timing is 5° and you set the ESC at 10° (you start the current change too early), you might hear some squeaking noise because of bad commutating.

JW: *Are sensorless brushless motors more suited for RC use than sensored brushless motors?*
RH: Sensorless design is easier for RC applications and is easier on the ESC design. Sensor brushless motors use Hall effect, contactless sensors to measure and know the angular position of the motor rotor at any given instant.

Sensor motors are more useful for industrial applications when you must know the precise angular position of the motor armature at any given instant. It is easier to control the torque on sensor motors; they are useful for motorized tools where precise torque control is required down to even zero rpm.

JW: *Are all Hacker motors manufactured in Germany?*
RH: Hacker produces different grades of brushless motors, and all are designed in Germany. On the high-end Hacker motors, the copper wires are usually much thicker and hand wound by German technicians. The benefit of hand-wound motors is that the wires can be packed denser, hence producing more magnetic flux and power.

In other motors, the copper wires are machine wound around the stator. Depending on the motor type, some are manufactured in Germany, and some are manufactured in China under close supervision. Regardless of where they are manufactured, they must pass Hacker standards. Hacker uses high-quality stator material that can handle high-frequency change in magnetic flux and minimizes eddy currents.

JW: *Thank you, Rainer, for the very informative explanation.*

SOURCES:

Hacker Motors
(913) 214-6995
www.hackermotorusa.com

06. Hacker manufactures its own motor components with CNC machines.

07. Rainer stands next to the highly guarded motor research and design test room.

08. The standard Turnado A50-10L V3 motor uses thinner copper wires and is machine wound.

09. The Turnado Edition 530 V3 must be custom ordered and uses thick copper wires and is hand wound in Germany.

10. A row of new motors is ready to be finished.

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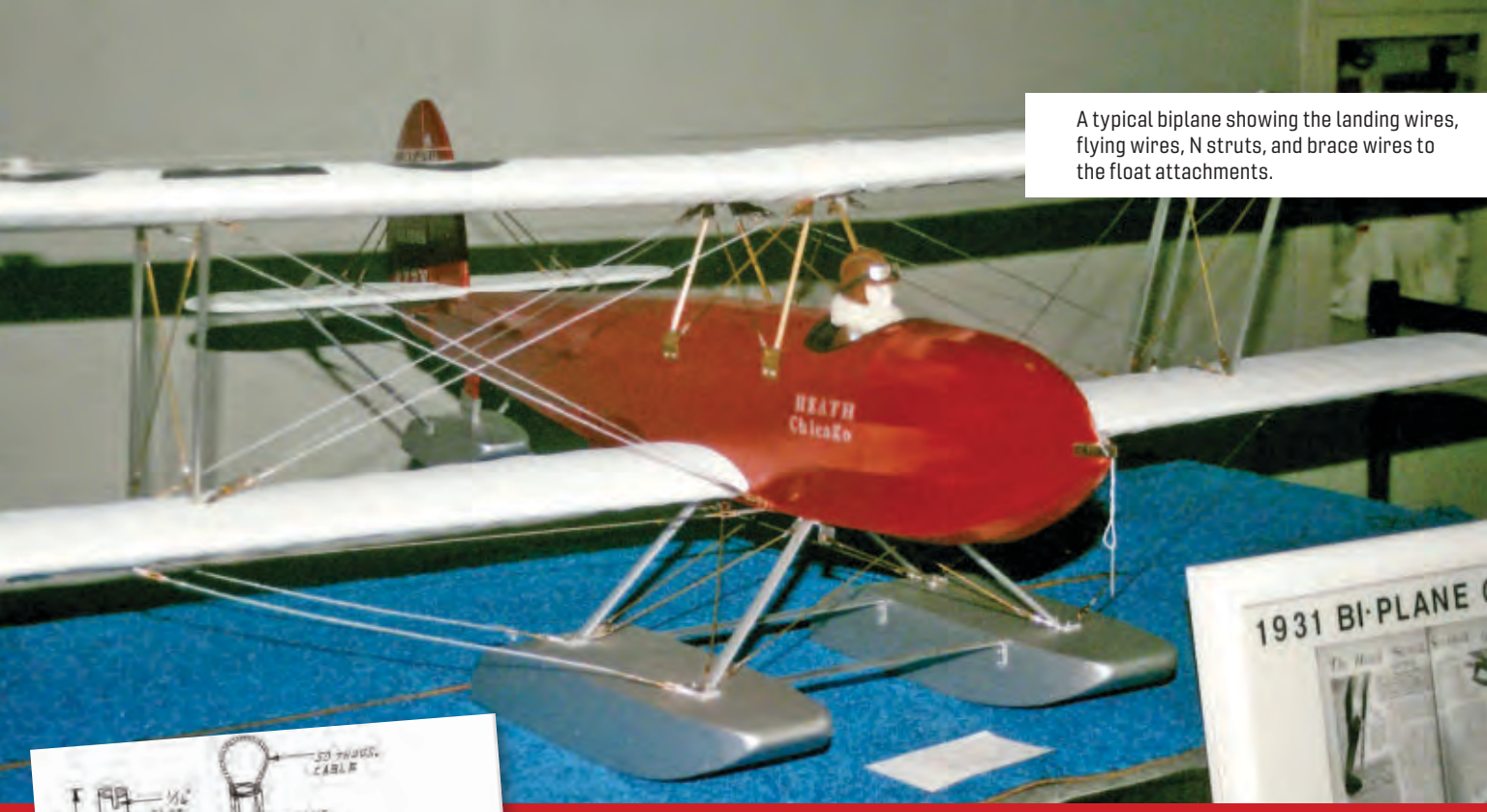
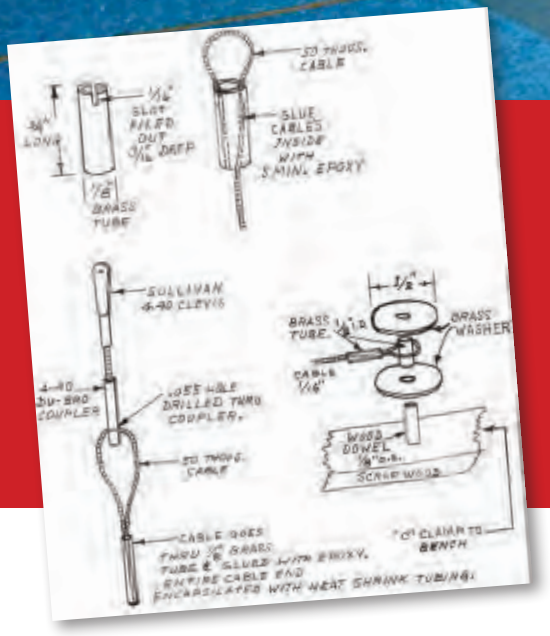


A typical biplane showing the landing wires, flying wires, N struts, and brace wires to the float attachments.



RIGGING A BIPLANE

Making flying and landing wires

By Lawrence Klingberg
Photos by the author

During the last few years, I have built 10 or 20 scale biplanes and learned quite a few techniques that I thought might be of interest to those who are just starting out rigging biplanes. First, let me define what the wires are used for on an airplane.

Flying wires usually attach to the bottom of the fuselage and reach out to the top of the wing N strut, holding the wing while in flight. Landing wires generally attach to the cabane of the airplane and extend to the bottom wing N strut. These wires hold up the wings while the airplane is on the ground. The end N struts will more than likely have wires attached to the two struts, forming an X brace to completely strengthen the two struts.

With all of the wires to be made when constructing a biplane, it is mandatory that the model is assembled on the bench with wings set at the correct dihedral. The fuselage can be held down with sandbags to make sure that it cannot move. Supports under the wires can be boxes, or using temporary jigs is a good idea. The main thing is that nothing can shift while measuring and marking the various cables.

01. A fine file is used to clean up the soldered cable ends. A clamp is modified (notice the jaws) to hold the cable during assembly. A completed cable end is shown, along with brass washers and tubing.

02. Nokorode soldering paste was used to coat the parts before assembly. The finished cable ends are shown. The large-scale turnbuckle and cable end used on a 1/2-scale model is available at most hardware stores.

03. This shows a 2-inch piece of wood across the workbench with aluminum sheet stock placed under the work area. A large-scale cable end has just been completed.

I have a 4 x 8-foot worktable that has a 2-inch piece of wood across the end of it. This has been used to make many cables throughout the years. In measuring a proposed flying wire, I cut some cardboard strips roughly 5/8-inch wide and a couple of inches longer than the length of the cable to be made. I then measure between the hole at the fuselage and the hole at the wingtip and use a pin at each end to mark the length between on the 5/8-inch wide cardboard strip. I transfer this length to my wooden strip and make two marks on the wood. This will be the cable length.

All of the cables on .60-size up to 1/4-scale airplanes can be made using 1/16-inch cable that can be bought at most hardware stores. Be sure that the cable that is purchased can be soldered, because that is how the ends are assembled. Each cable that I make terminates in an end that a 4-40 screw can go through the strut ear.

As shown in Photo 01, the components of a cable end are composed of brass washers and cut-off brass tubing. The tools required include a file and a clamp that has been modified with jaws that have been made to hold the cable while it is placed in the brass tubing before soldering the end of the cable.

To make a cable end, drill a 1/8-inch hole in a scrap piece of wood that is fastened to the bench with a C clamp. Cut off a piece of 1/8-inch dowel approximately 1-inch long and drive it into the wood, so that it sticks up roughly an inch. Place a brass washer over it and the 1/8-inch brass tube so that the cable will go around the spindle and back through the tube as shown in Photos 01 and 02.

Using a 150-watt conventional soldering iron, put a small amount of Nokorode soldering paste on the brass parts, and liberally solder the end of the cable assembly. Dunk the end in lacquer thinner for approximately 20 minutes then clean off the end with a rag. To finish the cable end, use a file or small sander to

clean off the excess solder. When finished, the end should look like the examples in Photos 01 and 02.

Using the cable length, make the other cable to size. If cable measurements are done precisely, an airplane can be rigged without any turnbuckles.

On the larger biplanes, I have used cables with small turnbuckles, as shown in Photos 02 and 03. The cable size for the 1/2-scale models is usually .075 thick.

Going to the smaller cables on models up to .60 size, I like to use .050-thick cable that can often be purchased from fishing supply stores. This material usually cannot be soldered. A nice clevis end can be made from the Sullivan 4-40 Gold-N-Rod clevises (part #528). Also used for cable ends are Du-Bro 4-40 threaded couplers (part #336). They can be used extensively in rigging a smaller airplane.

A nice cable end can be made from the 4-40 coupler drilled 1/4-inch from the end for a cable to pass through. The drill size is .055. See Photos 04 and 05 for details. With this type of cable end, the bonus is not only an end, but a turnbuckle that often comes in handy.

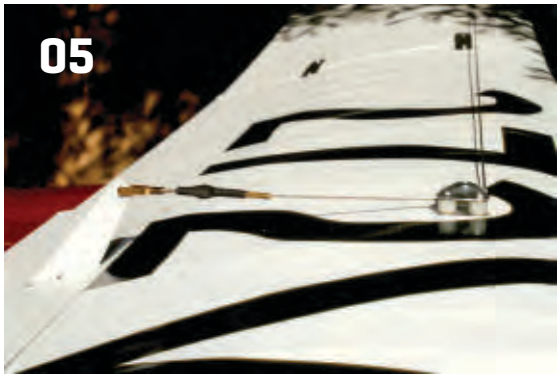
Photos 04 and 05 show finished cable ends that were used on a glider stabilizer and on the wing connecting to an aileron horn. I have included Photo 06 to show some 1/16-inch cables soldered directly to some Du-Bro 4-40 threaded couplers. Note the various brass end pieces on the struts and how the cables terminate on them.

Another cable end that can be used is the combination of 4-40 Du-Bro threaded couplers screwed into a Du-Bro 4-40 ball link (part #2161). This combination is especially useful in making the X bracing on the wing N struts. They are adjustable, which is very handy.

There is another useful product that can be used when dummy wires are needed on a nonflying model. Elastic thread can be obtained at local fabric stores such as JOANN Fabric and Craft Stores. It comes in silver and black and can be used for rigging on models that do not actually need working cables for strength. It is especially good for aerial wires on old airplanes.

I hope this article will inspire builders to make more biplanes. I think they are our link to the past and a thing of beauty in the air.

Keep 'em flying!



04. This photo shows what the cable end looks like after assembly and with the heat-shrink tubing applied.

05. This is another view of a completed cable end on a wing application. The nice part about this cable end is that it is adjustable like a turnbuckle.

06. The 1/16-inch cables are soldered directly to the Du-Bro 4-40 couplers. Strut ends are made of brass. When more than one cable needs to go to a strut such as in this connection to the strut end, a triangular piece of brass can be used, as shown in the photo.

SOURCES:

Sullivan
(410) 732-3500
www.sullivanproducts.com

Du-Bro
(800) 848-9411
www.dubro.com

JOANN Fabric and Craft Stores
(330) 735-6576
www.joann.com

Build a FREE FLIGHT Model

Learn the techniques to build a Keil Kraft Ajax kit

By Bob Benjamin
Photos by the author
bob@rcmodel.com

Regular *Model Aviation* readers already know that I have a lot to share about traditional model airplane materials and the techniques for working with them that model builders have fine-tuned throughout the years. This is the first of a series about building traditional Free Flight model airplanes.

I have also devoted a generous amount of space on the pages of my online Master's Workshop to suggest that the balsa wood, stick-and-tissue-and-dope rubber-powered model serves well to describe how all this model airplane stuff got started in the first place.

There are, in fact, a lot of good quality kits for such models on the market right now if you look for them. Some of them are faithful reproductions of the products that were common on hobby shops shelves 50 or 60 years ago, and others are reengineered versions of many of the same old designs using better balsa and new technology, such as laser cutting. One of the latter, this straightforward, box-fuselage, high-wing monoplane Keil Kraft Ajax kit, offers an excellent example for you to learn for yourself what this part of constructing model airplanes is all about.

BUILD A FREE FLIGHT MODEL

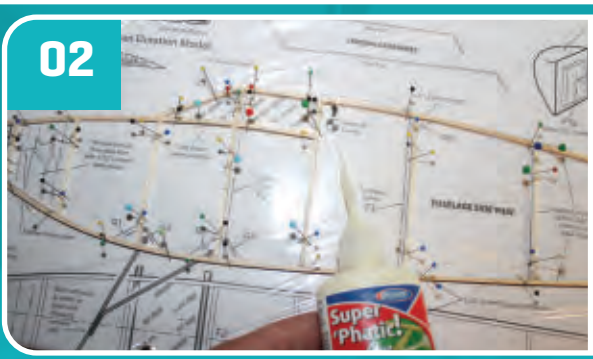
01

Here's the kit box and an overall shot of all of the stuff that comes inside it. Along the front row, I have arranged several of the Deluxe Materials products that I'm going to use to assemble it all. I will describe each of these in turn as we get to them while the model goes together.

These various Deluxe Materials adhesives and finishing materials are quite different from the traditional model airplane cement adhesives and either nitrate or butyrate dope that have been the standard for stick-and-tissue building in the past. These old materials have not gone away; you can still do a fine job of building the Keil Kraft Ajax using them.

The reason these new products have been developed, as well as the reason I am discussing them here, is that they solve problems such as shrinkage-induced warps, questionable glue penetration, and especially strong solvent vapors/odors that not everyone appreciates.

02



It's time to cut some balsa! I chose to follow the instruction sequence printed on the Keil Kraft Ajax plans step-by-step. I wanted to build the model as nearly box-stock as practical to get as close as I could to the mindset that a newcomer to aeromodeling (or to balsa building) would bring to this project.

I have assembled the first of two identical fuselage sides from 3/32-inch square balsa. As instructed, I covered the working area of the plans with clear plastic wrap (that shiny stuff) and held each discrete 3/32-inch square balsa component in place with small, glass-headed pins from the fabric store. All of the joints you see here have been made with Super 'Phatic glue.

03

Here's how that works. Super 'Phatic is a specialized adhesive developed by Deluxe Materials to work in closed balsa joints. This means that, as is the case with fast/thin CA glue (Roket Hot), you can apply a bead of Super 'Phatic on/around an assembled balsa joint and it will penetrate the joint and form a secure bond.

This entire fuselage side frame was assembled in place. I checked to be sure that I had it right then each joint was glued in position.

04

The best way to build a pair of identical fuselage sides is to build the second directly over, and in alignment with, the first. Use another sheet of plastic wrap on top of the completed first side after the glue has dried completely. Remove all of the pins so that the frames won't stick to each other.

If you look carefully, you can see that I have just begun to separate these two side frames at the nose. This photo looks different (the blue background) because it came from a separate building sequence.

05

Sanding is the magic process that allows you to build a lightweight, strong, neatly finished balsa model airplane structure no matter what its size. Sanding blocks with appropriate grades of abrasive paper are the key to doing accurate work and shaping or smoothing any flat or single-curvature surface.

There can be more to getting it right when the structure you are working on is extremely light—such as this fuselage side made entirely of 3/32 balsa. Supporting the work on a flat surface while you apply sanding pressure with the block is a good idea; using a full sheet of the appropriate grit as the supporting surface can be even better.

By experimenting with grits and varying the pressure that you apply to the work, you can control whether the sanding block moves against the work or whether the work moves against the abrasive base. When you get it right, you can even work on both sides of the structure at once.

With a degree of control, you can produce some really accurate results. Can you imagine what this fuselage side might look like if I had attempted to do this part "freehand" without support?

06

I cleaned up the other fuselage side frame and moved on to the next step in the instructions, preparing fuselage formers F-3 and F-4 to assemble both side frames into a properly aligned "square" structure.

What you see here is evidence of one of the few changes I felt had to be made to the kit instructions. These "extra" parts are 3/32-inch square balsa reinforcements for the cross-grained ends of formers F-2 and F-3 to permit you to handle those delicate laser-cut parts without risking splitting them.

07

If you look carefully, you can see how I pinned both reinforced formers in alignment on top of the plans then assembled both fuselage side frames around them. After all of these components are lined up and double-checked using the plastic drafting triangle in the background, it's time for glue.

This is an application that's perfect for Roket Hot. You can depend on this adhesive to penetrate those closed balsa joints and bond safely, without the need to disturb the alignment that you worked so hard to get right.

08

The next step in assembling the fuselage is adding all of the 3/32-inch square balsa crossmembers between F-3 and the tail. That extra balsa block is a good example of making use of an "on-the-spot" brace or support to preserve alignment.

09

Here's a clear shot of the fuselage structure assembled from F-2 to the tail. The 3/32-inch square balsa crossmembers at the stations ahead of F-2 that join the fuselage sides at the nose, have not yet been added.

10

The instructions suggest that you wet the 3/32 balsa longerons ahead of F-3 to permit you to bend them to match the fuselage top view on the plans without risking breaking them. The next step was to glue the nose former F-1 in place and let the entire assembly dry.

I finished joining the fuselage sides at the nose and I used the assembled structure to define/mark one of the 1/16-inch balsa sheet inset/reinforcement panels that will help the nose structure bear the loads of the wound rubber motor and the nose block and propeller assembly.

11

12

This is where the patience that you have invested in making the parts fit pays off. I cut out the 1/16-inch balsa sheet insert that I marked out in the previous step slightly oversize and used this technique to trim those joining edges exactly. This is a place where careful sandpaper trimming can be more accurate than cutting the balsa sheet to the finished size with a blade.

13

Inset/inlaid balsa parts should fit like this. Leaving open gaps and depending on glue or the covering to fill them is not good craftsmanship. You can see that I have left a bit of the 1/16 thickness of the sheet insert sticking out beyond where I want the finished surface to be, so that I can finish-sand it.

14

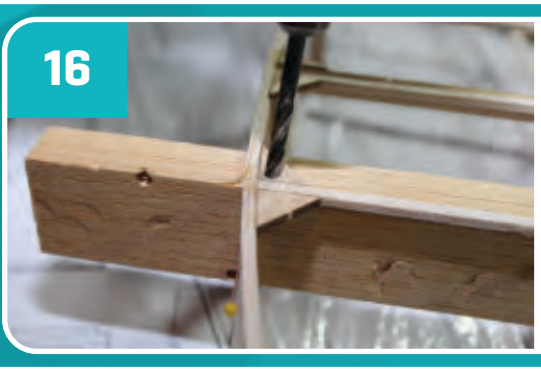
Neatness counts here too. Not only do these 1/16-inch balsa sheet inserts have to fit properly to bear design loads, but everyone who sees the finished model—including you—is going to get a good look at your work.

15

There are several 3/32-inch balsa sheet gussets contained in the Ajax fuselage. On my own, I would have included these in the initial fuselage side frame construction, but the Keil Kraft instructions said I should wait to do that.

I chose to hold each of them in position with one fingertip and added a spot of Deluxe Materials Roket Hot to lock the part in position. I went back with a second, generous shot of adhesive after my finger was out of the way. This is another of those applications where the instant grab of a CA glue such as Roket Hot comes in handy.

16



This is the same part of the assembled fuselage as in the previous photo but with the next gusset in place. You can see where I have made good use of that sanding block to level/smooth the entire face of the joint accurately.

Attention to details such as this will pay off when you end up with no glue bumps or poorly fitting parts to poke up through your tissue covering. The plans show a 3/32 hole for one of the landing gear mounting tubes. The best way to do that job is to support the work with a "backing block" so that the structure has to bear only the cutting load imposed by the drill.

17

That's a neat-looking fuselage frame. The only part of the fuselage left to work on is the balsa nose block/propeller assembly, which is where I will begin next time.

SOURCES:

Bob Benjamin's Master's Workshop
www.rcmodel.com

Deluxe Materials
www.deluxematerials.co.uk

Ripmax
www.ripmax.com

It's big and it's orange, which makes it stand out in the air. It is also capable of being flown like a trainer or an aerobat and can land just about anywhere you have the space to fly it.

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Access additional content by visiting www.ModelAviation.com/bonuscontent.

GIANT SCALE ON A BUDGET

Horizon Hobby E-flite Carbon-Z Cub SS 2.1m BNF Basic With AS3X and SAFE Select

By Jay Smith | jays@modelaircraft.org
Photos by Rachelle Haughn and the author

THE ORIGINAL E-flite Carbon-Z Cub that was released in 2014 was successful in providing many pilots with their first Giant Scale experience with an electric-powered, foam-composition model. The large tundra tires allowed it to operate from less-than-ideal flying sites, and floats added another great option.

The new E-flite Carbon-Z Cub SS has incorporated many changes beyond the obvious color change from blue to orange, although updates to the model were limited by what could be done with slight modifications to the original molds.

New features include thumbscrews for attaching the wing halves at the field without tools. Snap-on antennas cover two of the screw locations. Squared wingtips help with slow-speed handling and tip-stalls. The aileron area has been increased for a more responsive roll rate and an updated motor design improves longevity. A multiposition quick-release battery tray supports LiPo batteries up to 6S 7,000 mAh and more durable landing gear combines with larger, softer tires for less bounce on landings.

The E-flite Carbon-Z Cub SS continues with AS3X and adds Safe Select, giving pilots a helping hand when needed during flight.

Binding Your Radio

For this review, I used the Spektrum iX20 transmitter. I was able to download the radio setup file for the Carbon-Z Cub from the Spektrum website, making setup a breeze. E-flite even makes the binding process easier by having a servo extension in the bind port. It can be accessed via the top-mounted hatch.

You are given the option of binding with or without enabling Safe Select. Although I don't use Safe Select, Jason Merkle at Horizon Hobby made a great point about enabling it so that he could let others fly the airplane and get comfortable with it before taking full control of the model. It could

also be helpful if the model was ever lost in the sun. Safe Select can be enabled or disabled at will.

Assembly

Horizon Hobby has perfected safely fitting model aircraft in the smallest box possible; however, because this is a Giant Scale aircraft, the box is still substantial. Going over the manual and confirming all of the parts, I was happy to see parts bags individually marked, but be aware that a few are mislabeled. Fortunately, it is easy to determine the correct hardware needed because it is all detailed in the manual.

In addition to standard tools, to fully assemble the Cub, you will need threadlocker for the wheel collars and thin CA to glue the hinges on the rudder to the vertical stabilizer.

Assembly starts with getting the Cub on its wheels. The landing gear fairings, tires, and suspension springs are easily bolted on.

The tail wheel is already attached to the rudder, and the rudder attaches to the stabilizer with three CA hinges and a screw from the bottom. I had to use an X-Acto knife to clean the glue from one of the slots in the stabilizer, after which the rudder was easily attached and glued in place.

Horizon Hobby has perfected safely fitting model aircraft in the smallest box possible and has done so damage free.

The horizontal stabilizer slides over a rod and is held in place by four screws. The ball links for the rudder and elevator can then be attached to the control horns.

Although not common on most E-flite aircraft, the Cub requires that the motor be bolted to the firewall and the motor wires are attached to the ESC. The process is easy; however, tucking the motor and ESC wire into the fuselage takes a little care because the ESC takes up a good portion of the available space. I found it easiest to push the ESC to one side then slide the wires beside it. This also helps keep the wires from sitting on the ESC's heat sink.

The cowling can then be screwed onto the aircraft and the collet, spinner backplate, propeller, propeller nut, and spinner can all be attached.

The wing comes with six vortex generators that need to be installed using double-sided tape. In the bag with the vortex generators you will find black tape, but clear tape was also provided separately. In trying to complete the model and fly it the same day, I inadvertently used the black tape, which works fine, but it makes the attachment of the vortex generators more obvious because the tape can be seen through them.

It is then time to install the struts on the

This Giant Scale model can be flight ready in an hour or two. It took up the author's entire kitchen table.

wing halves so that they will be ready to be attached to the model. The wing halves slide over a carbon-fiber wing tube and the aileron and flap servo leads must be connected. The female ends of the plugs are captured in the fuselage, but you still need to plug them in. This model doesn't automatically connect them when attaching the wing.

When initially installing the left half of the wing, I found that it did not want to seat fully in the plastic pocket in the fuselage. It required minor sanding on the front to remove a small amount of flashing that was not present on the right half of the wing.

The wing halves are retained by four thumbscrews (which is a huge improvement), allowing the wing to be attached and removed without tools. I keep the thumbscrews in one of the parts bags inside the battery area when not in use.

Although I didn't see it mentioned in the manual, the Cub includes two stickers that represent landing lights and can be added to the front of the wing near the location where the struts attach to the wing.

I was provided a 6S 5,000 mAh LiPo battery to power the Cub and, thanks to the removable, multiposition tray, balancing the model on the center of gravity (CG) range of 105 to 120 mm was not an issue. I put a small piece of Velcro on the bottom of both wing halves to mark the CG.

Even after attaching the two Velcro straps as tightly as possible, the battery was still able to move slightly in the tray. I cut a piece of nonslip shelf liner to match the battery and put it at the bottom of the tray, which stopped the battery from shifting.

Flying

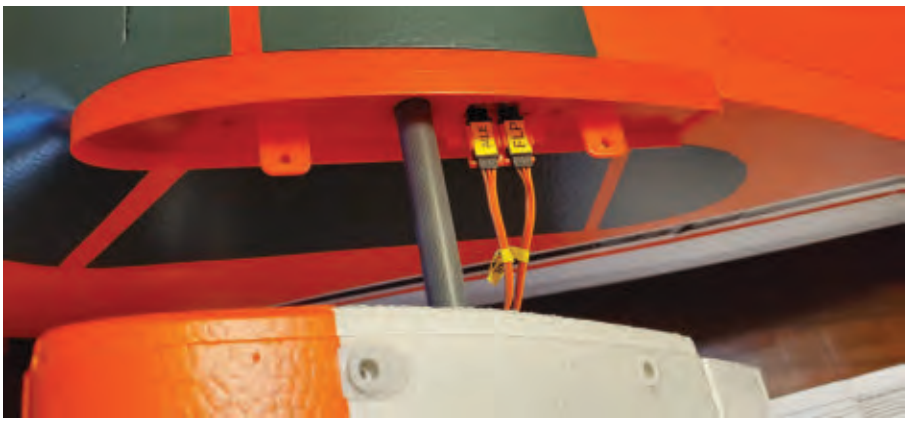
It is likely clear from looking at the tundra tires that this model is happy to fly from paved and unpaved surfaces. In fact, the softer tires even minimize the bounced landings that were associated with the previous Carbon-Z Cub. I really appreciate the versatility because I fly at the International Aeromodeling Center at AMA Headquarters in Muncie, Indiana, and the Cub can be easily flown at several of the sites.

It is capable of short-takeoff-and-landing (STOL) operation if you want to get airborne quickly. I typically use half flaps and slowly advance the throttle to get in the air with a scalelike look. I increased the flap, mixing a bit from the stock setup because the Cub still wanted to balloon with flaps deployed.

When it is in the air, the orange scheme really stands out and helps with orientation if you are flying in lower light conditions. The low rate setting provides plenty of throw for basic aerobatics and comfortable flight. The rudder is effective and, as with all Cubs, coordinating rudder with your turns is not mandatory, but it sure makes them look better.

The Cub is stable and, with the help of AS3X, it doesn't have any bad tendencies when forced into a stall. It simply drops the nose slightly and keeps on flying.

Knife-edge flight can be done in both low or high rates, and the model does pull slightly to the canopy. This is easily corrected with slight down-elevator. Slight down-elevator is also required for inverted flight and the Cub makes it easy to maintain.



The wing halves slide over a carbon-fiber wing tube and the aileron and flap servo leads must be connected. The female ends of the plugs are captured in the fuselage, but you still need to plug them in.

At a Glance

Specifications

Model type: Giant Scale foam aerobat
Skill level: Intermediate
Wingspan: 84.6 inches
Wing area: 1,130 square inches
Wing loading: 16.6 to 19.3 ounces per square foot
Length: 56.3 inches
Weight: 8.15 to 9.48 pounds
Power system: E-flite BL50 brushless motor (included); E-flite 60-amp ESC (included)
Radio: Four 26-gram digital MG mini servos; two 13-gram digital MG micro servos (included)
Flight duration: Six-plus minutes
Price: $429.99

Pluses

- Thumbscrews with decorative gas caps and snap-on antennas to easily install/remove the two-piece wing without tools.
- Articulated, shock-absorbing landing gear.
- Soft tundra tires for good ground handling.
- Highly visible color scheme.
- Inexpensive Giant Scale option.

Minuses

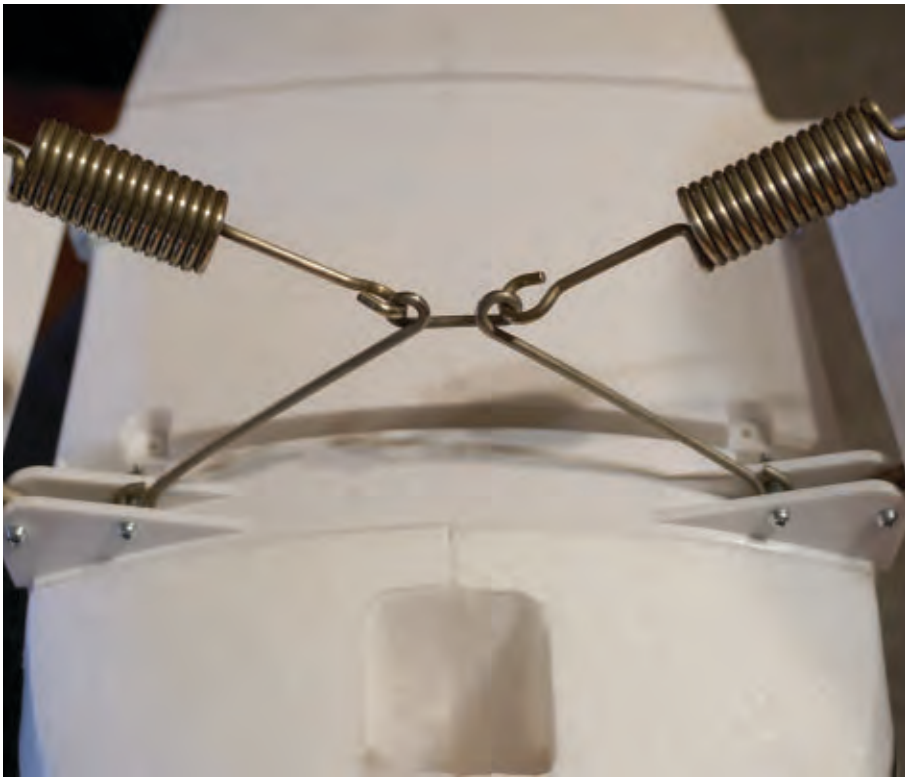
- A few parts bags are mislabeled.

Manufacturer/Distributor

Horizon Hobby
(800) 338-4639
www.horizonhobby.com

Spektrum
(800) 338-4639
www.spektrumrc.com

A multiposition, quick-release battery tray makes battery swaps easy. Nonslip shelf liner was put at the bottom of the tray, which stopped the battery from shifting.



A combination of articulated, shock-absorbing landing gear with large tundra tires ensures that the Cub can stand up to imperfect landings or less-than-ideal flying sites.

Snaps, rolls, stall turns, and just about anything you want to throw at it all fall within the Cub's repertoire. If you feel the need to hover the Cub, it is capable of doing so; however, the vertical performance doesn't rocket out of a hover, so you have to stay on top of it.

Vertical performance is good, but not unlimited. The Cub has enough in reserve to get you out of trouble, but I find slow flight, touch-and-gos and one-wheel landings the most fun. It also provides a longer flight, which is great if you don't have several larger batteries.

When it's time to land, I find half flaps or no flaps are my go-to options. Simply line up the Cub and slowly reduce the throttle while holding slight back pressure on the elevator. The Cub, with its softer tires, will reward you with nice landings.

I keep my flight times at 6 minutes for aerobatic flights and 7 minutes for more relaxing flights on the 5,000 mAh LiPo battery.

Conclusion

As someone who previously owned the blue Carbon-Z Cub, I find the new version to be a good upgrade and appreciate things such as the removable battery tray, toolless wing assembly and removal, and the color!

The Carbon-Z Cub is my go-to airplane for flying from grass, dirt, or less-than-ideal surfaces. It also makes a great Sunday flier.

The Horizon Hobby E-flite Carbon-Z Cub SS would make a nice option for someone who is looking to move up to a Giant Scale model without the expense and complexity that can sometimes be associated with larger aircraft.

The Cub requires that the motor be bolted to the firewall and the motor wires be attached to the ESC. The process is easy; however, tucking the motor and ESC wire into the fuselage takes a little care because the ESC takes up a good portion of the available space.

Looking the part of its full-scale counterpart, the Arrows RC Husky floats in on final approach with full flaps deployed.

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READY FOR LESS-THAN-PERFECT RUNWAYS

Arrows RC Husky 1800mm PNP

By Jon Barnes | barnesjonr@yahoo.com
Photos by the author

THE ARRIVAL OF late winter/early spring on the 2020 calendar marks the one-year anniversary of one of the industry's newest companies, Arrows RC. During its first year in business, this fledgling company primarily focused on releasing models in the 1,100 mm wingspan class and smaller.

Early offerings included a pentad of quintessentially popular World War II-era warbirds, followed by several slightly smaller general aviation airplanes. With this solid foundation of initial product offerings in place, Arrows RC decided to switch things up a bit with the release of a significantly larger 1,800 mm wingspan Aviat Husky.

The RC industry has popularized this relatively new genre of models by churning out a number of backcountry, short-takeoff-and-landing (STOL)-style models in the last few years. The Arrows RC Aviat Husky stands out from the rest of the pack, if only for the simple reason that, unlike most of its competitors, it is based on a real-world utility airplane.

The full-scale Aviat Husky is the only all-new, light aircraft to be designed and produced (by Christen Industries) in the US during the mid- to late-1980s. Six iterations have been developed since the initial release. The most recent A-1C version is available with either a 180 or 200 hp four-cylinder Lycoming powerplant.

With total production numbers exceeding 650 aircraft, the Aviat Husky has been used in pleasure and adventuring roles and in a variety of commercial applications. Perhaps its most noble mission is the fleet of seven that are flown on regular patrols by the Kenya Wildlife Service to help prevent the poaching of elephant tusks for ivory.

Large-diameter tundra tires allow this backcountry-capable STOL utility airplane to be flown from a variety of less-than-perfect surfaces. A factory-installed lighting system includes two always-on bright white landing lights on the outer LE of each wing half and red and green non-strobing wingtip-mounted navigation lights.

Assembly

Assembly of the Arrows RC Husky can be quickly completed and without the need for any adhesives. The sole tool needed to assemble this model is a good-quality 2 mm hex bit driver. Unlike many other models in this size and class, no multipin connectors are used to transfer signals from the wing electronics through the wing roots and into the model's fuselage. Pilots must manually connect the aileron, flaps, and included LED lighting system when mating the wing halves to the fuselage.

All of the wing wiring feeds into a recessed channel, located on the top interior side of the fuselage. Grabbing the wires out of the channel with one's fingers can be a little difficult; a pair of hemostats greatly simplifies the task. Several servo Y-connector cables are included and used for joining the two aileron servos and two flap servos.

A slightly different type of Y-connector is included to connect the factory-installed LED lighting in each wing half. Each half has a red or green wingtip-mounted non-strobing navigation light, as well as a pair of always-on, bright white landing lights embedded in the outboard part of the wing halves' leading edges (LEs).

Like most recent larger EPO foam kits, the Husky assembles without adhesives. Unlike most larger EPO foam kits currently on the market, the wiring for the wing electronics is not transferred into the fuselage using multipin connectors; the servo leads are routed into the fuselage the old-fashioned way and plugged directly into the receiver.

Ball link connectors are used on the control horn end of all pushrods. Two white antennae index snugly into slotted plastic receivers mounted in the top side of the wing. Their snap-lock fit negates the need for any adhesive to secure them in place,

and allows pilots to remove them for transport and storage.

While assembling the airframe, I noticed several somewhat ambiguously placed and unexplainable holes located on the top of both wing halves and approximately along the spar line. The assembly manual makes no mention or reference to their purpose.

The main gear assembly keys into the underside of the fuselage and is held in place with a plastic jam block. A second, similarly designed plastic gear-mounting piece is embedded in the fuselage a short distance aft of the one used to secure the main gear in place. Although at the initial announcement and introduction of the Husky nothing was mentioned about optional floats being available, the presence of the second gear-mounting block, and the pervasiveness and popularity of the full-scale Husky's setup as a floatplane practically guarantees that a set will eventually be made available for this model.

