the Ampeer

May The EFO Officers 2017

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The Flying Next Meeting:
Sat., May 13, 10:00 a.m., Midwest 7 Mi. Rd. Flying Field

What's In This Issue:

Build the Award Winning 1/6-Scale Mooney Mite

News From Denny Sumner

CJ Wysocki photo from the 2016 Mid-Am

The designer of this plane is EFO member Denny Sumner. He began the build Nov. 1, 2015 and it was ready for the Toledo RC Expo the following April.

His build thread on RC Groups is at: https://www.rcgroups.com/forums/showthread.php?2533763-Scale-Build-Off-5-1-6-scale-Mooney-Mite

The construction article appears in the June 2017 *Model Airplane News*. The article starts on p. 83. http://www.modelairplanenews-digital.com/man/june_2017?pg=83#pg83

The Mooney Mite received 2nd place in non-military sport scale at the 2016 Weak Signals RC Expo in Toledo, OH.

Mark Rittinger photo of Denny with his Toledo Show Award

Denny was presented with Sunday's Best Scale award at the Mid-America Electric Flies in July of 2016.

The plans to build this retractable landing gear civilian aircraft are available from AirAge Publishing.
http://www.airagestore.com/mooney-mite-2656.html

Model Airplane News did a nice job in presenting quite complete and useful information about the prototype model.

Specifications from page 84 of the article
Model: Mooney Mite
Type: Electric sport scale
Wingspan: 54 in.
Weight: 56 oz.
Wing loading: 19.72 oz./sq.ft.
Power req'd: Scorpion 3014/1040Kv or equivalent
Radio req'd: 5-channel [rudder, elevator, ailerons, throttle, retracts]
Gear Used
Radio: Spektrum DX9 w/Ar6210 receiver [spektrumrc.com]; JR SM241 servos for ailerons [jramerica.com]; Hitec HS65 servos for rudder and elevator [hitecrcd.com]
Motor: Scorpioin 3014/1040Kv [innov8tivedesigns.com]
Speed Control: Castle ICE 50 ESC [castlecreations.com]
Battery: Gracier 3S 4000mAh LiPo [buddyrc.com]
Propeller: APC 10x7E [apcprop.com]
Retracts: E-flite 15-25 [horizonhobby.com]

One very useful thing in Denny's article was that he gave the recommended throws in degrees instead of inches or fractions of an inch. It doesn't matter where you take the measurement on a movable surface, the degrees will always be the same.

The article also noted that, "With the Scorpion motor installed, it delivers 33.5 amps using 391 watts, for 111.7 watts per pound."

From watching this plane fly all last flying season, I can personally recommend it based on the way it flies and handles.

For someone looking for something a bit different, with retracts, that is not a war bird, this could be the project for you.

I highly recommend that you check it out.

I was quite pleased with the information presented by the magazine in the construction article. There were only two things missing that I would have liked to have seen presented. The first was the wheel diameters and brand, which also isn't mentioned in Denny's build thread, but probably present on the plans. The second was the easily computed wing cube loading factor, which is 11.7. That puts it just barely into the advanced sport plane category for flyability.

An Editorial: Grumman F8F Bearcat, Construction Article, *Model Aviation*, April 2017, p. 36

By Ken Myers

Compared to the construction article of Denny's Mooney Mite, the construction article for this plane was lacking in several decision making details.
Specifications from p. 37
Wingspan: 60 inches
Length: 48 inches
Flying Weight: 6 to 8 pounds
Wing loading: 23 to 24 oz. per square foot
Power: .60-size electric brushless motor; 80 to 90-amp ESC; 5000 6S LiPo battery
Radio: Five to six channels

Nowhere in the article does it state the wing area. For the wing loading is it 6 pounds times 16 ounces (96 ounces) divided by 23 oz./sq.ft.?
96 oz. / 23 oz. per sq.ft. = 4.17 sq.ft or 601 sq.in.
or...
8 lb. (128 oz.) / 23 = 5.56 sq.ft. or 801 sq.in.
6 lb. (96 oz. / 24 = 4 sq.ft. or 576 sq.in.
8 lb. (128 oz.) / 24 = 5.33 sq.ft. or 768 sq.in.

