

MODEL

03 / 2020

BRINGING MODELERS TOGETHER \$6.95US \$7.95CAN

AVIATION

PAGE 35 /

Spektrum iX20 Transmitter

AN INNOVATIVE CONNECTION TO OUR RC AIRCRAFT



PAGE 18 /
DO YOU TURN WITH PROFICIENCY OR CONSTANTLY
FIDDLE?

PAGE 24 /
INAUGURAL DISTRICT XI JAMBOREE

PAGE 30 /
LOST AND FOUND



THE OFFICIAL PUBLICATION OF
THE ACADEMY OF MODEL AERONAUTICS

FAA PROPOSED RULE ON REMOTE ID THREATENS MODEL AVIATION

SUBMIT YOUR COMMENT BY MARCH 2!

Help protect the future
of our hobby! Learn more
about how to comment.





FAA NPRM | HOW TO COMMENT

Making your voice heard is easy.

- » Visit **www.regulations.gov** and type FAA-2019-1100 in the search box.
- » Click on the Comment Now! button.
- » Identify your concerns within the proposed Remote ID rule.
- » Provide a summary of how your concerns will impact model aircraft operations.
- » Include data to back up your concerns when possible.
- » Provide alternative solutions.
- » Address financial impacts affecting you, your club, and the hobby industry.
- » Use templates on **www.modelaircraft.org/gov** to get started with your own personalized comment.
- » Submit comments by March 2, 2020.
- » Contact AMA for assistance.

Online submissions are the fastest way to submit your comment.

You can also mail your comment, identified by docket number FAA-2019-1100, to: Docket Operations, M-30
U.S. Department of Transportation
1200 New Jersey Avenue SE, Room W12-140
West Building Ground Floor
Washington, D.C. 20590-0001

More about the proposed rule:

In December 2019, the FAA released a proposed rule for Remote ID on UAS. The rule can be read in its entirety at www.regulations.gov by searching for FAA-2019-1100. The proposal is deeply flawed; some of the main concerns include the exclusion of a path for community-based organizations (CBOs), such as AMA, to establish and maintain fixed flying sites that satisfy Remote ID compliance. Second, the rule does not create a pathway for Remote ID compliance at AMA events and competitions. Third, the rule should account for situations where there is no internet connectivity, as many safe places to fly are in rural areas with little or no service. Finally, the rule should not require modelers to register each of their aircraft individually.



This coalition of aviation associations, hobby shops, and manufacturers will challenge the FAA and fight burdensome regulations to protect the many jobs and businesses that support the model aviation hobby, as well as STEM learning opportunities! Thanks to our current partners for joining the fight.



BROWNIES PRO & SPORT HOBBIES



Dave's A/C Electronics



Mike Goes Flying



Sign Up For Our Email Newsletters at:
towerhobbies.com

- Special, money-saving offers!
- New product announcements!
- Special buys, closeouts, inventory reduction savings!

INTERNATIONAL ORDERS ACCEPTED

WANT TO SAVE MORE? **Join the SUPER SAVER CLUB**

for details use number AL1001

Just Starting Out? Tower Hobbies

Tower Hobbies, your get started headquarters

EASYRC.COM



PHOENIX MODEL®



F4U Corsair 1.20/20cc
GP/EP/Gas ARF



1:4 3/4 Spitfire 50-61cc
Gas/EP ARF 95"

PMMA1821 Phoenix Model 1:4 3/4 Spitfire 50-61cc Gas/EP ARF 95"	3-Pay \$233.33	\$699.99
PMMA1845 Phoenix Model F4U Corsair 1.20/20cc GP/EP/Gas ARF 70.9"	3-Pay 133.33	399.99
PMMA0320 Phoenix Model Piper J-3 Cub GP/EP/Gas ARF 90.5"	3-Pay 101.01	299.99
PMMA1825 Phoenix Model Waco 50-61cc Gas/EP ARF 90.5"	3-Pay 201.01	599.99



HS-5645MG



HS-645MG



HRCM0645 Hitec HS-5645MG Digital Ultra-Torque Metal Gear 2BB	\$39.99
HRCM0927 Hitec HS-645MG High-Torque 2BB Metal Gear Servo	29.99
HRCM1028 Hitec HS-422 Standard Deluxe Servo U	13.59
HRCM5055 Hitec HS-5055MG Economy Digital Metal Gear Feather	19.99



14SGA



16SZA

FUTJ1009 Futaba 32MZ 2.4GHz FASSTest 18Ch Radio System Air	\$299.99
FUTK9460 Futaba 16SZA 16-Channel Air FASSTest Telemetry Radio	3-Pay \$233.33 699.99
FUTK9410 Futaba 14SGA 14-Channel Air Computer System	3-Pay 201.01 599.99
FUTL7627 Futaba R617FS 7-Channel FASST Receiver	49.99
FUTM0031 Futaba S3003 Standard Servo	10.99

RF9 REALFLIGHT

The most realistic RC flight simulator yet!

InterLink DX Controller by Spektrum™

RealFlight RF9 Software Digital Download now available!

RFLZ1100 RealFlight RF9 w/Spektrum InterLink DX Controller	3-Pay \$60.01	\$179.99
RFLZ1101 RealFlight RF9 DVD Software Only	2-Pay 50.00	99.99
RFLZ1103 RealFlight RF9 Software Only Digital Download	2-Pay 50.00	99.99
SPMZ1050 Spektrum Wireless Simulator USB Dongle	39.99	



SPEKTRUM.



Avian 45 Amp Brushless Smart ESC 3S-6S



Avian 80 Amp Brushless Smart ESC 3S-8S

SPMM1509 Avian 15 Amp Brushless Smart ESC 3S-4S	\$29.99
SPMM1510 Avian 30 Amp Brushless Smart ESC 3S-6S	39.99
SPMM1511 Avian 45 Amp Brushless Smart ESC 3S-6S	49.99
SPMM1512 Avian 60 Amp Brushless Smart ESC 3S-6S	59.99
SPMM1524 Avian 80 Amp Brushless Smart ESC 3S-8S	74.99
SPMM1513 Avian 100 Amp Brushless Smart ESC 3S-6S	2-Pay \$45.00 89.99
SPMM1514 Avian and Firma Smart ESCs Programming Box	29.99



UMX Turbo Timber



Extra 300 3D 1.3m BNF Bsc w/AS3X & SAFE Select

EFLA2566 E-flite UMX Turbo Timber	3-Pay \$46.66	\$129.99
EFLA2311 E-flite Extra 300 3D 1.3m BNF Bsc w/AS3X & SAFE Select	3-Pay 93.33	279.99
EFLA2584 E-flite Twin Otter PNP with Floats	3-Pay 66.67	199.99
EFLA1105 E-flite P-39 Airacobra 1.2m BNF Basic	3-Pay 93.33	279.99

DLE



DLE-30cc



DLE-20RA

DLEG0420 DLE Engines DLE-20RA Gas Rear Exhaust w/Elec Ignition	3-Pay \$95.01	\$284.99
DLEG0031 DLE Engines DLE-30cc Gas Rear Carb w/Elec Ig & Muffler	3-Pay 95.01	284.99
DLEG0435 DLE Engines DLE-35RA Rear Exhaust Gas w/Elec Ignition	3-Pay 116.67	349.99
DLEG0061 DLE Engines DLE-61cc Gas Engine w/Elec Ignition & Muff	3-Pay 150.00	449.99

SAVE \$40

off any order of \$360.00 or more during March.

Use coupon code
AMA40
 when ordering

Only one Coupon Code per order please. Not retroactive. Does not work on all brands/items shown. Some restrictions apply.

CONTENTS

104



FEATURES

18 Do You Turn With Proficiency or Constantly Fiddle?

Correcting the number-one bad habit in the sport

By Dave Scott

24 Inaugural District XI Jamboree

Wenatchee Red Apple Flyers provide the perfect flying site

By Joe Miller

30 ▶ Lost and Found

One drone locates two lost model aircraft

By Jack Cutrone

REVIEWS

35 ▶ Spektrum iX20 20-Channel DSMX Transmitter

An innovative connection to our RC aircraft

By Jay Smith

45 ▶ Multiplex Challenger Bi-Plane Indoor Edition

Fun and durable profile biplane

By Fitz Walker

49 Horizon Hobby E-flite F-16 Falcon 64mm EDF BNF Basic With AS3X and SAFE Select

An EDF jet experience suited for smaller flying sites

By Dan Landis

DIGITAL CONTENT ICONS



Video



Additional Photos



Social Media/Conversation



Downloadable Content/Plans



Additional Content

49



COLUMNS

- 04** View From HQ
By Chad Budreau
- 06** The Inside Loop
By Jay Smith
- 07** Click On
- 08** AMA In Action
- 12** Product Spotlight
- 14** In the Air
- 54** Focal Point
- 58** Vintage Viewpoint
By Bob Noll
- 62** Micro-Flying
By Joe Malinchak
- 64** Safety Comes First
By Dave Gee
- 68** Born to Fly
By Jim T. Graham
- 72** Advanced Flight Technologies
By Patrick Sherman
- 76** Around the Patch
By Thayer Syme
- 80** RC Scale
By Stan Alexander
- 84** RC Soaring
By Gordon Buckland
- 87** RC Jets
By Jim Hiller
- 92** RC Pylon
By Tim Lampe
- 96** RC Aerobatics
By Peter Vogel
- 100** Control Line Combat
By Mark Rudner
- 104** Free Flight Scale
By Dennis Norman
- 107** Donations
- 111** Final Flights
- 133** MA Marketplace
- 134** Index of Advertisers
- 135** Viewfinder
- ▶ 136** I Am the AMA
By Jay Smith

AMA NEWS

- 112** From the Copilot's Seat
By Randy Cameron
- 113** Call for Nominations
- 114** District News
- 125** AMA Enrollment Form/
AMA Safety Code
- 126** Plans Service/
Submission Guidelines
- 127** Membership Information/
MA's Frequently Used
Abbreviations/Acronyms
- ▶ 128** Education Through
Aviation
By Kyle Jaracz
- 129** Flying Site Assistance
By Tony Stillman
- 130** Sanctioned Event
Calendar



ON THE COVER

Take an exclusive look at the Spektrum iX20 transmitter. Incorporating a touch and voice interface, this is currently Spektrum's most advanced transmitter. To learn more, see our full review starting on page 35.

PHOTO BY MATT RUDDICK.



BECOME A MEMBER!

Join the Academy of Model Aeronautics for access to bonus content including how-to videos, interviews, event coverage, and free downloads! Learn more at www.ModelAviation.com.



FAA'S REMOTE ID PROPOSED RULE

By Chad Budreau, AMA Executive Director | chadb@modelaircraft.org

A FEW YEARS AGO, the FAA and national security entities began discussing how to remotely identify UAS. AMA immediately began advocating for our hobby and petitioned for a seat on the FAA Remote Identification and Tracking Aviation Rulemaking Committee.

AMA argued for a commonsense approach to Remote ID. We understand that autonomous or commercial UAS might need to be remotely identified, but model aircraft that are only capable of flying within line of sight do not. Our model aircraft do not pose any new risks to the airspace. Additionally, identifying the operator can easily be accomplished by looking for the individual on the flightline with two thumbs on the sticks.

Although many in Washington, D.C., agreed with AMA's commonsense approach, other aviation rulemaking committee members, security agencies, and UAS stakeholders did not. Some argued that everything and anything under the sun should comply with Remote ID. You can read the options and disagreements expressed during the Remote ID aviation rulemaking committee in the FAA final report published in 2017.

After two more years of deliberation, the FAA released its compromise in the December 26, 2019, proposed rule. The FAA attempted to accommodate our community, but as written, the proposed Remote ID rule will not work. I will loosely summarize elements of the proposed rule. Please visit www.modelaircraft.org/gov for a full analysis or watch my video at www.modelaircraft.org/viewfromhq.

Toys: The FAA generally carves out toys as weighing less than 250 grams or a 1/2 pound.

Flying Site Operations: On the surface, members at flying sites are generally exempt. There is no need for onboard equipment or connectivity for our current models. Yet, dig a little deeper and the proposed rule has numerous problems. The FAA requires members to register every model aircraft separately, even models exclusively used on flying sites. If you own 100 models, you must register all 100 models separately. Additionally, the FAA will not accommodate new flying sites, which absolutely will not work as we lose and gain roughly 10% of our flying sites each year.

Non-Flying Site Operations: AMA believes that members should be able to fly in any safe location that does not interfere with manned aviation or endanger people or property on the ground. Under the proposed rule, the FAA restricts non-flying field operations to 400 feet vertically and horizontally. This does not work for our community! In addition to having to register each model separately, members flying outside of a club field must connect with the FAA through the internet. This is impractical because many remote locations do not have connectivity.


Events and Competitions: The proposed rule does not address this topic. The FAA must accommodate our events at non-flying sites!

Manufacturers and Building Community: The FAA mandates that all UAS sold must be Remote ID compliant with onboard equipment installed before the sale. If you are a plans or scratch builder, the FAA creates some exemptions, but the devil is in the details. Members must construct and fabricate 50% of the model aircraft, which can be an unattainable feat.

Fully Autonomous or Commercial Operations: Autonomous UAS, capable of navigation beyond line of sight, must be fully compliant with Remote ID, including onboard equipment.

It is important to note that it took the FAA many years to get this first proposed rule drafted and released. We still have many years before the final rule is complete and implemented, but we need your help! The FAA is asking for public comment and feedback concerning the proposed rule. Anyone who supports aeromodeling must comment and help shape the proposed rule to accommodate our longstanding hobby!

By the time this issue is in your hands, we might only have a few weeks or days left to submit a comment. All comments are due March 2, 2020. To learn more about Remote ID and how to comment, please visit www.modelaircraft.org/gov.

Thank you for your support so our hobby can be enjoyed by generations to come! 



BETAFPV

ONE OF THE PREMIERE DRONE COMPANIES IN THE WORLD

SPECIALIZED IN MICRO DRONE WHICH IS A TINY FIRST-PERSON-VIEW AIRCRAFT

FPV EDUCATIONAL KIT

Learning to fly has never been easier




Tailor-made for kids and new starters. This brand-new educational kit is with the best 1S brushless whoop Meteor65, FPV Goggle, upgraded Lite Radio V2 TX and all spare parts you need to get started.



PREVIOUSLY

Meteor65 Brushless Whoop

PAGE 5 - 02 / 2020

Join us on   

Order online at betafpv.com



REALISTIC EXPECTATIONS

Jay Smith, Executive Editor | jays@modelaircraft.org

ON DECEMBER 26, 2019, the FAA released a proposed rule for remote identification (Remote ID) of UAS. The key statement in that sentence is *proposed*. Nothing in the 319-page document has yet become law, and we all have a right to comment and share our concerns. The FAA is accepting comments on the Remote ID proposal until March 2, 2020.

Now, more than ever, we need to unite as a group of people who enjoy this hobby

I think it is also important to have realistic expectations regarding the regulation of our hobby. When terms such as Homeland Security and National Defense enter the conversation at the government level, we shouldn't expect that AMA or any other person or group could stop all of the proposed regulations.

Please submit a formal comment to the FAA as soon as possible. To submit a comment, go to the Remote ID proposal page

Now, more than ever, we need to unite as a group of people who enjoy this hobby and are ready to take a stand to protect it. Our focus needs to be on providing meaningful responses and showing strength in numbers.

and are ready to take a stand to protect it. Our focus needs to be on providing meaningful responses and showing strength in numbers.

It is clear that AMA has had an impact on the proposed document with AMA's request to exempt fixed flying sites; however, we are not done. We are going to continue to advocate and try to minimize the burden put on hobbyists who enjoy flying model aircraft and ensure that this hobby is available to future generations.

on the federal website (www.federalregister.gov/documents/2019/12/31/2019-28100/remote-identification-of-unmanned-aircraft-systems). Click on the "Submit a Formal Comment" button at the top of the page. Complete the form and click on the "Submit Comment" button at the end.

Make your voice heard and send a message to the FAA that we intend to protect the hobby we love!

For the latest information, visit <https://amablog.modelaircraft.org/amagov>.

President Rich Hanson
Executive Vice President Randy Cameron
Executive Director Chad Budreau

STAFF:

Director of Communications
Rob Kurek

EDITORIAL
Executive Editor
Jay Smith

Managing Editor
Elizabeth Helms

Associate Editor
Jennifer Alderman

Staff Writer/Copy Editor
Rachelle Haughn

ART/DESIGN
Art Director
Lynn Balderrama

Graphic Designer
Aaron David Howard

MULTIMEDIA
Digital Experience Lead
Dillon Carpenter

Technical Communications Lead
Matt Ruddick

CONTRIBUTING EDITORS:

Stan Alexander, Bob Angel, Gordon Buckland, Sal Calvagna, Fred Cronenwett, Joe Daly, Don DeLoach, William Drumm III, Dave Gee, Greg Gimlick, John Glezellis, Jim T. Graham, Ken Hawkins, Jim Hiller, Louis Joyner, Tim Lampe, Joe Malinchak, Bob Noll, Dennis Norman, Jennifer L. Reynolds, Mark Rudner, Patrick Sherman, Don Slusarczyk, Thayer Syme, Pat Trittle, John Vlana, Peter Vogel

Academy of Model Aeronautics
5161 E. Memorial Dr.
Muncie IN 47302
Phone: (765) 287-1256
Fax: (765) 289-4248
www.modelaircraft.org

Editorial offices
8 a.m.–5 p.m. weekdays
Phone: (765) 287-1256,
extension 225
Fax: (765) 289-4248

ADVERTISING:

Advertising Account Executives
Jonathan McGraw (410) 316-9863

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 6T5

© 2020 Academy of Model Aeronautics, Inc. ("AMA"). All rights reserved. Reproduction in whole or in part without the express written permission of AMA is prohibited. *Model Aviation* is a registered trademark of AMA.

Visit www.ModelAviation.com/bonuscontent

See bonus content related to this issue. You can also comment on articles, view past issues, search the Digital Library, and manage your subscriptions.



Horizon Hobby Spektrum iX20 DSMX Transmitter

Digital & Web: Learn more about its features: <https://youtu.be/44cld1Hs0s>.



View from HQ

Web: Chad Budreau explains the FAA's latest NPRM:

www.modelaircraft.org/viewfromhq.

AMA Air is back with a new format!



The bimonthly show is back on the air! The first episode of the new year was released January 1. Check out *AMA Air's* newly redesigned set! You can watch it and subsequent episodes at www.modelaircraft.org/amaair. Here's what viewers have been saying about the updated show:

Howard Williams: Love the new set ... makes the hosts more personable. The new format is great ... keep up the outstanding work!

Soyfpv: I must admit ... the easy chairs and end table are pretty classy! Fun episode!

Arthur Smith: Love the new format. Good work!

Dennis Lee: Thumbs up on the new "set." Great job.



New 3 year warranty!

DA-170



Displacement: 10.48 ci (171.8 cc)

Weight: 8.00 lbs

Props: 32x12, 32x10

\$1695.00

DA-85



Displacement: 5.24 ci (85.9cc)

Weight: 4.3 lbs 4.53 lbs w/ignition

Props: 26x12, 27x10

(28x10 w/tuned pipe)

\$795.00

DA-100L

Now Lighter!



Displacement: 6.1ci (100cc)

Weight: 5.47 lbs 5.783 lbs w/ignition

Props: 2 blade: 26x12, 27x10, 28x10

\$999.00



info@desertaircraft.com

Phone: 520 722-0607

Fax: 520-722-5622

**DA-50R, DA-85, DA-100
and the DA-150**

all available at:

www.desertaircraft.com

SUBMIT A FORMAL COMMENT TO THE FAA'S PROPOSED REMOTE ID RULE

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

ON DECEMBER 26, 2019, the FAA released a proposed rule for remote identification of UAS. There are several areas of concern with the proposed rule that AMA will be pushing back on and we need your help advocating for change. We encourage everyone to submit a comment to the FAA's proposed rule for Remote ID. The comment period is open until March 2, 2020.

AMA has drafted multiple templates that can help guide you when forming individual comments. When writing your comment, please identify your personal concerns with the proposed rule. It is important to provide a summary of how the proposal will impact your model aircraft operations and include data to back up those concerns. For example, use numbers and address the financial impact the proposal will have on you and suggest alternative solutions.

All comments are taken into account and every comment matters. Call our Government Affairs team at (765) 287-1256 or email amagov@modelaircraft.org with any additional questions or concerns. The latest information can be found at www.modelaircraft.org/gov, in *Model Aviation*, and on social media.

There are several areas of concern with the proposed rule that AMA will be pushing back on and we need your help advocating for change. We encourage everyone to submit a comment to the FAA's proposed rule for Remote ID. The comment period is open until March 2, 2020.

Gaining Congressional Support

The Government Affairs team has spent the last few months in Washington, D.C., to address AMA's concerns with the proposed Remote ID rule. AMA met with multiple congressional offices to discuss the impact that the proposed rule would have on all aspects of the hobby. We were able to share our community's concerns regarding the Notice of Proposed Rulemaking (NPRM) and gained support from many on Capitol Hill.


Many members of Congress have agreed to contact the FAA regarding our concerns. Furthermore, many stakeholders within the hobby industry

are equally concerned with the Remote ID NPRM, and AMA is working with those organizations to present a united front against the proposal.

AMA wants to come together as an industry to find a solution to Remote ID that promotes compliance from recreational users and one that makes sense and is not overly burdensome for users. We will soon be asking members to contact their senators and representatives.

Additionally, AMA attended a meeting with the FAA and the 11 other organizations that were selected to make recommendations for the upcoming recreational knowledge and safety test. We learned that many of the elements for which we advocated regarding the recreational knowledge and safety test were accepted. AMA is working to find the best solution to provide the test to our members while ensuring a sensible approach to the test, and that privacy concerns are addressed. The test is expected to be rolled out sometime in 2020.

AMA Government Advocacy Coalition

In January 2020, AMA launched a new coalition to protect the model aviation hobby industry, starting with the fight for a better rule on Remote ID of UAS. The coalition is composed of hobby shops, manufacturers, and others in the aviation industry. The coalition's goal is to fight to protect the model aviation hobby, the many jobs and businesses that support it, and the STEM learning opportunities the hobby provides. 



AMA MODEL AVIATION HALL OF FAME

ESTABLISHED IN 1969, the AMA Model Aviation Hall of Fame honors men and women who have made significant contributions to the sport and hobby of aeromodeling. Selection is based on the individual's contributions to model aviation, which can include competition, design, experimentation, leadership, education, organization, writing, publishing, manufacturing, or other related activities. Emphasis is on the accumulated contributions in one or more of these categories over an extended period of time.

The selection committee is composed of past and present AMA presidents and one individual selected from each of the 11 districts by their respective vice presidents. Each year, a new class is inducted into the AMA Model Aviation Hall of Fame. As of the end of 2019, there were 342 inductees in the Hall of Fame.

To view the criteria for nomination, to nominate a person online, or to download a PDF nomination form, please visit www.modelaircraft.org/form/ama-model-aviation-hall-of-fame. Applications are also available by request by calling (800) 435-9262, ext. 521, or by emailing nominations@modelaircraft.org.

Please read all instructions carefully and follow the rules. Applications will be rejected if not completed properly. The following are a few guidelines for completing the application:

- » Membership in the AMA is not a requirement to be eligible for the AMA Model Aviation Hall of Fame. A person is eligible for nomination if he or she has made the kinds of contributions listed in the statement above. The candidate may be living or deceased.
- » The information provided should focus on how the candidate has contributed to model aviation overall, including specific examples.
- » The number of files received by AMA cannot be more than seven. Your application will be returned if it exceeds that number. Any letters of support not included with the original application will not be considered as part of the original application. Include no more than four files of biographical information. Letters of support, if included, are considered as a part of these four files.
- » Include no more than two images. At least one needs to be of high quality for use in the Hall of Fame Exhibit at the AMA's National Model Aviation Museum.
- » The information provided must be typed for easy reading by the selectors. If the application is not readable, it will not be evaluated.

**APPLICATIONS MUST BE RECEIVED
BY MARCH 31, 2020.**

To fill out an application online, visit
www.modelaircraft.org/form/ama-model-aviation-hall-of-fame

If mailing an application, send it to
Academy of Model Aeronautics
Attn: Hall of Fame
5151 E. Memorial Dr.
Muncie IN 47302

HARBOR FREIGHT

QUALITY TOOLS AT RIDICULOUSLY LOW PRICES

1,000+ Stores Nationwide • HarborFreight.com

CHICAGO ELECTRIC WELDING GOOD Standard Performance	FLUX 125 WELDER HIGH OR LOW VOLTAGE CONTROL AC OUTPUT CONVENTIONAL TRANSFORMER TECHNOLOGY 90 AMP @ 20% DUTY CYCLE 32 LBS. WEIGHT	BETTER Professional Performance	TITANIUM EASY FLUX 125 WELDER VARIABLE CONTROL EASY TO USE DC CLEAN WELDS ADVANCED INVERTER POWERFUL & EFFICIENT 90 AMP @ 30% LONGER RUN TIME 15 LBS. LIGHT & COMPACT	
	Customer Rating ★★★★ ITEM 63583/63582 shown SAVE \$80 COMPARE TO IRONTON \$179.99 MODEL: 45433	\$99.99	Customer Rating ★★★★ ITEM 56359/56355 shown SAVE \$259 COMPARE TO LINCOLN ELECTRIC \$439 MODEL: K2513-1	Customer Rating ★★★★ \$199.99
	41147029	41151276	41151276	41151276
	LIMIT 1 - Coupon valid through 4/25/20	LIMIT 1 - Coupon valid through 4/25/20	LIMIT 1 - Coupon valid through 4/25/20	LIMIT 1 - Coupon valid through 4/25/20

SCISSOR SUPER COUPON

FREE WITH ANY PURCHASE

OVER 5,000 5 STAR REVIEWS **★★★★★**

SUPER BRIGHT LED/SMD WORK LIGHT/FLASHLIGHT

- Super-Strong, Ultra-Lightweight Composite Plastic
- Magnetic Base & 360° Swivel Hook for Hands-Free Operation
- 3-AAA Batteries (Included)
- 144 Lumens

ALL IN A SINGLE SUPER POWERFUL LIGHT

ITEM 63878/63991 64005/60566/69567 63601/67227 shown

COMPARE TO PERFORMANCE TOOL \$13.52 MODEL: W2364

41124977

Cannot be used with other discounts or prior purchases. Original coupon must be presented. Valid through 4/25/20 while supplies last. Limit 1 FREE gift per customer per day.

SCISSOR SUPER COUPON

20% OFF

ANY SINGLE ITEM*

41140126

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 cards, open box item, 3rd of Parking Lot Sale item, compressors, floor jacks, safes, storage cabinets, chests or carts, trailers, welders, Admiral, Ames, Atlas, Baxor, Central Machinery, Cobra, Coverpro, Dayton, Dismouthack, Earthquake, Fisher, Hercules, Iron, Jupiter, Lynx, Paulsen, Predator, Talligator, Viking, Vulcan, Zurich. Not valid on prior purchases. Non-transferable. Original coupon must be presented. Valid through 4/25/20.

CHICAGO ELECTRIC WELDING **SCISSOR SUPER COUPON**

STANDARD AUTO-DARKENING WELDING HELMET

NOW **\$34.99**

SAVE 56% ~~\$44.99~~

Customer Rating **★★★★**

COMPARE TO KOBALT \$79.99 MODEL: SBY-A13

ITEM 61611/56358 46092 shown

41162768

LIMIT 2 - Coupon valid through 4/25/20

SCISSOR SUPER COUPON

200 LUMEN LED SUPER BRIGHT FLIP LIGHT

- Wireless, tool-free and easy installation

Customer Rating **★★★★**

NOW **\$1.99**

SAVE 60% ~~\$3.99~~

COMPARE TO PREMIER \$4.99 MODEL: SW-SWITCH-1224

ITEM 64189/64723/63922 shown

41181818

LIMIT 5 - Coupon valid through 4/25/20

CENTRAL PNEUMATIC **SCISSOR SUPER COUPON**

3 GALLON, 100 PSI OIL-FREE AIR COMPRESSORS • Air delivery: 0.6 CFM @ 90 PSI

HOT DOG ITEM 69269 97080 shown

PANCAKE ITEM 61615/60637 95275 shown

YOUR CHOICE **\$39.99**

SAVE 59% ~~\$59.99~~

Customer Rating **★★★★**

COMPARE TO PORTER-CABLE \$98.62 MODEL: PCFP2003

41182788

LIMIT 5 - Coupon valid through 4/25/20

SCISSOR SUPER COUPON

7 FT. 4" x 9 FT. 6" ALL PURPOSE/WEATHER RESISTANT TARP

Customer Rating **★★★★**

NOW **\$2.99**

SAVE 65% ~~\$8.78~~

COMPARE TO BLUE HAWK \$8.78 MODEL: BGRX10-Y

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

41192636

LIMIT 5 - Coupon valid through 4/25/20

BUNKER HILL **SCISSOR SUPER COUPON**

WIRELESS SECURITY ALERT SYSTEM

Customer Rating **★★★★**

NOW **\$9.99**

SAVE 69% ~~\$14.99~~

COMPARE TO FIRST ALERT \$32.99 MODEL: SFA600

ITEM 61910/62447/93068 shown

41194492

LIMIT 5 - Coupon valid through 4/25/20

EARTHQUAKE XT **SCISSOR SUPER COUPON**

PRO AIR IMPACT WRENCHES

A. 1/2" COMPOSITE PRO ITEM 62891

B. WITH 2" ANVIL ITEM 63000

1190 TORQUE FT. LBS. BOLT BREAKAWAY

Customer Rating **★★★★**

YOUR CHOICE **\$124.99**

COMPARE TO SNAP-ON \$614.95 MODEL: P7850

SAVE \$489

41215546

LIMIT 5 - Coupon valid through 4/25/20

HaulMaster **SCISSOR SUPER COUPON**

Customer Rating **★★★★**

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

- 5400 lb. capacity

NOW **\$19.99**

SAVE 39% ~~\$39.99~~

COMPARE TO MIBRO \$64.99 MODEL: 426920

41228985

LIMIT 5 - Coupon valid through 4/25/20

PITTSBURGH **SCISSOR SUPER COUPON**

RAPID PUMP® 1.5 TON LIGHTWEIGHT ALUMINUM FLOOR JACK

- Weighs 33 lbs.

Customer Rating **★★★★**

NOW **\$59.99**

SAVE 79% ~~\$79.99~~

COMPARE TO K TOOL \$151.42 MODEL: KT163094

ITEM 64552/64832 64980/64545 shown

41234713

LIMIT 5 - Coupon valid through 4/25/20

SCISSOR SUPER COUPON

AMMO DRY BOX

Customer Rating **★★★★**

NOW **\$34.99**

SAVE 59% ~~\$59.99~~

COMPARE TO RANGEMAXX \$99.99 MODEL: 1312-92

ITEM 63135 61451 shown

41237043

LIMIT 5 - Coupon valid through 4/25/20

PITTSBURGH **SCISSOR SUPER COUPON**

9 PIECE FULLY POLISHED COMBINATION WRENCH SETS

Customer Rating **★★★★**

LIFETIME WARRANTY

Item 42305 shown

YOUR CHOICE **\$5.99**

SAVE 79% ~~\$7.99~~

COMPARE TO HUSKY \$17.97 MODEL: H9W10PCSAE

SAVE 66%

TYPE ITEM

SAE 69043/63282/42304

METRIC 69044/63171/42305

41240534

LIMIT 5 - Coupon valid through 4/25/20

SCISSOR SUPER COUPON

MAGNESIUM FIRE STARTER

Customer Rating **★★★★**

NOW **\$14.99**

SAVE 24% ~~\$24.99~~

COMPARE TO COGHLAN'S \$9.99 MODEL: 7870

ITEM 69457/63733/66560 shown

41243447

LIMIT 5 - Coupon valid through 4/25/20

PITTSBURGH **SCISSOR SUPER COUPON**

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

Customer Rating **★★★★**

LIFETIME WARRANTY

NOW **\$12.99**

SAVE 59% ~~\$16.99~~

COMPARE TO HUSKY \$32.10 MODEL: HTHKSM14PCN

ITEM 63167/62476/63166/96645 shown

41245464

LIMIT 4 - Coupon valid through 4/25/20

Lynxx **SCISSOR SUPER COUPON**

40V LITHIUM-ION 14" BRUSHLESS CHAINSAW

Customer Rating **★★★★**

NOW **\$149.99**

SAVE \$49 ~~\$189.99~~

COMPARE TO KOBALT \$199 MODEL: KCS120-07

ITEM 64715 64478 63287 shown

41250413

LIMIT 1 - Coupon valid through 4/25/20

COVER PRO **SCISSOR SUPER COUPON**

10 FT. x 17 FT. PORTABLE GARAGE

Customer Rating **★★★★**

NOW **\$169.99**

SAVE 100% ~~\$199.99~~

COMPARE TO SHELTER LOGIC \$290.75 MODEL: 76377

SAVE \$120

ITEM 62859/63055 62860 shown

41252560

LIMIT 1 - Coupon valid through 4/25/20

HaulMaster **SCISSOR SUPER COUPON**

TRIPLE BALL TRAILER HITCH

Customer Rating **★★★★**

NOW **\$19.99**

SAVE 66% ~~\$59.99~~

COMPARE TO TOWPOWER \$59.99 MODEL: 101175799

SAVE 66%

ITEM 64311/64286 shown

41256734

LIMIT 3 - Coupon valid through 4/25/20

CENTRAL MACHINERY **SCISSOR SUPER COUPON**

8", 5 SPEED BENCHTOP DRILL PRESS

Customer Rating **★★★★**

NOW **\$54.99**

SAVE 69% ~~\$69.99~~

COMPARE TO WEN \$79.97 MODEL: 4208

SAVE 31%

ITEM 38119/62520/60238 shown

41262471

LIMIT 3 - Coupon valid through 4/25/20

KRAUSE & BECKER SUPER COUPON

AIRLESS PAINT SPRAYER KIT

Customer Rating ★★★★★

NOW \$164.99

~~\$219.99~~

COMPARE TO GRACO \$299

SAVE \$134

MODEL: 262800

ITEM 62915/60600 shown

41266494

LIMIT 1 - Coupon valid through 4/25/20

HARDY SUPER COUPON

POWDER-FREE NITRILE GLOVES PACK OF 100

Customer Rating ★★★★★

5 mil thickness

NOW \$5.99

~~\$7.99~~

COMPARE TO VENOM \$14.97

MODEL: VEN4145

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

41270753

LIMIT 4 - Coupon valid through 4/25/20

U.S. GENERAL SUPER COUPON

30", 5 DRAWER MECHANIC'S CARTS

• 15,000 cu. in. of storage
• 700 lb. capacity
• Heavy duty locking casters

Customer Rating ★★★★★

YOUR CHOICE OF 7 COLORS

NOW \$199.99

~~\$229.99~~

COMPARE TO Snap-On BLUE-POINT \$830

MODEL: KBBC10TPRES

SAVE \$630

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

41271776

LIMIT 1 - Coupon valid through 4/25/20

WERNER SUPER COUPON

TWO TIER EASY-STEP LADDER

• 225 lb. capacity

Customer Rating ★★★★★

NOW \$19.99

~~\$29.99~~

COMPARE TO WERNER \$33.88

MODEL: S322A-1

SAVE 40%

ITEM 67514

41272761

LIMIT 4 - Coupon valid through 4/25/20

CENTECH SUPER COUPON

AUTOMATIC BATTERY FLOAT CHARGER

Customer Rating ★★★★★

NOW \$4.99

~~\$9.99~~

COMPARE TO SCHUMACHER ELECTRIC \$30.41

MODEL: SC1

SAVE 83%

ITEM 69955, 64284, 42292 shown

41273983

LIMIT 4 - Coupon valid through 4/25/20

drillmaster SUPER COUPON

18 VOLT, 3/8" CORDLESS DRILL/DRIVER KIT WITH KEYLESS CHUCK

Customer Rating ★★★★★

Includes one 18V NiCd battery and charger.

NOW \$16.99

~~\$19.99~~

COMPARE TO BLACK+DECKER \$59.99

MODEL: GC1801

SAVE 71%

ITEM 68239/69651/62868/62873 shown

41274237

LIMIT 3 - Coupon valid through 4/25/20

TAILGATOR SUPER COUPON

900 WATT MAX. STARTING 2 CYCLE GAS POWERED GENERATOR

• 5 hour run time

Customer Rating ★★★★★

NOW \$109.99

~~\$124.99~~

COMPARE TO POWERSMART \$126.10

MODEL: P550

SAVE \$16

ITEM 63024, 63025 shown

41279165

LIMIT 1 - Coupon valid through 4/25/20

HaulMaster SUPER COUPON

4 PIECE, 1" x 15 FT. RATCHETING TIE DOWNS

Customer Rating ★★★★★

• 400 lb. working load

NOW \$6.99

~~\$12.99~~

COMPARE TO KEEPER \$22.80

MODEL: 5505

SAVE 69%

ITEM 90984/63056, 63057/63150, 56668/63094 shown

41279735

LIMIT 4 - Coupon valid through 4/25/20

CENTRAL MACHINERY SUPER COUPON

20 TON SHOP PRESS

• Extreme heavy duty steel construction

Customer Rating ★★★★★

NOW \$149.99

~~\$189.99~~

COMPARE TO STRONGWAY \$379.99

MODEL: 46260

SAVE \$230

ITEM 32879/60603 shown

41290331

LIMIT 1 - Coupon valid through 4/25/20

HaulMaster SUPER COUPON

18" x 12" MOVER'S DOLLY

Customer Rating ★★★★★

• 1000 lb. capacity

NOW \$7.99

~~\$10.99~~

COMPARE TO BUFFALO TOOLS \$22.99

MODEL: HOFDOLLY

SAVE 65%

ITEM 60497/61899/63095/63096/63097/63098 shown

41290798

LIMIT 4 - Coupon valid through 4/25/20

ARMSTRONG SUPER COUPON

17" - 42" SWIVEL/TILT TV WALL MOUNT

Customer Rating ★★★★★

NOW \$9.99

~~\$16.99~~

COMPARE TO PEERLESS \$29.98

MODEL: ETP2X2

SAVE 66%

ITEM 64238

41291160

LIMIT 5 - Coupon valid through 4/25/20

HaulMaster SUPER COUPON

TRI-FOLD ALUMINUM LOADING RAMP

• 1500 lb. capacity

Customer Rating ★★★★★

NOW \$74.99

~~\$99.99~~

COMPARE TO REESE TOWPOWER \$141.08

MODEL: 74554700

SAVE \$66

ITEM 69595/60334/90018 shown

41298838

LIMIT 1 - Coupon valid through 4/25/20

drillmaster SUPER COUPON

80 PIECE ROTARY TOOL KIT

Customer Rating ★★★★★

NOW \$6.99

~~\$9.99~~

COMPARE TO PROFESSIONAL WOODWORKER \$22.76

MODEL: 51832

SAVE 69%

ITEM 63235/63292/97626 shown

41308700

LIMIT 4 - Coupon valid through 4/25/20

WARRIOR SUPER COUPON

3 PIECE TITANIUM STEP BIT SET

Customer Rating ★★★★★

• 28 unique hole sizes
• 1/4" hex shank

NOW \$8.99

~~\$13.99~~

COMPARE TO IRWIN \$59.98

MODEL: 15504PKSM

SAVE 85%

ITEM 69087/60379/91616 shown

41313355

LIMIT 4 - Coupon valid through 4/25/20

PREDATOR SUPER COUPON

6.5 HP (212 CC) OHV HORIZONTAL SHAFT GAS ENGINE

Customer Rating ★★★★★

NOW \$99.99

~~\$119.99~~

COMPARE TO HONDA \$329.99

MODEL: GX200UT2022

SAVE \$230

ITEM 60363/69730 shown

41313532

LIMIT 2 - Coupon valid through 4/25/20

Grant's SUPER COUPON

12" x 12" MICROFIBER CLEANING CLOTHS PACK OF 4

Customer Rating ★★★★★

NOW \$1.99

~~\$2.99~~

COMPARE TO PROELITE \$5.99

MODEL: AZCOAB

SAVE 80%

ITEM 63358/63925/57162/63363 shown

41317152

LIMIT 4 - Coupon valid through 4/25/20

PITTSBURGH AUTOMOTIVE SUPER COUPON

12 VOLT, 150 PSI PORTABLE INFLATOR

Customer Rating ★★★★★

NOW \$6.99

~~\$8.99~~

COMPARE TO CUSTOM ACCESSORIES \$26.49

MODEL: 59008

SAVE 73%

ITEM 4077/63109/63152 shown

41324006

LIMIT 4 - Coupon valid through 4/25/20

ARCIMATE SUPER COUPON

36" PICKUP AND REACH TOOL

Customer Rating ★★★★★

• 36" reach
• Easy grip

NOW \$1.99

~~\$3.20~~

COMPARE TO ARCIMATE \$15

MODEL: 325

SAVE 86%

ITEM 94870/62176/61413 shown

41339531

LIMIT 4 - Coupon valid through 4/25/20

CENTRAL PNEUMATIC SUPER COUPON

3/8" x 50 FT. RETRACTABLE AIR HOSE REEL

Customer Rating ★★★★★

NOW \$59.99

~~\$79.99~~

COMPARE TO KOBALT \$99

MODEL: 56V-AIR184

SAVE \$39

ITEM 69265/62344/64685/93897 shown

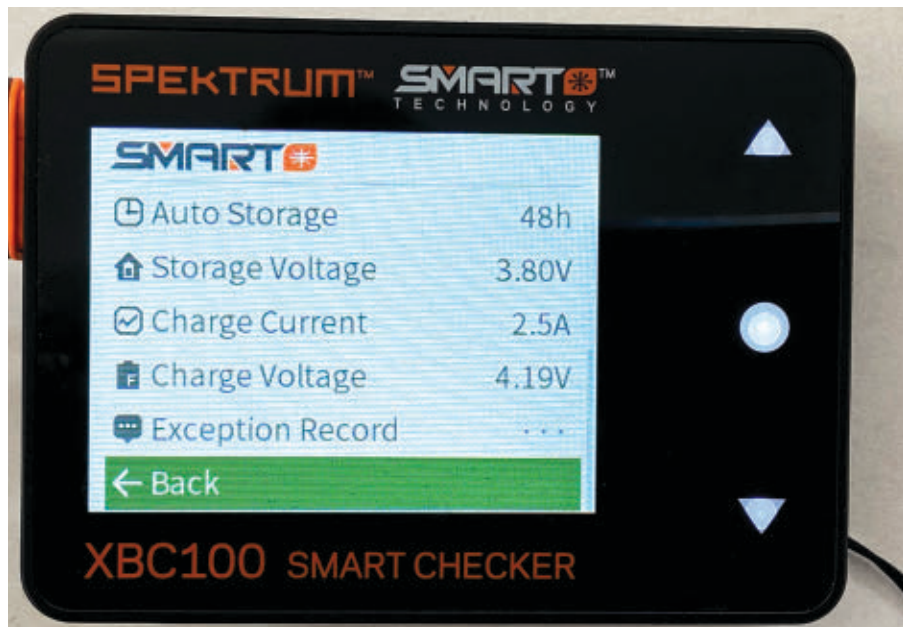
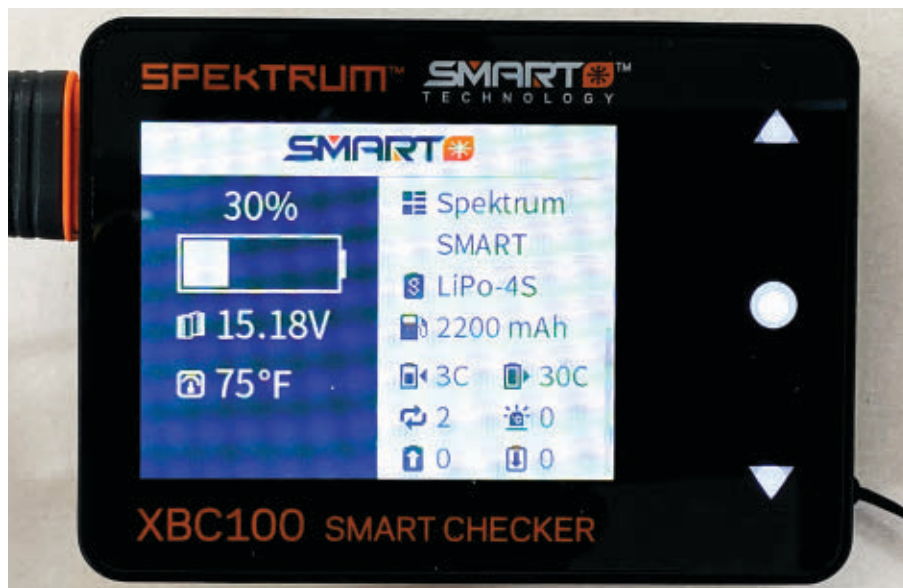
41340028

LIMIT 2 - Coupon valid through 4/25/20

1,000+ Stores Nationwide • HarborFreight.com

*Original coupon only. No use on prior purchases after 30 days from original purchase or without original receipt. Valid through 4/25/20.

All Harbor Freight Tools, the "Compare to" price means that the specified comparison, which is an item with the same or similar function, was advertised for sale at or above the "Compare to" price by another national retailer in the U.S. within the past 90 days. Prices advertised by others may vary by location. No other meaning of "Compare to" should be implied. For more information, go to HarborFreight.com or see store associate.



At A Glance



Specifications

- Battery balance connector:** Included for testing LiPos
- Battery temperature monitoring:** Yes
- Battery types:** 1 to 8S Lithium; 1- to 10-cell NiCd/NiMH
- Cells:** Balancing cell accuracy <0.005 volts
- Connector type:** IC3
- LCD:** Yes
- Servos:** Test servos without having to connect a radio and receiver
- Voltage:** +/-0.005 volts at 4.2-volt measurement accuracy
- Voltage range:** 5 to 36 volts
- Price:** \$39.99

When connected to a non-Smart battery, you can still balance by connecting the standard balance connector and use the USB functions, along with the servo driver features. The XBC100 will balance each of your battery cells to within +/-0.005 volts accuracy. It's a great deal for \$39.99!

As a servo tester, this gem really stands out! Aside from doing all of the things a servo cyclor/tester normally does, you can actually see how much current your servo is pulling as you run it through its range of motion. Connect your servo in whatever the application is and after centering and adjusting it in the usual manner, set it to auto cycle.

As it goes through the full range of motion, watch the LED screen and monitor the current. If you see a spike at a certain point of the range, you might have something binding. This is real-time testing of servo actuating that I've never had without setting up multiple meters and connectors.

The XBC100 includes an update port for easy access to updates and new features. This should ensure that this battery checker and servo driver will be a useful tool for years to come. AMA

➔ *New Products that are Worth a Closer Look*

XBC100 SMART BATTERY CHECKER & SERVO DRIVER

GREG GIMLICK REVIEWED the XBC100 Smart Battery Checker & Servo Driver and this is what he had to say:

When connected to a Spektrum Smart battery, you can check all of the integrated parameters such as the number of cycles, events, including overdischarging and overheating, adjust the Smart battery settings such as the automatic storage timer, and preset the charge current.

SOURCES:

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

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

➔ New Products from the *Modeler's Mall*



Lazy Bee Kit @ \$99 + S&H from Clancy Aviation

Tel.: (480) 498-0239;
email: andyclancydesigns@gmail.com;
www.andyclancydesigns.com

Clancy Aviation is back in business! The first airplane to go into production is an updated version of the original Lazy Bee kit.

This versatile, highly maneuverable slow flyer has a great reputation and has been popular with pilots of all skill levels. It can fly in close where it's easy to see and fun to watch, and it needs little airspace in which to fly. It's even been known to fly indoors. Make short takeoffs and landings with the Lazy Bee, and its rubber band-sprung landing gear softens hard landings and bumpy runways. It even flies 3D and as a 3D trainer!

With oversize control surfaces, a lot of control throw makes it very responsive, while a little control throw makes it docile. Choose from four wing options: the Original 40-inch wing (no ailerons); the 48-inch Extended wing (no ailerons); the 40-inch Special wing (with ailerons); or the Extended 50-inch Special wing (with ailerons).

The non-aileron wings are best for most pilots because they are the lightest and have low drag. The 40-inch wing can perform fast rolls and rolling circles, and the 48-inch wing flies like a sailplane and can lift heavy loads. The long and short wings with ailerons allow sideslips and other aileron maneuvers, and are best for windy conditions.

An optional float kit is also available. The new Lazy Bee kit comes with all laser-cut parts and has detailed plans and instructions. The airplane can fly with all types of electric motors or gas engines.



Civy Boy E-36 @ \$57-\$89 + S&H from BMJR Models

Box 1210, Sharpes FL 32959;
Tel.: (321) 537-1159;
www.bmjrmmodels.com

The original 74-inch Civy Boy was designed by Paul Gilliam and published in the October 1949 *Model Airplane News*. It became one of the most dominate Free Flight (FF) designs of the 1950s. The name was chosen because it was the first FF model that Paul designed after he was discharged from the Army.

Paul planned to design a model to compete against the Goldberg Sailplane. The long tail moment and relatively large stabilizer were intended to move the center of gravity aft, eliminating the need for extra nose weight. It was built in wing-spans of 24, 31, 36, 51, 57, 61, 64, and 84 inches, making it one of the most copied designs of all time.

BMJR's Civy Boy is based on the 36-inch, 1/2A-powered version and has a wing area of 193 square inches. Two prototypes were built; one for 1/2A Nostalgia with a Fox .049 engine and flying weight of 6.5 ounces, and an electric-powered version for Nostalgia that was built to E-36 rules and weighs 6.8 ounces. You can save money when you buy a double kit.



Mambo @ \$129.95 + S&H from Old School Model Works

7414 Burton Dr, Liberty Township OH 45044;
Tel.: (513) 755-7494;
www.oldschoolmodels.com

The Mambo is different from any other Old School Model Works kit because it's engineered from the beginning to be easy for a first-time builder. Don't confuse it with a trainer. It's aimed at modelers who are bored with RTF aircraft or those who have been flying for years and want to build a kit for the first time.

Using precision, laser-cut, interlocking parts, along with the company's unique WEB-LOCK construction and built-in alignment jigs, the Mambo can be built straight and true with a minimum parts count and a minimum amount of fuss.

Included with the kit are full-size rolled plans, a printed instruction manual, prebent main landing gear, a premium hardware package from brand-name, US manufacturers, and a clear, preformed, plastic canopy. Power can be from a .15 to .30 glow engine or a similar-size electric motor using a 3S LiPo battery pack.

The large, built-in fuselage hatch is securely held in place with magnets for quick access to the batteries or a fuel tank. The Mambo can readily accept the powerplant, radio, and other accessories from popular RTF trainers, such as E-flite's Apprentice 15e.

Cover and finish the Mambo the way you like, instead of being stuck with something that looks like others at your flying field. This sport model's retro design looks great in the air and makes you look like an ace pilot. Its wide flight envelope makes it a blast to fly, whether you like gentle cruising or tearing up the sky!



RETRO RC REACHES A MILESTONE

By Joe Hass

AN AMA MEMBER and owner of a Free Flight (FF) and RC kit and accessory company recently celebrated a milestone.

Mark Freeland, owner of Retro RC, has sold more than 10,000 kits. He founded his company in September 2008 with a single kit. Since then, his product line has grown to offer FF and RC laser-cut kits and accessories. He also acquired Campbell's Custom Kits and Campbell Models and sells those FF products.

He was inducted into the AMA Model Aviation Hall of Fame in 2018 and is a recipient of the Carl & Beth Goldberg Vital People Award.

Mark supports Science Olympiad and STEM programs. His efforts have included working with 20 students to build the Trioxide Darling, a Frank Ehling canard design. Mark enlarged it and converted it to rubber power. He has also designed and manufactured balsa kits to allow students to experiment with load-carrying structures.



BONUS CONTENT | Read more about Mark at www.TheParkPilot.org/mark-freeland and www.modelaircraft.org/sites/default/files/FreelandMark.pdf.

RC COORDINATOR, PILOT PASSES



AN AMA RC EVENT sanction coordinator and well-known RC jet pilot has passed away.

Andrew "Andy" Kane, 62, died December 30, 2019. He had served as an AMA District IV RC event sanction

coordinator for roughly 20 years.

In addition to serving as the RC sanctioned event coordinator, Andy was the president of the District of Columbia Radio Control club, of which he was a member for approximately 40 years. He also belonged to the Jet Pilots Organization and the International Miniature Aerobatic Club. He served as a contest director for turbine-powered model aircraft events and as an experimental aircraft inspector.

Andy is survived by his wife, Antonia "Toni" Kane; a daughter, Christina Kane; a sister, Jackie Kane Amar; a brother-in-law and a sister-in-law; two nephews, and several cousins.

AMA Thanks Its Lifetime Supporters!

The Academy of Model Aeronautics recently welcomed Life Members Robert F. Tiernan, Patterson NY; Richard Micchelli Jr., Hamilton NJ; Lee Godfrey, Billings MT; Brent C. Kovar, Las Vegas NV; Michael Cisler, Brighton MI; David M. Heckman, San Jose CA; Bill Tuck, Patterson CA; Paul Picazo, San Francisco CA; Stephen G. Warrenner, Ft. Wayne IN; Steven P. Ericson, Lancaster CA; James L. Layne, Glasgow KY; Timothy M. Hennip, Poplar Grove IL; Peter C. Miller, Culver IN; Wesley C. Sullivan, Katy TX; Bret J. Becker, Beavercreek OH; and Michael W. Callaway, Brenham TX.