Arrows RC chose to bedeck the Husky with an authentic-looking Aviat Husky red, black, and white color scheme. It features a cool-looking "blacked out" upper cowling section, spinner, and propeller, and sports the trademark Aviat Husky dog's head logo on both sides of the vertical stabilizer.

Flying

Although the assembly manual modestly specifies a four-cell LiPo battery pack in the 2,200 to 2,600 mAh range, the Husky features an abundantly oversize battery bay that is sure to lure pilots into upsizing the battery packs that they use. Pilots can only truly benefit from the implied longer flight durations of such an oversize battery area if there is ample longitudinal dimension

At a Glance

Specifications

Model type: Electric STOL
Skill level: Beginner to intermediate
Wingspan: 71 inches
Wing area: 739 square inches
Length: 47 inches
Weight: 75 ounces
Power system: Electric brushless
Radio: Minimum five channels required
Construction: Prepainted EPO foam
Price: $259.99

Test-Model Details

Motor used: Arrows RC 3541-750 Kv brushless outrunner (included)
ESC used: Arrows RC 45-amp brushless with integrated 3-amp SBEC; XT60 connector (included)
Servos: Six 17-gram digital (included)
Recommended battery: Minimum 35C 4S 2,200 to 2,600 mAh LiPo (not included)
Propeller: 13 x 7.5 (included)
Radio system used: Spektrum DX9 DSMX 2.4 GHz transmitter; Spektrum AR6210 six-channel DSMX 2.4 GHz receiver
Ready-to-fly weight (with 4S 2,500 mAh battery): 79 ounces
Flight duration: 5 to 15 minutes (depending on battery size)

Pluses

- Scale, foam-based model nicely represents this popular, light utility, backcountry aircraft.
- Abundantly oversize battery bay enables use of a variety of different sizes of batteries, with the benefit of potentially longer flight durations with larger packs.
- Sporty looking, authentic Aviat red, white, and black color scheme.
- Included bright white landing lights mounted in the wing's LE, and wingtip-mounted red and green navigation lights.
- No adhesives required for assembly.
- Full selection of spare parts available from Horizon Hobby.

Minuses

- Top side of both wing panels feature several undefined, ambiguous holes that slightly detract from the overall pleasing aesthetics of the model.
- Black paint flakes off easily around the edges of the battery compartment.

Manufacturer/Distributor

Arrows RC
www.arrowsrc.com

HobbyZone
(888) 953-9663
www.hobbyzone.com

From a small, four-cell 2,200 mAh LiPo battery pack up to a comparatively mighty 4,000 mAh pack—and perhaps even beyond—this model embraces four-cell battery packs in an impressively wide variety of capacities.

The red, white, and black color scheme chosen by the factory is authentic Aviat Husky livery and features a cool-looking, blacked-out upper cowling, spinner, and propeller assembly.

included to allow the imperative shifting of whatever battery is used, in order to maintain the proper recommended center of gravity. Arrows RC earns a well-deserved thumbs-up for equipping this model with plenty of room.

When using battery packs on the lighter side of the recommended range, pilots will be pleased to find that it is possible to push these smaller packs all the way forward toward the firewall. Larger-capacity battery packs, from 2,600 to 4,000 mAh and perhaps even bigger, can be positioned rearward as needed. This model's oversize battery bay is notable and impressive indeed!

Although the "blacked out" paint scheme used on the upper cowling and spinner assembly contributes to a really cool color scheme, the unavoidable act of inserting and removing a battery will result in the black paint flaking off around the edges of the opening that is created when the hatch is removed. A few careful dabs with a chisel-tip black Sharpie is one way to help keep this Husky's colors looking crisp and new.

Takeoffs can be executed in either a slow, scalelike manner or in a rapid, more ballistic manner! Pilots who opt for the former and ease into the throttle with a little self-control will revel in the way that the Husky pivots up onto its main gear early in the takeoff roll. The icing on the cake with this style of departure is a rudder that is almost immediately effective, offering pilots ample rudder authority with which to hold the centerline of the runway until airborne.

Pilots who prefer to allow their big dawg to run off leash can simply slam the throttle stick to the top and watch the Husky leap into the air in a few feet and climb skyward with a vengeance! Either takeoff option rewards pilots with a satisfying performance and appearance.

Pilots can also experiment with satisfying STOL-style departures by deploying the large flaps. Mixing in 15% to 20% down-elevator limited the tendency for the nose to balloon with flaps deployed.

In the air, the Husky possesses a versatile flight envelope. More astute pilots might notice that this model demonstrates a subtle proclivity toward the pitch-sensitive side of things. This is probably at least in part owing to the model's large wing and somewhat short tail moment. This can be mitigated with a little extra exponential added in on the pitch axis in the radio transmitter programming. Keeping the elevator throws a bit more on the modest side will also help smooth things out.

Roll rates at less than full throttle are slightly slow, even with full mechanical throws selected. Pilots will want to feed in a bit of compensatory elevator and rudder inputs to keep aileron rolls from getting too large. The slight dihedral of the Husky's long wing manifests itself in a tendency to self-stabilize in the roll axis.

Pilots will also need to use the rudder in order to keep the tail properly inline in the corners. This can either be done manually or by programming a mix on the radio transmitter. Although physically a larger model, the four-cell-based power system used in the Husky gives this model surprisingly strong vertical performance.

Crazy-long flight durations are possible when using a larger-than-recommended 4,000 mAh LiPo battery! (Pilots might find that it is possible to go with even larger battery packs!) Pilots who pack a meaty-size battery pack into their Husky with the intent to slowly parade around the pattern with the flaps deployed while practicing arrivals and departures could find that their bladder will petition for a full-stop landing long before the battery demands one!

While the hardness of the oversize tundra tires can make no-bounce landings on hard runways challenging, putting this Husky down in the grass or on other softer runway surfaces can make even inexperienced pilots look capable and proficient at their landings.

Conclusion

Although there are currently more than a few tundra tire-equipped, backcountry, STOL-capable models from which to choose, pilots who place a premium on models that possess real-world, full-scale counterparts will especially like what the Arrows RC Aviat Husky brings to the table.

Its 1,800 mm wingspan gives the Husky the biggest bark of any model in the Arrows RC product lineup. With an oversize battery bay that can easily accommodate nearly any four-cell LiPo battery pack—from 2,200 mAh up to 4,000 mAh and beyond—pilots can assuredly achieve their personal perfect balance between in-flight performance and long flight durations.

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Grumman HU-16 Albatross

Daryl Dunkelberger's (Elk Grove, California; email: daryl.dunkelberger@gmail.com) Park Scale Models Grumman HU-16 Albatross has a 96-inch wingspan, weighs 8 pounds, and, according to Daryl, "flies like a dream and has for four years now."

It's powered by two E-flite Power 10 motors, two E-flite 40-amp ESCs, and two 3S 3,300 mAh LiPo batteries.

Airbus A380s

Randy Manns (San Diego, California; email: roddraym@gmail.com) modified Tian Sheng Airbus A380 kits to resemble three aircraft liveries. "Each one is quite the spectacle to watch when [it is] in flight, especially the rollout on takeoff and, of course, no one wants to miss the landings!"

These 60-inch wingspan aircraft are 55 inches long and have been upgraded with four XRP 50 mm 11-blade EDFs, four ZTW 50-amp ESCs, functional slip flaps, and a functional rudder with aileron/rudder mix. Power is provided by Admiral 4S 40C 4,000 mAh LiPo batteries.

Spook

Paul Gallagher (Spring, Texas; email: cpaul.gallagher@gmail.com) submitted this photo of his 1940 vintage Spook. The 96-inch wingspan airplane was built from a Laser Design Services short kit over a period of nearly a year.

The unusually shaped gullwing intrigued Paul. "Building this wing was a challenge [because] each wing half had to be built in three sections," he wrote. "Getting all the angles front to back and left to right was very hard." The Spook features a two-piece fuselage, with the tail feathers easily removable for transport, although it necessitated using thin glider servos that were mounted in the tail feathers rather than with control rods.

Powered by an O.S. FS-70 engine turning a 12 x 8 propeller, the airplane sports a 12-ounce fuel tank and flies for half an hour with an all-up weight of 7-1/2 pounds. The finish is silk and Brodak dope in Diana Cream and Stinson Maroon colors. Paul's daughter made the appliques with her Cricut vinyl cutter.

3D-Printed Cessna 152

Cappy Polito (Stratham, New Hampshire; email: swivelflags@live.com) 3D-printed his 61-inch wingspan Cessna 152. The total time to print was 135 hours using a Prusa i3 MK3S printer with PLA filament.

"The electronics will be installed over this coming winter [2019]," Cappy wrote. He flies at the RC Aces club in North Hampton, New Hampshire.

Modified E-flite Timber X 1.2

Jim Hobelsberger (La Crescent, Minnesota; email: hobelsjf@acegroup.cc) sent in a photo of his modified E-flite Timber X 1.2m. "With a 47.5-inch wingspan and 41.5-inch fuselage length, I truly enjoy the flying characteristics of this STOL [Short Takeoff & Landing]-capable plane," he stated.

The color scheme resembles the full-scale Super Decathlon owned by his friend, Bill Blank, who is a retired air show performer and an RC enthusiast. Jim added the black and white-outlined starburst graphics, N number, and red and black striping. Custom graphics were obtained from Callie Graphics.

The aircraft is guided by a Tactic TTX650 transmitter and Tactic TR624 six-channel SLT receiver and powered with a 13 x 4 electric propeller mounted to a 10BL 900 Kv outrunner motor and a three-cell battery.

"It is a wonderful flier," Jim wrote. "This is one model aircraft that will not be put up for sale!"

Six Motor/Two EDF Airplane

George Lumpkins' (Katy, Texas; golumpk@swbell.net) airplane started as an old, tired, and lonely 60-size Ugly Stick.

George added six 15-size 1,500 rpm motors and 50-amp Value Hobby ESCs, as well as two Banana Hobby 50 mm EDFs and four main Wild Scorpion four-cell 4,200 mAh LiPo batteries from Grayson Hobby. A 2,200 mAh battery was used for the radio, and a 9-volt battery was tied to an independent beeper to aid in finding the airplane, just in case.

"Being considered slightly eccentric at my club in Houston does not bother me," George quipped. "[I'm] here to entertain my club." A video of the maiden flight can be seen on YouTube at https://youtu.be/XhZr-iL5KvE.

Avios MiG-17

Joe Wright's (Coral Springs, Florida; email: joew3881@att.net) Avios MiG-17 from HobbyKing is based on the military jets that the U.S. Air Force tested at Groom Lake (Area 51), Nevada, from January to May 1969. He stated that the program in which the full-scale MiG-17s were involved became the Red Flag exercises and Top Gun Weapons School for the U.S. Navy.

Alpha Rat

Daniel Mitchell (Sparks, Nevada; email: labrat_air@1st.net) uses the "Rat" moniker for any design that he creates that is essentially a "box with wings." They are typically test beds for specific design concepts. This one earned the name Alpha Rat because, at 220 watts per pound, it was the most aggressive Rat he had ever made.

The wing, fin, and stabilizer are open-bay construction reinforced with a carbon-fiber tow lattice that was inspired by the geodetic outer structure of the World War II Wellington bomber.

To improve radio reception, Daniel fully sheeted the top third of the fin to create a carbon-fiber-free "radome" for the remote antenna. The Alpha Rat's total weight is 7.25 pounds.

He wrote that the airplane accelerates fast, is quick in horizontal flight, and climbs like a "homesick angel." Flaps help slow it down for landing.

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FORTE-E

Dave Horvath (Los Angeles, California; email: forte@usa.net) designed and scratch-built his FORTE-E.

The 59-inch wingspan aerobatic airplane is powered by a Hacker A40-10S outrunner motor spinning an APC 11 x 8E propeller, a YEP 80-amp ESC, and a Turnigy nano-tech 4S 4,500 mAh LiPo battery. Hitec HS-225BB servos are on the rudder and elevator, with Hitec HS-125MG servos on the ailerons. A JETI DS-14 radio controls the airplane, and it is covered with UltraCote.

The FORTE-E earned second place in the static competition at AMA Expo West 2017.

YP-37

John Grooters (Orange, Texas; email: tex2sixty@yahoo.com) built this Curtiss YP-37 from a Nick Ziroli P-40 kit. The fuselage was completely redesigned as the YP-37, although the wing is the same as the P-40. John's aircraft is painted to match one that was assigned to two squadrons in Alaska.

The YP-37 weighs 35 pounds and is powered by a DLE-85 engine. It was John's first attempt at putting in an inline engine. His goal was to have fellow Orange County RC Club members fly it in team competition.

Sig Astro-Hog

Eric Reinhart's (Kingman, Arizona; email: kingmaneric@aol.com) Astro-Hog was built from a Sig Manufacturing kit purchased on eBay. He wanted to build it because of its four-channel, fully aerobatic, slow-flying characteristics.

The old-school kit of a 1957 design features die-cut balsa and plywood parts, as well as some parts that were printed onto 1/2-inch balsa. The aluminum motor mounts were replaced with fiberglass-filled nylon ones.

The covering is MonoKote with MonoKote designs applied using Windex. The 71-inch wingspan, 7-pound, 2-ounce airplane features an O.S. 65LA engine with a 12 x 7 APC propeller for unlimited vertical ability.

Eric wrote, "This model fit right into the center of my flight ability ... a joy to fly." A build blog can be read at https://bit.ly/2CL6Vqx.

Balsa USA Smoothie XL

Gregory Gee's (Glen Burnie, Maryland; email: ggee1961@gmail.com) Balsa USA Smoothie XL was built in the winter of 2018-2019. Spanning nearly 89 inches, it weighs 15 pounds. The solid areas are fiberglassed, and the open bay areas and wing are covered in Planetex. The paint is Klass Kote, and the markings are painted on using masks that Gregory created. The engine is an RCGF 32cc gas engine, with guidance by a JR DMSS system.

Gregory wrote, "It flies wonderfully, and full-flap landings are especially pretty!"

Sig Spacewalker

Nick Campbell's (Farr West, Utah; email: ncabguy@msn.com) Sig Manufacturing 1/3-scale Spacewalker was one of many firsts for him: his first scale build, first airplane with an engine, first fabric covering, and first paint job. It was only his second build ever.

Nick started flying airplanes in 2018 and enjoyed it so much that he started the Spacewalker in January 2019, finishing it in October 2019. He purchased it through an online classifieds ad, but found most of the balsa wood in the kit to be warped and moldy, so he re-created much of it.

The 104-inch wingspan Spacewalker weighs 22 pounds. Power is by a Zenoah G45 engine, and it's covered in Stits Poly Lite fabric and paint.

A5M4

The Jerry Bates Plans A5M4 Claude that Carl Becker (Fairfax, Virginia; email: carlhbecker@gmail.com) built is 1/4 scale with a 108-inch wingspan and weighs 42 pounds. Powered by an Evolution 160 seven-cylinder radial engine using a 28 x 10 propeller and white gas, it features Robart struts with Williams Brothers Model Products wheels. Carl controls it with a JETI DC-16 transmitter and Hitec servos. The paint is Testors rattle can enamel.

The Claude's maiden flight took place in March 2019. Carl's build thread can be found on RCScaleBuilder.com. He stated that it's a joy to fly.

Sig Four-Star 40

Sam Hiatt (Eugene, Oregon; email: makerkid.rc@gmail.com) built this Sig Manufacturing Four-Star 40 in June 2019. It was a raffle prize during his club's winter build challenge that a fellow club member won and gave to him.

Sam framed it in approximately 6 to 8 hours and covered it in Sky Blue UltraCote. For power, he used an O.S. Max 40 FP engine with a Top Flite 10 x 6 maple propeller. Hitec HS-311 servos and a Spektrum AR410 receiver were used for guidance.

"I recommend [it] to anybody looking for a great 40-size sport aerobatic plane." Sam added, "I am only 15 [years old], and most other pilots who see my talent level are amazed."

Modified Ultra Stick

Robert Dochterman (Cincinnati, Ohio; email: born.to.fly@fuse.net) modified this Hangar 9 Ultra Stick 30cc into a twin-engine aircraft.

Two DLE-20RA rear-exhaust engines swing Xoar 15 x 8 propellers. Both engines draw from a 24-ounce tank that is mounted in the fuselage. A balsa nose cone was fabricated and contains two 2,100 mAh LiFe ignition batteries and two receiver batteries, with 10 ounces of lead for balance.

Robert wrote that the airplane has power to climb vertically several hundred feet, and a flick of a switch can send either engine to idle. Single-engine performance allows for loops and rolls if rudder is used to offset the single-engine yaw.

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The Joe Bridi-designed Kaos was an improvement over his Sun Fli series. It was powered by a Veco-Lee custom .61 engine with a Perry carburetor.

50 YEARS AGO

By Bob Noll | bobrc@aol.com

AS I SIT AT MY COMPUTER to write this column, it is early February. For some strange reason, I was wondering what was going on in RC 50 years ago, so I decided to visit my magazine collection to find out.

One thing for sure is that the RC community was composed of nearly all builders. Many of them also loved to compete and design their own airplanes. That enjoyment for competition led most modelers to continue to improve upon their aircraft for better performance, whether it was for RC Aerobatics (Pattern), Scale, or Pylon Racing. Competition not only drove the improvement in airplane designs, but also the quality and reliability of our radio systems.

Radio Control Modeler (*RCM*), probably the leading RC magazine at the time, had an article by Joe Bridi about his newest Pattern airplane, the Kaos. The article began by calling attention to the design changes from his Sun Fli III and IV. This new design featured a double taper wing to help the rolls, a 19% root rib thickness, and reduced dihedral.

Designers such as Joe had to make improvements to their designs because the AMA Pattern maneuvers changed. More attention was paid to flight speed, rolling maneuvers, smoothness, and knife-edge flight. The double taper wing improved maneuvers such as slow rolls, four-point rolls, and spins.

That *RCM* issue contained an ad for the latest Heathkit system. The new Heath GD-19 System had "everything you need" and listed five channels that were available on three bands, all NiCd battery packs, four servos, and even a soldering iron for $219.95. That cost would be more than $1,300 today.

Micro-Avionics introduced its new XL-IC Micro-Avionics systems and listed three versions: a six-channel, dual-stick system for $429.95; a four-channel, dual-stick for $399.95; and a six-channel, single-stick system for $449.95. Would you pay more than $2,900 for a radio system today?

EK Products Inc. advertised its Logictrol five-channel, two-stick digital system for $369.95. The company claimed that it was the "oldest producer of digital systems."

Sig Manufacturing Company, Inc. had a full-page ad with its balsa and other building materials that included foam wing cores for airplanes, motor mounts, covering materials, dope, and much more. That ad also contained the Sig Superscale kit for Maxey Hester's Nats-winning RC Scale Zlin Akrobat for $38.95.

Carl Goldberg Models advertised its new Ranger 42 as the "Versatile Almost-Ready-To Fly Fun Model." Ranger 42 features included a one-piece molded wing, a one-piece molded stabilizer, and a one-piece vertical fin, as well as a molded fuselage that was completely assembled with the firewall, nose gear, and all of the needed fittings. The Ranger 42 cost $17.95, or approximately $115 today.

Flying Models featured a construction article about building the Aztec by converting the popular VK Cherokee into a twin. The article read, "A quick conversion of the ever popular VK Cherokee into a Semi-Scale Twin Piper Aztec look. Superb performance on a pair of Super Tigre .29's with counter rotating engines solved it all ... right engine, right torque, left engine, left torque." World Engines could supply the matching engine parts.

Nick Ziroli published plans for his Grumman F8F Bearcat. His article reflects on the record-setting performance by Darryl Greenamyer's full-scale Bearcat, of which he flew to a speed record of 483 mph. The previous record was 469 mph set by Fritz Wendel in Germany with a modified Messerschmitt Bf 109.

Nick's Bearcat was semiscale but realistic. He powered it with the new SuperTigre Saturn .60 engine and used the new Heathkit GD-19 radio system.

American Aircraft Modeler had a construction article titled "Ole Tiger." The author, Bob Morse, wrote that he was bitten by the RC Pylon Racing bug and decided to build a Formula 1 (F1) racer. Because his all-time favorite full-scale F1 aircraft was Bob Downey's Ole Tiger, his models had to be scaled after it.

An article about a Pattern contest in California mentioned that Lanier airplanes were flown by five finalists. They were some of the early ARF airplanes. Lanier aircraft came

This twin-engine airplane was built by modifying a VK Cherokee. A pair of SuperTigre .29 engines provided the power.

This was an original design by Hal Parenti for RC Pattern competition. Many modelers flew Pattern airplanes that they designed and built.

This F1 Pylon racer was a winning design and influenced by the full-scale Ole Tiger aircraft that Bob Downey flew in many F1 races, including the Reno Air Races.

in handy when your pride and joy met the earth and was destroyed.

I had two Lanier Pursuits that performed well. The secret to obtaining longevity with a Lanier was to take the time to use fiberglass and epoxy to strengthen the engine and nose gear mounts. This was necessary to ensure that fuel and exhaust oils did not weaken the nose structure.

A construction article titled "Kestrel" met the needs for a simple and small airplane. The Kestrel was a .020-assisted Soaring model for rudder-only and offered relaxing, long flights. The designer, David Boddington, designed the Kestrel as an "antidote" for high-speed, guided missiles being flown in the day. It was controlled by an ACE Pulse Commander radio that cost $69.95.

Model Airplane News had a construction article for a Blue Angel. The Blue Angel was a Nick Samardge design and featured a zero-zero, in-line configuration. This meant that both the wing and stabilizer were on the engine thrustline. In addition, there was no dihedral in the wing. This configuration was used by Art Schroeder in his Eyeball.

Nick painted his Blue Angel similar to the F-4F Phantoms that were used by the U.S. Navy's flight demonstration team at that time. This was not a bad idea if you were planning to attend the AMA Nats that were held at naval air stations across the country. The Navy supplied the judges for RC Pattern.

Lanier advertised its Citron Mark II designed by Jim Kirkland, an AMA Nats champion. The kit cost $48.95. In today's dollars, that would be $324.20.

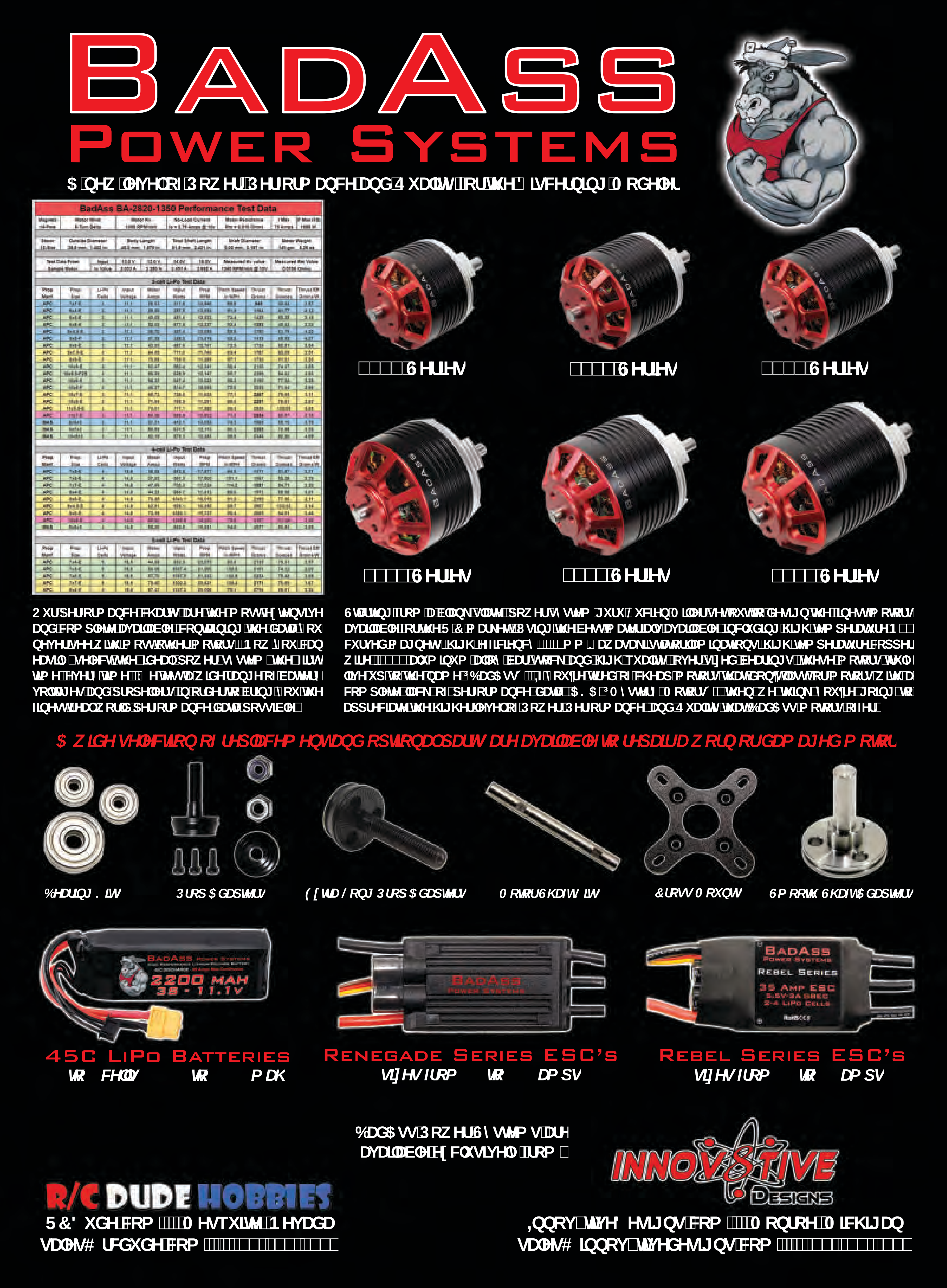
Before I close, I would like to mention the great newsletter published by the Vintage RC Society (VRCS). The *Vintage Flier* is a bimonthly color publication with reports from across the country. It is only available to members, so join this AMA SIG by visiting its website, listed in "Sources." While you're there, you can view an earlier issue of *Vintage Flier*. This is a quality newsletter.

SOURCES:

VRCS
www.vintagercsociety.org

This twin-engine Duellist was designed by Dave Platt. Several designers took on the challenge of twin-engine aircraft. Note the title is Mk III, signifying that two other Duellist designs preceded it.

This Mach 1 was built by Dan Grotzinger. The Norm Page-designed Mach 1 was a fast-flying RC Pattern airplane, hence the name he gave to the design.



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The small size of the 9-inch wingspan, two-channel model is apparent next to the author's Spektrum DX8 transmitter.

NINE-INCH CITABRIA STIK

By Joe Malinchak | joemal@echoes.net

AT THE 2019 INDOOR NIGHT at NEAT during the Northeast Electric Aircraft Technology (NEAT) Fair, I was impressed with the look and flight performance of Gordon Johnson's Citabria Stik.

The 13-inch wingspan model features curved, molded carbon-fiber parts and a 12% camber wing. I mentioned to Gordon that I was interested in building one, and he graciously offered to make me a set of molded carbon-fiber parts. He also mentioned that he could mold the parts for a smaller version if I liked. I figured that a 9-inch wingspan airplane would be a perfect size for flying in my living room.

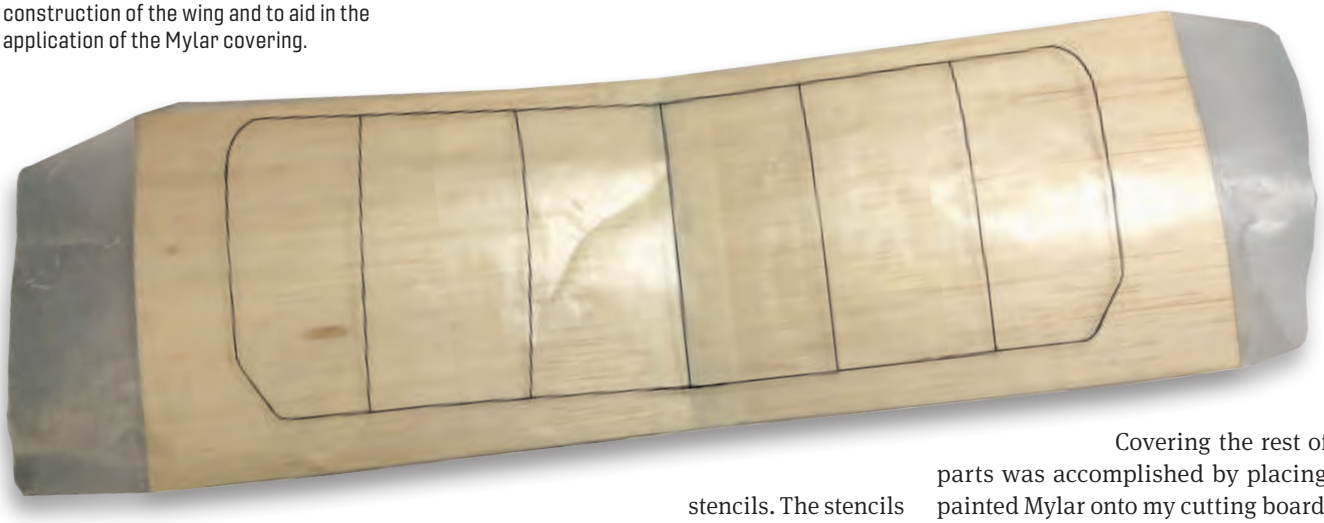
Not more than a month later, the parts arrived in the mail. I want to thank Gordon for taking the time to make them for me!

My plans and goals for this model were to make it as lightweight as possible and try to keep the weight at less than 3 grams ready to fly. I also wanted to give it a different look from other models of this type, so I decided on an L-Bird liaison scheme. To do this, I needed to use lightweight covering material, a drive unit, RC gear, and a battery.

I started constructing the wing by gluing all of the curved carbon-fiber ribs in place with some medium-thick CA glue. I constructed the rudder and elevator on my magnetic building board, using the curved parts and .3 mm carbon-fiber rod.

For covering, I used 2-µm thick clear Mylar from David Lewis at Homefly. I wanted to try to print my graphics onto the Mylar using inkAID and my inkjet printer. I sprayed 3M Super 77 spray adhesive onto the outer edges of some paper to use as a carrier sheet and glued this to the Mylar. I then

The author built a wood mount for construction of the wing and to aid in the application of the Mylar covering.



sprayed the Mylar with two coats of inkAID and sent it through my printer.

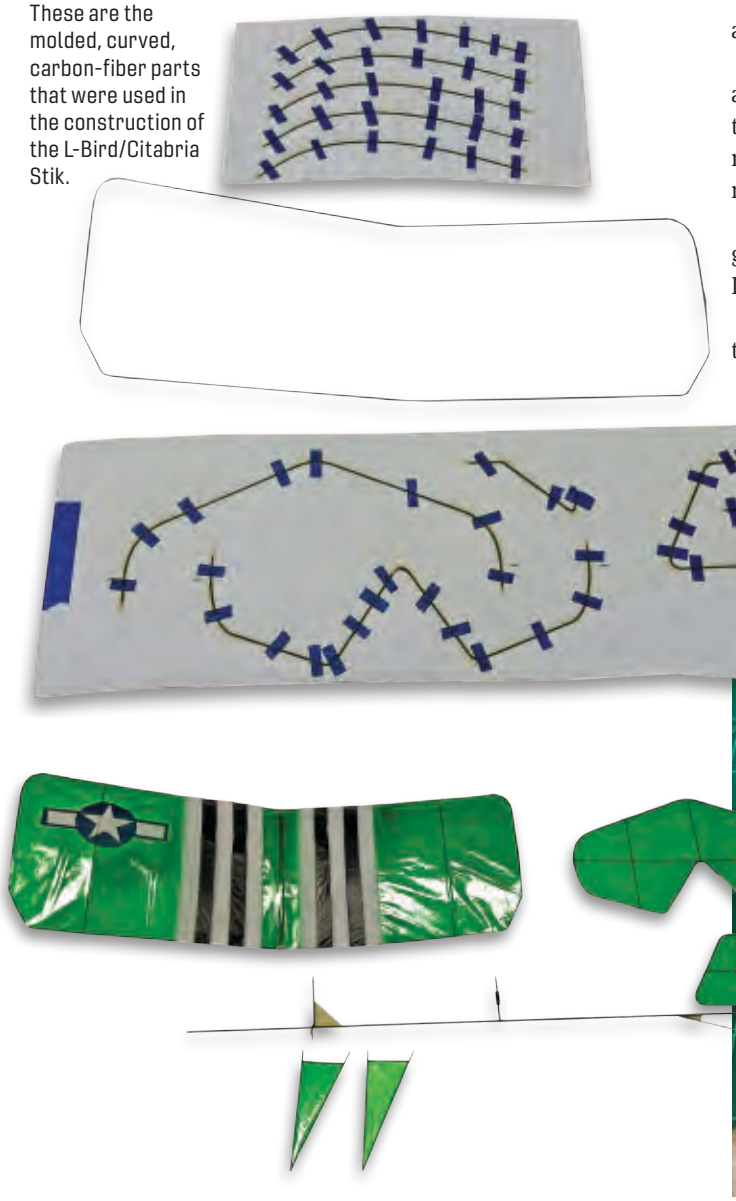
I had mixed results. It was a good test, but I ended up spray painting my colors onto the Mylar. I used Createx transparent and opaque paint. I painted the Mylar before applying it to the model, using laser-cut stencils for my markings. I stretched the Mylar out onto my magnetic building board and used magnets to hold down the stencils. The stencils need to be removed soon after painting because they will stick to the Mylar if the paint dries.

Covering the fragile and flexible carbon-fiber wing was challenging. I had to build a mount to hold the wing in place so that it would hold its shape when the covering was applied. I glued balsa handles to the covering, sprayed some adhesive onto the carbon-fiber wing, and applied the covering to one side of the wing at a time.

Covering the rest of the parts was accomplished by placing the painted Mylar onto my cutting board and spreading it tight, using tape to hold it in place. The parts were then sprayed with glue and positioned in place. I used a fresh #11 blade to carefully cut out the covered parts. The weight of the covered and painted parts was only 1 gram.

Next, I cut a fuselage out of .7 mm carbon-fiber tube and completed the basic assembly of the model. I had a 300-mg DelTang (DT) receiver on hand for guidance and installed a 100-milligram actu-

These are the molded, curved, carbon-fiber parts that were used in the construction of the L-Bird/Citabria Stik.



ator onto the rudder for simple two-channel control.

I saved the motor selection for last because I needed the total airframe weight to see how much power was needed. I wanted to see if I could make a drive unit using a 300-milligram, 3.2 mm motor. I used a 3.2 mm motor out of Mini Vapor servo mechanics.

I laser cut a motor mount out of Garolite and constructed the gearbox with one brass bearing and a 90/12 teeth gear from Didel. I used some heat-shrink tubing to hold everything together.

I also had a beautifully made, lightweight 3-inch foam propeller that Ruslan Ermolin sent me to try. The drive unit with the propeller ended up weighing only 600 milligrams and put out 3 grams of thrust on my test stand using a fresh 10 mAh LiPo battery cell from Micro Flier Radio.

The completed, ready-to-fly model ended up weighing 2.9 grams—slightly less than my target weight. It flies slowly for 2 or 3 minutes and exceeds all of my expectations!

Above: The covered and painted airframe parts are ready for final assembly and weigh only 1 gram. Above right: The author constructed this lightweight 3.2 mm gear drive for the aircraft. It features a foam propeller and delivers 3 grams of thrust. Right: The completed carbon-fiber model weighs only 2.9 grams ready-to-fly, and exceeded the author's expectations as a slow living-room flyer.

SOURCES:

NEAT Fair
www.neatfair.org

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The author shows a first-generation, rocket-assisted takeoff bottle, developed at JPL in California. Early tests were dangerous!

INDOOR FLYING CAN BE A TRIP, DUDE!

By Dave Gee | safetycolumn@cs.com

I RECENTLY ATTENDED an indoor event where young students competed with catapult-launched Free Flight gliders in a large gym. This was a highly organized contest. Hundreds of competitors and spectators rotated through the room on a schedule.

Indoor gliders are among the least hazardous types of models. Their lightweight airframes and low kinetic energy make it hard to imagine being harmed by a glider, but flight trimming these airplanes for maximum endurance is challenging. Nevertheless, the youthful pilots wore protective glasses according to the event rules.

On a side note, our sport is statistically one of the safest around. Even more interesting is that a large portion of incidents don't actually involve our aircraft. Things such as trips and falls, grass-mowing accidents, and reports of typical injuries that happen at parks get lumped in with RC model flying if they happen at the field.

Now back to that indoor contest. The gym floor was covered with thick, vinyl sheets to protect the wood from shoe scuffs. These sheets had wrinkles and raised edges every few feet, forming classic tripping hazards.

It wasn't just clumsy old guys such as I who were at risk. I saw normal, coordinated people stumble on these mats throughout the day. If anyone had been injured, it would have been tallied as an accident at a model airplane event, right?

The action was overhead, and some people walked while looking up at the models instead of watching the floor. I was told that the organizers were aware of the situation and had tried unsuccessfully to flatten the

mats by heating the room.

The lesson is to get the big picture when scanning our fields and flying sites. You know how to check a field for safe flight operations, but don't forget to scan the rest of the area for hazards. There are parking issues, pedestrian path obstacles, and other chances for an incident to happen. Although it's unrelated to our airplanes and rotorcraft, it counts!

Throttle Cut Is Better Than Finger Cut

Mel Roberts is a wise and experienced modeler. He kindly sent me information about the solution to a situation at his local field. There had been a rash of hand injuries in the pits and while carrying models to and from the flightline. Many of these incidents involved electric-powered airplanes that started unexpectedly.

The club began a program that trained and encouraged pilots to use the throttle-cut feature on their transmitters. Throttle cut involves a switch that deactivates the throttle lever until the pilot is ready to fly. Even if the throttle gets bumped, the propeller will not spin. This educational effort quickly brought good results, and injuries became less frequent.