Therefore, according to the given specifications, the wing area is between 575 sq.in. and 800 sq.in. What is it? That does make a difference.

The article notes the motor as a Power 60. Was it an E-flite brand? If so, which K_v? The E-flite Power 60 comes in two different K_v values. The Sources, listed at the end of the article, did not include Horizon Hobby.

The specifications just noted only a .60-size brushless motor? What is a .60-size motor?
Rimfire 60: 268g, 650Kv, rated to 65A, recommended prop for 6S - 12x6
http://www3.towerhobbies.com/cgi-bin/wti0001p?&I=LXLWV8&P=ML
E-flite Power 60: 380g, with two different Kv available
400Kv, rated to 55A, recommended prop for 6S - 15x??
470Kv, rated to 65A, recommended prop for 6S 15x8 through 17x7

http://www.e-fliterc.com/Products/Default.aspx?ProdID=EFLM4060A

http://www.e-fliterc.com/Products/Default.aspx?ProdID=EFLM4060B

Hobby King Turnigy G60: 360g, with three different Kv available; 300Kv, 400Kv & 500Kv, 500Kv rated to 65A, prop 13x8 using 6S
https://hobbyking.com/en_us/turnigy-g60-brushless-outrunner-500kv-60-glow.html
400Kv rated to 40A, prop 15x?? using 6S
https://hobbyking.com/en_us/turnigy-g60-brushless-outrunner-400kv-60-glow.html
300Kv rated to 60A, prop 13x8 using 6S
https://hobbyking.com/en_us/turnigy-g60-brushless-outrunner-300kv-60-glow.html

Power Up 60: 408g, 380Kv, rated to 60A, recommended prop for 6S 15x10 through 20x8
http://www.headsuphobby.com/Power-Up-60-380kv-Outrunner-Brushless-Motor_p_2308.html

Power Up 60 Sport: 408g, 430Kv rated to 80A, recommended prop for 6S 17x10 through 20x8

Those are just some of the many .60-size motors available. .60-size means absolutely nothing, as noted in the specification table on p. 37.

Having a good amount of 'overhead' amps for the ESC is a very good idea, but is an 80-amp or 90-amp necessary? What was used on the prototype? What was the amp draw with the recommend FMS 4-blade prop? Watts in?

There is a link given to the designer's build thread on RC Groups.
https://www.rcgroups.com/forums/showthread.php?2524535-Fun-Scale-60%C2%94-Grumman-Bearcat

Unfortunately, the information presented there is not that helpful either. "The proto uses a 50-60 350kv motor, 80-90 amp ESC, and 6s 5000 mah pack. The 4-blade propeller was from FMS's 1700mm P-47, and main gear struts and tail wheel retract from FMS's 1700mm P-51. The main gear retracts are standard 90 degree 3.5kg units but 85 degree would also work."
https://www.rcgroups.com/forums/showpost.php?p=35478018&postcount=201

As previously mentioned, the article notes a Power 60 on p. 36 without noting the K_v value. The build thread notes a 50-60 350kv motor, whatever that is.

What's the point? *Model Aviation* needs to do a much better job at providing basic, useful information in their construction articles.

No one is prefect, but I believe *Model Aviation* could do a much better job of providing useful information.

As I said, "No one is perfect."

Is this newsletter free from errors or omissions? Absolutely not!!!

In the April issue, I did not originally have a direct link to the video of how the canopy was built for nerdnic's P-39, which I said that I thought was pretty neat. I went back and changed the general link to a direct link in the video, thanks to a sharp-eyed reader's input.

In the February 2017 issue I had a graph, and I also implied in my text, that is was for battery interenal resistance at various voltages for ALL lithium based cells. Again, thanks to a reader, I did some further research and found out that that graph only applies to A123 cells and NOT to LiPo cells. The graph was redone to note that it is representative of A123 cells and the text was updated.

You'll probably find more errors in this issue as well, but that's what I have you, the 'readers' for. I truly appreciate your input!

