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<b>Ampeer subscriptions are \$10 a year US &amp; Canada and \$17 a year world wide.</b>	<b>The Next Meeting:</b> <b>Date:</b> Thursday, March 1 <b>Time:</b> 7:30 P.M. <b>Place:</b> Ken Myers's house (weather permitting)	

## What's In This Issue:

New Heli Site - Help with A-10 - NEAT Fair 2001 - Vacuuming Forming Info - Skyvolt Revisited - Benjamin Online - SlowFly Problem? - Upcoming Bluegrass - Flash EDF - U-2 - Seniorita Conversion - Kyosho Flash - Get Sanyos - Tailless Revisited - Upcoming Ft. Wayne Fly - S-Models - February EFO Meeting - Ed's Airforce - Recommendations for Electric Powered Flight Systems (cont.)

## New Electric Powered Helicopter Site

Fitz Walker has a new site for EP Helicopters. He has information on the current kits as well as conversions of glow powered helicopters. The URL is <http://www.e-helis.com>

## Looking for Help With Aeronaut A-10

From: Ray Richards  
Ray.Richards@Qualcomm.nl

I am an Englishman living and working in Holland and a very keen scale flyer. I'm just making the leap of faith into electric scale. I bought (from Hobby-Land in Germany, who recommended all the 'extra's) an Aeronaut A10 (51" span) with GRP fuselage, three mini servo's (metal geared...nice!) and 2 x Wemotec fan units with some mean looking motors for the "in nacelle" conversion (supplied).

I have just a couple of problems. All of the instructions are in German, and I could do with some advice on the building, preferably from someone familiar with the kit.

I would like to make a real pearl of this

one just to show the glow and gas fliers at my local clubs how good scale electric jets can be, and to say a "thank you" to the lady who bought it for me in the first place!

Any help would be very, very much appreciated

I'm also crazy about de Havilland Mosquitos. If you have any info on electric power train etc. for a 63", 72" and an 80" aeroplanes, I'd appreciate it.

Cheers for now.....good weather to you and many happy landings.

## NEAT Fair 2001 Open for Pre-Registration

From: Tom Hunt [THunt95147@aol.com](mailto:THunt95147@aol.com)

I am excited to announce that the 2001 NEAT Fair website is ready to take pre-registration. Those interested, please visit <http://www.nyblimp.com/NEAT.htm>  
Please tell your friends that are not "web-connected" that paper copies will not go out until May. If they would like, you may print the pages for them and they can fill it out by hand, but we would prefer a typed page from the website. Those who pre-register from the site will get their "badges"

Ampeer

sent to them, but no other correspondence. By May, those who we have not heard from (from our 2000 database) will get paper copies of the NEAT 2000 flyer and registration forms.

We have also put up the DEMO pilots form. If you have an "interesting" e-model and would like to fly in our Lunch time demo, follow the link to that page and fill out the form.

Also, later in May, we will have a form to pre-register for the Saturday night BAR-B-Q we are still planning. This will require a separate check, more than likely sent to a separate place, so don't wait until then to pre-register as a pilot. Since seating may be limited, and fairness to the people who will not get "paper copies" of this form until mid-May, we cannot accept e-applications any sooner.

For those vendors who we contacted last year, we will be sending out the vendor packages in early February. Those who are listening and were not invited last year (either through oversight, or they sprang up over the last year) may also contact us at neafair@aol.com to get on the mailing list.

Poke around the site. If you have any questions, please direct them to Neatfair@aol.com

Looking forward to seeing you all in less time than it takes to create a new e-modeler.

Best Regards,

Tom Hunt

ED 2001 NEAT Fair

### **Vacuum Forming Info**

From: Douglas Walsh vacform@earthlink.net

I saw your website with vacuum forming info, thanks for mentioning my book. Check out my website at [www.proto-form.com](http://www.proto-form.com) for the vacuum forming plans I offer. The Hobby-Vac machine is quite popular and it has 5 times more forming power than a vacuum cleaner can provide. My new website [www.Build-Stuff.com](http://www.Build-Stuff.com) will be operational in a few weeks and will have more books and videos and plans.

### **Skyvolt Revisited**

There was a photo of a "fleet" of Skyvolts in the February 2001 *Ampeer*. I received some questions about whether it is still available. The Model Aviation plan is No. 639 and sells for \$15.00US plus \$3.20US for shipping. To order the plan phone: 765.287.1256 ext. #505 or write to: AMA, 5151 E. Memorial Dr., Muncie, IN 47302. Customers outside the US, please call for

shipping cost.

The kit is available from New Creations R/C, P.O. Box 496, Willis, TX 77378, phone: 936.856.4630, Web site: <http://www.newcreations-rc.com>, and is listed in the new catalog 30A, as #TODA6000 for \$49.95US plus shipping.