For information about becoming a Life Member, contact AMA Headquarters at (800) 435-9262.

—AMA Membership Department



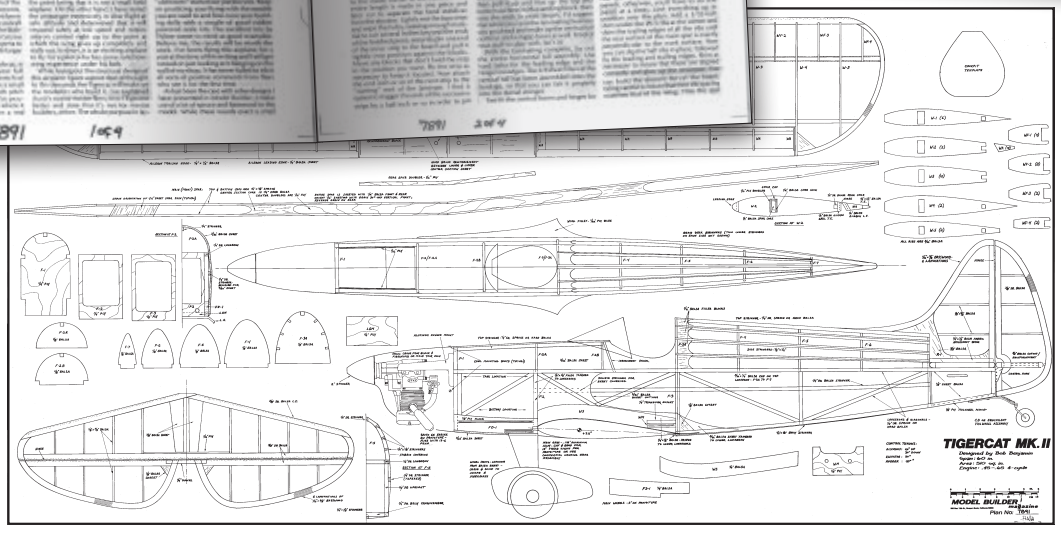
Build a 60-Inch Tigercat

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.

The 60-inch Tigercat Mk.II, designed by Bob Benjamin, was featured in *Model Builder*. The sport model uses a .65 four-stroke engine.

You can order plans for the Tigercat Mk.II, plans number 7891, for \$18 plus shipping

and handling by calling AMA Plans Service at (800) 435-9262, extension 507, or via email at planservice@modelaircraft.org.



⇒ *History Preserved*

DOLLY BEARS

By Claire Aldenhuisen

MOST OF THE 12,000 artifacts in the National Model Aviation Museum’s collection have obvious ties to aeromodeling, ranging from model airplanes to the wealth of competition paraphernalia associated with the Nats, but some acquisitions seem, for lack of a better term, odd.

A case in point is a small collection of teddy bears. Lovingly handcrafted, these bears are a testament to the legacy of AMA Model Aviation Hall of Fame Inductee Margaret “Dolly” Wischer. Like many aeromodelers, Dolly was incredibly creative, and her talents were put to good use within the hobby.



Above: Dolly Wischer is surrounded by a number of her handmade bears. (Source: National Model Aviation Museum Collection, Accession file 2010.53. Photograph provided by Bob Underwood.)
Right: This little bear badge was used to advertise Dolly’s efforts to sell the bears to raise money for the AMA Building Fund (to pay off the former AMA Headquarters in Reston VA). (Source: National Model Aviation Museum Collection, donated in honor of Dolly Wischer, 2010.53.01.)



According to her AMA History Project biography, Dolly was known for her natural ability to quickly produce signs for the Nats—a skill that was appreciated by contest directors and attendees alike. As a competitor, she likely saw the need for clear and concise directions!

Dolly also was responsible for the design of a Carl Goldberg model, the Falcon 56. It started life as the Super Zue, which was controlled by a scratch-built, pulse-proportional radio that Dolly also designed.

She frequently served as a mechanic for her husband, Bob, and was the RC Scale team manager in 1984 and 1986 for the US FAI teams, accompanying them to France and Norway.


But what Dolly is most remembered for are, of course, her teddy bears. She first tried her hand at sewing the cuddly creatures after the 1980 Nats in Wilmington, Ohio. She and Bob were staying at a dorm with another family, Bob and Rae Underwood and their daughters, Anne and Cathy. All four women were looking through a craft book when they came across a sewing pattern for a teddy bear. Dolly’s initial reaction to the pattern was, “That shouldn’t be too hard to make!”

Dolly was known for being frugal and she utilized everything she could to create her bears. She not only received donations of faux fur and leather for the bears, but also

was given lint from industrial dryers to stuff the bears with! The bears even featured movable joints that were assembled from Ball canning jar lid inserts and metal brads—the former being from her own pantry of homegrown preserved produce.

Not long after, Dolly began selling her handcrafted bears to benefit the AMA. She sold her “Dolly bears” at AMA trade show booths, the Nats, and FAI World Championship events. Each bear sold for \$25 and proved to be popular souvenirs for modelers to take home, especially as gifts for family members who weren’t modelers. She even led sewing workshops for non-competing family members of the FAI teams to foster a sense of camaraderie and friendship, despite language and cultural differences.

By 1988, she had raised more than \$3,000 for the AMA! She produced several thousand teddy bears in a variety of sizes and became known throughout the hobby as “the Bear Lady.” Not only did she carry this affectionate title, Dolly was also selected as an AMA Fellow in 1974, honored with the President’s Legion of Honor Award in 1986, and was inducted into the AMA Model Aviation Hall of Fame in 1988.

Dolly passed away in 2013, but her legacy lives on through the beloved teddy bears that accompanied her wherever she went! 



Two bears made by Dolly. The smaller one is the type that she would take as a kit to international events. (Source: National Model Aviation Museum Collection, donated by Jay Mealy, 2010.44.01-.02.)

HIGHEST QUALITY PRODUCTS COAST TO COAST



Viper XXL MK2



1/5th F-16 Falcon

ONLY STOCKING AMERICAN DEALER



Pilatus PC-21 Turboprop



BAE Hawk 100

Contact: jetshop@chiefaircraft.com

Skymaster Jets USA

More Details at
jets.chiefaircraft.com



XICOY
CG Meter

Weight, Balance & Angle Setup



Tx / Rx Batteries
 Duralite, Spektrum, Thunder Power



Jet-Tronics/Xicoy

Air Valves & Sequencers



DLE

- In Stock
- Electronic Ignition Included

All Models



Call for Pricing & Turbine Combos



Fixed Wing Gyros

iGyro & iGyro 3e
 iGyro 1e

Cortex
 3-Axis
 PRO Version



Grupp Modellbau
 In Stock

RV4

42% Size Only \$1,829.00
 100-120cc Power



2 Schemes - Quick Build

Carbon Cub SS

40% Size Only \$2,599.00
 100cc Power



16SZ

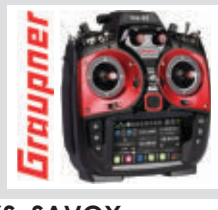
FASSTest



Duplex Radio Systems



iX20



Graupner

HITEC, MKS, SAVOX
 Lowest Prices - In Stock

Call for Multi-Servo Packages



PowerBox Systems



KRILL

ALL COMPOSITE CONSTRUCTION



EXTRA 330SC & LX MODELS
 31% TO 41% SIZES

38% 2.8m
 150-170cc

LASER Z-2300



AVANTI S FC Jet
 2.1m ARF



External Paint with
 Electron Landing Gear



Pilot

80-120cc Size
Laser 2.6m ARF



Predator Turbine Jet

New Schemes

1.8m & 2.2m
 Composite Jet

Available in Gear Only & Turbine Ready

PITTS Challenger ARF

Pilot-RC's first
 ever biplane



73" 50-70cc
 87" 100cc

DO YOU TURN WITH PROFIC



Dave Scott is a champion full-scale aerobatics competitor, air show pilot, aviation author, and operates the 1st U.S. R/C Flight School. His manuals and articles feature the specialized training techniques that he has developed—instructing more than 1,700 RC pilots of all skill levels and setting up and test-flying more than 1,000 airplanes at his school. More information about Dave's books and his flight school can be found at www.rcflightsschool.com.



LENGY

OR CONSTANTLY FIDDLE?

Correcting the number-one bad habit in the sport

By Dave Scott

Illustrations by the author

1usrcfs@gmail.com

Photo by Jennifer Alderman

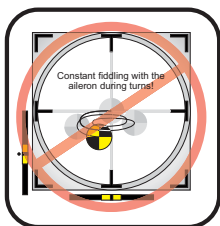
If you have followed my previous articles addressing common bad flying habits, you'll recall that the chief consequence of bad habits is a higher pilot workload compared with when tasks are performed optimally. Many pilots prematurely plateau because they exhaust all of their "brain bytes" correcting the consequences of their bad habits.

The solution to steady advancement is often not more stick time (e.g., continuing to repeat the same mistakes and hoping for better results), but identifying and correcting the bad habits that often

prevent pilots from continuing to improve their flying, conquering wind, diagnosing needed setup changes, and more.

I'll address the granddaddy of all bad habits, which is constantly fiddling with the ailerons during turns. Roughly 97% of pilots in the sport suffer from this bad habit in the form of unintentional altitude changes during turns, inconsistent positioning and landing setups, struggling to fly in wind, and/or blaming the wind for the fact that no two turns ever work out the same, among other inconsistencies.

DO YOU TURN WITH PROFICIENCY OR CONSTANTLY FIDDLE?



Genesis of the Number-One Bad Habit

The habit of needlessly fiddling with the ailerons during turns goes back to the first turns made by every new pilot. Before the first training flight, a typical instructor's advice to a new pilot is to keep the turns level and don't overcontrol.

New pilots invariably attempt to steer the airplane into turns, causing them to incorrectly hold in the aileron or rudder too long. As a result, the bank angle continues to steepen until no amount of elevator is able to pull the airplane out of the resulting spiral dive.

The correct solution is not to fiddle with the ailerons (as most pilots do) in an attempt to shallow the bank, but rather to not hold in the aileron at the start of the turn, and thereby avoid entering a spiral dive in the first place!

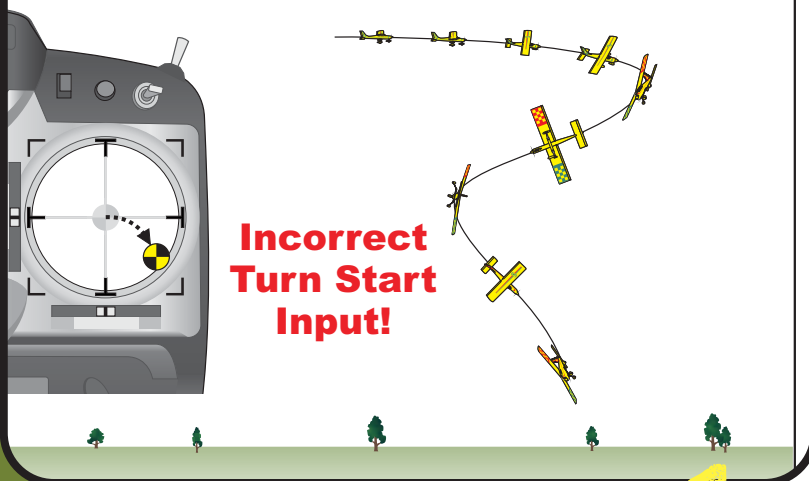
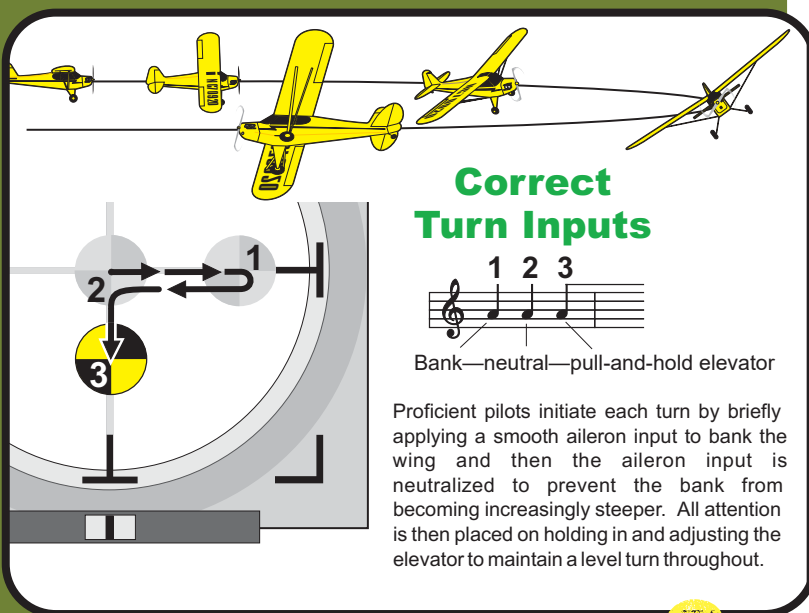


FIGURE 1



Correct Turn Inputs

Bank—neutral—pull-and-hold elevator

Proficient pilots initiate each turn by briefly applying a smooth aileron input to bank the wing and then the aileron input is neutralized to prevent the bank from becoming increasingly steeper. All attention is then placed on holding in and adjusting the elevator to maintain a level turn throughout.

FIGURE 2

Without detailed turning instructions, new pilots are on their own, learning through trial-and-error and reacting to what the airplane does. Consequently, every new pilot goes into his or her first turn holding in a small amount of left or right aileron and watching to see what happens next.

As the bank continues to steepen and the airplane starts to lose altitude, the instructor will call for the student to pull up-elevator in an attempt to arrest the descent. With attention now focused on the elevator, both student and instructor are likely oblivious to the fact that the student is continuing to hold in the aileron.

The result is an ever-steepening bank, an increasingly tighter spiral, and confusion about why the airplane is dropping, despite the student obeying the instructor's commands to pull more up-elevator (see Figure 1)!

This scenario is repeated several more times, and along the way, the focus of the turns becomes what to do when the airplane starts dropping. New pilots at this stage begin to associate descending turns with too steep of a bank and respond by trying to shallow the bank with opposite aileron at the first sign of losing altitude. Shallowing the bank widens the turn, of course, and it often becomes necessary to put some pro-turn aileron back in ... and on it goes.

Compounding this activity is the fact that every time the bank angle changes, a different amount of elevator is required to keep the turn level. Steeper banks require more elevator, whereas shallower banks require very little. The ever-changing bank angles make it nearly impossible to keep up with all of the needed elevator adjustments, and as a result, altitude changes during turns become the norm.

Additionally, each altitude change causes an alteration in airspeed and results in other unintended, negative consequences, such as porpoising after a turn (usually attributed to wind).

Most pilots are too busy making adjustments to give any thought to changing their techniques. They continue to make constant adjustments during turns (whether they're needed or not).

This pattern flies in the face of most other activities. Typically, when we become proficient at something, fewer adjustments are needed because we're more inclined to do the right thing in the first place. When properly executed, turning a model airplane is no different. If your turns require constant adjustments, it's a clear indication that you're doing something wrong!

Proficient/Efficient Turns

The turn procedure used by proficient pilots—the ones who make it look easy—starts with a smooth, yet

brief, aileron input to “set the bank” angle. Note that the aileron input is promptly neutralized to prevent the bank from becoming too steep. Up-elevator is then applied and held in to pull the nose into the turn. The elevator is adjusted as needed to keep the turn level throughout (see Figure 2).

In the event of an altitude change during a turn, the appropriate response is to adjust the elevator (not the aileron)! Of course, with only the elevator to be concerned about, keeping turns level is easy, and therefore all of the negative consequences of climbing and descending turns simply vanish.

Proficient pilots understand that the size of the aileron input determines the degree of bank and the size of the turn, as well as how much elevator will be needed to keep the turn level. Proficient pilots proactively input a smaller aileron input, and subsequently pull less elevator to affect a level, wide turn, or they add a larger aileron input and then pull more elevator to affect a level, tight turn (see Figure 3).

They make it look easy because they determine the aileron input that produces the degree of bank (rate of turn) that they are comfortable with 98% of the time. As a result, they are quickly able to determine the amount of elevator to pull each time to keep those turns level, often without needing any additional elevator adjustments.

This procedure entails much more than simply trying to find a comfortable bank angle and maintain level turns. It starts with recognizing that the neutral stick position provides a distinct point from which to gauge the size of each of your control inputs.

If your initial turns are either too wide or too tight, you should aim to increase or decrease the size of your initial aileron input relative to neutral. Or, if you initially pull too much elevator and affect a climbing turn, aim to pull less elevator relative to neutral next time (see Figure 4).

In the event that a turn needs to be tightened, restarted, or widened, the correct procedure is to smoothly apply a single small bump of aileron (in-out) to slightly steepen or shallow the bank angle while continuing to hold in the elevator (see Figure 5).

To avoid overcontrolling (or worse), the aileron input needs to be brief and not held in! Note that needing to bump the aileron during the turn should be fairly

The size of the initial aileron input used to “set the bank” angle determines how wide or tight the turn will be, as well as how much elevator you can expect to need to keep the turn level:

- A. A smaller initial aileron input (over and back to neutral) results in a shallower bank angle, and thus a wider turn that requires very little elevator to keep the turn level.
- B. A medium-size initial aileron input results in a medium bank angle, a steady rate turn (not too wide or too tight), and requires a moderate amount of elevator to keep the turn level.
- C. A larger initial aileron input results in a steeper bank, a tighter turn, and requires a larger elevator input to keep the turn level.

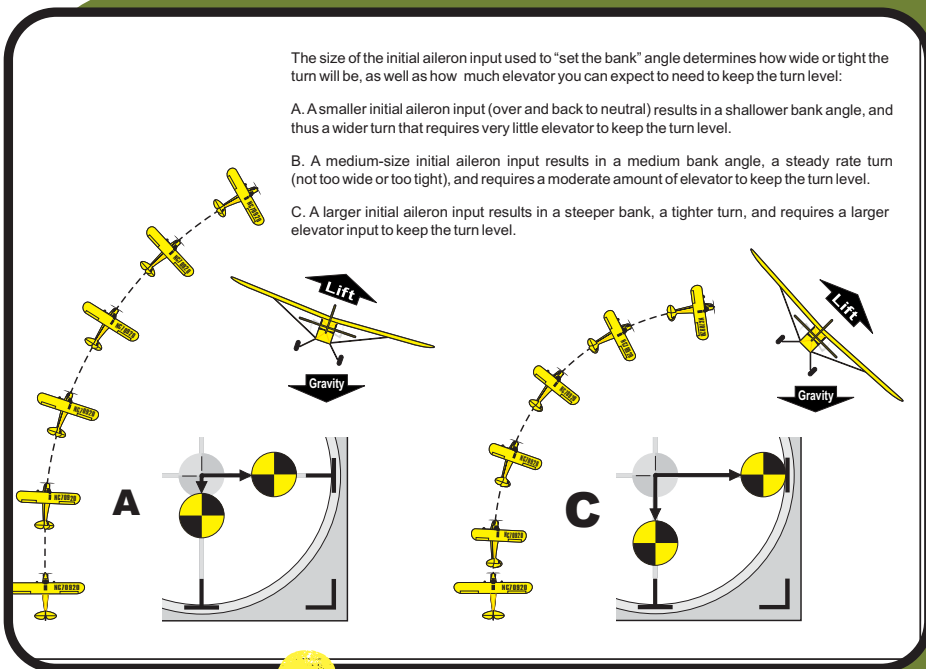


FIGURE 3

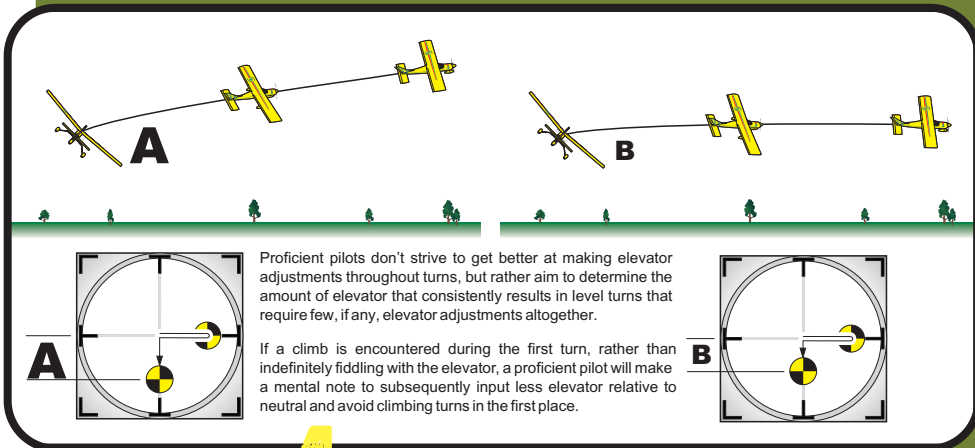


FIGURE 4

rare. If you consistently need to bump the aileron during turns, you should try changing the size of your initial bank input instead.

Gyro Stabilization

This turn procedure works with most airplanes, but there are a couple of exceptions. Aircraft with a lot of inherent upright stability, such as a high-wing powered glider, are prone to washout of turns and require additional bumps to keep them in a turn.

The other exception is a primary training airplane that features gyro stabilization technology. Gyro stabilization, such as Sensor Assisted Flight Envelope

DO YOU TURN WITH PROFICIENCY OR CONSTANTLY FIDDLE?

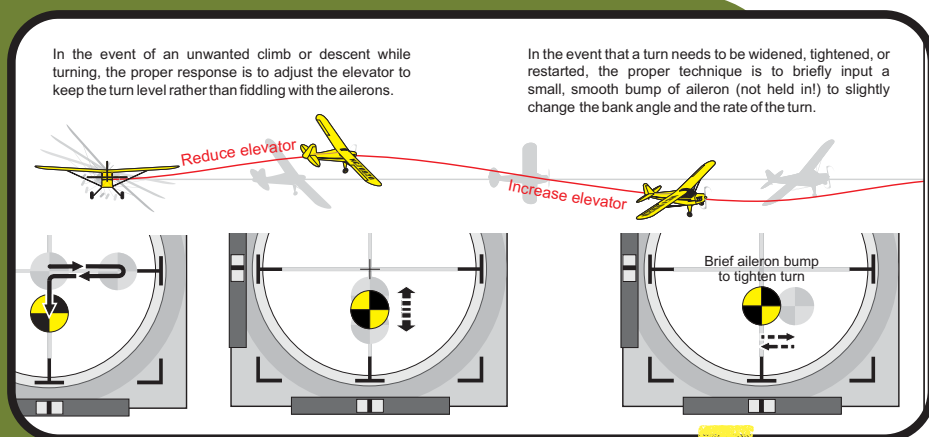


FIGURE 5

(SAFE) technology, is incorporated into certain airplanes. This technology makes it significantly easier for newcomers to the sport to quickly become successful, independent pilots.

Although these models initially require the use of unconventional (simplified) control techniques that will later need to be replaced with conventional control techniques, new pilots are wise to take advantage of the many benefits of starting out on airplanes that utilize the stabilization technology.

SAFE offers a novice pilot the option to start out in Beginner mode. In this mode, bank/roll and pitch are typically limited to no more than 15°, thereby limiting the airplane to mild maneuvering. In the Beginner mode, the airplane also returns to an upright, level attitude the instant the transmitter controls are returned to neutral.

In the Beginner mode, the airplane is essentially steered around the sky like a car. All the pilot has to do is hold the aileron control stick in the corresponding direction that he or she wants the airplane to go. When the model is trimmed for level flight, the stabilization technology automatically keeps turns level without any pilot input.

When the pilot wishes to exit a turn, he or she lets the aileron control stick return to neutral. The airplane will automatically return to level flight.

Switching to the Experienced/Normal mode removes any artificial bank or pitch limits and the airplane does what the pilot tells it to do. Holding in the aileron would cause the airplane to enter a spiral dive and eventually roll inverted. Turns must instead be initiated with a brief (in-out) aileron input to set a bank angle. The turn is sustained and kept level by holding in up-elevator. Exiting the turn requires taking out the elevator and applying opposite aileron to return the wing to level.

Again, new pilots are smart to start out with SAFE technology in the Beginner mode to avoid frequent mishaps or having to depend on others. After they have had some fun and build confidence, they can graduate to practicing conventional control techniques with the airplane still intact.

Some veteran pilots frown upon using SAFE stabilization technology because the control techniques are initially different from the conventional techniques used to fly higher-performance airplanes and aircraft without stabilization. However, these veterans fail to

consider that a novice has the option to switch back and forth between having stabilization or not, when ready to learn conventional control.

The point is this: The bad habits of holding in the aileron and subsequently fiddling with the aileron during turns are born out of ignorance. Those who start out in the Beginner mode need not worry about learning any lasting bad habits, as long as they understand how to correctly execute a conventional turn when they're ready to make the switch.

Conclusion

Proficient pilots don't endeavor to get better at making corrections. Just like a good driver, proficient pilots apply good control inputs that reduce the need for corrections altogether.

Consider that when your turn inputs are made correctly, the need for additional corrections might not exist. That is when you will be free to think ahead of the airplane, conquer wind, and take on new challenges with greater ease.

Happy flying. 

SOURCES:

1st U.S. R/C Flight School
1usrcfs@gmail.com
www.rcflightsschool.com

VENOM

POWER YOUR PASSION.



LIMITED LIFETIME WARRANTY



PROVEN U.S.A. SUPPORT



EASY CONNECT UNI PLUG SYSTEM 2.0



"A" GRADE MATCHED CELLS

VENOM UNI PLUG SYSTEM 2.0



EC3®

DEANS®



BATTERIES / CHARGERS / BOATS / ACCESSORIES

IF A PROBLEM OCCURS, WE'VE GOT YOUR BACK!

USA SUPPORT VENOMPOWER.COM

800.705.0620

Inaugural Jamb

01



District XI

Wenatchee



*Wenatchee Red Apple
Flyers provide the
perfect flying site*

By Joe Miller

dragonriders54@yahoo.com

Photos by Sally Eckhart and the author

The inaugural District XI Jamboree, held June 6-9, 2019, is in the books. The venue, pilot participation, and weather combined to offer us a chance to fly our aircraft, see old friends, and make new ones.

This is the District XI Jamboree that almost wasn't. Plans were made and in full swing when, in November 2018, a problem arose that looked as though it might doom this gathering.

Enter the Wenatchee Red Apple Flyers near Wenatchee, Washington. This group of model aircraft enthusiasts did not want to see the idea of having a district-wide jamboree shot out of the sky even before its wings could spread.

With a flying site that is one of the best in the country and a group of dedicated people to manage it, the dream was on its way to becoming a reality.



01, 02. Robert Swift's swing-wing F-14 drew much attention at the event.

03. On Saturday, during the lunchtime break, all 77 aircraft in attendance were out on the runway.

04. The AMA Model Aviation Hall of Fame award was presented to Robert Dodgson by outgoing VP Bryan Wood and AMA President Rich Hanson.

05. Mike Ingram donated \$500 to Mande Mikulski for the AMA Foundation.

Thursday

The site's driveway and electrically controlled security gate make you feel as though you are driving into a high-end RV park. A two-story clubhouse greets you and the lush, green grass spreads out, reminding visitors of a city park. RV hookups with water and electricity at an RC flying field? "Wow," is the thought that crossed my mind.

We were greeted by some of the nicest, most helpful people in the state. They not only directed me to my site, they unhooked my airplane trailer and placed it where it was most convenient.

After getting settled, I took a stroll around the grounds. I was impressed with the huge clubhouse, complete with a kitchen, viewing balcony, restrooms, and a shower. The 600-foot paved runway with neatly trimmed grass side runways took my breath away. There is a reason Washington is called the Emerald State.

Registration was taken care of by Terri Ingram. Seventy-two registered pilots were logged in and given safety information and a map of the surrounding area. Terri was gracious, knowledgeable, and made us feel welcome. I couldn't wait for the flying to begin!

Friday

Friday morning greeted us with a strong westerly wind, providing a bit of a challenge to the vendors as they set up their displays. Contest Director Phil

04



05

Tallman gave us our safety briefing on the dos and don'ts of the field. This was Phil's first time as CD and he did a great job.

I think the wind curtailed some of the open flying sessions, with only a few brave souls testing their



temperatures, and a light breeze. The day was going to provide us with all kinds of flying opportunities. Phil started the day with an 8:30 a.m. pilot briefing. The clubhouse area was full of attentive aviators excited about their chance to fly. Phil was watchful as open flying began and kept us on schedule. There was very little wait time to fly with four flying stations filling as soon as they were vacated.

The professional demonstration flights amazed the crowds. Many pilots marveled at what these people could do

06. Robert Swift's Stuka makes a landing approach.

07. Tim Hanstine and his son get ready to fly their Cracked Fokker Triplanes.

skills. The intrepid few who did take to the sky found it tricky navigating the wind gusts.

Tim Hanstine, of Northwest RC, flew several aerobatic routines with his giant aircraft. With precision and smoothness, he flew as if there was no breeze.

Dusty Eckhardt was brave enough to fly his T-28 Carbon Z. It handled the wind with ease and Dusty showed us that he has the skill to tame the wind.

While most enjoyed a fantastic lunch, we watched a Control Line demonstration by Mike Hazel of the West Coast Control Line Flyers of Salem, Oregon.

As the sun set behind the Wenatchee Mountains, we began to see a decrease in the wind and the promise of a better tomorrow.

Saturday

Saturday morning arrived with a clear sky, warm

with an RC aircraft.

AMA Associate Vice President Dave Agar took a turn as pit boss, ensuring that everyone had a chance to fly. With his cane in hand, he directed pilots and helped call takeoffs and landings. Dave kept things organized and fun without a lot of unnecessary rules or structure.

The vendor booths stayed active throughout the weekend. There was even a swap meet going on throughout the camping and vendor areas. During the lunch hour, we were invited to bring our airplanes to the runway for a giant photo opportunity. The line extended nearly the entire 600 feet of the runway, with airplanes stacked two and three deep.

After lunch, there was lots of flying, watching, chatting, and people enjoyed the day with new and old friends. Everyone I spoke with had nothing but praise

INAUGURAL DISTRICT XI JAMBOREE

08. Doug Stewart is preparing Bob Patterson's Gee Bee Ascender for takeoff.

09. This RC paraglider showcased its calm and gentle flying characteristics.

for the event and the location. They all spoke to each other as if they had known one another forever. That is what makes this sport so great. The people who will go out of their way to help another flier or just sit and talk as friends do.

The highlight of the day was the induction ceremony of Robert Dodgson into the AMA Model Aviation Hall of Fame. AMA President Rich Hanson presented Robert with the plaque. For many years, Robert built kits for Soaring aircraft and many of his friends came to honor him for his contributions to our sport.

Outgoing District XI Vice President (VP) Bryan Wood also received a plaque for his contributions to AMA and its members.


Sunday

Sunday's weather was even better than Saturday's. The wind was light and it was sunny and warm. Phil presented his morning pilot briefing and turned us loose. We broke for lunch and at 1 p.m. we started drawing for raffle prizes.

Mandee Mikulski, AMA's director of development, made the trip from Muncie, Indiana. She spoke with many of us about the endowment she is raising to provide for programs in the future. The Wenatchee Red Apple Flyers and Mike and Terri Ingram each made \$500 donations to the AMA Foundation.



Following the ceremonies, the raffle was conducted. Thousands of dollars' worth of prizes were donated to the jamboree. Thanks go to many of the "winners" who regifted their winnings to allow more participants to go home with prizes.

I feel the jamboree was well received by all who attended. Clearly, the venue was outstanding, but it was the people who made this event a success. The 2020 gathering will be held at the Wenatchee Red Apple Flyers' field on June 5-7. 

SOURCES:

District XI

www.facebook.com/AMADistrictXI

District XI Jamboree

www.amanwjamboree.com/event-info

09



THE ENJOYMENT OF BUILDING

**BUILD
YOUR DREAM
TODAY!**

IS REWARDED FOR MOMENTS LIKE THIS!

More choices, more kits than ever before! Balsa USA has the right R/C aircraft kit and accessories to get you started on your next R/C adventure. From entry level Trainer Kits to our 1/3 scale Ultimate Kit Series, we can help you build your dreams!

All of our kits come with plans, easy to use instruction booklets, die-cut or laser cut wood parts, Pre-bent landing gear, hardware and more! We even offer a line of adhesives and Plantex covering material to help build it even faster so you can spend more time enjoying moments like this!



BALSA USA

Build Your Dream Into a Reality!

ORDERS ONLY!
(800) 225-7287

(800) BALSAUSA

(No tech calls accepted)

Toll-Free valid in US & Canada Only

Fax (906) 863-5878

CUSTOMER SUPPORT
& TECH HOTLINE!
(906) 863-6421

tech@balsausa.com

BUSINESS HOURS

8:00am to 4:00pm CST M-F

email: balsausa@balsausa.com

www.balsausa.com



NO VOICEMAIL



Find us on
Facebook

We accept Visa, MasterCard, Discover and personal checks. Michigan residents add 6% sales tax. \$15.95 shipping on orders up to \$100.00, \$20.95 shipping on orders up to \$100.00 that includes 48" wood. All orders \$100.00 and up are FREE Shipping. All orders outside the continental United States are charged actual shipping. We recommend credit card payment for any orders that are subject to special shipping terms to avoid over or underpayment. Prices subject to change without notice. 15% Restocking Fee on ALL returned items.



The screenshot shows the DroneDeploy web interface. The main area is a satellite map of a rural area with a blue flight path overlaid. The path consists of several parallel lines forming a rectangular area. The sidebar on the left contains the following settings:

- Flight name: Copy of 2018-09-16 Glen plane search
- 12:29 Minutes, 28 Acres, 200 Images, 1 Battery
- Flight Altitude: 250ft (Rate: 5.0 in / ps)
- Structures Mode:
- Live Map:
- Obstacle Avoidance: (Enabled if sensors are available)
- Advanced:

At the bottom of the sidebar, there is a link: "Don't own a drone? [Test the simulator](#)".

01

LOST AND FOUND

One drone locates two lost model aircraft

By Jack Cutrone
cutrone.john@gmail.com
Photos by Matt Ruddick and the author

Glen Learnahan's heart stopped. He was flying the maiden flight on a 1/4-scale TR 260 that he had been building from an old Brown Box Models kit for two years. The preflight check had gone well and the DLE-55 engine was running smoothly.

After taxiing out and giving a last glance at the windsock, he advanced the throttle, eased the aircraft off the runway, and began flying circuits. He hadn't noticed that he was getting farther from the runway and was well over an adjacent cornfield. Without warning, the airplane made an uncommanded roll to the left.

Glen, an experienced RC and full-scale pilot, with his heart now pounding, struggled to maintain control. The airplane seemed to have a mind of its own, losing altitude with each twist and turn it made before disappearing entirely from view.

Glen concentrated on getting a visual line to where it went down. After his nerves

settled, he walked that line across the runway and into the cornfield. Deceptive from the flight stations, the corn was much higher than it had appeared, roughly two or three feet over his head. Despite the corn, Glen was confident that he would be able to locate the model without too much difficulty, given its size.

Four hours later, Glen came out of the corn without the airplane. The corn had been brutal, and to make matters worse, thick weeds filled in the space between the rows of corn. The walking cast on Glen's foot increased the difficulty. All he had to show for his efforts were cuts and scratches from the corn.

Word about the lost airplane spread throughout our club, the Lake County Radio Control Club. During the next eight days, Glen returned to the field and put in 4-hour days searching for his airplane before he had to go to work. He reluctantly reached the conclusion that the TR 260 was lost forever.

LOST AND FOUND



WATCH A VIDEO ONLINE!

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

01. The DroneDeploy dashboard of the first mapping flight plan.

02. This shows the map that was produced after the first flight.

03. This photo from the third mapping flight shows the airplane on the riverbank.

Enter the Drone

After years of flying RC airplanes and helicopters, I had recently purchased my first drone, a DJI Mavic Pro. I was still learning about its features and was interested in using it for mapping. I had already downloaded the previously free version of DroneDeploy's mapping software.

Glen's lost airplane was a perfect opportunity to put this new app to practical use.

The DroneDeploy software could hardly be easier to use. After downloading and installing the app, I went to the DroneDeploy website and registered, which gave me access to my DroneDeploy dashboard.

At the dashboard, when I clicked on the option to create a new mapping plan, the software showed a satellite view of the immediate area. Within that satellite view was an outline of a default 5-acre rectangular area to be mapped. The dashboard also shows default flight parameters: a flight altitude of 246 feet, calling for a 3-minute, 24-second mapping flight during the course of which 31 photos would be taken using one flight battery.

The default parameters can be changed in the app. By clicking and dragging on dots shown on the perimeter of the area to be mapped, the shape and size of the area to be mapped can be set. Other options include setting a higher or lower altitude for the flight.

Lower altitudes will increase flight time because more passes are required to cover the same area. Doing so will increase the number of photos taken during the flight and might result in having to use more than one flight battery to complete the mission.

The advantage of a lower flight altitude is that the resolution improves. At the default 246 feet, the resolution is 0.9 inches per pixel, while at 100 feet, the resolution is .4 inches per pixel. The high-definition photos that the Mavic Pro takes contain great detail. There are options to turn the drone's obstacle-avoidance system on or off, as well as to set the software for terrain or structure mapping.

Other options under the advanced tab are to set the

direction of flight, which can be helpful in avoiding obstacles, to set the maximum flight speed, and to set the starting waypoint. Another advanced setting is for the amount of frontlap and sidelap, which is the overlap from photo to photo that will be used later in creating the map.

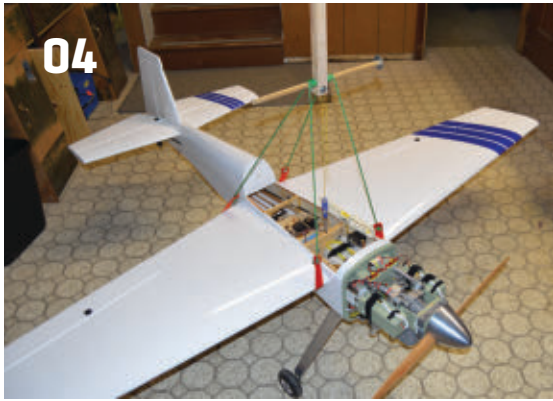
Glen was sure that the model had come down in the cornfield and thought it was close to a tree line adjacent to the Des Plaines River, east of the flying field. I set my first mapping effort to cover most of the cornfield, concentrating between the flying field and the tree line and all but a small portion of the cornfield.

The screenshot of my DroneDeploy dashboard shows the area I set to be mapped, with the flight path showing as green lines. As indicated, the flight was at 250 feet, lasting 12:29 minutes, covering 28 acres, and resulting in 200 images. It was flown the day after the airplane went down.

After the flight, I uploaded all of the images to the DroneDeploy website. The company's proprietary software "stitched" the photos together into one map using the geocoding tags on the photos, as well as the frontlap and sidelap portions of the photos themselves. The resulting map was then overlaid onto a Google map of the surrounding area and accessible from the dashboard.

I spent more than an hour examining the resulting map at the highest possible magnification, but I found the resolution to be somewhat disappointing. However, even with the resolution limitations, I was all but certain that the airplane was not in the area I had mapped. In further discussions, Glen repeated that he was sure that the airplane had gone down in the cornfield and had not flown past the tree line. He continued his search in that area for the next week.

I returned a week later to do more mapping at a lower altitude to increase the resolution. I also learned in the interval that the previously free version of the app produced lower resolution maps than the paid version, but that it is possible to view the individual photos that were



taken, and maintain the high resolution of the camera.

In deference to Glen, I performed two searches. One was a lower-level search of the cornfield, concentrating on the area that he had described. The other was a search where I thought it was more likely that the model had come down and included the trees to the north and east of the cornfield, as well as a small area farther east, across the Des Plaines River.

Before starting the second set of DroneDeploy mapping flights, I made an exploratory flight using the DJI GO 4 application for flying the Mavic. During that flight, I saw a suspicious object on the far side of the Des Plaines River, but I continued a search of the trees, and later returned to the object for closer inspection.

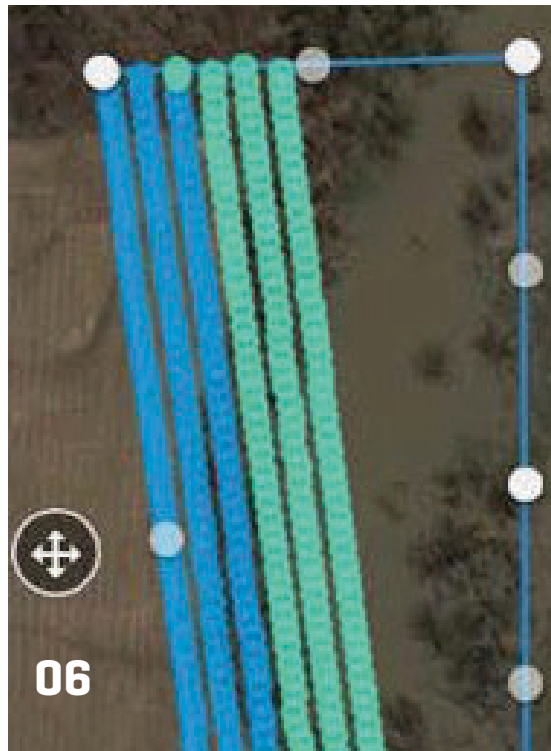
Because of the trees, I was cautious about altitude and obstructions. A video of the flight appears on YouTube (in the “Sources” listing).

After the exploratory flight, I made two DroneDeploy mapping flights. Because of the lower altitude, the flights lasted longer, past the flight capacity of a single battery. The software flies the first part of the flight and when the battery becomes low, it returns the drone to land at the point from which it took off. After a fresh battery is installed, the software returns it to where it left off, finishes the mapping flight, and then returns home.

After the two flights, I uploaded all of the photos to the DroneDeploy website. Several hours later, I was notified that the maps were finished. At the lower flight altitude, the map resolution was better and the suspicious object looked even more like a crashed airplane.

The next day (nine days after the crash), I went to the area and walked a quarter mile through the underbrush toward the spot I had seen. When I got there, I found the airplane! It had crashed nose-down at high speed into the muck of the riverbank. The spinner was buried 15 inches in the mud. The fuselage had broken in two aft of the wing, leaving one wing half still attached. The other was adjacent, and the canopy was nearby.

I carried all of the parts back to my car and called Glen. He was thrilled that I had found the airplane, although he had a hard time believing that it came down so far from where he thought. There was surprisingly little damage to the model, apart from the




04. This is the model before it was lost.

05. This is how the airplane looked after it was located on the riverbank.

06. A screenshot of the photos uploading to the DroneDeploy website.

broken fuselage. Glen plans to rebuild the airplane and fly it closer in.

The timing was good. Within a short time after the aircraft was recovered, severe rainstorms hit the area. The Des Plaines River rose, and the area where the airplane came down was underwater. Without the drone mapping, the airplane would have been lost.

Since writing this article, I’ve used my drone to locate another model airplane on the same day it was lost and guided the owner directly to it. 

SOURCES:

DJI
www.dji.com/support
www.dji.com

DroneDeploy
www.dronedeploy.com

Flight video
www.youtube.com/watch?v=xlhF02l4mA0

STAY CONNECTED

& CONFIDENT

**OVER 1000 ITEMS
TO BUILD, REPAIR
OR UPGRADE
YOUR MODEL**

SAFETY LOCK KWIK-LINK

The Safety Lock Kwik-Link offers everything a modeler could want in a clevis and more.

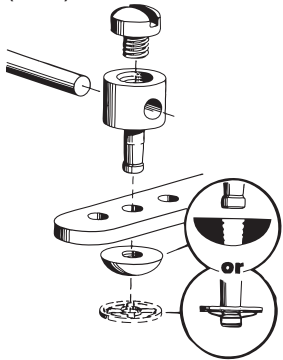
Features:

- Self tapping - leaving no slop on threads.
- Square shank, easy installation & adjustment.
- Brass plated stepped steel pin - no binding.
- Brass plated steel safety lock slides into groove for secure lock.
- 3 sizes available - 2MM, 2-56 and 4-40.
- Super strong, super tough, yet 10% lighter than steel clevis'.



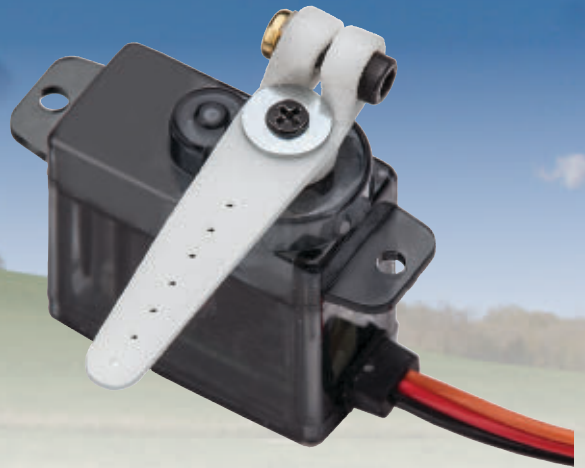
E/Z CONNECTORS

Makes setting up servos quick and easy. Need to make a small adjustment for better throw? No problem, just loosen the screw, make the adjustment and tighten. Accommodates 2MM, 2-56 (.072) and 4-40 (.093).



MICRO ADJUSTABLE SERVO ARM

Fits Micro Servos with output shaft diameters from 0.152" (3.88mm) - 0.185" (4.70mm). Four arms included (2 with small dia. hole and 2 with larger dia. hole). Complete with washers, bolts and nuts. Made from 100% virgin glass-filled nylon for strength and durability.



NICKEL PLATED DURA COLLARS

Great for securely holding wheels on axles as well as many other uses! Enough stock so that the threads will not strip and can be reworked for other uses.

Sizes:

1/16" (1.5mm) - 3/32" (2.3mm) - 1/8" (3mm) 5/32" (4mm) - 3/16" (4.7mm) - 7/32" (5.5mm) - 1/4" (6.3mm)



DU-BRO

AVAILABLE AT YOUR LOCAL
HOBBY SHOP

OR

SHOP ON-LINE & BUY DIRECT
www.DUBRO.com



On the top left and right of the transmitter are 16 switches that include sliders, a knob, and a push button.



WATCH A VIDEO
ONLINE!

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

AN INNOVATIVE CONNECTION TO OUR RC AIRCRAFT

Spektrum iX20 20-channel DSMX transmitter

By Jay Smith | jays@modelaircraft.org

Photos by Matt Ruddick and the author

HORIZON HOBBY AND SPEKTRUM

released its first Android-powered transmitter, the iX12, in December 2017. It incorporated some new features but could have benefited from additional processing power.

The Spektrum iX20 is the most recent Android-based transmitter, and I'm happy to report that it is much faster and offers many innovative new features.

Included in the box is everything you need to be successful with your new transmitter, except for the manual and an AC adapter. Because the English version of the manual spans 343 pages and can be viewed online—or even on the transmitter—it is understandable that the company opted to save some trees and leave it out.

I have to admit that omitting the AC adapter leaves me perplexed, given the price point of the transmitter and that one was provided with the

iX12. A charge cable is included, but without the adapter to plug it into a wall outlet. Granted, most people probably have one or more with other devices; however, I wanted to keep one available in the transmitter case.

When supplying your own AC adapter, for optimum results, the manual recommends a USB power supply that is capable of at least 2- to 3-amp output.

New Features

Equipped with a 5-inch touchscreen that offers a high-resolution, 720p HD color interface, a Spektrum transmitter has never looked better. It's also equipped with a faster processor, more RAM, and a newer version of Android that has the radio ready to use in roughly a minute. Sleep mode and swapping models is nearly instantaneous.

REVIEW

Its most exciting new feature is probably the capacitive-touch technology. This works with any of the 10 toggle switches, the I-switch button, or the gimbal sticks to respond to user-programmed voice alerts without interrupting the programmed mechanical movements that have been assigned.

Once enabled, you can touch a switch and the iX20 will announce what the switch does and what its setting currently is. If you touch the rate switch, it could report the current rate setting to you. Other uses include confirming the retract switch

For those who are comfortable with a smartphone or tablet, the general use and programming is intuitive and easy to learn.

or providing telemetry data, if a telemetry receiver is used. I have also used it to provide updates on the time remaining on the transmitter's timer.

The iX20 brings another first to Spektrum radios: a built-in camera. The 2-megapixel camera is intended to allow a user to photograph his or her aircraft, which can then be seen on the main screen along with the model name. The camera is capable of taking videos; however, a cellphone would likely be better suited for the task.

The radio also offers new speech-to-text functionality made possible by Android, which allows you to access and set up custom telemetry warnings, reports, and more through voice-recognition software.

The iX20 has 24 program mixes, which are the most ever offered in a Spektrum radio. In each mix, a curve is available for each position. For example, if you assign a mix to flight modes, you can have up to 10 flight modes. You'll also have up to 10 different curves for total flexibility.

Another nice feature is the inclusion of a magnetic micro-USB adapter that connects to the back of the transmitter to charge the radio. This is handy in case the transmitter is accidentally knocked over or the charge cable catches on something. It allows the cable to easily detach, which could save the transmitter from damage.

The Spektrum iX20 provides many new features, along with a refined Android experience.



Use

The iX20 is a comfortable transmitter to use. It is slightly larger than the previous iX12 and feels good whether you use your thumbs to fly or the pinch method. The radio was ergonomically engineered by Mirco Pecorari from AircraftStudioDesign.

Its quad-bearing gimbals are smooth and their tension is easily adjustable from the front of the radio. Simply remove the screw covers. Using a small Phillips screwdriver, turn the appropriate screws near the sticks clockwise a small amount to tighten the stick tension and counterclockwise to loosen it. The manual provides the locations of the screws. You can also add or remove the ratchet on the throttle stick

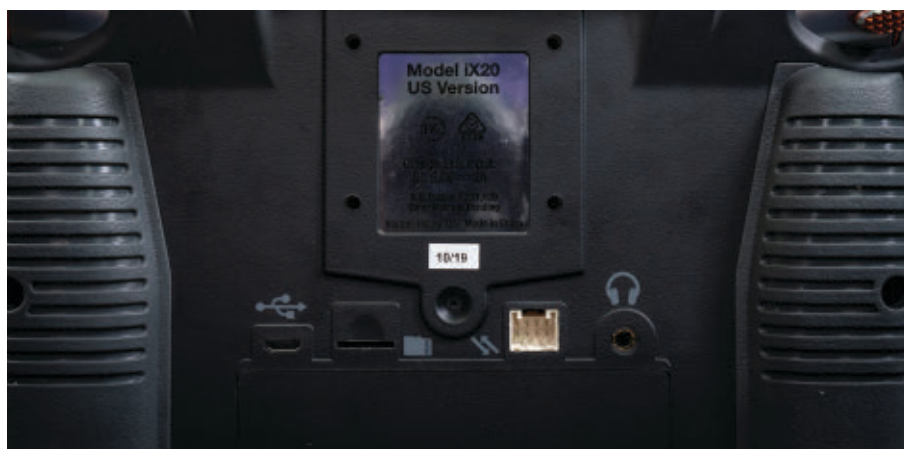
the same way.

The transmitter includes a Quick Start Guide, which is helpful in getting started with the iX20, especially if you are unfamiliar with the iX12 or Android. Using Android as an operating system provides additional functionality as compared with previous Spektrum transmitters; however, it also requires a little additional knowledge when initially jumping into this new technology. Horizon Hobby realized that people might need a little assistance and has posted several YouTube videos about the radio and its functionality.

To turn on the transmitter, press and hold the power button for several seconds. The transmitter is designed to prevent you



The Spektrum iX20 includes a nice aluminum transmitter case and some orange grips to change the transmitter's look and feel.



On the back of the transmitter is a USB charge port, micro memory card port, camera lens, serial interface port, and the audio jack.



At A Glance



Specifications

Band: 2.4 GHz
Channels: 20
Flight modes: Four
Frame rate: 11 ms or 22 ms
Model memory: 250 internal
Modes: User-selectable modes 1 to 4
Modulation: DSMX/DSM2
Range: Full
Receiver: Not included
Resolution: 1024 or 2048
SD card/AirWare capable: Yes
Telemetry: Yes
Transmitter battery type: Lithium Ion, 10,500 mAh
Price: \$1,399.99

Included

- Spektrum iX20 transmitter
- 10,500 mAh Li-Ion transmitter battery pack (installed)
- Custom carrying case
- Custom neck strap
- Short and long optional stick ends
- USB magnetic adapter cable
- Magnetic micro USB adapter
- Orange grip set
- Quick Start Guide
- iX20 decal sheet



Pluses

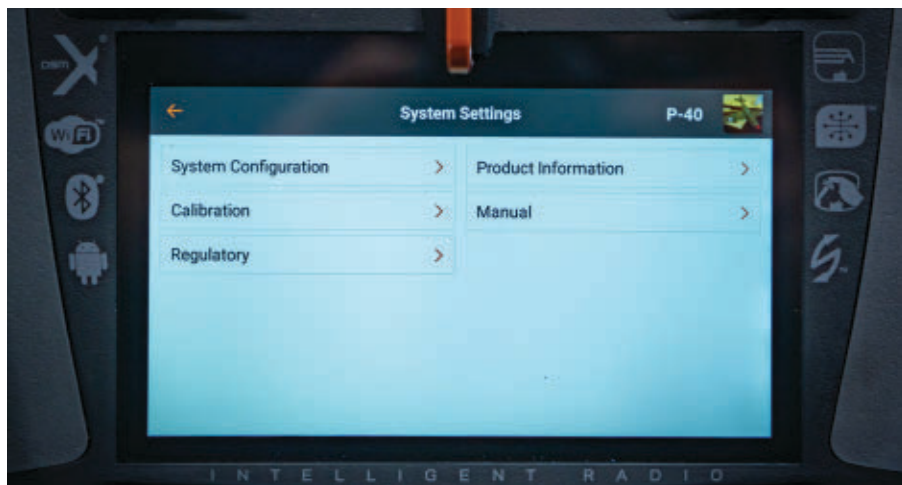
- High-resolution 5-inch 720p color interface.
- Wi-Fi, Bluetooth, and USB connectivity.
- Capacitive touch technology.
- Built-in camera.
- Good ergonomics.
- 250 model memory (internal).