A TechOne No Gravity Review

http://www3.towerhobbies.com/cgi-bin/wti0001p?&I=LXGHSR&P=ML

By Joe Hass

My XFC and 3D pilot son, Chris, introduced me to the **No Gravity**. It is available in red or blue, from Tower Hobbies. It was one of those airplanes that instantly became a "must have", especially when I understood that for the $120.00 price tag you got all the servos, ESC, motor AND right / left Thrust Vectoring. I placed my order.

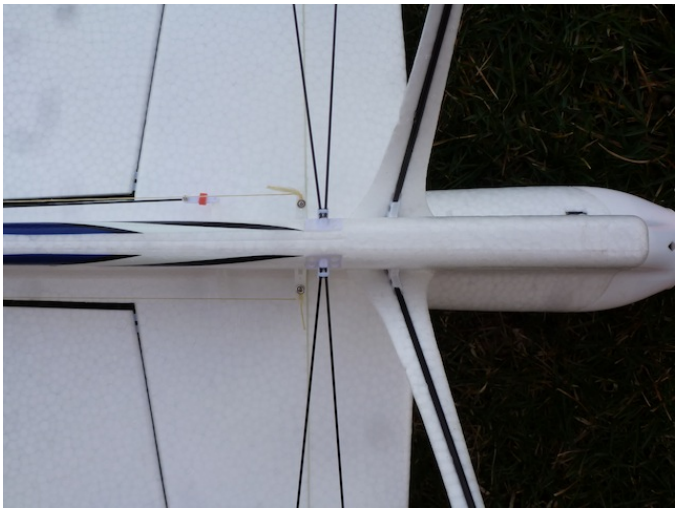
I only had a little bit of time on the day it arrived. When I opened the box to grab the instructions, I found that everything was stacked vertically in a molded foam carrier. Neat! I found the instruction book and took it with me on a business trip.

Based on the instructions I was expecting to install the servos, motor and thrust vectoring unit. I was pleasantly surprised to find all of those tasks completed.

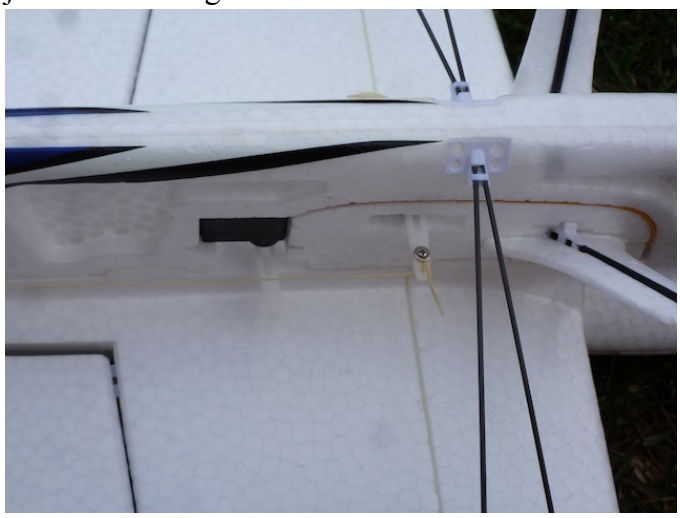
The instructions call for assembling the wing and horizontal stab before completing the control surface linkages. A quick study of the actual bird showed that it would be a lot easier to put all of the pushrod clips and pull – pull hardware for the rudder in first.

There was no mention of what adhesive to use, so I used thin foam safe CA to attach the wing, horizontal stab and the various braces. A shot of kicker quickly held everything in place.

There is way too much throw for the rudder with the recommended set up. I recommend that the attachment point for the pull pull lines be moved in a bit.