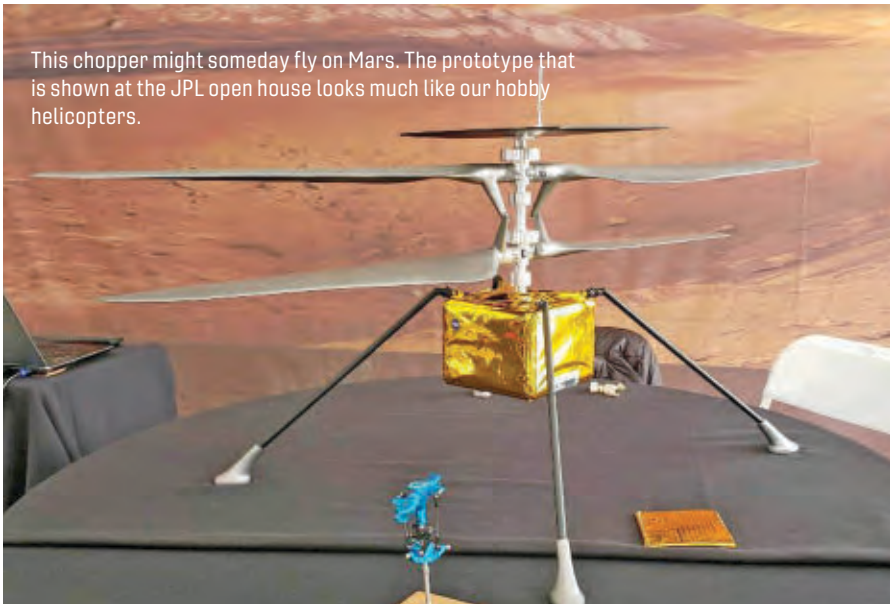
Mel wrote that the throttle-cut feature is not universal on all systems, nor is it standardized. Some effort must be made to set it up on each transmitter/airplane combination. A few radio systems actually have throttle cut available but do not mention it in the instructions.

You might have to do some research to find out how to activate throttle cut on your radio. Mel urges all pilots to set up and use this safety feature, and I concur!

Reaction Time

I was pleased to receive a scholarly report by David Andersen and Roy Maynard on the subject of reaction time in older modelers. They gave statistical data about how the speed of our mental and physical reactions tends to slow with age. According to them, this is bad news for those who are older than age 24 because that's when the decline starts.

This relates to our sport because many older RC pilots find that, despite long experience, their flying abilities are negatively affected by the passage of time. This situation doesn't hit everyone at the same rate,


This chopper might someday fly on Mars. The prototype that is shown at the JPL open house looks much like our hobby helicopters.

and I'm sure that every senior modeler is the rare exception, but a wise pilot knows his or her limitations. We should avoid putting ourselves into unsafe flight situations.

The report recommends taking some obvious steps as we get older and fly models that are within our ability. Use a spotter when needed, and perhaps have a pinch-hitter pilot to make our takeoffs and landings. Avoid complex maneuvers and low-altitude flight.

What is your reaction to this topic? Email me and share your opinions. It might be a few issues before I print the responses because apparently older pilots have a longer reaction time.

Black Powder and College Dorms

Legend has it that the famous Jet Propulsion Laboratory (JPL) in Pasadena, California, began when some amateur rocket makers had an explosive mishap in their college dorm. They were invited to take these experiments to a remote canyon. The authorities figured that at least that way, the students could damage only themselves and perhaps something useful would result.

It worked out well. That canyon is now home to the JPL campus, on the cutting edge of space exploration.

Those early experiments with rocket-assisted takeoff have led to many things. A recent JPL project is an autonomous helicopter designed to fly on Mars! Our hobby gave this project a head start, and look how much the vehicle resembles a commercial model chopper.

I think they ought to widen the landing gear a bit because there will not be anyone handy on Mars to set the thing back on its feet after a bobbled landing.

Mystery Airplane

This mystery airplane is easy because it's one of the most famous and recognizable aircraft in the world. I snapped this picture at the California Science Center in Los Angeles. It was interesting to see how this aircraft looks up close. It's far different from my expectations.

It has a rough finish, is not smooth as I anticipated it would be, and visible scorch marks tell how extreme the conditions were on its many flights. Email your guess to me at the address at the beginning of the column and receive special prize plans for a not-so-modern aircraft.

A Vildebeest to Call Your Own

The prize this month is a digital copy of a unique vintage construction drawing and parts sheet. It's a genuine, rediscovered Dime Scale airplane kit from pre-World War II England.

The Vickers Vildebeest not only has an awful name, but it's among the ugliest airplanes ever flown. Worse yet, this big, awkward torpedo bomber has excellent proportions for a flying model with lots of wing area, so I was unable to resist building one.

The plans show a 15-inch wingspan, but you can easily scale it up for RC and substitute foam for balsa if you're so inclined.

This is the easiest mystery airplane yet! Name this famous aircraft and win digital plans for a rare Dime Scale Vildebeest. Send your guess to the author at the email address listed at the beginning of this column.

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The main flightline at Joe Nall is an amazing place to be during the demonstrations.

CHECKING IN WITH TRIPLE TREE

By Jim Graham | jimtgraham@yahoo.com

WE ARE WELL INTO 2020, so I thought it would be a good time to check in with the Triple Tree Aerodrome in Woodruff, South Carolina, and see what is happening.

I reached out to Robb Williams, who is the new executive director of Triple Tree. He is a commercial pilot, qualified in more than seven aircraft, and has landed on every continent with the exception of Australia. He has also taught as an adjunct professor in the aerospace program at Polk State College in Winter Haven, Florida. These are just a few of the things Robb did before coming to Triple Tree in 2018.

Robb shared the following update.

Triple Tree Update

The 2019 Joe Nall Week was indeed one of the best ever, with visitors coming from around the globe to enjoy the fun, fellowship, and hospitality that is only found at the Triple Tree Aerodrome. We were pleased to have welcomed more than 14,000 guests from 47 states and 17 foreign countries.

Presales of tickets for Joe Nall 2020 opened on Cyber Monday. This will be the new opening date for ticket sales and the response has been tremendous. Premium campsites for nonreturners went on sale on January 14 and were practically sold out in a matter of minutes.

As we move closer to this year's event, the facility will be starting to construct the Legacy Walk at the patio area. The Legacy Walk will be the perfect place to remember loved ones or to celebrate friends and family.

We also plan to add new premium camping sites and upgrade our shower facilities. A 6-mile trail network will be completed before Joe Nall Week to allow our guests and their families to get their steps in and to enjoy all of the beautiful scenery the site has to offer.

For avid aviation enthusiasts, one visit to Triple Tree per year just won't cut it. We are proud to host more than 10 other aviation functions throughout the year.

We always start the new year with the one-day Frosty Dog event that is full of nonstop flying with your closest friends and fliers. Next on the calendar is the one-day Chilly-Chili Fly-In for general aviation in February. The newest addition to the Triple Tree event calendar is Uncle John's Fly-In. This event is for general aviation aircraft and is expected to take place for three days in March.

Our most significant and notable event, the annual Joe Nall Week, is held in May and draws thousands of RC enthusiasts from around the world. Immediately after Joe Nall is the Mid-South Sailplane Championships.

Mid-June belongs to the Young Aviators Fly-In. This event is the only one open to the general public to allow individuals without aviation ties the chance to see all of the opportunities that aviation has to offer.

Next on the calendar is Youth Masters and the South Carolina Breakfast Club. Both are held near the end of July each year. As fall begins, we start preparing the Triple Tree grounds for the largest general aviation event we have to offer: the Triple Tree Fly-In. This weeklong event in September typically draws anywhere from 500 to 1,000 aircraft from across the country.

Almost immediately after the Triple Tree

Pilots like to dip their airplane rudders in the lake on the 3D flightline at the Triple Tree Aerodrome!

Jase Dussia and his family put on a great noon demonstration during Joe Nall Week.

Fly-In, we host the growing Nall in the Fall event. Nall in the Fall is held in early October and is an autumn twist on the annual Joe Nall Week.

Finally, we close out the event season with the Heli Extravaganza, which happens in mid-October of each year.

In addition to our year-round schedule of events, we have been hard at work ensuring that Triple Tree is prepared for the next generation of aviation enthusiasts. In support of our mission to "ignite and expand the passion for aviation," we were thrilled to present six scholarships to students, modelers, teachers, and mechanics for progress in their personal, educational, and/or career-related opportunities. No other organization offers such a variety of educational scholarship opportunities!

The addition of the year-round scheduling, educational opportunities, and pilot-focused customer service has been spearheaded by Robb. Robb came to the Triple Tree family in August 2018. He is helping to ensure that the facility is on the path to long-term sustainability. He was recently named to a state educational panel that is developing K-12 science standards and made sure that aviation education was included in South Carolina schools.

Robb wrapped up his first year and, under his guidance, Triple Tree has had an economic impact of more than $1.5 million to the region. With his leadership, the programs will benefit local businesses, offer educational opportunities for everyone, and be a welcome partner in the international aviation community.

Triple Tree was also honored to receive a grant from the South Carolina Aeronautics Association to fund its ACE RC program. This program introduces young men and women to our hobby. We have had great success with this unique program, and we are thrilled to have been recognized by South Carolina for our efforts toward introducing RC flying to future generations of pilots!

Please make plans to join us for the 2020 Joe Nall Week and visit the Triple Tree website or Facebook page for updates! The links are listed in "Sources."

Joe Nall is *your* event. We will continue to do everything possible to keep the spirit of fun, fellowship, and hospitality alive at Triple Tree.

SOURCES:

Triple Tree Aerodrome
info@tripletreeaerodrome.com
www.tripletreeaerodrome.com

Triple Tree Aerodrome Facebook page
www.facebook.com/TripleTreeAero

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Even a momentary lapse in concentration or judgment during a critical phase of flight, such as during takeoff or landing, can put people in danger. Imagine how much damage a propeller spinning at 5,000 rpm could inflict on a child's face.

HOW AND WHY YOU SHOULD STERILIZE YOUR COCKPIT

By Patrick Sherman
lucidity@roswellflighttestcrew.com

TO A NOVICE PILOT, the term "sterile cockpit" sounds like a preventative measure against the spread of infectious diseases. Bring up the same subject with a drone pilot and his or her response is likely to be, "Wait a minute—I don't have a cockpit!" Nevertheless, it's an important concept with which to become familiar because UAS and aeromodeling are increasingly being recognized as full members of the aviation community.

In manned aviation—where the pilot sits inside the aircraft—the concept of a sterile cockpit emerged in 1981 with the introduction of Federal Aviation Regulations (FARs) 121.542 and 135.100. These rules basically state that the pilot and aircrew must devote their total focus to the operation of the aircraft during taxi, takeoff, and landing, as well as any operation occurring below 10,000 feet above mean sea level, except cruise flight.

During these "critical phases of flight," pilots should not be checking their email, eating a sandwich, or talking about the previous night's game. Every thought, motion, and utterance should be directly related to the safe operation of the aircraft.

Flight 401

As with many of the rules in aviation, the sterile cockpit standard is written in blood. The 101 people who died in a crash of a commercial jetliner that was caused by a distracted crew were a key factor in establishing it.

Eastern Airlines Flight 401 crashed in the Florida Everglades on the night of December 29, 1972. The Lockheed L-1011 TriStar had departed New York with 176 souls onboard—only 75 of them survived. Among those killed were

the pilot, the flight engineer, and two members of the cabin crew.

Approaching Miami for landing, the crew lowered the undercarriage; however, the first officer noticed that an indicator light should have shown that the gear was down and locked but it was not lit. The subsequent investigation revealed that the bulb had burned out and the landing gear was functioning properly.

The pilot asked air traffic control for permission to orbit over the Everglades while the crew diagnosed the problem. Activating the autopilot to maintain a constant altitude, the crew gave its attention to the problem with the indicator. While the pilot and copilot began to disassemble the console, the flight engineer went below to the avionics bay, where a small porthole gave him a view of the landing gear to confirm whether or not it had deployed correctly.

Unknown to any of them, an error in the autopilot function had caused the airplane to begin a gentle descent. An alarm sounded at the flight engineer's station, but he was still below and no one else heard it. Ignoring their instruments and flying over the pitch-black Everglades, none of the crew noticed the loss of altitude until it was too late.

Perhaps the most potent source of distraction that drone pilots face is the curiosity of onlookers who approach and ask questions without ever realizing that they are distracting a certified pilot who is conducting flight operations in the National Airspace System.

Distraction Danger

If you need any additional evidence of the danger that is caused by being distracted, look no further than America's roadways. Distraction was cited as a key factor in 25% of all motor vehicle accidents that occurred in 2016—more than 1.8 million—and 3,439 of those resulted in at least one death. In short, allowing yourself to become distracted while operating a vehicle is dangerous. The sterile cockpit

As a primary mitigation against the hazard of distraction, the FAA recommends that commercial UAS pilots wear safety vests that identify them and urge the public to stay away.

rule was put in place to mitigate that danger.

This works well in the context of commercial aviation. The cockpit door is locked and the pilots who are sitting at the controls are stone-cold professionals who have spent their entire careers operating under the sterile cockpit rule. However, if you're a UAS pilot, your cockpit is typically an open patch of dirt in public view—and you look like the perfect person of whom to ask a bunch of questions about drones.

Your first line of defense, as prescribed by the FAA, is your wardrobe. You should always wear a vibrant yellow or orange safety vest, similar to the ones worn by construction workers, with words to the effect of "Drone Pilot—Keep Clear" written across the back in large, block letters. Wearing a uniform underneath your vest is probably a good idea, too. It establishes you in the eyes of onlookers as a professional who is doing a job.

However, even if you are properly attired, the allure of seeing a drone in action might be too much for some bystanders, who will approach you anyway. Talking to people like this can be fun, and you are doing the drone industry a real service by demystifying the technology and explaining its beneficial applications, but always remember that your first responsibility is the safe operation of the aircraft.

If safety requires you to put people off or even ignore them completely, that is what you must do. No professional pilot would think less of you for it. Circumstances permitting, you can land the aircraft or put it in a hover at a safe location, which is the drone equivalent of a cruise flight.

Be on Guard

You can take additional steps to help safeguard your flight operations against distraction. The first is to make use of checklists. If you are interrupted while working your way down a checklist, start over. By following that procedure, you can ensure that every step required to conduct a safe flight has been completed.

Another key step is to be wary of the comfort that emerges with routine. It's a well-established fact that new pilots cause more than their share of mishaps and accidents. They are still learning and are therefore more prone to making mistakes. As new pilots gain experience, their accident rate drops.

Less commonly known is that as pilots accumulate more and more flight time, their accident rates begin to creep back up. They become complacent and open to distraction because routine has made them numb to the danger.

You also need to remember that drones are downright cool. No matter how obnoxious your yellow vest is, some people are going to feel compelled to come up and ask you questions.

If you are going to fly at a public venue, you might need to add another person to your flight crew: a public relations professional. This person's only job is to answer questions and serve as a barrier between the public and the people who are directly responsible for the safe operation of the aircraft.

Part of the Team

Sometimes the people with whom you interact while operating your UAS aren't curious onlookers; they are your friends and family. Whether drones are a hobby or something you use as part of your work, it's fun to share it with the people in your life. In this case, you can guard against the danger of distraction by providing a preflight briefing and making them a part of the team.

Start by explaining the sterile cockpit concept to them so that they aren't hurt or offended if you need to devote your total attention to the aircraft—even if that means not talking to them or answering their questions for a moment. You can also give them jobs. They can take on the role of being visual observers and watching for other air traffic, help monitor your telemetry, or even speak to members of the public who have questions.

These principles can be applied to traditional aeromodeling and are just as valid in that context. The big difference is that when you're out at the flying club, your buddies generally know better than to come over and start chatting while you're bringing your four-engine B-17 replica in for a landing.

This article has been presented with the support of the FAA Safety Team (FAASTeam) through its DronePro initiative.

SOURCES:

FAASTeam
www.faasafety.gov

Award Winning Airplanes

IMAC Worlds Matt Komar

Clover Creek JJ Hedrick

IMAC Worlds AJ Jaffe

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The camouflage scheme of Hervé Deturmeny's 80-inch MiG-17, which is now painted and has been flown, hides much of his meticulous detail work. See the link in "Sources" for a YouTube video of its first flight.

OUR HOBBY, OUR FUTURE

By Thayer Syme | thayer@flying-models.com

BEFORE I GET into the fun stuff this month, I want to touch briefly on the current FAA situation and the Remote ID proposal. Please take a look at a remarkable video by Jack Thornton, an eloquent young man who is involved in our hobby. There's a link in "Sources," or you can search Google or YouTube for "Our Hobby ... Our Future," published under Jack's username of Initial FPV.

Don't be put off by Jack's FPV involvement. At this point, all air-minded hobbyists need to stand up and be counted. He also has relevant links in the description, so sending a letter to the FAA and your representatives in Washington, D.C., won't be too much of a bother.

B-58 Hustler

With the important business out of the way, let's now get on to some fun. Two of the great things about this hobby are the people you meet and sharing the magic of flight with others. Throughout the last few years, I have swapped emails with Hervé Deturmeny, a European model jet pilot with a passion for ambitious projects.

Hervé first reached out to me hoping to find the center of gravity location on a project he had just started drawing. It is a 1:6-scale rendition of Convair's high-speed B-58 Hustler bomber. Measuring more than 10 feet in length and intended to carry 2-1/2 gallons of Jet-A fuel to feed its four Merlin turbine engines, it is far beyond any model I can envision tackling. He is targeting a final weight of 66 pounds and, with 18 pounds of thrust per engine, its performance will be impressive.

Wanting to practice his composite skills a bit before starting the tooling for the B-58, Hervé completed a "quickie" MiG-17 project that spanned 80 inches. The photos will give you an idea of the scope of his models. With the MiG finished and flown, Hervé is back working on the Hustler and sent me a photo of himself holding the fuselage plug. Wow!

The fuselage plug for Hervé's B-58 Hustler stands an inch shy of 10 feet tall! The author can't wait to see more of this impressive project.

Laminated Strips

Bringing things back to my more-pedestrian level, have you ever come up with a solution for a nagging problem at the workbench, and then wondered why you didn't think of it years earlier? I'm always grateful when those moments come along, and at the same time, a little embarrassed. Here's a tip that might help some of you with your own future projects by repurposing a technique that we have used for decades.

I'll start with two simple words: laminated strips. No doubt, many of you immediately thought about pulling a sandwich of glue-oozing balsa around a curved form (did you wax it first?) in order to create a light and strong outline for the wingtips or tail surfaces of some classic design.

There are variations on this theme, and we don't always need to laminate a full part. Years ago, I was fighting a 3/16-inch square fuselage stringer that needed an aggressive bend at one end, which just wasn't going to happen. In a moment of inspiration, I got out my trusty balsa stripper and split just the first 6 to 8 inches of the stringer into thirds. Each "finger" measured 1/16 x 3/16. I then laid this strip of wood into the former notches, tacked it in place, and used two lines of medium CA glue to lock the fingers into the desired curve. You can bet that I felt pretty good about my mastery of the craft that day!

Now jump ahead to early 2020 when I'm working on a new model. Recently, after having so much fun flying my Electric Kitten, I wanted to build something similar that would loosely resemble a scale model. I decided on a larger version of George Benson's Team Hi-Max Peanut Scale Free Flight design that I mentioned in my March 2020 column.

Finding strong, straight stock for the wing spar is one common concern, and as much as I hate to admit it, I know many of us don't have a well-stocked local hobby shop around the corner anymore.

And then it hit me! Where in the rule book does it say that laminated parts have to be curved? The easiest way for most of us to get those strong, straight spars might be to laminate them. I haven't started on the wing yet, but I have made up the spars to prove my theory.

Just as when laminating curved outlines, the first step is to prepare a form. I am planning the same 1/8 x 3/4-inch main spars that Fred Reese drew for the Kitten, and with a 48-inch wingspan, my Hi-Max spars will be only 24 inches long.

I found a straight piece of 1 x 4-inch pine that was approximately 26 inches long in my shop and used my table saw to cut a pair of notches in one face. They measured nearly 1/8 inch deep and an inch or so wide. The soft pine and extra width let me use pins to clamp the spar stock in place. Packing tape provided protection from the glue.

Next up was the needed strip stock. The spars had to be dead straight, so I didn't need a lot of thin strips. I used only two pieces of 1/8 x 3/8-inch hard balsa for each blank and arranged them so that their natural curves were opposed. I ran a bead of Titebond glue along the mating edges then pinned them in place on the form and let them dry overnight. The next morning, I had two dead-straight blanks

that were ready for the final prep.

I snapped the strips to rough length before gluing. With a bit of care while gluing, I was able to keep the edges aligned and they needed just a swipe or two with a 120-grit sanding block to remove the glaze that was left from wiping off the squeeze-out. A couple of quick passes on my Byrnes Model Machines table saw trimmed them to their final length and let me set the taper and dihedral angles needed at the center.

The rear spars on the Kitten are 1/8 x 1/2 inch, so two 1/4-inch wide strips will do the job this time. Fortunately, my miter fence and taper gauge are still set to the angles that will be needed. Yes, I could have milled my fixture on both faces if I had thought about it first!

If you are thinking of doing something similar for a future project, I recommend using a piece of hard stock to pad the strips from the pins. Not only will it prevent localized crushing of the wood fibers, it will also more evenly distribute the clamping forces.

Well, it has happened again. I've come to the end of my allotted space for this month. If you haven't done so already, please watch Jack Thornton's video and follow his lead. After all, there isn't much point in building models if we can't fly them.

SOURCES:

MiG 17 RC first flight YouTube video
https://youtu.be/fAjuu5fcf0I

Our Hobby ... Our Future
#FightForFPV YouTube video
https://youtu.be/A5rsfcc8hzs

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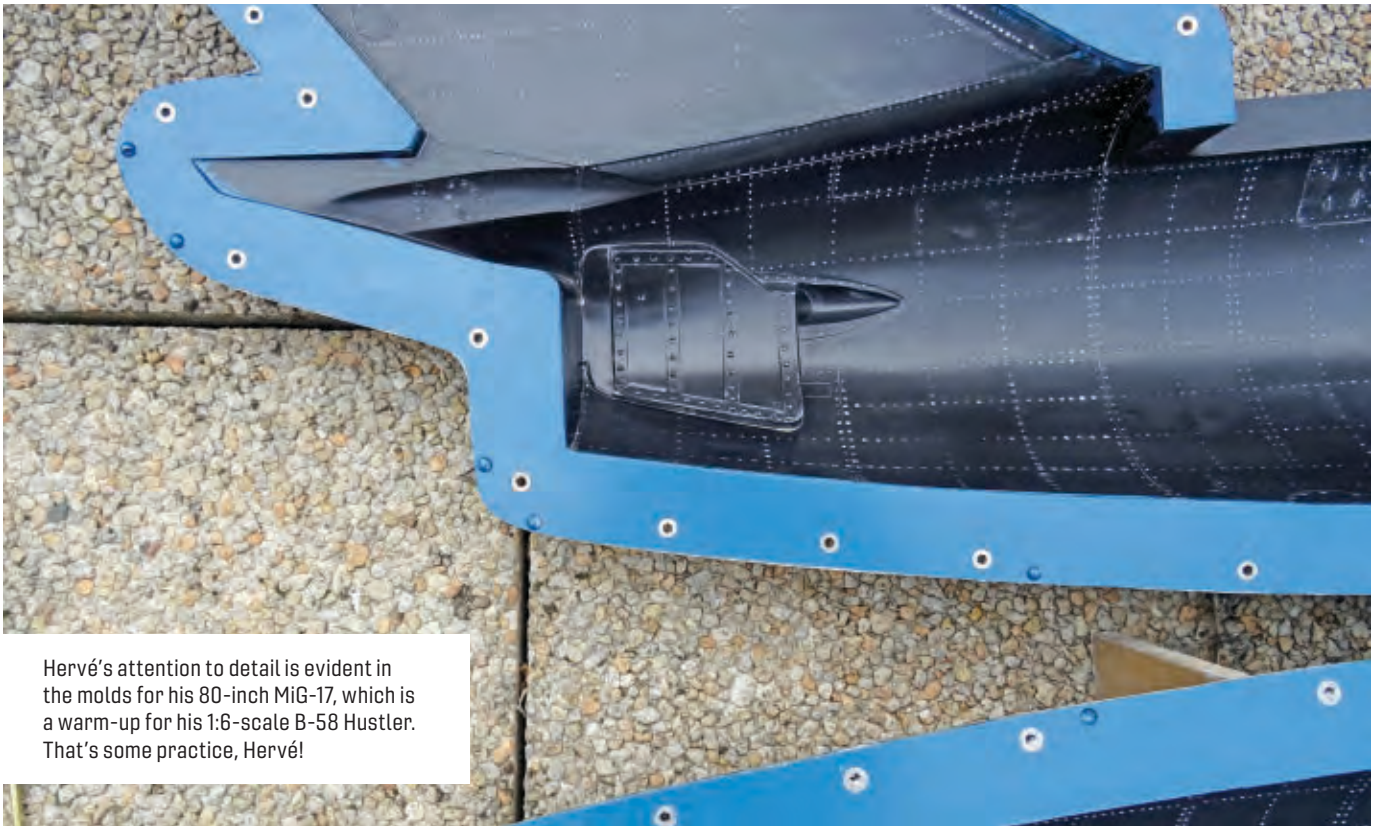

Hervé's attention to detail is evident in the molds for his 80-inch MiG-17, which is a warm-up for his 1:6-scale B-58 Hustler. That's some practice, Hervé!

Jeremy Arvin's Freewing A-4 attack fighter makes another smooth landing on the paved runway in the Foamy Electric class at the 2019 Mint Julep contest.

A SCALE, MOTORIZED GLIDER

By Stan Alexander | onawing4602@att.net

AL KRETZ THRIVES on competition, as well as true scratch-building. Scratch-building is an art form that few even try to accomplish today. He finds a unique airplane that he likes, does the research, finds good three-views or five-views, draws his plans, then builds the model. That's what scratch-building is—it's not building from someone else's plans or a kit. You start with an idea and go from there.

Al started the Gotha Go.244 from three-views from a plastic model. A lot of good information about plastic models is available from the International Plastic Modelers' Society (IPMS). He enlarged the drawings and designed and cut his wing ribs, formers, and other parts to enable him to take apart and transport the model in his full-size van.

The model spans 135 inches and weighs 42 pounds. Al decided to power it with two DLE-20 engines with side exhausts. The custom landing gear has spring-loaded shock towers, and the model has split flaps as well. Some of the scale features include dummy engines and full cockpit details. Most of the aircraft's construction is balsa and plywood.

Al states that the full-scale aircraft started as a twin-boom glider. Captured French engines were added, along with tricycle landing gear because the glider had skids. The cockpit was pretty simple because it started as a glider, and only enough instrumentation was added to make it functional.

The model was finished with 3/4-ounce fiberglass cloth and resin and painted with Klass Kote epoxy paint. Look for this one to fly at a local flying site or in a contest near you!

2020 Scale Nats Updates

AMA has announced that the entry fee for first-time Nats competitors will be waived this year. That does not include the event fee, but for most—including those competing in RC Scale and Control Line (CL) Scale—that should cut the cost in half or more.

The RC Scale and CL Scale competitions will take place at the International Aeromodeling Center (IAC) in Muncie, Indiana, on July 16-19. RC will be flown at Site 4 with the beautiful grass. The AMA grounds crew took great care of the site during the 2019 Nats, cutting the grass to 1/4 inch each day and cleaning up all of the clippings.

The most popular class is Fun Scale Open. At the 2019 Nats, Terry Nitsch took first place with his BVM Jets MiG-15. It's an electric ducted-fan (EDF) model with a 68-inch wingspan.

There are Scale classes for any experience level, even at the Nats. It's also a great place to find help on your project, watch some of the best pilots fly their flight routines, or see how others have finished their documentation packs.

New Scale Class

At the 2019 annual Mint Julep Scale contest, held at the Rosewood RC Flyers field in Rosewood, Indiana, there was a new, trial Scale class for entry-level competitors. The Foamy Electric class will again be flown this year and is open to any and all ARF or RTF scale, electric foam models. Several jets and a few propeller-driven, scale ARFs were flown at the 2019 event. All sizes are welcome. Anything from the Carbon Z T-28 to the smaller Freewing jets can be represented in this class.

Rules for the event are simple. There are seven maneuvers: takeoff, flyby, landing, realism, and three optional maneuvers, one of which can be a mechanical option such as flaps or retracts. It's all fun and designed to encourage someone to give competition a try and fly maneuvers other than just boring holes in the sky. It's a beginners' event, but I believe that there will be different levels of experience for this in the future.

This year's Mint Julep is scheduled to be held once again at the Rosewood RC Flyers field, June 26-28. The club has grass and paved runways, with an unlimited overfly area. Rosewood is right along the Ohio River, northwest of Louisville, Kentucky.

Fair skies and tailwinds.

Above: Al Kretz is shown with his new Gotha Go.224. The full-scale airplane started out as a glider and was motorized. This RC Scale Designer-class model has a 135-inch wingspan. Right: This view shows the simple cockpit interior of Al's Gotha Go.224. It's all scratch-built, including the instruments, wiring, seats, panel, and seat belts.

Art Sheldon's 1/2-scale Nieuport 11 touches down at the 2019 Mint Julep Scale contest in Rosewood IN.

Terry and Sheila Nitsch are shown with a 68-inch wingspan BVM Jets MiG-15 EDF jet. It won the 2019 RC Scale Nats Fun Scale Open class.

Shown is the pit area at the Scale Nats, held at the IAC's Site 4 in Muncie IN. Camping is right across the access drive, and everyone with a scale model appreciates the care and attention that is paid to this grass field.

SOURCES:

National Association of Scale Aeromodelers (NASA)
www.nasascale.org

DLE Engines
(800) 338-4639
www.horizonhobby.com

BVM Jets
(407) 327-6333
www.bvmjets.com

Motion RC
(224) 633-9090
www.motionrc.com

IPMS/USA
www.ipmsusa.org

Rosewood RC Flyers
www.rosewoodrc.com

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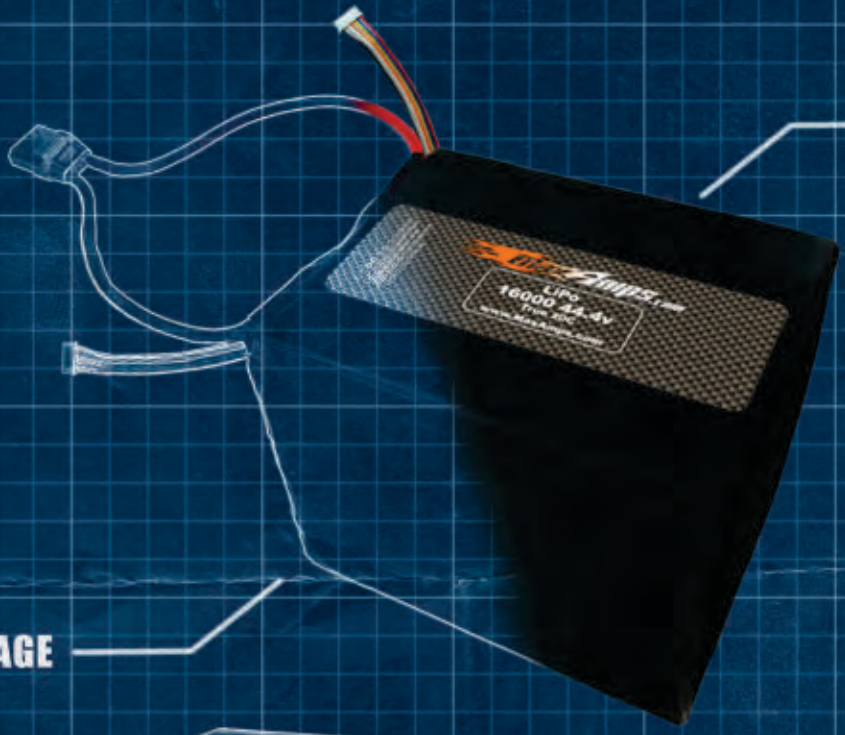

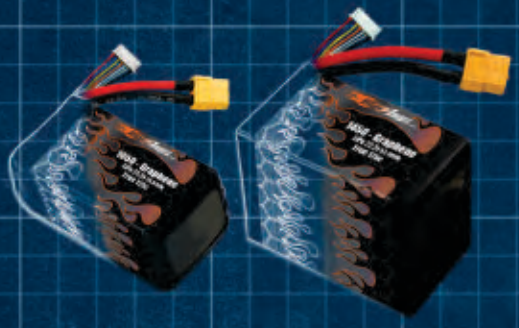

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Gil Gauger, with his current Sophisticated Lady, recently completed an Astro-Flight ASW-17 and an ancient Graupner Cirrus that was purchased at an estate sale.

SOARING NOSTALGIA A HOT TOPIC

By Gordon Buckland | gordon@gatorf3b.com

SINCE MY July 2019 column about our obsession with the past, many readers have submitted their stories and Soaring memories. As I promised, I have a couple of them for you.

Scott Keating

"[I] just read your "RC Soaring" column that was sent out as a *Media Minute* [newsletter] segment by the AMA at the end of September 2019 (I must have missed it in the magazine). I suspect nostalgia stuck with some of us [who] just never grew up, or at least never progressed into the 'modern' mindset. (I'm modernizing, albeit slowly.)

"After building and flying a Gentle Lady and Olympic 2 in the 1980s, I dreamed of building a Sagitta or something huge like a Sailaire. Thirty-some years later, I'm still stuck in past decades, flying a Gentle Lady (1980), Electra Lite (1979), and [I] finally managed to build a Sagitta 900 (from 1981 but modified for ALES [Altitude Limited Electric Sailplanes])—all built around the original [*Radio Control Modeler*] plans.

"I especially get a huge kick when I get a really good flight out of the Gentle Lady and my single-stick Kraft radio from the '70s. It's simple, uncomplicated fun.

"Hope to see you at the [Florida Soaring Society] meets!"

I share your passion, Scott. For me, "Sagitta envy" was an emotion I experienced on many occasions in the early 1980s.

Gil Gauger

"After reading your July 2019 article in *Model Aviation*, I felt compelled—as I am sure others will as well—to share a bit of nostalgia myself. I learned to fly, self-taught, on a Goldberg Electra in the mid-1980s, and then dived right into competitive Soaring with a Goldberg Sophisticated Lady. That Lady trophied at my first contest and at almost every contest I entered the next few years.

"In the fall of 1989, my Soaring journey changed immensely when I was asked to serve as [the] event director for the Soaring Nats in Vincennes, Indiana, in July 1990. At the fall planning meeting, I managed—over considerable opposition—to convince the AMA to put up trophies for Hand-Launch as an official event. That proved a success, I believe, [because] we now consider F3K a major part of our sport.

"This year, I am again serving as event director. That makes my sixth time, plus two [League of Silent Flight (LSF)] Nats [competitions] in the 1990s, a job I was happy to take on. As an ironic bit of history, my probationary contest in the process of becoming a contest director was the first event of the 1990 Nats.

"My life changed totally, beginning Labor Day weekend 2017. It began with tingling in my hands and feet and progressed [throughout] the course of a few days to a complete loss of the use of my arms and legs. I was diagnosed with chronic inflammatory demyelinating polyneuropathy (CIDP), or the chronic form of Guillain Barré syndrome.

The Sagitta 900 is a legendary, nostalgic RC Soaring model. This example by Scott Keating keeps those 40-year-old memories alive.

"After four stays in the hospital, two in-patient stays [for] physical therapy, and a long round of outpatient therapy, I began the slow way back.

"At 63 years old, my working career was over. My avocation as a guitarist was over. My Soaring journey was over (or so it seemed). But 8 months later, with assistance, I launched a sailplane in competition at the 2018 Wood Crafters event in Muncie, Indiana, managed to fly a few [Ohio Valley Soaring Series] events, and hobbled my way through the 2018 Nats. I play guitar again and dabble as a troubleshooting consultant for old customers. My life isn't over after all.

"Attached is a photo taken today of my current Sophisticated Lady (which took first place in the 10-minute [Thermal Duration contest] at the 2019 Balsa Flyers event, in blustery wind the first weekend of June [2019 in Muncie]), along with my recently completed Astro-Flight ASW-17 and an ancient estate sale Graupner Cirrus. There is something majestic about flying these old pieces of art.

"I utilized some of my time in the bed and [the] wheelchair to scour eBay, RCGroups, and such, and have started my

Scott still flies his beloved Gentle Lady in Florida contests using 1970s-era Kraft radios, including a single-stick version.

own stash of nostalgic sailplanes, both new-in-the-box kits and existing planes in need of refurbishment. There's a Sailaire, a Bird of Time, and my old Seely Constellation [that is] in need of repair.

"My kit stash includes a Challenger (that [fuselage] construction will require some serious commitment), an Off the Ground Models Prodigy, a Brian Agnew Vertigo, a Terry Edmonds Callisto, and another new-in-the-box Sailaire. On those occasions [that] I feel like reliving some of the early '90s, I can pull out my Falcon 600 and assortment of Troy Lawicki Ducks.

"I have been an Airtronics guy since the beginning, so, with the demise of the brand as a manufacturer for aircraft, I took advantage of the dump on the used market and stocked up for what should last the rest of my ride, with the exception of batteries. Surely three low-time transmitters should take care of my needs.

"Feel free to use any or all included here, and I can't wait to see you again at Muncie."

Thanks for submitting a great story, Gil, and thanks also for your service to Soaring as an official at the LSF Soaring Nats.

An F3J model bristling with sensors and cameras is prepared for test flights by an enthusiastic Dennis Harvey, Ed Dumas, and Team USA F3J's manager, Jody Miller.

2020 Team USA F3J Raffle

A quick reminder to readers: Don't miss out on tickets for the biggest Soaring raffle we have ever had, with the 2020 Team USA F3J raffle. You can learn all about the US F3J team on its website, listed in "Sources." Support the team by purchasing tickets and apparel in the team store.