Minuses

- Does not include an AC adapter.

REVIEW



The System Settings menu is accessed from any of the main screens by touching the System Settings button at the bottom of the screen. The System Configuration menu offers several basic setup options. This is also the place to view the manual for the transmitter.



The Dashboard is the main screen displaying the model name and image, if one is taken or selected, as well as the trims and timers. On the top right, you will find battery capacity and voltage, telemetry signal strength, and volume.



The Model Adjust menu contains features and adjustments that are used to finalize the settings for a model configuration. Options in this menu will vary depending on the model type that is selected during the initial model configuration, and the aircraft type selected in the Model Setup menu.

from inadvertently powering it on by touching the power button. Powering on the radio takes slightly less than a minute.

Sleep mode is accessed by double pressing the power button. It will allow you to have your radio available in moments. Sleep mode is used when you plan to use the radio again the same day. When you are done flying or working with the radio for the day, it should be powered off normally.

Registration can be done on the transmitter after you have set up Wi-Fi. Simply swipe down from the top of the screen and select the Wi-Fi icon to connect to available Wi-Fi networks. Registering the transmitter is done in System Settings then Product Information.

You will also need to register for Google Play if you do not already have an account. If you do have an account, you can simply link to it. After you access Google Play, you can update the transmitter software through the Spektrum AirWare software.

Spektrum AirWare software provides the interface to set up your models. When the transmitter finishes booting up, you will be in the AirWare software. This runs independently of Android, so even if Android crashes, you will maintain full control of your model aircraft.

Inside the AirWare software, you will start on the main screen that provides information about the currently selected model, trim inputs, and enabled timers. On the top left is your model's name. If you click on that, you will be taken to Model Utilities, where you can switch models. When you switch models, it saves your current model and loads the one you have selected. On the top right are the battery indicator and the volume setting.

On the bottom of the screen is the Model Adjust menu that contains features and adjustments that are used to finalize the settings for a model configuration such as Servo Setup, Dual Rates, Expo, and the Flap System.

The Model Setup menu features are used for basic aircraft setup configuration. Here you will find options such as Audio Events, Timers, and Model Start Warnings.

The System Settings allow you to access the System Configuration, where you can set the mode and language used for the transmitter. Product Information provides

the serial number of the transmitter, app version, and firmware version. It is also where you register the transmitter.

The Calibration menu allows a user to ensure that the analog input devices (control sticks, sliders, and knob) are properly working. To complete the calibration procedure, move every control to the extreme and return them each to center.

The screen shows a graphic representation of each input. The indicator turns green when each control's range of movement is confirmed. The control must be centered for the indicator to stay green. Select Save when all of the indicators are green. Calibration is required whenever a stick mode change is performed.

Viewing the manual is the final option found in the System Settings. It is handy to have the manual accessible if you have a quick question about one of the functions of the transmitter. You can even search for information, and double tapping the screen will enlarge the text. Double tap again and it will return to its original size. Although I wouldn't use this option for extensive reading, it is great if you need a quick reminder about one of the transmitter's many features.

If you want to customize some of the menu options, the Menu Setup on the iX20 allows you to do so based on particular receiver features by adding or removing items that might or might not be relevant. Simply go into the receiver drop-down menu and use the on/off buttons to turn items on or off or to select the channel count if the receiver you want is not listed.

The roller system used in previous Spektrum transmitters works well, but I have found that the touch screen makes navigation easy. All of the menus inside of the AirWare software are simple to understand, and changes are easily made.

On the Android side of things, you have plenty of preinstalled apps and widgets you can use and more can be downloaded. Many third-party apps that work with Android are available and others are under development.

The iX20 has an integrated auxiliary serial port that has long-range radio-frequency module support. This includes the CRFS protocol for compatibility with the TBS Crossfire and Crossfire V2. In addition, the iX20 is engineered to deliver a 9.5-volt power supply for external devices. Using



The Android Home Screen contains all of the applications that are loaded in the iX20. Shortcuts to applications can be moved onto the home screen for easy access.



The Model Setup menu features are used for basic aircraft setup configuration. The menu list varies by model type.

the iX20 transmitter with Crossfire will require an adapter (SPMA3090). Because flying beyond line of sight is not supported under the AMA Safety Code, I didn't use or test this functionality.


Conclusion

The iX20 has become my primary transmitter, leaving my iX12 and DX9 tucked away in their cases because I find the new transmitter easy to program and use. It has some great new features, along with a more refined Android experience.

For those who are comfortable with a smartphone or tablet, the general use and programming is intuitive and easy to learn. The inclusion of Wi-Fi and a touch screen makes this new radio a joy to use. Being able to perform tension, ratchet, and travel adjustments from the front of the transmitter is appreciated.

The capacitive-touch technology is the new feature I find myself using most often. From timer updates and telemetry notifications, to just having an easy reminder of the functionality of each switch or knob without taking your eyes off of your aircraft, is a huge plus.

Updating the transmitter or downloading aircraft setup files without the need of a computer is also nice.

The iX20 continues to build upon the innovation that Spektrum has brought to its radio systems since 2004. 

SOURCES:

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

SpektrumRC YouTube Channel
www.youtube.com/user/SpektrumRC

AVIOS

Albatross HU-16

Avios Albatross HU-16 Flying Boat
1620mm (63.7") PNF
SKU: 9310000350-0



AVIOS

MiG-17 FRESCO

Avios MiG-17 FRESCO 1200mm
SKU: 9306000383-0



HobbyKing.com®

AVIOS



C-130 HERCULES

Avios C-130 Hercules Military Gray
1600mm (63") (PNF)
SKU: 9306000465-0

GRAND TUNDRA



Avios Grand Tundra - Green/Gold
1700mm (67") Sports Model (PNF)
SKU: 9499000262-0



SPITFIRE MkVb

Avios Spitfire MkVb Super Scale 1450mm
ETO Scheme Warbird (PNF) w/80A ESC
SKU: 9499000365-0

Visit www.hobbyking.com/modelaviation for more!

H-KING



FOKKER D.VII

H-King Fokker D.VII Biplane
925mm (36.4") (PNF)
SKU: 9419000020-0



H-King Radjet 800 EPO
800mm (31.5") (PNF)
SKU: 9306000474-0



H-KING

Regional warehouses available



THE WORLD'S BIGGEST HOBBY SHOP

H-KING



H-King Flycat 70mm 12-Blade EDF Jet
1042mm (41") (PNF)
SKU: 9310000366-0



TL2000

H-King TL2000 EPO RC Plane 1160mm (45.7")
(PnF) w/Floats
SKU: 9152000018-0

BIXLER



H-King Bixler 1.1 EPO
1400mm Glider (PNF)
SKU: 9306000428-0



RADIO SYSTEM

ORX TX6i

Full Range 2.4GHz DSM2/DSMX compatible
6ch Radio System (Mode 2)
International Version
SKU: 9171001328-0



SKU: 9171001386-0



SKU: 9171001384-0



TURNIGY. Rechargeable Battery AA
2550mAh NiMH
SKU: 9985000005-0



TURNIGY.

Evolution PRO

Turnigy Evolution PRO
Digital AFHDS 2A Radio Control System
w/TGY-iA6C Receiver



HobbyKing.com®

THE WHOLE FPV PACKAGE

FPV GOGGLE CYCLOPS DIVERSITY

Quantum Cyclops Diversity
DVR FPV Goggle
SKU: 9171001337-0



FOXEEER

Foxeer Arrow V3 Black 650TVL
PAL FPV Camera
SKU: 9740000119-0



IMMERSION RC

ImmersionRC Tramp HV
5.8GHz FPV Video Transmitter V2
(International version)
SKU: 277000091-0



TBS™ Triumph RP-SMA (2pcs)
SKU: 641000026-0

Visit www.hobbyking.com/modelaviation for more!



TURNIGY
power systems

Power on Demand **PANTHER**
THE NEXT GENERATION IN PERFORMANCE



ZIPPY Compact 5000mAh
3S1P 20C Lipo Pack
SKU: 9067000450-0



Turnigy 3000mAh 3S 20C
Lipo Pack w/XT-60
SKU: 9067000248-0



Turnigy Graphene Panther
1600mAh 4S 75C Battery Pack
SKU: 9067000364-0

Nano-Tech **PLUS+**
HIGH DISCHARGE LIPO BATTERY



Rhino 2200mAh
3S 25C Lipo Pack w/XT60
SKU: 9952000024-0



Turnigy Nano-Tech 1300mAh 4S 70C
Lipo Pack w/XT60
SKU: 9210000263-0

Regional warehouses available



THE WORLD'S BIGGEST **HOBBY SHOP**

TURNIGY
power systems

PLUSH-32 SERIES SPEED CONTROLLERS



ESC Programming Card
SKU: 9351000115-0



150A Speed Controller w/BEC
SKU: 9351000114-0



120A Speed Controller w/BEC
SKU: 9351000113-0



100A Speed Controller w/BEC
SKU: 9351000112-0

SK3
AERODRIVE



2830 920KV
SKU: 9192000242-0



3548 840KV
SKU: 9192000256-0



4250 350KV
SKU: SK3-4250-350



THE TOLEDO R/C EXPO

2020
April 3, 4 & 5th



SEAGATE CENTER

401 JEFFERSON AVENUE, TOLEDO, OHIO

This three day event showcases all types of R/C model Planes, Cars, and Boats.
Along with the exhibitors, there will be speakers, swap shop, auctions,
and much more.

For all detail visit our website below

**\$10 THOUSAND
IN CASH PRIZES**



WWW.TOLEDOSHOW.COM



The author had no issues flying the Multiplex Challenger outside in up to 5 mph wind.



WATCH A VIDEO ONLINE!

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

FUN AND DURABLE PROFILE BIPE

Multiplex Challenger Bi-Plane Indoor Edition

By Fitz Walker | flying_fitz@yahoo.com

Photos by Lee Ray and the author

I'VE ALWAYS BEEN fascinated by flat-plate-style flying models and the way they seem to throw Bernoulli's principles out the window in a triumph of brute physics over elegant aerodynamics. Like the bumblebee, science says they shouldn't fly, but they do—and quite well.

In the tradition of some model airplanes dragging Mr. Bernoulli through the mud comes the Multiplex 3D-capable Challenger indoor flyer. Made of EPP foam and sporting a distinctive paint scheme, this biplane looks to offer high-performance aerobatics that are suitable for indoor flying in a small package.

Unsurprisingly, a model composed of flat parts comes in a flat package. All of the subassemblies, parts, and manual are neatly packed in a surprisingly thin box. The body and wings are constructed from durable, 6 mm EPP foam that is preprinted with the distinctive color pattern. Control surfaces are hinged using a beveled crease in the foam.

The manual is printed in multiple languages

that share a common set of black and white photos. Assembly steps are on separate pages from the photos, so I recommend carefully reading all of the steps and associated photos before starting. None of the parts are labeled, but the manual text describes each part, and I generally had no issues finding the parts I needed with the help of the photos.

It wasn't immediately obvious, but all of the plastic parts are 3D printed using Fusion Deposit Modeling—the same type of 3D printing commonly seen in hobby use.

Although the manual recommends adhesives that are common in Europe, you can (and I did) completely build the model using medium CA glue. Note that accelerator (CA kicker) can be used, but it should be done sparingly for the best strength.

Build

Assembly starts with the tail pieces. Those parts are reinforced by embedding various



This is how the flat EPP foam, with its colorful preprinted scheme, comes out of the box.

lengths of small carbon-fiber rods. The entire model is structurally strengthened by a veritable framework of carbon-fiber rods that must be cut and glued into place as the model is built up into a three-dimensional subject.

time-consuming step, but without the rods, the thin foam would lack structural integrity and be too flimsy for controlled flight. It is easy to do, but it will take a little time and patience.

Nearly all of the parts key together in

All of the controls were crisp and smooth. I was immediately at ease experimenting with all types of maneuvers and throwing the sticks in the corners.

Factory precut slots and grooves are provided for all of the reinforcement rods to slide into. I recommend labeling all of the carbon-fiber pieces and using a caliper to note the various thicknesses of the rods.

This is the most involved and

unique ways to prevent assembly errors. However, I had a brief pause when I needed to reference various pictures in order to determine the proper orientation of the wings. In fact, I came uncomfortably close to gluing in the bottom wing upside down.

I used the recommended motor package, which includes a 15-amp ESC, a 1050 Kv brushless motor, and 9 x 5 GWS propeller. Note that the propeller hub's hexagonal depression didn't fit the stepped washer hub for the motor shaft, so I slightly drilled out the hub with a roughly 8 mm drill bit. I also enlarged the cutouts for the tail servos with a hobby knife so that the Hitec HS-45HB servos would fit. The manual appears to have a slight error in the brass coupler length for the ailerons (14 mm vs. 20 mm). It is correct on the parts list, but not on the assembly text.

The receiver, battery, and ESC are simply attached to the airframe with Velcro. With the radio hooked up, the control throws, especially the ailerons, look to have excessive deflection. However, lots of exponential is prescribed by the manual to tame things down.

Flying

Although the Challenger is generally meant for indoor flying, my first flights were out in the open on a day with a light,

Thin carbon-fiber rods provide lightweight reinforcement to the structure.

variable breeze. Despite the scary control throws, the model handled smoothly and was not at all twitchy. As a precaution, I programmed in an aileron low-rate setting, but quickly went to the normal rates when it was apparent that I had nothing to fear.

This is not a model that you fly fast, so you need the extra throws. All of the controls were crisp and smooth. I was immediately at ease experimenting with all types of maneuvers and throwing the sticks in the corners. Surprisingly, it was very controllable in the roughly 5 mph wind during my outing.

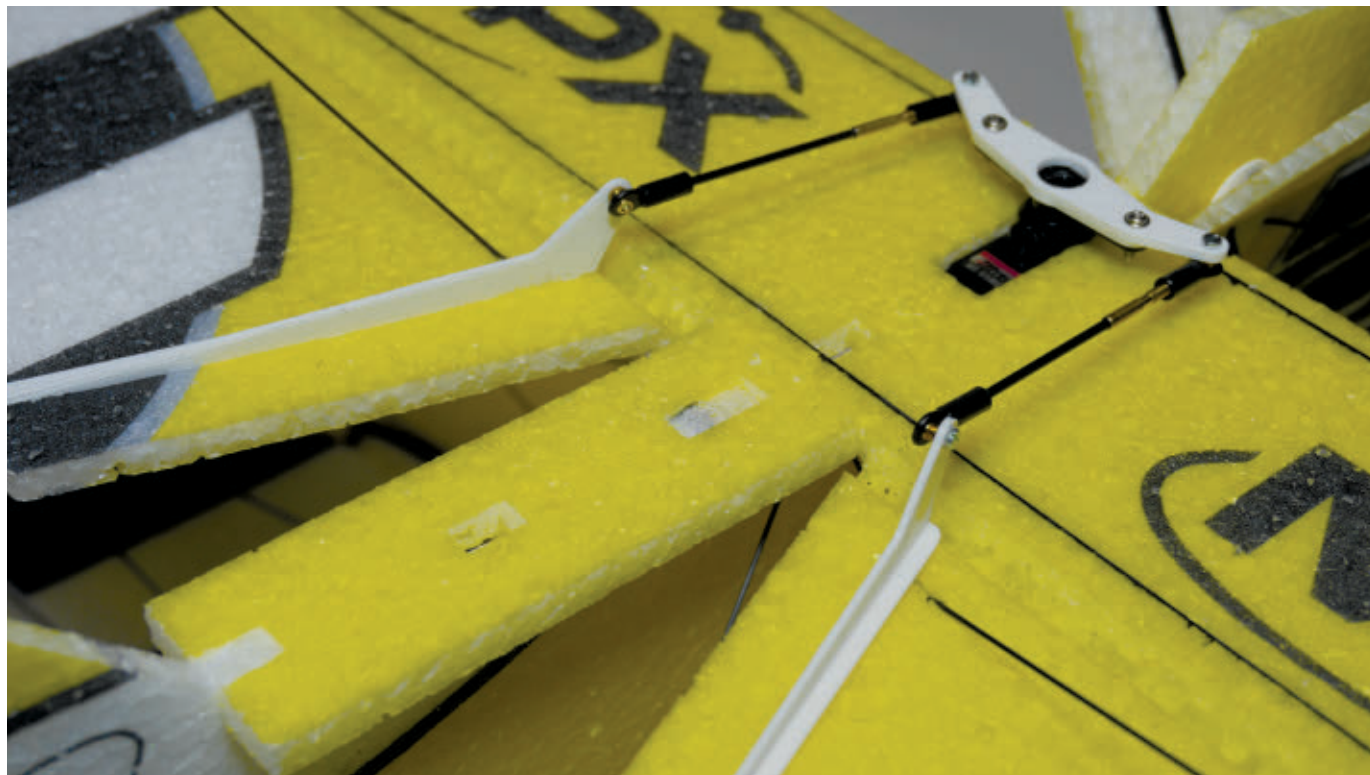
Control authority in forward flight is maintained to basically zero airspeed. This is great because this airplane excels at flying slowly. It also didn't seem to care much at what attitude it was placed. I just pointed it in the direction I wanted it to go, wings level or not.

Knife-edge flight can be done at crawling speeds with rudder authority to spare. Knife-edge loops are also easy to do. The roll rate is brisk at full deflection.

I don't claim to be an expert 3D flier, but the Challenger seemed to perform all of the advanced aerobatics in my mental library. I also found that the model didn't seem to accelerate too much on the down verticals, probably because of the drag of the carbon-fiber rod reinforcements

that were hanging out in the breeze. This low acceleration rate looks better because maneuvers will have a more consistent speed.

I found it to be a great model with which to experiment. Most maneuvers needed only a light touch of the controls. Although



The aileron servo uses an arm extension and adjustable carbon-fiber pushrods for large-deflection travel.



At A Glance



Specifications

Model type: Indoor 3D
Skill level: Intermediate/advanced
Wingspan: 33.46 inches
Length: 35 inches
Flying weight (listed): 7.93 ounces
Flying weight (as flown): 8.5 ounces
Motor: ROXXY C27-15-1050 Kv
Propeller: GWS 9 x 5
Battery: 3S 350 mAh LiPo
Construction: Carbon-fiber reinforced EPP foam
Radio gear: Hitec Aurora 9X transmitter; Hitec Optima 9 receiver; Hitec HS-45HB and HS-65MG-plus servos
Price: \$76.99



Pluses

- Easy to fly, yet very aerobatic.
- Capable of indoor and outdoor flight.



Minuses

- Minor error in manual.
- Some photos could be clearer.



Manufacturer/Distributor

Hitec/Multiplex
 (858) 748-6948
www.hitecrfd.com



The entire airframe is strongly reinforced in a lightweight manner.


it is not an airplane for beginners, intermediate pilots should have no problem flying it on calm days.

Because I rarely went past half throttle, the flight time using a 3S, 350 mAh LiPo battery was quite good. I easily got 5- and 6-minute flights on a single charge. When I elected to use full power, I had unlimited vertical climb, but horizontal, full-throttle flight quickly hit a drag wall, so don't expect a speed demon.

Although I wasn't able to truly test indoor flying with the model, I did fly it in my tree-lined cul-de-sac with no issues maneuvering

in such a confined space. Plus, there is something extra satisfying in being able to fly right outside of one's front door.

Conclusion

After spending some time flying the Multiplex Challenger, I found that its inherent stability, yet high maneuverability, makes it a fun airplane to experiment with new techniques. It excels in the low-speed flight envelope with gravity-defying, slow-speed handling. Both advanced and intermediate pilots will find a lot to like about the Challenger. 



The Challenger flies effortlessly and is comfortable in knife-edge flight.



The F-16 Falcon rolls down centerline for the initial takeoff.

AN EDF JET EXPERIENCE SUITED FOR SMALLER FLYING SITES

Horizon Hobby E-flite F-16 Falcon 64mm EDF BNF Basic with AS3X and SAFE Select

By Dan Landis | pttrnflyer2003@yahoo.com
Photos by the author

THE F-16 FIGHTING FALCON is one of the most iconic fighter jets out there—one of the best known and most recognizable. The U.S. Air Force demonstration team, the Thunderbirds, fly them, as well as the Viper Demo team that travels across the US and internationally, putting on some of the most incredible aerial displays in the world. The full-scale Falcon has more than 27,000 pounds of thrust, pushing it to speeds exceeding Mach 2 and at a ceiling slightly above 50,000 feet.

The 64 mm electric ducted-fan (EDF) F-16 Falcon is also quite impressive. Its eye-catching paint scheme is quite visible, while remaining true to

its scalelike appearance. This jet boasts a 40-amp ESC, powering a 64 mm, 11-blade fan system on 4S LiPo battery power.

Assembly

Safely packed in the box, each part is tucked into the foam so that nothing can move and nothing is touching. Upon removing all of the parts from the box, I performed a quick inspection to ensure that nothing was damaged, then it was time to quickly assemble the Falcon.

The first thing that you want to do is wipe the aircraft down, especially at the points where you

REVIEW

All of the F-16's parts were well packaged and had no damage upon arrival. Here, you can see all of the parts on the table.



will be gluing parts together. It is important to get all of the dust and any loose paint off so that the glue will make a good joint.

With the aircraft dusted, it was time to flip it over using my Foam-Flite stand to hold the jet. The first thing is to glue on the lower dorsal fins. Something to keep in mind is that this model can be flown with the landing gear off. If that is done, there is a chance of knocking off the lower dorsal fins. I used a small drop of medium CA glue on the front of the fin joint so that if they are knocked off, they shouldn't do any damage, and if I wanted to pull them off, it would not cause any major harm.

Next was to glue on the horizontal stabilizers. I again used medium CA glue, making a thin layer on the mounting surfaces. After a few moments, the stabilizers were dry.

I next installed the landing gear. The mains were pressed on and two small covers were screwed in to secure them in place. The nose wheel was pressed into place. Through the air scoop is a setscrew that gets tightened down, rendering the

nose wheel steerable.

With the aircraft back on its feet, the vertical fin was glued on using medium CA adhesive. When gluing on the fin, make sure that it is square and let it alone while drying so that it does not move.

The magnetic nose cone snaps into place, which makes it nice in case you should ever need to change it. The wing halves are held in place with two screws on each panel, making it easy to remove them to fit into a smaller vehicle for transport.

I am impressed with how well the E-flite F-16 Falcon flew. It is definitely a great little EDF.

Finally, I bound the Falcon to a DX9 transmitter. I followed the setup directions in the manual. After the radio was set up, I flipped the jet over so that I could connect

the pushrods. Make sure that the pushrods are the proper length so that everything is centered. I found that all of the pushrods needed to be adjusted to center the surfaces.

With that done, it was time to fly!

Flying

I charged the Spektrum Smart battery and it was off to the field to fly the F-16. One of the cool things about the Smart battery is that you can set up all of its settings and can even have the battery automatically discharge to storage voltage after a period of time with no use.

At the flying field, it was cold with low wind, but it felt as though it was freezing. On the first flight, I flew the Falcon with all of the armament on to see how that affected the aircraft. The F-16 flew well, had plenty of power to carry the ordnance, and it looked great doing so. Loops and rolls were easy to do and the aircraft's speed was good.

On the next flight, I removed all of the ordnance except for the wingtip missiles.

Remember to wipe down the aircraft parts before gluing. This shows the ventral fins that have been glued on. The author used only two small dots of glue to allow the fins to pop off easily without doing any damage during belly landings.



This shows the attachment point for the nose gear to the steering servo.



At A Glance



Specifications

Type: EDF jet
Weight: 1.98 pounds
Length: 43.3 inches
Wingspan: 28.7 inches
Material: EPO foam
Power system: 64-mm, 11-blade EDF fan unit; 2840 3150 Kv brushless motor; 40-amp ESC
Battery: 4S 2,200 mAh LiPo
Price: \$179.99 BNF; \$159.99 PNP



Pluses

- Quick assembly.
- Removable wings.
- Plenty of power.

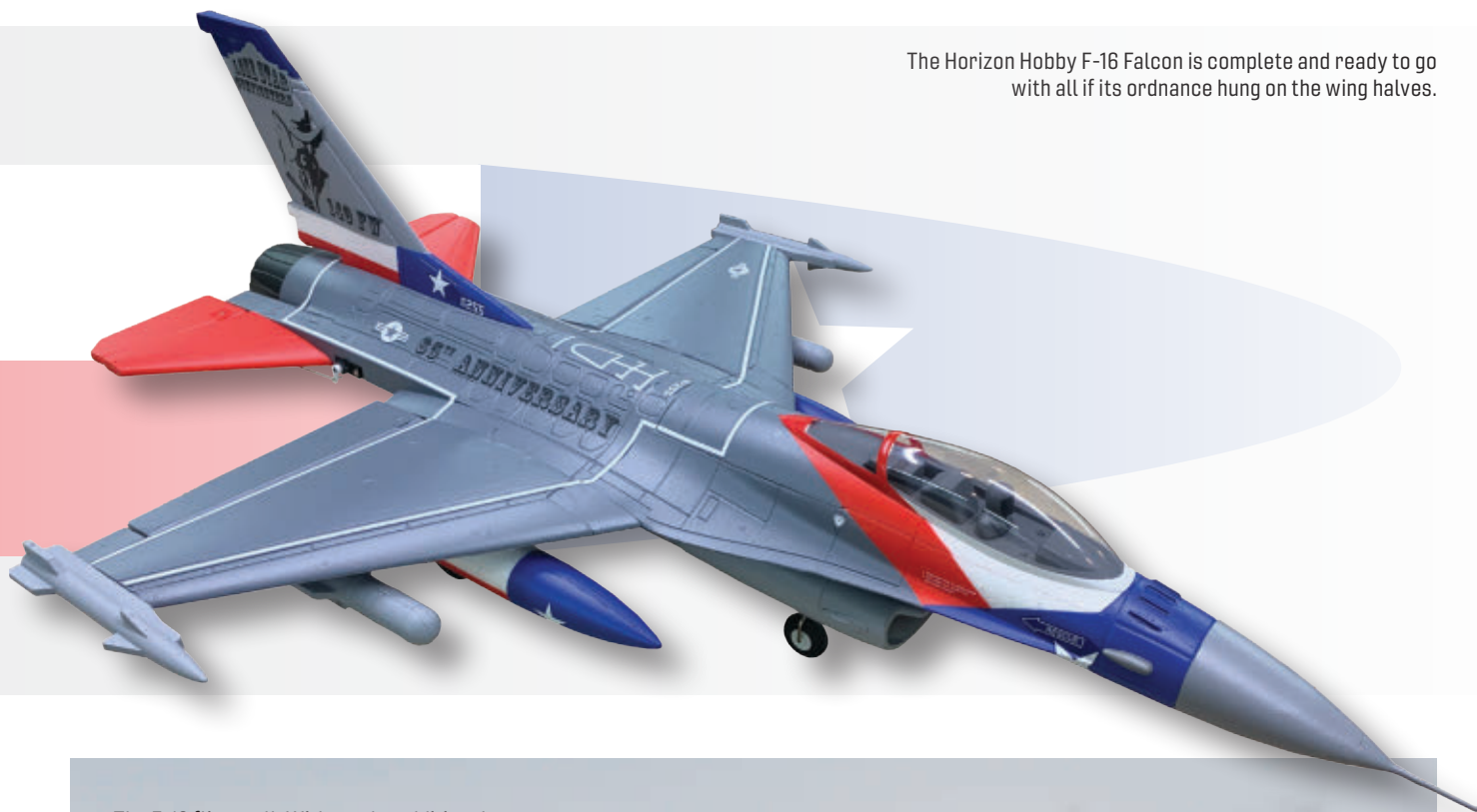


Minuses

- Ordnance has to be glued on and is not removable.

REVIEW

The Horizon Hobby F-16 Falcon is complete and ready to go with all of its ordnance hung on the wing halves.




The F-16 flies well. Without the additional ordnance, its improved speed and performance are noticeable.



With the drag and weight gone, the jet really performed well. Both speed and performance were noticeably better. Loops were larger and rolls were faster, as were the takeoffs. The F-16 jumped off of the ground and climbed away with great power. Gliding and landing were easy.

Conclusion

I am impressed with how well the E-flite F-16 Falcon flies. It is definitely a great little EDF. It is quick to assemble, has removable wing halves, only requires a 4S battery, and has a great scalelike appearance. 

SOURCES:

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

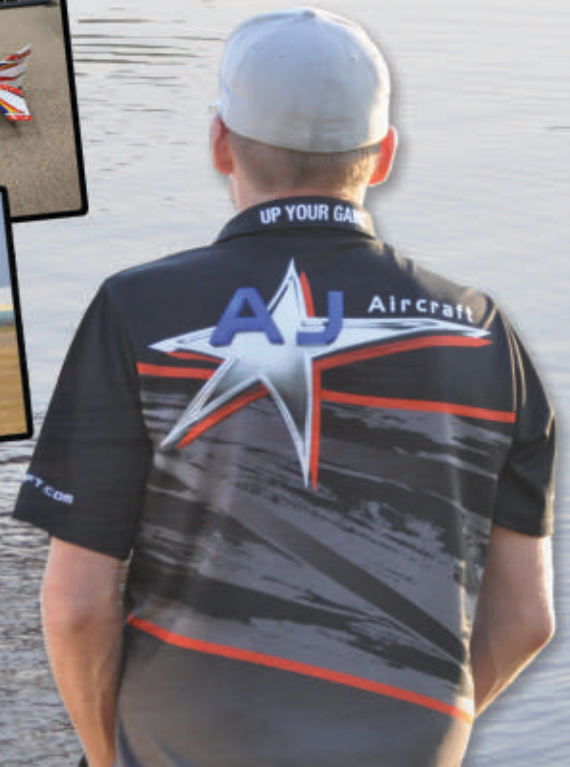
Spektrum
(800) 338-4639
www.spektrumrc.com

AJ AIRCRAFT

**NEW PRODUCT
COMING
SOON
2020**



***UP YOUR GAME, WITH INDUSTRY
LEADING AIRFRAMES, AND ACCESSORIES***



aj-aircraft.com

**Monday thru Friday 9am - 6pm
(734) 244-4015**

Interested in sharing your handiwork? Visit www.ModelAviation.com for submission guidelines.



Eindecker

Dave Bhend's (Chippewa Falls, Wisconsin; email: drakenwode17@gmail.com) wife, Chris, is shown with her Balsa USA Eindecker shortly after its maiden flight. This is her third kit build.

The airplane was covered with Oratex from Balsa USA and painted with Testors Model Master paint. The markings are also from Balsa USA. Electric power is with a Prop Drive 5050-580 motor, 90/100 ESC, and a HobbyKing 5S 5,000 mAh LiPo battery.

"I flew the maiden flight and it was a joy right from takeoff," wrote Dave. "One click of aileron trim and [it was] hands-off flight." Chris flew it at warbird shows throughout the Midwest in the summer of 2019.



Top Flite P-51

Adam Cline (Sanford, North Carolina; email: mustangpilotadam@gmail.com) built his Giant Scale Top Flite P-51 ARF with a few modifications.

The fuselage is fiberglass, the wing is done in MonoKote, and the decals are by Callie Graphics. He used a Zenoah G-62 engine, Futaba radio equipment, and Robart retracts, with a 20 x 12 Zinger propeller. "I can sometimes beat the guys [who are using] APC props," he boasted. The all-up weight is 23 pounds.

Adam noted that it flies great. "Goes fast but can slow down pretty well when you need it to."



Bristol M-1

Rick Rader's (Brooklyn, Ohio; email: rgrader@roadrunner.com) fascination with World War I warbirds led him to the Balsa USA Bristol M-1, an obscure aircraft that had a limited production.

The 60-inch wingspan M-1 is powered by a Saito 62B four-stroke engine and uses Hitec Mighty Mini servos, a Tactic SLT receiver, and a Tower Hobbies 2.4 GHz transmitter. Covered in MonoKote, the airplane's vintage wheels, pilot figure, and Vickers machine gun are from Williams Brothers Model Products. The wire support is silver elastic cord.

Rick wrote that it complements the Balsa USA 1/6-scale Fokker D.VIII that is in his hangar.



Finesse 2-Meter

Dave Patrick's Finesse 2-meter F3A RC Aerobatics (Pattern) airplane was flown around the world, including in Japan, Canada, Columbia, and the US. It is now owned by Nick Ziegler (Moline, Illinois; email: a100dork3@yahoo.com), who took a few years to go over every bolt to make sure it was flyable and perfect. "Just like 1995," he wrote.

The airplane wears its original paint and colors. The YS 1.40 engine was rebuilt and features a new fuel system, Spektrum radio gear, and MKS servos. The electronics and fuel system were replaced because of their age, but it still has the original spinner and retracts.

Nick sent the canopy to Dave, who signed it with notations about where it has flown.



Mighty Barnstormer

Joseph Zawodny's (Poquoson, Virginia; email: joe@zawadny.com) first exposure to the David Boddington-designed Mighty Barnstormer was when his dad scratch-built one from *Radio Control Modeler* plans in the mid-1970s. "It is a sweetheart of a flier, with no bad habits, [and it] looks and sounds great in the air."

Joseph purchased the plans pack from D.B. Sport & Scale, Ltd. and completed it in 7 months. The wingspan on Mighty Barnstormer #2 was increased from 88 inches to 101.5 inches. It weighs 13.25 pounds dry. Parts were drawn in Fusion 360 and cut on a CNC router. G10 fiberglass was used instead of plywood for the formers, the firewall, and the landing gear mounting plate. The airframe is covered with Super Coverite and sports custom vinyl decals. The wheel pants are from Fiberglass Specialties.

It is powered by a Saito FG-21 four-stroke gas engine turning a Xoar 15 x 8 propeller. Futaba radio equipment with Turnigy high-torque servos are also used.

Joseph documented his build with approximately 800 photos on his Building the Mighty Barnstormer Facebook page at <https://bit.ly/2XXt3ae>.



Cessna Bird Dog

This Cessna Bird Dog was scratch-built by Harry Jenkin (Toms River, New Jersey; jjharryjr@verizon.net) from 1/3-scale Mr. Hobby plans found on eBay. The 145-inch wingspan Bird Dog is 96 inches long and uses a Desert Aircraft DA-70 twin engine and 28 x 8 propeller. The airplane's total flying weight is 42 pounds.

The graphics were done by Callie Graphics, and the covering is orange UltraCote. Harry noted that the building time was approximately 3-1/2 months. He is a member of the Ocean County Modelers.



1911 Voisin Canard

Larry Nieman (Clemmons, North Carolina; email: lnieman@triad.rr.com) built the unusual French Voisin Canard, a pusher biplane that was designed in 1910 with a full-flying, forward-mounted elevator.

The scratch-built model has a 45-inch wingspan and is 50 inches long. It's powered by a Thunder Tiger F-54S four-stroke engine with an 11 x 6 pusher propeller and controlled by a Spektrum receiver with four Hitec servos. The covering is MonoKote. Larry stated that this was his first attempt at undercambered wings, which turned out better than he expected.

At the time of this writing, he had planned to make the maiden flight in July 2019.



Embraer C-390

George Lumpkins' (Katy, Texas; golumpk@swbell.net) C-17 was featured in the July 2019 "Focal Point." This same airplane is now an Embraer C-390! George said it flies better than his previous three versions!

The C-17/C-390 now has 70 mm fans in Banana Hobby 63 mm nacelles that were hollowed out to 70 mm. A 5-cell Value Hobby 60C 5,000 mAh battery was used. George heavily reinforced the landing gear. He stated that it has a wild sound and good flight characteristics.

"Part of this hobby is sharing and imagination," George wrote. "[I] just wanted to show possibilities for creativity."



Genesis 2-Meter

Nick Ziegler's (Moline, Illinois; email: a100dork3@yahoo.com) CA Model Genesis 2-meter Pattern airplane was rebuilt by Nick and his brother, Jeff, and is dedicated to stunt performer Evel Knievel.

The Genesis features a Motrolfly motor, Hobbywing high-voltage ESC, Roaring Top batteries, Spektrum servos and supporting gear, an APC propeller, and a Tru-Turn spinner.



Cessna 310 B

This Cessna 310 B was scratch-built by Adam Courville (Beaumont, Texas; email: a_courville@yahoo.com). It is a Rich Uravitch design and was featured in the August 2009 *Model Airplane News*. Adam began researching blueprints in September 2018, started construction in January 2019, and completed it in March 2019.

The 53-inch wingspan aircraft was modified to use E-flite electric retractable landing gear and dual servo split flaps similar to the full-scale aircraft. Adam used Cobra C-2217/20 motors, Cobra 33-amp ESCs, APC 9 x 6 slow-fly propellers, a Spektrum AR620 six-channel receiver, a Glacier 3S LiPo battery, and six Hitec mini servos. It sports UltraCote true red base color with black and white trim, and the windows were thermoformed by hand.

Adam stated that its performance is typical of a fast-flying scale airplane and that it flies best at a moderately fast airspeed.



Paramotor

The scratch-built trike cart and single-skin 2.4-meter sail from HobbyKing was Curt Hyman's (Kokomo, Indiana; email: corvettec5@netzero.net) first foray into paramotor aircraft. The triangular chassis is a Prather Products land sailer from the 1960s that Curt's dad used as a teaching aid for him and his brother, Kevin.

The paramotor was mostly built with items Curt had on hand, such as the E-flite 480-1020 Kv motor, APC 10 x 10e propeller, OrangeRx six-channel receiver, JR NES-4131 servos (donated by Kevin), G-Force 40-amp ESC, three-cell LiPo battery, Du-Bro tundra tires, scrap aluminum channels, and metal fasteners. The APC propeller was later switched to a Chinese 10 x 3.8 slow-flyer propeller. The weight, without the battery and sail, was 1.7 kilograms.

The paramotor first flew on July 8, 2019, at the Galveston RC Fun Flyers club field in Galveston, Indiana.



Ultralight

Peter Donk's (Wayland, New York; peterdonk@aol.com) scratch-built 1/4-scale ultralight design is based loosely on the Cubchel French aircraft. The "control wing" design does not use ailerons, but the wing panels pivot for roll control. The wing can also be coupled or mixed with the elevator to change the angle of attack as elevator input changes.

The fuselage on the 86-inch wingspan aircraft is bolted together with 6061 aluminum, while the wing and tail feathers are of more-conventional model airplane balsa construction. It also features a modified Clark Y airfoil. The ultralight is powered and controlled by a DLE-20 gas engine, 16-ounce fuel tank, Xoar 17 x 6 propeller, Power HD 1501MG servos, a Futaba receiver, dual Turnigy 6-volt 2,300 mAh NiMH receiver batteries, and a Turnigy 6-volt 2,300 NiMH ignition battery.

A YouTube video can be seen at <https://youtu.be/kYNibikinZU>.



Micro-Scale Models Super Ringmaster

Dave Reiber (Lincoln, Nebraska; email: sreiber@windstream.net) flew Control Line from 1954 to 1982 and built many Sterling kits. One of his favorites was the Super Ringmaster. When he saw a review of one in *Model Aviation*, he knew he had to build it.

"On opening the kit, the laser cutting of the premium balsa and plywood was unbelievable," Dave wrote. "It was not the old-time die-crush, and the parts fit was outstanding." He covered it with silkspan put on wet and finished it with Randolph dope. The power is a Norvel 25 engine, with control by JR.

"It flies like a 424 Quickie—fast and stable—but turns on a dime," Dave noted.



Sig Astro Hog

Donald Hoppe (Placentia, California; email: sshoops@gmail.com) completed a Sig Astro Hog kit in summer 2019. He used the coloring scheme from a build article he had seen and converted it to electric power using an Align BL-650 motor, five-cell LiPo battery, and a 15 x 8 propeller. The servos and receiver are Hitec, and a Hitec Flash 8 transmitter is used for control.

Donald wrote that it flies great and only needs approximately half throttle for normal flight.

He has been an AMA member for nearly three decades.



Zirol P-47

Neal Rehm's (Upperville, Virginia; email: racerrehm@gmail.com) 92-inch Zirol P-47 is shown flying at the 2019 Pegasus Barn-Burner Shootout, held at the Pegasus R/C Modelers Club in Hagerstown, Maryland.


Painted with Titan silver over epoxy fiberglass cloth, the P-47 is powered with a Desert Aircraft DA-85 and controlled by a Futaba 18MZ transmitter that has airspeed, altitude, and voltage telemetry. The main batteries are twin 2,500 mAh A123s. It weighs 43.5 pounds dry and has reached airspeeds of more than 120 mph.

Neal said that he loves to fly it!



Customized Ugly Stiks

Fred Huebinger (Edinburg, Texas; email: fredhueb1@netzero.net) designed his airplanes, but they were built by his friend, Fred Schmidt. The fuselages and 60-size wings started as Ugly Stiks, but many custom adaptations were added. There are six aircraft.

Fred H. stated that they fly the airplanes using O.S. 46AXII engines and Futaba servos. "The design is deceptively fast and very aerobatic, yet [it] will slow down to a crawl for landing (no need for flaps)." 



The author's Lancer was designed in 1957 by Dick Allen and Ralph Jackson of the Aeroguidance Society in Endicott NY. Dick won the 1957 Nats with the Lancer, which he flew with a .19 cubic-inch engine without a throttle. Bob flies his Lancer with an O.S. .46 engine.

RUDDER- ONLY FLYING

By Bob Noll | bobrc@aol.com

I RECEIVED AN EMAIL from a reader about rudder-only flying after he read my September 2019 column.

Camille wrote, "I can't imagine a sequence of rudder-only commands that executes an Immelmann: pitch up, half roll, neutralize pitch. If this is a lost art of the ancients, I'd dearly love to learn it!"

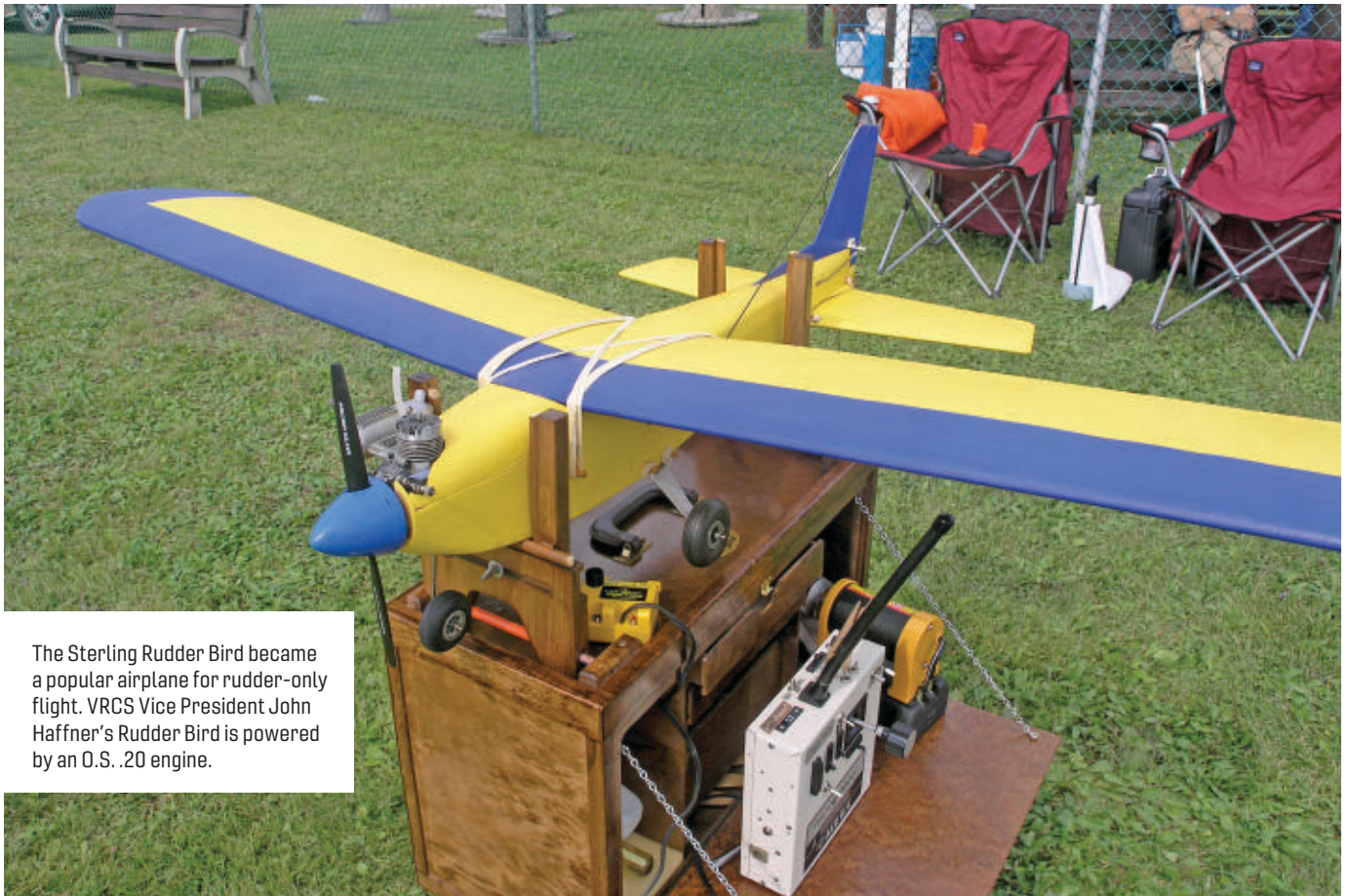
This exchange told me that I needed to introduce many *Model Aviation* readers to the "art form" of flying an RC airplane with only rudder and throttle control. Yes, that is how many of us old-timers got into flying RC back in the 1950s.

First, I'll take you back to 1953 when I first entered the fascinating hobby of building and flying model airplanes and guiding them from a radio transmitter. I had built several Free Flight models, but one trip to the flying field told me that it was more fun flying if you didn't have to chase the airplane with a car or bicycle.

How do you not only keep your airplane from flying away, but learn to do some simple maneuvers? Let's look at the "then" and "now" of rudder-only flying.

Then

The primary characteristics of those early RC models were a flat-bottom wing airfoil and a significant amount of wing dihedral. My Royal Rudderbug was flown using a .15-cubic-inch diesel engine without a throttle. The trick was to have the airplane climb when under power and come down when the engine ran out of fuel.



The Sterling Rudder Bird became a popular airplane for rudder-only flight. VRCS Vice President John Haffner's Rudder Bird is powered by an O.S. .20 engine.

Proper location of the center of gravity (CG) was critical, as well as the correct decalage of the wing and stabilizer. Early designs used rubber bands to attach the wing and stabilizer so that shimming could be done to accomplish a perfect power-off, shallow glide. It took many hand-launches into high grass before getting that decalage just right. It was also important that the airplane went straight upon gliding.

Everyone would hold their breath when a new airplane was hand-launched under power for the first time. Hand-launching was the safest way to get the aircraft airborne. Smaller engines were initially used to minimize flight speed, but as we gained confidence in the airplane, radio, and setup, a larger engine was sometimes installed.

A trick to reduce the initial flight speed was to put the propeller on backward for the first few flights. If everything was correct, the airplane would rise in a gentle left-hand turn while it climbed.

Although those test glides resulted in straight flight, the engine torque caused a left-hand turn. When it was high enough,

the rudder was actuated to put the aircraft into a tighter turn, which would result in a spiral dive to lose altitude. Up and down the aircraft would go until the engine stopped.

It didn't take long to discover that if the spiral dive was maintained long enough, the flight speed would increase, and neutralizing the rudder would result in a loop.

FREE • FLIGHT • FUN

**FLYING
ACES**

join the FlyingAcesClub.com

VINTAGE VIEWPOINT



Frank Iacobellis campaigned in Class I rudder-only flight with the popular Sterling Models Mambo.

retro RC and FF model
aeroplane kits and
accessories

1951 Flying Wing
Air Trails contest
winning design

laser cut full kit
for RC or FF
electric or
glow

span 55"
\$87 + S&H

www.RetroRC.us.com
(248) 212-9666
PO Box 193, Keego Harbor, MI 48320



The author's original Royal Rudderbug was built from a Berkeley kit in 1953. It was flown with a Webra .15 cubic-inch diesel engine without a throttle and controlled with a simple escapement.

RTL
Fasteners

Why Pay a Dollar
for just 4 Screws?

We have the hardware you need
at a fraction of retail!

Order today at:
www.rtlfasteners.com
or call 800-239-6010
708 Battlefield Blvd South #107
Chesapeake, VA 23322

If rudder was given at the top of the loop, a wingover or Immelmann could be flown.

When we put larger engines on our airplanes, we learned that downthrust was sometimes needed to reduce the climb rate during the climb for altitude. When throttle became available, it was much easier to achieve the correct balance between smooth flight and the power needed for level flight and maneuvers.

Let's take a look at how a vertical Figure Eight could be flown.

1. Put the airplane into a spiral dive until it is heading into the wind. More than one rotation might be needed to obtain sufficient air speed.
2. Neutralize the rudder and watch the airplane go into an inside loop if the engine has enough power.

3. Let the airplane continue through a complete loop.
4. Give rudder at the bottom of the loop and the airplane will do a fast half roll because of the wing dihedral.
5. Neutralize the rudder and the airplane will continue through another loop below the first loop. When it is at the top of the second loop, give full rudder to achieve another half roll and reduce the power.

Now

Proportional control was finally available, and the art of rudder-only flying became much easier. The ability to adjust the engine rpm and control the amount of rudder throw resulted in larger airplanes powered by larger engines. Before this, most rudder-only airplanes were flown with 1/2A motors. Engines as large as .60 became common in competition.

Today's rudder-only airplanes are flown with modern radios. I used the elevator channel and added a small elevator to my Royal Rudderbug replica and my Lancer. After I was satisfied that the CG and decalage were correct, I removed the elevator. This technique of flying a new rudder-only model made it much easier on my nerves and eliminated those hand-launches into the tall grass.

Dick Allen, the codesigner of the Lancer, built a new one with elevator control. He arranged the mixing on his transmitter so that he could throw a switch and eliminate elevator control, thereby enabling him to compete with the same airplane at Vintage Radio Control Society (VRCS) events in both Class I (rudder-only) and Class II (intermediate).

Electric power has been installed in rudder-only airplanes by some VRCS members. This power source provides instant torque and has definitely provided an advantage in Class I rudder-only competition. A short blast of power near touchdown will give a slight flair and a smooth landing.

The element of art is still there, no matter what power source you decide to use. I should also note that most rudder-only aircraft are designed with a nose wheel to protect the propeller upon landing. ✈️

SOURCES:

VRCS

www.vintagercsociety.org



LIVE HERE. FLY HERE. LOVE IT HERE.

On Top of the World Communities in Ocala, FL offers a lifestyle beyond compare for the flying enthusiast.



TAKE A TEST FLIGHT WITH
A WORLD TOUR ADVENTURE,
3 DAYS & 2 NIGHTS

FOR JUST
\$149*



- Private Radio-Controlled Flying Field, Drone Course & Race Car Track
- 4 Fitness Centers plus Tennis, Pickleball & Bocce
- Indoor & Outdoor Pools • 3 Golf Courses
- Dog Parks • Restaurants • Lifelong Learning Center

Our R/C Club has Taken Off! Over 150 Modelers are Living their Dream Right Now!