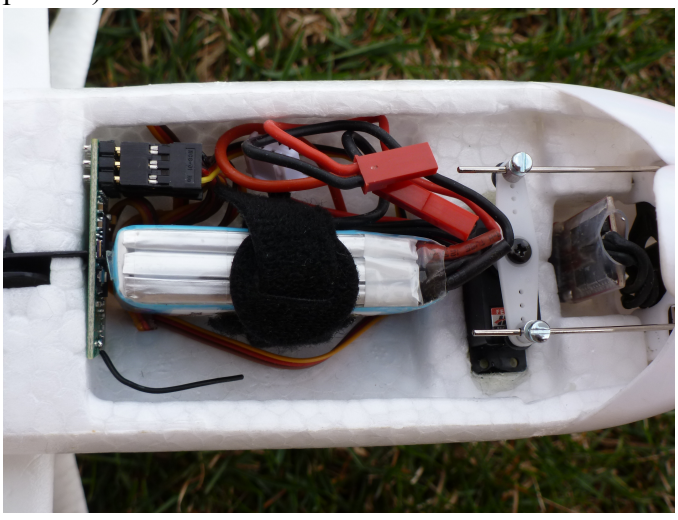
In fact reversing the location of the line tie down screw and the line attachment will give you just about the right amount of rudder throw.



I had to go into the Tactic TTX850 transmitter and reduce the throw to below 50% on the rudder to make everything work when set up per the instructions.

I programmed the thrust vectoring servo to follow the rudder as well as using a switch on the transmitter so that I could turn thrust vectoring on and off.

The instructions call for the receiver to be below the 3S 450mAh LiPo battery. I could not see any way that would work regardless of what receiver I used. I pulled the case off a Tactic 6-channel receiver and slid it vertically behind the battery (see picture).



I studied the thrust vectoring assembly and determined that there was interference between the pushrod connectors and the battery hatch. I solved that problem with a combination of removing a bit

of foam from the hatch and bending the thrust vectoring servo arms down a bit. A further look showed that the thrust vectoring pushrods were rubbing against the thrust vectoring unit. A little surgery opened up the holes and took care of that problem.

The prop is held on with o rings. The spinner has a centering rod. Foam Tac was the only adhesive that would hold the spinner to the prop and still be removable to replace the O rings.

With my Tactic TTX850, I have the ability to set up each flight control surface on a separate 3 position switch. High rate had maximum throw with 50% expo. Low rate was 50% throw with 30% expo.

The instructions specify a center of gravity (CG). It took ½ ounce of lead to get the CG at the recommend position. Yikes! It felt like I doubled the weight of the completed aircraft.

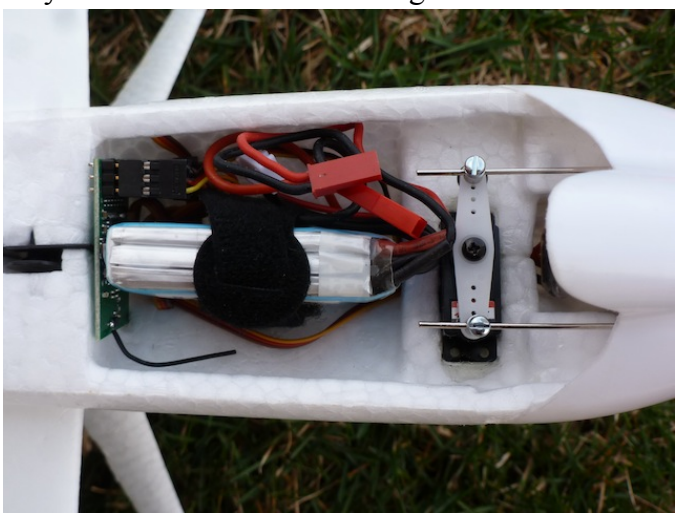
The first flight was indoors at Ultimate Soccer Arenas at low rate. Even with the small wheels and wheel pants the No Gravity quickly lifted off the artificial turf and required lots of up trim.

In short, it flew terribly. I landed and removed half the weight. This was better. I removed the rest of the extra nose weight and the No Gravity was perfect in the air. The CG now resides 1.25 inches behind the plastic spar, well behind the recommended position.

As I continued to fly it, I thought about adding back a bit of nose weight but decided to let Chris fly it. He flies his 3D aircraft with the CG very aft. He loved the way it flew so I will simply learn to love it too.

Actually there are distinct advantages to an aft CG when doing 3D. The aircraft is very neutral in rolls and knife edge. The aft CG is especially helpful with thrust vectoring in knife edge. I experimented with knife edge loops on low rate with reasonable success. It was when I switched to high rate on rudder that this bird really came alive with thrust vectoring. Knife edge loops are an absolute blast. Flat turns in level flight are amazing. With all the control deflection any maneuver you can think of is possible.