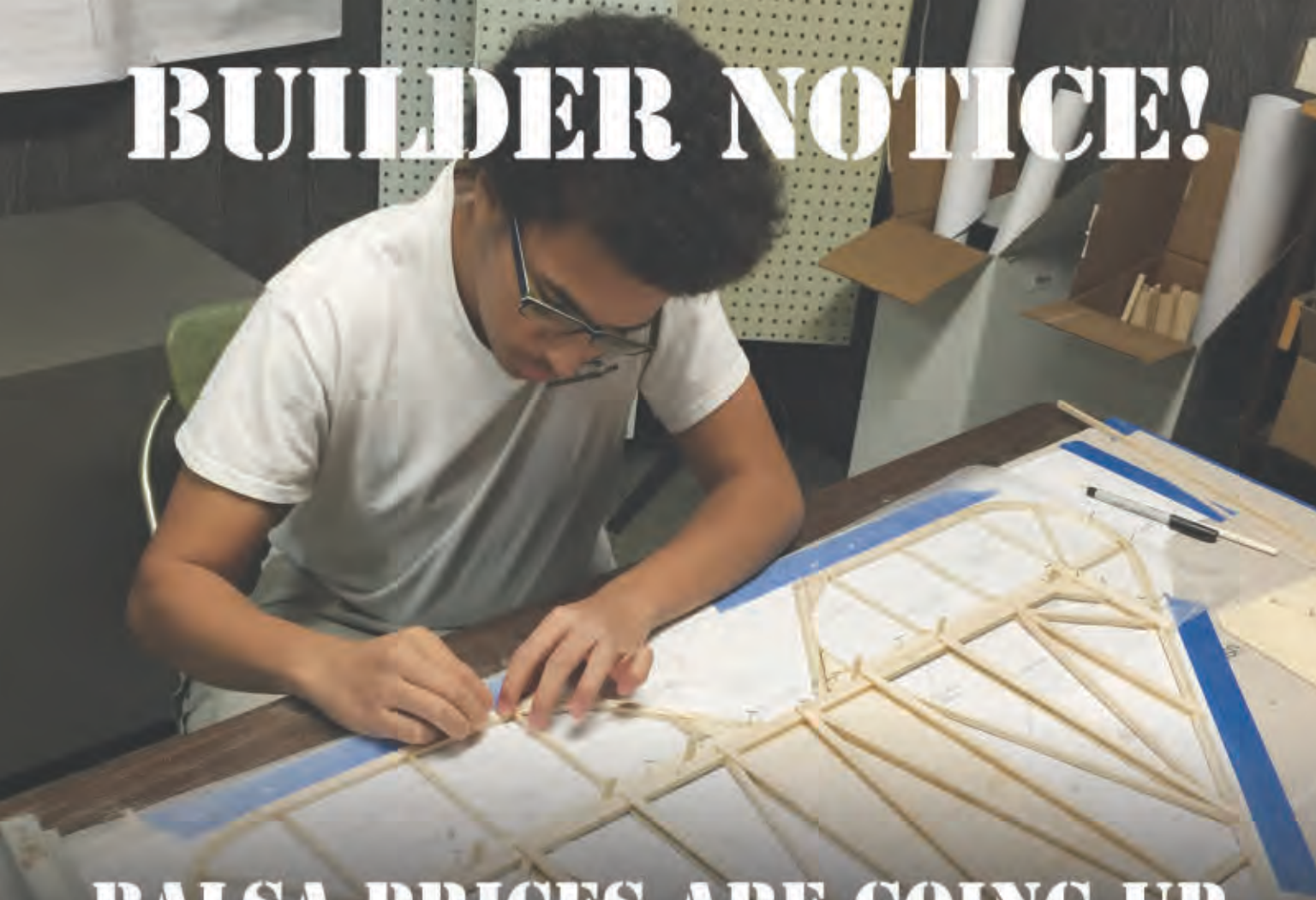
Watch for an upcoming column that includes some amazing details about the work that has been done with sensor data collection by a group of Soaring enthusiasts who are dedicated to the team. A concerted effort is being made to improve many aspects of the USA F3J team pilots' flight envelope optimization.

Until next time, go downwind and soar!

SOURCES:

LSF
www.silentflight.org

Team USA F3J
www.teamusaf3j.com



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Shin Yamaji, of Ann Arbor MI, has a sport jet that is not often seen: a Global Aerojet Sparrow G2 from Global Jet Club. It's a nice airplane that he flies well.

SHOUTOUT TO AMA

By Jim Hiller | jetmodeler@earthlink.net

I WANT TO give a shoutout to the hard work that AMA has done on the Notice of Proposed Rule Making (NPRM) for drones. Yes, I know our model airplanes are considered drones; like it or not, it is what it is, and we can't change it.

I want to also give a shoutout to AMA Government Affairs Director Tyler Dobbs for his informative *AMA Podcast* broadcasts that explain the content of the NPRM, how it affects modelers, and what we can do to support the cause. I hope everyone followed Tyler's lead and responded with comments on the NPRM.

At the time of this writing, a lot of chatter was on the internet. It's far enough along now that cooler heads are in place and we're getting the word out about what we can do to help. I hope all modelers have put forth the effort to protect our hobby from excessive regulation.

Do not be disappointed or surprised if the new rules process is not complete by the time this article goes to print. The Part 103 ultralight rules process dragged on for years, and in the end, received favorable rules for ultralight flying. Ultralight pilots formed a national organization, and their industry organized to support, promote, and provide safe guidelines that the FAA recognizes to this day.

Participate in the process, follow the *AMA Podcast* for information about how we can support each other, and never forget that the AMA is the membership—not just a few folks in Muncie, Indiana. Great things get done by stepping up and volunteering.

Getting Back to Flying

This is the time of year that Northerners get back to flying—all of the winter inspections and repairs are done, and new jet projects are complete and ready for test flights.

I like to start the season by flying some sport airplanes first. In my case, they are my Electric Formula 1 Pylon racers. Then it's on to the jets for test flights. It takes a few flights just to get my thumbs nimble again. I'm sure Southerners don't know what that means.

The variety, size, and performance of the sport jets that are available is unreal, and many new models were introduced in 2019, making the decisions even harder. The advent of reliable, affordably priced, 45-newton turbines has led to an increasing release of smaller airframes to meet the demand.

Large, scale jets just got a boost with the Tomahawk Aviation F-86 that is available in various completion levels. It's no longer just a kit. This sweet jet has me already thinking about next winter's project.

Perfect Takeoffs

I was wandering the internet and briefly visited Budd Davisson's website, Airbum.com. It is a treasure of his thoughts, pictures, flight reports, tips, and general lifetime of aviation. It's worth the time to check it out if you love aviation. He also has wonderful flight reports from a lifetime of writing about a huge variety of airplanes.

I was reading through his how-to and flight training articles and one in particular, "Beautiful Takeoffs," hit the mark. His takeoff tips can help you understand how to make the perfect scale, 10-point takeoff with a tricycle-gear airplane.

What is a perfect takeoff and how does one achieve it? Simply rotate the aircraft during the takeoff roll, with the nose gear off the ground, then let the airplane rise gently. It's easy to state but difficult to achieve.

I put typical takeoffs into three categories: popping-off the ground and climbing away; never rotating as the airplane lifts off the ground; and rotating the airplane, raising the nose gear off the ground, then gently lifting off. The difficulty in a perfect takeoff is that it requires the aircraft design to be matched with the airplane setup while achieving the proper piloting technique. When executed well, it is a display in airmanship.

The rotate and takeoff technique comes from the old adage that airplanes are

With the growing popularity of 45- to 60-newton turbines, smaller models, such as the HSD Viper that is shown, are filling pilots' needs for sport jets. This is a growing segment of the RC jet modeling community.

meant to fly and not drive.

On a side note, back when RC Aerobatics pilots were judged for their takeoffs, the perfect one for a 10-point score required proper rotation followed by liftoff from the ground. It wasn't easy, but with practice, it was achievable.

The first type of takeoff that I mentioned—running along the ground then popping off—is usually the result of poor landing gear placement relative to the center of gravity (CG). The CG is too far forward of the main gear axle.

There are two reasons for this. Either you've set up your airplane so that it is nose-heavy, or the designer set the landing gear too far aft. The first can be easily fixed and will normally make a better-flying airplane. The second problem is more difficult to fix.

Today's modern jet fighters use computers to stabilize the pitch axis and are set up with an aft CG location that requires the landing gear to be located farther aft so that the aircraft don't sit on their tails. The scale jets that have scalelike landing gear locations do not work well with the forward CG that we use to achieve aerodynamic stability.

The second takeoff technique is generally considered a safe takeoff. Let the airplane roll along the ground to achieve ground speed that is more than what is required to fly. This is a good technique for test flights, with plenty of airspeed on liftoff. It's also a good technique for general flying with any airplane that is new to you, or if you have been away from flying for a while.

There are two ways to get into trouble with the second technique. First—which I have seen many times—is when you over-speed the tire rpm, the rubber expands and the tire comes off of the rim.

The other issue that can arise is that the wing lifts the main wheels off of the ground, leaving only the nose wheel on the ground. Now you have a vehicle with all of its weight behind the tire that has not lifted off. It will want to turn around and put the weight ahead of the tire. If you wonder why your jet becomes squirrelly on takeoff, that's normally why.

The fix for a jet that becomes squirrely on a takeoff roll is to simply pull a small amount of up-elevator and put the main wheels back on the ground. It's amazing how much the steering stability will improve as the airplane lifts off.

Finally, a perfect takeoff requires a properly set up airplane with minimal weight on the nose gear. Some models will remain sitting on their tail when you push the tail down. This makes rotation so much easier. I have found that scale 1950s-era jets tend to be capable of some really sweet takeoffs. The scale location of the landing gear, combined with the proper CG, result in a nice landing gear balance.

My technique is full up-elevator from the start of the takeoff roll and the throttle at 60% to 80%, depending on how overpowered the model is. I then steer it straight and watch the nose wheel closely, waiting for the moment that the tire starts to leave the ground. As the nose wheel leaves the ground, I relax the up-elevator and throttle to only 10% to 20%. I try to achieve approximately the same angle of attack that I would have on the landing approach.

It is important to release the full up-elevator as the nose wheel leaves the ground. Should you continue to hold onto full up-elevator, you will stall the airplane as it breaks ground and bad things can happen.

This is not an easy takeoff and not for the faint of heart, but when it's performed well, it is a true beauty and a display of airmanship.

SOURCES:

Jet Pilots Organization (JPO)
www.jetpilots.org

Bud Davisson's website
www.airbum.com

Tomahawk Aviation
https://tomahawk-aviation.com/eu

AMA Podcast
www.modelaircraft.org/podcast

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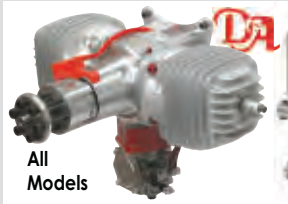

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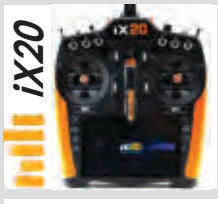

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Left: The meter on the Master Glo igniter can indicate the condition of your glow plug.
Above: This Allen Booth Master Glo glow plug igniter comes with an 18-inch lead and charger.

TO WHAT DO YOU ATTRIBUTE YOUR SUCCESS? (OR HOW COME YOU'RE SO GOOD?)

By Tim Lampe | tim.lampe@hotmail.com

THE BETTER I understand RC Pylon Racing, the more I wonder how elite-level Pylon Racing pilots got to be so good. I'm not looking for speed secrets—I'm just amazed when I watch one of those pilots click off 10 perfect laps, each one identical to the one before it.

I reached out to elite Pylon Racing pilot Jim Allen. I already knew Jim from my time working at Hobbico when I was assigned the in-house development and instruction manual job for the Quik-V6, a Quickie-500 (Q-500) Pylon racer. Jim and I still occasionally email or chat on the phone, and I always seek racing advice from him when we're at races.

During our nearly two-hour phone conversation for this column, the subject that Jim mentioned the most was his refusal to settle for the way a Pylon Racer flies if he doesn't think it's perfect—or at least as good as he can possibly get it. Jim also touched on airplane setup (rudder mixing, wingtip weight, control throws, etc.) and the peculiarities of flying the course, but the conversation kept coming back to testing and tuning as much as necessary to get an airplane to fly virtually perfect.

Jim feels that many pilots get their setup "close enough" then just work with what they have instead of going that extra mile (or 10!) to make it better. Of course, not everyone has the skills that Jim has to recognize a problem in the first place, let alone understand how to correct it. This not only comes from Jim's demand for perfection, but also from years of RC Pylon practice, racing, and experience.

At the time of our conversation, Jim had returned from another testing session at the Speedworld RC Flyers flying field near Phoenix. He said that

he now has approximately 24 flights on his newest Q-40 Caudron and it's finally nearly perfect. He mentioned that he added roughly 1.5% of elevator exponential and a couple of other control throw changes on an equally minute level. I don't know whether most pilots could even tell a difference by adjusting the controls in such small increments, so part of this skill is developing the perception and sensitivity that this fine-tuning requires, which, I suppose, comes with airtime and an analytical approach.

Jim also talked about developing his skills by testing and practicing with other pilots. He specifically mentioned the years of practice he has had with Gary Schmidt, another elite-level Pylon Racing pilot. They can observe the behavior of each other's airplanes and the course around the poles, commenting and suggesting improvements.

Finally, Jim also said that after he gets an airplane flying the way he likes, he records everything about the setup, including the center of gravity, control throws, exponential, mixing, etc., so that the next model of the same design can be set up the same way. I wish I would have done that with my black-and-white Sweet 1 before losing it in turbulent air when it was trailing another airplane at the Nats!

In addition to grinding out test flights, Jim mentioned the importance of basic flight trimming and referenced the trimming notes in the back of the Quik-V6's instruction manual. The link to the manual is listed in "Sources." This trimming/setup information isn't an afterthought, but a process that Jim strongly believes in.

I don't know if his account is helpful to readers. Many pilots have difficulty finding flying sites that are suitable and can accommodate Pylon airplanes for practice, let alone locations where one can practice with other pilots around pylons. I guess this means that you have to make the most of race weekends by getting to the flying site a day or two early (if permitted) to practice and/or tune flights on location.

I don't know how much harder I can work to get my airplanes tuned and trimmed, but I'll keep Jim's approach in mind, and hopefully, it will come with more experience.

Master Glo Glow Plug Igniter

This Master Glo glow plug igniter from Allen Booth is powered by two 2,200 mAh NiCd batteries connected in series with a 30-amp diode and heat sink to drop the voltage down to the 1.5 volts that are

Jim Allen (R) poses with Gary Schmidt, who is holding hardware from yet another race win. This is a tough combination to beat.

required for glow plugs. It has a resettable fuse and a meter that reads the current on the lead.

An 18-inch flexible, silicone-coated lead with alligator clips is included, but Allen noted that the Master Glo can also be purchased without a glow plug clip, or that he could customize the length of the wire and/or attach your own glow plug clip if you sent it to him.

Anderson Powerpole 30-amp connectors are externally mounted to the case with matching connectors on the leads. This makes it easy to customize the length of wire and the clip types should you prefer to do so on your own.

The anodized aluminum case measures 3-5/8 inches tall by 2-1/4 inches wide by 1-1/8 inches thick. I tested several glow plugs to read the meter and the old ones drew nearly 4 amps, while new plugs drew closer to 2.5 amps (possibly indicating the condition of the plug). The price is $60 with the included 250 mAh AC wall charger.

I like the Master Glo igniter because of the aluminum case and the external connectors. I can use my own leads with the twist-on glow plug connector.

Ball Bearing Tool and Engine Stand

I have a little space left, so while I'm on the subject of products, I'll discuss the Triple J Fabrications Nelson/Jett ball bearing tool and engine stand. The tool allows the removal and installation of bearings without heating the case, while the solid steel stand is handy for holding the engine while you work.

The bearing tool is $127.99, and the stand is $27.99. These are found in the Pylon Racing/Accessories section on the Central Hobbies website or are available directly from Jack Hinkel Sr. Hex key sizes of 1/4 inch and 5/16 inch are required for the ball bearing tool.

This Triple J Fabrications Nelson/Jett ball bearing tool and engine stand are handy for working on Q-40 Pylon racer engines.

The ball bearing tool draws ball bearings in and out of the case without heat or damaging the bearings.

SOURCES:

National Miniature Pylon Racing Association (NMPRA)
www.nmpra.net

Quik-V6 manual
http://manuals.hobbico.com/gpm/gpma1250-manual.pdf

Allen Booth
(260) 312-3185
rcflyer39@hotmail.com

Central Hobbies
(406) 259-9004
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Scott Gilkey at the 2013 Nats in Muncie IN. Jennifer Alderman photo.

COMBAT PREPARATION

By William Drumm III | midair72@hotmail.com

YOU HEAR "Start combat!" and your airplane is still sitting on the stand. Now you fumble around and drop your streamer. Of course, it lands right in the only wet spot left on the field. Ugh!

Being rushed and frustrated during the 90-second scramble can be avoided by following a simple preparation routine. In my May 2019 "RC Combat" column, I wrote about being prepared before heading out to the field on contest day.

Preparation is still the key to having an enjoyable day of flying RC Combat. I can't stress enough that getting out to the field early and test-flying your airplanes is the key to starting your contest off right. Take the time to trim each airplane and get the motors tuned in for the day.

After your aircraft are all dialed in, start getting ready for the actual competition. Grab your streamers for the day and attach one to the airplane that you are going to start. Prepare a backup streamer by attaching a string to it and wrapping the string around the streamer to keep it tidy. Make sure you keep the backup streamer in a dry, easily accessible place.

Clear any unnecessary tools out of the way. This will make it easier for you to fix the most common problems during a round. During the meet, I only keep a few handy tools at my fingertips. In the top of my flight box, I keep the following items:

- Spare propeller
- Wrench for the propeller
- Slip-joint pliers to grab the hub on a broken propeller
- Spare glow plug

- Glow plug wrench
- Thrust washer puller if I am using a Magnum XLS 15A engine

Now you are ready for the competition to start. Before every round, make sure your "sticky" is still sticky. If there is dew on the field, your sticky material will get wet and will not snag a streamer in the air. This is especially true if the wet weather flagging tape streamers are being used. Reapply the sticky substance as needed throughout the meet so that you get those precious cuts.

Before each round, inspect your airplane for damage that might have occurred during the previous round of Combat. Move the servos and check to ensure that they didn't strip a gear in the heat of the action and that your hinges are still intact.

Make sure all of the tail feathers are securely attached and a spar didn't break loose on you. Replace any broken rubber bands that secure the wing to the fuselage. Inspect the propeller for any nicks that might have occurred in any midairs. Make sure your fuel tank is still secure and that your fuel lines aren't cut. Then fuel up for the upcoming round.

Most contest directors will give a 1-minute warning and a 30-second warning to start engines. At the 1-minute warning, turn on your transmitter and plug in your airplane. Check your controls and make sure your throttle opens and closes.

Ensure that up is up, down is down, left is left, and right is right. You will be surprised how many times throughout a year I have witnessed crashes because the controls were reversed. Switching airplanes and swapping wings can get tricky. Don't just make sure the surfaces move—make sure they move in the *correct* direction.

At the 30-second warning, attach your fuel lines and make sure your throttle is open to your preferred starting position. Attach your glow igniter and have your starter handy. If your igniter has an indicator on it, ensure that your glow plug is working.

Common repairs only require a few tools.

Backup streamers stay dry in a flight box drawer.

Start Engines!

You begin to get excited and the adrenaline starts pumping through your veins. Don't get frenzied and rush. Taking your time through the 90-second scramble up until the signal to start combat will lead to a more enjoyable day, without the wrong kind of propeller cuts. I'm talking fingers here, folks. If something does go wrong, take a deep breath and fix what needs to be fixed. Losing 40 points for not launching on time is not worth having an accident.

At the "start engines" signal, I begin the timer on my transmitter. I only use a 90-second countdown. My Spektrum transmitter has a beeping countdown, so I can start lining up on my first victim of the round. It continues to keep counting so that I know how much time is left throughout the round.

I grab my starter and start my engine. After the engine is running, I sit my starter down on the side of my flight box then walk around to the rear of the airplane and remove the glow igniter. I run the throttle all the way up and quickly check the needle setting by pinching the fuel line and make any necessary adjustments.

Now I throttle back down so that the airplane is easier to handle while I am walking out to the flightline. I grab my streamer and transmitter in one hand and the aircraft in the other. If you are uncomfortable with launching it yourself, you can always ask someone else to launch it. You can also ask your judge to manage the streamer for you. When picking up your airplane and heading to the line, make sure your string doesn't get caught on your flight box.

I am one of the few pilots who launches an airplane with my left hand. I prefer to have my thumb on the right stick while launching. This has come in handy several times in windy conditions when the airplane was tossed around on launch.

Most pilots are right-handed and it is awkward to throw with their left hand. Most people don't like having the exhaust blow in their faces, but I just love the smell of nitro in the morning!

After you are at the line, make sure to wait your turn to launch. Having multiple airplanes launching at the same time is a recipe for disaster. When it's your turn, step out past the pilot line and launch your airplane into the wind as best as you can.

If the wind is coming straight down the runway from my left, I prefer to launch with my left wingtip slightly higher. This leads to the aircraft being blown up and away from the pilot line. If the left wingtip is down, it leads to the airplane being slammed down into the ground and toward the pilot line.

Now that you are up in the air and your streamer has unrolled, get some altitude and try to stay away from the other airplanes in the air. You don't want to lose your streamer before the starting signal is called and be forced to land and reattach it, but that's why you have a backup airplane ready to go. Take a deep breath now and get ready ...

Now go get those cuts!

Cutcha later!

SOURCES:

Radio Control Combat Association (RCCA)
www.rccombat.com

Merle Mohring's Kawanishi H8K Emily flying boat was flown with four O.S. .26 four-stroke engines and flaps using down-the-line electronic controls. Notice how the wheels for the paved CL circle were mounted into the fuselage and tip floats.

CONTROL LINE FLOATPLANES

By Fred Cronenwett | clscale7@gmail.com

THERE ARE SO MANY types of full-scale aircraft, including propeller-driven airplanes, jets, biplanes, and floatplanes. As a general rule, Control Line (CL) modelers don't usually consider floatplanes because we typically fly off of grass or pavement.

Full-scale floatplanes primarily come in two forms. The first has wheels that can be retracted to land on water or extended to land on a paved runway. The second type is designed to fly exclusively from water and has no provisions to land on grass or a paved runway. The Boeing 314 Clipper, the Short Sunderland, or the Kawanishi H8K Emily flying boat are three examples of aircraft that were designed to fly only from the water.

Some full-scale aircraft, such as the Grumman HU-16 Albatross and the Consolidated PBY Catalina, have retractable landing gear so that they can land on water or a paved runway. The retractable landing gear on these aircraft, however (especially on the Albatross), can be difficult to duplicate in the scale at which we typically build.

If you fly in competition, the rules allow you to put permanently mounted, recessed wheels on a model (*Control Line Scale Rules and Regulations*, Section 7, 7.7, c) so that you can fly from a circle without having any points deducted during static judging. If the full-scale aircraft has retractable landing gear, you will be expected to have the landing gear extended during static judging. If the model has retractable landing gear, you can claim that as two options during a competition flight.

Full-Scale Variations With Floats

Some aircraft, such as the Mitsubishi Japanese Zero, have a land-based version with wheels and another version with floats. The Zero had one central float below the fuselage and wingtip floats. Multiple civilian aircraft also have land-based and water-based versions. A typical full-scale floatplane has two floats.

This is a typical nose wheel on a full-scale float. The gear swings up then retracts back into the float if the pilot wants to land on water.

There are also aircraft with floats where the land-based wheels retract into the floats so that they can land on a paved runway or on the water.

Where to Put the Wheels

In the 1990s, Merle Mohring built his Profile Scale Kawanishi Emily with four O.S. .26 four-stroke engines and flaps. This is an excellent example of how to hide the wheels and still fly off of a paved circle. One wheel is behind the center of gravity, while the forward wheel acts like a nose wheel. Because the model will tend to tip to the side, the vertical height of the wingtip wheels will be important to establish.

Grant Hiestand flew a Fun Scale Macchi M.C.72 air racer in the 1998 Northwest CL Regionals in Roseburg, Oregon, when there was a float pond from which to fly a CL model off of water. This model was adapted with wheels for the 2019 AMA Nats and was flown in CL Fun Scale (see my November 2019 "CL Scale" column). There were four wheels on the aircraft, two in each float. Put them into the float with half of the wheel exposed along the centerline of the float.

The aforementioned rise-off-water (ROW) float pond was used at the Northwest CL Regionals for several years. A half circle was dug into the ground and filled with water. We flew all sorts of CL models from the water. Flying from this water pond was an incredible experience that I will never forget.

One year, I flew my 41-inch wingspan Tigercat on floats off of it just for fun. I don't believe Grumman ever put a Tigercat on floats, but that would have been an impressive sight.

Buder Park 60th Anniversary CL Fun-Fly

Come join us at Buder Park in St. Louis on June 27-28, 2020, to celebrate the 60th anniversary of the flying site. Any CL model is welcome because it is not a contest, but a fun-fly. If you want to put in some practice flights, this would be a good way to get ready for the CL Nats that will be held in July at the International Aeromodeling Center (IAC) in Muncie, Indiana.

On this full-scale Cessna 185 Skywagon, the wheels are built into the floats. They retract, allowing the pilot to land on the water.

Frank Macy's 1950 Super Fireball on its original floats was shown at the 1998 Northwest CL Regionals in Roseburg OR.

The author's 80-inch wingspan Piper Cub is shown on the step for takeoff at the 1998 Northwest CL Regionals float pond.

The dates of the fun-fly were changed to include both Saturday and Sunday. We will also raffle off merchandise and other donations.

Check out the feature article about Buder Park in the September 2019 issue of *Model Aviation* that discusses the history of this flying site.

Closing Thoughts and Contest Calendar

The National Association of Scale Aeromodelers (NASA) Scale Classic is coming back to the Midwest in 2020. It will be held at the IAC on September 11-13.

A variety of contests will be held from St. Louis to Pennsylvania. The Northwest CL Regionals is the only CL Scale contest on the West Coast that I know of. I was unable to confirm whether the Tree Town Modelaires Midwest Regional Championships in Aurora, Illinois, will be held.

The Nats are right around the corner, so remember to register before the deadline because the number of trophies that are ordered depends on how many pilots are registered. Static judging starts on Friday, July 17, at the end of the CL Nats week. If you arrive a few days early, you can check out the action at the other CL circles.

Verify all dates and locations on the AMA IAC Events and Nats calendar before making any travel plans.

- May 22-24: Northwest CL Regionals, Roseburg OR
- June 15-20: Brodak Fly-in, Carmichaels PA
- June 27-28: Buder Park CL Fun-Fly, St. Louis MO
- July 17-19: AMA CL Scale Nats, Muncie IN
- August 1: West Michigan Smoke Rings Scale Contest, Kalamazoo MI
- September 11-13: NASA Scale Classic, Muncie IN
- September 19: Broken Arrow CL Stunt and Scale, St. Louis MO

Land softly!

SOURCES:

Seaplane Landing Gear demo. Gear up for water landing ... YouTube video
https://youtu.be/Pk5itDKwWVs

Control Line Float fly YouTube video
https://youtu.be/N3yd-8vjES4

Control Line Scale Rules and Regulations
https://bit.ly/379g7Sy

NASA
www.nasascale.org

Flying Lines: News of Northwest Control Line Model Aviation
www.flyinglines.org

Lafayette Esquadrille CL Club
www.lafayetteesquadrillecl.wordpress.com

AMA Event Calendar
www.modelaircraft.org/event-calendar

AMA Foundation Endowment

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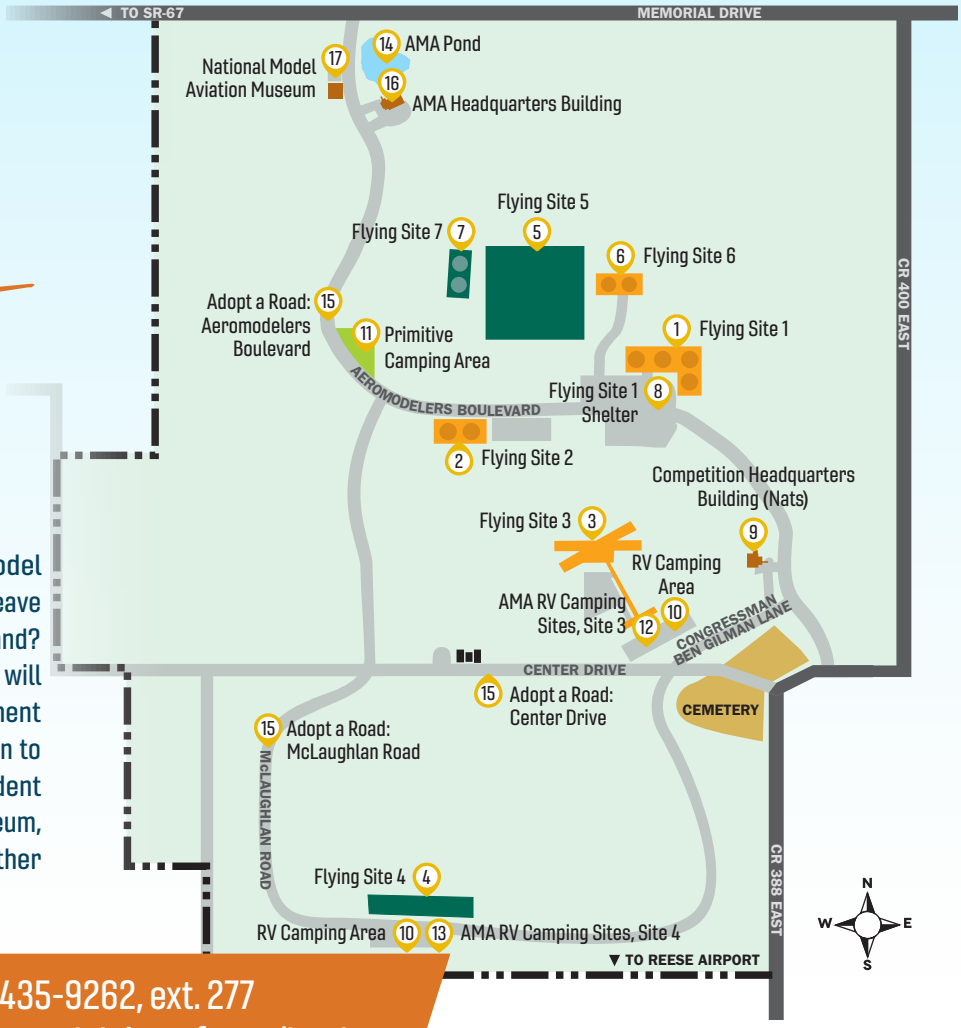
The AMA Foundation is excited to offer model aviation supporters the unique opportunity to leave a lasting legacy through its Where Will You Land? campaign. Money raised through this campaign will directly benefit the AMA Foundation Endowment Fund. This fund will create a long-term solution to support programs related to education, student scholarships, the National Model Aviation Museum, AMA's national flying site, club grants, and other related programs.



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The 2020 AMA Indoor FF Nats will return to the Round Valley Dome in Springerville AZ.

INDOOR FF NATS

By Don Slusarczyk | don@slusarczyk.com

THE INDOOR FLYING SEASON is well underway, and for those who are looking for more competition this season, there is still time to make it to the 2020 AMA Indoor Free Flight (FF) Nats.

The Indoor FF Nats will be held once again at the Round Valley Dome in Springerville, Arizona. The dome is approximately 99 feet high and 440 feet in diameter. This year, the contest will be five days long, running Wednesday, May 27 through Sunday, May 31.

Many AMA and Flying Aces Club (FAC) classes will be flown at this event, so if you can attend, it is worth making the trip to fly at this site. Check out the AMA and National Free Flight Society (NFFS) websites for registration forms and the contest schedule.

AMA Rules Cycle

The initial voting by the Indoor Contest Board for the current Indoor FF proposals is due by May 1. Several proposals have been submitted that cover several Indoor FF topics. The first regards the use of a "whisker," or ceiling bumper, in Limited Pennyplane.

The second is in regard to the interpretation and limitations of the Builder of the Model rule for AMA Indoor FF classes. The third proposal is a clarification of the building contents for ceiling height determination, and the last one deals with timing when models collide.

I urge all fliers to visit the AMA website, read the proposals, and participate in the process. Proposals that have passed the initial vote are then opened for cross proposals. Cross proposals can be submitted online to the AMA from May 31 until July 15.

AMA National Records Application Fees

The AMA Executive Council approved a $25 processing fee for AMA national records. This fee is per record, so if you set multiple records in one day, $25 needs to be submitted with each application you send in.

Also new this year is that if you are paying the fee by credit card, the record application can be scanned as a PDF and emailed to AMA. If you are paying by check, or you do not have the ability to scan the record form, you can still mail it as before.

This new policy went into effect on January 1, 2020. The revised record forms are on the AMA website, and all previous record applications are now obsolete, so please discard any that you might have and download the new three-page form.

The Micro Cementeur Glue Bottle Is Back

When I first started building Indoor FF models in 1984, the Micro Cementeur glue bottles were the only glue bottles that my dad and I used. The angled spout and micro opening allowed for precise gluing. We had several of them filled with different glue mixtures. Some were thick viscosity, some thin, some with plasticizer, and some without, depending on what we were building. It has been years since I had one.

Imagine my surprise when I saw that they are now available again for purchase. Thanks to a collaboration with Jim Buxton and Dave Lindley, they can now be purchased online at Indoor Free Flight Supply. The link is listed in "Sources."

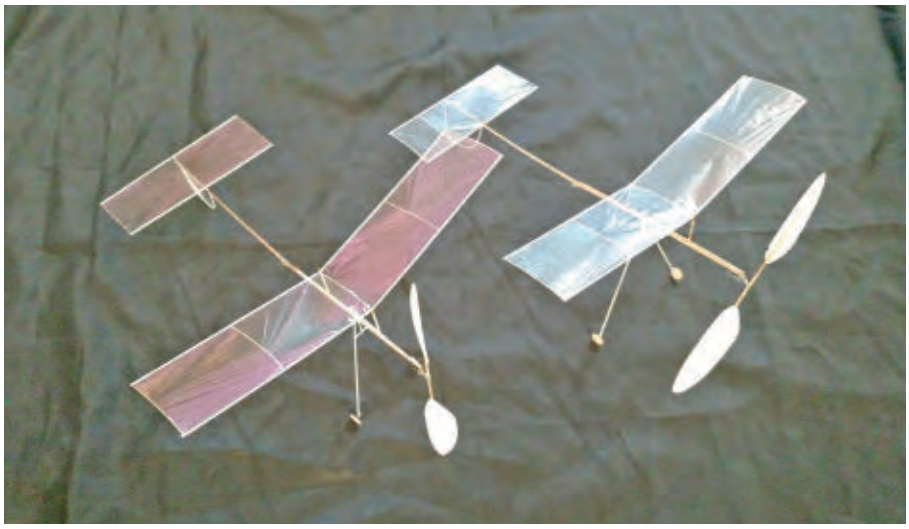
A Classic AROG

I have always been a fan of Old-Timer Indoor FF model designs from the 1930s and 1940s. When Josh Finn posted a photo of his recently built 1942 AROG replica, I had to find out more information.

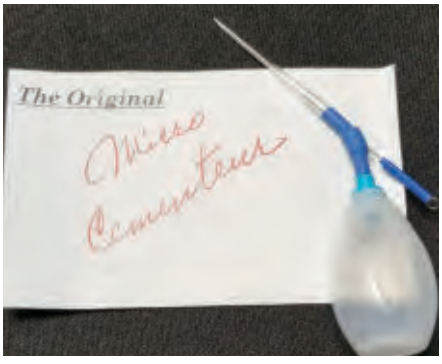
For those who do not know, AROG is one of the oldest Indoor FF classes. The rules are simple. A-class models have a maximum wing area of 30 square inches. The ROG stands for rise-off-ground, so the model must have wheels for a rise-off-ground takeoff.

The model that Josh built is called the EZ ROG and originally appeared in a 1942 issue of *Flying Aces* magazine. Josh's version is covered with modern plastic instead of microfilm and has a flying weight of 500 mg with the all-wood balsa propeller. I really like the classic look of this model!

Josh also sent along some photos of an AROG that his wife, Hope, built. It is a simplified design for those who want to get into flying in the AROG class. The model is capable of 7- to 8-minute flights and is easy to build. If you are interested in trying this



A pair of J&H Aerospace AROG kits that were built by Hope Finn fly 7 to 8 minutes.



The Micro Cementeur glue bottle allows precise control of the glue drop size, as well as placement. Photo by Dave Lindley.

Josh Finn's replica is of the EZ AROG from a 1942 issue of *Flying Aces* magazine.

class, contact Josh at J&H Aerospace for details about kits for these models.

1962 World Indoor Model Championships Nostalgia

While on the topic of Indoor FF nostalgia, I recently found some interesting items on eBay from the 1962 World Indoor FF Model Championships. I was able to get a banner, a banquet invitation, and a banquet menu.

What really caught my eye was the back of the menu, which is full of autographs. The 1962 Indoor FF World Championships were held in Cardington, England, and the world champion that year was Karl Heinz Ricke with flights of 45:40 and 43:08. His model featured elliptical dihedral and weighed 0.955 gram, flying on 1.25 grams of Pirelli rubber. I wonder how that airplane would perform with modern Tan rubber.

A few weeks later, I was able to also find the Winter 1962 issue of *AeroModeler* on eBay, which had full coverage of the contest. All together it makes for a nice piece of Indoor memorabilia.

Until next time, keep the weights down and the times up!

A collection of 1962 World Indoor FF Championships memorabilia was found on eBay. The autographs of many famous Indoor FF modelers are on the back of a dinner menu from the 1962 World Indoor FF Championships.

SOURCES:

Indoor Free Flight Supply
indoorffsupply@outlook.com
www.indoorffsupply.com

J&H Aerospace
www.jhaerospace.com

NFFS
www.freeflight.org

AMA Nats
https://amablog.modelaircraft.org/nats

FAC
www.flyingacesclub.com

AMA NATS

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RC Pylon: July 12-18
Control Line: July 12-18
CL/RC Scale: July 16-19
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Outdoor Free Flight: July 27-31
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Listed are people and organizations that donated $10 or more in February 2020. These donations are earmarked for AMA's programs, the National Model Aviation Museum, and the International Aeromodeling Center. If your name is not listed, or if you have any questions, contact AMA Foundation at donations@modelaircraft.org or (800) 435-9262, extension 277.

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Eric Sacher - CO - $100 - AMA Scholarship Fund in memory of Eric Sacher

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Donor levels represent only individual donations made in February 2020. Some donors may qualify for the next donor contribution level based on cumulative giving.

AMA Foundation

WHERE WILL YOU LAND?