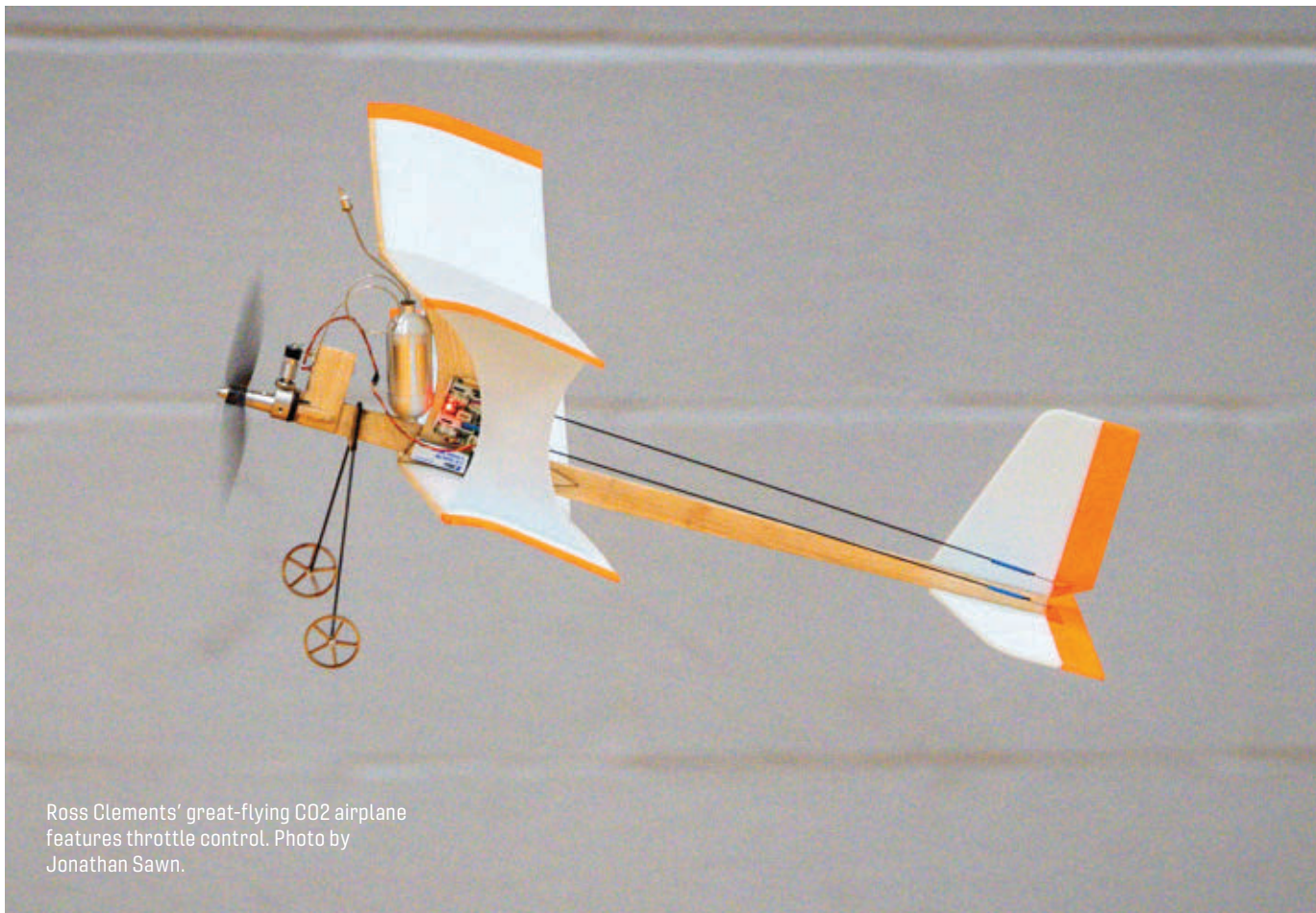
Maintenance-Free, Single-Family & Luxury Estate Homes from the \$170s to the \$400s

Call today to book your World Tour
866.228.5878 | OnTopoftheWorld.com

*At least one guest must be 55 years of age or older to participate in our World Tour Adventure. All guests must be at least 18 years of age. A tour with one of our knowledgeable Sales Associates is required. Accommodations are limited and available on a first come, first served basis. A 3 Day/ 2 Night World Tour is \$149.00; rates subject to sales tax. Must qualify to be eligible for World Tour. On Top of the World Communities reserves the right to change or withdraw any offer at any time. Prices, features and specifications are subject to change without notice. On Top of the World Communities LLC, Ocala, Florida a 55+ community.

#12826-1/20  





Ross Clements' great-flying CO2 airplane features throttle control. Photo by Jonathan Sawm.

2019 INDOOR NIGHT AT NEAT

By Joe Malinchak | joemal@echoes.net

AS I WRITE THIS, I am about to embark on another career journey. After two years of flying the Embraer E-190 for American Airlines, I am now starting my training to fly the Airbus A320. The training involves many hours of home study, including more than 26 hours of system videos, several weeks of ground and simulator instruction in Charlotte, North Carolina, and a few weeks of operational experience flying the line with an instructor before being signed off.

I mostly made short shuttle flights on the E-190, much like the regional flights that I flew for more than 27 years, so the A320 will be a nice change.

2019 Indoor Night at NEAT

I am continuing my coverage of the 2019 Indoor Night at NEAT that I began in my January 2020 column because I could not fit in all of the action. With it being the 20th anniversary of the Northeast Electric Aircraft Technology (NEAT) Fair, held September 12-15, 2019, in Downsville, New York, as well as our micro RC seminar reunion, there were some truly amazing indoor models.

Ross Clements had some beautiful models with him this year, including some majestic rubber-powered Free Flight (FF) models and some CO₂-powered RC airplanes. He let me fly one of his CO₂ aircraft that was equipped with throttle control. The throttle on it operated smoothly, and I was able to perform some touch-and-gos and slow flybys. It was a fun experience!

Gordon Johnson is perfecting his molded carbon-fiber techniques and building some amazing lightweight models. This year, he had his new carbon-fiber Stik Citabria. The model has a 13-inch wing built with 12%

camber—yes, 12% camber! It uses two Micro Flier Radio .5-gram servos, a Z-Tron Spektrum-compatible receiver, and a custom ball-bearing drive made by Ralph Bradley. He also flew his 20-inch wingspan F3P Carbon Bender.

Henry Pasquet flew one of his record-setting RC Endurance aircraft and some of his CO₂-powered airplanes. He made a video years ago about building and flying CO₂-powered aircraft. It helped me and many others by introducing CO₂ motors as an alternate source of lightweight power for micro airplanes. I ended up contacting him about the video and we have been good friends since!


Rick Ruijsink and Matej Karasek, from the Netherlands, flew their DelFly Nimble flapping wing Micro Air Vehicle. The model was impressive in its performance and maneuverability. Mike Cripps flew some of his beautiful microscale models at the event. His 12-inch wingspan Farman Sport Carte Postale was a unique, great-flying scale subject.

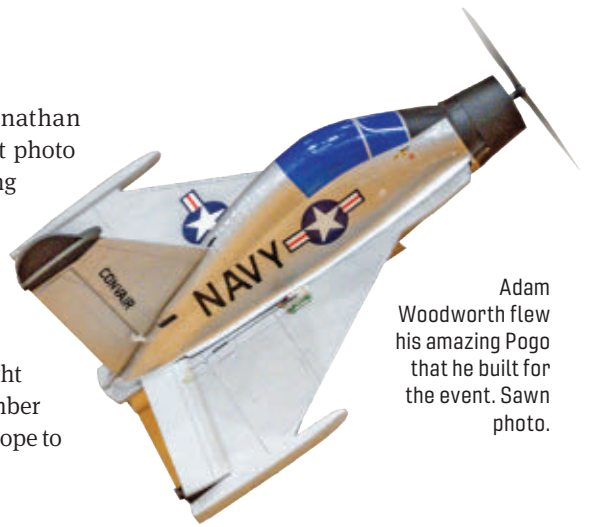
Nick Leichy of Micro Flier Radio flew in from Florida and brought some truly amazing models that featured his latest RC gear. I really liked his Piper J-3 Cub. The three-channel airplane is constructed out of printed foam. It has a 9-inch wingspan and uses two of his 400 mg submicro servos, a Rabbit servo receiver, a direct-drive motor, and a 2-inch propeller. The Cub weighs only 5-3/4 grams and flies beautifully. Nick also had his new micro F3P Simi Tri-Plane that he designed, for which he made his own coaxial drive unit.

Expert FF modeler Ray Harlan attended the 2019 Indoor Night at NEAT and flew some beautiful FF aircraft. He put in a great flight with one of his airplanes during the halftime show. Ray also had his version of Gordon Johnson's 20-inch wingspan, curved, carbon-fiber Carbon Bender. He used some of the weight-saving building techniques that he perfected with his FF models in its construction. His great-flying, 20-inch, micro F3P model only weighs 14 grams and is covered with Ultrafilm.

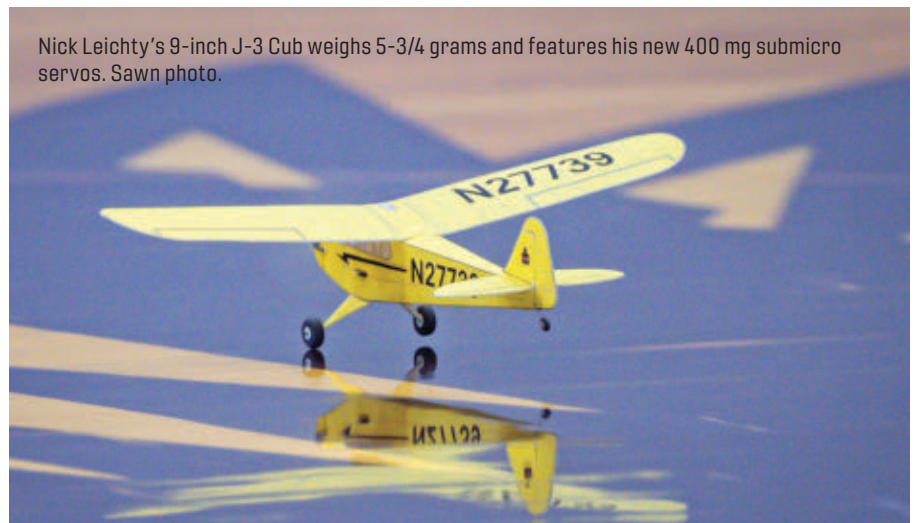
The 2019 Indoor Night at NEAT was a wonderful event. I want to thank the Downsview Central High School for letting us use the gym, and everyone who participated for all of the hard work that they did in preparing their models and making the trip to the event.

I would also like to thank Jonathan Sawn of Sawn Craft for the great photo coverage of the event and for letting me use his beautiful flight shots for this column. You can see all of his photo coverage of NEAT on his website, listed in "Sources."

The next NEAT Fair Indoor Night at NEAT event will be held September 18-19, 2020. My wife, Cindy, and I hope to see everyone there! 



Adam Woodworth flew his amazing Pogo that he built for the event. Sawn photo.



Nick Leichy's 9-inch J-3 Cub weighs 5-3/4 grams and features his new 400 mg submicro servos. Sawn photo.



Gordon Johnson flew his 13-inch, curved carbon-fiber Stik Citabria. The model's wing is built with 12% camber. Sawn photo.



Mike Cripps flew this unique 12-inch wingspan Farman Sport Carte Postale. Sawn photo.



Ray Harlan prepares his FF model for another majestic flight. Sawn photo.

SOURCES:

NEAT Fair
www.neatfair.org

Sawn Craft
www.sawncraft.com

Micro Flier Radio
(941) 377-9808
www.microflierradio.com

SAFETY COMES FIRST

Look at the joy on these faces! Studies show that a challenging and satisfying hobby enhances the quality of life. Aeromodeling fits the bill!



DRILLING DOWN INTO WELLNESS

By Dave Gee | safetycolumn@cs.com

THE CONCEPT OF "WELLNESS" is a big thing these days in the world of industrial safety. The medical field is pushing that word as well. This concept is about avoiding illness and accidents by making positive and healthy lifestyle choices. Sounds pretty touchy-feely, right?

Well, brace yourself. Studies have shown that activities such as our hobby can actually help you live longer, stay healthier, and be happier than those who stay home and watch TV.

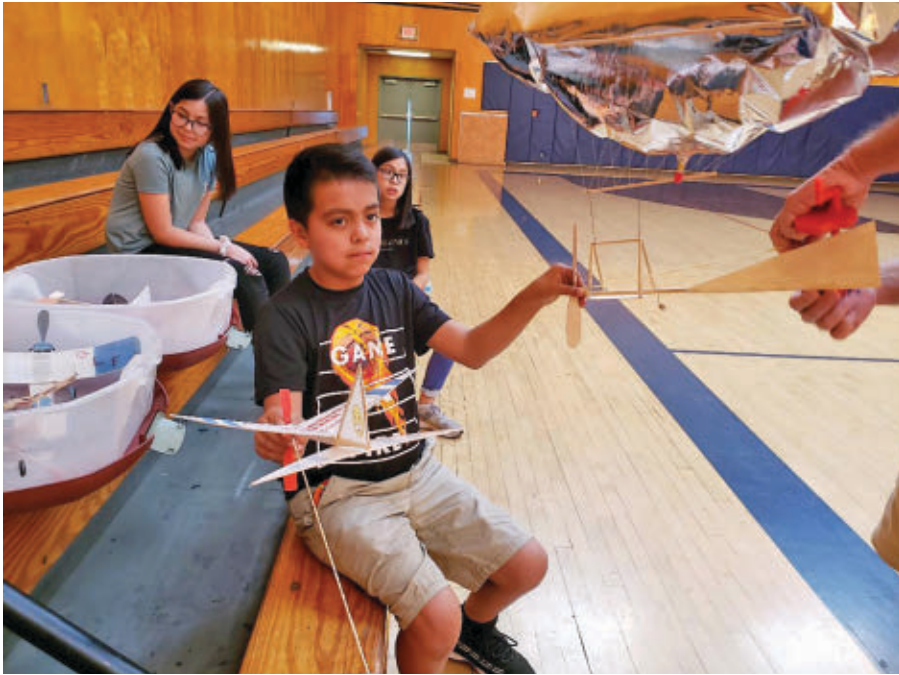
If you're just getting started in aeromodeling, you know the sheer joy that a pilot can feel from a good flight or from showing off a newly built model to friends at the field. Some of us have been at it for a long time and might have forgotten that feeling. One reason I enjoy working with newcomers and kids is that they provide a constant reminder of how much *fun* this sport really is. That excitement is energizing, and I think it provides a positive benefit for our health.

We've all seen pilots who take things seriously, whether in competition or casual flying. I think that if you're wearing a scowl in this hobby, you're not doing it right. The main reason our miniature flying machines exist is to bring us pleasure. Sure, there are scientific models and technologically advanced platforms, but model airplanes in general are *cool!*

Let's revel in the enjoyment of our hobby. Let it lower your blood pressure a bit. Consider the smile you wear as a sign that you're getting at least some level of health benefits from the money you spend at the hobby shop.

Gotta Take This Call

Multitasking has become a big issue in our society. Nearly everyone now



Multitasking has no place in RC flying, but this kid shows how cool it can be for Indoor FF pilots as he stooges two airplanes at the same time.

carries a cellphone, and the newest versions include many more communication options than just a phone call. These things ring and buzz regardless of what we might be doing at the moment. It is hard to disregard the urgent beeping of a message!

Texting or dialing while driving is now illegal in many states. Hands-free gadgets were supposed to solve the problem, but accident statistics seem to show that mental distraction is the real issue, not the physical operation of the phone.

All of this relates directly to model aviation hobbyists. How many pilots have heard their phone ring during the operation of an RC aircraft? I've been in that situation. How many have tried to answer the cellphone while their model is in the air?

I'm ashamed to admit to taking the lead in this area. As I awkwardly reached for the cellphone, my brain slowly processed the situation and notified me about the big mistake in progress. Duh!

In my own defense, many of my models are Free Flight (FF), and this would have been no problem with one of them in the air. Holding a transmitter makes it different, of course.

My skills as an RC pilot are minimal at best, and I need to ignore the cellphone until my airplane has landed, crashed, or whatever.

People tend to think that they are better at multitasking than they really are. In fact, a phone call takes away a huge percentage of the attention that a human brain has available. Our minds actually switch back and forth from one task to another instead of doing both at once. This leaves gaps in our judgment.

When a pilot is on his or her cellphone, an RC aircraft has a series of chances to operate unsupervised because the pilot's brain alternates between conversation and flying. "Getting behind the plane" is a term pilots use to describe this kind of trouble.

Pavlov Was Doggone Right

The urgent sound of a phone call coming through tends to take top priority in our minds because we've been trained to respond quickly to that stimulus. While you are flying, resist the urge! Don't take your cellphone to the flightline. Just like while driving a car, we shouldn't tempt fate by splitting our attention from the important task at hand. After all, we are operating an aircraft, not folding laundry at home.

NOW THAT YOU KNOW HOW TO FLY, LEARN TO BUILD!

- DESIGNED FROM THE GROUND-UP TO BE EASY TO BUILD, PERFECT FOR FIRST TIME BUILDERS.
- PRECISION, LASER-CUT, INTERLOCKING PIECES.
- WEB-LOCK WING CONSTRUCTION.
- QUALITY USA HARDWARE.
- PRE-BENT LANDING GEAR.
- ROLLED, FULL-SIZE PLANS INCLUDED.
- ILLUSTRATED MANUAL INCLUDED.
- READILY ACCEPTS RADIO, POWERPLANT AND HARDWARE FROM SOME RTF TRAINERS, LIKE THE APPRENTICE 15E*.
- FUN TO FLY AND SNAPPY AEROBATICS FROM A SEMI-SYMMETRICAL AIRFOIL.
- COMPLETE INFORMATION, PHOTOS, AND VIDEOS ARE ON OUR WEBSITE.

WWW.OLDSCHOOLMODELS.COM
PHONE: 513-755-7494

Let's Build Something.

OLD SCHOOL MODEL WORKS IS AN AIRBORNE MEDIA BRAND.

* APPRENTICE 15E IS A REGISTERED TRADEMARK OF HORIZON HOBBY.

- * WINGSPAN: 44 INCHES
- * WING AREA: 365 SQ. INCHES
- * WEIGHT: 2.5-3.5 POUNDS RTF
- * POWER: .15-.30 GLOW OR ELECTRIC EQUIVALENT
- * RADIO: 4 CH.

Old-School MODEL WORKS

\$129.95
+ \$5 SHIPPING
IN THE LOWER 48

PROTOTYPE MODEL SHOWN. DOES NOT INCLUDE POWERPLANT OR WHEELS.

SAFETY COMES FIRST

Propeller Strikes on Strike?

There has been a recent dry spell in the reports that I get about propeller-strike incidents. These usually come in far too frequently, so I am filled with hope that we have all finally gotten the message about keeping our body parts out of the path of spinning propellers. It's about time. No more bruised knuckles and cut hands. Hooray!

Or maybe the pilots who got hurt can't write or type until the cast comes off ...

Mystery Airplane

The mystery airplane is not very mysterious this time. It is a famous and revered aircraft that was used by various air forces from 1948 to 2017—a mind-boggling 69 years of active service!

This sleek trainer was developed from a pioneering jet fighter. The designers were surprised to find that the

lengthened two-seater was faster than the original aircraft because of previously undiscovered aerodynamic rules for flight near the speed of sound.

I snapped this picture during a recent air show in Palmdale, California. What a thrill it was to see this classic jet in flight!

My email address is at the beginning of this column. Use it to send me this airplane's name, nickname, or military designation and stand by to receive digital prize plans in return.

While you're at it, please consider including whatever close-call story you've



This mystery airplane is easy! It's a famous jet trainer with a long service life. Email your guess to the author's email address at the beginning of this column and win prize plans.



The Martin B-12 makes a good-flying No-Cal scale model. Win plans for this profile, twin-engine bomber by answering the mystery airplane puzzle via email.


recently heard or perpetrated. Topic suggestions are welcome, too. We do a big favor when we share cautionary information with our friends. I'd rather be warned in advance than patched up after an incident!

Martin No-Cal

And what a set of prize plans it is! The Martin B-12 was hot stuff when it came out, but by the time Pearl Harbor was attacked, the technology on these airplanes was obsolete. Several were destroyed by the Japanese raiders on December 7, 1942, which makes it eligible for my club's Pearl

Harbor No-Cal contest.

No-Cal models are FF profile, stick-and-tissue airplanes with 16-inch wingspans. This one has twin motors, which makes it less competitive but much more fun. Some pilots upgrade these designs to electric power and micro RC. Others cut them out of foam and speed up the construction process.

Those who enter the mystery airplane contest can choose how to build the digital Martin Bomber plans that I'll send. Be forewarned that this is one of my own drawings and not nice, clean plans like real designers produce. 

Joe Nall Week

May 8-16, 2020 / Fun, Fellowship & Hospitality

Be a part of this great RC event with flyers represented from clubs around the world.

Seven dedicated flight lines: Main, Float, Electric, 3D, Helicopter, Control Line, and FPV / Over a mile of manicured golf turf runway

Outstanding food concessions / Spectacular demos and shows
The biggest names from the hobby come to the event / Camping, camping, camping!



38TH Annual Event!

There's no other event like Joe Nall.
Fun from dawn till long after dark.
You have to experience it to believe it!



For more information & registration,
visit tripletreeaerodrome.com.
330 Mary Hanna Road, Woodruff, SC 29388



BORN TO FLY



The AeroScout is made for beginners, but on high rates, it can tear up the sky!

THE AEROSCOUT: FROM RC TRAINER TO FPV BARNSTORMER!

By Jim Graham | jimtgraham@yahoo.com

I'M A SUCKER FOR an RC airplane that delivers. I'm sure everyone who is reading this column is the same way. You have an airplane (or a shop full of airplanes), but there is this one thing that your current favorite aircraft isn't doing for you.

Maybe you wish it was easier to put together. Maybe you wish it flew "big" but fit in the back seat of your car. Or maybe you are like me. Lately, I have been flying more visual line-of-sight (VLOS), but with every VLOS airplane that I own, I always wonder, "How would this airplane fly with FPV?"

When I was at the Horizon Hobby RC Fest last summer at Eli Field in Monticello, Illinois, I saw newcomers flying the new HobbyZone AeroScout S 1.1m. It's an airplane designed for pilots who are just starting out in the hobby. I'm a 20-year veteran. How would such an aircraft hold any interest for me? Well, let me tell you.

I got the AeroScout for a review and I have to say it is one of the easiest "box-to-runway" builds I have experienced—and that is saying a lot when talking about Horizon Hobby aircraft.

With AS3X, the airplane can almost fly itself. I know it was designed that way to give a new pilot the confidence he or she needs to succeed, but as I was flipping through the different modes, I immediately began thinking about the FPV applications. I literally went into SAFE mode and landed the AeroScout with no hands (for real!).

I went to RCGroups.com to see what the RCGroups forum family had to say about this and, of course, they had already seen the FPV potential.

The AeroScout is a simple, high-wing, pusher airplane that seems docile enough, but it's a barnstormer!



Here is the simple FPV installation that the author put together with spare parts.



What I was really looking for was the best method to mount the FPV camera and video transmitter.

Throughout the years, I have tried expensive FPV rigs, but lately I have come to realize that most Fat Shark-based gear is just as good. It also helps a new FPV pilot because every piece of the FPV puzzle is inexpensive. The only real question was how to mount the camera.

I went with my "KISS" [keep it simple, stupid] concept and cut a piece of wood from my modeling scrap pile that would mount on top of the wing through the front wing-mounting screws. I had a bunch of 3D-printed Fat Shark mounts that I zip-tied to the wood. It was super easy and cost nothing. If you don't have a 3D printer,

there are all kinds of ways to mount a Fat Shark camera.

To power the entire unit, I used a JST pigtail that plugs into the main battery's balance tab. This keeps weight down, and I have never had an issue with pulling that little bit of current off of the main battery pack.

Let's get to the "why" aspect of this equation. Why would I think the AeroScout would make a great FPV airplane? I have discussed the AS3X aspect of it. You also must consider what great manners the AeroScout has in the air.

You will be surprised to know that it can really be aerobatic. I have video of it doing rolling circles and extended inverted flight. It will really do a lot more than you

would expect from a trainer such as this, but the thing I was really excited about was its ability to take off and land using the goggles!

When I fly an FPV wing—or any FPV airplane—the trick is getting off of the ground. If someone is standing around, I will ask him or her to throw my airplane for me while I'm in the goggles. I have just given that person the added responsibility of launching my airplane.

I want to be able to take off by myself or, even more exciting, land with the goggles on. Throw in some touch-and-gos and I have a versatile FPV winged aircraft!

I'm happy to report that the takeoff was noneventful. I did have the camera angled slightly downward on the wing, so the first time I came in for a landing, I just knew I was going to nose it in. I concentrated on staying nice and level and keeping a touch of power going. To my surprise, I made a perfect landing! I shouted with glee!

After a few more sessions, I realized I might be better at landing while wearing the goggles than when I fly line-of-sight. Crazy, I know.

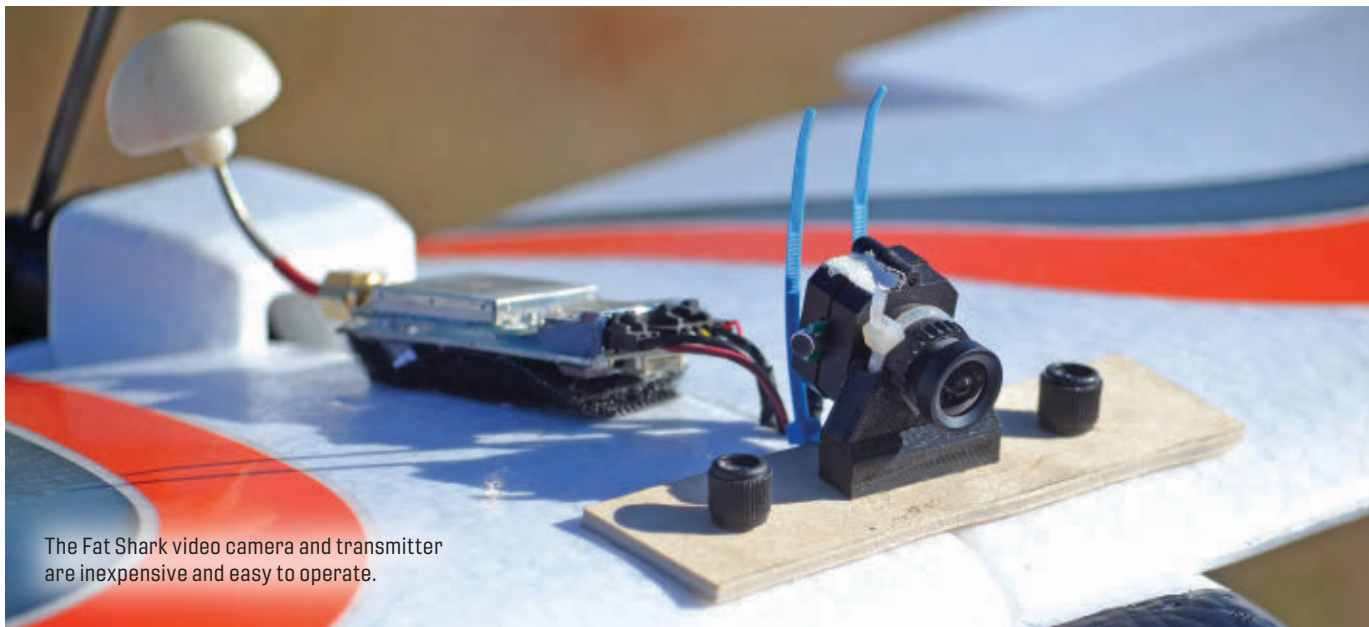
There were two FPV airplanes at the field and that always leads to challenges. The wind was blowing hard at 8 to 11 mph, which is another thing I can comment on. Even in that stout wind, the little AeroScout did not mind. The only time I noticed the wind was when I decided I was going to fly through the flying field gazebo. No one else was at the field that day, so the coast was clear.

When you do something such as this, you totally forget that you are in the goggles. It is as though the mind blocks everything out except the task at hand. You are simply the airplane and flying through the sky. I pulled back the throttle, lined up the AeroScout, and made my approach.

For me, the trick to flying through things is to see myself flying through it in advance. When I rode motorcycles, my mantra was to look where I wanted to go and not where I didn't. I brought this concept with me to FPV and it works most of the time.

As I approached the gazebo, the wind was so strong that I had to grab a handful of rudder to perform a serious crab

BORN TO FLY



The Fat Shark video camera and transmitter are inexpensive and easy to operate.

maneuver. I was crabbing in so hard that I was looking at the edge of the structure.


Let's stop here. I already decided that I loved the AS3X on the AeroScout. I loved

the handling characteristics, and I loved the ability to land and take off. The last thing I wanted to do was turn my newish airplane into a pile of foam.

Back to the gazebo ... As I entered the

structure, I kept looking out the other side. I also ducked and tilted my body to the left as though that might help the airplane get through. I couldn't help it! When I came out unscathed on the other side, I once again whooped with joy! I could not believe that I made it through.

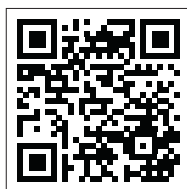
This concludes my tale of an airplane that started as a trainer and became a barnstormer. I hit record on my DVR but, of course, it turned itself off and there is no video documentation of my great feat. Maybe I'll try it again when the wind dies down.

I'm super happy with the AeroScout FPV. If winged FPV is something that interests you, I highly suggest using this entry-level aircraft as your first foray into it. 

A STURDY STAND FOR R/C AIRPLANES AND POWERBOATS



ULTRA STAND



HOME & FIELD USES:

BUILD - MAINTAIN - TRANSPORT - STORE

ERNST
MANUFACTURING INC.

WWW.ERNSTRC.COM
(877) 376-7885

MADE IN THE USA
LIFETIME GUARANTEE

Distributor and dealer inquiries invited

SOURCES:

RCGroups.com Horizon Hobby Hobbyzone
AeroScout S 1.1m RTF Review
<https://bit.ly/2PbK7Yh>

RCGroups.com AeroScout S 1.1m RTF Flight
Review YouTube Video
<https://bit.ly/359iBjA>

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

Fat Shark
www.fatshark.com

Thingiverse 3D Fat Shark Camera Mounts
Search
<https://bit.ly/2E6AKTo>

TAKE-OFF THE SEASON WITH THE BEST!

The Mamba series combines light weight and modern design with the latest 3D/aerobatic biplane knowledge from Quique Somenzini. Experience and intense attention to every aerodynamic and geometric detail allow a biplane experience that is not available anywhere else!

Starting with a Model 12, officially licensed from Jim Kimball Enterprises, Quique makes extensive changes to refine the design and further perfect it as a 3D aerobatic model.

Experience an aerobatic biplane like never before and get your preferred size now!

#MAMBANATION



Mamba 120 ARF / ARFSV

Wingspan: 85 in.
Weight: 29 lb. 0 oz. (with DA-120)
Power: Gas 100-125cc.
Construction: Balsa and Carbon Fiber-Laminated Plywood

Mamba 70 ARF / ARFSV

Wingspan: 77.2 in.
Weight: 19 lb. 0 oz. (with DA-70)
Power: Gas 50-70cc.
Construction: Balsa and Plywood

Mamba 60 E+ Super PNP

Wingspan: 53.2 in.
Weight: 7 lb. 12 oz. (with 6s 4200mAh)
Power: Electric, 65-size
Construction: EPO Foam

Mamba 10 Super PNP

Wingspan: 43.4 in.
Weight: 3 lb. 6 oz. with 3s 2200mAh.
Power: Electric, 10-size
Construction: EPO Foam

LICENCED BY:



DESIGNED BY:



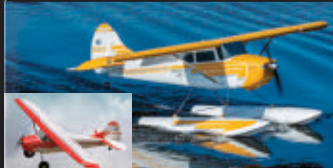
Also check out these fantastic Super PNP's!

FV-31 Cypher VTOL EDF



Wingspan: 38.2 in.
Weight: 3 lb. 10 oz. with 3s 3500mAh.
Power: (4) EDF Unit
Construction: EPO Foam

Cessna 170 Super PNP



Wingspan: 86.7 in.
Weight: 8 lb. 11oz. with 6s 4000mAh
Power: Electric 60-size
Construction: EPO Foam

QQ Extra300G2 Super PNP



Wingspan: 47.8 in.
Weight: 3 lb. 0 oz. with 3s 2200mAh.
Power: Electric 10-size
Construction: EPO Foam

FlexJet Super PNP



Wingspan: 41.6 in.
Weight: 6 lb. 7 oz. with 6s 4000mAh.
Power: Electric 60-size
Construction: EPO Foam

"Our Flex Innovations products are Designed, Tested, Flown and Supported in the USA"

Order online at WWW.FLEXINNOVATIONS.COM, call us at (866) 310-3539

or visit your local Flex Innovations Dealer. Follow us on

Dealers Wanted! Email us at sales@flexinnovations.com

ADVANCED FLIGHT TECHNOLOGIES

A small portion of the site map that was built by the team from ERAU reveals a pair of outdoor gun ranges, as well as a cluster of buildings at the Gunsite Academy, which is located 30 miles north of the university's campus in Prescott AZ.



MAPPING MISSIONS DONE DIRTY CHEAP

By Patrick Sherman
lucidity@roswellflighttestcrew.com

MAPPING A 3,000-square-acre property to a resolution of 1 inch per pixel is a straightforward proposition for a modern UAS operator. A fixed-wing or vertical takeoff and landing platform would be the best choice given the size of the project.

There are plenty of good ones from which to choose, including the WingtraOne, the SenseFly eBee, or the Quantix from AeroVironment. Each of them offers an autonomous, highly reliable solution.

However, what if you didn't have \$20,000 for the WingtraOne, \$18,000 for the eBee, or \$6,500 for the Quantix? What if you didn't have \$1,000? Can a mission of this scale and complexity be accomplished on the cheap? That's what a group of researchers from Embry-Riddle Aeronautical University (ERAU) set out to discover in the Arizona desert north of Prescott.

As a newly appointed member of the university's adjunct faculty who came along to help with the project, I will confess to having some initial skepticism to the approach taken by my colleagues. Would an integrated system—even one that relied on slower-moving multirotors—be better than something patched together using an X-Acto knife and a discontinued airframe?

Under the Gun

The particular 3,000 acres that we set out to map encompasses the Gunsite Academy, a civilian firearms training facility that is due west of the tiny town of Paulden, Arizona, which is 30 miles north of ERAU's Prescott campus. In many ways, the complex of indoor and outdoor shooting ranges

BROKE YOUR RESOLUTIONS ALREADY? THAT'S OKAY.

RE-RESOLUTE TO SOMETHING LASTING



NEWish YEAR | NEW YOU
START 2020 RIGHT | SWITCH TO **Futaba**

is the perfect venue for flight testing.

Located in Class G airspace, it is sparsely populated and access is strictly controlled. Mapping the facility was offered by way of a thank-you to the Gunsite team for its past and ongoing support of ERAU's UAS test efforts.

Arriving on-site, I helped unpack the vehicles and caught a first glimpse of the aircraft we would be using: the Parrot Disco. Having been discontinued for several years, I was surprised to see the black, EPO-foam flying wing. I reviewed the Disco a couple of years ago on the Roswell Flight Test Crew YouTube channel, and found it to be a stable, reliable platform that was particularly well-suited as a trainer for new fixed-wing pilots. Its GPS-enabled flight control system essentially precludes the possibility of a flyaway or loss of control.

Initially priced at \$1,200 per unit with an onboard camera and FPV capability, the Disco failed to find a niche in the industry and Parrot ceased production. I wondered to myself, "How is this relic going to help us make a map?"

That's when David Thirtyacre, the chairman of the department of flight for the

ERAU Worldwide campus, pulled out an X-Acto knife to demonstrate the technique.

Disco Fever

"We cut a hole in the belly of the aircraft to create an opening that is large enough for the lens of a GoPro camera to stick down through it," David said. "The trick is to make sure that it is set low enough in the body because the GoPro has a really wide field of view, and you don't want any part of the aircraft to be visible to the camera."

I had not touched a GoPro for more than five years, since manufacturers started selling small, civilian UAS with integrated cameras, so I was unaware of the latest features. Beginning with the GoPro 5 Black edition, David explained, the manufacturer began installing GPS receivers onboard the cameras, giving them the ability to embed georeferenced coordinates in individual photographs.

Dr. Joseph Cerreta, an expert in photogrammetry with the department of flight, said that having coordinates associated with the images is important for stitching them together to create a single, large orthomosaic. "Technically, they don't need



Using a razor blade or an X-Acto knife, the Parrot Disco can be modified to carry a GoPro Hero action camera, which can then be used in concert with the aircraft's rudimentary autonomous flight mode to create high-resolution maps.

ADVANCED FLIGHT TECHNOLOGIES

The Parrot Disco was developed as a recreational FPV platform and makes a superb trainer for first-time fixed-wing pilots. It never found a niche in the market and was discontinued by the manufacturer.



to be geotagged if you're using ground control points, but we don't have any set up out here, so that data is crucial," he said.

Indeed, one of our early flights ended in failure when the GoPro failed to acquire a GPS lock before takeoff and no location data was recorded. That mission had to be reflown.

"We use the camera's time-lapse setting to capture the images," David said. "If you're flying at 100 feet above ground level, using an interval of one photo every two seconds seems to work pretty well. If you're up at 400 feet, you can dial that back to one photo every five seconds. Even then you capture a whole lot of images with a lot more overlap than you would using a specialized mapping utility to control the flight. You might get 150 to 200 photos using Pix4D Capture or DroneDeploy while mapping a 1/4-mile square. Using this technique, we get between 500 and 600 images."

Mission Control

For a few extra dollars, Disco pilots can unlock a waypoint-driven flight mode in the FreeFlight Pro app. It is primitive compared with the sort of mission planning software that is available from Pix4D Capture or DroneDeploy. You cannot simply define a polygon and let the software create an efficient "lawnmower pattern" within it. Instead, each waypoint must be individually set, and ensuring that there is adequate sidelap coverage between parallel flight paths depends on

the pilot's judgment.

A problem with this approach leapt out at me immediately. Because the GoPro is triggered by a time interval rather than GPS coordinates, it would capture more images on the upwind leg when it was flying into the wind and fewer on the downwind leg.

David was prepared with a solution. He wrote, "As far as planning goes, you want to fly crosswind so that the forward speed is constant throughout the flight. Also, the optimal camera angle for photogrammetry is about 85°. The Disco flies at about a 5° angle of attack, so that works out almost perfectly."

One of the biggest challenges with performing a mapping mission over such a large area is precisely the same as it would be with any other platform—maintaining visual line-of-sight (VLOS) with the aircraft, as is required under 14 CFR Part 107.

Joseph explained, "In order to meet the VLOS requirement, you need to establish new launch and recovery sites in different locations. Each of those locations has its own challenges, like having enough space to launch and recover the aircraft."

The Price Is Right

It wasn't always easy or smooth, but throughout three days, we managed to map the entire 3,000-acre site with our small fleet of Discos and GoPro Hero 7 Black Edition cameras peering down from their bellies. It was an impressive accomplishment for a platform that was not designed for the mission.

I asked David how and why ERAU had come to possess so many Parrot Discos. "Initially, we tried it out and we thought it would be a really good training platform," he said. "The first couple cost us about \$1,200 each. Then, when we went back to get more, they cost us about \$700 each, and I was able to pick some up later for about \$400 apiece."

After returning home, I checked online. You can get a GoPro Hero 7 Black edition for approximately \$300 on Amazon. Add that to \$400 for a Disco and \$6 for an X-Acto knife and you have the makings of a functional mapping drone for \$706.

It might not offer all of the convenience and autonomous functionality of a more-expensive platform, but it will get the job done, at a price that makes high-resolution mapping available to people who don't have a spare \$20,000 in their pockets. ✈️

SOURCES:

Amazon
www.amazon.com

Parrot
(877) 972-7768
www.parrot.com

GoPro
www.gopro.com


SPEKTRUM.
SMART 
TECHNOLOGY

A Smart choice for every pilot

Compatible with telemetry-enabled receivers and sensors, these transmitters also are ready to support the innovative, all-in-one telemetry of Spektrum™ Smart batteries, ESCs, and receivers.

iX12

Perfect for the sport flier

- Superb ergonomics have been optimized to fit a wide range of pilot needs
- Large 250 model memory
- Versatile Wi-Fi, Bluetooth, and Micro USB connectivity
- Easy to use 4-inch Android touchscreen interface



iX20

Perfect for the pro pilot

- On-The-Fly fine tuning for easy in-flight mix and programming adjustments
- Industry's first capacitive touch technology
- Custom My List for quick access to most-used features
- Voice recognition and custom voice alerts
- Giant 5-inch Android touchscreen powered by a leading edge processor for fast boot times and model setups

Learn more at spektrumrc.com

©2020 Horizon Hobby, LLC. DSMX, the DSMX logo and the Horizon Hobby logo are trademarks or registered trademarks of Horizon Hobby, LLC. The Spektrum trademark is used with the permission of Bachmann Industries, Inc. All other trademarks, service marks and logos are property of their respective owners. 63561

**BEST
BRANDS
IN RC**

HORIZON
H O B B Y



Dennis Kordes (far R) flies Darcy Whyte's Squirrel with his son Scott, grandson Joe, and great-grandson Conner. His family is also active in full-scale aviation. See the text for more information.

FOUR GENERATIONS FLYING SQUIRRELS

By Thayer Syme | thayer@flying-models.com

LIFE HAS BEEN pretty slow in the airplane side of my workshop during the last month or so. I am typing this during the holidays, and consequently, most of my recent shop time has been dedicated to seasonal home care and, of course, knocking out a few Christmas presents that I had planned to start much earlier in the fall.

That doesn't count the extra support that my father requested for projects that he had planned to start much earlier as well! On the other hand, I know that I am fortunate to still be able to share those projects with my father, so there are no complaints.

I expect most of you would agree that sharing time across generations is one of the great pleasures we have in life and that the opportunity never lasts long enough. In line with this family theme, I'll start off this month with a four-generation photo that was sent to me by Dennis Kordes, showing members of his family flying their rubber-powered Squirrels in front of his home in Centennial, Colorado, near Denver.

Dennis reported that he waited a while after originally conceiving the idea to get this photo. Between everyone's busy schedules and waiting for the right weather, it took approximately two years before it was "in the can."

Dennis' son, Scott, is a 35-year air traffic controller, while his grandson, Joe, is a 7,000-hour commercial pilot who currently flies regional jets for Delta. Both Scott and Joe are accomplished model builders and pilots, and Dennis is confident that his 8-year-old great-grandson, Connor, will be as well in a few years. With such mentorship, I would not be surprised. No pressure, though, Conner!

Canadian artist and inventor Darcy Whyte developed the Squirrel nearly a decade ago, and Dennis has been a fan of the design for many years. He feels that the airplane makes a nearly ideal first model that is both inexpensive and a great flyer. He reported that “it is easy to make up ‘kits,’ and then help a kid to make one. They are always amazed to start off with a piece of tissue and a few sticks, and soon see a flyable airplane.”

Dennis likes to keep several Squirrels ready to go in his garage, and often gives them away to the neighborhood kids who walk by with their parents or grandparents.

Most rubber-powered models are optimized for duration, but the Squirrel is instead designed for rapid and easy building. It all but guarantees success for first-time modelers or anyone else who is looking for a nearly foolproof Free Flight (FF) model.

Although I’ve not yet built one, I have read through Darcy’s 24-page Squirrel handbook that he wrote as a manual for the kit that he sells. If you prefer to try one on your own, Darcy offers the handbook as a free download on his website.

The Squirrel is so easy to build that he prefers referring to its construction process as “making” and not “building.”

That sounds appropriate to me, and I expect most of us could knock one out in less than an hour. Darcy’s website also includes links to

several videos about building and flying the Squirrel.

If Dennis’ name sounds familiar, you might recall that I included a photo in the July 2019 issue of *Model Aviation* that showed his two Speed 400-powered Electric Kittens.

Remembering Our Mentors

All too often, we miss the chance to personally thank those who have mentored us. This happened to me recently with a dear friend who most generously shared his own modeling path with me during my early days in FF.

Soon after moving to San Francisco approximately 25 years ago, I took one of my early FF models to a local RC club meeting. One member spent a bit more time than the others admiring my efforts that evening, and soon after, he introduced me to George Benson and the FF world of the Marin Aero Club (MAC).

At that time, the loosely knit MAC was primarily a rubber-powered FF group, sport flying monthly in a local school gym throughout the year and outdoors when the weather allowed. George was, in his own words, the facilitator for the club. There was no formal structure to the group, so “president” was far too lofty a title for his responsibilities and his own modest demeanor.

George and I quickly realized that our interests in modeling and full-scale aviation, as well as photography and woodworking, lined up pretty closely. I

New Website, Old Favorites!



Peck-Polymers
and

GOLDEN AGE REPRODUCTIONS

www.Wind-It-Up.com

soon found myself heartily welcomed not only into the Marin Aero fold, but also into his close circle of friends.

The sunny mornings I spent flying with George throughout the next nine years, along with our many other visits, remain among my fondest memories of living in San Francisco. Those days met their inevitable end when my family and I moved back to New England. They have been sorely missed ever since.

We kept in touch as best we could after the move, but as is all too often the case, our schedules, and later George’s increasing struggle with dementia, eventually got the best of our friendship. Approximately the first of November 2019, I received word that he had passed away quietly in his home, a year or so after our last contact.

I am not sure how well George was known for his modeling efforts outside of Northern California, although he did submit his Team Hi-Max ultralight Peanut Scale plans to *Model Builder* magazine in the mid-1990s, which the magazine published as a center spread.

You can see a fine example of George’s Hi-Max in action on YouTube. Jason McGuire enlarged the original design to 22 inches



Jason McGuire enlarged George Benson’s Team Hi-Max ultralight Peanut Scale to 22 inches for this gorgeous model. It recently proved to be too successful for his local park. See it in action on YouTube.



SIG Rascal 110 EG ARF

No.: SIGRC84EGVARFB - Rascal 110 EG
SIGRC84EGVARFR - Rascal 110 EG
SIGRC880EGARFB - Rascal 80 EG
SIGRC880EGARFR - Rascal 80 EG
SIGRC168 - Rascal 168(Kit)



SIG Kadet Seniorita Sport EP ARF

No.: SIGRC109EPARFB - (blue)
SIGRC109EPARFR - (red)



Herr Mini Sport Kit

No.: HRR304



SIG Kadet Senior Sport EG ARF

No.: SIGRC96EGARFR
SIGRC96EGARFB



SIG Kadet LT-40 EG ARF

No.: SIGRC67EGVARFG (Green)
SIGRC67EGVARF (Original)



Seagull T-34 Mentor

No.: SEA240M - (USAF)
SEA240Y - (Navy)



Alien Taylorcraft 72

No.: AAC502
No.: AAC502 (combo)



SIG Edgetra EP ARF

No.: SIGRC107EPARF

Adhesives



Paint



Fuel



Wood



Finishings



SIG Mfg. Co., Inc. • www.sigmfg.com • 641-623-5154

for flying with his son in his local park and has recently posted a couple of videos on his channel.

There are links at the end of the column in "Sources," or you can search YouTube for the phrases "From George Benson plans" and "Hi-Max thermal." Using the quotes will bring up both videos quite easily. Jason's revised plans for George's Hi-Max are available from the *Flying Models Plan Store*.


Fun Stuff

A happier opportunity crossed my path recently when I received an order for a few plans and short kits from a seemingly familiar name. A couple of emails back and forth soon confirmed that he had indeed been a member of the first RC club that I joined more than 40 years ago and had generously given me a finished model when I was getting started in the hobby.

While there is still time, thank you, Bill, for your generous support both recently and during my fledgling days. I believe that model is still stored at my mother's home in Maine, and I will try to retrieve it soon and hopefully get it back in the air.

I hope to get back to some more modeling

soon. I have a few workshop and building tips in mind for my next column, and perhaps news of a new design that I have been tossing about for a while.

Until next time, I encourage all of you to take a moment and reach out to any of your own mentors who are still with us and thank them for their time and guidance. 



Romping through a clear California sky with its dethermalizer disconnected, George Benson's Jimmie Allen Skokie flirts with fate seeming to dare Hung—the mischievous god of thermals—to do his worst.

SOURCES:

Rubber Band Airplane! (Darcy Whyte's Squirrel)

darcy@inventorartist.com
www.rubber-power.com

22-inch Hi-Max enlarged from George Benson plans by Jason McGuire

www.youtube.com/watch?v=DNzGoqF_k5w

Hi-Max thermal ride by Jason McGuire

www.youtube.com/watch?v=zHLI8rmp3sM

Flying Models Plan Store

<http://store.flying-models.com/catalog>

Simply Revolutionary!

Extra 330LX

It's about time.

- fly a 40% with the agility of a 35%
- super light all composite construction
- never seen before torsional stiffness
- beveled control surfaces with extreme throws
- clamped single-piece carbon landing gear
- 4 sets of ganged servos right on the CG
- massive push rod elevator control
- confined structural muffler compartment
- adjustable motor dome for 2 & 4 cyl

The Best
of Two Worlds
Precision + 3D



NEWS Flash: PAU becomes CARF



CARF-Models Trading LLC
207-329-7713
(Ray Labonte)
info@carf-models.com



BLUE SKIES Andy!

RC SCALE

The noontime runway show at the U.S. Scale Masters allowed spectators to check out the model aircraft.



BUILDERS OF MODEL AIRPLANES

By Stan Alexander | onawing4602@att.net

BUILDERS ARE OUT THERE. We might be scattered and there are fewer of us than in the past, but we are out there. We all just need to connect locally and get together sometimes.

This was a thought that Tom Nelson and Charles Waterston shared in middle Tennessee. Tom had a new Proctor Enterprises Albatros DVa kit and he wanted to show it to others in the area.

We met on a windy and cold day in November. Tom attached the four pages of plans to Charles' motorhome and we all got together in the shed where it was stored. Tucked into one corner of the shed was a nice workshop. Tom explained the plans, kit, and the more than 1,000 parts that came with it to the group. The smaller bags of parts were labeled and sorted. Tom stated that it took more time to find the parts and brackets than it did to use them.

A great time was had by all, and several in the group agreed to bring their projects to the next meeting. It's not a club—just a group of dedicated modelers who enjoy building and flying aircraft. There are no club politics, dues, or anything like that—just a healthy curiosity about kits, plans, and building. Is anyone else doing this?

Retractable Landing Lights

It's taken me a while to figure out the mechanics of installing the retractable landing lights for my 1/4-scale Cessna C-165 Airmaster model and making them work. I picked up a couple of flashlights at Walmart, of which the reflectors were approximately the right size.

I destroyed the flashlights, made a mount, and worked out the mechanics



Bill Adams' SBD Dauntless is shown during Static judging at the U.S. Scale Masters Championships. He finished fourth in the Advanced class.



Tom Nelson shows a group of modelers some of the fantastic wood details on his Proctor Albatros DVA.

to add a micro switch so that the lights would deploy when the flaps were extended. I hope they work. I plan to have more about this in my next column.

U.S. Scale Masters Championships

Randy Warkentin submitted this information about the U.S. Scale Masters Championships.

In October 2019, the 40th annual U.S. Scale Masters Championships was held at

the Clovis Area Modelers RC Club in Clovis, California. The club worked to get its field ready for the contest, making many improvements that included a flagpole, parking, and landscaping. The club members also provided a 120 x 40-foot tent as a pit area for the contestants.

Pilots began showing up on

Wednesday morning, and on Thursday, the event started with the Clovis East High School Air Force Junior ROTC Color Guard performing the opening ceremony. Contestants and spectators were treated to an air show by Dave Fusinato and Jan Sundberg, who flew an unbelievable formation of Hawker Hunter jets with close maneuvers and smoke. At noon, Jim Chapman continued the demonstration air show with his impressive T-45 turbine jet.

After the Friday Static judging and the

flying on Saturday, the awards banquet was held Saturday night. Instead of a speaker, contestants were asked to recall great memories of past Scale Masters Championships that they had attended.

In the "Best of" awards, Gus Strutsman received a 100-point static score for his Fokker E.III. In the Advanced class, Tim Dickey won with his J-3P Cub. Taking first place in the Expert class was Chris Wolfe, who also won the Grand Champion award. Chris' dad, Tom, called for him during the flying portion of the contest.



Quadra - Zenoah Parts & Service
Zenoah Sales
Spring Starters-Tanks-Mounts
Mufflers and Much More
Giant Scale Headquarters
WWW.BENNETTBUILT.COM

RC SCALE



A group photo of the competitors who attended the 2019 Red Stick Classic Scale Contest in Baton Rouge.



Chris Wolfe's A-7E Corsair II won the Expert class and was the overall Grand Champion.



David C. Lloyd's Balsa USA Ercoupe finished second in the Advanced class at the U.S. Scale Masters Championships.

The ProAm Pro class winner was Adam Clement with his Mitsubishi A6M Zero. In ProAm Sportsman, Jan Sundberg took first place with his Hawker Hunter jet. Bill Adams and Chris Spangenberg won in Team Scale with their Hawker Typhoon.

Upcoming Events

The Red Stick Classic will be held March 28-29, 2020, at the Baton Rouge RC Club near Baton Rouge, Louisiana. The site is Kissner Field, which has a 660-foot grass runway with more than 200 acres of overfly area.

The site has covered pit areas and parking for RVs and dry camping. AMA RC

Scale classes will be offered. A Saturday evening banquet will be held with Cajun cooking! The contest director is Jeff Pike.

The AMA RC and Control Line (CL) Scale Nats will be held July 16-19, 2019, at the International Aeromodeling Center in Muncie, Indiana. It will feature one day for Static judging and three days for flying. All AMA RC and CL Scale events will be flown. Camping is available and there are plenty of hotels in Muncie.

For more information, check out the National Association of Scale Aeromodelers (NASA) website, listed in "Sources."

Fair skies and tailwinds. 