I did have a problem with the thrust vectoring servo. It is the same type of servo as the rest of the control surfaces. The gears stripped. This could be a “one off” failure or because of all the aggressive flying. I replaced it with a Hitec HS 56HB. I also changed to Dubro Micro Easy Connectors for more clearance with the hatch. The Hitec servo was an easy fit and has a more durable gear train.



It can certainly be built as the instructions indicate, but an experienced builder will have no problem reading through the instructions for an easier way to assemble it. The most disappointing thing was the incorrect CG.

At 11.5 ounces, flying indoors or out is easy. The more I fly the No Gravity the more I like it. With the thrust vectoring it takes very little room to fly. It is durable as I have had my share of “oops” trying low level 3D. The price point is excellent.

Give it a try.

Joe Hass

joehass@gmail.com
248-321-7934

Ken Myers Dollar Tree Foam Board (DTFB) Ugly Stik

I thought now was a good time to share this plane to encourage folks to build not conventional material planes for the Mid-Am's new event and award, which has been noted on the current Mid-Am flyer.

The little Ugly Stik uses the proportions of the original Phil Kraft Ugly Stik. It features a true Clark-Y airfoil. It flies well and was easy to build.

Airframe Specifications:
Wing area: approximately 340 sq.in.
Wing span: 40.87"
Ready to Fly weight: 23.6 oz. with 3S 1000mAh LiPo Battery*
Wing loading: 10 oz./sq.ft.
Wing Cube Loading Factor: 6.5 (typical park flyer value)
*Weight includes 1.75 ounces of lead in the nose

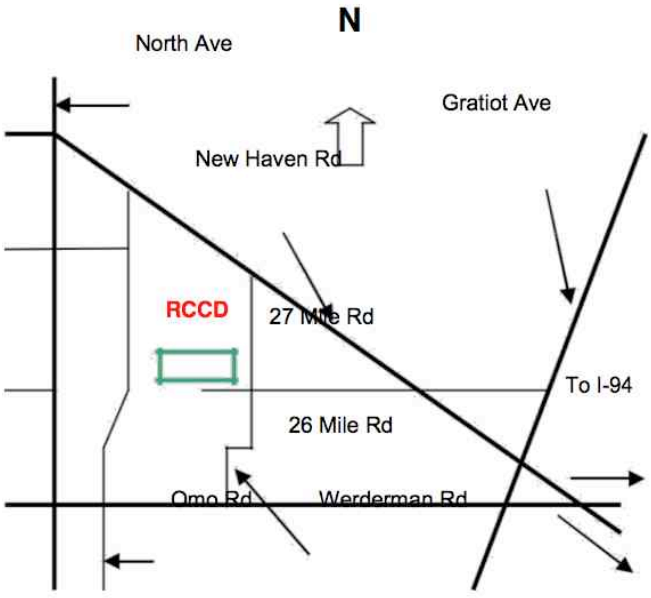
Power System:
Motor: Cobra C-2217/16 brushless outrunner
http://innov8tivedesigns.com/parts/brushless-motors/c-2217-16
Prop: APC 9x4.5E thin electric
http://www3.towerhobbies.com/cgi-bin/wti0001p?&I=LXFGW3&P=7
ESC: Castle Creations Thunderbird 54
http://www3.towerhobbies.com/cgi-bin/wti0001p?&I=LXUTB2&P=7
Battery: (various brands) 3S 1000mAh LiPo Batteries
Maximum static amp draw: about 16 amps
Average in flight amp draw: about 8 amps
Flight time for typical aerobatic flight: 6.5 minutes

Radio System:
Tactic TTX650 6-channel transmitter
http://www3.towerhobbies.com/cgi-bin/wti0001p?&I=LXCPXU&P=7
Tactic TR624 receiver
http://www3.towerhobbies.com/cgi-bin/wti0001p?&I=LXZNR1&P=ML
Servos: 4 Emax 12g ES08MAII Metal Gear Sub-Micro Servo
http://www.headsuphobby.com/Emax-12g-ES08MAII-Metal-Gear-Sub-Micro-Servo_p_192.html