By Dan Bott, AMA Foundation Board Chairman | daniel_bottsr@ml.com

The Academy of Model Aeronautics established the AMA Foundation to assist with efforts beyond its membership offerings—programs concentrating on the growth and sustainability of the model aviation hobby as a whole. Expanding our mission, the AMA Foundation has established an endowment fund to augment our annual donors' gifts by enhancing the resources to secure perpetual funding of current programs and allow for additional programs.

The endowment fund is invested for long-term growth with the annual income directed to fund existing and new AMA initiatives that grow and support the hobby. The AMA Foundation Endowment will create a long-term solution for funding of programs related to education, student scholarships, the National Model Aviation Museum, AMA's International Aeromodeling Center (IAC), club grants, and other related programs.

The endowment growth is built through large, direct contributions, legacy giving, planned giving, and estate bequests. Our newest opportunity, Where Will You Land?, is a naming rights campaign offering an opportunity to put your name on a flying site, building, or another high-recognition asset of your choosing—all located at the IAC in Muncie, Indiana.

In addition to having your name on the location of your choice, each landing spot purchased will be shared on the AMA Foundation website and our robust social media. Gifts of $10,000 or more will also qualify donors to be included in a special donor edition of *Model Aviation* magazine in 2021.

As an example of how this will be presented, instead of referring to an event occurring at Site 3, it will be "Your Name" flightline. Watch one of our latest videos introducing the naming rights campaign at https://youtu.be/8FDokOozZPc.

To introduce this program, we are launching a direct mail campaign that will send 18,000 letters to past donors, hobby industry companies, advertisers, and large corporate sponsors.

In this issue of *Model Aviation*, I am sharing an initial glimpse of our naming rights program, Where Will You Land? This campaign will provide an opportunity for passionate individuals, hobby companies, and corporate donors to select from an attractive array of naming opportunities to memorialize their passion for the hobby and/or corporate donors to expand their brand.

Today is a perfect time to consider how you will put wings on your legacy. One way will be to choose the Where You Will Land? program with your name at the IAC. We invite you to explore offerings and then speak with our team to take advantage of one of the opportunities. Visit www.modelaircraft.org/land to see a sample of options from which to choose.

Dan Bott is an AMA Life member (L22) and an AMA Foundation Heritage Society Donor Member. Professionally, Dan is a four-decade-long financial advisor who can be reached at daniel_bottsr@ml.com.

I

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District I

Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont

Thank you to all of the AMA members who submitted comments in opposition to the FAA's notice of proposed rulemaking (NPRM) for Remote ID of UAS.

On February 14, 2020, District I members received an email from me titled "Last Chance to Save the Hobby." It described the issues or concerns that AMA members would face if the NPRM was passed. I urged members to submit comments opposing the NPRM that related to the unwarranted, burdensome, and restrictive rules that would impact the hobby for them.

We needed help to get the comment count up to 25,000, but through the efforts of the AMA and its members, in two weeks we doubled our expectations with 53,208 total comments!

Within a few days of the FAA's release of the NPRM, we created a four-page summary of Remote ID to explain the technology's equipage, design, and performance requirements. We also created an eight-page Comment Consideration document to describe what members would no longer be able to do if the NPRM were passed. The documents, along with templates and instructions for posting FAA comments, were added to the District I website.

Joe Pangborn, president of the Rhode Island Aeromodelers, invited me to talk about the main concerns AMA has with the NPRM for Remote ID.

AVP Tom Rocheleau and I spoke at the RC Propbusters meeting in Connecticut about NPRM issues and commenting to the FAA.

AMA members and officers from four AMA clubs attended the FAA NPRM meeting hosted by the Burlington RC Flyers in Massachusetts.

Pictured with me and club president Howard Samuels (fifth from the L) are several AVPs along with club officers of the Burlington RC Flyers.

In the months that followed, I was invited, along with local associate vice presidents (AVPs) Daren Hudson, John Yassemedis, Steve Brehm, Steve Goler, and Tom Lavoie, to discuss the NPRM with the Charles River RCers, Burlington RC Flyers, Rhode Island Aeromodelers, South County RC, and RC Propbusters clubs. Other clubs had members at the meetings.

We handed out copies of the documents we created and discussed reasons for exempting Remote ID for line-of-site (LOS) flying at FAA-Recognized Identification Area (FRIA) sites, for opposing the phase-out of FRIA sites, for not obsoleting current RC systems for Remote ID integrated systems, for eliminating dangerous geofencing, for utilizing a nonintegrated broadcast module for multiple UAS, for only individually registering UAS capable of beyond LOS flying, and more.

Howard Samuels said it best when he thanked us all for convincing the members of the urgency and importance of commenting, and provided the tools to maximize the impact.

Check out the comments that AMA, AOPA, EAA, and some of us made at www.amadistrict-i.org/com. The fight for a revised NPRM is not over as we continue to influence members of Congress!

District II

New Jersey, New York, Europe

Members of District II's Top O' New Jersey R/C Club celebrated one of their own recently when long-standing club member and noted modeler, Frank Fanelli, was presented with a Life Achievement Award sponsored by the Cloudbusters Model Airplane Club of southeast Michigan.

The Cloudbusters' award is historically presented for achievements and significant contributions of individuals, made over many years, in model or full-scale aviation.

The Cloudbusters award was initiated in 1990. In subsequent years, between one and five awards were made until 2008 when it fell into hiatus.

Numerous well-known personalities have received the award including William Bishop (Comet), Al Bladder (designer and competitor), Joseph Dallaire (manufacturer), General James Doolittle, Dave Dulaitis (designer and competitor), Dave Scott and Bob Thompson (cofounders of the Flying Aces Club), James H. Stewart (military aviator and actor), Dr. Walter A. Good, Earl Stahl, Edward Packard (Cleveland), Dave Platt, Henry Struck, and some world-renowned full-scale aviators such as Neil Armstrong, Robert A. (Bob) Hoover, Burt and Dick Rutan, and Jeana Yeager.

The Cloudbusters revived the award in 2020. This year, the committee selected four people to receive the honor: John G. Brodak (Brodak Manufacturing, Control Line), Lee Campbell (Campbell's Custom Kits, Free Flight), Lloyd Shales (designer, manufacturer, distributor, and teacher), and Frank.

Top O' New Jersey club president, Pat Rizzuto (L), presents Frank Fanelli with his award.

Frank has always given his time and talent to help new fliers as an instructor as well as providing guidance in model construction and radio control systems. As an editor with *Flying Models* magazine for many years, Frank was able to share his passion for the hobby with all of the modeling community with timely articles and instructional features concerning our ever-changing hobby.

Frank was one of the first influential members of our hobby to recognize the importance and inroads that battery-powered flight was making. He brought this major change in our hobby to the attention of readers throughout the country. Frank is retried now, but he still plays an active role in the hobby and continues to be recognized as an influential member of the flying community.

Thank you, Frank, for your many contributions.

Michael Geller is the youngest member of the Top O' New Jersey R/C Club. He was voted into the club last fall. Although Michael is only 8 years old, he is already an accomplished pilot, flying all sorts of airplanes under the supervision of his dad, noted pilot Scott Geller.

It's wonderful to see young people in the hobby, especially father-and-son pilots such as Scott and Michael.

Remember, it's not about what you fly, it's about the friends you make.

Club secretary Anthony Curcuruto (R) welcomes new member Michael Geller.

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District III

Ohio, Pennsylvania, West Virginia

This month, I want to discuss the role of AMA associate vice presidents (AVPs). These people are:

- Not an elected office
- Appointed by the respective district vice president (VP) to represent a specific geographic area or specific group of clubs
- Must be an AMA Leader Member
- Is the liaison between the district VP and members in your assigned area
- Provides periodic reports to the district VP about activities in your assigned area
- Might be selected to represent the district at an AMA Executive Council meeting in the event the district VP is unable to attend
- Requires travel as directed by the district VP

Allow me to introduce a new AVP for the state of West Virginia. His name is James "Jim" Butler from St. Albans, West Virginia. I asked Jim to provide some background on himself.

"I am a lifelong model railroader, but always had a desire to try my hand at flying RC. In 2011, the year after I retired from law enforcement, my wife got me a HobbyZone Super Cub for Father's Day. That simple foamie made me realize just how much fun flying RC can be. Of course, now when my wife comes down to our basement and looks around at the many airplanes hanging from the ceiling, she just rolls her eyes and mutters, 'I have no idea what I was thinking.'

"I enjoy taking foam airplanes and vinyl wrapping them to look like a specific aircraft. Many of my models are decorated to represent airplanes with a local tie, such as West Virginia Air Guard airplanes or those flown by West Virginians. I tend to gravitate to scale or scalelike warbirds and general aviation models; however, I appreciate a good-looking aerobatic aircraft and I enjoy watching talented pilots fly helicopters.

"I am the current president of the Mountaineer RC Flying Club in Tornado, West Virginia. I have a strong appreciation for the AMA and the job it does in representing members during what seem to be uncertain times. Like most members, I consider it a part of the hobby, and a fun part, to help present the best possible face of model aviation to the public."

Thank you, Jim, for stepping up to help advance model aviation in West Virginia. I have seen many of Jim's vinyl-wrapped aircraft and I can tell he does a superb job of making a plain foamie look like a scale replica.

I urge District III members to contact the AVP for your area with any issues that might need AMA assistance. The AVP contact information is always found on the left side of this column. We will all do our best to help you.

Temporary Flight Restrictions, or TFRs, are becoming the norm, particularly in a presidential election year. Several Pennsylvania clubs have TFRs throughout the year because of their proximity to President Donald Trump's residence in New Jersey.

I received an email from Eric Fagan concerning his club's many TFRs. The club made a sign that is displayed whenever there is a TFR affecting its flying field. Great idea! I would encourage any club affected by a TFR to post a similar sign at the field.

Until next month, fly safely and have fun.

District IV

Delaware, District of Columbia, Maryland,
North Carolina, Virginia

I want to thank all of our members for responding to AMA's Call to Action and submitting comments to the FAA. We anticipated breaking our previous NPRM record of 19,000 comments in 2014, but you all really got behind this and submitted more than 52,000 responses!

The AMA was worried that with so much misinformation out there many people wouldn't bother, but you came through. It is going to take the FAA quite some time to come out with another proposed rule or final rule—it could take years! Please believe that the AMA is continuing to do everything in its power to work out the best solution possible to preserve our privilege to fly now and each day forward.

For up-to-date, real information, please go to the AMA Government blog at https://amablog.modelaircraft.org/amagov.

What are we going to do now? Go fly and have fun safely just as we have for the last 84 years. By the way, this is most likely not the last time we will need you to do this.

Mid Atlantic Dawn Patrol 2019 by Associate Vice President Rick Cawley:

When fall arrived in 2019, and the days were getting shorter, that meant only one thing. It was time for the Mid Atlantic Dawn Patrol in Virginia Beach, Virginia, in October.

We arrived on Wednesday and the temperature was in the mid-90s. Hot is a word that comes to mind—hot enough that I was glad I brought two fans that hung from my canopy frame. By Friday the temperature came down and the wind increased.

Sal Calvagna and his Ilya Muromets.

The aircraft that showed up at this year's event were great. We had a Sikorsky Ilya Muromets (1913-1922), the first four-engine bomber designed by engineers led by Igor Sikorsky. The model was built by Sal Calvagna and was an incredible feat with so much detail you just kept looking at the quality build and well-deserved Best of Show recognition.

I was impressed to see a 1/3-scale Stearman built by Dennis MacCallen powered by a Moki radial engine and a Bücker Bü Jungmeister powered with a Saito radial built by Carl Becker, just to name a couple.

Dennis MacCallen's Stearman.

Carl Becker and his Jungmeister.

On Saturday, the Military Aviation museum scheduled a World War I air show for spectators but because of the wind, the participants decided to fly World War II heavy-metal airplanes instead. You can't go wrong with plan B. The sound of radials flying by in Corsairs, Mustangs, P-40s, Fw-190s, and more, is a fantastic experience. You do get a great value when you register as a pilot with all the flying you want and free access to the museum hangars, plus access to the air show.

Contest director Mark Ward and the members of the Tidewater RC club did a fantastic job putting on the event. This is a great venue for RC and full-scale aviation.

Go fly and have fun safely.

IV

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District V

Alabama, Florida, Georgia, Mississippi, Puerto Rico, South Carolina, Tennessee, US Virgin Islands

I'm writing this as the Remote ID NPRM is drawing to a close. It went down to the wire, but it looks as though we topped 50,000 comments! This is an awesome response considering the numbers of comments on previous issues that had a longer comment period. Great job to our members and great job by the AMA Headquarters staff of getting out videos, podcasts, emails, and social media posts!

On to more cheerful matters.

I want to welcome my new associate vice president in the Fort Myers, Florida, area. Joe Dolliver is a Leader Member, club officer for the Cape Coral R/Sea Hawks, an active member in the modeling community, and most importantly, I found out at the Perry, Georgia, Southeastern Model Show that his wife makes awesome cookies!

More good news: We have some great clubs in our district that take the time and effort to reach out beyond the borders of their flying fields and into the community to spark interest (and hopefully fan the flame!) in our awesome hobby. Word of this outreach fills my email inbox each month and I hope I have the time and space to mention each one.

One such club getting out and doing things is the Can-Am Flyers located in Zephyrhills, Florida. The club was recently invited to share its love of all things model airplane by participating in the 2020 Florida State Fair.

The club members came up with a professional quality display case with lighting, informational panels on the club and the history of model aviation, and a carrier for handouts. Although not very large, it was an excellent utilization of the allocated space and was likely seen by hundreds of people. Hopefully it inspired a few!

Another club in the district doing a fantastic job is the Imperial RC Club in Mulberry, Florida, near Lakeland. Many know them as the "folks in the gold shirts that manage the flightline" at Frank Tiano's events such as Florida Jets and Top Gun. The members also host events at their club field.

I attended the Florida eJet Fest International on February 7-8, 2020, at the club's field and had a wonderful time. Contest Director Jerry McGhee used Air Boss Sean Gallagher to manage the busy departures and arrivals associated with the relatively short flight time of electric jets. Fun contests (that had little impact on open flying), sponsor prizes, and good food service combined for a great event and it showed. This was the second year for the eJet Fest and it grew from 18 pilots the first year to 47 this year!

Gavin Street, age 14, flew his E-flite F-16 every time I looked out on the flightline. What a nice young man from a great family!

The Can-Am Flyers of Zephyrhills FL had this great display at the Florida State Fair.

Team BVM was in the house at eJet Fest in Mulberry FL with these gorgeous composite electric jets. Pictured are Enrico Traby (L) from Premstätten, Austria, and BVM's Rob Lynch from Deltona Lakes FL.

This E-flite Phantom II was repainted and won the Best Scale Jet competition by the father-and-son team of Rich and Matt Moore from Pembroke Pines FL.

District VI

Kentucky, Illinois, Indiana, Missouri

Whoo-hoo! May Day is just around the corner. For me, this is the best time of the year. My hometown club always has a fun-fly on my birthday, with a large turnout and lots of camaraderie!

The first submission this month is by Phil Bean:

This year is off to a flying start at the Rend Lake RC club (RLRC). There was fly-in on January 1, 2020. We have had indoor fly-ins with more scheduled and the Warbirds Over Rend Lake is scheduled for September 19-20.

Opportunities to promote flying to youth are numerous. RLRC sent a teen girl from our club to camp AMA the previous two years and she enjoyed it greatly. The club received an AMA TAG grant for two E-flite Apprentice trainers that have gotten a lot of use in intro flights for beginners.

Another program I want to bring attention to, started by EAA, is called Build and Fly. This package deal is offered by the EAA in partnership with model manufacturers and distributers. It consists of a kit, tools, covering, radio system, adhesives, a flight simulator, a field box kit, and a complete electric power system with batteries for only $500. EAA Chapter 1155, in Mt. Vernon, Illinois, has this program underway, with construction started by local youth working two hours on Saturday evenings.

This past weekend (as I write this), there is an area that doesn't drain well and holds standing water. When life gives you lemons, make lemonade. We had five water takeoffs by two airplanes on floats and one amphibian model.

Next is from Mike Cerveny of the Illinois Valley Remote Control club in Peru, Illinois:

Many people have been members for decades and are still fascinated by the hobby. Jim Pagani has been active with the club going back decades. He has been the club president and headed up many projects. His knowledge of the sport is extensive and he shares it with all. These days he is our senior instructor.

One of Jim's personal projects was building a P-38 airplane that is a sizable and accurate model of the aircraft. Using Nick Ziroli plans as a starting point, it took him 8 years to build the 114-inch wingspan P-38. The finished airplane weighs 51 pounds. He invested more than $4,000. The P-38 was test-flown in 2018.

The gentleman who built this plane is Jim Pagani (L). He is 89 years young!

The last submission is from Frank Noyes of the Lake Ozark Radio Control Society (LORCS). Many clubs have great fliers. A few have inspirational fliers. The LORCS has Brian Stark and he fills the bill on both counts. Brian started flying RC in 1989. He was injured in an industrial accident that left him a quadriplegic. This caused a 27-year absence from flying.

Brian started back in the hobby in 2017. Flying from his wheelchair, he has become an accomplished pilot. He began flying with an E-flite Carbon Z Cub. In his words, "something big and slow." Lately he has taken on learning 3D flying.

He has had help from family to accomplish this, and uses a specially modified DX9 transmitter with extended sticks and a pair of gloves with tubes attached to them that slide over the sticks to control his airplane. Brian is an inspiration to all who see him fly.

You can't help but be amazed at what Brian Stark has accomplished. He has proven that a disability doesn't have to stop you from enjoying this great sport of ours.

Remember, to see your club in the magazine, simply send me a submission of your club's event from this past year! I encourage you to email me at amadistrictVI@modelaircraft.org with the word "magazine" in the subject line and attach some pictures! Don't forget to introduce someone to model aviation!

VI

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District VII

Iowa, Michigan, Minnesota, Wisconsin

Hello again. After writing this column for the past eight years or so, it's easy enough to begin repeating myself. Most of the time, it's unintentional, but in this case it's worth repeating.

Regardless of your view of the world, none of us are getting out of here alive. It might not be the easiest subject to talk about, but it's at least some serious food for thought. Too often I get a call from a deceased member's family for advice on what to do with their loved one's models and equipment. In most cases, they have no idea of the value or even if it's treasure or trash.

For sure, it's no secret that there's a big difference between what you think it's worth and what someone is willing to pay, so first you might as well make your peace with that. One way to help your family out is to get with a trusted modeling friend (while we're still on the right side of the grass) and talk things over about what to do once you're gone. It can save your family a lot of heartaches and headaches at a difficult time.

Another good option is to pay it forward and pass your equipment and models to a fellow modeler who has had some bad luck and has nothing to fly. Most of us who have been in the hobby for a time have plenty of things laying around gathering dust. I'm sure you'd find it more rewarding to see them being used again.

COVID-19

As I write this column, we're now hearing more information about the COVID-19 virus. Many of our day-to-day activities are rapidly changing with closings of schools, our work, restaurants, and other things.

Please take all precautions in your daily activities. Many of us are of the particular vintage that are the most vulnerable.

It's also probably not news to you that what would have been the 66th Toledo Expo was also canceled this year because of bans on public gatherings.

The good news is that plans are already underway for 2021. The 66th will now be April 9 through 11. Save the dates.

I've included a few of my favorite pictures from last year's Toledo event for your enjoyment!

Take a kid flying!

District VIII

Arkansas, Louisiana, New Mexico, Oklahoma, Texas

Get out and fly! Check the District VIII website for the latest contest information: https://amadist8.com.

Greg Skinner, from Oklahoma, and Patrick and Mimi Mason, from Texas, at an event in Wichita Falls TX.

The 2018 National RC Scale Helicopter Champion, Nat Scallon, is a member of the Chisholm Trail RC Club in Oklahoma.

Richardson RC Club members include Mike Smith, safety officer; Phil Voight, vice president (VP); Rhett Lambert and his father John Lambert; John Williford; and Allen Delger. Rhett is the 2019 IMAC Advanced and Freestyle National Champion.

At the Model Aviators of South Arkansas swap meet were club officers Jason Cunningham, treasurer; Vince Stanton, president; associate vice president (AVP) Gary Strickland; Brian Crittenden, secretary; Lloyd Greer, VP; Norm Faith, safety officer; and AVP Stan Kopreski.

Texoma RC Modelers Club VP John Flanders; Ray Sledge; and John McDonald, secretary. Front: David Taylor, president, and dad Kenneth; Dan Powell, safety officer; and Chris Moore, board of directors.

Carl and AaRahn Steward at Bomber Field in Texas.

Pilot Derrick Martin, of Amarillo TX, and Ahsan Shams, of Baton Rouge LA, at the HOTMAX Jet Fly in Waco TX.

VIII

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District IX

Colorado, Kansas, Nebraska, North Dakota, South Dakota, Wyoming

During the winter months in District IX, indoor flying is sometimes the rule, not the exception. One indoor event that has shown steady growth during the past few years is the Red River RC Flyers event in the Red River Valley of North Dakota/Minnesota. Here's a report from event coordinator Brian Dorff.

Our club's indoor event, The International, had roughly 50 pilots from North Dakota and Minnesota, as well as Canadian pilots from north of the border in Manitoba this year. Now in its third year, this is becoming a true destination event. It was a busy day!

All aspects of our shared hobby are represented from slow flyers to 3D; fixed wing to heli; and FPV quads to Free Flight rubber power. The facility is big enough that the Free Flighters' area and the FPV course are a safe distance from the main RC flightline. The venue is the University of North Dakota's football practice facility, which gives us a huge area in which to fly and a ceiling that exceeds 60 feet running the entire length of the building.

The International is complete with several RC companies having booths to demonstrate products, including 30-minute technical seminars from presenters showcasing new technology in the industry.

Each year, we try to give the participants something different to try. Last year, we organized a paper airplane contest with the first prize being an RTF aircraft. This year, we went an entirely different route with a slow-flyer-only pylon race. What a hoot! Lots of smiles went with the wingtip-to-wingtip action. We added a few more heats because the pilots wanted to go again and again!

Traditionally, we take another timeout in the flying for a mass hover event, offering a lot of photo opportunities for the 60 or so spectators.

There are many reasons to come to North Dakota in the winter, but this might be the best one. Hope to see you in Fargo next year!

Above: Aaron Newton, from Sioux City IA, won the 2020 Winter Photo Contest with this picture that just makes you feel cold looking at it. An AMA windsock is on the way to his chosen club.

Left: Members of the University of North Dakota racing team spent the day preparing for the upcoming Collegiate Drone Racing Championships to be hosted by the University of North Dakota.

A few of the 50 pilots who shared the University of North Dakota's practice facility for The International. Photos by Tom Scherer.

District X

Arizona, California, Guam, Hawaii, Nevada, Utah

I wanted to do a wrap-up of the 2019 AMA Expo West. This was the last Expo in this format.

I was sad that this was the last Expo. I always enjoyed going to and seeing the latest developments in our sport. The trade show was never profitable for the AMA and was frequently a drain on our resources. For that reason, the decision was made to end the event as it existed.

My would like to start a new event: an AMA Expo West 2.0. This will be primarily a flying event held at the San Gabriel Valley Radio Control League and Knights of the Round Circle fields in Whittier, California. The location should be convenient for members in Southern California, and I hope folks will come from outside of the area to attend.

We'll be able to do both RC and Control Line flying at the event. I hope to convince some of the past Expo vendors to attend and display their products and conduct demos. This gathering will be November 6-8, so please hold the date.

I'll have more information in the next few months. I hope we can grow this into an all-new event for our members.

Please enjoy some of my favorite photos from the 2019 Expo.

Until next month, I wish you all happy landings.

The Expo had a static display competition and this Beechcraft Bonanza, built by Karl Swope, caught my eye.

This Bulldog made some great low-altitude aerobatic passes.

Jack Cruttenden shows off his Coast Guard twin.

Michael Edwards, from the Livermore Flying Electrons, with his favorite electric ducted-fan aircraft.

Right: This was a beautiful 1/5-scale 1941 Luscombe Model 8A.

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District XI

Alaska, Idaho, Montana, Oregon, Washington

Hi all. I hope you are all out flying. I'm writing this at the end of February and in the Northwest it is feeling like spring and I want some outdoor action.

I haven't stopped building the Der Jager, but sometimes I get a little distracted!

The second wing panel of the Der Jager is under there somewhere!

I know we've had a lot of rule stuff going on and it gets to us. Most of us say "We've been doing this safely for years, why do we need to be affected?"

We are good at what we do, and we haven't changed, but the world has. That will force us to change. My advice is to keep in touch, understand what is happening, and let your concerns be known. You all did a great job commenting on the FAA proposed rule for Remote ID. We will see results from your efforts. Keep this up and keep enjoying the hobby. We will be able to continue.

If you have any questions, ideas, or comments, please send me an email or call. I'll do what I can. Go out and fly!

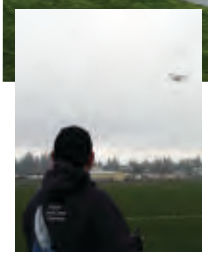
Associate Vice President (AVP) Joe Miller wrote about a club's last hurrah:

Keizer, Oregon, is slightly North of Salem, Oregon, and is home to the Keizer Krosswind RC Association. The club has been using a grass strip located on the grounds of sod grass growers since 1982. The club has an AMA chartered club number of 971, so you know it has been around awhile. The club had as many as 100 members in its heyday.

Its last official fun-fly was held February 9, 2020. It was a cold, gray day with the temperature in the 40s, but it was warmed by the dozen fliers who came to bid the event farewell.

Everyone was in good cheer, talking and flying as if it were 70° with sunshine! These are the type of fliers who make this sport and hobby as great as it is. They might be out of this field, but the club saw it coming and it has a new field ready to set up when the weather gets a bit better.

The club officers; Eric Suing, president; Jerry Hall; vice president; and treasurer Bob Bevens will ensure that the Krosswinds will be flying for years to come.



Above: Keizer club members.

Left: Rob Heap is flying his Apprentice modified to be a biplane.

AVP Bob Stevens sent this in about a hobby shop in Anchorage, Alaska.

Modelers in Anchorage are fortunate to have a world-class hobby shop serving the community. The Anchorage House of Hobbies (AHH), is located in the heart of the colorful neighborhood of Spenard, Alaska. It has been in business since 1964. AHH is a full-service store carrying airplanes, cars, boats, model railroads, plastic models, and just about everything.

AHH is a third-generation family business. I remember purchasing my first Kraft radio from founder Ray Rafuse in the late 1970s, and I still do business with his grandson, Ryan, today. Friendly, knowledgeable service has always been a family tradition.

AHH is a special place. If you are ever in Anchorage, you owe it to yourself to visit this remarkable store. You will be impressed.

That's all for this month. Keep building and flying!

Education Through Aviation

GO FLY COMPETITOR SUPPORTS CAMP AMA 2020

By Kyle Jaracz, Education director | kylej@modelaircraft.org

Have you ever heard of Go Fly? It's an aviation competition that challenges electric vertical takeoff and landing aircraft to fly for a set amount of time, 20-plus miles, while carrying a single person.

AMA has shared many posts about the competition via social media and provided model aviation literature at the event. Financing for this $1 million prize competition is provided by Boeing, the event's Grand Sponsor. Also contributing are Google, Pratt & Whitney, and others.

This past February, on leap day to be exact, several teams gathered at NASA's Ames Flight Research Center in California. Teams showcased their air vehicles in many forms, from artist renderings, to scale models, all the way to full-scale FAA-certified vehicles. This event is so challenging that of a field of 854 teams that started in 2017, only two qualified to compete for the main event. Neither of the teams left with the main prize, and the event is being rescheduled.

One of those two teams that qualified to compete for the prize was a single individual, Pete Bitar. Although I'm sure Pete would offer many thanks and recognize helpful individuals along the path, Pete himself designed, developed, drove across the country with his aircraft in tow, and test-flew it. He is truly a jack of all trades.

Pete's aircraft suffered an early setback that affected its performance in subsequent flights. Despite this challenge, his aircraft flew higher than the other team's, walking away with a functional airframe and newfound desire to reach the final goal. Pete also plans to achieve the fastest flight and has some tricks up his sleeve to ensure his success.

So why do I mention Pete Bitar? He is from Anderson, Indiana, which is a quick drive from AMA Headquarters. I've reached out to Pete and met with him on several occasions, along with Jay Smith, *Model Aviation*'s executive editor, about model aviation, general aviation, and the clear interconnectedness that exists between the disciplines.

Just as full-scale aviation has inspired the model aircraft we build and love, our model aircraft technology is inspiring and informing new advancements in full-scale aviation. Through these advancements and the proven method of subscale modeling to confirm and enhance full-scale aircraft, Pete is challenging the status quo in aviation through his company, Electric Jet Aircraft.

Pete received his pilot's license at an early age and has been involved in all kinds of aviation exploits throughout his career. From heavy-lift drones to a new electric jetpack, to his Go Fly aircraft, he's a tinkerer, thinker, and doer—something that rings true for AMA members. It's that camaraderie and mutual respect within the aviation world that is exciting to me! Pete's path is one that shows young members how they can transition their passion for the hobby into doing what they love for a living.

This year at Camp AMA, one of our excursions will be to visit Pete at his shop at the Purdue Innovation Center, where he is the entrepreneur in residence. I'm excited to share Pete's story, and am sure it will provide our campers with an unforgetable experience.

Time to go fly!

AMA ENROLLMENT FORM

SIGNING UP ONLINE IS EASY, VISIT WWW.MODELAIRCRAFT.ORG/JOINAMA TODAY!

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First Name & Initial | Last Name

Mailing Address | Apt.#

City | State | Zip Code | Phone

Date of Birth: | Email: | ☐ New Member ☐ Renewal | AMA # (Renewals only - leave blank if unknown)

2. Select Membership Type

		One-Year	Two-Year	
Adult	• Adults 19 or over as of July 1, 2020. • Includes subscription to *Model Aviation* magazine.	☐ **Adult $75.00**	☐ **Adult $140.00**	**Membership option amt:**
Senior	• Adults 65 or over as of July 1, 2020. • Includes subscription to *Model Aviation* magazine.	☐ **Senior $65.00**	☐ **Senior $120.00**	
Park Pilot	• Adults 19 or over as of July 1, 2020. • Includes subscription to *Park Pilot* magazine. Park Pilot membership is for aircraft 2 pounds or less that fly below 60 mph and does not include voting rights or competitive priviledges. Park Pilot membership insurance benefits are limited to $500,000 of liability coverage.	☐ **Park Pilot $38.00**	☐ **Park Pilot $70.00**	**Membership option amt:**

Support the AMA Foundation

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All membership benefits begin on the day a properly completed form and correct dues payment is received at AMA Headquarters. If a magazine is included with the membership, it begins with the first issue available for the year after a correct current form and payment are received. Membership rates and insurance limits are those in effect at the time of printing. Actual cost of dues and amount of insurance coverage are subject to change. Any such changes will be noted at the time of membership processing so they may be accepted or not. If I am involved in any claim or suit I will not sue the AMA, Inc. I understand that this does not affect my liability insurance coverage. "I agree to comply with the AMA Safety Programming."

Total:

$_____

Application Source:P

Mail completed form to:
AMA 5161 E. Memorial Dr. Muncie IN 47302

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SIGN 3 FLY FREE	Recruited by:	AMA#

ACADEMY OF MODEL AERONAUTICS NATIONAL MODEL AIRCRAFT SAFETY CODE

Effective January 1, 2018

A model aircraft is a non-human-carrying device capable of sustained flight within visual line of sight of the pilot or spotter(s). It may not exceed limitations of this code and is intended exclusively for sport, recreation, education and/or competition. All model flights must be conducted in accordance with this safety code and related AMA guidelines, any additional rules specific to the flying site, as well as all applicable laws and regulations.

As an AMA member I agree:

- I will not fly a model aircraft in a careless or reckless manner.
- I will not interfere with and will yield the right of way to all human-carrying aircraft using AMA's See and Avoid Guidance and a spotter when appropriate.
- I will not operate any model aircraft while I am under the influence of alcohol or any drug that could adversely affect my ability to safely control the model.
- I will avoid flying directly over unprotected people, moving vehicles, and occupied structures.
- I will fly Free Flight (FF) and Control Line (CL) models in compliance with AMA's safety programming.
- I will maintain visual contact of an RC model aircraft without enhancement other than corrective lenses prescribed to me. When using an advanced flight system, such as an autopilot, or flying First-Person View (FPV), I will comply with AMA's Advanced Flight System programming.
- I will only fly models weighing more than 55 pounds, including fuel, if certified through AMA's Large Model Airplane Program.
- I will only fly a turbine-powered model aircraft in compliance with AMA's Gas Turbine Program.
- I will not fly a powered model outdoors closer than 25 feet to any individual, except for myself or my helper(s) located at the flightline, unless I am taking off and landing, or as otherwise provided in AMA's Competition Regulation.
- I will use an established safety line to separate all model aircraft operations from spectators and bystanders.

For a complete copy of AMA's safety programming handbook, please visit: **www.modelaircraft.org/files/100.pdf.**

FLYING

May

ALABAMA
POSTPONED
05/2/2020 - Fort Payne, AL (C) SOUTHERN FRIED ELECTRAFLY. Site: 23rd St SE Jacoway Field. Mr Glenn H Bond CD/EM PH: (404)502-0933. Email: glennhb007@gmail.com. Visit: www.dekalbrcflyers.com. Sponsor: DEKALB RC FLYERS.

05/30/2020 - Fort Payne, AL (C) WARBIRDS OVER FORT PAYNE. Site: 23rd St SE Jacoway Field. Mr Glenn H Bond CD/EM PH: (404)502-0933. Email: glennhb007@gmail.com. Visit: www.dekalbrcflyers.com. Sponsor: DEKALB RC FLYERS.

ARIZONA
CANCELLED
05/1/2020 - 05/3/2020 - Sedona, AZ (C) MAY-FLY 2020. Site: Forest 761 B Rd Scalf Field. Mr Hal Jordan CD/EM PH: 928.634.1616. Email: jordan_hw@yahoo.com. Visit: camodelers.com. Sponsor: CENTRAL ARIZONA MODELERS INC.

05/15/2020 - 05/17/2020 - Glendale, AZ (C) WINGS FOR ST. JUDE. Site: W Model Way AMPS Field. Mr Michael A Niehaus CD/EM PH: (269)993-8384. Email: wingsoverarizona@gmail.com. Visit: www.wingsaz.com. Sponsor: ONE EIGHTH AIR FORCE.

ARKANSAS
05/2/2020 - 05/3/2020 - El Dorado, AR (AA) JOHN GUNN OPEN INVITATIONAL STUNT CONTEST. Site: 736 Industrial Rd Kenneth Makepeach Field. Mr Jason W Cunningham CD/EM PH: (870)226-6509. Email: jcunningham50@hotmail.com. Sponsor: MODEL AVIATORS OF S. ARKANSAS.

05/22/2020 - 05/23/2020 - N Little Rock, AR (C) MARCS FAMILY FUN FLY AND WARBIRDS. Site: 3211 Central Airport Rd Bishop Field. Mr Stanley E Kopreski CD/EM PH: (501)539-3656. Email: skopreski@msn.com. Visit: www.themarcs.org. Sponsor: MARCS.

05/23/2020 - 05/24/2020 - El Dorado, AR (A) NORTHWEST SPRING PATTERN OPENER. Site: 742 Industrial Rd. Mr William W Bowen CD/EM PH: C509-222-4262. Email: paternjock@aol.com. Visit: tcrcm.org. Sponsor: TRI CITY RC MODELERS.

05/23/2020 - Barling, AR (C) MEMORIAL WEEKEND FUN FLY. Site: 2014 E Church St. Mr Jorge L Calderon CD/EM PH: (479)650-0386. Email: jjcalderon28@live.com. Visit: facebook flightmasters model airplane club. Sponsor: FLIGHTMASTERS MAC.

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05/1/2020 - 05/3/2020 - Sacramento, CA (AAA) NORTHERN CALIFORNIA FREE FLIGHT CHAMPIONSHIP. Site: 1 Co Rd E2 Waegell Field. Mr William H Vanderbeek CD/EM PH: 408-472-0274. Email: billvanderbeek@yahoo.com. Visit: oaklandclouddusters.org. Sponsor: OAKLAND CLOUD DUSTERS.

05/2/2020 - 05/3/2020 - Oakdale, CA (AA) OAKDALE IMAC. Site: 8400 Eastman Rd Ward Hendricks Field. Mr Mark L Huntley CD/EM PH: (916) 529-1279. Email: mark@huntleyfamily.net. Visit: www.rcflyersunlimited.com. Sponsor: RC FLYERS UNLIMITED INC.

05/2/2020 - 05/3/2020 - Visalia, CA (AA) CVRC SOARING BENTWING CONTEST. Site: 8400 Ave 320. Mr Phil D Hill CD/EM PH: (559)217-4655. Email: phil.hill.48@gmail.com. Visit: www.cvrcsoaring.com. Sponsor: CENTRAL VALLEY RC SOARING CLUB.

05/3/2020 - Chino, CA (DEMO) CAL-POLY UAV EDUCATIONAL WORKSHOP. Site: 17602-17698 Cucamonga Ave Prado Field. Mr Stephen A Parola CD/EM PH: 951532-3034. Email: saparola@verizon.net. Visit: pvmac.com. Sponsor: POMONA VALLEY MODEL AIRPLANE CLUB INC.

05/7/2020 - 05/9/2020 - Davis, CA (C) HELICOPTER SCALE MASTERS. Site: 43295 County Rd 29 Woodland/Davis Burgdorf Henson Field. Mr Gonzalo Martinez CD/EM PH: 415-341-7588. Email: gonzalo.martinez@autodesk.com. Visit: www.helicopter-scale-masters.com. Sponsor: WOODLAND/DAVIS AEROMODELERS.

05/10/2020 - Perris, CA (C) LOTTO/TWIN PUSHER. Site: 26075 San Jacinto Ave Taibi Field. Mr Hal Cover CD/EM PH: (909)591-3717. Email: hcover3646@hotmail.com. Sponsor: SCAMPS.

05/13/2020 - 05/17/2020 - Wheatland, CA (C) CAMP FAR WEST SEAPLANE EVENT. Site: 9300 McCourtney Rd Camp Far West Lake. Mr John L Sorenson CD/EM PH: 916-216-0384. Email: sorensonjohn7@gmail.com. Visit: amosrc.com. Sponsor: ASSOC MODELERS OF SACRAMENTO AMOS.