SOURCES:

NASA
www.nasascale.org

Proctor Enterprises
(503) 668-8612
www.proctor-enterprises.com

U.S. Scale Masters Association
www.usscalemasters.org

Baton Rouge Radio Control Club
www.batonrougerc.com

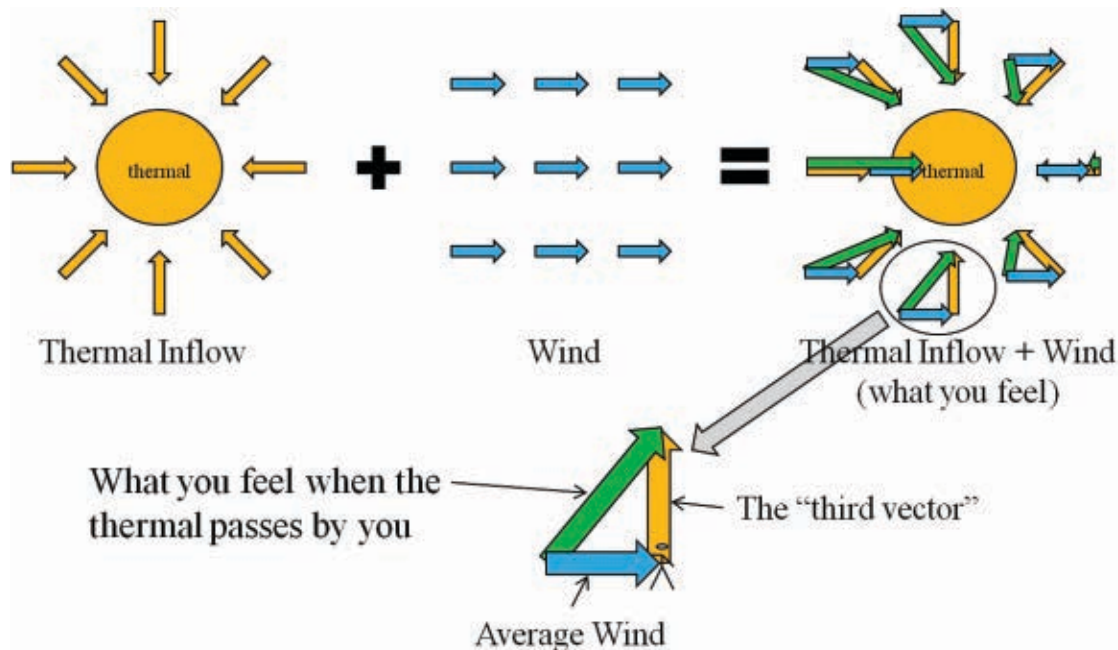
AMA Nats
<https://amablog.modelaircraft.org/nats>

JETI MEZON PRO ESCs

WITH SYSTEM INTEGRATION, TELEMETRY & WIRELESS PROGRAMMING

The image displays a Jeti Mezon Pro ESC system. The central component is the DS-24 Dual Band Radio Control System, which has a color LCD screen showing system status: Antenna (9/9, 100%), MEZON PRO: Power (0W), MEZON PRO: U Battery (11.3V), and MEZON PRO: Capacity (0mAh). Below the screen are several control knobs and buttons, including a green star-shaped LED indicator. A Mezon Pro ESC is connected to the system, showing a current of 0.0A. A 10-channel receiver (duplex REX10) is also visible, connected to the ESC. The system is powered by a battery pack (MEZON 55, 2-12LiXX / 5-SiV). Three inset screens demonstrate the system's capabilities:

- CONFIGURATION:** Shows settings for MEZON Motor, including Rotation (Normal), PWM Freq (8 kHz), Auto (0%), Temperature (25°C), and Number of poles (14).
- TELEMETRY:** Displays real-time data: Voltage (11.3V), Current (0.0A), Capacity (0mAh), Rotation (0RPM), Temperature (24°C), and Motor time (00:00).
- GRAPHS:** Shows two graphs: a "Battery graph" with a peak of 57.9A and a "Revolution graph" with a peak of 14800RPM.



Joe Wurts created this third-vector diagram to help pilots understand the concept of pinpointing the direction of a nearby thermal.

MAKING A THERMAL PLAN

By Gordon Buckland | gordon@gatorf3b.com

WHY DO SO MANY PILOTS fail to max in Thermal Duration (TD) events when others find a way to stay up? I think I understand part of the answer, and the solutions are no longer secret!

We should all be better-skilled pilots today than in years past thanks to the amazing learning tools that we have, such as the “Paul Naton Thermal Soaring Masters” video series from Radio Carbon Art Productions that features Mike Smith. We’ve also had champions such as Joe Wurts and Daryl Perkins share their knowledge for a couple of decades. So why are pilots still sinking out too often?

It was apparent at the Tangerine Soaring Championships, held November 22-24, 2019, in Ocala, Florida, that many Thermal Soaring pilots could score better if they got into the habit of following some proven RC Soaring basics. Conditions were windy at times—particularly on Saturday as a cold front approached. The 10-plus-mph wind made conditions tricky, and the pilots needed to pay attention to the signs if they wanted to get their times.

During Saturday’s contest, a pilot asked, “How do you decide which way to go before you launch?” Let’s explore that subject because the decision is key to improving the longevity of any Soaring flight.

Pay Attention to These Before Launch

- The previous group: You must watch the preceding flight group to see where they went and what was working for them. You will often observe regular cycles of lift traveling through and be able to predict the next thermal’s approach. During windy conditions, certain geographic areas work

consistently well because of the moving air rising and falling over variations in the terrain. If you are not paying careful attention to the preceding flight groups, you might not observe this and could miss an easy ride when it's your turn.

- **Birds:** Signs, such as birds, are often missed because pilots are not paying attention. Not just birds turning in a thermal, but any birds. They all show the type of air in which they are flying. A traveling bird that is "straight lining" still shows lift and sink similar to what a model airplane does.

Watching a buzzard tuck its wings to fly fast is a sign of sinking air and an area to avoid. Small, insect-eating martins and swallows linger in an area if there is lift that brings up insects from the ground. If you see them milling around, that's where you should be.

Despite this, other pilots launched and followed each other upwind to sink out when there was a bird that was crosswind and staying up in lift. The pilots did not fly to the bird because it was windy, and the bird was not in the upwind direction where that they were so focused on going to. (They found out that going upwind was sink.)

- **Opponents' aircraft:** Unless you are launching first in a man-on-man contest, you can watch the launch and the first minute or so of your opponents' flights to see where they go they go, what air they fly through, and what lift they find. After you launch, pay attention to them or have your caller constantly report their progress. You need to have a strategy that allows you to reach the "pack" if they find better air than you, so don't go too far away on your own.
- **Wind direction and varying strength:** Pay constant attention to what the wind is doing, even when you are not flying. Be aware of the prevailing wind direction and strength because that is your only reference to understand changes. Any change in the direction is a valuable sign of what lift is nearby or has gone by. Any lasting change in wind speed reveals where and how far away the lift is.

The most obvious sign is a reduction in the prevailing wind speed. This often indicates that lift is approaching upwind. Increased speed can mean that lift has passed and is now downwind. The



The late Kenny Goodwin with the best TD trainer you can use: a pole and streamer as a visual indicator of wind speed and direction.

change in wind direction helps pinpoint the direction of lift.

Thermal Plan

Armed with real-time knowledge by simply being aware and observant, you can approach the flightline to launch with a good idea of where to go. If you have a partner or timer, discuss what was observed before the launch so that you are both aware of the "plan." You each might not have the same conclusions, but

by independently observing all of the signs, you can come to a consensus and decide where to go.

The most important information often comes during your actual launch and, as Skip Miller once said to me, "You must be prepared to change your mind during the launch if you feel or see something else."

Be sure to study Joe Wurts' third-vector diagram that is included with this column to understand how to read thermals based



RACE - E & Floats

40" span 242 sq.in.
Floats to wheels in minutes

Race-E; kit #B-314
Flash Floats Kit# B-309
Combo \$80.00 + postage


 Ask for Free Catalog with over 112 FF, RC and CL kits
For modelers that like to build what they fly

www.bmjmodels.com
 321-537-1159

RC SOARING

on the wind direction and speed. Also consider the following tips.

- Decisions during launch: Whether you launch via a winch or electric power, observe the handling of your model and the performance of the launch equipment. During a winch launch, you will notice a straining winch or higher tension when launching in lift.

While flying an electric-powered sailplane, you will see a higher climb rate than normal if you launch in lift. If the lift just went by, you might find yourself launching downwind. Although a downwind winch launch might be lower than normal, continue in the launch direction to catch the lift that caused the downwind launch.

- Pay attention: Your model is always talking to you. After you launch and you begin tracking a course to your “read,” pay attention to what your model is telling you. Direct engagement with a thermal can mean that the tail is being pulled by inflow toward the rising air (making the model turn away from lift). Changes in wind speed (indicating direction and the proximity of a thermal) can be read easier when flying on a crosswind heading by watching the aircraft during

this initial thermal-seeking phase.

- Eyesight: Much of the observation needed to find lift and use it requires better eyesight than what you have naturally. You should obtain a prescription for long-distance eyewear and purchase a pair of special prescription glasses just for flying.

I suggest ordering 50% amber-tinted sunglasses online from Zenni Optical. Don't get polarized glasses—only amber tint is needed for optimal visibility. A prescription at Walmart and the glasses from Zenni will cost you less than \$120. It's the best investment you can make to earn some wood at your next TD contest.

Lost Sailplane Recovered

During the 2011 F3J Team Selection event in Cocoa, Florida, many sailplanes were lost in the woods during a windy weekend. One of those models was flown by Dave Bradley (the Junior on our team). In the weeks after the event, Jody Miller and I spent many hours searching the woods and only found one lost sailplane, Phil Barnes' Supra.

Eight years later, in August 2019, a sailplane was found under the floor of a nearby home. The person who found it in 2011 was apparently a teenager who hid it under the house and forgot about it. The teen grew up and left home. His parents discovered the

model under the mobile home in almost perfect condition.

Jody and I were Dave's teammates at that 2011 contest, so we were happy to return it to him at the 2019 F3J Team Selection contest at Horse Feathers Airport in Virginia. This Pike Superior will fly again.

F3J Team USA

It is an F3J cycle again, and the team representing the US is strong. I have been tasked with raising funds to get the team to Slovakia for the F3J World Championship in July 2020. Please support your team by purchasing apparel or raffle tickets on the website listed in “Sources.”

Until next time, fly downwind and soar! 

SOURCES:

League of Silent Flight (LSF)

www.silentflight.org

Radio Carbon Art Productions

(888) 834-2261

www.radiocarbonart.com

Zenni Optical

(800) 211-2105

www.zennioptical.com

Team USA F3J

www.teamusaf3j.com



Dave Bradley (center) was happy to get his Pike Superior back after it spent eight years in the Florida jungle.



The Top RC Model Odyssey sport jet that is discussed in this column is ready for its test flight. It was a nice winter build for this coming summer's flying enjoyment.

NEW SPORT JET

By Jim Hiller | jetmodeler@earthlink.net

FLYING SEASON IS over for those of us in northeastern Ohio, and my thoughts have turned to winter building projects—or this year's jet assembly process. It's not really building. For modern ARF jets, it's merely assembling and installing systems in the airframe.

We really do get carried away. There are lots of decisions to make, such as what products to use, the brand of retracts, the gyro, smoke pump, servo wires, batteries, and, yes, even which jet to buy. Let's discuss the decisions I made with my new sport jet for the 2020 season.

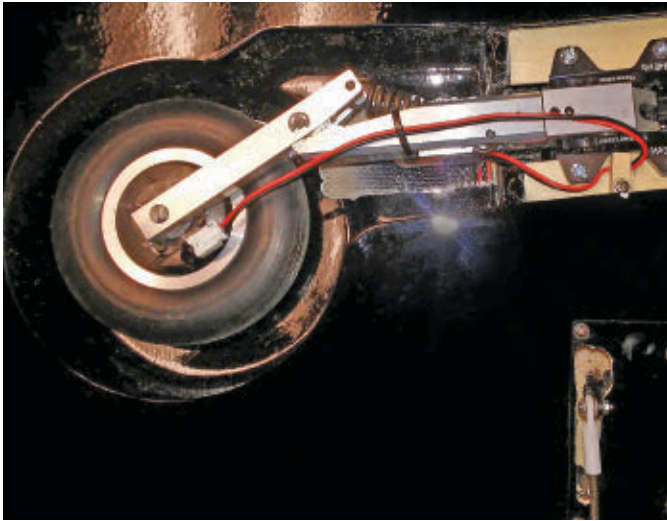
My airplane selection was based on two things. First, I have a Jet Central Cheetah 160 turbine engine in need of a home. It is an older Cheetah, so I have approximately 32 pounds of thrust available.

Second, I've been flying a lot of scale jets these last few years, and it's time to get back to a sport jet. There is a wide selection of good-flying airframes available in this size of sport jet. Fortunately, I have flown a number of them, so my decision is based on flying experience.

My needs are simple: I want a good aerobatic airplane. Think of old-school Pattern flying with positive and negative G maneuvers, combined with good spin and snap-roll characteristics. The list of sport jets fitting this description is long. There are many good airplanes in this size category, such as the Havoc GTS, Pilot RC Predator, T-One Models T-1, CARF-Models Flash, and so on.

The Pilot Predator 2.2-meter jet was high on my list. It's a good aerobatic airplane with no bad habits and a proven airframe. I found that the Predator flew well but was not quite locked in, but with a properly set up, quality gyro using rate mode, it really develops a tight, precise feel and brings the Predator to life.

The Predator has the usual "fish" look of today's sport jets. The benefit is the large fuselage side area for knife-edge flying and rolling maneuvers, and the variety of color schemes that

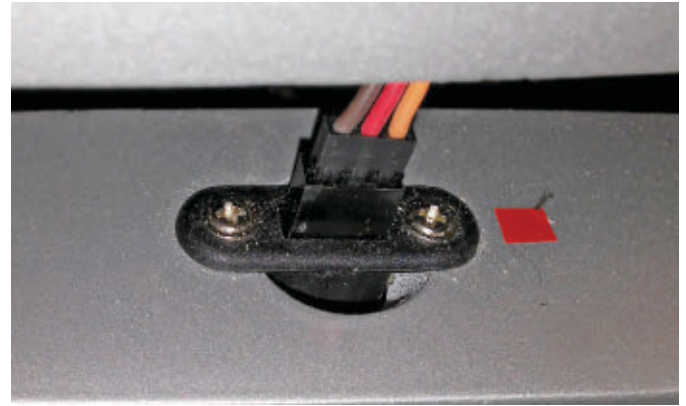


The Electron Retracts landing gear for the Top RC Model Odyssey includes an adjustment feature for proper geometry of the trailing link main landing gear struts. A hard landing on pavement will cause the gear to move up and back to absorb the impact. On many landing gear installations, the strut is adjusted straight and fails to absorb the vertical impact of pavement landings, which negates the shock-absorption function.

are available on the Predator is impressive. The cost of the Predator is quite reasonable for this size of jet.

The Top RC Model Odyssey is an aircraft

offered to loan it to me as a backup airplane for the XFCv2 competition held at Eli Field in Monticello, Illinois, in summer 2019. Fortunately, I didn't need it.



The Expert Electronics charge receptacles can be utilized to clean up servo connections and simplify field assembly. When attaching the fin on this model, they were also installed for the elevator servos.

that I recently flew and found to really be a joy to fly. It flew so well that the owner, Ken Olsen,

The Odyssey is also a proven airframe and has good inside and outside looping flight characteristics, along with a reasonable fuselage side area for knife-edge flight and rolling maneuvers. I found that the Odyssey felt more locked in without a gyro than the Predator, but I will install a gyro because of the tree line that is adjacent to my flying field runway. Gyros do a great job



BRODAK MANUFACTURING AND DISTRIBUTING COMPANY, INC.

We Are the LARGEST Kit Manufacturer in the World -- and Growing!



B-24 LIBERATOR
Wing Span 60"
DA-573 \$224.95



AVENGER (GRUMMAN TBF/TBM)
Wing Span 41"
DA-540 \$71.95



AVRO LANCASTER
Wing Span 60"
DA-565 \$229.95



NIEUPORT 17
Wing Span 68"
DA-402 \$249.95



PBY CATALINA
Wing Span 44"
DA-542 \$103.95



DOUGLAS DC-6
Wing Span 60"
DA-554 \$224.95



SUPER CONSTELLATION
Wing Span 60"
DA-560 \$249.95



B-17 FLYING FORTRESS
Wing Span 75.5"
DA-520 \$229.95



ERCOUPE
Wing Span 60"
DA-546 \$142.95



DOUGLAS DC-3
Wing Span 60"
DA-563 \$169.95



AERONCA CHAMP 60"
Stick & Tissue Construction
DA-581 \$99.95



TAYLORCRAFT BC-12
Wing Span 60"
DA-559 \$98.95



CESSNA 150
Wing Span 60"
DA-562 \$99.95



56" MORANE-L
Originally free flight, now R/C
DA-403 \$109.95

Great Finishes Start with Brodak Butyrate Products!

Visit our website for a full list of colors and products.

Brodak is your one-stop shop for all the component power-parts for Dare planes, as recommended by the designers. Brushless Motors / ESCs / Lipo Battery Packs / Servos / and more!

We have WW I Spoked Wheel Kits & Jigs (8 sizes), Dare Vintage Plastic Wheel kits, Vacuum-formed Radial Engines, Pilots, Armament (classic and modern), Rockets and more!

**100 Park Avenue / Carmichaels, PA 15320 / www.brodak.com
(724) 966-2726 (voice) / (724) 966-5670 (fax) / email: flyin@brodak.com**

RC JETS

of taming turbulent air on windy days.

Two things that I found that the Odyssey does well are snap rolls and spins. Some sport jets don't stay in a spin well and hesitate the rotation every 3/4 turn or so. My Xtreme ARF Vixen suffers from this in a positive snap roll or spin, but it's fine in negative snaps and spins. This poor positive-spin tendency can be reduced with low-rate rudder and elevator, along with high-rate ailerons.

The Odyssey is carried by Robart Manufacturing and Gator RC. Both businesses have good reputations. The Odyssey can be purchased with JP Hobbies electric landing gear and brakes. It's a landing gear system with a good status, but I've been flying Electron Retracts landing gear for years in my sport jets and have decided to stay with what I know.

Electron offers a complete package for the Odyssey that includes the ER-40-size retract units and appropriate struts, wheels, and brakes, with the option of a GS200 manual controller, so off went my order for the landing gear package.

That was just the beginning of the choices. Next came the radio, which, for me, was easy. I planned to stay with my Spektrum DX18, so I chose an AR20310T 20-channel PowerSafe receiver that includes power save, dual battery input for redundancy, and plenty of features for this type of jet. I do need to update my transmitter soon, and that iX20 is tempting.

The gyro of choice will be a Cortex Pro obtained through AeroPanda, which is a relatively new supplier for the jet modeling community and carries quality products for those who want the best.

I prefer to use two-cell LiFe batteries in

my jets when suitable. For this project, I went with two 2,100 mAh 2C LiFe batteries that are good for a typical day of flying on a single charge. It's the same setup that I am using in my Der Jet Cougar.

The Odyssey fuselage comes in two parts, with the nose section separating between the inlets, so I am taking advantage of this. The fuselage will not fit in my 6-foot, 6-inch truck bed in one piece, so I want to be able to easily separate the fuselage for transport on the days that I don't want to haul my trailer to the field.

My plan was to make the bolts that secure the front and rear halves of the fuselage easily accessible. The electrical and fuel lines that travel through the fuselage split line were made to easily disconnect. I am using 6- and 9-pin One-Clik Multi-Connex on the servo wires and landing gear wires, along with the appropriate plugs on the batteries. The radio, turbine, retract, and landing gear batteries are located in the front section of the fuselage for balance.


The fuel tanks are located just aft of the fuselage split line between the inlets, with the UAT located in the forward bay front section. I could not find a convenient place for it in the rear section of the fuselage. I did install the turbine fuel pump in the rear section near the turbine, so only two fuel lines cross the fuselage split line—from the fuel tank to the UAT and from the UAT to the pump. Both are easy to disconnect.

The Odyssey comes with a nice, well-detailed plastic cockpit. A trick that I have learned with plastic cockpits is to apply a layer of 1- to 2-ounce-per-yard fiberglass cloth to reinforce the outside and improve long-term durability.

The fiberglass cloth also tends to stop

plastic model cockpits from warping under the hot summer sun. Warpage is also common on any of the plastic items located under the canopy. My advice is to apply this layer of fiberglass before you take the model out in the sun. Warped cockpits are disappointing.

It is always fun assembling a new model aircraft. As I write this, the Odyssey project is nearing the end. All systems, minus the gyro, are installed, powered up, and adjusted, and the center of gravity has been checked out.

The final punch list of items that remain is getting shorter. It now includes finalizing the smoke system plumbing and tidying up all of the wires in the fuselage bay just forward of the split line. The devil is in the details! 

SOURCES:

Jet Pilots Organization (JPO)

www.jetpilots.org

AeroPanda

(321) 312-0723

www.aeropanda.com

Robart Manufacturing

(630) 584-7616

www.robart.com

Gator RC

(800) 380-9373

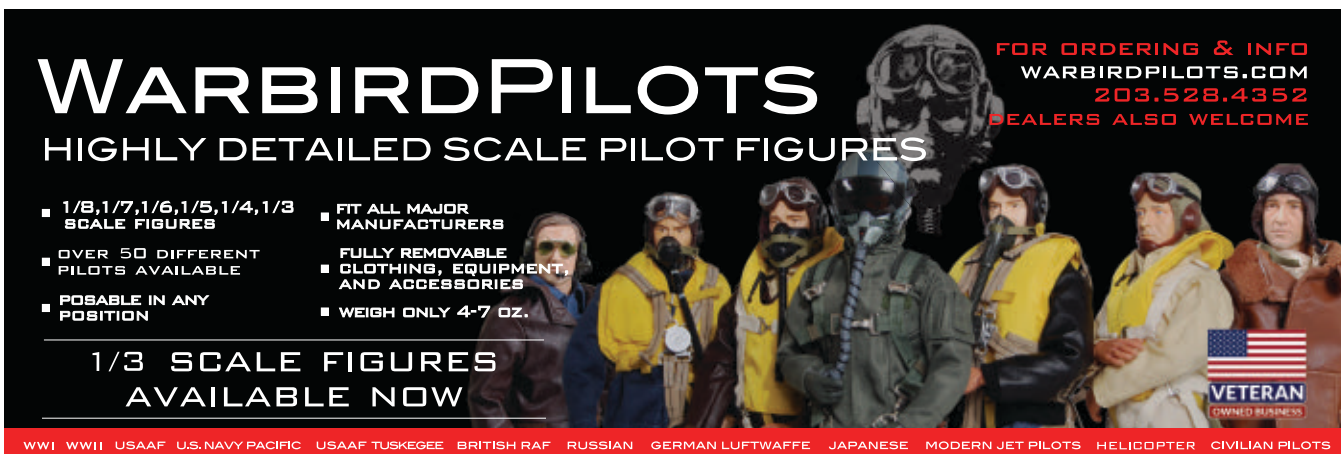
www.gator-rc.com

Electron Retracts USA

info@electron-retractsusa.com

www.facebook.com/electronretractsusa

www.electron-retractsusa.com



WARBIRDPILOTS


HIGHLY DETAILED SCALE PILOT FIGURES

- 1/8, 1/7, 1/6, 1/5, 1/4, 1/3 SCALE FIGURES
- FIT ALL MAJOR MANUFACTURERS
- OVER 50 DIFFERENT PILOTS AVAILABLE
- FULLY REMOVABLE CLOTHING, EQUIPMENT, AND ACCESSORIES
- POSSIBLE IN ANY POSITION
- WEIGH ONLY 4-7 OZ.

FOR ORDERING & INFO
WARBIRDPILOTS.COM
203.528.4352
DEALERS ALSO WELCOME

1/3 SCALE FIGURES AVAILABLE NOW

WWI WWII USAAF U.S. NAVY PACIFIC USAAF TUSKEGEE BRITISH RAF RUSSIAN GERMAN LUFTWAFFE JAPANESE MODERN JET PILOTS HELICOPTER CIVILIAN PILOTS


VETERAN OWNED BUSINESS

SWEET



84" Bushmaster



65" Thunderbolt



60" Slick 580



60" Laser EXP



Extreme Flight has been at the forefront of electric airframe and power system development since the introduction of brushless electric motors and lithium polymer battery technology to our hobby in the early 2000s. Having produced electric specific airframes ranging from 44 inches to 95 inches, we have found a particular range that in our opinion is the current "Sweet Spot" for electric flight. Powered by our powerful, reliable and efficient Torque 4016/500 Brushless Outrunner and a single 6S 3300-5000 mah lithium polymer battery, this range of aircraft delivers big plane flight performance

EXTREME

(770) 887-1794

SPOT

54-84"
6S LIPO
5.5-8 LBS



60" Gamebird GB-1

62" FW190



72" Muscle Coupe



60" Extra 300

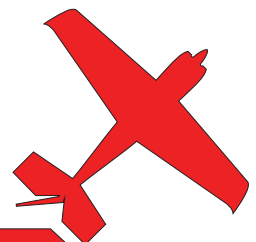


54" Muscle Bipe



in a reasonably priced package that is quick and easy to assemble and small enough to easily transport to and from the flying field. This fleet of airframes begins with our 54" Legacy Aviation Muscle Bipe and extends through our 60" EXP aerobatic thoroughbreds, Aces High Warbirds and on to our 84" Legacy Turbo Bushmaster. Discover for yourself the pure excitement that these models deliver! Regardless of your preference or flying style, Extreme Flight has a model for you. How sweet it is!

FLIGHT



www.Extremeflightrc.com



It's not exactly a staged image in a professional photo studio, but this authentic peek into a workshop shows the fuselage plug of the Small Wonder resting on a Too Sweet wing with the Too Sweet horizontal stabilizers fitted.

NEW PYLON RACERS

By Tim Lampe | tim.lampe@hotmail.com

CONVENIENTLY, and coincidentally at approximately the same time, three new Pylon Racing aircraft are being developed, with reliable details coming to light. Even more information will soon be available by word-of-mouth and on the internet. Not everyone is in the loop or pays attention to the forums though, so let's get to the facts provided directly by the sources!

New Q-40 Model

Nearly everyone who is on the Pylon Racing circuit has probably heard about the new Q-40 airplane that is in development by the team of Dan Kane, AJ Seaholm, and Tom Scott. (AJ also made mention of it in his September 2019 "RC Pylon Racing" column.)

By the time this issue is in AMA members' mailboxes, many will have already seen the airplane and even raced against it, but I thought it would be interesting to find out how the concept was born and learn about the development process. I chatted with Dan to get the details.

Dan told me that the seed was planted when AJ, his friend and teammate, began flying Chinese Made American Design (CMAD) Racing Miss Daras a couple of years ago. AJ was quickly sold on the Dara's speed and manners around the poles.

Flying one at the 2018 Phoenix QM40 Classic, AJ won a flyoff against Robert Holik, putting up a race time of 57.26—only .04 seconds short of the national record at the time (57.22 by Jim Allen with a CMAD Racing Too Sweet).

Thoroughly impressed, AJ asked Dan to design a new Q-40 racer with a

A 3D rendering of the Jim Allen Quik-V7 composite edition.



more conventional, Mustang-type airframe, with the same wing and airfoil as the Dara. Coincidentally, Dan had penned a Heinkel He 100 tailored to Q-40 specifications. The design was approved by the AMA design committee, but not by the F3T design committee (F3T is the FAI Q-40 version that is popular in Europe). Dan had already decided to go back to a Mustang-based design anyway.

With AJ's special request and the new Mustang concept in mind, Dan got back to his CAD program to select airfoils and calculate dimensions to draw what is now named the Miss Foxy Lady (modeled after the P-51 Mustang-based Unlimited class Reno air racer of the same name). The drawing files were sent to Tom at Scott Models (also known as CMAD Racing) in Cincinnati, where the drawings guided the company's CNC machines to make molds for laying up prototype models for race testing.

Chuck Bridge (maker of the impeccable Q-500 426 Vortex racer and the father of Pylon Racing pilot Randy Bridge) made the first wing, while Harold Sattler of Saskatchewan, Canada, laid up a fuselage. The horizontal stabilizers were from existing CMAD stock of Dara/Loki parts.

Dan built the first model and performed the maiden flight at the Ben Martin CAPS Classic Pylon race, held August 24-25, 2019, at the International Aeromodeling Center in Muncie, Indiana. I was there, and it was exciting to see a brand-new Pylon aircraft being born right before my very eyes! AJ also raced the airplane to dial in the center of gravity and the control throws.

In its next appearance at the annual Heartland Speed Freakz Mike Tallman

Legacy Race, held September 21-22, 2019, near Wichita, Kansas, the prototype was lost because of a wing failure. Such are the woes of development, but that is why there is a process.

The wing design was structurally rearranged, and Chuck was commissioned to build a new wing to the improved specifications. Dan prepped the second prototype, which Gino Del Ponte and Tom test-flew during practice sessions at the Q-40 Championship Race, held October 5-6, 2019, at Mike Langlois' Old Julian Airport in Liberty, North Carolina. Dub Jett and Mike Helsel also got their mitts on this model for more thrashing and scrutinizing before returning it to Dan. Mike confided that as far as he was concerned—aside from a few minor preflight mechanical adjustments—the design was ready to race!

It was next raced at the Cliff Telford Memorial Tangerine Pylon Race on December 7-8, 2019, in Apopka, Florida. There, Dan flew several fast, trouble-free heats, revealing that almost everything had been worked out and that the airplane was nearly ready for production. He said he was quite pleased with the way the new Miss Foxy Lady flew and that it was competitive (as Dub and Mike noted from their test sessions).

At the time of this writing, two more prototypes

were expected to be built and raced at the Phoenix QM40 Classic in February 2020. Airplanes were to be produced by Steve Taylor at A1 Composites in Australia, and distribution would be through CMAD Racing, with availability speculated to be near the end of 2020.

Quik-V Gets a New Lease on Life

With the loss of the Great Planes Quik-V6 ARF from the market, the designer, Jim Allen, is working to get the airplane available again. He has developed a slightly revised version to be available as a laser-cut plywood and balsa short kit for the fuselage and tail that will be called the Quik-V7. There should be an announcement in the National Miniature Pylon Racing Association (NMPRA) forum and in the Pylon Racing forum on RCGroups by the time you read this. A build thread is also planned.

The laser-cut short kits for the fuselage and tail will be available from Manzano Laser Works. I was provided one of these fuselage short kits. The wood and laser cutting are fantastic, and the fuselage was assembled on my workbench within approximately an hour.

As for the wing, CNC-cut foam cores will initially be available from Jim, as well as landing gear. Foam cores will require the builder to add the balsa sheeting and complete the model, but a build thread for this is planned. I've also heard that a few individuals on the Pylon Racing circuit will provide wings that are already sheeted. News and contact information about this should also appear in the forums.

The wing from a previous Quik-V6 ARF will work perfectly on the new fuselage kit.



The first prototype of Miss Foxy Lady.

RC PYLON

A wing from a Great Planes Viper might also be used with a bit of wing saddle sanding in the fuselage aft of the front wing mount.

Early in 2020, composite wings and, eventually, fully composite versions of the Quik-V7, will be in the works by Karl Harrod at Harrod Performance Aircraft in Australia. Solid stock colors are planned, but custom paint could also be requested on a custom-order basis. These should be

available from Karl and directly from Jim in the US. Watch for more information in the forums.


Last-Second Addition

In gathering information from Dan about the Miss Foxy Lady, I was reminded of another new Q-40 that's in roughly the same stage of development. I recall getting a peek at the fuselage mold at one of the races in Muncie in 2019.

It's called the Small Wonder in honor of the beloved and late Jerry Small. Jerry was instrumental in the development of the other two popular Ashley-type airframes, the Sweet 1 by Gary Freeman of Advanced Pylon Products and the Too Sweet by CMAD Racing.

The Small Wonder uses the same wing and horizontal stabilizer as the Too Sweet, but the fuselage has been slightly reworked with a taller vertical stabilizer and a smaller nose to utilize a 1-3/4-inch spinner (instead of the 2-inch spinner that is required on the other Sweets).

In addition to the Miss Foxy Lady, the Small Wonder will be in the CMAD Racing lineup that will be manufactured by A1 Composites.

I would like to thank Dan and Jim for their timely and extensive contributions to this month's column. 

SOURCES:

CMAD Racing
(513) 604-6464
www.cmadracing.com

NMPRA
www.nmpra.net

RC Groups (Pylon Racing thread)
www.rcgroups.com/pylon-racing-233

Manzano Laser Works
tomj@manzanolaser.com
www.manzanolaser.com

A1 Composites
sales@a1composites.com.au
www.a1composites.com.au

Advanced Pylon Products
(407) 222-5759
www.advancedpylonproducts.com



Getting Better Ideas Off The Ground..

The World's Strongest R/C Hardware

2 mm and 3 mm

Designed, Engineered, Tested and Manufactured to the Highest Quality Standards

Robust upgrades for your ARF's and BNF's

Today's airframes are amazing, beautiful and expensive
Why leave it up to Chinese control hardware?

S529 2 mm Clevis'		S530 3 mm Clevis'
-----------------------------	-------------------------------------------------------------------------------------	-----------------------------

Our Gold-N-Clevis' 11 step assembly process makes for the worlds strongest and longest lasting clevis'

S540 2 mm Rod Pack	S541 3 mm Rod Pack
------------------------------	------------------------------

Threaded Rod Assortment 4", 6", 8" & 12" Double End Thread
Tin plated steel for easy soldering in both sizes

S592 2 mm Ball Connector		S593 3 mm Ball Connector
------------------------------------	-------------------------------------------------------------------------------------	------------------------------------

Machined aluminum ball connectors for precise control, strength, and durability.

Available now at your favorite dealer or @ sullivanproducts.com

Sullivan Products, 8950 Yellow Brick Rd, Baltimore, MD 21237

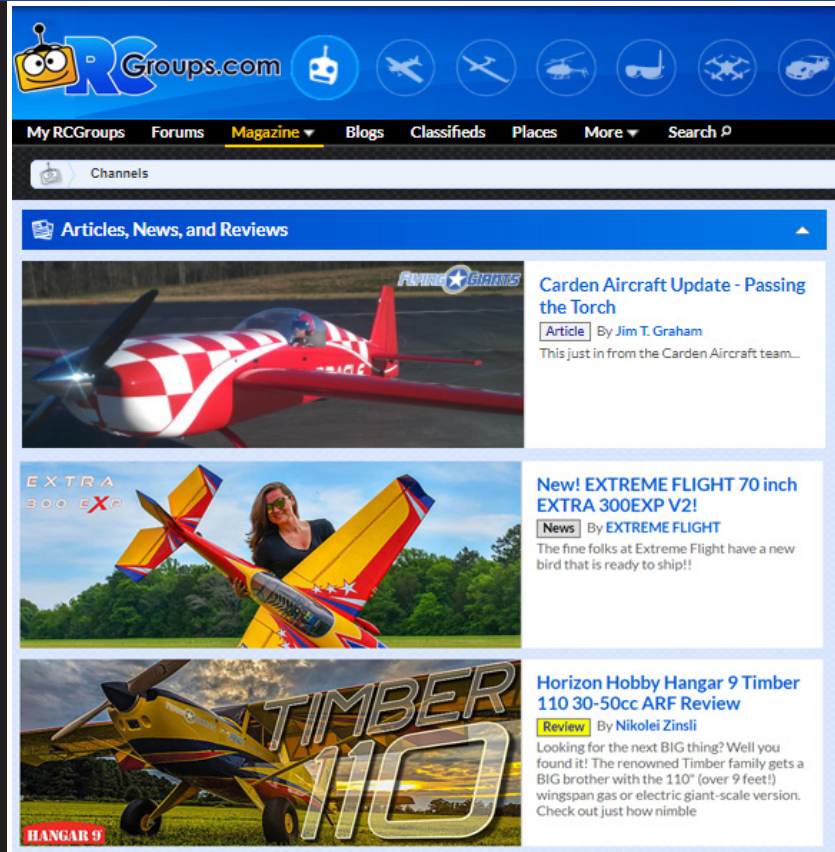
Join us on Facebook:
[Facebook.com/SullivanProducts](https://www.facebook.com/SullivanProducts)

WWW.SULLIVANPRODUCTS.COM



THE ORIGINAL RC SOCIAL MEDIA SITE

**FORUMS
NEWS
REVIEWS
CLASSIFIEDS
BLOGS
PHOTOS
AND MORE**



Words from our members...

"Global reach, new product announcements. It's like being at the field, when you can't." - Bell47G2

"Of all the 'social media' sites and information available, I have learned that I get more of the straight scoop on RC Groups than anywhere else." - J. Branaum

"I can't imagine this hobby without RCG! Thanks to all the members for your insight and knowledge, you have all helped me." - Shadow-D

"This is by far, the BEST R/C site I have ever seen, and used. I have learned much, tried to pass on my experience, bought and sold airplanes and equipment here, made friends." - Steve Merrill



**Planes • Helis • Drones
FPV • Car • Boats
and more!**

A scene from the 2018 RC Aerobatics Nats, held at the International Aeromodeling Center in Muncie IN. Photo by Jenni Alderman.



NEW SEQUENCES FOR 2020

By Peter Vogel | vogel.peter@gmail.com

IT IS NOW 2020, and I'm left with two important questions. First, where's the flying car that I was promised when I was in elementary school in the 1970s? Second, have you learned the new RC Aerobatics (Pattern) sequences?

Indeed, with the new year comes new sequences! F3A, Masters, and Advanced classes change sequences every two years. In recent years, Intermediate has changed on the same schedule. Sportsman changes less often (approximately every five to six years), and this is a year for that schedule to change as well!

Before I address the sequences themselves, it's worth noting that the National Society of Radio Controlled Aerobatics (NSRCA) sequence guidelines committee, which meets in the years between sequence changes, made some significant updates to the sequences in 2019 that resulted in noticeable changes.

For Sportsman, this is the first time in roughly two decades where there's actually a new maneuver in the sequence (a triangle loop), not simply a different order in which to fly the approved maneuvers.

The second thing you'll notice in *all* sequences is that the K-factor of many maneuvers has changed significantly! This is the result of discussion by the RC Aerobatics community throughout recent years, particularly in Masters.

As maneuvers become more complex (such as rolls integrated into loops), the K-factor doesn't reflect the increased difficulty of the maneuvers. The reality is that the logic behind the original K-factors for many maneuvers seems to have been lost to time, and as maneuvers added more elements, the K-factors didn't change significantly—if at all.

A survey of active participants showed that they were overwhelmingly in support of some modification of the K-factor system to better reflect the actual

elements within each maneuver. The International Miniature Aerobatic Club (IMAC) made this change a long time ago, assigning a difficulty value to each potential element then adding those difficulties to arrive at the K-factor for a complete maneuver.

For Pattern, the method is similar, but K-factors for basic, common maneuvers will try to be kept in the same ballpark as they had been.

The final approach is for each basic geometry (such as a Cuban 8, triangle, etc.) to have a base K-factor assigned then elements (such as rolls, point rolls, slow rolls, snaps, roll reversals, and knife-edge flight) have a K-factor assigned.

Repeated rolls (such as a roll in each segment of a square loop) have their added K-factor divided in half to avoid excessively “pumping” the K-factor with common maneuvers. Any roll that has more than one continuous roll (such as a half roll or two horizontal rolls) has a difficulty factor of 2.

As an example, a Cuban 8 has a base K-factor of 3; a Half Cuban 8 has a base difficulty factor of 2. A half roll or quarter roll has a difficulty factor of 1, so a basic full Cuban 8 has a difficulty factor of 4.5 (3 + 1 [first half roll] + 0.5 [second half roll]), which is then rounded up to 5. The result is that many maneuvers have had their K-factors slightly adjusted.

The system isn’t perfect. For example, a roll on a vertical line is significantly easier than a roll on a horizontal line, but this system assigns the same difficulty to both.

It’s a starting point that we’ve needed for a long time! If there’s interest, I can cover all of the details of the new K-factor system in a future column.

For now, the important thing to be aware of as you read the new sequences is that the K-factors might have changed—in many cases increasing—which raises the *cost* of minor errors in those maneuvers! For example, the Cuban 8 used to have a K-factor of 3, meaning a 1-point error of having your wing off by 15° after a roll used to cost you 3 points. The new K-factor is 5; that same error now costs you 5 points!

Sportsman

The Sportsman sequence will still feel familiar, but check out that triangle loop with a K-factor of 3 before the end! The total K-factor is higher than it used to be for the Sportsman sequence.

Sportsman Maneuver	KFactor
Takeoff	1
Straight Flight Out	1
Half Reverse Cuban 8	2
Straight Flight Back	1
Immelmann Turn	2
45 degree down line	1
Exit box, free turnaround	
One Horizontal Roll	1
Stall Turn, No Rolls	2
45 degree up line	1
Split 5 (half roll, half loop)	2
Double Immelmann without rolls	2
Exit Box, free turnaround	
Two Inside Loops	2
Half Reverse Cuban 8	2
Two Point Roll	2
Half Cuban 8	2
Triangle Loop, no rolls (base at top)	3
Landing	1
Total K	28

Intermediate

Little is new here other than the higher K-factors for many maneuvers. The total K-factor is a full 8 points higher than it

Intermediate Maneuver	KFactor
Takeoff	1
Double Immelmann with Half Rolls	4
Stall Turn without rolls	2
Reverse Cuban 8 with half rolls	5
Half Square loop with full roll up (inverted exit)	2
Two inside loops from the top, inverted exit	2
Half loop from the top	1
Two Half Rolls reversed	3
Top hat with quarter rolls up and down	3
Triangle loop (base at top)	3
Humpty Bump with options	3
Two horizontal rolls	2
Shark’s Tooth, half roll on the 45 degree down line	3
Square Loop on Corner	3
Half Reverse Cuban 8	2
45 degree up line with half roll (exit inverted)	2
Half Square Loop on corner from top, inverted entry	2
Stall Turn, ¼ roll up, ¼ roll down	4
Landing	1
Total K	48

Fast Shipping!

Visit Us At www.GravesRC.com

GRAVES RC
Orlando, Florida

RC AEROBATICS

MILE HIGH RC
A FULL LINE OF ARF'S IN STOCK
20cc-120cc
www.MILEHIGHRC.COM

Mile High RC offers modern ARF's for modern pilots visit milehighrc.com for a full line of aircraft accessories
 US Distributor of EME Engines.

EME, GP, AND DJ GAS ENGINES IN STOCK
DEALERS WELCOME

used to be, so there are more points to lose—or to help create separation between you and other pilots!

Advanced

The two of four-point rolls in the crossovers of the Reverse Cuban 8 result in a significant bump in the K-factor for that maneuver (K-factor of 7). The total K-factor in the new system is a full 13 points higher than before, although none of these maneuvers are new to the Advanced class.

Advanced Maneuver	KFactor
Takeoff	1
45 degree up line with 4 point roll	4
Half Square loop from top, half roll down	2
Slow roll	2
Half Cuban 8 with full roll (inverted exit)	3
Triangle loop with one positive snap roll (inverted entry and exit)	5
Top Hat, ¼ roll up, ¼ roll down (inverted entry)	4
Double Immelmann, 2 of 2 point roll first, full roll second	5
Stall turn, full roll up	3
Reverse Cuban 8 with 2 of 4 point rolls	7
Shark's tooth, ½ roll on vertical, 2 half rolls reversed on the 45 down line	5
Figure 2 with half roll up (inverted exit)	3
Half Square loop on corner from top, inverted entry	2
Figure M with quarter rolls	6
Humpty Bump with Options	3
Four Point roll	3
Half Square loop with 2 of 4 point roll up	3
Three turn spin	2
Landing	1
Total K	64

Masters

The rolls integrated into the top 90° of the Cuban 8 should be interesting to watch, and the K-factor of 9 makes it the most valuable one in the sequence. This is the first time that I've seen a Top Hat turnaround with the option to go cross-box or maintain the Z-line. The total K-factor of 86 (25 higher than in previous years) should make for interesting changes in the normalized score differentials this year in the Masters class!

Masters Maneuver	KFactor
Takeoff	1
Cuban 8 with full rolls integrated into the top 90 degrees of both part loops	9
Half square loop with 4 of 8 point roll	4
Square loop from the top with 2 of 4 point rolls in each segment	8
Top hat from top with options. 1 roll down, 2 of 4 point roll up (option: ¼ roll down, 2 of 8 point roll up)	5
2-½ turn spin (inverted exit)	2
Humpty bump with options (quarter or half rolls up and down)	3
Eight point roll	4
Stall Turn, full roll up, half roll down, inverted exit	3
Top hat, 2 of 2 point roll up, snap roll on top, 2 of 4 point roll down	6
Half square loop on corner with half rolls (inverted exit)	4
Pull, Push, Push, Humpty bump from top, 2 of 4 point roll down, full roll up	4
Half square loop with ½ roll	2
Triangle loop with 2 of 4 point rolls in diagonals, full roll on top	8
Humpty with options, inverted exit	3
Two 3 of 4 point rolls reversed, inverted exit	7
Stall Turn, 4 point roll up, half roll down	5
Hourglass, middle entry, top first 1-1/2 snap roll down (inverted exit)	7
Landing	1
Total K	86



SOURCES:

NSRCA
www.nsrca.us

IMAC
www.mini-iac.org

Pilots at the RC Aerobatics Nats at the International Aeromodeling Center in Muncie IN. Alderman photo.

THE NATIONAL



AMA'S FUN-FLY

International
Aeromodeling Center
Muncie, Indiana

JULY 24-26



**\$10 LANDING FEE
FOR 3 DAYS OF FLYING,
DINNER, AND A T-SHIRT**

*FIRST 100 TO REGISTER WILL RECEIVE A T-SHIRT

**REGISTER AT
MODELAIRCRAFT.ORG/FUNFLY**

Want to make new friends, fly your favorite aircraft, and eat?

Three days of flying with dinner and a membership meeting Saturday night!

**Meeting/Dinner
Saturday @ 5pm**

Eat! Fly! Have Fun!

Contest Director:

Randy Cameron, *AMA Vice President*

(417) 830-9211 | flyrc@modelaircraft.org

CONTROL LINE COMBAT

Winners of the 2019 US F2D Team Trials, who will represent the US at the 2020 FAI F2 World Championships for CL Model Aircraft to be held August 10-15 in Wloclawek, Poland, include (L-R): Greg Wornell, mechanic; Chuck Rudner, pilot; Radik Magzianov, pilot; Cary Minor, mechanic; Mark Rudner, pilot; Sasha Nadein, Junior; and Andrey Nadein, mechanic.



TAKING STOCK FOR THE YEAR AHEAD

By Mark Rudner | mark.s.rudner@gmail.com

SPRING IS ON ITS WAY and that means only one thing—it's time for the next installment of this column in *Model Aviation*.

With the new flying season fast approaching, it's a good time to take stock of your equipment and make sure that all is in order for the year ahead. It's also a good time to think back to last season and what went wrong in the matches that you lost.

What can be done to ensure that it doesn't happen again this year? In the end, Control Line (CL) Combat is dogfighting, and to make sure that your matches will be won or lost in the air, it's important to eliminate any weaknesses in your setup that could potentially let you down.

When did you last change the safety strap on your handle? It's there. You put it on and take it off almost without thought each time you fly, but have you taken care of it? The safety strap is easy to overlook because hundreds of flights might go by without it ever needing to perform its job. If it breaks the one time when you need it in a heavy collision, that's an instant "L" that could have been avoided.

When I was inspecting my handles recently, I found that one of my safety straps was looking a little worse for the wear. There are many ways to make a safety strap. It can be nice to use a bright color that will make your handle easier to spot in the grass. I like to use a thick, soft rope that won't dig in or abrade my skin while I'm flying. The thicker the rope though, the bulkier the knots will become.

To overcome this problem, and to provide a strong connection that doesn't damage the rope itself, I have been using Alex Prokofev's method (shown

in the photo) for the last few years. To join the loose ends, I use three or four cable ties tightly cinched down. This gives a super low-profile connection, with no bulk or annoying protrusions. If you try it, just remember to have the clasp parts of the cable ties pointing away from your hand.

The length of the safety strap is not crucial, but it's important to have enough room for the slipknot to open and let your



After cutting pieces from two airplanes using the saw-guide jig, the wing halves match nearly perfectly. They were glued together with Gorilla Glue, the spars and LE were slotted across the joint with a cutting wheel on a Dremel tool, and carbon-fiber joiner pieces were glued in.

21 AIRPLANE	
ULTRA BRITE LEDs 4.8 to 12V	
RAM 121 - \$44.95 Super Set, 3 nav, 4 strobe, to 96"	
RAM 122 - \$29.95 Strobe, 2, adj. rate, to 96"	
RAM 123 - \$29.95 Landing Lites, 2, servo cont.	
RAM 124 - \$39.95 Big Nav, 3 nav, 1 strobe, to 168"	
RAM 125 - \$34.95 Nav, 3 nav, 1 strobe, to 96"	
RAM 132 - \$24.95 Park Flyer, 3 nav, 1 strobe, to 48"	
RAM 161 - \$19.95 ARF Lites, 3 wireless, 3.7V	
RAM 179 - \$24.95 3 D Lites, 18, 3 colors, 9V	
RAM 187 - \$29.95 Park Fly, 3 nav, 2 ldg, 1 str, to 54"	
RAM 188 - \$14.95 3 Micro wireless, 3.7V	
RAM 195 - \$14.95 Micro Nav to 24", 3.7V	
RAM 197 - \$14.95 Nano Nav to 16", 3.7V	
INCANDESCENT 9V	
RAM 01 - \$34.95 Flashing Nav, 3, to 96"	
RAM 02 - \$24.95 Strobe, simulated, adj.	
RAM 03 - \$39.95 Landing lights, 2, 4.8V	
RAM 04 - \$24.95 Rotating Beacon, adj.	
RAM 06 - \$34.95 Sky Lights, 18, Nite Flyer	
RAM 14 - \$29.95 Big Nav, 3, to 168"	
RAM 15 - \$19.95 Nav, 3, to 94"	
RAM 16 - \$24.95 Econo Ldg. Lights, 2	
RAM 186 - \$29.95 Gun Flash, 4, adj.	

Need Lites? 29 Choices!	
3 HELICOPTER LED 4.8 to 12V	
RAM 174 - \$29.95 Micro Heli, 3 nav, 2 ldg, 1 strobe	
RAM 175 - \$29.95 Heli, 3 nav, 2 ldg, 1 strobe	
RAM 196 - \$14.95 Nano Heli nav, 3.7V	
5 MULTIROTOR LED	
RAM 190 - \$14.95 MQX etc. 4 lites, 3.7V	
RAM 191 - \$14.95 ISO etc. 4 lites, 3.7V	
RAM 192 - \$14.95 QR1 etc. 4 lites, 3.7V	
RAM 193 - \$14.95 to 24" span 4 lites, 5V	
RAM 194 - \$14.95 Nano QX etc. 4 lites, 3.7V	
<i>Made in the USA since 1976</i>	
NEED MORE INFO?	
See your hobby retailer or send a #10 S.A.S.E. to 229 E. ROLLINS RD., ROUND LAKE BEACH, IL 60073 USA	
(847) 740-8726 FAX: (847) 740-8727	
Ram	WWW.RAMRCandRAMTrack.com

hand in and out, and for there to be generous slack in the strap throughout all motions of normal flying. On the flip side, the strap should not be so long that it hangs down and could potentially snag on your opponent or his or her handle/lines.

Repair Jig

Because CL Combat can be a destructive sport at times, repair work naturally comes with the territory. While repairing aircraft last season, I wasn't satisfied with the fit between parts that I got while splicing wing halves together from different airplanes. To remedy this situation, I built a saw-guide jig from a long plank of hardwood that I picked up at my local home improvement store, along with a new mini hacksaw with a sharp, fine blade.

As shown in the photo, with all of the

covering removed from the airplane, the leading edge (LE) fits flat against the back wall of the jig. I made several parallel slots to allow me the freedom of where to make the cut, depending on where the damaged section would need to be removed.

The new hacksaw blade cut through that LE like butter and made a perfect vertical face. After cutting the damaged part off of the first airplane, I carefully measured the alignment and made a cut in the same position on the wing of a second airplane that I wanted to splice with the first.

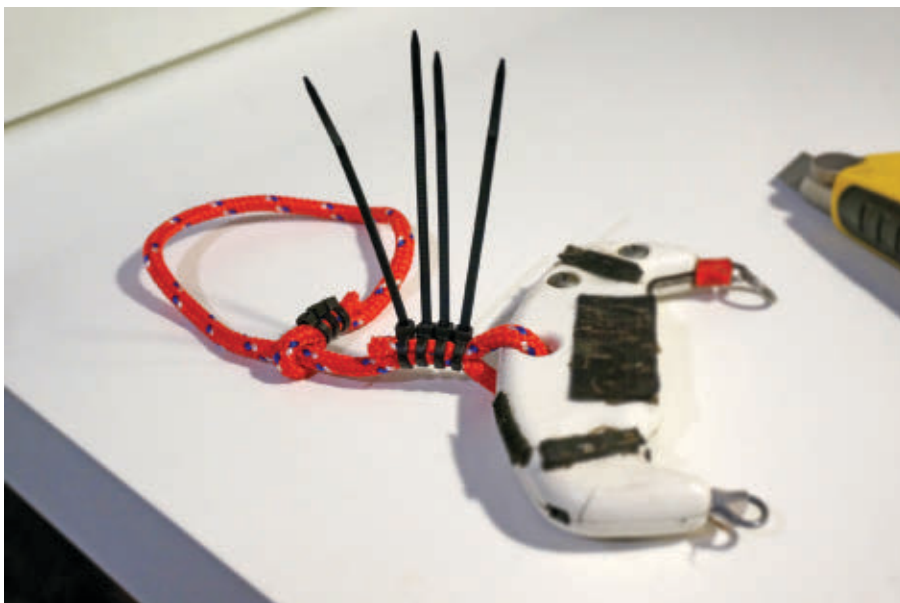
The cuts made a nearly perfect match. The hour or two of work it took to make the jig paid off big by both speeding up and improving the quality of my repairs.

DIY Heat Gun

When it comes to field repairs, I've seen a lot of creative solutions for tools that can be used on the go. Nothing tops Dave Fischer's Combat trailer. I've stayed in hotel rooms smaller than that trailer, and he has everything one could need, including electricity, to build a new airplane or rebuild an engine at the field, if needed.