Videos:
A landing:
https://www.youtube.com/watch?v=lWdqIw8N94g
The plane looping:
https://www.youtube.com/watch?v=iYZ9MyQqwVA

Upcoming Watts Over Wetzel

Radio Control Club of Detroit
(12th Annual RCCD Electric Fly-In)
Date: May 20th. & 21st. 2017
Times: Pilots' Meeting at 8:45 am
Flying Starts at 9:00 am
Location: RCCD Flying Field in Wetzel State Park (see map below)



Format: Fly-In - Electrics only, any size (110V power available for charging)
Landing Fee: $10.00 Daily or $15.00 for both
Event Updates at: www.rccd.org/WOW.htm

Ample parking, Food &Refreshments, Raffles, Limited bleacher seating available. Sun Shades Suggested, Vendors on site.

Pilots Prizes #1: All registered pilots will receive one ticket, good for a chance at one prize each. You do not have to be present to win, but must make arrangements to pickup your prize.

Michigan Recreation Pass required for Park access

Co-CD's
Phil Laperriere - 586-228-9583
John McCormick – 586-596-8403

Follow and Like us on Facebook:
www.facebook.com/WattsOverWetzel

Upcoming Keith Shaw Birthday Party Electric Fly-in 2017

From CD Dave Grife via Email

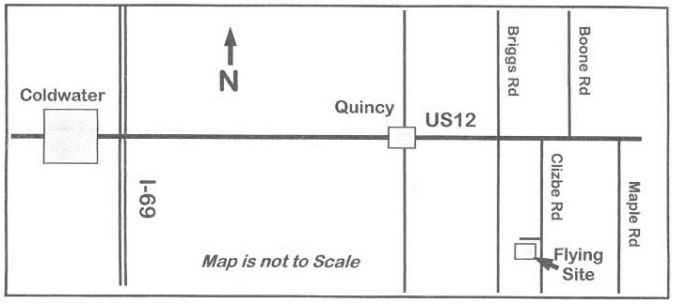
The Balsa Butchers are hosting the "Keith Shaw Birthday Party Electric Fly-In", for the 16th year, at their field near Coldwater, MI. The event takes place on Saturday, June 3, 2017. It is a one day event again this year.

The event consists of Open Electric Flying with a "Special Guest of Honor Theme".

Enjoy a day with the "Pioneering Master of Electric R/C Flight". 8 am - 5 pm Saturday, $15 landing fee.

For additional information contact;
Dave Watson 517-250-6190 or
flybuddy619@yahoo.com
Contest Director: Dave Grife - E-mail:
grifesd@yahoo.com or Phone: 517-279-8445
Please e-mail or call with any questions.

The field will be open for guests to fly on Sunday as well.



Directions: Quincy is approximately 4.5 miles east of I-69. Clizbe Road is approximately 1.6 miles east of Quincy. The Flying site is approximately 1.5 miles south of US-12 on the west side of Clizbe Road.

A Flite Test Pietenpol Aircamper

From Ken Sulkowski via email

Ken,

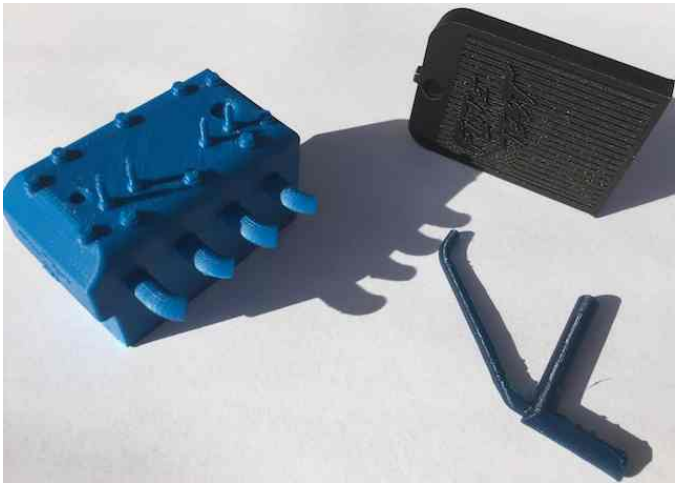
I enjoyed reading about the Flight Test Sea Duck (in the April issue). There is a good test flying video of the model on the company's website. I am thinking about building their Guinea Pig.