05/14/2020 - 05/16/2020 - Reedley, CA (C) KINGS CANYON JET RALLY. Site: 1751 S Alta Ave PEG Field. Mr David C Fusinato CD/EM PH: 559)940-3283. Email: nfwdave@engineer.com. Visit: http://clovisrc.club. Sponsor: CLOVIS AREA MODELERS.

05/15/2020 - 05/17/2020 - Silverado, CA (C) SOCAL WINGS OF FURY, FPV WING RACING. Site: Blue Diamond Haul Rd OCMA Field. Mr Robert B Hunter CD/EM PH: (714)273-1419. Email: bobh@huntershome.com. Sponsor: ORANGE COUNTY MODELERS ASSOCIATION and Orange County FPV.

05/15/2020 - 05/17/2020 - Visalia, CA (C) 2020 CVRC SPRING AEROTOW. Site: 8400 Ave 320. Mr James T Johnson CD/EM PH: (559)694-1526. Email: james.tjohnson@live.com. Visit: https://cvrcsoaring.wordpress.com. Sponsor: CENTRAL VALLEY RC SOARING CLUB.

05/15/2020 - 05/17/2020 - Fallbrook, CA (C) 2020 SAN DIEGO HELI FUN FLY. Site: Pankey Rd Johnson Field. Mr Christopher A Wilson CD/EM PH: (760)415-3833. Email: chris.tricopter@gmail.com. Visit: www.palomarrcflyers.com/events. Sponsor: PALOMAR RC FLYERS.

05/16/2020 - 05/17/2020 - Lost Hills, CA (AA) DUAL CLUBS FREE FLIGHT BONANZA. Site: Holloway Rd North of Paso Robles Lost Hills Model Airfield. Mr Don A Bartick CD/EM PH: (858)774-2941. Email: dbartick@4-warddesign.com. Sponsor: SAN DIEGO ORBITEERS.

05/16/2020 - 05/17/2020 - Davis, CA (AA) FRED BURGDORF MEMORIAL. Site: 43295 County Rd 29 Woodland/Davis Burgdorf Henson Field. Mr Robert Holik CD/EM PH: 530-661-0399. Email: apcprop@aol.com. Visit: wdarc.org. Sponsor: WOODLAND/DAVIS AEROMODELERS.

05/16/2020 - 05/17/2020 - Perris, CA (AA) RIVERSIDE PATTERN CONTEST. Site: Riverside Perris Field. Mr Lynn W Burks CD/EM PH: (909) 8025654. Email: rclen123@roadrunner.com. Sponsor: RIVERSIDE RADIO CONTROL CLUB.

05/16/2020 - Lincoln, CA (C) ROTORS OVER ROSEVILLE 2019. Site: 4015 E Catlett Rd. Mr Geordan L White, Sr CD/EM PH: (916)521-8590. Email: geordanwhite1547@comcast.net. Visit: www.amosrc.com. Sponsor: ASSOC MODELERS OF SACRAMENTO AMOS.

05/21/2020 - 05/24/2020 - Reedley, CA (C) 23RD/6TH ANNUAL GIANT SCALE FUN FLY. Site: 4557 S Frankwood Ave Reedley Municipal Airport. Mr Richard E Maida CD/EM PH: (831)265-7289. Email: mrcorsair@usa.net. Visit: clovisrc.club. Sponsor: CLOVIS AREA MODELERS.

05/24/2020 - Perris, CA (AMA) ORBITEERS MONTHLY. Site: 26075 San Jacinto Ave Taibi Field. Mr Michael Pykelny CD/EM PH: (858)748-6235. Email: mpykelny@hotmail.com. Visit: www.san diegoorbiteers. Sponsor: SAN DIEGO ORBITEERS.

COLORADO
05/16/2020 - Pueblo, CO (CRST) SKY CORRAL ELECTRIC FLY-IN. Site: Off of Woodleaf Dr. Col. Brad Dolliver Field. Mr John G Boren CD/EM PH: (719)924-8582. Email: borenjohn@comcast.net. Visit: skycorralrcclub.com. Sponsor: SKY CORRAL RC CLUB.

05/30/2020 - Longmont, CO (C) 2020 AEROFEST. Site: 33 Quail Rd St Vrain School District innovation Center. Mr Richard C McCaskill CD/EM PH: (303)682-0440. Email: rickm1947@aol.com. Visit: innovation.svvsd.org. Sponsor: IC AERONAUTICS.

CONNECTICUT
05/14/2020 - 05/17/2020 - Salem, CT (C) NEW ENGLAND SCALE SOARING AEROTOW. Site: 479 Norwich Rd. Mr Steve J Pasierb CD/EM PH: (203)246-5881. Email: spasierb@optonline.net. Visit: https://rcpropbusters.com/index.html. Sponsor: RC PROPBUSTERS INC.

FLORIDA
05/12/2020 - 05/13/2020 - Palm Bay, FL (AA) REBEL RALLY. Site: 2190 Sapodilla Rd SW. Mr Duncan McBride CD/EM PH: (239)437-0065. Email: n319dm@gmail.com. Sponsor: FLORIDA MODELERS ASSOCIATION.

05/16/2020 - Christmas, FL (A) FSS 9 ALES. Site: 1543 N Fort Christmas Rd. Mr Raed A Elazzawi CD/EM PH: (407)405-4718. Email: raed5@yahoo.com. Visit: www.orlandobuzzards.org. Sponsor: ORLANDO BUZZARDS RC SOARING SOCIETY, INC.

CANCELLED
05/16/2020 - 05/17/2020 - Jacksonville, FL (C) JAX EDF MADNESS 3. Site: 3461 Lannie Rd. Mr Warren L Bio CD/EM PH: (808)4464111. Email: warrenbio@yahoo.com. Visit: www.gatewayrc.com facebook event "jax edf madness 3." Sponsor: GATEWAY RC CLUB.

GEORGIA
05/7/2020 - 05/10/2020 - Andersonville, GA (C) SOUTH EAST REGIONAL AEROTOW (SERA 2020). Site: 428 Neil Hodges Rd. Mr Marc Simmons CD/EM PH: (407)579-0087. Email: kd4jaz@gmail.com. Visit: scalesoaring.com.

05/17/2020 - Whitesburg, GA (AMA) MAY DAZE. Site: 1487 Black Dirt Rd NGTurf Sod Farm. Mr Dohrman G Crawford CD/EM PH: (770)698-8737. Email: tum25@bellsouth.net. Visit: www.thermalthumbers.com. Sponsor: THERMAL THUMBERS OF METRO ATLANTA.

05/23/2020 - Dunwoody, GA (A) MAY INDOOR. Site: 1978 Mt Vernon Rd Saint Luke's Presbyterian Church. Dr Joshua W Finn CD/EM PH: (842)-509-6692. Email: joshuawfinn@gmail.com. Sponsor: THERMAL THUMBERS OF METRO ATLANTA.

05/23/2020 - Dahlonega, GA (CRST) UAS4STEM REGIONAL COMPETITION. Site: 323 Geirrein Rd. Mr Archie J Stafford CD/EM PH: (301)247-9298. Email: archies@modelaircraft.org. Sponsor: NORTH GEORGIA MODEL AVIATORS.

05/29/2020 - 05/31/2020 - Hinesville, GA (C) FIRST EVER AMA 5TH DISTRICT SPRING FLY IN. Site: 248 Wells Cemetery Rd Heath Green Sky Ranch. Mr David L Wenzel CD/EM PH: (912)754-9619. Email: davevfrguy@hotmail.com. Visit: www.hgbarnstormers.com. Sponsor: H.G. BARNSTORMERS.

05/30/2020 - 05/31/2020 - Andersonville, GA (C) F3S JET PRECISION AEROBATICS CONTEST. Site: 428 Neil Hodges Rd Hodges Field. Mr Craig W Baker CD/EM PH: (706)833-6354. Email: psk560@yahoo.com. Visit: www.jetaerobatics.org.

IDAHO
05/9/2020 - Pocatello, ID (A) FURBALL OVER GIESLER FIELD. Site: 1950 Boeing Ave Geisler Field. Mr Rick Kent CD/EM PH: 208-681-9641. Email: rckent639@gmail.com. Sponsor: EASTERN IDAHO AEROMODELERS.

05/16/2020 - 05/17/2020 - Kuna, ID (AA) BARKS IMAC CHALLANGE. Site: 2400 E Kuna Mora Rd. Mr Michael W Verzwyvelt CD/EM PH: (208)733-9213. Email: michael@bridgemail.com. Visit: www.barks.us Sponsor: BOISE AREA RK SOC BARKS.

ILLINOIS
05/23/2020 - Elk Grove Village, IL (AA) WINDY CITY CLASSIC. Site: 20101 Busse Woods Ned Brown Model Flying Field. Mr Michael A Schmitt CD/EM PH: 847-445-2420. Email: 46encore@gmail.com. Visit: chicagolandcirclecutters.com. Sponsor: CHICAGOLAND CIRCLE CUTTERS.

05/30/2020 - 05/31/2020 - Crab Orchard Precinct, IL (C) THE DARRELL HONEY MEMORIAL SCALE FLY-IN. Site: Chaney Rd. Mr. Brandon M Stone CD/EM PH: (618)303-2388. Email: cerus98@yahoo.com. Visit: www.skysquires.com. Sponsor: SKY SQUIRES RC.

INDIANA
POSTPONED
05/2/2020 - Morristown, IN (C) ALL ELECTRIC FLY IN AND TAILGATE SWAP MEET. Site: 9860 Blue River Rd Blue River Air Park. Mr Ted B Brindle CD/EM PH: (317)797-8502. Email: iflyrc5@comcast.net. Visit: indyrcmodelers.com. Sponsor: INDIANAPOLIS RC MODELERS.

05/15/2020 - 05/17/2020 - Muncie, IN (A) CAPS INDY SHOOTOUT. Site: 5161 E Memorial Dr International Aeromodeling

SANCTIONED EVENT CALENDAR

Center. Mr Tom Melsheimer CD/EM PH: (440)488-4743. Email: tommelsh@gmail.com. Visit: www.capsracing.com.

05/15/2020 - 05/17/2020 - Muncie, IN (AA) CENTRAL INDIANA IMAC CHALLENGE. Site: 5161 E Memorial Dr International Aeromodeling Center. Mr Michael D Karnes CD/EM PH: (317)716-6220. Email: karnes1025@gmail.com. Visit: modelaircraft.org.

05/16/2020 - New Haven, IN (C) MAY FUN FLY & SWAP MEET. Site: 1702 N Webster Rd. Mr Tim Scherer CD/EM PH: 260-450-7018. Email: scheretb@me.com. Visit: flyingcircuits.org. Sponsor: FT WAYNE FLYING CIRCUITS INC.

05/21/2020 - 05/25/2020 - Muncie, IN (C) MEMORIAL DAY IMPROMPTU FUN-FLY. Site: 5161 E Memorial Dr International Aeromodeling Center. Mr Daniel R Landis CD/EM PH: (217) 729-0003. Email: pttrnflier2003@yahoo.com. Visit: https://bit.ly/2tscwxy.

05/23/2020 - New Haven, IN (C) VINTAGE FLY FLY 2019. Site: 1702 N Webster Rd. Mr Bruce H Wallace CD/EM PH: (260)450-2948. Email: wallbh.9613@gmail.com. Visit: flyingcircuits.org. Sponsor: FT WAYNE FLYING CIRCUITS INC.

05/30/2020 - Elwood, IN (C) MADISON COUNTY R/C FLY IN. Site: 8246 County Rd 1850. Mr Michael P Sharp CD/EM PH: (765)617-7987. Email: mpsdodge@aol.com. Visit: madisoncorc.com. Sponsor: MADISON COUNTY RC FLYERS.

KANSAS

05/2/2020 - 05/3/2020 - Paola, KS (C) R/C BARNSTORMERS AEROBATICS FUN FLY. Site: Toe Rd at Hillsdale Reservoir. Mr Vicente "Vince" Bortone CD/EM PH: 913-449-5670. Email: vincebrc@gmail.com. Visit: http://rcbarnstormers.info. Sponsor: R/C BARNSTORMERS.

05/9/2020 - Lawrence, KS (C) JAYHAWK OPEN. Site: 952 E 1000 Rd. Mr Patrick A Deuser CD/EM PH: (785)766-9254. Email: pdeuser@hotmail.com. Visit: jayhawkmodelmasters.com. Sponsor: JAYHAWK MODEL MASTERS INC.

05/13/2020 - 05/17/2020 - Lucas, KS (C) MIDWEST SLOPE CHALLENGE. Site: Lucas Park Recreation Area Wilson Lake. Mr Mark Dennis CD/EM PH: 913-523-3391. Email: m-dennis@swbell.net. Visit: midwestslopechallenge.com. Sponsor: WINGS OVER WILSON SOARING CLUB.

05/24/2020 - Berryton, KS (A) TOPCLASS ANNUAL. Site: 4535 Se 69th St Blue Sky Aerodrome. Mr James K Lee CD/EM PH: 785/266-7714. Email: jlee9@cox.net. Sponsor: TOPEKA CL ASSN.

05/29/2020 - 05/31/2020 - Newton, KS (AA) HCRCC SPRING SHOWDOWN. Site: 314 NE Lake Rd Harvey County East Lake. Mr Joseph L Owen CD/EM PH: (316)282-2470. Email: joe.owen.04@gmail.com. Visit: www.facebook.com/events/480880185922665. Sponsor: Harvey County Radio Control Club.

05/30/2020 - 05/31/2020 - Paola, KS (AA) R/C BARNSTORMERS PATTERN CONTEST. Site: Toe Rd at Hillsdale Reservoir. Mr Vicente "Vince" Bortone CD/EM PH: (913)449-5670. Email: vincebrc@gmail.com. Visit: http://rcbarnstormers.info/index.php. Sponsor: R/C BARNSTORMERS.

05/30/2020 - Lawrence, KS (C) JAYHAWK ELECTRIC. Site: 952 E 1000 Rd. Mr Gary L Rauckman CD/EM PH: (785)423-2700. Email: rocketman200@juno.com. Visit: jayhawk electric. Sponsor: JAYHAWK MODEL MASTERS INC.

KENTUCKY

05/16/2020 - 05/17/2020 - Hebron, KY (AA) NORTHERN KENTUCKY PATTERN CHAMPIONSHIP. Site: 9062 River Rd. Mr David Johnstone CD/EM PH: 859.640-7467. Email: 911.davej@gmail.com. Visit: flyingcardinals.org. Sponsor: FLYING CARDINALS OF NORTHERN KY INC.

LOUISIANA

05/15/2020 - 05/16/2020 - Sulpher, LA (C) MAYDAY 2020. Site: 7036 Larksfield Rd Hinch Model Airpark. Mr Mark H Spies CD/EM PH: 713-469-2462. Email: markhspies@gmail.com. Visit: larksrc.org. Sponsor: LAKE AREA RADIO KONTROL SOCIETY.

05/22/2020 - 05/23/2020 - Monroe, LA (C) MAD DOG MEMORIAL WARBIRD CLASSIC. Site: 1440 Buckhorn Bend Loop Rd. Mr. Todd M Jackson Sr. CD/EM PH: (318)614-4232. Email: tmjacks@bellsouth.net. Visit: www.facebook.com/groups/467047790767927. Sponsor: BACK OF THE BEND FLYING CLUB.

MAINE

05/2/2020 - 05/3/2020 - Standish, ME (C) KIWANIS FLOAT FLY IN. Site: 40 Kiwanis Beach Rd. Mr William Reeve CD/EM PH: (207)797-8492. Email: willyreeve@yahoo.com. Sponsor: PROPSNAPPERS INC.

MARYLAND

05/2/2020 - 05/3/2020 - Hollywood, MD (CRST) UAS4STEM REGIONAL COMPETITION. Site: 44550 Steer Horn Neck Rd Helwig Field. Mr Archie J Stafford CD/EM PH: (301)247-9298. Email: archis@modelaircraft.org. Sponsor: ACADEMY OF MODEL AERONAUTICS and PATUXENT AEROMODELERS.

05/9/2020 - Upper Marlboro, MD (C) 29TH ANNUAL OPEN HOUSE FLY IN. Site: 17230 Swanson Rd. Mr Charles A Gettier CD/EM PH: (410)991-3178. Email: cagettier@gmail.com. Visit: pgrcclub.com. Sponsor: PRINCE GEORGES RC CLUB INC.

MASSACHUSETTS

05/23/2020 - Hadley, MA (CRST) HCRC HELI-FEST 2020. Site: 21 Honey Pot Rd. Mr Michael J Shaw CD/EM PH: (413)330-1827. Email: mshaw.spfld@gmail.com. Visit: www.hampshirecountyrc.org. Sponsor: HAMPSHIRE COUNTY RCERS.

MICHIGAN

CANCELLED

05/3/2020 - Pontiac, MI (AA) 2020 INDOOR FLING. Site: 867 South Blvd E Ultimate Soccer Arena. Mr Michael B Welshans CD/EM PH: (248)545-7601. Email: mbwelshans@aol.com. Sponsor: CLOUDBUSTERS MODEL AIRPLANE CL UB.

05/16/2020 - 05/17/2020 - Detroit, MI (AA) BIG ART ADAMISIN MEMORIAL CONTEST. Site: 21770 Joy Rd Rouge Park Winter Sports area. Mr Marcus P Warwashana CD/EM PH: (734)449-7355. Email: whellieman@gmail.com. Sponsor: STRATHMOOR MODEL CLUB OF DETROIT.

05/17/2020 - White Lake, MI (C) JOHNS JET JAMBOREE VIII. Site: 9480 White Lake Rd. Mr John Hoover CD/EM PH: 248-814-8359. Email: aspectav5429@yahoo.com. Visit: pmac.us. Sponsor: PONTIAC MINIATURE AIRCRAFT CLUB.

05/30/2020 - Quincy, MI (C) KEITH SHAW BIRTHDAY BASH FLY IN. Site: 320 Clizbe Rd. Mr David R Grife CD/EM PH: 517/279-8445. Email: grifesd@yahoo.com. Visit: www.theampeer.org. Sponsor: BALSA BUTCHERS.

05/30/2020 - 05/31/2020 - New Haven, MI (C) WATTS OVER WETZEL. Site: 25001 27 Mile Rd Wetzel State Recreational Area. Mr Kevin Glynn CD/EM PH: (586)530-5659. Email: kevinpatrick1067@gmail.com. Visit: www.rccd.org. Sponsor: RC CLUB OF DETROIT.

MISSISSIPPI

05/16/2020 - 05/17/2020 - Jackson, MS (AA) 10TH ANNUAL MMRC IMAC CHALLENGE. Site: 6765 Interstate 55 Jackson County Landfill. Mr Bobby L Folsom CD/EM PH: (601)415-4445. Email: bobbyleejr@bellsouth.net. Visit: mid ms rc club facebook home page. Sponsor: MID MISSISSIPPI R/C CLUB.

MISSOURI

05/16/2020 - 05/17/2020 - Fenton, MO (AA) MIDWEST SPEED CONTEST. Site: 265 Valley Park Rd Buder Park. Mr John R Moll CD/EM PH: (314)831-4001. Email: jl172@sbcglobal.net. Sponsor: LAFAYETTE ESQUADRILLE.

NEBRASKA

05/16/2020 - Mead, NE (C) WW1 AND GOLDEN AGE FUN FL. Site: 1211 9th St. Mr Nelson S Carpenter CD/EM PH: (402)709-3651. Email: nelsonsc3@cox.net. Sponsor: WESTERN RC FLYERS INC.

NEVADA

CANCELLED

05/1/2020 - 05/3/2020 - Las Vegas, NV (C) DISTRICT X FLY-IN. Site: 6800 E Russell Rd William Bennett Model Airfield. Mr Guido C Terzo CD/EM PH: (702)837-7321. Email: gterzo@aol.com. Visit: www.lvrc.club. Sponsor: LAS VEGAS RADIO CONTROL CLUB and LAS VEGAS SOARING CLUB INC.

NEW JERSEY

05/3/2020 - Middlesex, NJ (BRST) MM SPRING RACE/SPEED. Site: 302 John F Kennedy Dr Mountain View Park. Mr Carl T Schaefer CD/EM PH: (908)803-7405. Email: earthingbrush2@yahoo.com. Sponsor: MIDDLESEX MODELERS INC.

05/29/2020 - 05/31/2020 - Southampton Township, NJ (C) 5TH ANNUAL FREEFALLRC PODCAST HELIFEST. Site: 231 Landing St Allen Airpark. Mr Steve B Yun CD/EM PH: 2016760456. Email: deejae@gmail.com. Visit: https://freefallrcpodcast.show. Sponsor: NORTH JERSEY HELI PILOTS and TRI COUNTY RC CLUB.

05/30/2020 - Pemberton, NJ (C) BCRCC SELL, BUY, AND FLY. Site: 141 N Pemberton Rd Pemberton Regional Airport. Mr Anthony C Rossi CD/EM PH: 908-420-6901. Email: p510851@gmail.com. Visit: burlingtoncountyrc.com. Sponsor: BURLINGTON COUNTY RC CLUB INC.

NEW MEXICO

05/15/2020 - 05/17/2020 - Farmington, NM (A) 2020 SAN JUAN ALL SCALE CLASSIC. Site: 1620 Ojo City of Farmington Model Park. Mr Timothy S Nobis CD/EM PH: (505)436-9584. Email: timxlr8r@msn.com. Visit: sjrcclub.org. Sponsor: SAN JUAN RADIO CONTROL CLUB.

NEW YORK

05/2/2020 - Brooklyn, NY (C) SEAVIEW ROTARY WINGS SPRING SPOOL UP 15TH ANNIVERSARY. Site: Calvert Vaux Park Greenway. Mr Eaton E Bryce CD/EM PH: (917)749-3125. Email: fastrcheli1@aol.com. Visit: flysrw.com. Sponsor: SEAVIEW ROTARY WINGS.

05/16/2020 - 05/17/2020 - New Hampton, NY (AA) HATSCHEK INTERNATIONAL CHALLENGE. Site: 337 Co Rd 12 Barron Field. Mr David Acton CD/EM PH: (914)393-7491. Email: davidptacton@hotmail.com. Sponsor: BROOKLYN SKYSCRAPERS.

05/16/2020 - 05/17/2020 - Harpursville, NY (C) FLOAT FLY. Site: 1674 Colesville Rd Nathaniel Cole Park. Mr Brian R Tyler CD/EM PH: 607-427-8011. Email: flyinbri@echoes.net. Visit: modelersofbinghamton.com. Sponsor: MODELERS OF BINGHAMTON INC.

05/17/2020 - Wantagh, NY (C) NASSAU FLYERS ANNUAL HELICOPTER FLY-IN. Site: 3320 Merrick Rd Lufbery Aerodrome, Cedar Creek Park. Mr Stuart A Silverman CD/EM PH: (516)476-3194. Email: docstu5@msn.com. Visit: nassauflyersrc.com. Sponsor: NASSAU FLYERS/L.I. CONDORS RC CLUB INC.

05/30/2020 - Deer Park, NY (C) EWF AIRPLANE FUN FLY. Site: Old Cammack Rd. Mr Boyce E Wellmaker CD/EM PH: 516-233-6301. Email: bwellmaker@yahoo.com. Sponsor: EDGEWOOD FLYERS INCORPORATED.

NORTH CAROLINA

05/2/2020 - Huntersville, NC (A) MCLS HUNTERSVILLE CONTROL LINE FUN FLY. Site: 15401 Holbrooks Rd David B Waymer Aeromodeler Flying Field. Mr Will D Davis CD/EM PH: (704)860-1079. Email: willddavis@msn.com. Visit: mcls.wacama.com. Sponsor: METROLINA CONTROL LINE SOCIETY.

05/2/2020 - Bailey, NC (C) MEMORIAL FLY IN. Site: 10776 Simms Rd. Mr John Bage CD/EM PH: 919-576-3019. Email: johnbage@gmail.com. Visit: wilsonrc.org. Sponsor: WILSON RC MODELERS ASSN.

CANCELLED

05/2/2020 - Sanford, NC (C) ANNUAL WARBIRDS OVER SANFOR. Site: 4500 Jefferson Davis Hwy. Mr Mark N Cline CD/EM PH: (919)776-9504. Email: clinesfly@windstream.net. Visit: facebook/sanfordmac. Sponsor: SANFORD MODEL AIRPLANE CLUB.

05/2/2020 - Statesville, NC (C) FUN FLY & TAILGATE SWAP MEET. Site: 222 John Long Rd. Mr James E Loftis III CD/EM PH: (336)707-9893. Email: gsoav8r@bellsouth.net. Visit: www.statesvillemodelflyers.org. Sponsor: STATESVILLE FLIERS RC CLUB INC.

05/9/2020 - Randleman, NC (C) 3RD ANNUAL SPRING FLING-FLY WHAT YOU BRING-SWAP-N-SHOP. Site: 6252 Davis Country Rd. Mr Charles D Johnson CD/EM PH: (336)736-7640. Email: davidjohnson84@icloud.com. Visit: www.

ccrcm.com. Sponsor: CENTRAL CAROLINA MODELERS.

05/16/2020 - 05/17/2020 - Monroe, NC (AA) MONROE PATTERN OPEN. Site: 8501 Morgan Mill Rd McCracken Aerodrome. Mr Timothy L Pritchett CD/EM PH: (864)871-1902. Email: tjpritchett@aol.com. Visit: www.charlotteaeromodelers.org. Sponsor: CHARLOTTE AEROMODELERS INC.

05/16/2020 - Huntersville, NC (C) FLYING ACES FUN FLY. Site: 15401 Holbrooks Rd David B Waymer Aeromodeler Flying Field. Mr Walter D Chanter III CD/EM PH: (503)708-4207. Email: tchanter1@msn.com. Visit: www.fapa.wacama.com. Sponsor: FLYING ACES PILOTS ASSOC.

CANCELLED

05/16/2020 - Gaston, NC (C) WARBIRDS OVER THE ROANOKE. Site: 6702 NC-46. Mr Douglas Hughes CD/EM PH: (252)308-6840. Email: vetman357@embarqmail.com. Visit: 95thsquadronrc.com. Sponsor: 95TH SQUADRON.

05/17/2020 - Dunn, NC (C) FUN FLY AND SWAP MEET. Site: 2688 Red Hill Church Rd. Mr Daniel J Pazzuto Jr. CD/EM PH: 910-751-9406. Email: ncrcflyer@hotmail.com. Visit: harnett mini aero club. Sponsor: HARNETT MINI AERO CLUB.

05/20/2020 - 05/24/2020 - Wilson, NC (CRST) FIRST IN FLIGHT JET RALLY. Site: 4545 Airport Dr NW Wilson Industrial Air Center. Mr Lawrence E Lewis CD/EM PH: (919)215-3946. Email: rclarry@aol.com. Visit: firstinflightjets.com. Sponsor: FIRST IN FLIGHT JETS.

05/30/2020 - Mt Pleasant, NC (C) SMITH LAKE FLYERS SPRING EDF JET RALLY. Site: 6241 Smith Lake Rd Bernie Smith Aerodrome. Mr Gilbert M Cofer CD/EM PH: (704)791-2518. Email: gcofer@twc.com. Visit: smithlakeflyers.org. Sponsor: SMITH LAKE FLYERS.

OHIO

05/16/2020 - 05/17/2020 - Delphos, OH (A) BATTLE FOR BEAN TOWN. Site: 7651 Elida Rd. Mr Robert F Loescher CD/EM PH: (419)516-4473. Email: rcca621@gmail.com. Visit: larksclub.homestead.com. Sponsor: LARKS.

05/20/2020 - 05/21/2020 - Germantown, OH (CRST) SPRING IS IN THE AIR SAM R/C CONTEST. Site: 10491 Carlisle Pike. Mr Dennis Sedlock CD/EM PH: (937)371-0534. Email: dsedlock5657@att.net. Sponsor: WESTERN OHIO RADIO KONTROL SOCIETY.

05/22/2020 - 05/23/2020 - North Bend, OH (C) 9TH ANNUAL IOK DAWN PATROL. Site: 10414 Miamiview Rd. Mr Tony Gronas CD/EM PH: 513-868-3279. Email: btgronas@zoomtown.com. Visit: airmaster.info. Sponsor: AIRMASTERS.

OKLAHOMA

05/29/2020 - 05/30/2020 - Lawton, OK (C) WARBIRDS OVER THE WICHITAS. Site: Cache Rd. Mr Robert P McFadden CD/EM PH: (580)481-0127. Email: birddogs002@gmail.com. Visit: www.lawtonareafunflyers.org. Sponsor: LAWTON AREA FUN FLYER SOCIETY.

OREGON

05/9/2020 - Turner, OR (C) WINTER BUILD CHALLENGE. Site: 9493 55th Ave SE. Mr Ted D Foster CD/EM PH: (503)930-9574. Email: tedo55@aol.com. Visit: salemrcpilots.com. Sponsor: SALEM R/C PILOTS ASSOC.

05/9/2020 - 05/10/2020 - Eagle Point, OR (C) ALL SCALE FLY IN. Site: 888 E Antelope Rd Agate Skyways. Mr John O Gaines CD/EM PH: 541-951-1947. Email: johng97525@msn.com. Visit: rogue-eagles.org. Sponsor: ROGUE EAGLES RC CLUB INC.

05/22/2020 - 05/24/2020 - Roseburg, OR (AAA) NORTHWEST CONTROL LINE REGIONALS. Site: 3896 NW Stewart Pkwy Roseburg Regional Airport. Mr Mike Hazel CD/EM PH: (503)871-1057. Email: zzclspeed@aol.com. Visit: flyinglines.org. Sponsor: NW REGIONALS MANAGEMENT ASSOC.

PENNSYLVANIA

05/16/2020 - 05/17/2020 - Centre Hall, PA (AA) STATE COLLEGE IMAC CHALLENGE. Site: 413 Airport Rd Centre Airpark. Mr Jon Guizar CD/EM PH: (570)263-0353. Email: jon@ncc-bridges.com. Visit: www.scrc-club.com. Sponsor: State College Radio Control Club.

05/30/2020 - Allison Park, PA (C) GYPSY MOTH FLIERS FUN FLY. Site: 422 Cedar Run Rd. Mr Anthony Hallo CD/EM PH: (724)953-9912. Email: tony.hallo365@gmail.com. Sponsor: GYPSY MOTH FLIERS.

RHODE ISLAND

05/30/2020 - 05/31/2020 - South Kingstown, RI (A) RISC RED ROOSTER F5J CONTEST. Site: 631 Usquepaugh Rd Covell Field. Maarten Broess CD/EM PH: (401)323-8145. Email: drmbroess@gmail.com. Visit: www.flyesl.org/contest.aspx?contestid=301. Sponsor: RHODE ISLAND SOARING CLUB.

SOUTH CAROLINA

05/9/2020 - 05/16/2020 - Woodruff, SC (C) JOE NALL WEEK. Site: 330 Mary Hanna Rd Triple Tree Aerodrome. Mr Michael J Gregory CD/EM PH: 864-313-6572. Email: mjoelgregory@gmail.com. Visit: tripletreeaerodrome.com. Sponsor: TRIPLE TREE AVIATORS C/O MIKE GREGORY.

05/15/2020 - 05/16/2020 - Woodruff, SC (AA) 2020 TRIPLE TREE STUNT CHAMPIONSHIP. Site: 330 Mary Hanna Rd Triple Tree Aerodrome. Mr Will D Davis CD/EM PH: (704)860-1079. Email: willddavis@msn.com. Visit: tripletreeaerodrome.com. Sponsor: METROLINA CONTROL LINE SOCIETY.

05/23/2020 - Piedmont, SC (C) FLY WHAT YOU BOUGHT AT JOE NALL. Site: 190 Owens Rd. Mr Randy L Rigby CD/EM PH: (864)688-2771. Email: rrigby1653@gmail.com. Visit: blueridgerc.com. Sponsor: BLUE RIDGE RADIO CONTROL.

TENNESSEE

05/2/2020 - Knoxville, TN (C) HELI FUN FLY. Site: 4698 Luttrell Rd. Mr Aaron Blake CD/EM Email: aaron@aaronblake.com. Visit: http://volunteeraeromodelers.org. Sponsor: VOLUNTEER AERO MODELERS INC.

05/16/2020 - 05/17/2020 - Corryton, TN (A) HOUSE MOUNTAIN F5J. Site: 8621 Washington Pk Thompson Airpark. Mr James R McCarthy CD/EM PH: (847)737-3789. Email: jimrmccarthy@comcast.net. Visit: house mountain rc www.housemountainrc.com. Sponsor: HOUSE MOUNTAIN RADIO CONTROL.

05/16/2020 - 05/17/2020 - Knoxville, TN (C) BEN OLIVER SPA PATTERN CLASSIC. Site: 3204 Williams Bend Rd. Mr James L Russell CD/EM PH: (606)260-2258. Email: jameslelandrussell@gmail.com. Visit: seniorpattern.com. Sponsor: KNOX COUNTY RC SOCIETY.

05/22/2020 - 05/24/2020 - Arlington, TN (C) MEMPHIS PROP BUSTERS SPRING FUN FLY. Site: 3945 Inglewood Pl. Mr Dennis T Maras CD/EM PH: (817)871-4825. Email: travelingfools2004@yahoo.com. Visit: www.memphispropbusters.com. Sponsor: MEMPHIS PROP BUSTERS.

05/23/2020 - Georgetown, TN (C) WARBIRDS OVER CLEVELAND. Site: 1200 Francisco Rd NW. Mr James Patterson CD/EM PH: (423)479-8449. Email: rusty2788@yahoo.com. Visit: https://bradleycountyrcclub.webs.com. Sponsor: BRADLEY COUNTY RADIO CONTROLLED MODEL AIRCRAFT CLUB.

05/23/2020 - Knoxville, TN (C) KCRC FLOAT FLY. Site: 3204 Williams Bend Rd. Philip F Spelt CD/EM PH: (865)604-0541. Email: chuenkan@comcast.net. Visit: kcrctn.com. Sponsor: KNOX COUNTY RC SOCIETY.

05/30/2020 - Knoxville, TN (C) VAM SPRING FUN FLY. Site: 4698 Luttrell Rd. Mr Aaron Blake CD/EM Email: aaron@aaronblake.com. Visit: http://volunteeraeromodelers.org. Sponsor: VOLUNTEER AERO MODELERS INC.

05/30/2020 - Jackson, TN (C) WTRCF FUN FLY. Site: 205 R Deloach Rd. Mr Harry E Wood CD/EM PH: (731)307-9504. Email: harryewood@msn.com.

TEXAS

POSTPONED

05/1/2020 - 05/3/2020 - Katy, TX (AA) SPACE CITY 12TH ANNUAL PATTERN CONTEST. Site: 6332 Katy Hockley Rd. Mr John A Blackmon CD/EM PH: (281)351-9772. Email: john.blackmon@comcast.net. Visit: www.spacecityrc.com. Sponsor: SPACE CITY RC CLUB.

05/2/2020 - 05/3/2020 - El Paso, TX (AA) 3RD ANUAL SOUTH CENTRAL SOUTH WEST SMAKDOWN. Site: 6121 Stan Roberts Sr Ave Patriot Field. Guy Alon CD/EM PH: (954)397-4539. Email: alonguy2000@gmail.com. Visit: www.mini-iac.org/event-details/pid/1040. Sponsor: EL PASO RADIO CONTROLLERS.

05/2/2020 - Sherman, TX (C) TEXOMA RC ELECTRIC EXTRAVAGANZA 2020. Site: 734 Logston Rd Pete Darter Flying Field. Mr Joe E Denney CD/EM PH: (903)819-5843. Email: jed1d@yahoo.com. Visit: www.texomarc.org. Sponsor: TEXOMA RC MODELERS.

05/2/2020 - Fort Worth, TX (C) WARBIRDS OVER LAKE BENBROOK. Site: 4300 Winscott Plover Rd Thunderbird Field at Mustang Park. Mr Ed Kettler CD/EM PH: (469)867-7981. Email: ed.kettler@gmail.com. Visit: fwthunderbirds.org. Sponsor: FORT WORTH THUNDERBIRDS R/C ASSOCIATION, INC.

05/8/2020 - 05/9/2020 - Austin, TX (C) KEN WHITE SCALE & WARBIRD. Site: 8705 Lindell Ln Lester Field. Mr Dave E Begier CD/EM PH: (512)585-2918. Email: beag25@gmail.com. Sponsor: AUSTIN RC ASSOCIATION.

05/9/2020 - 05/10/2020 - Fort Worth, TX (AA) WES BLAIR TEXAS SCALE CHAMPIONSHIPS 2020. Site: 6903 Randol Mill Rd. Mr Lawrence R Harville CD/EM PH: (817)781-9615. Email: lawharv@yahoo.com. Visit: flygsw.org. Sponsor: GREATER SW AERO MODELERS INC.

05/9/2020 - Comfort, TX (C) B.A.M.S. SPRING FUN FLY. Site: Schneider Cemetery Rd Kendall County Parks. Mr Cecil T Murray CD/EM PH: 858-442-8847. Email: cthomasmurray@mac.com. Visit: boerne area model society. Sponsor: BOERNE AREA MODEL SOCIETY.

05/9/2020 - Dickinson, TX (C) TCRCC WARBIRD #1 FUN FLY & SWAP MEET. Site: 7500 N Humble Camp Rd. Mr Harvey W Cappel CD/EM PH: (409)939-4271. Email: hcappel@aol.com. Visit: tcrcc.com. Sponsor: TEXAS CITY RC CLUB.

05/15/2020 - 05/17/2020 - Brenham, TX (A) 18TH LONE STAR NATS. Site: 2080 Old Navasota Rd. Mr David E Ebers Sr. CD/EM PH: 979-436-5384. Email: david.eberssr@gmail.com. Sponsor: BRENHAM RC AIRPLANE CLUB.

05/16/2020 - 05/17/2020 - Hamilton, TX (AA) 28TH ANNUAL SPRING CUP. Site: 489 FM 3302 Hamilton Municipal Airport. Mr Faust R Parker CD/EM PH: (817)757-7866. Email: frpjr@att.net. Sponsor: TEXAS CLOUD CLIMBERS.

05/16/2020 - 05/17/2020 - Dickinson, TX (AA) TEXAS CITY R/C PATTERN CLASSIC. Site: 7500 N Humble Camp Rd. Michael A Johncock CD/EM PH: 281-757-3177. Email: mjohncock@dxservice.com. Visit: tcrcc.com. Sponsor: TEXAS CITY RC CLUB.