For those who do not have electricity at the field, there are a number of solutions that are available for generating heat to shrink covering on repairs or to de-warp airplanes. Last year, my flying buddy and constant innovator, Ole Bjerager, came up with a do-it-yourself heat gun setup for the field (see the photo). The core of the heat gun is a small butane torch and a computer CPU fan that is powered by a small LiPo battery. The aluminum cone focuses the air and provides a shield from the direct flame.

I haven't been brave enough to try it on one of my own airplanes yet, but Ole says



The author's new safety strap is ready for the 2020 season. The cable ties are a convenient and low-profile solution to binding thick rope to the handle.

CONTROL LINE COMBAT

it works great as long as you don't tip the torch upside down while it's running.


Team USA 2020

In July 2019, the US F2D Team Trials were held at the International Aeromodeling Center in Muncie, Indiana. Dave Edwards again stepped in to run the event. It was a good contest, and ran smoothly all the way through.

The weather was great all weekend until the very last match, when a classic Muncie storm barreled in and inundated us in a matter of seconds. The match between Chuck Rudner and Jeff Johnson had to be postponed until the next morning.

When the dust settled, the team that will represent the US at the 2020 FAI F2 World Championships for CL Model Aircraft, to be held August 10-15 in Wloclawek, Poland, was Radik Magzianov, Florida; Chuck Rudner, California; Mark Rudner, California/Denmark; and Junior team member Sasha Nadein, Pennsylvania/Ukraine. Rylan Ritch will also compete in Poland as the returning Junior world champion.

Jeff Johnson and Aimee Olson earned the first and second alternate spots. Because of a recent change in the FAI rules that introduced a women's category for the World Championships, Aimee might also

get a chance to compete in Poland. She flew very well all weekend at the Team Trials, and it will be great to have her with us representing the US. 

SOURCES:

Miniature Aircraft Combat Association (MACA)

www.macasite.org

2020 FAI F2 World Championships for CL Model Aircraft

<https://bit.ly/2PzdYZF>

www.facebook.com/2020faif2abcdworldchampionships



Ole Bjerager is shown with his heat gun at the Penguin Club outside of Copenhagen, Denmark. The small butane torch provides the heat, and a CPU fan driven by a small LiPo battery provides the airflow. The aluminum cone channels the air and provides a shield from the direct flame.



A saw guide, such as the one shown, can be helpful for making precise cuts when splicing wing parts together.

JL Products

Make it a Flawless Flight with the RotoFlow Fuel System

New Design

- Brass rotary fuel pick-up uses centrifugal force to ensure constant and reliable contact with fuel
- Three year warranty
- Zero maintenance
- Harder-hitting throttle
- No internal hoses or connections to harden, or leak air or fuel
- Works with gas, glow fuel and smoke oil
- Improved design incorporates PTFE bearings

16 oz. 20 oz. 24 oz.

- 9 sizes, 10 oz. (\$29.95) – 50 oz. (\$49.95)

See our full line at jlproducts.net • (262) 628-3506 • info@jlproducts.net

Get Off to a Perfect Start with the Quik Fire Fuel Balancer and Filter

- Holds 1/4 ounce of fuel at the engine for an instant start and a constant supply
- Smooths out fuel demand and irregular fuel surges from extreme flight
- Eliminates two fuel line connections
- 2 or 3 line designs, both \$24.95

Patents pending

To fuel tank

To fuel dot

GET READY FOR AN
ALL NEW



JUNE 7-13, 2020

BEGINNER TO ADVANCED RC PILOTS AGES 13 TO 17

SEE PETE BITAR'S
WORKSHOP AT
THE PURDUE
POLYTECHNIC
CENTER



TWIN FUSE
CHALLENGE
WITH MASON
HUTCHISON
FROM
STRATOLAUNCH



FOR MORE INFORMATION, VISIT CAMP AMA ONLINE:

AMAFLIGHTSCHOOL.ORG/CAMPAMA

OR CONTACT THE AMA EDUCATION DEPARTMENT:

EDUCATION@MODELAIRCRAFT.ORG



FREE FLIGHT SCALE

Vance Gilbert launches his Flamingo into the gray, blue, and white of a typical Geneseo NY afternoon sky. Photo by Thomas Hallman.



2019 FAC NON-NATS

By Dennis Norman | dennis@airacemodels.com



VIEW MORE PHOTOS

Check out additional content at www.ModelAviation.com/bonuscontent.

A HEART ATTACK prevented me from attending the 2019 Flying Aces Club (FAC) Non-Nats that was held in Geneseo, New York, on July 16-20, 2019. Many thanks to Stew Meyers, Henry Toews, Dave Mitchell, and Rick Pendzick for sending me their impressions and recollections of the event. Thanks also to Tom Hallman, Pete Kaiteris, Dave Mitchell, and Charlie Sauter for providing photographs for this column.

A torrential thunderstorm hit Geneseo on the evening of July 17. Tom Arnold and his brother, Herb, arrived after blowing two tires while en route, but they were still in good moods. The weather was extremely hot starting that Thursday, but no additional rain fell during the remainder of the contest—there was just aggressive wind.

Many contestants started the day by renting golf carts, which greatly helped with retrieving models and making their way smoothly around the flying field.

Attendance is usually lower at a Non-Nats contest. This year, 86 FAC members registered, but only 71 actually attended. Of those in attendance, 64 were Open/Seniors, four were Juniors, and three did not fly. There were 876 airplanes entered, but only 437 flew. There were 1,106 flights recorded, which averaged one every 61 seconds.

Embryo Endurance and World War II Combat each had 25 entries and were tied for events having the highest number of entries. Matthew King entered 44 airplanes for the most by an individual contestant. Wally Farrell made the most flights with 73.

Volaré Products and Easy Built Models set up displays to meet the wants

Rich Weber built this de Havilland Airco D.H.4 biplane. When the "hands" disappear, will it have a pilot to safely fly it? Hallman photo.



Erika Escalante launches her handsome P-51D red-tailed Mustang during the WW II Mass Launch event, in which she finished fourth. Well done! Photo by Charlie Sauter.

or needs of attendees. The National Warplane Museum in Geneseo had a C-47 and a B-17 on display and offered the crowd unrestricted access to both. During the event, Dr. Richard Zapf conducted an amusing, but informative, trivia contest on aviation.

Some models were never to be seen again. Dennis Ruhland's Folkerts SK-2 won

the Greve Race Mass Launch with a flight so high and fast that it was last seen near the campus of the State University of New York in Geneseo, never to return.

Vance Gilbert had an epic flight that ended with the loss of his handsome Focke-Wulf A21 Möwe. After a 15-minute flight, the model disappeared in the vicinity of the Geneseo River. The search continued the following day but was unsuccessful. The Möwe was presumably "lost at sea."

On Saturday, July 20, the inaugural FAC National Air Race Mass Launch was held. It included high-wing and low-wing aircraft, biplanes, and anything else that was not flown in either the Greve Race or Thompson Race events. Strong wind scattered models over the bean fields and kept several contestants from recovering their aircraft in time for the next round. Ross Mayo ultimately won the event with his 24-inch wingspan Easy Built Orion.



Static scale judge Wally Farrell eyes Mike Kelly's impressive Supermarine Spitfire Mk I before the airplane won fifth place in the Battle of Britain event. Sauter photo.

FREE FLIGHT SCALE



Vance Gilbert's lovely Stinson floatplane climbs into an idyllic Geneseo NY sky en route to eastern Lake Erie for a water landing. Photo by Dave Mitchell.



Wondering how Dennis Ruhland's Folkerts SK-2 won the Greve Mass Launch event? It punched a hole in the sky high above the competition! Mitchell photo.



No article about the 2019 Non-Nats would be complete without a tribute to the late Tom Nallen (L), shown here with his son, Tom Nallen II, at Geneseo NY in 2010. More information about Tom is in the *Model Aviation* Digital bonus content. Photo by Pete Kaiteris.

SOURCES:

Easy Built Models

(334) 358-5184
www.easybuiltmodels.com

FAC

www.flyingacesclub.com

Dave Mitchell, FAC president

cinc@flyingacesclub.com

National Free Flight Society (NFFS)

www.freeflight.org

Tom Hallman

(610) 395-5656
www.hallmanstudio.com

Stew Meyers, FAC news editor

(301) 803-0577
newsletter@flyingacesclub.com

Rick Pendzick, FAC treasurer

(781) 264-6012
join@flyingzcesclub.com

Henry Toews

(416) 565-4702
henry.toews@yahoo.com


National Warplane Museum

(585) 243-2100
www.nationalwarplanemuseum.com

Volare Products

(269) 420 9477
www.volareproducts.com

Because 2019 was the 50th anniversary of the Apollo moon landing, a local rocket club launched two rockets in commemoration during the midafternoon on Saturday. The first, an approximately 10-foot V-2 replica, rose spectacularly with a deafening roar, but it quickly malfunctioned and, without a parachute to slow its descent, buried itself nearly 3 feet into the earth! It took almost an hour to dig it out! The second rocket was also large and launched directly over the flightline. It flew out of sight, thankfully without a malfunction.

Dave Mitchell, the FAC president, was somewhat stunned by the launches and quickly determined that future FAC events would not include rockets! 

DONATIONS

Listed are people and organizations that donated \$10 or more in December 2019. 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.



FOUNDATION NEARLY REACHES ITS GOAL

THE AMA FOUNDATION is proud to share with its supporters that nearly \$293,000 was raised for AMA programs in 2019. We want to thank every person who contributed to this cause. Because of you and your support as a member and/or an AMA Foundation supporter, 2019 was prosperous. Thank you for supporting model aviation and for your passion for the hobby.

Help support the AMA now and in the future with a gift to the AMA Foundation Endowment Fund. This fund will be used for continued growth of the Academy's benevolent programming.

amafoundation.modelaircraft.org/endowment

\$1,000 UP TO \$15,000:

Alexander W. Barbee Jr. - GA - \$2,400 contribution to AMA Foundation General Fund

Robert F. Davey - CA - \$1,000 contribution to the AMA Foundation General Fund

Bob Jervis - OH - \$5,000 contribution to the AMA Foundation General Fund (New Heritage Society Member)

NMPRA - TX, \$5,935 contribution to the Cliff and Nancy Telford Memorial Scholarship

Charles A. Radosta - IL - \$1,000 contribution to the AMA Foundation General Fund (new Lifetime Donor)

Clyde H. Riley - AZ - \$5,000 donation to the AMA Foundation Education Fund

Lou M. Sardella - NV - \$15,000 donation to the AMA Foundation General Fund (new Heritage Society Member)

\$500 UP TO \$999.99:

Keith A. Angelo - CA - \$500

Don Edberg - CA - \$500

Jay S. Gerber - PA - \$600

Warren W. Knapp - NY - \$500

Kenneth Marron - PA - \$500

Frank Tiano - FL - \$600 (Florida Jets and Top Gun Invitational)

Jim Tiller - SD - \$500

\$100 UP TO \$499.99:

Richard C. Adamonis - CT

Andrew E. Andrews - NC

Willem A. Anemaat - KS

Lauren E. Anstead - WA

Terence R. Antoszewski Sr. - KS

Bruce A. Baier - WI

Bren Bailey - NC

T.J. Barcanic - CA

Robert J. Beasley - AL

David R. Becher - NV

Michael H. Bedharek - OH

Hugh M. Bennett - CA

Scott E. Black - IN

Preston Blake - FL

Thomas H. Bootz - IN

Colin Bosch - AZ

Daniel R. Bott Sr. - AZ

John W. Bracey - FL

Robert M. Brooks - TN

Victor Bunze - MO

Paul Busse - MO

Paul R. Caisse - NH

Munroe C. Clayton - NY

Donald Coe - WI

Stephen M. Colligan - AK

James M. Conerly - CA

Stanley Conway Clough - FL

Tracy L. Cox - IL

Michael J. Dascoli - MA

Xavier Deprez - LA

George W. Dowell III - VA

Du-Bro Products, Inc. - IL

Doug K. Dubuque - WA

Milby D. Dunn II - TX

Dan Febrorriello - SC

Charles R. Fee - OH

George W. Flathers - VA

Stephen C. French - MI

Alex Garibay - CA

Frank S. Gattolin - IL

Charles A. Goodman - CA

Felix Gora - OH

Rege E. Hall - IN

Richard D. Hanson - AZ

Frank R. Harper - WA

Frank L. Hollahan - PA

Jeff G. Hollfelder - CA

Jeffrey W. Johnson - UT

Larry Johnson - NE

Samy S. Kamienowicz - CA

John A. Kiefer - MI

James Kohrman - OH

Brent C. Kovar - NV

Joseph M. Lachowski - NJ

Neal E. Lambert - IN

Lars E. Lavine - WI

Michael J. Lebwohl - NJ

David M. Leifheit - IL

Richard C. Lindberg - NM

Jim W. McConnell - OR

James A. McGlinchey - NY

Samuel W. Megowen - CA

Steven K. Miner - AZ

Walter R. Morgan - CA

Arthur Murphy - TX

David M. Napier - CO

Mark G. Nosek - OH

Robert A. Obenberger - TX

Rick Paquin - AZ

Michael E. Peck - CA

Terry A. Peterson - IA

Daniel N. Petroff - CA

Paul J. Polillo - AZ

Ronald A. Regan - TX

William R. Rigby - KY

James "Jim" E. Riley - NV

Matthew A. Selig - IN

Michael R. Sjulian - NM

David J. Stutman - NY

Peter R. Vanhorn - TX

Joseph W. Vermillion - MI

Lanny P. Waguespack - CO

John R. Warner - CA

Christopher Webb - NY

Shi-Keng Yang - MD

D.H. Youngblood - TX

\$25 UP TO \$99.99:

Jim Abrames - CA

Lukas Ackerman - CA

Thomas J. Acord - AR

Richard Adamo - WA

Bill Althaus - KY

Jarib Alvarez - FL

Bruce N. Amundsen - CT

Darrell L. Anderson - MT

Jeffrey A. Anderson - AK

Jurgen Appis - NJ

Andrew Argenio - RI

John C. Aslanian - CA

Nicholas Bain - TN

Jim Barchuk - FL

Jeff A. Barnes - IN

Edmund C. Bassick - CT

Tom Bauer - KS

Christena L. Baugher - IN

David B. Beardsley - WA

Peter Becker - WA

Evan J. Beigel - CA

Richard A. Bekielewski Jr. - IL

Kendall T. Berkey - FL

Brent Bernard - LA

Joe Bessette - CT

Alan Bier M.D. - GA

Jonathan D. Bier - MA

National Model Aviation Museum Patrons

Bill Althausen - KY	Rodger A. Hays - LA
Lauren E. Anstead - WA	James M. Hickey - NV
Terence R. Antoszewski Sr. - KS	James K. Hoffer - NM
Alexander W. Barbee Jr. - GA	John A. Kiefer - MI
Robert J. Beasley - AL	Warren W. Knapp - NY
Peter Becker - WA	Neal E. Lambert - IN
Alan Bier M.D. - GA	Bernard H. Marion - MA
Doyle S. Blevins - NC	Frank J. Mauro - NJ
Daniel R. Bott Sr. - AZ	Richard Meserole - NY
Billy J. Brooks - NC	Jorge J. More - IL
Kenneth P. Chepenik - NC	Paul E. Nelson - MA
Tracy L. Cox - IL	Mark G. Nosek - OH
Robert W. Cushman - NH	Philip R. Paynter - FL
Ronald A. Dailey - FL	Michael E. Peck - CA
Brooks Davis DDS - TX	Ronald A. Regan - TX
Jason Della Valle - PA	Randall J. Roman - GA
Eric W. Dittman - AK	William P. Sanders - GA
James H. Dodsworth - FL	Robert H. Shaw - TN
George W. Dowell III - VA	David T. Shields - AZ
Doug K. Dubuque - WA	Robert J. Shull - KY
Jeffrey N. Elliott - TN	Jeffrey J. Sikorski - MI
Scott D. Elmore - GA	Thomas Sollich - Germany
Louis M. Escalona - TX	David J. Stutman - NY
Paul Faccione - NY	Jeffrey W. Swan - MD
Alex Garibay - CA	Joseph W. Vermillion - MI
Dennis L. Goodrich - IA	John R. Warner - CA
Roger Gregory - CA	Herbert C. Ziegler - NY
Frank R. Harper - WA	

Karl J. Bihl - FL	Doug E. Bracey Jr. - FL
Caleb Billingsley - GA	Derek Bradley - FL
Ronald D. Black - KS	Robert J. Brassell - OH
Ted L. Blankenship - MO	Billy J. Brooks - NC
Doyle S. Blevins - NC	Gregory M. Brown - FL
Mike Bornhoff - CA	Anthony T. Brunton - TX
Ronald B. Borovec - WA	B's Lawn & Pest Control Services - NV
Andrew Boswell - CA	Dennis C. Buchanan Jr. - AL
Jeffrey J. Bott - IN	Chad F. Budreau - IN
Lawrence M. Bourassa - MN	John Burnap - CA
Fred M. Boyajian - MA	Gary A. Burrows - AZ

Thank You for Donating During #GivingTuesday!

Bren Bailey - NC	Scott Krause - NJ
Richard A. Bekielewski Jr. - IL	Joseph M. Lachowski - NJ
Daniel R. Bott Sr. - AZ	Richard C. Lindberg - NM
Joseph C. Flint - OH	Bill A. Mahan - LA
Charles A. Goodman - CA	James A. McGlinchey - NY
Jeffrey E. Hughes - VA	Herbert B. McKahin - IA
Kyle J. Jaracz - IN - for Camp AMA	Edward C. Mundy - VA
Bill Johanson - SC - in honor of Fred Johanson	Rick Paquin - AZ
Jeffrey W. Johnson - UT	Young Scarborough - TX
Vincent M. King - MI	Michael R. Sjulín - NM
	Darrell F. Thorp - CA

Matt E. Bushore - MI	Stephen Q. Dean - TX
Chuck W. Byrd - OK	Victor Cruz Dejesus - PR
Brian G. Campbell - WA	Jason Della Valle - PA
Jorge E. Campos - TX	David W. Demick - NY
Daniel Carambot - GA	Jerome A. Dennis - ME
Darin Celino - LA	Joseph L. Denny - IN
John Chan - NY	Gustavo Diaz - PR
Jamie Chapman - IN	Mark A. Diblasi - SC
John A. Chavez Sr. - CA	James H. Dicks - CT
Bryan L. Cheatwood - OK	Dale G. Dietz - MO
Kenneth P. Chepenik - NC	Eric W. Dittman - AK
Elliott Chernoff - PA	Rhea E. Dobson - SC
Paul Clifton Jr. - AZ	James H. Dodsworth - FL
Robert L. Cobb - CA	Roland B. Doss - WV
Stephen W. Coggins - SC	Manuel D. Duarte - CA
David Colgan - IA	James Dulac - TX
Manuel H. Collier - CT	Michael L. Duncan - IN
Tygue L. Collins - NY	Steve Eichenberger - AZ
Craig A. Condit - MA	Jeffrey N. Elliott - TN
Scott S. Cooper - NJ	John H. Ellis - OK
David R. Cotton - TX	Scott D. Elmore - GA
Franklyne Cox - TX	Thomas Emery - FL
Bill Cress - NJ	Louis M. Escalona - TX
Robert W. Cushman - NH	Paul Faccione - NY
Douglas A. Dahlheimer - OH	Richard Fagersten - NJ
Ronald A. Dailey - FL	Brian Farrell - OH
Bruce L. Dalen - CA	Nigel S. Fay - NV
Robert H. Daley Jr. - WV	Ronald Featherston - TX
Bobby Darroll - CA	Jim Fee - CA
Harry Daugherty - VA	Gordon J. Fenley - LA
Brooks Davis DDS - TX	Eddie L. Fleming - NC
Bill Dawson - CO	Joseph C. Flint - OH

Walk of Fame bricks

T.J. Baroanio - CA
Shi-Keng Yang - MD

William A. Floyd - NV
Steve Franks - MA
John C. Fryling - WA
Brandon Gaither - PA
Jay L. Gatchett - OH
Ronald T. Gauthier Jr. - NY
Japhet Gaztambide - FL
Leslie T. Gelbaum - GA
Todd George - WA
Peter J. Georgio - CA
Joseph P. Giasi Jr. - FL
Richard R. Gilliland - CA
Jorge M. Giroud - FL
Dallas C. Gleason - AR
David W. Goesch - CA
Craig Goldenson - CA
Dennis L. Goodrich - IA
Gary L. Graham Sr. - TX
Frank M. Graziano Jr. - NC
Roger Gregory - CA
Joyce Hager - IN
David Haggard - FL
Michael Hales - OR
John A. Hamel - NC
Kenneth L. Hamlin - WA
John D. Hann - IN
Jack M. Hardy - AZ
Thomas Harpring - FL
Daryl Harris - IN
Richard N. Hart - GA
Tom Hartvigsen - TN
Paul Hatcher - NC
Warren Hatfield - GA
Andreas Hau - TN
David J. Hayes - NC
Jimmy R. Hays - OK
Rodger A. Hays - LA
James R. Heady - IN
John D. Heeter - CA
Lester Helveston - NH
Albert A. Hemphill - CA
Edgar Herbert - FL
Rafael A. Hernandez - OH
James M. Hickey - NV

Dale Hickl - TX
Thomas W. Hickman Jr. - TX
Gary E. Himes - MO
James K. Hoffer - NM
Jerry G. Holder - TX
John D. Honchak - IL
Robert E. Hottle - NC
Louis E. Hudson - NC
Jeffrey E. Hughes - VA
David Hurlston - TX
James A. Hurst - WI
Hervey S. Hutchins - CO
Arsenio Ibay - MD
Indian River Kontrol Society - FL
Kenneth Jablonski - MI
Barry R. James - WI
Richard S. Jang - CA
Bill Johanson - SC
John D. Jones - WV
Louis N. Jungheim - IN
Glen A. Just - IA
William Kast - CO
Robert A. Keck - TX
Thomas Kelley - MI
Harold E. Kellogg - CO
Thomas W. Kerr - FL
John B. Kidney - MO
Jim W. Kiloh - TX
Vincent M. King - MI
Douglas R. Kittle - CA
Tim R. Klem - KY
Howard P. Klemmetsen - GA
Paul D. Kling - CO
Donald J. Klopp - PA
Dennis W. Kracke - WA
Scott Krause - NJ
Michael J. Kraynyak - PA
Harlan J. Krohmer - IL
Yury Kuznetsov - TX
Joseph F. Lacchia - CA
Jeffrey M. Landsman - RI
Paul R. Lang Jr. - CA
Steven T. Lang - IL
Richard F. Lange - FL

Jeffrey A. LaPierre - TN
Lee Laroque - WI
Jeff W. Lawrence - CA
George R. Leblanc - FL
William J. Lentz - MI
Michael L. Leonard - CA
Robert Leventhal - CT
James J. Liang - CA
Mack A. Lindsay - SC
Jon K. Little - NC
Michael Logan - GA
Stephen D. Loupot - TX
Paul R. Low - VT
Michael G. Lukens - NV
Neal D. Lutke - SD
Chris D. Lynn - TX
Bill A. Mahan - LA
Jeffrey P. Majnarich - OR
William C. Malloy II - OH
Richard Mansuetto - WV
Bernard H. Marion - MA
Frank J. Mauro - NJ
Angelo L. Maymo - IL
Giorgio Mazzini - FL
Stanley H. McCall Jr. - KS
Charlie J. McClary II - IL
Jay A. McClellan - NY
Herbert B. McKahin - IA
Theodore E. McNeal - TX
Dennis K. Mead Sr. - TX
William Meese - AL
Elio T. Mendoza - FL
Richard Meserole - NY
Tom D. Mettler - CA
Dennis L. Miendersma - IL
Scott A. Miglicio - PA
Rowan J. Milner - FL
Hormuz Minina - GA
Robert Mohr - CO
Donald C. Monrad - SD
William A. Moody - WA
Nathan D. Moore - IL
Patty Moore - WA
Jorge J. More - IL
Francis B. Morganti II - NM
Dean Morrison - NJ
Charles K. Morton - SC
Ronald Moyer - MD
Edward C. Mundy - VA
James L. Myers - PA
John S. Mynster - FL
Derrick Nedzel - CO
R. Mike Neely - CA
Paul E. Nelson - MA
John M. Nied - TN
Karl M. Nordstrom - FL

Curtis W. Oberg - FL
Liam J. O'Connor - CA
Philip Y. Okita - CA
Robert O'Neal - IL
Dewalt Oosthuizen - AZ
David A. Ortmyer - FL
Joseph F. Owens III - FL
Robert S. Parker - CA
Elbert Parkes - MI
Jimmy R. Parrish - FL
John W. Pawlak - NY
Jon S. Payne - CA
Philip R. Paynter - FL
Robert R. Pазey - PA
Craig S. Peck - PA
Donald K. Peckinpaugh - CA
Robert M. Peiser Sr. - FL
Kenneth M. Pelles - CO
Michael Perasic - CA
Angel L. Perez - NJ
Bruce R. Peters - FL
Harold Pfreundler - FL
Jason T. Plumer - CA
Edward J. Pollack - PA
Robert A. Pollard - MA
Jim E. Porep - CA
John Prats - IL
Jorge J. Prieto M.D. - IL
Chuck W. Pringle - NV
Arthur J. Rahn - CA
Allen T. Rausch - IL
Wes A. Renken - AK
Brian C. Rhoads - AZ
Christopher R. Rhodes - VA
James H. Rice - TX
Linda M. Rice - TX
John Ritter - MD
Emery E. Roberts - WA
Ian Roberts - FL
Tommy Roberts - TX
Warren D. Roddy - IL
Peter Rojeski Jr. - SC
Randall J. Roman - GA
Bruce Romanello - FL
John P. Rosig - NJ
Robert J. Rourke - VA
Richard A. Ruhl - OK
Randolph B. Ryman - SC
Robert J. Saber - MI
William P. Sanders - GA
Walt M. Santos - OR
John T. Sarhage - NJ
Young Scarborough - TX
David J. Schenck - CA
Donald J. Schiltz - CA
Herbert W. Schlickemaier III - VA

DONATIONS

In honor and in memory of ...

Edmund C. Bassick - CT - Foundation Education Fund in Memory of Dave Jackson

Christena L. Baugher - IN - AMA Foundation Endowment in Memory of brother John L. Baugher

Du-Bro Products, Inc. from the Du-Bro employees - IL - \$180 - Dewey O. Broberg Memorial Scholarship in Memory of Dewey O. Broberg

Adrienne V. Osborne - CA - Foundation General Fund in Memory of Robert Elling

Jim Tiller - SD - \$500 - Foundation General Fund in Memory of John Risdon, longtime District IX aviation enthusiast. This donation is from the sale of his estate.

James C. Schoonover - ID
Willard Schroder - AZ
Daniel N. Schroeder - FL
Thomas S. Scott - OH
Melvin L. Sellers - GA
Paul A. Serotta - CA
Robert H. Shaw - TN
Robert M. Shaw Jr. - MA
Ron D. Shaw - CA
Patrick J. Sherman - OR
David T. Shields - AZ
Robert J. Shull - KY
Jeffrey J. Sikorski - MI
Kevin Simpson - NC
Vernon V. Sisney - TX
Matthew S. Skiba - NY
Clark R. Smith - TX
David L. Smith - MD
Stephen C. Snyder - DE
Thomas Sollich - Germany

Richard Sonheim - CA
Thomas Sontag - MN
James J. Sorenson - CA
William T. Sowards - OH
Bob Sowder - VA
William K. Spillman - WY
Jack E. Spitz - IL
Howard A. Sprintz - NY
Dennis C. St. John - CA
John G. Stainforth - TX
Douglas B. Stewart - OK
T. Doug Stewart - WA
Randolph G. Strang - GA
Charles B. Swain - KS
Jeffrey W. Swan - MD
Phillip L. Tallman - WA
Jerry W. Taylor - NC
William E. Temple - AZ
Wyatt L. Terry - GA
Norm Teter - IL

Guy C. Theard - LA
Peter R. Thom - CA
Sam L. Thomas - WV
Darrell F. Thorp - CA
Derek E. Townsend - IN
Leo K. Trisollini - AR
David C. Trogdon - NC
Lorne M. Trottier - FL
John P. Turco - PA
Eduard J. Van De Beld - NH
Robert H. Van Der Kloot - MA
Frank W. Vassallo - CA
John Vitek - HI
William B. Vogetley - TX
Gary R. Walker - PA
David Wallace - UT
Jeffery Walsh - OH
Michael D. Walther - TX
Peter Walton - NY
Patrick H. Waugh - ME

Fredrick Weaver - OR
Robert B. Weidlich - VA
David Whittington - NC
Richard G. Wick - TX
Steve D. Wiemholt - OR
James S. Willis - CA
Jerry R. Wilson - GA
Paul A. Winters Jr. - FL
Douglas H. Wittenberg - NV
James M. Wolgamuth - WA
Patrick A. Wood - OR
John Wylie - CA
Keith Wylie - NY
Shane H. Yanagisawa - MD
Igor Yegorov - OR
Michael V. Young - FL
Barry A. Zeigenfuse - PA
John R. Zengel - NY
Herbert C. Ziegler - NY


Donor levels represent only individual donations made in December 2019. Some donors may qualify for the next donor contribution level based on cumulative giving. 

PHOTO CREDIT: SHUTTERSTOCK / YUGANOV KONSTANTIN





IN LOVING MEMORY

of our friends who have taken their final flights

By Angie Martin, Membership director | angiem@modelaircraft.org

Brad Banks, *Springdale AR*
 Robert Bates, *Morgantown WV*
 George Benson, *Mill Valley CA*
 Thomas Berry, *Bellevue WA*
 Joe Berry, *Lufkin TX*
 Lee Bishop, *Molalla OR*
 Charles Bock Jr., *Incline Village NV*
 David Bowerman, *Dayton TN*
 Bruce Brownlee, *Roanoke AL*
 John Bullman, *Wayne NJ*
 Ronald Carroll, *Kansas City MO*
 Don Chase, *Midland TX*
 Patrick Connolly Sr., *Williamsville NY*
 Thomas Cope, *Silverdale WA*
 Lawrence Coslick, *Saint Louis MO*
 Donald Courter, *Davenport IA*
 Scott Coyer, *Shakopee MN*
 Robert Davis, *Longmont CO*
 Jack Deibert, *Sumner WA*
 Robert Duckworth, *Mineral Wells WV*
 Robert Elling III, *Castro Valley CA*
 Paul Elliott, *Long Beach CA*
 Richard Etherington, *Wichita KS*
 John Festerman, *Harrison Township MI*
 Rick Fite, *Hemet CA*
 Richard Fletcher, *Leominster MA*

William Foster, *Gibbon NE*
 Mark French, *Lancaster WI*
 Eric Gay, *Whitehouse OH*
 Robert Gizzie, *Saint Charles MO*
 Russell Gross, *Corona CA*
 Ferdinand Harris Jr., *Charlottesville VA*
 William Hatcher, *Naples FL*
 Gerald Hellums, *Waco TX*
 William Henn, *Harwich MA*
 Leroy Hickey, *Winfield IA*
 George Hill, *Summerville SC*
 Franklin Hobbs, *Kingsville MO*
 Leon Holton Sr., *Wauchula FL*
 Edward Jeschelnic Jr., *Willowick OH*
 Mark Johnson, *Spring Valley CA*
 Samuel Karpel, *Somerset NJ*
 Sheldon Kaye, *Naples FL*
 Dare Keelan, *Houston TX*
 Earl Keffer, *Thornton CO*
 William Kraftchak, *Sebastian FL*
 Mark Kruzal, *Albuquerque NM*
 Kenneth Kuhn, *Jim Thorpe PA*
 Frank Lacava Jr., *Deerfield Beach FL*
 Robert Langelius, *White Plains NY*
 Victor Lee, *Sunnyvale CA*
 James Loew, *Chippewa Falls WI*

Albert Lynch, *Chicago IL*
 Alvin Madler, *Baker MT*
 Benedict Mariano, *Greensburg PA*
 Carl McCain, *Peru IN*
 Stephen Miller, *Cape Canaveral FL*
 Arthur Miller, *Omaha NE*
 Thomas Mitchell, *Pinckney MI*
 Tony Naccarato, *Burbank CA*
 Tom Nallen, *Chicopee MA*
 Michael Nassise, *South Easton MA*
 Tony Newman, *Blythe GA*
 Robert Nicholas, *Torrington CT*
 Alex Ogilvie III, *Weirsdale FL*
 Nolan Parmer, *Prescott AZ*
 Malcolm Pegram, *High Point NC*
 Frederick Perdue, *Marian VA*
 Norman Pollard, *San Antonio TX*
 Charles Powell, *North Versailles PA*
 James Powers, *Houston TX*
 David Pratt, *Friendship NY*
 Robert Rachau, *Selinsgrove PA*
 Edward Rambo, *Torrance CA*
 Frederick Rehner, *Roanoke Rapids NC*
 Ronald Remling, *Sheboygan WI*
 John Rufner, *Auburn IN*
 Jerry Ruthven, *Lakeland FL*

Lyle Sams, *Kingsport TN*
 William Sanderman, *Colorado Springs CO*
 Jonathan Sartain, *Warrior AL*
 Edward Schneider, *Victoria TX*
 Shawn Schneider Jr., *Loveland CO*
 Daniel Schwan, *Prescott AZ*
 Stuart Shipley, *Arlington TX*
 Richard Shortuse, *Riverview FL*
 John Simmermon, *Newark DE*
 Thomas Sirmon Sr., *Pensacola FL*
 Edward Stout, *Portales NM*
 Elliot Sussman, *Idaho Falls ID*
 Wallace Tallent, *Seymour IN*
 Philip Thomas, *Albuquerque NM*
 Eric Trani, *Arvin CA*
 Loren Tregellas, *Wichita KS*
 Leroy Wallace, *Broken Arrow OK*
 Dennis Wallen, *Bloomington IL*
 Eugene Waters, *Oak Ridge TN*
 Stuart Weckerly, *Dearborn MI*
 Edward White, *Jacksonville FL*
 Glenn Williams, *Mohave Valley AZ*
 Richard Wood, *Mashpee MA*
 Ernest Worley, *Blairsville GA*
 Richard Wright, *Ridgecrest CA*
 Darrell Wright, *Sapulpa OK*



⇒ *From the Copilot's Seat*

INAUGURAL AMA NATIONAL FUN-FLY PLANNED

By Randy Cameron, Executive Vice President | flyrc@modelaircraft.org

I hope everyone is having a great year so far. I did make it to two of my local clubs to get some New Year's Day flights in. It was great—meaning no crashes for me—with temperatures in the lower 50s, which is unusual in my area during this time of year. Our thumbs didn't freeze as they usually do, although it was windy.

Many have asked me questions about the FAA's National Proposed Rule Making (NPRM) for Remote Identification of Unmanned Aircraft Systems. December 31, 2019, was the official release date, with a short 60-day comment period. I expect that by the time this is published, we will be nearly at the end of the comment period.

I hope AMA has been able to keep you all informed and up-to-date with the progress, and you have had an opportunity to make comments either online, through the postal service, or by fax. Please stay tuned to AMA's social media, blogs, emails, and website to ensure that all of our voices are heard at the right time. I won't go into the NPRM for Remote ID of UAS here, but you will be able to find and keep up with information on the issue as indicated.

Please stay tuned to AMA's social media, blogs, emails, and website to ensure that all of our voices are heard at the right time.

On a much happier note, I'd like to let everyone know about the inaugural AMA National Fun-Fly. It is scheduled for July 24-26, 2020. Details are being worked on as I write this.

One reason for hosting this event is that AMA's bylaws require the organization to have an annual membership meeting. In the past, we've held these meetings at other

locations such as during Joe Nall Week, AMA Expo East and West, and other gatherings. Many of us felt that it would serve us well to have a flying event at the International Aeromodeling Center (IAC), in Muncie, Indiana.

We hope that the event will bring members to the IAC who have not been there before. It will provide an opportunity to have open flying at the site, and for people to visit the AMA's facilities and National Model Aviation Museum.

The membership meeting is scheduled for the evening of Saturday, July 25, with a meal to follow. Bring your family, come just for the meeting, or better yet, come for the entire weekend for time to fly and explore AMA's Headquarters.

There is limited camping available on-site, if you wish to make camping reservations, do so soon because the spots fill up quickly. If you would like to volunteer to help with this event, feel free to contact me via email at flyrc@modelaircraft.org.

I hope all of your landings are good ones, and please be safe! I hope to see you in July. ✈️

NOMINATIONS DUE FOR AMA EXECUTIVE VICE PRESIDENT AND VICE PRESIDENTS IN DISTRICTS III, VII, AND XI

Nominations for AMA executive vice president and vice presidents in Districts III, VII, and XI are due at the Headquarters of the Academy of Model Aeronautics by June 26, 2020. Any AMA Adult member may submit a nomination.

To be eligible to discharge the duties of AMA executive vice president, a nominee must be a Leader Member of the AMA and must previously have served as a member of the Executive Council or associate vice president or as a Contest Board member for at least one (1) year.

To be eligible to discharge the duties of AMA vice president, a nominee must be a Leader Member of the AMA and must reside in the district.

(Nominees and nominators will be notified by HQ confirming receipt of nomination. If confirmation is not received within two weeks after you have sent your document, contact Joyce Hager at [765] 287-1256, extension 200.)

A letter of acceptance and a résumé of professional qualifications and model aviation experience from the nominee must be on file at AMA Headquarters by July 11, 2020, 15 days prior to the published meeting.

Nominating Procedure Document

Relating to Article IX

Candidate Guidelines:

- (a) No person may nominate himself/herself for office.
- (b) No person shall simultaneously hold two positions on the Executive Council. In the event a person holding an office is elected or selected to a second position on the Executive Council, that person must choose which of the two positions he/she will continue, such decision to be made within 48 hours of the announcement of the selection, or else the person so affected will be deemed to have selected to remain in the first office held.
- (c) Incumbent is automatically placed on the ballot, provided that he/she has been properly nominated and accepted, except that a 3/4 vote against may withhold the incumbent's name from the ballot (see Bylaws, Article IX, Section 2).
- (d) All nominations must be received at AMA Headquarters thirty (30) days prior to the convening of the Nominating Committee Meeting. All information must be submitted by electronic means.
- (e) Candidate must be a legal resident of the district in which the election is being held; this does not apply to the office of the President or Executive Vice President.
- (f) Candidate must be a current AMA member with Leader Member status (other qualifications apply to the office of the President and Executive Vice President, Article IX, section 3).

(g) No person elected to and serving as an active member of the Executive Council shall be paid for any regular column or article in *Model Aviation* magazine. Exception may be made for such articles as the coverage of special events provided prior arrangement was made for said article. Articles and columns printed in the "AMA News" section are not paid contributions. No paid columns may be submitted after the individual has been placed on the ballot.


Candidate Acceptance:

All correspondence must be submitted electronically to AMA HQ Muncie IN. Failure to meet all requirements, will disqualify said nominee.

(A) A letter of acceptance by the candidate and his or her résumé must be electronically submitted 15 days prior to the meeting. Included should be professional qualifications and model aviation experience, along with the items listed below.

1. Management experience.
2. Financial background.
3. Insurance employment and/or expertise.
4. Legal background.
5. Technical background, including areas of aeronautics, electronics (especially in radio frequency propagation and usage), acoustics (as related to noise studies and analysis), and other areas of engineering.
6. Aeromodeling background must be noted. The individual will be required, if elected to national office, to deal with questions related to all areas of aeromodeling and should have a broad-based background.

(B) Campaign statements must be received at AMA Headquarters 10 days prior to the Nominating Committee meeting. Campaign statements will not be read by any person until it is determined who will be placed on the ballot.

(C) Each candidate is allowed one AMA-financed campaign email push, which will occur simultaneously for each race. It will consist of a maximum of 750 words (a URL will be considered one word) and one current head shot photo if desired. The content of the email push is due to the AMA HQ 10 days after the nominating committee has determined the ballot. The content of the email must be sent electronically so that it can be cut and pasted by staff to eliminate error. The email will be sent 20 days after the nominating committee has set the ballot. 



I

Andy Argenio

Vice President

brandshobby@gmail.com
3 Sheila Ln., Smithfield, RI 02917
(401) 231-6901
www.amadistrict-i.org



ASSOCIATE VICE PRESIDENTS

Steve Brehm, Jamestown RI; (401) 423-1085; stbrehm@yahoo.com

Andrew Figlar, Shelton CT; (203) 513-8546; figlar335@att.net

James Gilliatt, Concord MA; (978) 369-9796; jegilliatt@cs.com

Steve Goler, Salem MA; (617) 373-0884; nipmuck2@comcast.net

Daren Hudson, Greenland NH; (603) 674-5809; dth7@comcast.net

Ray LaBonte, Standish ME; (207) 892-7994; rplabonte@aol.com

Tom Lavoie, N. Smithfield RI; (401) 824-6134; d2tw4all@yahoo.com

Joan Liska, Middletown CT; (860) 347-0257; jliska9000@sbcglobal.net

Mark Montella, Falmouth, MA; (508) 457-4984; montellamj@comcast.net

Thomas J. Puma Jr., North Clarendon VT; (802) 558-4439; usakingcat1@aol.com

Tom Rocheleau, Wethersfield CT; (860) 280-1701; trocheleau@cox.net

William Unghire, Newinton CT; (860) 978-5353; n1cnv@icloud.com

Ted Wojcik, Fremont NH; (603) 479-3799; tedwojcik@comcast.net

TECHNOLOGY AND SAFETY OFFICER

John Yassemedis, 5 Quarry Rd., Nashua NH 03062; (603) 321-8442; jyassemedis@comcast.net

EVENT SANCTION COORDINATOR

David Surwell, 24 Norwich Rd., Nashua NH 03062; (603) 888-2020; davidsurwell@comcast.net

District I

Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont

AMA District I continues to participate in air shows at New England airports to promote aeromodeling and aviation. The following report was submitted by Associate Vice President (AVP) Daren Hudson.

On September 22, 2019, AMA District I club members enjoyed returning to Concord Airport for the annual Wings and Wheels Granite State Airport Managers Association (GSAMA) STEM fundraiser. We have been involved with this event for several years with static displays and simulators. For the third year, we were proud to add Giant Scale and turbine flight demonstrations.

District I Vice President Andy Argenio, several AVPs, and members from District 1 clubs, including the Fremont RC Flyers, Southern New Hampshire Flying Eagles, Southern NH RC Club, Middlesex RC Club, and Plum Island Airport RC Club, volunteered as pilots, spotters, simulator



This was the third year that District I's air show performers entertained the public at the Concord Airport Wings & Wheels Event.



District I's air show flight team at the event included (L-R) Andy Fagen, Ted Wojcik, Daren Hudson, John Yassemedis, Mark Racicot, and Cody Wojcik. Not pictured are Chris McNaughton and Neil Cumbie.



AMA AVPs Daren Hudson (R) and John Yassemedis talk about model aviation with Civil Air Patrol cadets.


instructors, and static area monitors. As with all of our outreach events, we were able to engage with the young and old and answer questions about AMA and aeromodeling.

GSAMA representatives reported that there were thousands of attendees at the STEM fundraiser. We were able to provide two full hours of continuous demonstration flights, giving the crowd a great example of several model operations.

During the flights, we had a chance to narrate and explain the benefits and successes of the AMA safety programming.

These events are truly a team effort. Special thanks to all of our wonderful volunteers, air boss Greg Goodrich, and Rita Hunt from GSAMA for inviting us each year. We look forward to 2020.

An album and a full recap are available on Facebook. Search for "2019 Concord, New Hampshire, GSAMA Wings and Wheels District I Outreach."

Thank you, Daren, for this excellent report about district outreach efforts. 

District II

New Jersey, New York, Europe

On December 6, 2019 my wife, Bernice, and I attended the Syracuse Thunderbirds Aero Radio Society's (STARS) annual Christmas dinner. It was very generous of the STARS to invite us.

You might recall that the club also hosted the 18th annual AMA District II Fly-In on August 31 and September 1, 2019. We had a wonderful time at the dinner and talked about model aviation and what everyone was building.



Daniel Nans at the STARS dinner.

The STARS held a gift exchange at its club dinner. Some of the gifts were humorous and others practical. AMA Youth member, Daniel Nans, received a copy of the book *The American Fighter Plane*, illustrated by fellow AMA member Ted Williams, with text by Amy Williams. The gift was appropriate because Daniel has various scale aircraft in his fleet. I'm sure we'll be seeing Daniel's modeling achievements blossom.

Like the STARS, many AMA clubs in the Northeast celebrate the winter season with holiday parties,



Chris Reibert at the Rochester Aero Modeling Society on New Year's Day.

celebrations, and New Year's Day fly-ins. For most, these have become traditional annual events.

Flying all season in the north is challenging because the daytime temperatures can remain in the single digits for many days. Getting out and flying together in less than ideal conditions is rewarding and adds a new dimension to the hobby. Don't fly when weather conditions compromise safe flying, but certainly enjoy the sky the entire year.



The Batavia Radio Control Club Christmas dinner.



The Finger Lakes Air Pirates celebrate New Year's Day.



The Somerset RC Club Freeze Fly.



Winter flying with the Roxbury Model Aircraft Club.

Remember, it's not about what you fly, it's about the friends you make.



II

Eric Williams

Vice President

ropilot@nycap.rr.com

4242 Amanda Ln., Schenectady NY 12303

(518) 356-2057

www.amadistrict-ii.org

www.facebook.com/DistrictIIAMA



ASSOCIATE VICE PRESIDENTS

Dennis Andreas, Freeport NY; (516)

379-0135; danandreasdqhsd@juno.com

Frank Costello, Somerset NJ;

teams3fpv@gmail.com

Chuck Davis, Sayville NY; (631) 589-

7690; cjdavis60@verizon.net

Gary Fitch, Delevan NY; gmfitc@

hotmail.com

Gene Gavin, Staten Island NY; (718)

967-0598; Gavin1957@aol.com

Jon Gerber, Staten Island NY; (718)

984-5013; taxman846@aol.com

Frank Granelli, Rockaway NJ; (973)

625-4995; granellif@aol.com

Bill Hauth, Hamburg NY; (716) 649-

8582; toolmkr2000@msn.com

Tony Jensen, Binghamton NY; (607)

644-6873; tjravenpilot@gmail.com

Ron McGrath, North Chili, NY;

ronmcgrath@rochester.rr.com

Thomas Murray, Basking Ridge NJ;

(908) 766-5656

Anthony Rossi, Somerset NJ; (917)

320-2665; p510851@gmail.com

Leonard Max Smart, Morrisonville

NY; (518) 563-6878; hotrodsbymax@

charter.net

Alexander Szemere, Kendall Park NJ;

(732) 821-5641; drszemere@aol.com

Michael Wong, Mahwah NJ;

kingmeow@verizon.net

Herb Ziegler, Baldwinsville NY; (315)

857-6266; herbz1957@yahoo.com

RC EVENT SANCTION COORDINATORS

Tony and Trish Jensen, Binghamton

NY; (607) 644-6873; tjravenpilot@

gmail.com

CL/FF EVENT SANCTION COORDINATOR

AMA Headquarters, Competitions

Department; (800) 435-9262, Ext.

252; cpierce@modelaircraft.org



Mark Radcliff

Vice President
 mradcliff@suddenlink.net
 199 Heron Dr., St. Marys WV 26170
 (304) 684-2133
www.amadistrict-iii.org
www.facebook.com/ama.district.iii



ASSOCIATE VICE PRESIDENTS

Randy Adams, Fairfield OH; (513) 484-3318; r1rcpilot@aol.com

Mike Barbee, Delaware OH; (740) 362-5545; mabarbee@aol.com

Jeff Black, New Oxford PA; (717) 965-5634; jrblack1964@gmail.com

Dave Chisholm, Valencia PA; (724) 898-3386; dave@satcomdn.com

Nelson Gould, Macungie PA; (484) 515-7888; at6snj@ptd.net

Tony Husak, Harts Grove OH; (440) 283-7447; thusak1@windstream.net

Dan Luchaco, Sayre PA; (570) 888-1856; pafflyer23@gmail.com

Jim Martin, Franklin OH; (937) 260-0143; hooitelovesremy@yahoo.com

Al Myers, Canfield OH; (330) 506-6194; ajm486@hotmail.com

Joseph Vislay, Monclova OH; (419) 878-8843; jvislay@embarqmail.com

John Zoldak, Ravenna OH; (330) 554-9455; jzoldak@neo.rr.com

Lisa Zoldak, Ravenna OH; (330) 348-4543; lzoldak@neo.rr.com

CL/FF/RC EVENT SANCTION COORDINATORS

Nelson Gould (PA), 1340 Oak Dr., Macungie PA 18062; (484) 515-7888; at6snj@ptd.net

Sheila Nitsch (OH, WV), 5650 Boyd Rd., Grove City OH 43123; (614) 877-3453; tnitsch@columbus.rr.com

WEBMASTER

Roger Luther, Johnstown PA; (814) 266-2630; raluther@atlanticbb.net

District III

Ohio, Pennsylvania, West Virginia

In 2019, I was pleased that several District III clubs took advantage of an AMA grant program called Take off And Grow (TAG). The TAG program is designed to introduce and promote model aviation in your local community. Clubs can receive up to \$1,000 to purchase trainers, host an open house, etc. For more information, visit www.amaflightschool.org/programs/take-off-and-grow.

One District III club that received a 2019 grant was the Penn Ohio Radio Kontrol Society (PORKS; <http://porks564.org>). I received an invitation to attend the group's event held September 14, 2019, in Pulaski, Pennsylvania, from club program coordinator Ed Gantz. Upon arrival, I was greeted by several club members and officers including club president, Colin Reese.

After becoming acclimated to the club's beautiful flying site, I noted that this TAG event's main focus was not just buddy-box flying with newcomers but was an open house to invite the public to the club field.



PORKS members celebrate after their successful TAG event.



A view down the flightline of the PORKS TAG event.

Ed indicated that he invited 63 guests, which included 17 kids. Invited guests included owners of area businesses, public service organizations, etc. Guests were given packets of information about AMA and the PORKS; a chance to drive

trucks on our RC tracks; an opportunity to use a flight simulator and to fly RC on a buddy box; a great lunch; the chance to win an RC truck or Timber RC airplane; and could watch flight demonstrations.

I helped buddy box several adults and I heard attendees say that they had no idea that this club existed and that it was such a positive asset to the community. At the end of the day, I was impressed with the professionalism of this TAG event.



The hospitality area set up for the PORKS open house.



The RC racetrack is an added attraction for prospective club members.



The club's sign welcomed visitors and guests to the open house.

In a follow-up email, Ed indicated that the club had received terrific feedback from the attendees and it appears that they will be getting at least five new adult and three new Youth members. Ed also indicated that the club's RC tracks have contributed to increased membership, with many of these individuals eventually trying RC flying.

Congratulations to PORKS for hosting a great TAG event. By doing so you are ensuring that your club will continue to grow.

Until next month, fly safely, fly AMA.

District IV

Delaware, District of Columbia, Maryland, North Carolina, Virginia

We have lost a true pillar of model aviation with the passing of Andy Kane from Silver Spring, Maryland.



Andy Kane was a "gentle giant of model aviation."

Andy did so much, not only for District IV, serving as our RC Event Coordinator for as long as I can remember, but also nationally. He frequently introduced youth to flying with his Clipped Wing Cub on a buddy box and would always bring the largest and most interesting airplanes to events.

As District III Vice President Mark Radcliff put it, Andy was a gentle giant of model aviation. He will be greatly missed.

Taking over as the District IV RC Event Coordinator is John Bergsmith. See his contact information in the sidebar.

The Johnston County Aeromodelers Club (JCAC) has been growing. Dan West submitted this report.

Many pilots enjoy fall as the best time of the year for flying. It's not too hot, not too cold, and JCAC in Smithfield, North Carolina, had perfect weather for the club's Fall Fun-Fly on October 19, 2019. More than 40 pilots registered for the event, some coming from out of state. Throw in an estimated crowd of more than 100 spectators and it was a packed house at JCAC.

Before the models took to the air, JCAC dedicated the event to late club member Anthony



A view of the flightline at the JCAC Fall Fun-Fly.



Anton Bereznyi, age 15, won the grand prize.

Jones. Anthony was a longtime member who regularly lobbied for JCAC to host a fly-in.

The event kicked off with some amazing flying by Alex Fredrickson and Steve Conerly. The pilots demonstrated 3D aerobatics while flying their airplanes and helicopters to choreographed music. It was quite a demonstration, which had the huge crowd in awe.



Another view of the flightline and a pilots' meeting at the JCAC event.

Because it was a fun-fly, competitions were held at midday.

JCAC had some great raffle prizes, and drawing the Grand Prize (a Horizon Hobby Carbon Cub S+ RTF, donated by Raleigh Hobby), was 15-year-old Anton Bereznyi. He and his mom, Nataliya, have recently moved to the US from Ukraine. They learned of JCAC's Fall Fun-Fly the day before on Facebook.

If the thrill and excitement of just being at the event wasn't enough, the thrill of then winning the Cub was beyond exciting.

With the success of the JCAC Fall Fun-Fly, and the support from regional hobby shops and the community, JCAC looks forward to continued growth and success and more events in the future.

Go fly and have fun safely. 