Attached is a picture of my Pietenpol Aircamper but with the paper engine.

I finished their (Flite Test's) Pietenpol Aircamper about a month ago and it flew beautifully right off the drawing board.

http://store.flitetest.com/ft-pietenpol/

A bonus are the 3-D files included for the model; an engine block and radiator. My son has printed mine and I'll get them on Sunday.



The model is totally constructed with a hot glue. All I have is a cheap hot glue gun. It was a little difficult to use. I think I'll buy buy the

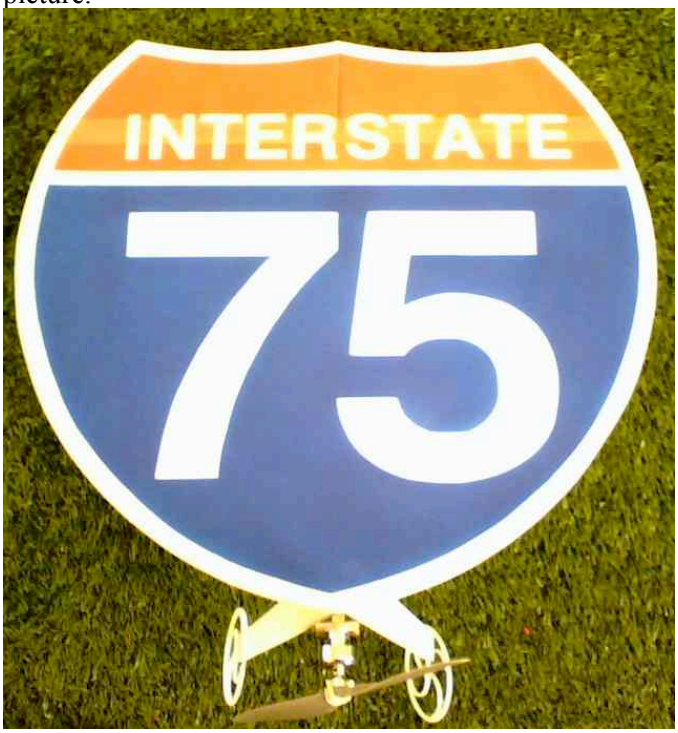
recommended glue gun if I build the Guinea Pig. It looks like it has a smaller nozzle and lays down a finer bead of glue. Although it's not necessary it would make to build easier. However it can be built with a cheap glue gun.

Looks like a good one for our not conventional materials categories at the Mid-Am this year. Thanks for sharing. KM

Another White Sport, an I-75 sign & a Slow Cub
From Ken Sulkowski via email

Ken,
Again, thanks for the newsletter.

After reading about Richard Utkan's White Sport I remembered mine. It's not the greatest flying machine, but it is fun to build and to fly indoors. I have since put a hat on my pilot and got him to sit still long enough for a picture.



Also attached is a picture of something I got to fly, an I-75 sign.

and

I was really surprised when I opened the March 2017 *Ampeer* and saw a red and white slow cub. Attached is a picture of the one I've been flying for the last month or so at the arena. I enjoyed watching Rodger fly his so much that I just had to have one. It's just a fun little flying machine.

33rd Annual Mid-America Electric Flies 2017
AMA Sanctioned Event
Saturday, July 8 & Sunday, July 9
Hosted by the:
Ann Arbor Falcons and **Electric Flyers Only**

The 7 Mile Rd. Flying Site, Salem Twp., MI, is
Provided by the:
Midwest R/C Society

Contest Directors are:
Ken Myers phone (248) 669-8124 or
kmyersefo@theampeer.org
http://www.theampeer.org for updates & info
Keith Shaw (734) 973-6309

Flying both days at the Midwest R/C Society Flying Field - 7 Mile Rd., Salem Twp., MI

Registration: 9 A.M. both days
Flying from 10 A.M. to 4 P.M. Sat. & 10 A.M. to 3 P.M. Sunday