CANCELLED

05/16/2020 - Malakoff, TX (C) CEDAR CREEK FUN FLY & SWAP MEET. Site: 8017 Co Rd 1201 Smith Ranch Airport. Mr Billy E Campbell CD/EM PH: (903)675-7443. Email: ncamp126@aol.com. Sponsor: CEDAR CREEK AERO-MODELERS.

05/16/2020 - Princeton, TX (C) RICHARDSON RADIO CONTROL CLUB ANNUAL TRY RC DAY. Site: 6556 Farm to Market Rd 546 Bratonia Park. Mr Harold J Walsh II CD/EM PH: (972)-358-9206. Email: altavista1956@gmail.com. Visit: www.rrcc.org. Sponsor: RICHARDSON RC CLUB.

05/16/2020 - Wixon Valley, TX (C) BVRC ANYTHING ELECTRIC. Site: 963 FM 2776 Dan Gray Memorial Flying Field. Terry E Hix CD/EM PH: (979)255-9254. Email: terryhx7@gmail.com.

05/16/2020 - 05/17/2020 - Canyon, TX (C) ARKS'S ANNUAL FUN FLY. Site: 18545 City Lake Rd. Mr David Reighley CD/EM PH: (806)690-3174. Email: reighley@nts-online.net. Visit: https://sites.google.com/site/arksrcclub/home. Sponsor: AMARILLO RADIO KONTROL SOCIETY.

05/16/2020 - Inez, TX (C) VRCF CHARLES SCHNEIDER MEMORIAL MAY FUN FLY. Site: 1355 Hiller Rd. Mr Johnny Longoria CD/EM PH: 361-676-6118. Email: johnnyvrcf@yahoo.com. Visit: victoriaremotecontrolflyers.com. Sponsor: VICTORIA RADIO CONTROL FLYERS.

SANCTIONED EVENT CALENDAR

POSTPONED

05/16/2020 - Kingsbury, TX (C) WARBIRDS OVER KINGSBURY. Site: 190 Pershing Ln Old Kingsbury Aerodrome. Mr Dean F Lukover CD/EM PH: (210) 421 5147. Email: lukoverd@sbcglobal.net. Visit: www.tricityflyers.com. Sponsor: TRI CITY FLYERS INC.

05/22/2020 - 05/23/2020 - Katy, TX (C) CUBS & HIGH WING FLY IN. Site: 6332 Katy Hockley Rd. Mr Paul G Curry CD/EM PH: 281-450-5517. Email: pgpjcurry@sbcglobal.net. Sponsor: SPACE CITY RC CLUB.

05/23/2020 - 05/24/2020 - Pampa, TX (AA) 3RD ANNUAL PANHANDLE IMAC. Site: 10 Rd Swaney Field. Ms Amanda R Darling CD/EM PH: (806)282-4227. Email: amandarachele@yahoo.com. Visit: www.mini-iac.org/regions/south-central-region. Sponsor: PROPS.

05/30/2020 - Rosenberg, TX (AA) FORT BEND RC PATTERN CONTEST - SPRING 2020. Site: 1135 Spur 529. Mr Heedo Yun CD/EM PH: (281)512-9163. Email: heedo.yun@gmail.com. Visit: fortbendrc.com. Sponsor: FORT BEND RADIO CONTROL CLUB.

VIRGINIA

05/1/2020 - 05/3/2020 - Manassas, VA (DEMO) MANASSAS AIRHOW. Site: 10600 Harry J Parrish Blvd Manassas Regional Airport. Mr Kevin C Rychlik CD/EM PH: (571)220-3086. Email: kcrychlik@aol.com. Visit: www.manassasairshow.com. Sponsor: VIRGINIA FLYERS.

05/15/2020 - 05/17/2020 - Midland, VA (A) ESL AT HORSEFEATHERS. Site: 9648 Green Rd Horsefeathers Aerodrome. Mr Kerry N Cochrell CD/EM PH: 401/257-0056. Email: rc4fun@comcast.net. Visit: http://flyesl.org/contest.aspx?contestid=325. Sponsor: BLUE RIDGE AREA SOARING SOCIETY.

05/15/2020 - 05/17/2020 - Palmyra, VA (C) HELI DOMINATION. Site: 11176 W River Rd. Mr Cliff Lewis CD/EM PH: (434)962-8685. Email: clewis600@yahoo.com. Visit: fcrcfc.org. Sponsor: FLUVANNA COUNTY RC FLYING CLUB.

WASHINGTON

05/2/2020 - 05/3/2020 - E Wenatchee, WA (C) APPLE BLOSSOM FLY-IN. Site: 5201 4th St SE. Mr David A Moline CD/EM PH: (509)630-2148. Email: dave.moline17@gmail.com. Visit: www.redappleflyers.org. Sponsor: WENATCHEE RED APPLE FLYERS.

05/7/2020 - 05/10/2020 - Othello, WA (C) OTHELLO HELICOPTER FUN FLY. Site: 2395 Hampton Rd Weaver's RC Field. Mr Bill J Pierce CD/EM Email: helibill1@charter.net.

05/9/2020 - 05/10/2020 - Kennewick, WA (C) MAA FLOAT FLY. Site: 213316 E Finley Rd Two Rivers park. Mr David G Miller CD/EM PH: (509)542-1959. Email: dmiller2b@charter.net. Visit: http://www.my2wings.com. Sponsor: MINIATURE AIRCRAFT ASSOCIATION.

05/15/2020 - 05/17/2020 - Othello, WA (AA) NORTHWEST SCALE SPRING OPENER. Site: 2395 Hampton Rd Weaver's RC Field. Mr Patrick G Winters CD/EM PH: (509)981-0037. Email: pgwinters1@gmail.com. Visit: weaversairfield.com.

05/16/2020 - 05/17/2020 - Valley, WA (C) BARONS ANNUAL SPRING FLOAT FLY. Site: 3290 E Jump Off Rd Jump Off Joe Lake Resort. Mr Robert W Lutz CD/EM PH: (509) 385-3307. Email: cloudguy5859@yahoo.com. Visit: climatehawk.org/info.html. Sponsor: BARONS MODEL CLUB.

05/16/2020 - 05/17/2020 - Zillah, WA (C) VOLCANO FUN FLY/SCALE. Site: 3513 Cheyne Rd Ben's Strip Cheyne Rd. Mr Ryan R Siebol CD/EM PH: (509)930-8132. Email: fordfnatic@gmail.com. Visit: yvam.net. Sponsor: YAKIMA VALLEY AEROMODELERS.

05/29/2020 - 05/31/2020 - Shelton, WA (C) WINTER BUILD CHALLENGE. Site: 171 W Sanderson Way Shelton Airport. Joseph C Diaz CD/EM PH: 3604902461. Email: flyingracer@comcast.net. Visit: winterbuildchallenge.com. Sponsor: SANDERSON FIELD RC FLYERS.

05/31/2020 - Ridgefield, WA (C) SUPPORT THE TROOPS. Site: 17200 NE Delfel Rd @ Clark County Fairgrounds (West end). Mr David Agar CD/EM PH: (360)721-1963. Email: kamanhusky@aol.com. Sponsor: CLARK COUNTY RC SOCIETY INC.

June

ALABAMA

06/27/2020 - 06/28/2020 - Alabaster, AL (C) ALABASTER RC ASSN SPA PATTERN EVENT. Site: 2280 US 31 Limestone Park. Mr William D Phillips Jr. CD/EM PH: (205)491-9641. Email: ddphill9@aol.com.

ARKANSAS

06/4/2020 - 06/7/2020 - Mayflower, AR (C) S.M.A.L.L. Site: 855 Arkansas River Trail. Mr Pavel Plechacek CD/EM PH: (501)269-2914. Email: pavelp1971@yahoo.com. Visit: www.arskytigers.com. Sponsor: ARKANSAS SKY TIGERS.

06/13/2020 - 06/14/2020 - Wrightsville, AR (AA) LOST SQUADRON IMAC. Site: 7158 Lost Squadron Dr. Mr Dale E Womack CD/EM PH: (501)257-7925. Email: daleflysrcp47@basicisp.net. Sponsor: FRATERNAL ASSN OF RC MODELERS FARM.

CALIFORNIA

06/4/2020 - 06/6/2020 - Hemet, CA (C) BIGGEST "LITTLE" JET RALLY IN THE WEST. Site: 6601 Simpson Rd Hemet Model Masters Airpark - Simpson Field. Mr Mario D Muniz Sr. CD/EM PH: (909)969-1003. Email: mmkarbiz2@gmail.com. Visit: www.hemetmodelmasters.net.

06/5/2020 - 06/7/2020 - San Diego, CA (CRST) UAS4STEM. Site: South Shores Parkway SEFSD Rotorplex at Mission Bay. Mr Jim A Bonnardel CD/EM PH: (858)292-5518. Email: jbonnardel@earthlink.net. Sponsor: SILENTELECTRICFLYERSOFSANDIEGO.

06/6/2020 - 06/7/2020 - Isleton, CA (AA) WEST COAST CHALLENGE IMAC. Site: 18303 Tyler Island Rd. Mr Mark L Huntley CD/EM PH: (916) 529-1279. Email: mark@huntleyfamily.net. Visit: www.tokayrcmodelers.com.

06/6/2020 - 06/7/2020 - Silverado, CA (C) 14TH ANNUAL WARBIRDS AND CLASSICS SCALE FUNFLY. Site: 5305 Santiago Canyon Rd Bob Swenson Memorial Field. Mr John Randall O Wilbur CD/EM PH: (949)683-9662. Email: rwilbur@videotecheng.com. Visit: scalesquadron.com. Sponsor: SCALE SQUADRON OF SOUTHERN CA.

06/6/2020 - 06/7/2020 - Riverside, CA (C) IERCC SUMMER HELI BASH. Site: 11401 Arlington Ave. Mr Thomas S Rogers CD/EM PH: (909)772-6831. Email: ts.rogers9o9@gmail.com. Visit: iercc.net. Sponsor: INLAND EMPIRE RADIO CONTROL CLUB.

06/14/2020 - Perris, CA (AMA) ORBITEERS MONTHLY . Site: 26075 San Jacinto Ave Taibi Field. Mr Michael Pykelny CD/EM PH: (858)748-6235. Email: mpykelny@hotmail.com. Visit: www.sandiegoorbiteers.com. Sponsor: SAN DIEGO ORBITEERS.

COLORADO

06/6/2020 - Strasburg, CO (C) OPEN HOUSE. Site: 52860 E Quincy Rd. Mr David M Weiss CD/EM PH: (303)549-5778. Email: davemw@q.com. Visit: www.milehirc.com. Sponsor: MILE HI RC.

06/12/2020 - 06/14/2020 - Littleton, CO (C) WARBIRDS & CLASSICS OVER DENVER. Site: 11500 N Roxborough Park Rd Chatfield State Park. Ms Lora K Knowlton CD/EM PH: 303-973-1209. Email: cocoug@aol.com. Visit: warbirdsoverdenver.com. Sponsor: JEFCO AEROMODLERS CLUB.

06/20/2020 - 06/21/2020 - Golden, CO (AA) 2020 COLORADO PATTERN CHALLENGE. Site: 7608 Highway 93 AAM Airpark. Mr Joseph F Pirozzoli CD/EM PH: (303)422-0290. Email: jfpirozzoli@gmail.com. Visit: www.arvadamodelers.com. Sponsor: ARVADA ASSOCIATED MODELERS.

06/26/2020 - 06/27/2020 - Ault, CO (C) ROCKY MOUNTAIN BIG BIRD FESTIVAL. Site: 12760 14th Hwy Drake Field. Mr Van G Kratzenstein CD/EM PH: (970)330-7670. Email: marvanaircraft@comcast.net. Visit: loveair rc org. Sponsor: LOVE-AIR R/C CLUB.

CONNECTICUT

06/6/2020 - Farmington, CT (C) 6TH ANNUAL FARMINGTON VALLEY WARBIRD FLY-IN. Site: 3 Meadow Rd. Mr Peter R Church CD/EM PH: (860)276-8102. Email: peterchurch@cox.net. Visit: www.ccrcclub.com. Sponsor: CENTRAL CONNECTICUT RC CLUB.

06/13/2020 - 06/14/2020 - Salem, CT (C) MEMORIAL FUN FLY. Site: 479 Norwich Rd. Mr Shane M Duffy CD/EM PH: (860)908-7096. Email: shane-m-duffy@hotmail.com. Sponsor: RC PROPBUSTERS INC.

06/27/2020 - Farmington, CT (C) DON WILD MEMORIAL CUBS AND CLASSICS FUN-FLY. Site: 3 Meadow Rd. Mr Craig Korsen CD/EM PH: (860)559-3228. Email: cbk07@yahoo.com. Visit: ccrcclub.com. Sponsor: CENTRAL CONNECTICUT RC CLUB.

FLORIDA

06/6/2020 - 06/7/2020 - Land O Lakes, FL (AA) 24TH ANNUAL SPRING CLASSIC IMAC CONTEST. Site: 22500 State Rd 52 BCF Area 52 Flying Field @ Conner Preserve. Dr Gregory C Baggerly CD/EM PH: (813)310-3182. Email: gbaggerly@gmail.com. Visit: baycityflyers.com. Sponsor: BAY CITY FLYERS, INC.

06/6/2020 - Dunnellon, FL (C) 11TH ANNUAL TRI-COUNTY ELECTRIC FLY IN. Site: 11729 Bridges Rd Rainbow RC Airpark. Mr Bruce D Richardson CD/EM PH: 352-425-9976. Email: brucerpda@earthlink.net. Visit: www.tricountyrcclub.homestead.com. Sponsor: TRI-COUNTY RC CLUB.

06/9/2020 - 06/10/2020 - Palm Bay, FL (AMA) FMA JUNE RECORD TRIALS. Site: 2190 Sapodilla Rd SW. Mr Duncan McBride CD/EM PH: (239)437-0065. Email: n319dm@gmail.com. Sponsor: FLORIDA MODELERS ASSOCIATION.

06/13/2020 - Riverview, FL (C) PREMIER WARBIRD FLY-IN. Site: 12705 Balm Boyette Rd. Dr Malcolm R Greenberg CD/EM PH: 989-798-0536. Email: mirogflyer@aol.com. Visit: www.triplecreekrc.com. Sponsor:

TRIPLE CREEK RC.

GEORGIA

06/5/2020 - 06/7/2020 - Andersonville, GA (AA) PEACH PATTERN CLASSIC. Site: 428 Neil Hodges Rd Hodges Field. Mr Robert G Campbell CD/EM PH: (850)499-7095. Email: rgc1701@gmail.com. Visit: www.hodgeshobbies.com. Sponsor: EGLIN AERO MODELLERS and MILL CREEK AERODROME, INC.

06/11/2020 - 06/13/2020 - Andersonville, GA (C) WARBIRDS OVER GEORGIA. Site: 428 Neil Hodges Rd Hodges Field. Mr Mike Chilson CD/EM PH: (205) 306-7164. Email: emailme@mikechilson.com. Sponsor: CENTRAL ALABAMA SPORTFLIERS.

06/13/2020 - 06/14/2020 - Whitesburg, GA (AA) CHATTAHOOCHEE CHALLENGE. Site: 1487 Black Dirt Rd NGTurf Sod Farm. Mr James A Altenbern CD/EM PH: 864-398-0303. Email: jaltenbern0705@charter.net. Visit: www.thermalthumbers.com. Sponsor: THERMAL THUMBERS OF METRO ATLANTA.

06/20/2020 - Dunwoody, GA (A) JUNE INDOOR. Site: 1978 Mt Vernon Rd Saint Luke's Presbyterian Church. Mr Nicholas A Ray CD/EM PH: 865-368-3820. Email: lasray@gmail.com. Visit: www.thermalthumbers.com. Sponsor: THERMAL THUMBERS OF METRO ATLANTA.

06/26/2020 - 06/28/2020 - Menlo, GA (C) RED, WHITE & BLUE FUNFLY. Site: 1215 Sunnydale Rd. Mr Timothy B Williams Sr. CD/EM PH: (423)595-9023. Email: tim309will@yahoo.com. Sponsor: BIG SKY R/C CLUB.

IDAHO

06/6/2020 - Pocatello, ID (A) RED BARON'S TURKEY SHOOT. Site: 1950 Boeing Ave Geisler Field. Mr Randy K Shiosaki CD/EM PH: (208)785-6691. Email: shiosaki@cableone.net. Sponsor: EASTERN IDAHO AEROMODELERS and RED BARON RC MODELERS.

06/24/2020 - 06/28/2020 - Moscow, ID (AAA) KIBBIE DOME ANNUAL. Site: 711 S Rayburn St Kibbie Dome. Mr Jake A Palmer CD/EM PH: (360)545-3113. Email: 82.jake@gmail.com.

ILLINOIS

06/6/2020 - 06/7/2020 - Elwood, IL (A) CHUCK MACK MEMORIAL PATTERN CONTEST. Site: 17415 W Bernhard Rd. Mr Raymond V Shroba IV CD/EM PH: (815)258-1618. Email: president.jolietrc@gmail.com. Visit: jolietrc.com. Sponsor: JOLIET RADIO CONTROL CLUB INC.

06/6/2020 - Pontoon Beach, IL (C) ALL-ELECTRICS FLY-IN (DANNY URBECK MEMORIAL). Site: 285 Bruns Rd. Mr Stanley J Marmuziewicz Jr. CD/EM PH: 618-741-1926. Email: soarin2007@live.com. Visit: http://midwestairwingrc.com/events. Sponsor: MIDWEST AIR WING R/C CLUB.

06/13/2020 - 06/14/2020 - Streator, IL (C) DAVE GOERNE MEMORIAL FUN FLY. Site: 1248 E 15th Rd. Ryan L Hinton CD/EM PH: (815)341-3369. Email: catfish25p2000@yahoo.com. Sponsor: STREATOR RC FLYERS.

06/18/2020 - 06/20/2020 - St. Charles, IL (C) WINDY CITY WARBIRDS AND CLASSICS. Site: 3821 Karl Madsen Dr - off of Peck Rd. Mr Armin Weber CD/EM PH: (630)697-0992. Email: aweberp47@gmail.com. Visit: foxvalleyaero.com. Sponsor: FOX VALLEY AERO CLUB.

06/20/2020 - Pawnee, IL (C) SANGAMON VALLEY RC FLY IN. Site: 7800 N Pawnee Rd Holmes Airstrip. Mr Gary E Stevens CD/EM PH: (217)691-2224. Email: therossiman45@gmail.com. Visit: svrcflyers.com. Sponsor: SANGAMON VALLEY RC FLYERS.

06/20/2020 - Waco, TX (C) FLOAT FLY. Site: 11123 Chickory Ridge Way Chickory Ridge Lake. Mr Orv S Steinmetz CD/EM PH: 815 988 6583. Email: skyhawker6@gmail.com. Visit: rockvalleyr/cflyers.club.com. Sponsor: ROCK VALLEY RC FLYERS.

06/26/2020 - 06/28/2020 - Decatur, IL (C) GLOW PLUG PALOOZA. Site: 4814 Cundiff Rd. Mr Michael I Ramsey CD/EM PH: (973)945-9956. Email: milehipilot@gmail.com. Visit: http://glowplugpalooza.com. Sponsor: DECATUR AEROCOMMANDERS R.C INC.

06/26/2020 - 06/28/2020 - Erie, IL (C) RC FLIGHT FEST 2020. Site: 8689 Star Rd Erie Air Park. Neal F Zahn CD/EM PH: 309-507-9012. Email: erieclubrc@gmail.com. Sponsor: ERIE RC CLUB.

06/27/2020 - 06/28/2020 - Hoffman Estates, IL (AA) TRI VILLAGE PATTERN CONTEST. Site: 3000 Shoe Factory Rd. Mr Robert G Satalino CD/EM PH: (847)987-9516. Email: bobrcair@comcast.net. Sponsor: TRI VILLAGE RCERS.

INDIANA

06/6/2020 - Winamac, IN (C) FLYING FLEA MARKET. Site: 238 South 100 W Braun Field. Mr Stanley Zolodz CD/EM PH: (219)776-1652. Email: sjzolodz@hotmail.com. Visit: www.midwestsundowners.com/. Sponsor: WINAMAC AERO-MODELERS.

06/6/2020 - 06/7/2020 - Muncie, IN (A) MCCOOK FIELD SQUADRON FAC MEET. Site: 5161 E Memorial Dr International Aeromodeling Center.Mr Patrick M Murray CD/EM PH: 317-410-2200. Email: pmurray@centerlinedesignllc.com. Visit: flyingacesclub.com. Sponsor: CENTRAL INDIANA AEROMODELLERS.

06/7/2020 - 06/13/2020 - Muncie, IN (CRST) CAMP AMA. Site: 5161 E Memorial Dr International Aeromodeling Center. Mr Kyle J Jaracz CD/EM PH: 765-287-1256. Email: kylej@modelaircraft.org. Sponsor: ACADEMY OF MODEL AERONAUTICS.

06/11/2020 - 06/14/2020 - Elizabeth, IN (CRST) 2020 EDF JET JAM. Site: 11352 Highway 111 SE. Mr. Robert N Belluomini CD/EM PH: (513)325-6268. Email: bneffb@icloud.com. Sponsor: ROSEWOOD RC FLYERS.

06/13/2020 - Morristown, IN (C) CUBS AND FLOATY FLYERS. Site: 9860 Blue River Rd Blue River Air Park. Mr Ted B Brindle CD/EM PH: (317)797-8502. Email: iflyrc5@comcast.net. Visit: indyrcmodelers.com. Sponsor: INDIANAPOLIS RC MODELERS.

06/17/2020 - 06/18/2020 - New Haven, IN (BRST) BOB HARTWIG MEMORIAL 32ND ANNUAL RC OLD TIME CONTEST. Site: 1702 N Webster Rd. Mr Bruce H Wallace CD/EM PH: (260)450-2948. Email: wallbh.9613@gmail.com. Visit: flyingcircuits.org. Sponsor: FT WAYNE FLYING CIRCUITS INC.

06/19/2020 - 06/20/2020 - Elwood, IN (C) MADISON COUNTY DAWN PATROL. Site: 8246 County Rd 1850. Mr Tamas T Seres CD/EM PH: 765.620.6483. Email: tom.seres@yahoo.com. Visit: madisoncorc.com. Sponsor: MADISON COUNTY RC FLYERS.

Indiana06/20/2020 - Wheeler, IN (C) FLYING FLEA MARKET. Site: 476 N 650 W Rainford Field. Mr Stanley Zolodz CD/EM PH: (219)776-1652. Email: sjzolodz@hotmail.com. Visit: www.midwestsundowners.com. Sponsor: MIDWEST SUNDOWNER R/C FLYING CLUB.

06/20/2020 - New Carlisle, IN (C) ART PEEBLES MEMORIAL FLY-IN. Site: 55600 Snowberry Rd. Mr Joseph Larson CD/EM PH: (574)271-0020. Email: beaglewerks@gmail.com. Visit: http://michianaskyraidersinc.com. Sponsor: MICHIANA SKY RAIDERS, INC.

06/20/2020 - St John, IN (C) ANNUAL FLOAT FLY. Site: 8 Lake Hills Drive at Golf Lake. Mr Dennis W Shipley CD/EM PH: (219)696-9652. Email: deltadawn3@hotmail.com. Sponsor: CROWN POINT AEROMODELERS.

06/26/2020 - 06/28/2020 - Elizabeth, IN (AA) MINT JULEP SCALE MEET. Site: 11352 Highway 111. Mr Dale Arvin CD/EM PH: (812)284-0162. Email: darvin8094@aol.com. Visit: rosewoodrc.com. Sponsor: ROSEWOOD RC FLYERS.

06/27/2020 - 06/28/2020 - Danville, IN (C) BLACKSHEEP R/C MODELERS 13TH ANNUAL WARBIRD. Site: 178 E Twin Bridges Rd Corsair Field. Mr Rege E Hall CD/EM PH: (317)250-4767. Email: hall.rege@sbcglobal.net. Visit: blacksheepclub.org. Sponsor: BLACKSHEEP R C MODELERS CLUB.

IOWA

06/12/2020 - 06/14/2020 - Montezuma, IA (C) MIKE GRETZ MEMORIAL RC FLY-IN. Site: 5115 US Hwy 63 Sig-Hester's Airport. Mr Robert E Nelson CD/EM PH: (319)239-5744. Email: bobsrc@zumatel.net. Visit: sigmfg.com.

06/19/2020 - 06/20/2020 - Montezuma, IA (AMA) MIKE GRETZ CONTROL LINE FUN FLY & SL COMBAT. Site: 5115 US HWY 63 Sig-Hester's Airport. Mr Robert E Nelson CD/EM PH: (319)239-5744. Email: bobsrc@zumatel.net. Visit: bobsrc@zumatel.net.

KANSAS

06/6/2020 - 06/7/2020 - Paola, KS (C) HEART OF AMERICA FLOAT FLY. Site: W Lake Miola Dr. Mr Patrick A McGhee CD/EM PH: (913)696-1168. Email: pmcgheekc@gmail.com. Visit: http://rcbarnstormers.info. Sponsor: R/C BARNSTORMERS.

06/27/2020 - 06/28/2020 - Salina, KS (AA) 4TH ANNUAL NATS WARM-UP FOR IMAC. Site: Levee Trail System. Mr Rudy D Voldrich CD/EM PH: (785)456-4586. Email: rvoldrich@cox.net. Visit: smokyhillrc.org. Sponsor: SMOKY HILL MODEL FLYING CLUB INC.

06/27/2020 - 06/28/2020 - Pittsburg, KS (AA) 2020 PITTSBURG RC PATTERN CONTEST. Site: 504 S 200th St Atkinson Municipal Airport. Mr Ihncheol Park CD/EM PH: (620)719-9453. Email: patternflyer@sbcglobal.net. Visit: www.facebook.com/pittrc. Sponsor: PITTSBURG RADIO CONTROL CLUB.

06/27/2020 - Lawrence, KS (C) JAYHAWK FLOAT FLY. Site: 952 E 1000 Rd. Mr Gary L Rauckman CD/EM PH: (785)423-2700. Email: rocketman200@juno.com. Visit: jayhawk float fly. Sponsor: JAYHAWK MODEL MASTERS INC.

KENTUCKY

06/4/2020 - 06/7/2020 - Bowling Green, KY (C) VETTE CITY BIG BIRD FLY IN. Site: 185 Stahl Ln Carson Stahl Memorial Aerodrome. Mr Steven Price CD/EM PH: (270)790-9050. Email: sprice.ky@gmail.com. Visit: www.skymacbg.com. Sponsor: SOUTHERN KY MODEL AERO CLUB SKYMAC.

06/6/2020 - Somerset, KY (C) START OF SUMMER FLY IN. Site: Kentucky 1247 CR Fowler Field. Mr Jami L Albright CD/EM PH: 606-305-5660. Email: jami.albright@twc.com. Visit: smac-ky.org. Sponsor: SOMERSET MODEL AIRPLANE CLUB.

06/6/2020 - 06/7/2020 - Louisville, KY (DEMO) WINGS FOR KIDS R/C AIR SHOW. Site: 2565 KY 1747 Bill Fluke Airfield at EP Tom Sawyer Park. Mr Douglas E Bailey CD/EM PH: (502)930-5753. Email: zgconcours@icloud.com. Visit: rcrcky.com. Sponsor: RIVER CITY RADIO CONTROLLERS.

06/13/2020 - Paducah, KY (CRST) GEORGE LANKTON MEMORIAL FLY-IN. Site: 501 County Park Rd McCracken County Model Air Park. Mr Phillip Rudd CD/EM PH: (270)217-3150. Email: greyfoxx@bellsouth.net. Visit: paducahaeromodelers.com. Sponsor: PADUCAH AERO MODELERS, INC.

LOUISIANA

06/12/2020 - 06/13/2020 - Sulpher, LA (C) CUBS AND COUSINS. Site: 7036 Larksfield Rd Hinch Model Airpark. Mr Jeffrey S Reed CD/EM PH: (409)313-2852. Email: lpgreed@yahoo.com. Sponsor: LAKE AREA RADIO KONTROL SOCIETY.

06/27/2020 - 06/28/2020 - Sulpher, LA (AA) GULF COAST PATTERN CHAMPIONSHIP. Site: 7036 Larksfield Rd Hinch Model Airpark. Mr. Monroe D Michaelis CD/EM PH: (337)853-6642. Email: patternflyer444774@yahoo.com. Visit: www.larksrc.org. Sponsor: LAKE AREA RADIO KONTROL SOCIETY.

MARYLAND

06/13/2020 - Boyds, MD (C) ANDY KANE FLY-IN. Site: 16200 Schaeffer Rd Walt Good Field. Mr Edward A Leibolt CD/EM PH: 301-949-8790. Email: ealeib@verizont.net. Visit: dc-rc.org. Sponsor: DCRC CLUB.

06/20/2020 - 06/21/2020 - Vienna, MD (AA) ESAC JACK STOVAL IMAC CHALLENGE. Site: 4835 Indiantown Rd. Mr Kenneth M Weaver CD/EM PH: (410)726-7577. Email: kenweaver191@yahoo.com. Visit: esac.org. Sponsor: EASTERN SHORE AEROMODELERS.

06/27/2020 - Beltsville, MD (C) AIRPLANES OF THE WORLD XVI. Site: 6050 Van Dusen Rd Konterra Model Airpark. Mr Kirk M Adams CD/EM PH: 443-995-2962. Email: kirkfsa@gmail.com. Visit: flyfreestate.com. Sponsor: FREE STATE AEROMODELERS.

MASSACHUSETTS

06/13/2020 - Dartmouth, MA (C) DAVE ANDRADE MEMORIAL FUN FLY & WARBIRD DAY. Site: 482 Smith Neck Rd. Mr Edward E Watts CD/EM PH: (781)326-1045. Email: nedwatts@mac.com. Sponsor: BRISTOL COUNTY RADIO CONTROL.

06/18/2020 - 06/21/2020 - Newburyport, MA (CRST) 2020 PLUM ISLAND JET RALLY. Site: 24 Plum Island Turnpike Plum Island Airport. Mr Robert J Radford CD/EM PH: (603)475-2200. Email: 1fb111nav@gmail.com. Sponsor: PLUM ISLAND AIRPORT R/C FLYERS.

06/21/2020 - Turner Falls, MA (C) FCRCC ANNUAL FATHER'S DAY FUN FLY. Site: 10 Aviation Way. Mr Theodore A Toothaker CD/EM PH: (413) - 475 - 3936. Email: toothata1@gmail.com. Visit: www.franklinrc.com. Sponsor: FRANKLIN COUNTY RC.

MICHIGAN

06/4/2020 - 06/6/2020 - Grand Ledge, MI (C) WARBIRDS AND CLASSICS OVER MICHIGAN. Site: 8328 Otto Rd. Mr Gerry D Kesler CD/EM PH: (517)719-6438. Email: gkesler1@hotmail.com. Visit:

SANCTIONED EVENT CALENDAR

warbirdandclassics.com. Sponsor: CAPITAL AREA RADIO DRONE SQUAD C.A.R.D.S.

06/11/2020 - 06/13/2020 - Baldwin, MI (C) MICHIGAN JET RALLY. Site: 8140 Michigan 37 Baldwin Municipal Airport. Mr Len Todd CD/EM PH: (970)903-3569. Email: lentodd@att.net. Visit: www.lcmfa.com. Sponsor: LAKE COUNTY MODELERS & FLYERS ASSOCIATION.

06/12/2020 - 06/14/2020 - Saranac, MI (AA) SARANAC IMAC. Site: 8548 Morrison Lake Rd Walter RC Park. Mr David A Walter CD/EM PH: (616)204-3798. Email: gasman3145@gmail.com. Visit: www.walterrcpark.com. Sponsor: IONIA COUNTY MODEL CLUB.

06/19/2020 - 06/21/2020 - Saranac, MI (C) MIDWEST EXTREME FLIGHT FESTIVAL 2020. Site: 8548 Morrison Lake Rd Walter RC Park. Mr David A Walter CD/EM PH: 616-204-3798. Email: gasman3145@gmail.com. Visit: walterrcpark.com. Sponsor: IONIA COUNTY MODEL CLUB.

06/19/2020 - 06/21/2020 - Erie, MI (C) GREAT LAKES CLASSIC SCALE. Site: 11452 Minx Rd. Mr John S Borton CD/EM PH: (419)882-1165. Email: jsborton1@gmail.com. Sponsor: WEAK SIGNALS RC.

06/26/2020 - 06/27/2020 - Saranac, MI (C) RC HELI FUN FLY CHOPPER FEST . Site: 8548 Morrison Lake Rd Walter RC Park. Mr David A Walter CD/EM PH: 616-204-3798. Email: gasman3145@gmail.com. Visit: walterparkrc.com. Sponsor: IONIA COUNTY MODEL CLUB.

06/27/2020 - 06/28/2020 - Jackson, MI (AA) MID-MICHIGAN IMAC CONTEST. Site: Dalton Rd Pete Dillon Field. Mr Michael L Roxberry CD/EM PH: (517)782-4921. Email: roxberrym@comcast.net. Visit: jacksonrc.com. Sponsor: JACKSON RC CLUB.

06/27/2020 - 06/28/2020 - Baldwin, MI (C) MICHIGAN PYLON RACE COMPETITION. Site: 8140 Michigan 37 Baldwin Municipal Airport. Mr Len Todd CD/EM PH: (231)745-9241. Email: lentodd@att.net. Visit: www.lcmfa.com. Sponsor: LAKE COUNTY MODELERS & FLYERS ASSOCIATION.

MINNESOTA

06/12/2020 - 06/13/2020 - Owatonna, MN (C) MINNESOTA JETS. Site: 7018 SW 48th St. Mr Christopher L Mayer CD/EM PH: (507)250-4160. Email: crjdriver@charter.net. Visit: http://jets.smmac.com/about. Sponsor: SOUTHERN MN MODEL AIRCRAFT CLUB.

06/13/2020 - 06/14/2020 - East Bethel, MN (AA) MINNESOTA PATTERN CHAMPIONSHIPS. Site: 19801 Minnesota 65. Mr Brian D Dorff CD/EM PH: 701-317-6816. Email: bluebaronbrian@gmail.com. Visit: anoka-rc.com. Sponsor: ANOKA COUNTY RC CLUB INC and RED RIVER RC FLYERS.

06/27/2020 - East Grand Forks, MN (A) RED RIVER R/C FLYERS PATTERN CONTEST. Site: 46577 140th St SW. Mr Brian D Dorff CD/EM PH: (701)317-6816. Email: bluebaronbrian@gmail.com. Visit: www.redriverflyers.com. Sponsor: RED RIVER RC FLYERS.

MISSOURI

06/5/2020 - 06/7/2020 - Eureka, MO (C) SLRCFA GIANT SCALE & JET FLY IN. Site: 788 Augustine Rd. Mr Marshall L Henley CD/EM PH: 636-429-2884. Email: marshallhenley@gmail.com. Visit: slrcfa.com. Sponsor: ST LOUIS RC FLYING ASSOC.

06/6/2020 - Eldon, MO (C) RELAY FOR LIFE CANCER FUN FLY. Site: 26 Porter Rd Harrison Field Mr Daniel D Smith CD/EM PH: (573)216-8454. Email: daniel@eldonmo.com.

06/13/2020 - 06/14/2020 - Lee's Summit, MO (A) KC F2D TRIPLE ELIMINATION 2020 8TH ANNUAL! Site: 3581 Rennau Dr Charles W Reed III Flying Field. Mr Andy Minor CD/EM PH: (816)868-9454. Email: dr.andyminordc@gmail.com. Sponsor: KANSAS CITY RC ASSN.

06/19/2020 - 06/20/2020 - Bolivar, MO (C) BOLIVAR PRO BRO. Site: 4807 S 127th Rd. Mr Steve E Prewitt CD/EM PH: 417-459-7865. Email: flymetwo@gmail.com. Visit: bolivarsportflyers.com. Sponsor: BOLIVAR SPORT FLYERS.

06/26/2020 - 06/28/2020 - Saint Joseph, MO (C) ST. JOSEPH BARNSTORMERS FUN FLY. Site: 7274 Missouri 6 Field of Dreams. Mr Boston R Parker CD/EM PH: (620)290-3571. Email: bostonparker@hotmail.com. Visit: facebook.com/stjoebarnstormers. Sponsor: ST JOE BARNSTORMERS.

06/27/2020 - 06/28/2020 - Fenton, MO (C) SPIRIT OF ST LOUIS BUDER PARK CL FUN FLY. Site: 265 Valley Park Rd Buder Park. Mr Frederick S Cronenwett CD/EM PH: (316)680-1515. Email: clscale7@gmail.com. Visit: https://lafayetteesquadrillecl.wordpress.com. Sponsor: LAFAYETTE ESQUADRILLE.

MONTANA

06/6/2020 - Polson, MT (C) ROLAND AND GEORGE MEMORIAL FUN FLY. Site: 7801 Farm Rd Minesinger Trail Farm. Eric J Kendall CD/EM PH: (406)303-0853. Email: bigskyhobbycorner@gmail.com. Sponsor: MISSION VALLEY MODEL AVIATORS.

6/17/2020 - 06/21/2020 - Livingston, MT (C) PARADISE VALLEY FLY IN #1. Site: 10 McDonald Creek Rd Skattum Dairy Farm. Mr Dennis S Rollins CD/EM PH: (406)855-2640. Email: dennis.s.rollins@gmail.com. Sponsor: CRAZY MTN FLYERS RCM.

06/26/2020 - 06/28/2020 - Billings, MT (C) BILLINGS FLYING MUSTANGS ANNUAL FLY IN. Site: 8223 Grand Ave Chamberlain Field. Mr Dennis S Rollins CD/EM PH: (406)855-2640. Email: dennis.s.rollins@gmail.com. Visit: www.billingsflyingmustangs.us. Sponsor: BILLINGS FLYING MUSTANGS.

06/27/2020 - 06/28/2020 - Helena, MT (C) MONTANA SUMMER SOARING IX. Site: 3557 Eames Ln. Mr Curtis L Suter CD/EM PH: (406)459-0923. Email: suterc@msn.com. Visit: www.rcgroups.com/forums/showthread.php?3524655-montana-summer-soaring-ix. Sponsor: HELENA FLYING TIGERS.