IV

Jay Marsh

Vice President

jaymarsh@ama-d4.org
3227 Pine Needles Rd.,
High Point NC 27265
(336) 687-0973

www.amadistrict-iv.org
www.facebook.com/amadistrictIV



ASSOCIATE VICE PRESIDENTS

John Kirchstein, DE; (302)731-2831;
john@kirchstein.net

Mark Weiss, DE; (302)547-4917;
markw@ama-d4.org

Rick Cawley, NC; (919) 630-1649;
racbgc2@yahoo.com

Mark Smith, NC; (704) 798-2776;
mark@ama-d4.org

David Trogdon, NC; (910)654-1220;
dtrogdon4967@gmail.com

Richard "Rick" Moreland, MD; (301)
261-7366; rmoreland1@verizon.net

Nic Burhans, VA; (540) 219-9646;
nic@ama-d4.org

Rusty Kennedy, VA; (757) 812-2812;
rusty@ama-d4.org

Terry Terrenoire, VA; (412)760-4593;
terry@ama-d4.org

Bob Burnett, Washington, D.C. SFRA;
(703) 742-9682; bob@ama-d4.org

EVENT SANCTION COORDINATORS

CL AVP: Jack Rosemere; Box 1264,
Cambridge MD 21613; (410) 330-4663;
jrosemere@verizon.net

FF AVP: Bob Sowder, 84 Misty Hills
Ln., Troutville VA 24175; (540) 525-
7086; bsowder@rbnet.com

RC: John Bergersmith, 1438 Piney
Church Rd., Concord NC 28025; (704)
699-6977; RCcoordinator@ama-d4.
org

GOVERNMENT RELATIONS AVP

Ray Stinchcomb, (443) 618-8998;
govrelations@ama-d4.org

WEBMASTER

Jack Upchurch, webmaster@
ama-d4.org

SOCIAL MEDIA ADMINISTRATOR

Douglas LeRoy, social@ama-d4.org



V

Andrew Griffith

Vice President

barracadahockey@aol.com
12258 Bucks Harbor Dr N
Jacksonville, FL 32225
(904) 993-4956
www.amadistrict-v.org



ASSOCIATE VICE PRESIDENTS

Mickey Avery, AL; (334) 247-5103;
Avery.mickey@gmail.com

Rick Grim, AL; (256) 656-0859;
uavpilot@bellsouth.net

Chuck Foreman, FL; (352) 509-4460;
foremanchuck15@gmail.com

Andrew Griffith, FL; (904) 993-4956;
barracadahockey@aol.com

Keith Hall, FL; (813) 928-3861;
wingman@verizon.net

Jose Melendez, FL; (321) 412-3078;
rcjets12@hotmail.com

Bill Barbee, GA; (912) 660-2155;
awbarbee@hotmail.com

Bob Dixon, GA; (478) 960-5200;
rldixon3@cox.net

Nick Ray, GA; (865) 368-3820;
lasray@gmail.com

Darrell Sprayberry, GA; (706) 280-
5848; darrelluh1b@optilink.us

Dave Wenzel, GA; (912) 754-9619;
davevrguy@hotmail.com

Paul Verger, MS; (228) 826-4892;
cpaulverger@yahoo.com

Edwin Medina, Puerto Rico; (787) 525-
7768; captmedina@gmail.com

Don Wise, SC; (803) 534-8164;
d7wise@cs.com

Scott Anderson, TN; rcfoamy@
hotmail.com

Dick Tonan, TN; (615) 995-6291;
dtonan@mac.com

**SAFETY COORDINATOR: Red
Scholefield**, Johns Island SC; (843)
494-5225; redscho3@gmail.com

**RC AND FF EVENT SANCTION
COORDINATOR: Dick Tonan**

CL EVENT SANCTION

COORDINATOR: Dave Wenzel

WEBMASTER: Glenn Bond,
d5amaweb@gmail.com

District V

Alabama, Florida, Georgia, Mississippi, Puerto Rico, South Carolina, Tennessee, US Virgin Islands

I'm back! I want to thank everyone who took the time to vote in the election. I also want to thank Bob Brogdon for his service to the district and congratulate Rich Hanson on his reelection as AMA president. I'm glad to be your district vice president again and I'm ready to get to work!

It's a challenging and sometimes confusing time to be in the hobby with new rules and everyone with their own interpretation of the rules. I suspect that one of my most important challenges during my time on the AMA Executive Council will be the 400-foot restriction and its impact on Giant Scale, jet, and glider flying. Getting up to speed on the issues will be my highest priority.

My other area of focus will be youth membership and STEM. We must do whatever we can to demonstrate to our youth that aeromodeling is a gateway to interest in and careers in STEM fields. This can be done on a national level but it's up to our members and clubs to do it at a grassroots level.

Free Youth memberships, dedicated training nights during the summer, fairs, and mall shows are examples of outreach that can be used to attract Youth members. After we have them interested, we need to look at converting them to full adult members as they grow up and deal with the many distractions in today's world.



The Curtiss Jenny model along with the movie poster from *The Flying Ace*.

Gateway RC and Norman Studios: When it comes to retaining flying sites, one of the best things you can do as a club is to have a history of community involvement. One of the clubs I belong to is Gateway RC in Jacksonville, Florida. It has just such a history and its involvement in this cool project is one of many examples.

Norman Studios was active in the early 1900s and its property is undergoing restoration as a museum to highlight the studio's impact on the community and its history making silent films of the era. One such film was *The Flying Ace* featuring a Curtiss Jenny.

Club President Steve Arrington, assisted by several members including (the late) Ed White, Richard Corbin, and Robert Hoisington, obtained and restored a Curtiss Jenny as well as two other period models. The airplanes are on display at the film studio and used in traveling exhibits such as a special exhibition about silent films at the Cade Museum for Creativity and Invention in Gainesville, Florida, where nearly 9,000 visitors viewed the exhibit. In another instance, it was set up at the main library in downtown Jacksonville.

Gateway commits to run a table with several models and flight simulators at the Greater Jacksonville Agricultural Fair. The members spend a week in shifts demonstrating all facets of our hobby and helping youngsters and big kids gain knowledge using computer flight simulators.

The value of this type of community cooperation can't be overstated. If local officials who know little about the hobby hear about your club, you want it to be in a positive light because this will head off potential problems.

That is it for this month. Fly a lot and fly safely! 



Steve Arrington is with Rita Reagan, president of the Norman Film Studios Museum. During the Jenny's presentation, the club also donated the late Ed White's D.VII that Steve cleaned and covered.

District VI

Kentucky, Illinois, Indiana, Missouri

This month's submission is from Barry Mizes of the Midwest Air Wing RC club in Pontoon Beach, Illinois, near St. Louis.

We held our annual Frozen Finger Fun Fly on January 1, 2020. The event was coordinated by our club's vice president, Stan Marmuziewicz. We were extremely lucky that the weather cooperated this year with a sunny sky and temperatures in the mid-50s. Roughly 40 members came out to celebrate the New Year and get in their first flights of 2020.

In addition to a general fun-fly, we had a chili cook-off, potluck lunch, and a cumulative flight time contest. The winner of the flight time contest managed to fly more than 1 hour 40 minutes of the 4-hour event, using just 2 batteries for his FPV flying wing.

It was a great start to the events we have planned for this year.



I want to take a moment to let you know that District VI has a webpage at <http://amablog.modelaircraft.org/amadistrict-vi> and a Facebook page. If you haven't looked at either of these, please take time to check them out!

The Facebook page is full of events happening throughout our district. Also, the latest AMA news is always posted there. These posts are possible through Donald Way's efforts. Donald is a District VI associate vice president as well as the district's webmaster. Thank you for your service in supporting District VI, Donald!

Although I am writing this on the day after New Year's Day, you won't read it until nearly

March. The weather is great, with daytime temperatures reaching nearly 50.

It should be obvious that I am lacking material for my article this month. Some of you send me your club's monthly newsletter, so I will fill the rest of this column with material from newsletters. My problem is that I don't have a way to get the pictures from the newsletters into this posting.

The Dope Can newsletter of The Suburban Aero Club of Chicago reported that former club president John Kallend was replaced by Devin Tornow. Flier of the year honors went to Al Myers, Greg Stevens, and John York. The February Raffle was a big one as three airplanes were raffled off including a Hangar 9 Twist 40, an FMS F3A Explorer PNP, and a FMS Zero A6M5 PNP.

From the newsletter of the Sentral Illinois Radio Society of Bloomington, Illinois: The club held its 2019 banquet and it was was a great success. Nineteen members plus spouses and family attended. After a great meal, there was an auction that put more than \$1,000 into the club's coffers. Also, new club officers were installed into their positions during the banquet.

From The Printed Circuit newsletter of the Fort Wayne Flying Circuits: Many clubs hold a an annual January 1 event and the Flying Circuits held its Polar Bear Fly. This year, more than 30 pilots showed up to socialize and fly in the 13 mph wind. There was some snow in the area so floatplanes and skis were necessary to battle the cold and fly.

Remember, to see your club mentioned in *Model Aviation*, 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! This is the time of year when submissions are non-existent, so get to writing!

Don't forget to introduce someone to model aviation!



VI

Gary Himes

Vice President

AMADistrictVI@modelaircraft.org
5204 N. Smalley Ave., Kansas City MO 64119
(816) 550-1205

www.amadistrict-vi.org

www.facebook.com/AMADistrictVI



ASSOCIATE VICE PRESIDENTS

Dale Arvin, Jefferson IN; (812) 284-0162; darvin8094@aol.com

Gary Bussell, Muncie IN; (765) 288-3541; cgbussell@comcast.net

Craig Greening, Mahomet IL; 872-203-0377; servoframes@gmail.com

Mike Mueller, Hoffman Estates IL; (847) 507-4373; mike@f3aunlimited.com

Leo Rodriguez, South Bend IN; (724) 396-2700; lrodriguez44@verizon.net

Keith Sessions, Burlington KY; (859) 801-8182; keithksessions@hotmail.com

Bob Underwood, St. Charles MO; (636) 939-3394; bobrae53@sbcglobal.net

Donald Way, Hobart IN; (219) 614-6218; bolar36@hotmail.com

EVENT SANCTION COORDINATORS

RC/CL Steve Ort, 140 Whit Ln., Reidsville, NC 27320; (812) 498-8353; steve.ortcc@gmail.com

FF Charles Markos, 655 Carlisle Ave., Deerfield IL 60015

SAFETY COORDINATOR

Walter Voyt, Joliet IL; (815) 725-4677

FREQUENCY COORDINATOR

Mel Ziska, Naperville IL; (630) 357-7350

WEBMASTER

Donald Way, bolar36@hotmail.com



VII

Tim Jesky

Vice President
timjesky@charter.net
2886 E. Country Ln., Monroe MI 48162
(734) 384-6085
www.amadistrict-vii.org



ASSOCIATE VICE PRESIDENTS

Bruce Baier, Oshkosh WI; (920) 233-1127; buzssr@gmail.com

Lee Frederickson, Ada MI; L1520@comcast.net

David George, Riverview MI; (734) 284-9017; indiancity5129@yahoo.com

Randall Gibson, Lansing MI; (317) 698-4346; rgibson@mrmrcha.org

Bud Gorman, Knife River MN; (218) 834-5797; bgorman@frontiernet.net

Bob Johnson, Fond du Lac WI; (920) 922-6705; bobj54935@yahoo.com

Mark Robotti, Lindstrom MN; (651) 257-6792; mgrobotti@frontier.com

Len Todd, Baldwin MI; (907) 903-3569; lentodd@att.net

Dell Shannon, Osceola IA (641) 342-4278; dell.t.shannon@gmail.com

Marc "Doc" Shelstrom, Lancaster WI; (608) 732-4077; shelstrm@uwplatt.edu

Peter G. Van Heusden, Bloomfield Hills MI; (248) 515-1071; petervh@malibutech.com

Kent Woods, Ames IA; (515) 232-8180; woods229@msn.com

EVENT SANCTION COORDINATORS

Michael J. Haller (RC), Fond du Lac WI; (920) 979-9452; mike.haller60@gmail.com

Marc Warwashana (CL), Whitmore Lake MI; (734) 449-7355; whellieman@gmail.com

AMA Headquarters (FF), (800) 435-9262; competition@modelaircraft.org

FREQUENCY COORDINATORS

Al Schwartz, Roseville MN; (651) 633-2286; alberts@comcast.net

Pete Waters, Northville MI; (248) 924-0223; petewaters@charter.net

District VII

Iowa, Michigan, Minnesota, Wisconsin

As I write this, the FAA has released a new Notice of Proposed Rulemaking regarding Remote ID. Many of you have contacted me expressing concerns about this new rule. If you haven't already done so, I urge you to voice your thoughts. The URL is www.faa.gov/uas/research_development/remote_id. The comment period is open until March 2, so please don't delay.

Spring is just around the corner so now is a good time to look over your models and be ready to go when the nice weather arrives. Another sure sign of spring is the 66th annual Weak Signals' Toledo Show: R/C Model Expo. The dates are April 3-5, 2020. I hope to see you there.

The following text and photos are courtesy of Rich VeDepo and the Iowa City AeroHawks.

It is tradition for the Iowa City Aerohawks to get together on New Year's Day to welcome in the flying season, but the weather doesn't always cooperate. Temperatures can range from the high 30s to -30° and wind can be calm to 30 mph or more. We are never guaranteed to have snow on the ground so we can fly with skis, but we are always assured it will be cold.

I don't recall *not* having at least a few people fly on New Year's Day. I've been a club member for more than 32 years and it was a tradition when I joined. Let me share with you the challenges of flying in the winter.

More than 30 years ago, six or eight people, would gather at our field on New Year's Day, dressed like Yukon explorers, to see who would be the first to fly and ring in the New Year. In the late 1980s, there wasn't any shelter or a clubhouse to keep us warm, or even anything to block the wind—just an old Weber grill and a rusty burn barrel we would hover around to warm our hands.



It was an honor to be the first person in the air, so it turned into a race to get your airplane airborne. Glow engines were pretty much the only option. They run fine after you get them started but trying to start them at -20° can be difficult. It often boiled down to who was lucky enough to even get their engine started to be first in the air on New Year's Day. A little Zippo lighter fluid down the carburetor worked wonders.

Winter flying has its challenges, but you feel a sense of accomplishment when you're successful. The biggest change I have seen in the last 30 years is that electrics have become the choice for most New Year's Day fliers. No more trying to start glow engines in the cold. Electric motors and the newer-chemistry batteries are always ready.

Our club has added several amenities throughout the years. We have a large, heated clubhouse with electricity. The traditional New Year's Day event has turned into a well-attended annual Chili Fun Fly and Potluck. A few members bring their favorite chili recipes, while others bring something to share. Not everyone who attends brings an airplane; some come just for the camaraderie and the array of good food. We typically draw between 35 and 50 people, including friends and a few spouses.

We have a TV available in case our Iowa Hawkeyes are lucky enough to be playing on New Year's Day. There are no excuses for missing a day at the field. We show highlight videos of the past flying season so we can dream of warmer days to come.

The pictures are from the 2020 Chili Fun Fly. We had a great time as we welcomed in another year and a new decade. May this decade be filled with as much fun and great memories as the past.

Take a kid flying!



Left: A few of the club members enjoying the day.
Above: A salute from our new president-elect Lizzie Peters and her vice president, Tom Peters.

District VIII

Arkansas, Louisiana, New Mexico, Oklahoma, Texas

We have had several associate vice president (AVP) changes. Let's get caught up.

AVP Tom Holmsley has moved from El Paso to Baytown, Texas. Replacing Tom is Paul Rucker, who is a member of the El Paso Radio Controllers. He has flown Control Line (CL), 1/2A, micros, electric ducted fans (EDFs), sport, and old-school Pattern. He is a club flight instructor and he and his wife, Angelica, are around a lot.

Paul's first AMA assignment was presenting the AMA Distinguished Service Award to Danny Sanders. Danny has been a standout for years in District VIII. It is a well-deserved award.



AVP Paul Rucker (R) and Danny Sanders.

New AVP Johnny Longoria, from Victoria, Texas, started the Victoria Remote Control Flyers. He flies Giant Scale, floatplanes, gliders, glow-power, electrics, 3D, EDFs, and turbines. He is a contest director, an active competitor, and is often seen with his fiancée, Ann.




(L-R): AVP Johnny Longoria, AVP Tom Holmsley, and Lawrence Harville at the Space City Club's Pearl Harbor Fly-In.

AVP Bruce Landsman is from San Benito TX.



New AVP Bruce Landsman is from San Benito, Texas. He flies CL, aerobatics, fun-flies, Pylon, Scale, warbirds, and is an active Nats competitor. He travels with his wife, Patty.

The Alvin RC club held its annual charity fundraiser for the Brazoria County Sheriff's Department for less-fortunate families. It is a great community service. 



(L-R): Lewis Mack, Tom Youens, Officer Shanks, and AVP Benny Behrens.



Jimmy Allen (L) and his son, Jimmy, who is president of the Permian Basin RC Club. Passing it on! Dad always took his son to the field, now the son takes his dad to the flying field.



At the International Miniature Aerobatic Club contest in Sherman TX. In the center is VP Lawrence Harville and AVP Amanda Coke.



VIII

Lawrence Harville

Vice President

lawharv@yahoo.com
932 Calloway St., Hurst TX 76053
(817) 781-9615
www.amadistrict8.org



ASSOCIATE VICE PRESIDENTS

Benny Behrens, Pearland TX; (832) 499-2043; cbbahrens@comcast.net

Amanda Coke, Dalhart TX; (806) 282-4227; amanda_coke@yahoo.com

Johnny Hunt, Godley TX; (817) 905-8124; huntsranch@aol.com

Stan Kopreski, Sherwood AR, (501) 539-3656; skopreski@msn.com

Bruce Landsman, San Benito TX; (956) 244-1034; adjc1c2@hotmail.com

Johnny Manuel Longoria, Victoria TX; (361) 676-6118; johnnyvrfc@yahoo.com

Stew Moore, Jefferson TX; (903) 665-7501; mooremas1@netscape.com

Brian Regan, Albuquerque NM; (505) 508-6693; brain23@centurylink.net

Clay Ricks, Duncan OK; (870) 853-7499; clayricks172@hotmail.com

Randy Ritch, Magnolia TX; (281) 701-3121; randyritch.dist8@yahoo.com

Paul D. Rucker Jr., El Paso TX; (915) 329-3292; doda2024@yahoo.com

Gary Strickland, Hooks TX; (903) 278-5703; garystric@gmail.com

Jerry Walters, Maurice LA; (337) 298-7755; jerome1w@bellsouth.net

AVP-SAFETY

Tony Breyen; Wichita Falls TX; (940) 733-2803; awb1056@sbcglobal.net

RC EVENT SANCTION COORDINATOR

Amanda Coke, Dalhart TX; (806) 282-4227; amanda_coke@yahoo.com

FF/CL EVENT SANCTION COORDINATOR

Lawrence Harville, Hurst TX; (817) 781-9615; lawharv@yahoo.com

DISTRICT VIII WEBMASTER

Sonny Coleman, zepher@camnet.net



IX

Jim Tiller

Vice President
jtiller@hotmail.com
Box 828, Custer SD 577307
(605) 390-3878



ASSOCIATE VICE PRESIDENTS

Brian Blois, Winter Park CO; (720) 333-2720; @brian.blois@outlook.com

Tyler Brown, Lincoln NE; (402) 617-0444; tylerx9@yahoo.com

Steve Graham, Denver CO; (303) 883-0205; steve.graham1@comcast.net

Brandon Koch, Mandan ND; (701) 471-9575; kochbrandon471@gmail.com

Rick McCaskill, Frederick CO; (303) 682-0440; rickm1947@aol.com

Josh Nelson, Casper WY; (307) 277-3110; huntwyo@gmail.com

Zachary Roller, Rapid City SD; (605) 519-0815; zroller28@gmail.com

Arend Schuurman, Elkton SD; (605) 695-2122; arend.schuurman@gmail.com

EVENT SANCTION COORDINATOR

Troy Hamm, Gardner KS; (913) 744-5745; funflyr@juno.com

District IX

Colorado, Kansas, Nebraska, North Dakota, South Dakota, Wyoming

In District IX, there are a couple of ways to deal with the cold winter weather. One is to just keep flying and the other is to do the snowbird thing and head south. Here's a pictorial glimpse into both.

Many District IX clubs have a traditional event held on or around January 1 to start the New Year with a flying tradition that hopefully carries into

the other 11 months. We salute those hardy pilots who comb the frost out of their beards, freeze their fingers to the transmitter sticks, and fly.

We who stay and don't travel south envy those who just pack up whatever airplanes they can and head for a warmer winter airfield in Texas, Arizona, or California.

To each his own! 🛩️



Left: The gathered group at the January 1 Jeffco Aeromod'lers I.C. Carb Day. (L-R): Tom Sarber, Peter Thompson, Johnny Wolf, Debbie Wolf, Bud Glass, Tom Higgins, Larry Bickel, and Bruce Ream.



Below left: Wyoming associate vice president, Craig Bastion, and his wife spend some time with the Quartzsite Desert RC Flyers in Quartzsite AZ.



Here's an aircraft you seldom see modeled and rarely modeled this well. Scott McCrory, from Dillon CO, took over this Cessna T-50 Bobcat after it was framed by Jerry Bates. It then went to Keith Brown who gave it to Scott to finish. The landing gear was custom built by the late Richard Moore. Twin Cobra electric motors are powered by a 6S battery. The radio is a Futaba 14SG with S.Bus servos.



Peter Ostler watches Darren Schwede fly his foamie at the Rapid City Propbusters Frost Your Buns Fly on January 1 in South Dakota.



Tony DeGregorio, from Belle Plaine KS, sent this information about Lindel Gilde, who is turning 90. Lindel was born in 1930 and started flying Free Flight models in 1940. He was in the Army Air Corps when it transitioned to the U.S. Air Force in 1947. He retired as a Senior Master Sgt. in 1969. The inset is Lindel with his 1957 Trixter Beam and a more recent photo shows him with his son, Jeff.

District X

Arizona, California, Guam, Hawaii, Nevada, Utah

The second annual District X Fly-In was a roaring success. It was held at the Willie McCool Memorial Model Air Park, home of the Las Vegas PropNuts. We had a great turnout with people traveling from the East Coast to attend.

All of the proceeds raised went to the Make-A-Wish Foundation of Southern Nevada. If you would like to help this worthy organization, you can reach it at <https://snv.wish.org>. I encourage you to contribute.

The weather for the three-day event was beautiful and clear. It was cold in the early morning but warmed to shirt-sleeve temperatures by midmorning. Sunday brought some wind but everyone who attended had a great time.

The third annual event will have a change of date and location. The event will move to the William Bennet Radio Control Airfield, home of the Tournament of Champions. This field can accommodate Control Line, which will open up a new flying category. We will hold the event May 1-3, 2020.

These changes will allow us to hold a second district-wide event in Southern California in the fall. I'll have more details soon. In the meantime, please enjoy some of my favorite event photos.



The Big Kahuna himself, Jeff Easton of Salt Lake City, with his Dave Scott-designed Ultimate Trainer. It was Jeff's first kit-built and MonoKote project.



Nathan Kisner, from Dallas, flies with the Golden Triangle Club of Grand Prairie TX. This is his first year in RC. Welcome, Nathan.



Vincent Krell is prepared for takeoff with his Hangar 9 Extra 300. It is his first gas-powered airplane.




Warren Washington, of Las Vegas, makes a low pass with his RV-4. Warren is the club's photographer.



My good friends from New England, District I Vice President Andy Argenio (L) and Associate Vice President Steve Brehm, came to help me run the event. Many thanks!



Shawn Collins, of North Las Vegas, is a PropNuts member and employee of the City of North Las Vegas. He keeps the club in good standing with the city.

Next month I'll share more photos of the fly-in and information about the fall event. Until then, I wish you all happy landings. 



X

Lawrence Tougas

Vice President
ama.district10@gmail.com
Box 276, Fairfield CA 94533
(707) 480-2053
www.ama10.org

✉

ASSOCIATE VICE PRESIDENTS

Tim Attaway, Chula Vista CA; (619) 427-6392; trattaway@cox.net

Forrest Barton, Woodland CA; (530) 383-9019; cbarton328@aol.com

Jim Bonnardel, San Diego CA; (858) 292-5518; nitroblast@hotmail.com

Richard Bonnardel, Kailua HI, (808) 261-7046; rebbfb@hawaii.rr.com

Kurtis Chandler, Phoenix AZ; (602) 647-8342; kurtisc-ama@cox.net

Alan Friedman, Eloy AZ; (520) 876-0232; pooralan@aol.com

Dan Johnson, Preston ID; (435) 619-3112; dksajohnson@gmail.com

Kevin Houser, Oro Valley AZ; (520) 490-7657; khouser@rockefellerfarmers.com

Tim Johnson, Rancho Santa Margarita, CA; (562) 965-4288; timothy@johnson.us.com

Mike Lee, Redlands CA; (909) 792-8424; mlee8249@msn.com

Scott Malta, Merced CA; (209) 723-4202; scottmalta@comcast.net

Barry Mattison, Las Vegas NV; (702) 218-3827; bm.brabbit@gmail.com

Dave Meriwether, Laguna Beach CA; (949) 350-4075; meriwed@comline.com

Jim Mohan, Phoenix AZ; (623) 434-1351; jmohan351@cox.net

Gil Terzo, Las Vegas NV; (702) 523-9897; gterzo@aol.com

Peter Vogel, Santa Clara CA; (408) 569-7067; vogel.peter@gmail.com

Roger Willis, Murrieta CA; (951) 249-9688; willisasoc@aol.com

EVENT SANCTION COORDINATORS

Tim Attaway (CA south of Bakersfield), Chula Vista CA; (619) 427-6392; trattaway@cox.net

Forrest Barton (CA north of Bakersfield), Woodland CA; (530) 383-9019; cbarton328@aol.com

Kurtis Chandler (AZ, UT) Peoria AZ; (602) 647-3842; azpm@cox.net



XI

Phil Tallman

Vice President
AMADistrictXI@modelaircraft.org
28910 W. Hallett Rd., Medical Lake WA
99022; (509) 220-6513



ASSOCIATE VICE PRESIDENTS

David Agar, Battle Ground WA; (360) 721-1963; kamanhusky@aol.com

Rick Crow, Garrison MT; (406) 559-6662; rwcrowjr@gmail.com

Michael Ingram, Wenatchee WA; (509) 699-3034; firercer@cs.com

Joe Miller, Dallas OR; (503) 798-7241; dragonriders54@yahoo.com

Chris Rankin, Bend OR; (541) 330-5692; oregonraven@earthlink.net

Jay Schoening, Lynden WA; (360) 220-0407; jjschoening@msn.com

Robert Stephens, Anchorage AK; (907) 440-0478; rfstephens@hotmail.com

Jay Strickland, Central Point OR; (541) 830-7976; strickdog@q.com

Bryan Wood, Meridian ID; (208) 412-3254; bw5493@yahoo.com

FF/CL EVENT SANCTION COORDINATOR

Mike Hazel, P.O. Box 505, Lyons OR 97358; zzclspeed@aol.com

RC EVENT SANCTION COORDINATOR

Michael Ingram, Wenatchee WA 98802; (509) 699-3034; firercer@cs.com

District XI

Alaska, Idaho, Montana, Oregon, Washington

I hope everyone's year is going well. I have not made much progress on my Der Jager. Only one wing panel is done and it's not enough to waste picture space.

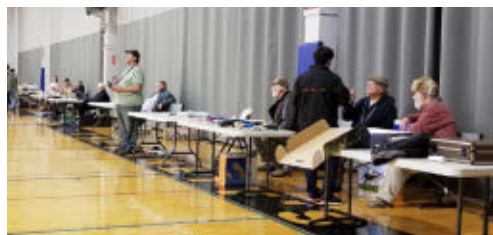
The FAA is changing our world. We at the AMA are doing our best to make those changes something we can work with and continue to enjoy and grow our hobby. I know all of you are concerned. I get emails and phone call every week.

We have had some good outcomes, several flying sites in controlled airspace have been given Letters of Agreement for altitudes above 400 feet, and there are more to come. I think this is largely the result of you contacting your representatives when we asked. It opened some eyes. Thank you for your time and effort!

We will continue to work hard for the members. Call or email me if you have questions. Watch your emails from AMA for current news, watch the AMA YouTube videos, and listen to AMA podcasts. If you stay informed, you can continue to help us when we need it.

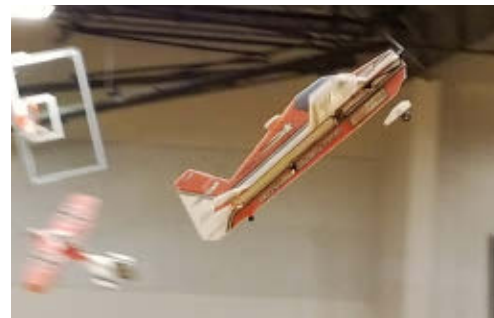
I have done some indoor flying since the last time I wrote. The Inland Empire Quiet Flyers host events every month in Spokane Valley, Washington. We fly in a recreational facility called the HUB that has five full-size basketball courts. HUB opens up two adjacent courts for us to use.

If you have never flown indoors, I suggest you try it. It takes its own skillset. You have to watch out for walls, ceilings, and other aircraft. I've seen more than 10 planes in the air at once.



We fly in 20-minute sessions. Each session has a different type of aircraft to minimize confusion and collisions. There are three session types: small/light micros flying in a pattern, rotary-wing aircraft, and larger 3D airplanes.


Check out the club's website (www.ieqf.org) for dates and times.



Another big thing going on in District XI is the Winter Build Challenge. Associate Vice President Joe Miller submitted the following:

Across the Pacific Northwest, clubs are organizing winter build challenges. Ted Foster, who is a member of the Salem RC Pilots Association and the Dallas Wingdingers, has been going to clubs in the area and signing up pilots. At last count, there are 32 individuals building this winter—some with multiple aircraft. He even snagged a builder from California. Way to go.

All maiden flights will be on May 9, 2020. Thirty-two intrepid souls will be putting their hard work and dreams in the air. We can only hope that they all return intact.

I am sure we have all put together an ARF or two. Building takes us back to when we would put an aircraft together and take it outside and see what happens. Back then we could only dream of the technology we have now. Now, we can build, test, adjust, and make sure everything is in good working order before we launch. Even so, we will be trying to hold down the anxiety that comes with each maiden flight and double it for a kit- or scratch-built model. 



Ted Foster holding his project.

SIGNING UP ONLINE IS EASY, VISIT WWW.MODELAIRCRAFT.ORG/JOINAMA TODAY!

1. Contact Information

First Name & Initial		Last Name	
Mailing Address			Apt. #
City	State	Zip Code	Phone
Date of Birth:	Email:	<input type="checkbox"/> New Member <input type="checkbox"/> 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 <i>Model Aviation</i> magazine.	<input type="checkbox"/> Adult \$75.00	<input type="checkbox"/> Adult \$140.00	Membership option amt:
Senior	• Adults 65 or over as of July 1, 2020. • Includes subscription to <i>Model Aviation</i> magazine.	<input type="checkbox"/> Senior \$65.00	<input type="checkbox"/> Senior \$120.00	
Park Pilot	• Adults 19 or over as of July 1, 2020. • Includes subscription to <i>Park Pilot</i> magazine. <small>Park Pilot membership is for aircraft 2 pounds or less that fly below 60 mph and does not include voting rights or competitive privileges. Park Pilot membership insurance benefits are limited to \$500,000 of liability coverage.</small>	<input type="checkbox"/> Park Pilot \$38.00	<input type="checkbox"/> Park Pilot \$70.00	Membership option amt:
Youth	• For anyone under 19 as of July 1, 2020.	<input type="checkbox"/> Choose Youth (free)	<input type="checkbox"/> Include 1 year <i>MA</i> magazine (Youth price \$15.00)	Youth amt:

Support the AMA Foundation

General Fund <input type="checkbox"/> \$25 <input type="checkbox"/> \$50 <input type="checkbox"/> \$100 <input type="checkbox"/> \$500 <input type="checkbox"/> \$ _____	AMA Site Development <input type="checkbox"/> \$25 <input type="checkbox"/> \$50 <input type="checkbox"/> \$100 <input type="checkbox"/> \$500 <input type="checkbox"/> \$ _____	Club Support <input type="checkbox"/> \$25 <input type="checkbox"/> \$50 <input type="checkbox"/> \$100 <input type="checkbox"/> \$500 <input type="checkbox"/> \$ _____	Scholarship Fund <input type="checkbox"/> \$25 <input type="checkbox"/> \$50 <input type="checkbox"/> \$100 <input type="checkbox"/> \$500 <input type="checkbox"/> \$ _____	Museum Patron Program <input type="checkbox"/> \$25/Patron <input type="checkbox"/> \$100/Supporting <input type="checkbox"/> \$1,000 / Life	Donation Total:
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------

3. Payment

Check Visa Mastercard Discover Card No. _____ - _____ - _____ - _____ Exp: _____

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."

Mail completed form to:
AMA 5161 E. Memorial Dr. Muncie IN 47302

Signature: _____

Total:

\$ _____
Application Source: P

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.

FULL-SIZE PLANS SERVICE/SUBMISSION GUIDELINES

- No. 1118: *Infield Engineering TBD-1 Devastator: Paul Kohlmann's 60-inch wingspan warbird is powered by a 650 Kv brushless motor and 4S 3,700 mAh LiPo battery.*..... \$27.00
- No. 1117: *Constellation: Designed by Keith Sparks, this electric, 68-inch wingspan Connie is built from sheet foam and balsa.* \$19.00
- No. 1116: *SkySpringer: Clark Salisbury's 40-1/2-inch wingspan electric beginner airplane uses a 1,080 Kv brushless motor and three-cell 1,300 mAh LiPo.* \$14.00
- No. 1115: *Turn-E-Cat: Mike Hausner's 39-inch wingspan electric Pylon racer is constructed using MPF foam.*\$8.00
- No. 1114: *Fidget: Al Clark's aircraft is specifically designed for the Galloping Ghost radio control system* \$10.00
- No. 1113: *Curtiss SB2C Helldiver: Pat Trittle's 48-inch wingspan warbird is guided by four channels and powered by an outrunner motor and 2S LiPo battery* \$18.00

Full-size plans list available. A complete listing of all plans previously published in this magazine through no. 1118 may be obtained for \$2.00 from the AMA Plans Service, 5151 E. Memorial Dr., Muncie IN 47302; ph: (800) 435-9262, ext. 507; email: planservice@modelaircraft.org. Plans listings, photos, and printable order forms are also available online at www.modelaircraft.org/plans.aspx.

Fill in the blanks below with the number(s) of the plans you want to order. ****Add a second copy of each plan for half of the original plans cost (limit 1). Please do not include requests or payment for other service with your plans order. Allow one to three weeks for delivery—longer for overseas. NO CODs, please. Prices and Shipping/Handling charges may be subject to change.**

Plan # _____ Plan # _____ Plan # _____ Plan # _____

By Mail: Check or money orders (in U.S. funds drawn on a U.S. bank) are payable to:
AMA
5151 E. Memorial Dr.
Muncie IN 47302

Plan(s) total	\$ _____
**AMA Members: subtract	
10% from total above	(-\$ _____)
subtotal.	\$ _____
U.S./Foreign Shipping	\$ _____
Total Order	\$ _____

By Email: planservice@modelaircraft.org
By Phone: (800) 435-9262
By Fax: (765) 281-7904

Check Money Order MasterCard Visa AMA #: _____
CARD NO. _____ EXP. DATE _____ / _____ / _____
CARDHOLDER'S SIGNATURE (if faxing or mailing) _____
NAME _____ PH# _____
STREET _____
CITY _____ STATE _____ ZIP _____

Domestic Shipping and Handling Charges*

(All domestic orders are shipped in tubes)

Order	Shipping	Foreign Orders
\$2.00 to \$9.99	add \$5.00	Contact the Plans Service for shipping charges.
\$10.00 to \$29.99	add \$6.00	
\$30.00 to \$39.99	add \$9.00	Phone: (800) 435-9262
\$40.00 to \$59.99	add \$12.00	Fax: (765) 281-7904
\$60.00 to \$89.99	add \$15.00	Email: planservice@modelaircraft.org
\$90.00 to \$120.00	add \$18.00	
\$120.00 to No Limit	add \$21.00	NO REFUNDS OR EXCHANGES ON PLANS.

Model Aviation (ISSN 0744-5059, USPS 087-930 Publications Agreement No. 4068854) is owned exclusively by The Academy of Model Aeronautics, Inc., a nonprofit organization, and published monthly at 5161 East Memorial Drive, Muncie IN 47302. Copyright Academy of Model Aeronautics, 2006. Model Aviation and the AMA and Wings & Torch logo are registered trademarks of the Academy of Model Aeronautics. All rights reserved. When membership in the Academy of Model Aeronautics includes subscription to Model Aviation, \$18.00 of the dues are for the subscription. Membership is open to all who are interested in model aviation.
Non-AMA-Member Subscription Rates: At U.S. addresses, \$36.00 for 12 months; elsewhere (including Canada), \$60.00 a year; payable in advance. Schools (U.S.), \$16.00 per year. Libraries (U.S.), \$16.00 per year. Youth (U.S.) under age 19 as of July 1, \$15.00 per year. Send subscription orders/ payments and changes of address to the attention of AMA Membership Department. Six weeks are required for change of address; give new and old addresses as printed on latest label. Back issues, \$7.00 (including postage).
Editorial Offices: Model Aviation, 5161 East Memorial Drive, Muncie IN 47302.
Advertising Offices: Airborne Media, 7414 Burton Dr., Liberty Township OH 45044. (For general AMA business, memberships, AMA-member and non-member subscriptions, Sanctioned Events Calendar, etc., contact AMA Headquarters.)
Model Aviation and/or the Academy of Model Aeronautics should not be considered to endorse any advertised products or messages pertaining thereto. Content of all articles, model designs, special features, and columns of this magazine is the opinion of the author and does not necessarily represent the official position of the Academy of Model Aeronautics. We cannot accept responsibility for unsolicited articles or artwork. Any material submitted must include return postage. Periodical rate postage paid at Muncie IN and at additional mailing offices.

Postmaster: Send address changes to Academy of Model Aeronautics, 5161 East Memorial Drive, Muncie IN 47302, Attn: Membership Department

Submission Information and Guidelines

About Us

If you or your organization would like to be a part of the "About Us" program, contact MA Executive Editor Jay Smith at (765) 287-1256, extension 225, or by email at jays@modelaircraft.org.

Aero Mail

If you have a letter to the editor, please submit it to MA Executive Editor Jay Smith at 5161 E. Memorial Dr., Muncie IN 47302, or email jays@modelaircraft.org. We also encourage you to submit letters to the editor online at www.ModelAviation.com/editor.

Product Spotlight: Worth a Closer Look

We have found some of these items on our own, but many have been brought to our attention by outside sources. If you have a product or service that you feel might be "worth a closer look," contact MA Executive Editor Jay Smith by email at jays@modelaircraft.org.

Product Spotlight: Modeler's Mall

Manufacturers and distributors should include their mailing address, telephone number or email, a website address, and the purchase/retail price of the product for the consumer.

Product releases and photos should be sent to MA Executive Editor Jay Smith at jays@modelaircraft.org, or by postal mail at 5161 E. Memorial Dr., Muncie IN 47302, Attn: Modeler's Mall.

Focal Point

Submissions may be made by email (with photo as an attachment, not embedded within the body of the email) or by postal mail. All submissions should be sent to Associate Editor Jennifer Alderman at 5161 E. Memorial Dr., Muncie IN 47302, Attn: Focal Point, or emailed to jennifer@modelaircraft.org.

If you have questions about how to prepare your submission for publication, please contact Jenni Alderman at the above email address or Executive Editor Jay Smith at jays@modelaircraft.org.

Viewfinder

Submissions may be made by email (with photo as an attachment, not embedded within the body of the email) or by postal mail on a disk or as a hard copy. All submissions should be sent to Associate Editor Jennifer Alderman at 5161 E. Memorial Dr., Muncie IN 47302, Attn: Viewfinder, or emailed to jennifer@modelaircraft.org.

For more information and author guidelines, go to www.ModelAviation.com/authorguidelines.



ACADEMY OF MODEL AERONAUTICS
 5161 E. Memorial Dr., Muncie IN 47302
 (765) 287-1256 | Fax: (765) 289-4248
 www.modelaircraft.org
 Office hours: Monday-Friday 8 a.m.-5 p.m.



**NATIONAL MODEL AVIATION MUSEUM AND
 LEE RENAUD MEMORIAL LIBRARY**
 5151 E. Memorial Dr., Muncie IN 47302
 (765) 289-4236
 www.modelaircraft.org/museum
 Open Memorial Day to Labor Day
 Call (800) I-FLY-AMA for hours.

Use our toll-free Membership Assistance Hotline for questions concerning your membership from 8 a.m. to 5 p.m. (EST) Monday through Friday.

(800) I-FLY-AMA (435-9262)
 (765) 287-1256 | Fax: (765) 289-4248

Membership Services **Ext.**

Address changes	129
Club and chapter records	291
Leader Member applications	298
Membership records/questions	129
Missing magazines	223
Safety Code questions	230

Retail **Ext.**

AMA Plans Service.....	507
Webstore	212, 504

Insurance Matters **Ext.**

Claims, filing and status, problems, questions	253
Insurance certificates flying site/mall show	291
Legal questions and issues.....	251

Education **Ext.**

Education support/classroom materials, scholarship program, youth program ideas, TAG program, AVP training	226, 514, 517
---------------------------------------------------------------------------------------------------------------------------	---------------

Programs & Activities **Ext.**

AMA Awards.....	521
Disaster Relief Fund	200
Government Relations.....	227, 235, 236
Flying site support.....	230
Intro Pilot Program.....	291

Large model aircraft questions.....	230
Leader Club program.....	297
Club event handouts	291
Turbine waiver	291
AMA Foundation/charitable donations, National Model Aviation Day, Club Recognition and Reward Program	277, 279

Competition Services **Ext.**

Flying Site Assistance, rules-change cycle administration, Contest Board, AMA Competition Regulations, general technical questions, National Records	230
AMA sanctions, non-AMA sanctions, event listings, supplemental (display) ad, AMA Competition Regulations ordering, Contest Calendar, Contest Directors, Event Managers, AMA National Records.....	252
Nats/flying site usage.....	200/261
World Championships Team programs, International Sporting License, International Records, FAI competition rules and regulations	252

Media and Publications **Ext.**

Cloud 9 newsletter	500
Magazine article reprints.....	511
Magazine back issues.....	129
Model Aviation.....	225
Park Pilot.....	225
Digital publications.....	231
AMA Air.....	219
AMA podcast.....	229

Model Aviation's Frequently Used Abbreviations/Acronyms

ARF	Almost Ready to Fly
BEC	Battery Eliminator Circuit
BNF	Bind-N-Fly
CA	cyanoacrylate glue
CAD	computer-aided design
EAA	Experimental Aircraft Association
EPP	(foam) expanded polypropylene
EPO	(foam) expanded polyolefin
EPS	(foam) expanded polystyrene
ESC	electronic speed control
FAA	Federal Aviation Administration
FPV	First-Person View
LCD	Liquid Crystal Display
LED	light-emitting diode
LiFe	Lithium Iron Phosphate
LiPo	Lithium Polymer
Nats	National Aeromodeling Championships
RC	Radio Control
RTF	Ready to Fly
SIGs	Special Interest Groups
STEM	Science, Technology, Engineering, and Math
STEAM	Science, Technology, Engineering, Art and Math
sUAS	Small Unmanned Aircraft Systems
UAS	Unmanned Aircraft Systems
UAV	Unmanned Aerial Vehicle

Model Aviation editorial offices:
 (765) 287-1256, ext. 225
 8 a.m.-5 p.m. weekdays
 Fax: (765) 289-4248

To advertise in *Model Aviation*
 Please visit:
www.ModelAviation.com/advertise



⇒ *Education Through Aviation*

UNDERSTANDING LEARNING STYLES

By Kyle Jaracz, Education director | kylej@modelaircraft.org

Last month I discussed various learning styles and what they are. This month I want to pick up where I left off and help you to understand how to effectively match your teaching skills to the student’s learning style.

What is the most effective teaching method that imparts knowledge, offers creativity, and nurtures a passion within those to whom we reach out? Spoiler: There is no one magical method that works for everyone, but that doesn’t mean there isn’t a solution!

Each of us has our own learning styles—our own individual ways of understanding and processing new information as it is presented to us. Although there are different methods of dividing learning styles, for me, it makes the most sense to categorize them into four groups. They are visual, auditory, reading/writing, and kinesthetic learners (commonly known as VARK), which I described in the February 2020 “Education Through Aviation” column.

Which learning style do you have? Have you found that your learning style is a mix of styles? Most people have a mix of the aforementioned learning styles, and that’s called multimodality. This mix usually manifests itself in one of two ways. Some learners are flexible as to what method works in what situation. They are able to switch their learning modes to accommodate the task or information at hand.

Other learners aren’t satisfied until they have touched on each of the learning styles. This second group often takes longer to gather information. The result is they have a better understanding of the subject than their peers.

Either way, remember that incorporating all of the learning styles in your classroom or at the flying field is a recipe for success. It will help engage students and encourage everyone to be involved in the lesson.

Incorporating all aspects of VARK in a lesson might seem like a tall order, but here’s an example of how to accomplish just that. Suppose you’re discussing the basic forces of flight: lift, drag, weight, and thrust.

Try incorporating an engaging auditory presentation, text on a screen, a diagram that shows the principles of what you are describing, a video to show how these forces react to an aircraft, and an actual model aircraft in hand. This will allow all of your students to understand the information presented in their own way.

Understanding how to incorporate each of these styles into your presentations is key to finding success. It’s something we strive to create in our educational materials at the AMA as well. Don’t expect to accomplish the goal of having a perfect presentation on each and every attempt, but if you are mindful in how you speak to each of the learning styles, the chances of learning success are greatly improved.

Feel free to reach me at AMA Headquarters (kylej@modelaircraft.org) if you have an example of how you teach using these principles. It’s a great opportunity to collaborate and learn from each other as we strive to create learning materials.

See you at the flying field! 

SOURCES:

Fleming, N.D. & Mills, C. (1992). *Not Another Inventory, Rather a Catalyst for Reflection. To Improve the Academy*, 11, 137-155.

 **ONLINE EDUCATIONAL OPPORTUNITIES**

Thanks for sharing so much great content with me via social media! If you haven’t heard, there is a great group for model aviation educators. Simply search “Youth and education, Model Aviation Group” on Facebook (<http://www.facebook.com/groups/196015354190463>). While you’re there, be certain you have joined the “I Fly AMA” Facebook group (<http://www.facebook.com/groups/IFLYAMA>) as well.

One of the items that was shared with me a few weeks ago is the YouTube channel of a young man who is experimenting with model aviation in different ways! His channel is named “CopterDude.” Be sure to check him out next time you find yourself browsing videos (www.youtube.com/channel/UCiVVhQtWp7v-VP6tmUQ3Zow)!



⇒ Flying Site Assistance

INSTALLING A FABRIC RUNWAY

By Tony Stillman, Safety & Flying Site Assistance | fsac@modelaircraft.org

As spring approaches, it's time to start thinking about your airplanes, as well as your flying site. Although there is still a bit of winter to go, at least here in Indiana, soon warmer temperatures will prevail and we will have good enough weather to plan trips to the field.

If you are part of a model club, then you are probably already planning a work day or days to get the field in shape. My club in Indiana is planning to install a replacement Geotex fabric runway in early spring so everyone can enjoy it this summer.

Adding a fabric runway to a field is inexpensive and can greatly improve the flying experience, especially if you own smaller aircraft with small wheels. A fabric runway allows for smooth takeoffs and landings for smaller models.

Here is an excerpt from an article I ran some years back about fabric runways, written by Todd Blose from Texas. Todd's club, the Texas Model Aircraft Foundation, installed a Geotex runway. Because I have received many inquiries about fabric runways, I thought this would be a great time to present this to you.

Todd created a frequently asked questions sheet about fabric runways.

- *What size is your fabric runway?* It is 44 x 298 feet with a 15 x 150-foot taxiway and a 15 x 150-foot pit area.
- *What preparation is needed before laying the fabric?* We graded the runway, taxiway, and pit area, then rolled and filled all of the low spots and rolled more.
- *How is it installed?* It is held down by 8-inch staples approximately 8 inches apart at all edges and seams. After the fabric has tightened, we added more staples between each staple.
- *What maintenance is required during the season?* The only maintenance required has been to kill a few weeds working up through the seams and patch a few propeller strikes.
- *What needs to be done each spring?* Check to make sure each staple is down.
- *Is any winter preparation needed?* No winter preparation has been needed.
- *How easy is it to repair and what was used on the seams?* We repair holes using small pieces of the fabric and asphalt roof patching compound. Some of the smaller holes can

be repaired using just the asphalt roof patching or Henry 10.3-ounce 208 Wet Patch Roof Cement. The seams are stitched with the asphalt roof patching or Henry 208 Wet Patch Roof Cement. Because the cure time is 24 hours, we used 3M 90 contact cement to hold the seams until the cement dries.

- *How long has your fabric been down?* It has been in place since April 2013.
- *How long will it last?* Other clubs have suggested it will last 6 years in a climate such as in Michigan, but a club in Texas has had it for 5 years and expects it to last much longer.
- *What are the top problems with the fabric runway?* You must have a very slow idle on the models because airplanes will move easily on a smooth surface, unlike grass. If a model noses in or crashes hard on the runway, it can put the propnut through the runway or the propeller might slice through; however, generally it does no harm.
- *Does it stay tight?* The material stretches tight in the sunshine and stays tight year-round.
- *Does the wind damage the runway?* We have not had any problem with the wind damaging the runway, but we installed it with special staples. (We have had 50 mph wind without any problems.)

Runway Installation

One of our members designed a tool for putting the staples in. With one worker loading the staples and another driving them in, the work went surprisingly fast. We rolled out the fabric and pulled it flat before stapling it. In a few hours of warm sunshine, the fabric stretches tight. It is usable within a couple of hours.

We added extra staples at each end and after a week in the sun, we added more to each side to ensure that it would stay down. We completed the runway in approximately 3-1/2 hours and started flying from it the same day. Make sure you do not pull the fabric too tight. Pull it tight by hand and the sun will smooth it out.

Thanks for sharing, Todd! Time to go fly! 

SANCTIONED EVENT CALENDAR

FLYING

March

ALABAMA

03/20/2020 - 03/22/2020 - Bessemer, AL (C) BIRMINGHAM 2020 - THE DITCH. Site: 7477 Dickey Springs Rd. Mr. Jacob T Crowder CD/EM PH: (205)514-5469. Email: jtcrowder@crimson.ua.edu. Visit: www.facebook.com/birmingham-rc-helicopter-club-1889978454548087. Sponsor: BIRMINGHAM HELICOPTER MODELERS.

ARIZONA

03/8/2020 - 03/8/2020 - Tucson, AZ (AA) TUCSON IMAC. Site: Club Field. Mr Kevin Garland CD/EM PH: (770)715-6263. Email: garlandk89@gmail.com. Visit: www.tucsonradiocntrlclub.com. Sponsor: TUCSON RADIO CONTROL CLUB INC.

03/10/2020 - 03/14/2020 - Tucson, AZ (C) VINTAGE STUNT CHAMPIONSHIPS XXXII. Site: 4600 N Silverbell Rd Christopher Columbus Park. Mr James Hoffman CD/EM PH: 480-329-3316. Email: windswept4@cox.net. Visit: azucontrol.org. Sponsor: CHOLLA CHOPPERS MAC and CENTRAL ARIZONA CL CLUB.

03/13/2020 - 03/15/2020 - Mesa, AZ (C) GUNSMOKE 2020. Site: Superstition Airpark. Mr Paul J Goldsmith CD/EM PH: 602-323-7753. Email: pt19nut@aol.com. Sponsor: ONE EIGHTH AIR FORCE.

03/20/2020 - 03/22/2020 - Tucson, AZ (AA) TOP GUN F2D. Site: 4600 N Silverbell Rd Christopher Columbus Park. Mr Steve D Stewart CD/EM PH: (520) 220-9322. Email: clcombat@yahoo.com. Sponsor: CHOLLA CHOPPERS MAC.

03/21/2020 - 03/22/2020 - Apache Junction, AZ (C) CACTUS CLASSIC. Site: N Ironwood Rd Superstition Field. Mr Randall W Wegner CD/EM PH: 520-954-0021. Email: thesuperweg@aol.com. Visit: www.eastvalleyaviators.org. Sponsor: EAST VALLEY AVIATORS INC.

03/27/2020 - 03/29/2020 - Mesa, AZ (C) WINGS OVER ARIZONA. Site: Levee Drive Superstition Airpark. Mr Noel Hunt CD/EM PH: (586)747-3001. Email: rostrutter@gmail.com. Visit: http://azmodelaviators.com. Sponsor: ARIZONA MODEL AVIATORS.

03/28/2020 - 03/29/2020 - Tucson, AZ (C) WATTS UP ELECTRIC FLY-IN. Site: Tucson Radio Control Club. Mr Kevin Garland CD/EM PH: (770)715-6263. Email: garlandk89@gmail.com. Visit: www.tucsonradiocntrlclub.com. Sponsor: TUCSON RADIO CONTROL CLUB INC.

CALIFORNIA

03/22/2020 - Perris, CA (AMA) ORBITERS 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 ORBITERS.

FLORIDA

03/11/2020 - 03/14/2020 - Lakeland, FL (C) FLORIDA JETS. Site: 4999 Air Show Rd Paradise Field. Mr Frank Tiano CD/EM PH: (863)607-6611. Email: frank@franktiano.com. Visit: franktiano.com. Sponsor: IMPERIAL RC CLUB INC.