Pilot Entry Fee: 18 and over, $15 Sat. - $10, Sunday, (ask about the family rate),
Under 18, FREE
Parking Donation Requested from Spectators

Saturday's Awards
Best Scale
Most Beautiful
Best Ducted Fan
Best Sport Plane
New Foam Flurry for NCM Aircraft
CD's Choice
Sunday's Awards
Best Scale
Most Beautiful
Best Mini-Electric
Best Multi-motor
New Most Unique NCM Aircraft

CD's Choice

Planes Must Fly To Be Considered for Any Award
Saturday's & Sunday's Awards:
Plaques for 1st in each category

Open Flying Possible on Friday
Night Flying Possible, Weather Permitting,
Friday & Saturday Nights
Refreshments available at the field both days.

Potluck picnic at the field on Saturday evening.

Come and join us for two days of fun and relaxed electric flying.

Come, Look, Listen, Learn - Fly Electric - Fly the Future!

Merchandise drawing for ALL entrants

New Events for this year for NCM (Not Conventional Materials) aircraft.
Traditionally, model aircraft airframes have been mostly constructed from balsa wood, plywood, spruce, and fiberglass. For the purposes of this meet, NCM airframes are mostly constructed from not conventional materials i.e.; sheet foam, foam board, cardboard, block foam, foam insulation material, etc.

Foam Flurry for NCM aircraft: This is a true event. It is based upon the all up/last down event of early electric meets. Any NCM aircraft may be used (no ARF types). Power systems are limited to a maximum of 3S (no paralleling) LiPo batteries or 4S maximum, no paralleling, for A123 packs. All planes qualifying for this event will launch at the same time, and the last one to land will be declared the winner.

Most Unique NCM Aircraft Award: A new award will be given on Sunday to an aircraft in the NCM category that is judged as 'most unique' by the Mid-Am panel of judges.

* * * * *

To locate the Midwest R/C Society 7 Mile Rd. flying field, site of the Mid-America Electric Flies, look near top left corner of the map, where the star marks the spot, near Seven Mile Road and Currie Rd.

The field entrance is on the north side of Seven Mile Road about 1.6 Miles west of Currie Rd. Address: 7419 Seven Mile Road, Salem Twp, MI 48167 - numbers are on the fence.

Because of their convenient location and the easy drive to the flying field, the Comfort Suites and Holiday Inn Express in Wixom, MI have been added to the hotels' listing. They are only 10 miles northwest of the field and located near I-96 and Wixom Road. See the map-hotel .pdf for more details.

http://www.theampeer.org/map-hotels.pdf

Upcoming E-vents

Tuesdays, Indoor Flying at the Ultimate Soccer Arenas in Pontiac, 10 a.m. to 1 p.m.
NOTE: even though the winter indoor sessions ended April 11, they will continue fly this spring at Ultimate through the end of April, and maybe longer, if interest remains high enough for a cost of $8 per session for all pilots.

May 13, Saturday, 1st EFO flying meeting of the year at the Midwest RC Society 7 Mi. Rd. Flying Field, 10 a.m. Everyone with an interest is welcome. Proof of current AMA membership required to fly.

May 20 & 21, Sat. & Sunday, Radio Control Club of Detroit's 12th Annual All Electric Fly-In, Watts over Wetzel (WOW) (Wetzel State Park), large number of pilots, awesome flying site, Great food, Raffles and prizes, email the contest director, John McCormick (jpmccormick@live.com), for more details or visit the RCCD Web site (http://rccd.org/). (details in this issue)

May 28 "John's Jets", at Pontiac Miniature Aircraft Club (No further info available)

June 3, Saturday, 16th Annual Keith Shaw Birthday Electric Fly-in, Balsa Butcher's flying field near Coldwater, MI (full details in this issue)

July 8 & 9, 33rd Annual Mid-America Electric Flies - (full details in this issue)

The Ampeer/Ken Myers
1911 Bradshaw Ct.
Commerce Twp., MI 48390
http://www.theampeer.org

The Next Monthly Meeting:
Date: Saturday, May 13, 2017 **Time:** 10:00 a.m.
Place: MRCS 7 Mi. Rd. Flying Field