NEBRASKA

06/19/2020 - 06/21/2020 - Alda, NE (C) GI MODELERS RC AIRPLANE FUN FLY 2020. Site: 3173 County Rd 24. Mr Steve Blayney CD/EM PH: 308-390-7439. Email: rcflyergi@gmail.com. Visit: www.gimodelers.club. Sponsor: GRAND ISLAND MODELERS ASSN.

NEVADA

06/19/2020 - 06/22/2020 - West Wendover, NV (AA) CASINO CUP. Site: Lincoln Hwy BLM Site. Mr Jack Murphy CD/EM PH: (801)550-9128. Email: jack.murphy@utahhomes.com. Sponsor: MAGNIFICENT MOUNTAIN MEN INC.

NEW HAMPSHIRE

06/6/2020 - 06/7/2020 - Concord, NH (AA) GRANITE STATE 2019 IMAC. Site: 58 Locke Rd. Mr James R Cyr CD/EM PH: 2034212145. Email: warhawk@snet.net. Visit: concordskyhawks.com Sponsor: CONCORD SKYHAWKS.

NEW JERSEY

06/6/2020 - Forked River, NJ (C) 4TH ANNUAL LAKE FUN FLY. Site: Deer Head Lake Dam. Mr Richard L Bombardier CD/EM PH: 732-237-2080. Email: rlbomber@comcast.net. Visit: pbm1727.org. Sponsor: PINE BARREN MODELERS.

06/7/2020 - Middlesex, NJ (BRST) MIDDLESEX MODELERS WARM-UP RACE/SPEED. Site: 302 John F Kennedy Dr Mountainview Park. Mr Carl T Schaefer CD/EM PH: (908)803-7405. Email: earthingbrush2@yahoo.com. Sponsor: MIDDLESEX MODELERS INC.

06/20/2020 - Bridgewater, NJ (C) BIG BIRD FLY-IN. Site: 355 Milltown Rd North Branch Park. Mr. Domecq Smith CD/EM PH: (732)215-8371. Email: domecqsmith@msn.com. Visit: https://somersetrc.org. Sponsor: SOMERSET RC.

NEW MEXICO

06/6/2020 - 06/7/2020 - Albuquerque, NM (AA) JOHN GAYER MEMORIAL ROADRUNNER CLASSIC. Site: 14311 Central Ave NW Henry Wood Memorial Field. Mr Joseph F Pirozzoli CD/EM PH: (303)422-0290. Email: jfpirozzoli@gmail.com. Visit: http://rmfm.club/index.php. Sponsor: ROCKY MOUNTAIN FLYING MACHINE.

CANCELLED

06/13/2020 - 06/14/2020 - Albuquerque, NM (C) ARCC GREEN CHILI SCALE EXTRAVAGANZA. Site: 8500 81st NW George J Maloof Memorial Air Park. Mr Howard A Chapman CD/EM PH: (505)301-8244. Email: howard15@swcp.com. Visit: arcc.club. Sponsor: ALBUQUERQUE RC CLUB.

NEW YORK

06/5/2020 - 06/7/2020 - Geneseo, NY (AA) EMPIRE STATE FREE FLIGHT CHAMPIONSHIPS. Site: 3489 Big Tree Ln National Warplane Museum at Geneseo. Mrs Ruth A Bane CD/EM PH: (585)765-9363. Email: windwhip47@aol.com. Visit: wnyffs.org. Sponsor: WESTERN NEW YORK FREE FLIGHT SOCIETY.

06/13/2020 - 06/14/2020 - Red Hook, NY (C) RHINEBECK ADRODROME SPRING FUNFLY. Site: 9 Norton Rd Old Rhinebeck Aerodrome. Mr Warren A Batson CD/EM PH: (845)266-3862. Email: batson.warren@gmail.com. Visit: mhrcs.com. Sponsor: MID HUDSON RC SOCIETY.

06/13/2020 - 06/14/2020 - Bath, NY (C) JOLAMTRA FUN FLY. Site: 5752 Wind Fall Rd Jolamtra Landing Area. Mr Paul P Spara CD/EM PH: 585-738-5424. Email: paulspara@gmail.com.

06/13/2020 - West Haverstraw, NY (C) WARBIRDS OVER THE HUDSON. Site: 516-524 Beach Rd. Beach Rd Sanitary Landfill. Mr Bruce A Leach CD/EM PH: (845)786-1879. Email: bruceleach@optimum.net. Visit: hvrcc.com. Sponsor: HUDSON VALLEY R/C CLUB.

06/21/2020 - Wantagh, NY (C) NASSAU FLYERS ANNUAL ELECTRIC FLY-IN. Site: 3320 Merrick Rd Lufbery Aerodrome, Cedar Creek Park. Mr Stuart A Silverman CD/EM PH: (516)476-3194. Email: docstu5@msn.com. Visit: nassauflyersrc.com. Sponsor: NASSAU FLYERS/L.I. CONDORS RC CLUB INC.

06/25/2020 - 06/28/2020 - Crown Point, NY (C) VALLEY OF THE GIANTS. Site: 580 New York 185 Bridge Rd. Mr Solomon G Allen CD/EM PH: (518)597-3570. Email: cpsollie597@gmail.com. Visit: www.champlainvalleyflyers.com.

06/26/2020 - 06/27/2020 - Deer Park, NY (C) EDGEWOOD FLYERS HELI FUN FLY. Site: Old Cammack Rd. Mr Boyce E Wellmaker CD/EM PH: (516)233-6301. Email: bwellmaker@yahoo.com. Sponsor: EDGEWOOD FLYERS INCORPORATED.

06/26/2020 - 06/27/2020 - Binghamton, NY (C) WARBIRDS OVER CHENANGO BRIDGE. Site: 247 Airport Rd Chenango Bridge Airport. Mr Jason M Felice CD/EM PH: 607-341-0829. Email: felicejm27@gmail.com. Sponsor: BINGHAMTON AEROS.

06/26/2020 - 06/27/2020 - Manorville, NY (CRST) WARBIRDS OVER LONG ISLAND. Site: Moriches-Riverhead Rd. Mr Victor A Macaluso CD/EM PH: (516)578-3254. Email: omots54@aol.com. Sponsor: LONG ISLAND SKYHAWKS.

06/27/2020 - 06/28/2020 - New Hampton, NY (AA) SKYSCRAPERS ANNUAL. Site: 337 County Rd 12 Barron Field. Mr David Acton CD/EM PH: (914)393-7491. Email: davidptacton@hotmail.com. Sponsor: BROOKLYN SKYSCRAPERS.

06/27/2020 - 06/28/2020 - Brockport, NY (C) RAY EDMUNDS MEMORIAL JUNE FUN FLY. Site: 304 Salmon Creek Rd Northampton Park Model Flying Field. Ed Britton CD/EM PH: 585-309-4348. Email: eplanerc@gmail.com. Visit: rccr1957.com. Sponsor: RADIO CONTROL CLUB OF ROCHESTER.

NORTH CAROLINA

06/6/2020 - Winston Salem, NC (C) WINGNUT. Site: 2301 W Clemmonsville Rd Hobby Park W. Mr Vance W Jones CD/EM PH: (336)831-7565. Email: jonesv2723@att.net. Visit: http://hprc.almostliveradio.net. Sponsor: HOBBY PARK RCERS.

06/6/2020 - La Grange, NC (C) ECRC FUN FLY. Site: 4150 County Line Rd. Mr Brian R Brannan CD/EM PH: 919-915-0838. Email: absbran@bellsouth.net. Visit: ecrcgflyers.com. Sponsor: EAST CAROLINA RCERS.

06/13/2020 - Goldsboro, NC (C) WAYNE AERONAUTICS FIXED WING FUN FLY. Site: 262 James Hinson Rd. Mr Jimmy Pernell CD/EM PH: (919)915-3677. Email: jfpernellrc@aol.com. Visit: jfpernellrc@aol.com. Sponsor: WAYNE MINIATURE AERONAUTICS.

06/18/2020 - 06/21/2020 - East Bend, NC (C) 7TH ANNUAL GIANT SCALE WARBIRDS AND VINTAGE AIRCRAFT UP TO 1940. Site: 3324 Apperson Rd. Mr John F Welcome CD/EM PH: (336)303-2245. Email: jfwelcome@gmail.com. Visit: www.riversiderc.com. Sponsor: RIVERSIDE AERO MODELERS SOCIETY.

06/20/2020 - Youngsville, NC (C) BLAST FROM THE PAST VINTAGE FLY IN. Site: 1339 Bethlehem Church Rd. Mr Herbby Alford CD/EM PH: 919-218-1389. Email: herbby.alford@wemc.com. Visit: rd-rc.com. Sponsor: RALEIGH DURHAM RADIO CONTROL.

06/26/2020 - 06/28/2020 - Goldsboro, NC (AA) MID-ATLANTIC HELI CHAMPIONSHIPS. Site: 262 James Hinson Rd. Mr Robert M Montee CD/EM PH: (571)234-3065. Email: monteerm@hotmail.com. Visit: facebook.com/midatlantichelichampionships. Sponsor: WAYNE MINIATURE AERONAUTICS.

06/26/2020 - 06/28/2020 - East Bend, NC (C) DRAGON FLY HELI EVENT. Site: 3324 Apperson Rd. Mr Mark Pfaff CD/EM PH: (336)816-1262. Email: tmarkpfaff@gmail.com. Visit: riversiderc.com. Sponsor: RIVERSIDE AERO MODELERS SOCIETY.

06/27/2020 - 06/28/2020 - Tabor City, NC (AA) SMFC IMAC CHALLENGE. Site: 548 Narrow End Rd. Mr David C Williams CD/EM PH: (910)395-5930. Email: davecw@ec.rr.com. Visit: www.southeasternmodelers.com. Sponsor: SOUTHEASTERN MODELERS FLYING CLUB.

OHIO

06/5/2020 - 06/7/2020 - Trenton, OH (A) GCRCC/CAPS MOONSHOT PYLON RACE. Site: 1912 Woodsdale Rd. Mr Thomas S Scott CD/EM PH: 573-604-6464. Email: askus@scottmodels.com. Visit: gcrcc.net. Sponsor: GREATER CINCINNATI RC CLUB.

06/5/2020 - 06/7/2020 - Centerburg, OH (AA) CENTRAL OHIO SCALE CLASSIC. Site: 3275 Columbus Rd Chapman Memorial Field. Mr Adam J Grubb CD/EM PH: (614)312-4290. Email: grubb.34@osu.edu. Sponsor: CENTRAL OH RK SOC CORKS and FAIRFIELD OHIO RADIO KONTROL F.O.R.K.S.

06/6/2020 - Little Hockng, OH (C) BLENNERHASSETT AREA RC ANNUAL SPRING FLY-IN. Site: 405 Carson Ln. Mr Joseph Kapraun CD/EM PH: (304)482-4670. Email: kapraunj@frontier.com. Visit: barcc.us. Sponsor: BLENNERHASSETT AREA RC CLUB.

06/6/2020 - Germantown, OH (C) DAWN PATROL & GOLDEN ERA FLY IN. Site: 10491 Carlisle Pike. Mr James A Martin CD/EM PH: 937-260-0143 - CELL. Email: hooitelovesremy@yahoo.com. Visit: worksrcclub.net. Sponsor: WESTERN OHIO RADIO KONTROL SOCIETY.

06/6/2020 - Lisbon, OH (C) CENTAUR FUN FLY. Site: 8318 County Home Rd. Mr Craig M Straub CD/EM PH: (330)206-7791. Email: toytrdkaw@yahoo.com. Visit: www.centaur-rc.org.

06/7/2020 - Geneva, OH (C) KEN PAGE MEMORIAL. Site: 5925 Romeo Rd. Mr Bernard Oldenburgh CD/EM PH: 440-255-3014. Email: bernieo-rc@oh.rr.com. Visit: mentorrc.com. Sponsor: MENTOR AREA RC SOCIETY.

06/11/2020 - 06/14/2020 - Doylestown, OH (C) SPRING FLING 3D MELTDOWN. Site: 11600 Porr Rd. Mr Mark A Sivard CD/EM PH: 330-351-6713. Email: mpsivard@yahoo.com. Visit: http://doylestownbarnstormers.com. Sponsor: DOYLESTOWN BARNSTORMERS RC CLUB.

06/13/2020 - 06/14/2020 - Dayton, OH (AA) DAYTON NATS WARM UP. Site: 1301 E Siebenthaler Wegerzyn Gardens MetroPark. Mr Bob Heywood CD/EM PH: 937-890-7555. Email: rheywood@woh.rr.com. Sponsor: DAYTON BUZZIN BUZZARDS MAC.

06/13/2020 - 06/14/2020 - Perrysville, OH (C) BUCKEYE FPV RACE AT THE LAKE. Site: 3431 OH-95 Pleasant Hill Lake. Mr Wesley Johnson CD/EM PH: (614)745-6133. Email: wjohnson0722@gmail.com. Visit: www.multigp.com/races/view/?race=19895/buckeye-fpv-race-at-the-lake. Sponsor: CENTRAL OHIO ROTARY FLIERS.

06/13/2020 - Delphos, OH (C) FLY WHAT YOU BRING. Site: 7651 Elida Rd. Mr Rodney C Metz CD/EM PH: (419)738-2007. Email: dts@bright.net. Visit: http://larksclub.homestead.com. Sponsor: LARKS.

06/13/2020 - Piqua, OH (C) UVFF FUN FLY IN. Site: 8451 Troy-Sidney Rd. Mr Gary B Webb CD/EM PH: 937/286-2865. Email: gcwent@woh.rr.com. Sponsor: UPPER VALLEY FUN FLYERS.

06/14/2020 - Columbiana, OH (C) MAHONING COUNTY MODEL CLUB. Site: 44337 County Line Rd Shaker Woods Field. Mr Richard E Evans CD/EM PH: (330)207-9161. Email: ree39@zoominternet.net. Sponsor: MAHONING COUNTY MODEL CLUB.

06/20/2020 - Alliance, OH (C) DAWN PATROL OVER ALLIANCE. Site: 13871 Union Ave NE Barber Airport. Mr Rick Jacobs CD/EM PH: (330)724-7132. Email: rickj@neorc.com. Visit: alliancebalsabees.com. Sponsor: ALLIANCE BALSA BEES INC.

06/20/2020 - Wilmington, OH (C) 2020 CLINTON MODEL AVIATORS FATHER'S DAY RC FLY IN. Site: 1700 Texas Rd. Mr Mike W Winkelman CD/EM PH: (937)393-0352. Email: memwink@yahoo.com. Visit: www.clintonmodelaviators.com. Sponsor: CLINTON MODEL AVIATORS.

06/26/2020 - 06/27/2020 - Galena, OH (C) OHIO WATERFRONT VINTAGE GATHERING. Site: 5770 Africa Rd Dinneen Field @ Alum Creek State Park. Mr Jean Marie C Piednoir CD/EM PH: (740)936-5180. Email: piednoir.jm@gmail.com. Visit: wmaa-wags.org. Sponsor: WESTERVILLE MODEL AERO ASSN.

06/26/2020 - 06/28/2020 - North Jackson, OH (CRST) NORTHEAST OHIO HELI THROWDOWN. Site: 9551 Gibson Rd. Mr Dave E Karash CD/EM PH: (330)518-2809. Email: dkarash@sbcglobal.net. Visit: http://nighthawksrc.com/index.html. Sponsor: NIGHT HAWKS.

OKLAHOMA

06/6/2020 - 06/7/2020 - Tulsa, OK (AA) TULAS GLUEDOBBERS INAUGURAL IMAC. Site: 2817 S 177th East Ave Grant Wilson Field. Mr Billy Cunningham CD/EM PH: 918-906-2087. Email: bill@powermasterengines.com. Visit: tulsagluedobbers.com. Sponsor: TULSA GLUE DOBBERS.

06/11/2020 - 06/14/2020 - Duncan, OK (C) SUMMER OF FUN FLY 2020. Site: 172729 N 2910 Rd Duncan Lake South Bank. Mr Clay Ricks CD/EM PH: 870-853-7499. Email: clayricks172@hotmail.com. Visit: www.facebook.com/groups/ctrcs/?ref=bookmarks. Sponsor: CHISHOLM TRAIL RC SQUADRON INC.

OREGON

06/19/2020 - 06/21/2020 - Sutherlin, OR (C) PLAT I FLOAT FLY. Site: 712 Plat I Rd @ Plat I Reservoir. Mr Alan Rader CD/EM PH: 541-672-0491. Email: rockeee1@yahoo.com. Sponsor: UMPQUA VALLEY MODELERS.

06/26/2020 - 06/28/2020 - Redmond, OR (AA) FIELD OF DREAMS 2020 SCALE RALLY. Site: 1859 NE Maple Ave. Mr Tommy L Rainwater CD/EM PH: (858) 527-8627. Email: trainwater157@gmail.com. Visit: http://www.fieldofdreamsrc.com. Sponsor: FIELD OF DREAMS RC CLUB INC.

06/27/2020 - Turner, OR (C) MELON'S FOLLIES 29TH ANNUAL FUN FLY AND MODEL AIRSHOW. Site: 9493 55th Ave SE. Mr W L Pete Melin CD/EM PH: (503)362-8257. Email: pmelin@msn.com. Visit: salem rc pilots association. Sponsor: SALEM R/C PILOTS ASSOC.

PENNSYLVANIA

06/6/2020 - 06/7/2020 - Easton, PA (C) 41ST ANNUAL LVRCS ELECTRIC FLY. Site: 4140 Gradwohl Switch Rd. Mr Thomas R Castellano CD/EM PH: (610)438-3742. Email: tomp40c@rcn.com. Visit: lvrcs.com. Sponsor: LEHIGH VALLEY RADIO CONTROL SOCIETY.

06/6/2020 - 06/7/2020 - Gettysburg, PA (C) WARBIRDS OVER GETTYSBURG. Site: 600 Cavalry Field Rd East Calvary Field. Mr Jeff R Black CD/EM PH: (717)965-5634. Email: jrblack1964@gmail.com. Visit: bluegrayrc.com. Sponsor: BLUE & GRAY MINIATURE AIRCRAFT.

06/6/2020 - 06/7/2020 - Indiana, PA (DEMO) JIMMY STEWART AIRPORT FESITVAL. Site: 398 Airport Rd Indiana Co Jimmy Stewart Airport. Mr James A Duncan CD/EM PH: 724-422-5893. Email: jamesaduncan@comcast.net. Sponsor: INDIANA FLYERS CLUB.

06/12/2020 - 06/14/2020 - Toughkenamon, PA (CRST) SUMMERFEST GIANT WARBIRD AND JET RALLY. Site: 1235 Newark Rd New Garden Airport Field. Mr David Malchione, Sr CD/EM PH: (610)357-6649. Email: bvmjpo6@aol.com. Visit: newgardenflyingfield.com.

06/15/2020 - 06/20/2020 - Carmichaels, PA (AAA) BRODAK FLY IN 2020. Site: Locust Ave. Mr Will D Davis CD/EM PH: (704)860-1079. Email: willddavis@msn.com. Visit: bridal.com. Sponsor: METROLINA CONTROL LINE SOCIETY and FLYING CIRCUS.

06/20/2020 - 06/21/2020 - Carlisle, PA (A) 2020 POLECAT ALES. Site: 363 Potato Rd Bear Field. Mr David V Reisinger CD/EM PH: (717)385-6801. Email: dvr5606@gmail.com. Sponsor: CARLISLE AEROMODELERS INC.

06/20/2020 - Homer City, PA (C) 6TH ANNUAL SUMMER SOLSTICE FUN FLY. Site: Old Home Manor Drive. Mr Anthony Hallo CD/EM PH: (724)953-9912. Email: tony.hallo365@gmail.com. Sponsor: INDIANA FLYERS CLUB.

06/27/2020 - 06/28/2020 - Herndon, PA (C) 6TH ANNUAL CARL BREDBENNER FLY IN. Site: 452 Flying Eagle Rd Aerobats Club Field. Mr Joseph J Reiner CD/EM PH: 570.425.2782. Email: grrrrrumpy@tds.net. Sponsor: AEROBATS.

SOUTH CAROLINA

06/6/2020 - Florence, SC (C) ANNUAL SPRING FLY IN. Site: 2600 Paper Mill Rd. Mr Robert H Gainey CD/EM PH: 843-615-8114.

SANCTIONED EVENT CALENDAR

Email: ruddercable@yahoo.com. Visit: gooneybirdsrc.com. Sponsor: GOONEY BIRDS.

06/6/2020 - York, SC (C) MARK WILLIS MEMORIAL BIG BIRD FUN FLY. Site: 240 Langrum Branch Rd. Mr Gregory A Blackwell CD/EM PH: (803)487-8850. Email: jet_doc@comporium.net. Visit: yorkcountyflyers.com. Sponsor: YORK COUNTY FLYERS INC.

06/20/2020 - Campobello, SC (C) CAMPOBELLO FLYERS SUMMER 1 FLY IN. Site: 1475 Roddy Rd. Mr Robert M Babb CD/EM PH: (864)529-8973. Email: cyclenutus@yahoo.com. Visit: campobelloflyers.com. Sponsor: CAMPOBELLO FLYERS RC CLUB.

SOUTH DAKOTA

06/6/2020 - 06/7/2020 - Aurora, SD (C) GIANT SCALE FLY IN. Site: 20920 474th Ave. Mr Tom A Sroufe CD/EM PH: 605-690-6953. Email: mufflerace2000@yahoo.com. Visit: brookingsaeromates.weebly.com. Sponsor: BROOKINGS AEROMATES RC.

TENNESSEE

06/5/2020 - 06/7/2020 - Arlington, TN (C) MEMPHIS PROPBUSTERS WARBIRD FUN FLY HONORING VETERANS. Site: 3945 Inglewood Pl. Mr Rick Pellicciotti CD/EM PH: (901)481-1934. Email: rick@belleaireaviation.com. Visit: www.memphispropbusters.com. Sponsor: MEMPHIS PROP BUSTERS.

06/6/2020 - Knoxville, TN (C) KCRC CUBFEST. Site: 3204 Williams Bend Rd. Mr Edward J Dumas, Jr CD/EM PH: (865)386-7506. Email: ed@eddumas.com. Visit: www.kcrctn.com. Sponsor: KNOX COUNTY RC SOCIETY.

06/6/2020 - Tullahoma, TN (C) SPRING FUN FLOAT FLY. Site: 2912 Northshore Rd. Mr Michael Jenkins CD/EM PH: 931-581-5479. Email: webmaster@coffeeairfoilers.com. Visit: https://coffeeairfoilers.com/spring-float-fly. Sponsor: COFFEE AIRFOILERS.

06/12/2020 - 06/15/2020 - Corryton, TN (AA) HOUSE MOUNTAIN IMAC CONTEST. Site: 8621 Washington Pk Thompson Airpark at House Mountain RC. Dr Kevin Turner CD/EM PH: 865-776-8465. Email: kevinjulieevan@gmail.com. Visit: mini-iac.com. Sponsor: BLOUNT COUNTY MODEL AVIATORS and HOUSE MOUNTAIN RADIO CONTROL.

06/12/2020 - 06/14/2020 - Ooltewah, TN (C) WARBIRDS OVER SUMMIT. Site: 4234 Old Woodland Dr Summit Air Field. Mr Stephen D Payne CD/EM PH: 423-819-8918. Email: p51c@epbfi.com. Visit: crccflyers.com. Sponsor: CHATTANOOGA R/C CLUB.

06/13/2020 - 06/14/2020 - Cedar Hill, TN (C) MTRCCA SPRING FELLOWSHIP FLY-IN. Site: 3000 Maxey Rd. Mr Augustus R Tonan CD/EM PH: 615-995-6291. Email: dtonan@mac.com. Visit: mtrcca.org. Sponsor: MIDDLE TENNESSEE R/C CLUBS ASSOCIATION.

06/13/2020 - 06/15/2020 - Ooltewah, TN (C) CRCC WARBIRDS OVER THE SUMMIT. Site: 4234 Old Woodland Dr Summit Air Field. Mr Anthony Bosco CD/EM PH: 423-667-2498. Email: anthonybosco701@comcast.net. Visit: crccflyers.org.

06/20/2020 - Harriman, TN (C) WARBIRD FLY IN AND FUNFLY. Site: Happy Hollow Rd. Mr Randy E Daugherty CD/EM PH: (865)307-3653. Email: randy.daugherty0408@gmail.com. Visit: tneagles.com. Sponsor: TENNESSEE EAGLES R/C.

06/25/2020 - 06/28/2020 - Mountain City, TN (C) 2019 JET PRECISION AEROBATICS NATIONAL CHAMPIONSHIPS. Site: 611 Airport Rd Johnson County Airport. Mr Archie J Stafford CD/EM PH: (301)247-9298. Email: rcpattern2012@gmail.com. Visit: www.jetaerobatics.org.

TEXAS

06/5/2020 - 06/7/2020 - Tyler, TX (C) 6TH ANNUAL TUFF FUN FLY/TAILGATE SWAP. Site: 3463 Corporate Drive Northside RC Airpark. Mr John Skinner CD/EM PH: 903-539-1308. Email: wrang123@yahoo.com. Sponsor: TEXAS UNLIMITED FUN FLYERS.

06/5/2020 - 06/6/2020 - Hempstead, TX (C) JUNE WARBIRD. Site: 13917 FM 1887 Bomber Field. Mr Woody B Lee CD/EM PH: (832)794-3370. Email: woody.lee123@gmail.com. Visit: bomberfieldusa.com.

06/6/2020 - Fort Worth, TX (C) GSW BIPLANE FUN FLY. Site: 6903 Randol Mill Rd. Mr Darrell L Abby CD/EM PH: (817)692-7380. Email: darrellabby@att.net. Visit: flygsw.org. Sponsor: GREATER SW AERO MODELERS INC.

06/6/2020 - Rosenberg, TX (C) FORT BEND RC, GIANT SCALE FLY-IN, JUNE 6, 2020. Site: 1135 Spur 529. Mr Heedo Yun CD/EM PH: (281)512-9163. Email: heedo.yun@gmail.com. Visit: fortbendrc.com. Sponsor: FORT BEND RADIO CONTROL CLUB.

06/12/2020 - 06/13/2020 - Aubrey, TX (C) WARBIRDS OVER TEXAS. Site: 2380 Brewer Rd Eagle Field. Mr Ed Kettler CD/EM PH: (469)867-7981. Email: ed.kettler@gmail.com. Visit: ndrcc.com. Sponsor: NORTH DALLAS RC CLUB, INC.

06/13/2020 - Freeport, TX (C) BCMA ANNUAL OPEN FLY. Site: 633 County Rd 792 Brazoria County Modelers Field. Mr Erik D Valdez CD/EM PH: (979)265-2525. Email: erikv79@gmail.com.

06/13/2020 - Scottsville, TX (C) SPRING LAND AND FLOAT FLY. Site: 1010 FM 2199 ED Baker RC Complex. Mr Bruce G Ackerman CD/EM PH: (318)272-2348. Email: rcaddiction2242@gmail.com. Sponsor: MARSHALL AERO MODELERS.

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06/20/2020 - Dayton, TX (C) HI-WING HO-DOWN. Site: 9249 Farm to Market Rd 686. Mr Larry L Rogers CD/EM PH: 713-503-1191. Email: larry5926@gmail.com. Visit: jetero rc club. Sponsor: JETERO RC CLUB INC.

06/27/2020 - Beaumont, TX (C) BIG BIRD FLY IN. Site: 6300 Folsom Dr. Mr Charles C Nowell CD/EM PH: (281)546-8132. Email: blazenowell@aol.com. Visit: brcc.club. Sponsor: BEAUMONT RC CLUB.

VIRGINIA

06/4/2020 - 06/6/2020 - Spotsylvania, VA (C) MILITARY WARBIRDS & CLASSICS OVER FREDERICKSBURG. Site: 6900 Jefferson Davis Hwy Robbie Campbell Memorial Airfield. Mr Salvatore A Vezzi CD/EM PH: 804-519-2380. Email: salvezzi@aol.com. Visit: fredericksburgrc.com. Sponsor: FREDERICKSBURG AREA RC CLUB.

06/6/2020 - Bedford, VA (C) WINGS OVER D-DAY. Site: 2348 Falling Creek Rd. Mr Victor W Tuck CD/EM PH: (540)815-3693. Email: bsax@cox.net. Visit: www.vaaeromodelers.com. Sponsor: VIRGINIA AEROMODELERS.

06/11/2020 - 06/14/2020 - Cedar Bluff, VA (C) VIRGINIA JETS. Site: 2200 Airport Rd Tazewell County Airport. Mr Ken Kayser CD/EM PH: (336)251-3631. Email: kxkayser@gmail.com.

06/12/2020 - 06/14/2020 - Harrisonburg, VA (C) 36TH RAY GORDON MEMORIAL FLY-IN. Site: 4979 S Valley Pike. Mr Timothy L Blankenship CD/EM PH: (540)828-6142. Email: rcflyertim@yahoo.com. Visit: www.vrcfc.org. Sponsor: VALLEY RC FLYING CLUB.

06/13/2020 - Bealeton, VA (C) FARM 2020 SUMMER FLOAT FLY. Site: 5305 Lake Ritchie Rd. Mr William M Towne CD/EM PH: 540.428.1053. Email: bbtowne@comcast.net. Visit: farmclubrc.com. Sponsor: FAUQUIER AERO RECREATION MODELERS.

06/18/2020 - 06/20/2020 - Spotsylvania, VA (C) JETS OVER THORNBURG. Site: 6900 Jefferson Davis Hwy Robbie Campbell Memorial Airfield. Mr Salvatore A Vezzi CD/EM PH: (804)519-2380. Email: salvezzi@aol.com. Visit: fredericksburgrc.com. Sponsor: FREDERICKSBURG AREA RC CLUB.

WASHINGTON

06/5/2020 - 06/7/2020 - E Wenatchee, WA (C) AMA NORTHWEST JAMBOREE. Site: 5201 4th St. SE. Phil L Tallman CD/EM PH: (509)220-6513. Email: phillip.tallman@gmail.com. Visit: amanwjamboree.com. Sponsor: WENATCHEE RED APPLE FLYERS.

06/13/2020 - Deer Park, WA (C) WARBIRDS OVER DEER PARK. Site: 1519 12th St Deer Park Airport. Mr Robert W Lutz CD/EM PH: (509) 385-3307. Email: cloudguy5859@yahoo.com. Visit: climatehawk.org/info.html. Sponsor: BARONS MODEL CLUB.

06/17/2020 - 06/21/2020 - Zillah, WA (C) YAKIMA VALLEY AERO MODELERS HELI FUN FLY. Site: 3513 Cheyne Rd Ben's Strip. Mr George L Radford CD/EM PH: 509-307-5174. Email: george501949@charter.net. Visit: yvam.net. Sponsor: YAKIMA VALLEY AEROMODELERS.

WEST VIRGINIA

06/13/2020 - 06/14/2020 - Saint Marys, WV (AA) W.V. RC PATTERN CHAMPIONSHIPS. Site: 2857 N Pleasants Hwy. Mark A Radcliff CD/EM PH: 304-684-2133. Email: mradcliff@suddenlink.net. Visit: www.flyingwingnutz.org. Sponsor: FLYING WING NUTZ OF WV.

WISCONSIN

06/12/2020 - 06/13/2020 - Appleton, WI (C) FLAG DAY FUN FLY & MIDWEST 3D SHOOTOUT. Site: W5007 Quarry Rd. Mr Tim R Miller CD/EM PH: (920)740-3250. Email: ifly12@ymail.com. Visit: www.flyvam.com. Sponsor: VALLEY AERO MODELERS, INC.

06/21/2020 - Hilbert, WI (C) FATHER'S DAY R/C AIRCRAFT FUN-FLY. Site: 2342 Ott Rd Miniature Aircraft Airport. Mr Eric Schultz CD/EM PH: (920)901-6837. Email: ekaschultz@gmail.com. Visit: www.calumetflyers.com. Sponsor: CALUMET FLYERS INC.

06/27/2020 - 06/28/2020 - Green Bay, WI (A) TUNDRA TERROR XXIV. Site: 4430 County Rd N. Mr William C Drumm, Iii CD/EM PH: 920-428-0323. Email: midair72@hotmail.com. Visit: gbmac.com. Sponsor: GREEN BAY MODEL AIRPLANE CLUB.

06/27/2020 - Beloit, WI (C) 2ND ANNUAL VINTAGE PILOTS FUN FLY. Site: 6806 S Co Rd J. Mr Stanley R Anderson CD/EM PH: (608)436-1586. Email: molokaimo@charter.net. Visit: rrams.net. Sponsor: ROCK RIVER AERO MODELERS SOCIETY, INC.

NONFLYING

May

CALIFORNIA

05/16/2020 - Santa Maria, CA (E) CENTRAL COAST ANNUAL SWAP MEET & BBQ. Site: 4040 US Hwy 101 Elk's Unocal Event Center,. Mr Charles W Barnes CD/EM PH: (805)886-7921. Email: cdbarnes10@comcast.net. Visit: trivalleyrcmodelers.com. Sponsor: TRI VALLEY RC MODELERS.

MASSACHUSETTS

05/2/2020 - Turners Falls, MA (E) 9TH ANNUAL GIANT WESTERN MASS RC FLEA MARKET & SWAP MEET. Site: 82 Industrial Blvd Franklin County Technical School. Mr David Korpiewski CD/EM PH: (413)695-2191. Email: davidk@cs.umass.edu. Visit: franklinrc.com. Sponsor: FRANKLIN COUNTY RC.

VIRGINIA

05/2/2020 - Mechanicsville, VA (E) HANOVER R/C FLYING CLUB SWAP MEET & FUN FLY. Site: 3449 Mechanicsville Turnpike. Mr Gary R Moyer CD/EM PH: (804)244-0995. Email: coastrnut@verizon.net. Visit: hanoverrc.com. Sponsor: HANOVER RADIO CONTROL FLYING CLUB.

WISCONSIN

05/17/2020 - Lodi, WI (E) LARCC ANNUAL TAILGATE SWAP MEET. Site: 2180 Co Rd J. Kevin J Kopp CD/EM PH: 608.220.3678. Email: treasurer@larcc.com. Visit: larcc.com. Sponsor: LODI AREA RADIO CONTROL CLUB.

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ONE-WHEEL LANDING

By John Lovett | jlovett@vail.net

Photo by Gary Scrip, used with permission

JOHN LOVETT FLIES his Horizon Hobby 1/4-scale Super Cub at the Wolcott International flying field, which is located on Eagle County land near Edwards, Colorado, in the Vail Valley.

The Super Cub is powered by a DLE-55 gas engine and Xoar 18 x 8 propeller. John added cosmetic additions to match the Alaskan Cub that a friend owns. "Because of the altitude of our flying field (7,600 feet), the largest gas motor that would fit without cowling protrusion was used," he said.

Gary Scrip, a professional photographer based in Edwards, caught this photo at just the right moment of John's Cub losing one of its Du-Bro 5.5-inch tires, which are larger than the stock tires. "The tire came off because of the additional stress and [the] rough runway," John stated. "Corrective action was to grind a notch in the gear for the retainer setscrew for a better seat."

Although the airplane did flip, it was at a low speed, and John was able to repair it. He quipped that it was "almost a successful one-wheel landing!" Even so, he wrote that the Cub flies great at the high altitude—"something that is an issue for many models, especially those with a high wing loading. There is a fine line for a stall. The flaps make a noticeable difference for landing."

John has flown RC since the 1970s and has more than 40 scale models of helicopters, gliders, and airplanes. He mentioned that he always looks forward to reading *Model Aviation*. "You do a great job."

SHARE YOUR STORY

Do you have a high-quality/high-resolution airplane, helicopter, or multirotor photo that you are proud of, or a model aviation-related photo with a great story behind it? Email your "Viewfinder" photo and a description about it to jennifer@modelaircraft.org.

CHARLEE SMITH

National sales manager, Bob Smith Industries, Inc.

Jay Smith: *How did you get involved with model aviation?*
Charlee Smith: Our dad kept us supplied with plastic and balsa kits that he obtained for pennies on the dollar from a damaged freight warehouse. He also had many old issues of *Air Trails* magazine that kept our aviation fever running high, along with many weekends spent at Van Nuys Airport and Armed Forces Day air shows at Edwards AFB [Air Force Base].

My first attempt at scratch-building was a solid balsa B-25H from *Air Trails* plans when I was 9 years old. In junior high, our model airplane club built and competed with balsa hand-launch gliders and I made my first try at RC with an Ambroid Charger.

Our local hobby shop was a big help with this. With high school taking up most of my time, my next big step at age 17 was scratch-building and learning to fly with a Professor built from *Radio Control Modeler* magazine plans. I still use the same Dremel Moto-Shop scroll saw I used to cut out the parts for this trainer.

JS: *How has model aviation impacted your life and/or career?*
CS: Many would say model aviation has been my career. After working as a draftsman and not getting to the finish line of being an aeronautical engineer, my brother and I started making fiberglass RC Pylon kits. This led to having a hobby shop for 13 years and making composite parts for various aerospace firms.

My brother, Bob, eventually saw the light that selling the components used in manufacturing (and modeling) was a much cleaner and more profitable business. So, in the early 1980s, Bob Smith Industries (bSi) started producing adhesives for hobby shops. I joined him in 1989 and we have worked smoothly together ever since.

JS: *Who or what has influenced you the most?*
CS: Bob Palmer was so good at Control Line Stunt in the 1950s that AMA made a category that only he competed in. He was also a lead model maker for the wind tunnels at Lockheed Martin Corporation. He was a fiberglass composite expert and he taught Bob and me all of the tricks of his trade.

Engine expert, Clarence Lee, along with John Brodbeck, took us under their wings. I designed the aircraft, but it was the power provided by Clarence (and Bob's superb flying skills) that led to championships. Model magazines have constantly provided motivation.

JS: *What disciplines of modeling do you currently participate in?*
CS: I like to make what hasn't been built before. Currently, I'm focused on models of concepts for full-scale aircraft, in the future and the past. How would you design a piston-powered fighter with the knowledge that was available in late 1942?

JS: *What other hobbies do you have?*
CS: I enjoy photography and reading about aviation and World War II history almost as much as modeling, but the majority of my free time is spent on landscaping (aka yardwork).

JS: *What is your number-one tip regarding bSi products?*
CS: If you use bSi's Insta-Set accelerator, you will find it is also an excellent cleaner. It removes the adhesive residue left by tapes and stickers and is compatible with all surfaces. I used it this past week to remove the scuff marks left by our vacuum cleaner on our baseboards. It saved me from having to repaint them.

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