03/11/2020 - 03/14/2020 - Lakeland, FL (C) FLORIDA JETS. Site: 4999 Air Show Rd Paradise Field. Mr Frank Tiano CD/EM PH: (863)607-6611. Email: frank@franktiano.com. Visit: franktiano.com. Sponsor: IMPERIAL RC CLUB INC.

03/13/2020 - 03/15/2020 - Palmetto, FL (C) 29TH ANNUAL DICK COLE MEMORIAL FLY IN. Site: Carl Wegner Field. James L Holloman CD/EM PH: (941)224-7009. Email: jhhollo6540@aol.com. Visit: manateerc.com. Sponsor: MANATEE COUNTY RADIO CNTRLRS.

03/14/2020 - 03/15/2020 - Elkton, FL (C) FLORIDA SOARING SOCIETY #465 ALES SPONSORED BY SARCF. Site: 3005 Alan Nease Rd St Johns County Solid Waste. Mr Thomas J Boyd CD/EM PH: (904)814-5672. Email: tb139harbor@gmail.com. Sponsor: SAINT AUGUSTINE RC FLYERS.

03/21/2020 - 03/22/2020 - Ocala, FL (AA) 2020 OCALA FLYING MODEL CLUB IMAC CONTEST. Site: 1020 SE 110th St. Mr Edward J Baker CD/EM PH: (207)318-3524. Email: ejbaker14@gmail.com. Visit: ocalaflayingmodelclub.com. Sponsor: OCALA FLYING MODEL CLUB.

03/21/2020 - 03/22/2020 - Cape Coral, FL (C) GATHER OF THE GIANTS. Site: 1030 NW 28th St Seahawks Air Park. Mr Randy L Butz CD/EM PH: 239-223-3994. Email: randybutz@embarqmail.com. Visit: rseahawks.org. Sponsor: CAPE CORAL R/SEA HAWKS.

03/28/2020 - 03/29/2020 - Nokomis, FL (C) 21ST ANNUAL WINGS OVER VENICE. Site: 4000 Knights Trail Rd Memorial Field. Mr Jim Hullhorst CD/EM PH: 941.441.6379. Email: oldrcflier@aol.com. Sponsor: R/C FLIERS OF VENICE INC.

GEORGIA

03/28/2020 - Dunwoody, GA (A) MARCH INDOOR. Site: 1978 Mt Vernon Rd Saint Luke's Presbyterian Church. Mr James A Altenbern CD/EM PH: 866-398-0303. Email: jaltenbern0705@charter.net. Visit: thermalthumbers.com. Sponsor: THERMAL THUMBERS OF METRO ATLANTA.

INDIANA

03/28/2020 - 03/29/2020 - W Baden Sprgs, IN (A) 2020 JIM RICHMOND OPEN. Site: 8538 W Baden Ave West Baden Springs Hotel. Mr Reynold A Mazzocco CD/EM PH: (812)455-0838. Email: aprivipilot@aol.com. Sponsor: BONG EAGLES.

LOUISIANA

03/13/2020 - 03/14/2020 - Breaux Bridge, LA (C) WARBIRDS OVER ACADIANA. Site: Aeromodellers of Acadiana DeCloutier Hwy. Mr Allen D Lopez CD/EM PH: (337)2966979. Email: 55adl.lopez@gmail.com. Visit: fb-aeromodellersofacadiana "aosa" rc club for lafayette louisiana. Sponsor: AEROMODELERS OF ACADIANA.

03/20/2020 - 03/21/2020 - Rayne, LA (C) CAJUN FELI FEST. Site: Don Habetz Memorial Field. Mr Jon R Martin CD/EM PH: (337)783-2759. Email: marfly3@bellsouth.net. Visit: www.ramsrcflyers.com. Sponsor: RICE AREA MODELERS SOCIETY.

03/21/2020 - Shreveport, LA (CRST) 2020 SOUTH CENTRAL SKILLZ CLINIC. Site: 7167 US-71. Dr Cambize Shahrdar CD/EM PH: (318)716-8218. Email: cshahrdar@yahoo.com. Visit: www.mini-iac.org/event-details/pid/1023.

03/27/2020 - 03/29/2020 - Port Allen, LA (AA) RED STICK CLASSIC 2020. Site: Kissner Field. Mr Jeffrey K Pike CD/EM PH: (225)337-2037. Email: jeffreypike@hotm.com. Visit: batonrougerc.com. Sponsor: BATON ROUGE RC CLUB INC.

NEW YORK

03/14/2020 - Syracuse, NY (C) MODEL AIRCRAFT FORUM & INDOOR FLY IN. Site: Syracuse Academy of Science. Mr Herbert C Ziegler CD/EM PH: (315)857-6266. Email: herbz1957@yahoo.com. Visit: arcsnews.com. Sponsor: AERO RADIO CLUB OF SYRACUSE.

NORTH CAROLINA

03/19/2020 - 03/21/2020 - Spencer, NC (DEMO) WIND AND WINGS THE SCIENCE OF FLIGHT. Site: 411 S Salisbury Ave NC Transportation Museum. Mr Michael F Goodman CD/EM PH: (704)982-0537. Email: mfgoodman@ctc.net. Visit: nctrans.org/events/wings.aspx. Sponsor: CABARRUS RC FLIERS and CENTRAL ARIZONA CL CLUB.

03/28/2020 - Wade, NC (C) PIEDMONT AEROMODELERS AMA FUN FLY AND SWAP MEET. Site: 2900 Hayfield Rd. Kent Porter CD/EM PH: (919)538-6811. Email: kent.porter@porterscales.com. Visit: piedmontaeromodellers.club. Sponsor: PIEDMONT AEROMODELERS.

OREGON

03/7/2020 - Albany, OR (AMA) INDOOR RECORD TRIALS. Site: 1500 NW Oak Grove Dr Oak Grove Elementary School. Mr Glenn R Grell CD/EM PH: (541)926-7237. Email: wmc@peak.org. Sponsor: WILLAMETTE MODELERS CLUB INC.

SOUTH CAROLINA

03/20/2020 - 03/21/2020 - Piedmont, SC (C) JASON JORDAN JET JAM. Site: 933 Massey Rd. Mr Keith Alexander CD/EM PH: (864)787-3043. Email: kfa911@gmail.com. Visit: firetownflyers.com. Sponsor: FIRETOWER FLYERS.

03/27/2020 - 03/28/2020 - Bowman, SC (C) BOWMAN RC FLYERS SPRING FLING. Site: 1422 Landsdowne Rd. Mr John J Landolfi CD/EM PH: (570)856-2762. Email: summerplace58@gmail.com. Visit: bowman rc flyers on facebook. Sponsor: Bowman RC Flyers.

TEXAS

03/27/2020 - 03/29/2020 - Monaville, TX (C) HOUSTON JET RALLY. Site: Bomber Field. Mr Woody B Lee CD/EM PH: (832)794-3370. Email: woody.lee123@gmail.com. Visit: bomberfieldusa.com. Sponsor: BOMBER FIELD USA.

03/28/2020 - Grand Prairie, TX (C) JETS OVER DFW EDF ELECTRICS FUNFLY, TAILGATE SWAPMEET GTRCC. Site: Low Branch Park. Mr Gary L Pannell CD/EM PH: (817)682-5277. Email: garpannell@gmail.com. Visit: gtrcc.org. Sponsor: GOLDEN TRIANGLE RC CLUB.

03/28/2020 - Katy, TX (C) THROWBACK FLING FLY IN. Site: 6332 Katy Hookley Rd. Mr Paul G Curry CD/EM PH: (281)859-7626. Email: pgjcurry@sbcglobal.net. Visit: facebook space city rc. Sponsor: SPACE CITY RC CLUB.

UTAH

03/6/2020 - 03/7/2020 - St George, UT (C) 42ND ANNUAL PRESIDENTS DAY FLY-IN. Site: Remote Possibilities RC Club Field. Mr Joe M Kirton III CD/EM PH: (435)215-8240. Email: kirton.joe@gmail.com. Visit: www.remoterc.com.

April

ALABAMA

04/17/2020 - 04/19/2020 - Huntsville, AL (C) DISTRICT 5 FUN FLY. Site: 4100 Leeman Ferry Rd SW Capt Trey Wilbourn Field @ Huntsville Landfill. Mr Alvin C Blair CD/EM PH: (269)277-0879. Email: alkaiblair99@yahoo.com. Visit: rocketcityrc.com. Sponsor: ROCKET CITY RADIO CONTROLLERS.

04/24/2020 - 04/26/2020 - Huntsville, AL (C) 4TH ANNUAL STEVE HELMS FUN FLY. Site: Club Field. Mr Ken Abbott CD/EM PH: (931)302-0518. Email: coptdr2@msn.com. Visit: www.huntsvillehelmsflyers.org. Sponsor: HUNTSVILLE HELI FLYERS.

ARIZONA

04/18/2020 - 04/19/2020 - Mesa, AZ

(C) TAKING FLIGHT 2020. Site: Levee Dr Superstition Airpark. Mr Paul Kaup CD/EM PH: (708)359-5289. Email: prkaup@gmail.com. Visit: https://sites.google.com/site/rftstars7/taking-flight-april-18-19-2020. Sponsor: ARIZONA MODEL AVIATORS.

CALIFORNIA

04/4/2020 - 04/5/2020 - Lone, CA (A) GOLD COUNTRY COMBAT DUEL. Site: Spiva Field on Lone Rd/Michigan Bar Rd. Mr William P Letchworth III CD/EM PH: (510)708-5322. Email: leenkimberly@yahoo.com. Visit: goldcountryflyers.com. Sponsor: GOLD COUNTRY FLYERS.

04/4/2020 - 04/5/2020 - Hemet, CA (AA) HEMET 2020 IMAC. Site: 6601 Simpson Rd. Mr Jacques R Telles CD/EM PH: 602-319-8161. Email: jacquestelles@hotmail.com. Visit: hemetmodelmasters.net. Sponsor: HEMET MODEL MASTERS.

04/18/2020 - Hesperia, CA (C) RCPRO WARBRID RACE. Site: 6963 Arrowhead Lake Rd Victor Valley RC Park. Mr William T Yates Sr. CD/EM PH: (760)552-5509. Email: still4given@yahoo.com. Visit: vvrcef.org. Sponsor: VICTOR VALLEY R/C FLYERS.

04/19/2020 - Perris, CA (AMA) ORBITERS MONTHLY. Site: Taibi Field. Mr Michael Pykelny CD/EM PH: (858)748-6235. Email: mpykelny@hotmail.com. Visit: www.sandiegoorbiteers.com. Sponsor: SAN DIEGO ORBITERS.

04/24/2020 - 04/26/2020 - Turlock, CA (C) 5TH ANNUAL TURLOCK ROTOR RALLY. Site: 519 E Greenway Ave Turlock Airpark. Mr David J Bettencourt CD/EM PH: (209)620-7512. Email: yakyak55@charter.net. Visit: turlockrcclub.com. Sponsor: TURLOCK RC CLUB.

CONNECTICUT

04/19/2020 - Glastonbury, CT (AA) SPRING FLING INDOOR CONTEST. Site: 330 Hubbard St Glastonbury High School. Mr John D Koptonak CD/EM PH: 860.434.1029. Email: gliderglider@comcast.net.

FLORIDA

04/3/2020 - Fort Pierce, FL (C) SUNDANCERS ANNUAL BIG BIRD EVENT. Site: 7901 Germany Canal Rd. Mr John Martorano CD/EM PH: threejohnny@yahoo.com. Visit: sundancersc.org. Sponsor: SUN DANCERS RC CLUB.

04/4/2020 - Dunnellon, FL (C) 20TH ANNUAL BIG BIRD FLYIN. Site: 11729 Bridges Rd Rainbow RC Airpark. Dr Ralph W Rogers III CD/EM PH: (352)220-3363. Email: rcdcc35@gmail.com. Visit: tricoountyrcclub.homestead.com. Sponsor: TRI-COUNTY RC CLUB.

04/11/2020 - Cape Coral, FL (C) CAPE ELECTRIC FUN FLY. Site: 1030 Northwest 28th St Seahawks Air Park. Mr Joseph B Dolliver CD/EM PH: (239)218-2677. Email: joe33914@gmail.com. Visit: rseahawks.org. Sponsor: CAPE CORAL R/SEA HAWKS.

04/14/2020 - 04/15/2020 - Palm Bay, FL (AA) FMA SPRING FLING. Site: Sopadilla Rd. Mr Duncan McBride CD/EM PH: (239)437-0065. Email: nic19dm@gmail.com. Sponsor: FLORIDA MODELERS ASSOCIATION.

04/18/2020 - Ocala, FL (C) SPRING FLING. Site: OFMC Field 110th St. Mr Jesse C Hinds CD/EM PH: (727)243-3928. Email: jesse@packetcity.com. Visit: www.ocalaflayingmodelclub.com. Sponsor: OCALA FLYING MODEL CLUB.

04/25/2020 - 04/26/2020 - Ocala, FL (AA) OCALA SUN PATTERN CONTEST. Site: 1020 SE 110th St. Mr Peter S Ferguson CD/EM PH: (321)271-0240. Email: pferg30@gmail.com. Visit: ocalamodelflayingclub.com.

04/25/2020 - Land O Lakes, FL (C) FUN-FLY-IN. Site: 22500 State Rd 52 BCF Area 52 Flying Field @ Conner Preserve. Mr Peter C Rundel CD/EM PH: (813)995-2110. Email:

pete@therundels.com. Sponsor: BAY CITY FLYERS, INC.

INDIANA

04/24/2020 - 04/26/2020 - Muncie, IN (C) PYLON RACING SCHOOL (PRS). Site: IAC Site 3 International Aeromodelling Center. Mr Tom Melsheimer CD/EM PH: (440)488-4743. Email: tommelsh@gmail.com.

LOUISIANA

04/4/2020 - 04/5/2020 - Denham Spgs. LA (AA) ALLAN PERRET MEMORIAL STUNT CHAMPIONSHIPS. Site: South Park. Mr Perry A Rose CD/EM PH: 225 369 2964. Email: prose02@snet.net. Sponsor: BATON ROUGE BI-LINERS MAA.

04/25/2020 - 04/26/2020 - Shreveport, LA (AA) 6TH ANNUAL SHREVEPORT IMAC CHALLENGE. Site: 7167 US-71. Dr. Cambize Shahrdar CD/EM PH: 318-716-8218. Email: cshahrdar@yahoo.com. Visit: sharkrc.org. Sponsor: SHREVEPORT AREA RADIO CONTROL SOCIETY.

MARYLAND

04/25/2020 - 04/26/2020 - Hagerstown, MD (A) 2020 PEGASUS FMAC IMAC CLASSIC. Site: 19880 Old Forge Rd. Mr Bradley Davy CD/EM PH: bdavy92960@msn.com. Email: bdavy92960@msn.com. Visit: pegasusrc.com. Sponsor: FREDERICK MODEL AIRCRAFT CLUB and PEGASUS RC AIRPLANE CLUB.

NORTH CAROLINA

04/4/2020 - Kinston, NC (C) KINSTON AERO-MODELERS SPRING FLY IN. Site: 207 Airport Rd. Mr Robert E McLaughy CD/EM PH: (252)315-9100. Email: rmcgaughy@embarqmail.com. Visit: coastplanes.com. Sponsor: KINSTON AERO-MODELERS.

04/4/2020 - Winston Salem, NC (C) 10TH ANNUAL SKY KING E-FEST. Site: 2301 W Clemmonsville Rd Hobby Park. Mr Vance W Jones CD/EM PH: (336)831-7565. Email: jonesv2723@att.net. Visit: http://hprc.almostliveradio.net. Sponsor: HOBBY PARK RCERS.

04/18/2020 - Wade, NC (CRST) SPRING WARBIRD. Site: 2900 Hayfield Rd. Kent Porter CD/EM PH: 919-538-6811. Email: kent@porterscales.com. Visit: piedmontaeromodellers.club. Sponsor: PIEDMONT AEROMODELERS.

04/25/2020 - Monroe, NC (A) 2ND ANNUAL SPRING JET RALLY. Site: 8805 Morgan Mill Rd McCracken Aerodrome. Mr W Scott Gantt CD/EM PH: (704)564-0716. Email: scott.gantt@usi.com. Visit: charlotteaeromodellers.org. Sponsor: CHARLOTTE AEROMODELERS INC.

04/25/2020 - Lumberton, NC (C) MT ELIM RC CLUB. Site: 13799 N Carolina Hwy 72. Mr Jack D Johnson CD/EM PH: (910)374-3460. Email: toothmanjack@nc.rr.com. Sponsor: MT ELIM RC CLUB.

04/25/2020 - Elm City, NC (C) TAD DIETRICK MEMORIAL FLY IN. Site: 7475 White Bridge Rd Town Creek Field. Mr A B Gentry Jr. CD/EM PH: 252-343-3961. Email: wn4z462@centurylink.net. Visit: tarheelrcflyers.org. Sponsor: TARHEEL R/C FLYERS.

OHIO

04/25/2020 - 04/26/2020 - Kent, OH (A) 2020 KENT STATE INDOOR FF CONTEST. Site: Kent State University Field House. Mr John D Kagan CD/EM PH: (440)503-1433. Email: john_kagan@hotmail.com. Visit: www.facebook.com/events/484305275528123.

PENNSYLVANIA

04/18/2020 - Barnesville, PA (C) 2020 LIGHTS OVER TUSCARORA. Site: 70 Foothill St. Tuscarora State Park. Mr Kyle P Snyder CD/EM PH: (484)464-1320. Email: kyle.snyder17960@gmail.com. Visit: https://

tuscarorarcflyingclub.com. Sponsor: TUSCARORA RC CLUB.

SOUTH CAROLINA

04/18/2020 - Swansea, SC (C) LARKS SPRING FLY IN. Site: 1347 State Rd S-32-45 LARKS Pelion Field. Mr Walter H Senour CD/EM PH: (912)223-0201. Email: wsenour@gmail.com. Visit: www.larksrc.com. Sponsor: LEXINGTON AIRCRAFT RADIO CONTROL SOCIETY LARKS.

04/24/2020 - 04/25/2020 - Rembert, SC (C) SOD BUSTERS WARBIRD INVASION. Site: Modern Turf Sod Farm Camden Hwy. Mr Forest K Morris CD/EM PH: (770)375-5102. Email: scalenut@bellsouth.net. Visit: www.facebook.com/carolina-sod-busters-263051937048906. Sponsor: CAROLINA SOD BUSTERS.

04/25/2020 - Campobello, SC (C) CAMPOBELLO FLYERS SPRING FLY IN. Site: Campobello Flyers RC Club Roddy Rd. Mr Robert M Babb CD/EM PH: (864)804-0035. Email: cyclenutus@yahoo.com. Visit: campobelloyfers.com. Sponsor: CAMPOBELLO FLYERS RC CLUB.

TEXAS

04/4/2020 - 04/5/2020 - Monaville, TX (C) HIGH WING HOEDOWN. Site: Bomber Field. Mr Woody B Lee CD/EM PH: (832)794-3370. Email: woody.lee123@gmail.com. Visit: bomberfieldusa.com. Sponsor: BOMBER FIELD USA.

04/11/2020 - Alvin, TX (C) 30TH ANNUAL BIG BIRD FLY IN. Site: 2444 CR 180. Mr Fred W Daniels CD/EM PH: 281-488-8371. Email: fdaniels51@sbcglobal.net. Visit: alvinrc.club. Sponsor: ALVIN RC MODELERS ASSN.

04/17/2020 - 04/19/2020 - Schertz, TX (C) SPRING FLOAT FLY 2020. Site: 999 Texas 1604 Loop Martinez Dam. Mr Robert A Jones CD/EM PH: (210)789-4425. Email: rivercityrc@satx.rr.com. Sponsor: RIVER CITY RADIO CONTROL.

04/18/2020 - 04/19/2020 - Georgetown, TX (AA) TEXAS REPUBLIC CLASSIC PATTERN CONTEST. Site: 655 County Road 141. Mr Rene Grebe CD/EM PH: 626-991-0842. Email: renegrebe39@gmail.com. Visit: gamarc.org. Sponsor: GEORGETOWN AERO MODELERS ASSN.

04/18/2020 - Grand Prairie, TX (BRST) 7TH ANNUAL SPA AEROBATIC CONVENTION. Site: 2701 Seaton Rd Low Branch Park. Mr Franklyn Cox CD/EM PH: (972)339-8537. Email: countilaw@yahoo.com. Visit: www.goldentrianglerc.org. Sponsor: GOLDEN TRIANGLE RC CLUB.

04/18/2020 - Crosby, TX (C) PROP NUTS ANNUAL FLEA MARKET & FLY IN. Site: 3787 Wolcek Rd. Crosby Propnuts Field. Mr Taswall G Crowson CD/EM PH: (281)474-9531. Email: tcrowson@flash.net. Visit: www.propnuts.com. Sponsor: PROP NUTS RC CLUB-2.

04/23/2020 - 04/26/2020 - Texarkana, TX (C) TEXARKANA RC FLY IN. Site: Corps Rd. Mr Gary Strickland CD/EM PH: (903)278-5703. Email: garystric@gmail.com. Visit: www.trcfrc.org. Sponsor: TEXARKANA RC FLYING CLUB.

04/23/2020 - 04/26/2020 - Thorndale, TX (C) HELI'S OVER APACHE PASS. Site: 9119 N FM 908. Mr Kenny Sierra CD/EM PH: (210)240-3547. Email: ks42k@aol.com. Visit: https://apachepassrc.com/home/events/helis-over-apache-pass. Sponsor: FLY APACHE PASS RC.

04/24/2020 - 04/26/2020 - Dallas, TX (AA) DMAA SPRING WARM-UP GENE HEMPEL MEMORIAL. Site: Samuel Garland Park 11500 McCree Rd. Mr Patrick E Hempel CD/EM PH: (972)841-8766. Email: ptrckhem@aol.com. Visit: www.damm-1902.org. Sponsor: DALLAS MODEL AIRCRAFT ASSN.

04/24/2020 - 04/26/2020 - Sherman, TX

(C) 3RD ANNUAL TEXAS TWISTE. Site: 1579 Hazelwood Rd Pete Darter Flying Field. Mr Robert L Heaton CD/EM PH: (580)565-2324. Email: robertheaton59@icloud.com. Visit: texomarc.org. Sponsor: TEXOMA RC MODELERS.

04/25/2020 - Houston, TX (C) WARBIRDS OVER JSC. Site: JOHNSON SPACE CENTER. Mr Michael R Laible CD/EM PH: 713/542-0987. Email: mrLaible@sbcglobal.net. Visit: jscrc.com. Sponsor: JOHNSON SPACE CENTER R/C CLUB.

WISCONSIN

04/25/2020 - 04/26/2020 - Green Bay, WI (A) TUNDRA TERROR XXIII. Site: 4430 County Rd N. Mr William C Drumm III CD/EM PH: 920-428-0323. Email: midair72@hotmail.com. Visit: gbmacc.com. Sponsor: GREEN BAY MODEL AIRPLANE CLUB.

NONFLYING

March

ALABAMA

03/21/2020 - Decatur, AL (E) NORTH ALABAMA SPRING SWAP MEET. Site: 1117 Lenwood Rd SE Decatur Shrine Club. Mr James R Ray CD/EM PH: (256)353-1323. Email: james_r_ray@att.net. Visit: ourdmac.com. Sponsor: DECATUR MODEL AIRPLANE CLUB.

CALIFORNIA

03/28/2020 - Oakdale, CA (E) 24TH ANNUAL SPRING SWAP MEET. Site: RCFU Club Field, 7133 Eastman Rd Ward Hendricks Field. Mr Ronald A Lenci CD/EM PH: (209)838-3869. Email: ronlenci@gmail.com. Visit: www.rcflyersunlimited.com. Sponsor: RC FLYERS UNLIMITED INC.

CONNECTICUT

03/22/2020 - Wallingford, CT (E) ECSF 6TH ANNUAL R/C SWAP MEET. Site: 1074 S Colony Rd Zandri's Stillwood Inn. Mr Dennis J Keegan CD/EM PH: (860)322-2102. Email: ecسف.swap@gmail.com. Visit: swampflyers.net. Sponsor: EASTCOAST SWAMP FLYERS RC INC.

EAST COAST SWAMP FLYERS R/C CLUB INC - AMA #973

6th Annual R/C SWAP MEET Sunday, March 22 2020

100 TABLES VENDORS - \$20/TABLE
ADMISSION - \$5 AGES 10 & UNDER FREE!

VENDOR SETUP - 7:30AM
GENERAL ADMISSION - 8:30 - 12:00

Zandri's Stillwood Inn
1074 S. Colony Rd
Wallingford, CT 06492

Easy off, easy on I-91 Exit 13

MORE INFO AT OUR WEBSITE:
WWW.SWAMPFLYERS.NET
CONTACT: ECSF.SWAMP@GMAIL.COM

FLORIDA

03/21/2020 - Sebring, FL (E) HIGHLANDS RC CLUB ANNUAL SWAP MEET. Site: 12700 Ar buckle Creek Rd. Dr Kevin M Strathy CD/EM PH: (863)991-0600. Email: kevinstrathy@gmail.com. Visit: highlandsradiocontrol.com. Sponsor: HIGHLANDS RADIO CONTROL CLUB INC.

03/21/2020 - Land O Lakes, FL (E) SWAP MEET. Site: 22500 State Rd 52 BCF Area 52 Flying Field @ Conner Preserve. Mr Michael Diesu CD/EM PH: (813)995-0545. Email: mdiesu@tampabay.rr.com. Visit:

baycityflyers.org. Sponsor: BAY CITY FLYERS, INC.

ILLINOIS

03/7/2020 - Swansea, IL (E) 16TH ANNUAL SWAP MEET. Site: 2425 N Illinois St Belleville/Swansea Moose Lodge 1221. Mr Daniel R Arens CD/EM PH: (618)444-8063. Email: rcflyerdan@hotmail.com. Visit: bellevillercflyers.com. Sponsor: BELLEVILLE RC FLYERS.

INDIANA

03/14/2020 - Angola, IN (E) TRI-STATE RC SWAP MEET. Site: 904 Williams St National Guard Armory. Mr Richard A Atekruse CD/EM PH: (260)577-0060. Email: raltekruse47@gmail.com. Visit: facebook smaklub. Sponsor: STEUBEN MODEL AIRCRAFT KLUB.

10th Annual Tri-State R/C Swap Meet
Saturday March 14th, 2020
Angola, Indiana
Radio controlled airplanes, cars,
boats, drones, & accessories
Angola National Guard Armory
904 N. Williams St.
9:00 AM to 12:00 Noon, setup-8am
Adult Admission (kids over 12) \$5.00, women free
Wall Table rental: \$35.00, non-wall rental: \$12.00
Phil's Hobby Shop and Bremen Hobbies will be there
Information or table rental email:
raltekruse47@gmail.com

03/28/2020 - Franklin, IN (E) JCRC-FLYERS SWAP MEET. Site: Johnson County Fairground Scott Hall Bldg. Mr James W Craig CD/EM PH: (317)439-6378. Email: craig_j@att.net. Visit: jrcrf.net. Sponsor: JOHNSON COUNTY FLYERS R/C.

Johnson County R/C Flyers
2020 R/C SWAP MEET
New Location Larger Facility
Saturday, March 28th 2020
8:00am to 12:00pm
Johnson County Fairgrounds
250 Fairgrounds Street (Scott Hall)
Franklin, Indiana 46131
Vendor set-up starts at 7:00am
Doors open to public 8:00am to 12:00pm
General admission \$5
Tables are \$12 in advance \$15 at door
To reserve tables, contact James Craig at
317-439-6378 or craig_j@att.net
RAFFLE ITEM:
NANUK 9 ALUMINUM STICK SOCC 81"
\$0/50 RAFFLE TICKETS
Don't stop for breakfast!
LUNCH BONUSES
Kitchen will be open for Breakfast and Lunch
Please keep in mind we will have 3 events later this year:
Warbird Fly-in, Model Aviation Day and the Heartnut Fly-in
You're welcome to fly at our field after swap meet.
Facebook group JCRCF or jrcrf.net

MICHIGAN

03/8/2020 - Linden, MI (E) 29TH ANNUAL FLINT'S RC ANNUAL SWAP MEET. Site: 4070 Lahring Rd Lake Fenton High School. Mr William C Gerald CD/EM PH: (810)845-3007. Email: impalass6565@comcast.net. Visit: rcflyingaces.com. Sponsor: THE FLYING ACES R. C. CLUB INC.

03/28/2020 - Kalamazoo, MI (E) THUNDERBIRDS RC CLUB SWAP MEET. Site: 2900 Lake St Kalamazoo County Expo Center. Mr Luis Espinel CD/EM PH: (269)373-1196. Email: espinel@ameritech.net. Sponsor: THUNDERBIRDS R/C CLUB.

NEW YORK

03/21/2020 - Bloomfield, NY (E) THE MIKE HOWELL MEMORIAL AUCTION & SWAP MEET. Site: Rhonda's Auction House. Mr James A Schwab CD/EM PH: (585)301-1107. Email: 29jschwab29@gmail.com. Visit: canandaiguaskychiefs.org. Sponsor: CANANDAIGUA SKY CHIEFS.

03/29/2020 - Buffalo, NY (E) 56TH ANNUAL

SANCTIONED EVENT CALENDAR

AUCTION. Site: 1600 Southwestern Blvd Ismailia Shrine Center. Mr Robert Rosplochowski CD/EM PH: (716)444-4700. Email: highflyer22@roadrunner.com. Sponsor: RC AIRCRAFTERS OF W.N.Y.



THE RC AIRCRAFTERS
Of Western New York Present Their

56th Annual AUCTION
For all items related to radio control

Sunday March 29th 2020 at Ismailia Shrine Center
1600 Southwestern Blvd.
West Seneca, NY 14224

Doors Open at 10:50 AM
Auction Starts at 12:00 AM

Door Prizes 50/50 Raffles Refreshments

Airplane Door Prize

Admission 7.00 Ladies & Kids Free

NORTH CAROLINA
03/21/2020 - Lexington, NC (E) 22ND ANNUAL SWAP MEET. Site: 100 Fairground Rd Davidson County Fairgrounds Exhibition Center. Mr Mark B Fansler CD/EM PH: (336)479-8900. Email: mfansler@triadaero.org. Visit: triadaero.org. Sponsor: TRIAD AEROMODELERS, INC.



Triad Aeromodelers
22nd ANNUAL RC SWAP MEET

Saturday March 21, 2020
Time: 8:00 AM to 1:00 PM

NC - DAVIDSON CO. FAIR EXPO CENTER
\$5.00 Admission (Ladies, Children Free)
Table reservations: Wall \$20, Aisle \$15
Contact: Mark at 336-479-8900
e-mail: mfansler@triadaero.org
Web Site: www.triadaero.org

OHIO
03/17/2020 - Ravenna, OH (E) 31ST ANNUAL SWAP SHOP. Site: 7075 State Rd 88 Maplewood Career Center. Mr Michael P Ryan CD/EM PH: (330)296-3633. Email: mryan@littlekeg.com. Visit: ravennathunderbirds.com. Sponsor: RAVENNA THUNDERBIRDS RC CLUB INC.

RAVENNA THUNDERBIRDS
31ST ANNUAL SWAP SHOP

SUNDAY, MARCH 1st, 2020
Time: 10:00 AM till 1:00 PM
Sellers Set Up at 9:00 AM

Admission \$4.00, (chance on 3 door prizes inc.). Wives & Kids Free
Site: Maplewood Career Center
7075 ST. RT. 88
Ravenna, OH 44266

RAFFLES *REFRESHMENTS*
For Table Reservations & Info Call:
Mike Ryan @ 330-296-3633 or
mryan@littlekeg.com Tables layout available at ravennathunderbirds.com

03/14/2020 - Columbus, OH (E) 50TH ANNUAL MODEL SHOW AND SWAP SHOP.

Site: 4411 Tamarack Blvd Northland Performing Arts Center. Mr Paul C Krumm Jr. CD/EM PH: (614)891-6999. Email: pckrumm@aol.com. Visit: wmaa-wags.org. Sponsor: WESTERVILLE MODEL AERO ASSN.

WESTERVILLE MODEL AERONAUTICS ASSN
50th ANNUAL MODEL SHOW and SWAP SHOP

34 Trophies in 11 categories
100 SWAP SHOP Tables

MARCH 14, 2020
8:30am - 1 pm

Northland Performing Arts Center
4411 Tamarack Blvd
Columbus, OH 43229

SHOW INFO: (614) 891-6999
TABLE RSVN: (614) 582-9131
WWW.WMAA-WAGS.ORG

03/21/2020 - Urbana, OH (E) SWAP MEET. Site: 1652 N Main St Champaign Aviation Museum. Mr David Marenberg CD/EM PH: (937)207-4105. Email: dmaren1987@gmail.com. Visit: flyurbana.com. Sponsor: MAD RIVER FLYING ASSOC.

Swap Meet
Champaign Aviation Museum
Grimes Field, North of Urbana
OH, on US Rt. 68

March 21st 2019
Tables \$15 at the Door

go to www.flyurbana.com to reserve tables

03/28/2020 - Lancaster, OH (E) 2020 ANNUAL LANCASTER HOBBY EXPO AND SWAP MEET. Site: 125 E Fair Ave Fairfield Fairgrounds. Mr Tony R Scott CD/EM PH: (740)687-5038. Email: tonsycott40@sbcglobal.net. Visit: flying-forks.com. Sponsor: FAIRFIELD OHIO RADIO CONTROL F.O.R.K.S.

OREGON
03/14/2020 - McMinnville, OR (E) SWAP MEET. Site: 11275 SW Durham Ln Yamhill Valley Heritage Center. Mr Jeff Jones CD/EM PH: (503)367-4784. Email: joneses460@msn.com. Visit: https://mcminnvilleaircraftmodelers.weebly.com. Sponsor: MCMINNVILLE AIRCRAFT MODELERS.

PENNSYLVANIA



CENTRAL PENN AEROMODELERS ASSOC.
Visit Our Website: www.cpaaa.us

40th Annual Radio Control EXPO

March 14, 2010 * Lebanon, PA
41,000 Sq. Ft. Indoors
602 Spaces



First Time Renters Call Todd First

To Pre-Register send space rent plus \$8.00 per person (payable to CPAAA) with S.A.S.E. to:
CPAA
244 Ridge Road
Mechanicsburg, PA 17050

Info...Call Todd 717- 857- 4726

03/14/2020 - Lebanon, PA (E) 40TH ANNUAL RC EXPO. Site: 80 Rocherty Rd. Todd L Lojak CD/EM PH: (717)857-4726. Email: info@cpaa.us. Visit: cpaa.us. Sponsor: CENTRAL PENN AEROMODELERS.

03/28/2020 - Delmont, PA (E) MARC RC FLEA MARKET. Site: 2360 PA-66 Delmont Event Center. Mr David D Frew CD/EM PH: (724)727-2396. Email: ddfrew@gmail.com. Visit: remarc.org. Sponsor: MURRYSVILLE AREA RC SOCIETY.

03/28/2020 - Hamburg, PA (E) 27TH ANNUAL SWAP MEET. Site: 501 Pine St. Mr Jack D Hilbert Jr. CD/EM PH: (610)657-5286. Email: pcchilbert@gmail.com. Visit: tcws.org. Sponsor: TRI COUNTY WING SNAPPERS INC.



CENTRAL PENN AEROMODELERS ASSOC.
Visit Our Website: www.cpaaa.us

40th Annual Radio Control EXPO

Date: Saturday, March 14, 2020 (regardless of weather)

TIME:
8:30 a.m. - Gen. Admission 7:00 p.m. - Open Tables Only
Info... Call Todd 717-857-4726

Advance Tickets \$8.00
Admission \$10.00 (Donation under 12 free)
Aisle Spaces: \$20.00 each (5 ft long)
Wall Spaces: \$25.00 each (5 ft long)

Place: **LEBANON FAIRGROUNDS**
80 Rocherty Road - Lebanon, PA 17042



TRI-COUNTY WING SNAPPERS

Hamburg RC Swap Meet
March 28, 2020, Hamburg Field House, 501 Pine St., Hamburg, Pa. 19526 Located near Cabela's I-78 & Rt. 61. Info at www.TCWS.org. 610-657-5286
Over 240 tables, 16,000 Sq. Ft. of floor space. Free Parking. Food available. Doors Open 8:00 AM. Adm. \$5.00, Aisle Tables \$7.00, Wall Tables \$12.00

TEXAS

WAMS SWAP MEET & AUCTION!

Fri., March 20, 2020
* Swap Meet: 5 p.m. 'til 9 p.m.

Sat., March 21, 2020
* Swap Meet: 8 a.m. 'til Noon
* Auction: Noon 'til 5 pm

Admission \$7.00 Each Day
Table Rental \$12.00 Each Day

Weatherford High School
2121 Bethel Rd. • Weatherford, TX
Exit 406 East on Service Road
Exit 408 West on Service Road

For Info, Call Verne 817-629-1909
vernebell@gmail.com

03/20/2020 - 03/21/2020 - Weatherford, TX (E) WAMS ANNUAL SWAP MEET & AUCTION. Site: 2121 Bethel Rd Weatherford High School. Mr Verne B Bell CD/EM PH: (817)629-1909. Email: vernebell@gmail.com. Sponsor: WEATHERFORD AERO MODELING SOCIETY.

WISCONSIN
03/1/2020 - Kaukauna, WI (E) 35TH ANNUAL R/C SHOW & AUCTION. Site: W2091 County Road J StarLite Club. Mr Tim A Stadler CD/EM PH: (920)475-3998. Email: flyvam670@gmail.com. Visit: flyvam.com or facebook. Sponsor: VALLEY AERO MODELERS, INC.

April

FLORIDA
04/25/2020 - Cantonment, FL (E) NFMI ANNUAL SPRING SWAP MEET. Site: 3125 Pine Forest Rd Pine Forest Assembly of God. Mr Sam R Helnich CD/EM PH: (312)914-1728. Email: sam@smhelnich.us. Visit: <http://nfmi.org/nfmi-swap-meet>. Sponsor: NORTHWEST FL MODELERS INC.

ILLINOIS
04/4/2020 - Granite City, IL (E) MIDWEST AIR WING R/C CLUB ANNUAL SWAP MEET. Site: 2060 Delmar Ave Granite City Township Offices. Mr Stanley J Marmuziewicz Jr. CD/EM PH: (618)741-1926. Email: soarin2007@live.com. Visit: <http://midwestairwingrc.com>. Sponsor: MIDWEST AIR WING R/C CLUB.

04/11/2020 - Wheaton, IL (E) SWAP TIL' YOU DROP. Site: 2015 W Manchester Rd DuPage County Fairgrounds. Mr Hector R Rivera CD/EM PH: (630)439-6016. Email: president@suburbanrcbarncstormers.com. Visit: suburbanrcbarncstormers.com. Sponsor: SUBURBAN RC BARNSTORMERS INC.

04/19/2020 - Columbia, IL (E) COLUMBIA RC FLYING CLUB SWAP MEET. Site: 211 E Cherry St Turner Hall. Mr Cameron C Cook CD/EM PH: (618)281-7243. Email: triplesea@gmail.com. Visit: columbia-rc.net. Sponsor: COLUMBIA R/C FLYING CLUB INC.

Swap Meet
April 19, 2020
8:00am - Noon
Turner Hall 211 E Cherry St
Columbia, Illinois 62236
Columbia R/C Flying Club, Inc.

www.Columbia-rc.net

Call us for driving directions
Call: Jeff 314-814-7818
Call: Cameron 618-281-7243
Admission \$5.00, tables \$10.00
Open 8:00 am
NO RESERVED TABLES
FIRST COME, FIRST SERVED

MINNESOTA
04/4/2020 - Detroit Lakes, MN (E) SWAP N SHOP. Site: 808 Washington Ave Washington Square Mall. Mr Orvin L Fossen CD/EM PH: (218)234-7047. Sponsor: F-M SKYLARKS INC.

NEW YORK
04/18/2020 - Seneca Falls, NY (E) FLAPS 18TH ANNUAL RC SWAP MEET. Site: 35 Water St Seneca Falls Recreation & Park. Mr Bradford Stevens CD/EM PH: (585)729-8505. Email: bahnzai@hotmail.com. Visit: facebook finger lakes air pirates. Sponsor: FINGERLAKES AIR PIRATES.



Finger Lakes Air Pirates - 18th Annual R/C Swap Meet and Auction

Saturday, 18 April 2020

Doors open at 9:00 - Swap Meet 9:30 - Auction 11:00

Seneca Falls Recreational Center
35 Water St., Seneca Falls, NY 13148
Just off of RT. 20 - 5 Miles from TWY Exit 41

Free Parking - Free Tables - No Auction Fees
50/50 Drawings at 10:00 and 11:30

* Drawings for Free Door Prizes *
*** Outstanding Raffles ***
Food and Refreshments Available

\$5.00 Admission - Women/Kids Free



Advertising opportunities are now available for display ads in the MA Marketplace. Visit www.ModelAviation.com/advertise for information and pricing.

AEROScott MODEL ENGINE SERVICE

Since 1989, 2- and 4-cycle, gas and glow, complete service. Custom machining and fabrication services.

10820 Central Ave., Ontario, Calif 91762

909-562-7106

aeroscott89@gmail.com

AeroScott.com

Carbon Fiber and EPP Foam:

www.windcatcherrc.com

LEE CUSTOM ENGINES:

Custom K&B 61s assembled by designer Clarence Lee with PDP (Perry Directional Porting) \$165.00 plus \$12.50 shipping. Your K&B 61 Customized including PDP \$28.50 plus \$12.50 shipping. Stripped glowplug threads repaired. 2-stroke heads \$17.50. 4-stroke \$22.50 postpaid. 4-stroke exhaust ports repaired. \$28.50 postpaid. Include header pipe when sending head or cylinder. Add \$15.00 if sending complete engine for either repair.

Lee Custom Engines, 10112 Woodward Ave., Sunland, CA 91040 (818)352-3766



SONIC-TRONICS INC.
Performance,
Reliability &
3800 MA of
POWER
Made in
USA
www.SonicTronics.com



New! **Super Economy Electric Gas Can**
• Completely Sealed
• Pickup Filter
• No Holes in Container
• 2000 MAH Battery
• Fast Fueling
• High Quality Pump
• Charger Included
\$119.95 plus S&H **price breakthrough!**
Madison Components, Inc., Mesa, AZ 85207
www.qualityrcproducts.com 1-480-888-7806

How to Advertise Your Items in MA Marketplace

Display Marketplace ads are available in one size only (2-1/4" wide x 2-3/8" high). Please refer to www.ModelAviation.com/advertise for information on preferred file formats accepted. If you need help in creating artwork, it is available for a modest fee - contact our sales representative at www.ModelAviation.com/advertise for details.

Up to 15 display Marketplace positions are available, one ad space per advertiser, placed randomly, for a length of up to 6 consecutive issues.

When a scheduled campaign is completed, that advertiser may advertise again, asking to be added to the rotation list. Once other advertisers have had the opportunity to run, a new campaign can start.

For Text Marketplace, please refer to www.ModelAviation.com/advertise. All Text Marketplace ads may run for more than one month at a time.

No frequency or other discounts are applicable on any Marketplace ads. Visit www.ModelAviation.com/advertise for payment details.

Illegible ads and/or ads received without the proper payment amount will be discarded. Ad and payment must be received by the 15th, and there is a 2-month leadtime. For example: April 15 for the June issue.

Ads will be printed on a first-come, first-served basis, as space permits. Responsibility for content rests solely with the advertiser. Model Aviation retains the right to reject unsuitable advertising. The Academy of Model Aeronautics does not endorse products/services advertised.

No proofs or tear sheets will be sent.

INDEX OF ADVERTISERS

INTERESTED IN ADVERTISING IN *MODEL AVIATION*?

Visit www.ModelAviation.com /advertise for more information!

Advertising Account Executive

Jonathan McGraw (410) 316-9863

PLEASE NOTE: Responsibility for content and suitability of advertisements in this magazine rests with the advertiser. Advertisers are responsible for product quality and delivery timeliness. *Model Aviation* retains the right to reject unsuitable advertising. The Academy of Model Aeronautics does not endorse products advertised.

A	
AJ Aircraft www.aj-aircraft.com	53
AMA National Fun-Fly www.modelaircraft.org	99
AMA Shop Online www.modelaircraft.org/shopama	CV5
B	
B&B Specialties www.bennettbuilt.com	81
Balsa USA www.balsausa.com	29
BetaFPV https://betafpv.com	5
BMJR Models Inc. www.bmjmodels.com	85
Brodak Manufacturing & Distributing Company www.brodak.com	88
C	
Camp AMA amaflightsschool.org/campama	103
CARF Models Ltd. www.carf-models.com	79
Chief Aircraft www.chiefaircraft.com	17
D	
Desert Aircraft www.desertaircraft.com	7
Du-Bro Products www.dubro.com	34
E	
E-flite www.horizonhobby.com	CV6
Ernst Manufacturing Inc. www.ernstrc.com	70
Esprit Tech www.esprittech.com	83
Extreme Flight R/C www.extremeflightrc.com	90-91
F	
Flex Innovations www.flexinnovations.com	71
Flying Aces Club www.flyingacesclub.com	59
Futaba Corporation of America www.futabausa.com	73
G	
Graves RC Hobbies www.gravesrc.com	97
H	
Harbor Freight Tools www.harborfreight.com	CV1, 10-11
Hextronik Limited www.hobbyking.com/modelaviation	40-43
J	
J & L Power Products www.jlproducts.net	102
M	
Mile High RC www.milehighrc.com	98
O	
Old School Model Works www.oldschoolmodels.com	65
On Top of the World www.ontopoftheworld.com	61
R	
Ram www.ramrcandramtrack.com	101
RCGroups www.rcgroups.com	95
Retro RC LLC www.retrorc.us.com	60
RTL Fasteners www.rtlfasteners.com	60
S	
Sig Manufacturing Co., Inc. www.sigmg.com	78
Spektrum Radios www.spektrumrc.com	CV4, 75
Sullivan Products www.sullivanproducts.com	94
T	
Toledo Weak Signals R/C Expo www.toledoshow.com	44
Tower Hobbies www.towerhobbies.com	1
Triple Tree Aerodrome www.tripletreeaerodrome.com	67
V	
Venom Group www.venom-group.com	23
W	
Warbird Pilots www.warbirdpilots.com	89
Wind-it-up Enterprises www.peck-polymers.com	77

Model Aviation (ISSN 0744-5099, 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. POSTMASTER: Send address changes to Academy of Model Aeronautics, 5161 E. Memorial Dr., Muncie IN 47302 Attn: Membership Department. For non-member subscription rates, go to www.modelaircraft.org/publications/subscribe.aspx or call 1-800-FLY-AMA (1-800-435-9262). When membership in the AMA includes a subscription to *Model Aviation*, \$18 of the dues are for the magazine subscription.




DAYS GONE BY

By John Gorla | p47john@icloud.com

JOHN GORLA'S PHOTO was taken in 1957 in an open field off of Avenue U in Brooklyn, New York, which was part of Marine Park. He wrote:

"This picture of me (on the right) was taken when I first started flying RC! My red and black Live Wire trainer with a K&B .15 engine [used a] single-channel escapement on the rudder with a homemade Lorenz tube receiver! The transmitter we shared was a homemade gyro 5-watt, single-channel (the

big black box) transmitter built by Ronny Lepre [who is standing]. The other guys were Joel Cohen (on the left), putting together his Live Wire Rebel, and Jeffrey [no last name available] (in the center), with his Live Wire Rebel.

"We were lucky to have my father drive us to fly this day. Otherwise, we would go the 7 miles by bicycle while holding planes with wings on under one arm and towing our mother's shopping cart behind a bike with all of our equipment in it!" 



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.



FITZ WALKER

Model Aviation contributor

By Jay Smith | jays@modelaircraft.org

Jay Smith: How did you get involved with model aviation?

Fitz Walker: I started when I was approximately age 9 or 10 years old, first with Control Line models through the help of my then stepfather. I later progressed to building balsa-and-tissue Free Flight airplanes (which flew terribly but I didn't care), and eventually to RC in my late teens when I was old enough to buy my own equipment.

JS: How has model aviation impacted your life and/or career?

FW: It probably kept me out of trouble as a kid. I was too busy building airplanes in the basement to engage in nefarious activities with friends. Seriously though, I naturally had an interest in science and technology, and model aviation helped focus those aptitudes into an interest in aviation-related topics and a career as an engineer in the aerospace industry.

At one point, I even ran my own mail order RC helicopter business. I highly doubt that I'd be the same person or have the

great kind of friends I have if it were not for model aviation. It's the best hobby I've ever had.

JS: What disciplines of modeling do you currently participate in?

FW: A lot of them. I fly mainly sport and scale fixed-wing RC models of most types, but I also fly gliders and helicopters. I'm also fairly active with RC boats and occasionally cars. In fact, I just picked up a Tamiya RC Tank to restore.

I also enjoy building plastic models when I can. I probably have modeling attention deficit disorder.

JS: What other hobbies do you have?

FW: I like to joke that hobbies are my hobbies. I'm active in the Maker community, where I enjoy 3D printing and building things such as an electric motorcycle and a fully animatronic K-9 robot dog replica from the old *Dr. Who* TV show.

Another passion of mine is retro computing with my own personal collection of 8-bit computers from the 1980s. I'm also

a licensed, full-scale glider pilot. Did I mention I dabble in N-scale trains, too?

JS: Who or what has influenced you the most?

FW: I've been fortunate to have some pretty influential parents in my life. My father could seemingly fix anything, so I learned a lot about repairing and building things from him. My mother always encouraged me to pursue my interests, no matter how eclectic and nerdy they could get sometime. They influenced me as well as Mr. Spock (seriously).

JS: How has being involved with a YouTube channel and podcast impacted your hobby?

FW: I had no intention of having a YouTube channel until I was asked to make a how-to video for a model. People liked my production style and it grew from there. It has given me an opportunity to fly a variety of models that I otherwise would have not been able to fly. To my surprise, I'm occasionally recognized when I go to RC events.

The RC podcast experience has been overwhelmingly positive. I've been able to meet industry insiders, historic personalities, and make new friends. It has improved my appreciation for the hobby by talking to, about, and with some truly remarkable people. 



WATCH A VIDEO ONLINE!

Access additional content by visiting
www.modelaircraft.org/iamama.

Power and intelligence all-in-one!

AVIAN™



SPMXAE1060
Avian 60A Smart ESC



SPMXAE1080
Avian 80A Smart ESC



SPMXAE1100
Avian 100A Smart ESC

Using the latest advances in connectivity, Spektrum™ Smart technology ensures that all of your model's electronics work together for the greatest efficiency and performance. Now Avian™ electronic speed controls have joined the Smart ecosystem — making you more connected to your aircraft than ever before!

Avian™ Smart ESCs combine “plug-and-play” simplicity with the ability to communicate with other Smart electronics. They not only deliver power but also gather and transmit telemetry data from other components in real time — without needing multiple wires, sensors, modules and links.

- Easy to install
- Fast, powerful 32-bit M4 processor
- High Output Switching BEC
- Multiple programming options
- Heat-resistant IC connectors (backwards compatible with EC connectors)
- Multi-point protection
- Limited 1-year warranty

ONE WIRE TELEMETRY



See the complete line of Avian Smart ESCs at SpektrumSmart.com



SHOP AMA

AMA GEAR | HATS & CAPS | APPAREL | WOMEN | MEN | KIDS | BOOKS & MEDIA



NORTH END® FLUX FLEECE

Limited time offer—
was \$79.99 | now starts at **\$74.00**



LADIES VINTAGE LONG-SLEEVE TEE

Limited time offer—
was \$15.99 | now starts at **\$13.99**



**FLY IN
STYLE
ORDER
NOW!**

ORDER ONLINE AT
www.modelaircraft.org/specialoffer

E-flite®



NEW

UMX Turbo Timber

From sport to scale, ultra-slow flyers to ultra-fast racers, EDF jets and beyond, there's a wide variety of E-flite® UMX™ (Ultra Micro eXtreme) airplanes to choose from. They arrive factory-assembled, and ready to bind to your favorite Spektrum™ transmitter right out of the box. Plus they're equipped with exclusive AS3X® technology that elevates your flight experience by making it feel like you're flying a much larger airplane whether flying in your yard, a nearby park or almost anywhere else.



NEW

UMX™ Ultrix™



UMX MiG-15



UMX Aero Commander



UMX Cirrus SR22T



UMX Waco



UMX™ Gee Bee R2



FIND A DEALER
www.HorizonHobby.com

©2020 Horizon Hobby, LLC. E-flite, UMX, Timber, Ultrix, AS3X, and the Horizon Hobby logo are trademarks or registered trademarks of Horizon Hobby, LLC. The Spektrum trademark is used with permission of Bachmann Industries, Inc. GEE BEE is a registered trademark of KW Intellectual Properties, Inc. and is used under license. Cirrus and associated emblems, logos and body designs, are either trademarks or registered trademarks of Cirrus Design Corporation and are used under license by Horizon Hobby, LLC. All other trademarks, service marks or logos are property of their respective owners. 59220.2

**BEST
BRANDS
IN RC**

HORIZON
H O B B Y

VENOM

POWER YOUR PASSION.



LIMITED LIFETIME WARRANTY



PROVEN U.S.A. SUPPORT



EASY CONNECT UNI PLUG SYSTEM 2.0



"A" GRADE MATCHED CELLS

VENOM UNI PLUG SYSTEM 2.0



EC3®

DEANS®



BATTERIES / CHARGERS / BOATS / ACCESSORIES

IF A PROBLEM OCCURS, WE'VE GOT YOUR BACK!

USA SUPPORT VENOMPOWER.COM

800.705.0620