Recommended power is "05" to "15" with 7 cells+. My version is 17% larger and sports an Astro Flight 25G using 14 and 15 cells (soon to be converted to MaxCim power!), while the even larger one of Chris True's used an Astro Flight 40G. All fly/flew great!

### **Bob Benjamin Online**

Bob is now online with a beautifully designed site at <http://www.rcmodel.com>

Here you will find information on his design philosophy, column, designs and writings about his adventures in electric flight. For the sport scale and sport fliers, this is a MUST VISIT site to see how one of the "real, long-time experts" does it!

### **SlowFlier/ParkFlier Problem?**

From: Lee Tait

Ken,

I learned to fly on E-power at the Romeo field location 15 years ago and went to IC power the next year because of flight duration and the norm of the other fliers. I have always played around with E-power and am having a hoot flying a Zagi and have gotten several others IC guys flying Zagi's also.

Here is my concern. Today, many of the new people get into the flying electric things with no knowledge or info from the seller (Hobby Shop, mail order, etc. ) that they can cause (radio) interference with other people who are flying at AMA chartered sites and are/have done that already. Also, they themselves may have been the subject of interference from a local AMA flying site. I believe the recommended distance is 5 miles, and or 3 miles under some particular situations.

With the surge in electric flight products that's available and attractive for the first timer, I see this as big area for problems to occur.

Have you seen any discussion online or would you care to respond or start the question as something us concerned/knowledgeable fliers are concerned about?? Could/should AMA ask that all plane suppliers, radio suppliers put a notice to that effect or does that open up the door to other problems, law suits, etc.?

*Okay folks, what do you think? KM*

**Upcoming Bluegrass Electric Fly-In**

From: Keith Hollifield keith6566@qx.net

On behalf of the **Lexington Miniature Aircraft Club**, I would like to announce the second annual Bluegrass Electric Fly-In on July 21, 2001 in Lexington, KY. This event will be held at our club field which features a 600'x50' paved runway alongside a 600'x100' grass runway. This will be an all electric get together with the emphasis on open flying and fun. We will have a Web page flyer with directions, event information, and hotel contacts in the near future. It will be posted on Ezone in the events section and on our web page located at <http://fly.to/lmac>. We would like to thank everyone that attended last year and made it a great success. We all had a terrific time and look forward to seeing a great turn-out this year.

I will update you with more specific event information and participating vendors as that becomes available.

Regards,

Keith Hollifield

LMAC Electric Event Committee

**New E-Mail Address for Flash E-74 EDF**

From: Mark Nankivil nankivil@telocity.com

Hi Ken!

I sent you the Flash E-74 EDF info a short while ago. (*see Feb. 2001 Ampeer KM*) Well, last night our DSL service "migrated" to our new DSL service without warning. I wanted to correct the e-mail address I sent previously to: nankivil@telocity.com

I really appreciate it! Mark Nankivil

**The U-2: She Flies!**

From: Grant Calkins CasinoOp@worldnet.att.net

On Monday, January 22, 2001, I took my new U-2 to the Edwards AFB field for her maiden flight. As customary for my maiden flights, Tony Frakowiak of NASA Dryden Research Center at Edwards, and one of the very best RC pilots you will ever meet, was at the controls. Takeoff roll was straight and true, and those long wings lifted the plane off at the 6 second mark, and she climbed straight into the western sky! First flight was 4 1/2 min with landing as pretty as takeoff. One year to build. The U-2 is possibly the most beautiful plane in the air!

The U-2 is scratch built. The wings are covered foam, fuse is planked balsa over ply formers.

Mine is done up in white. Several U-2s, both NASA and Air Force, were white, and I liked that look better anyway.

**Brief specs:**

Wing Span: 74"

Weight: 66.6 oz all up

Power: single WeMoTec 480 fan with Plettenberg 200-20-6 motor

Motor battery: 11x1000 mAh Nicads (plan to switch to NiMH later)

Static: V=12.4, A=22.4, W=272 (all from WhattMeter)

Addendum: Before this flight I had conversations with the Plettenberg factory regarding whether 11 cells was too much for the 200-20-6 motor. I have used this motor

many times on various jets with 10 cells with no problems and excellent results. They suggested not to use more than 10 cells - I was on my own if I did. But, I felt that I needed the power, so away I went. I should have listened to Plettenberg!

After just two successful flights the motor was thrashed. Sounds like a cement mixer. Haven't taken it out yet (it's major abdominal surgery to get to it), but likely the brushes are shot and probably the bearings also.

I've got an 8' B-2 on the boards (just starting) that will have 4 WeMoTec/Plettenberg fans (the U-2 has just one). Scratch built as well. It could be awesome!

Grant Calkins

Muroc Model Masters - Edwards AFB, California  
Channel Islands Condors, Camarillo, CA

### Electric Conversion of the Sig Seniorita

An Open Letter to Kenneth Esslinger

Ken sent an email inquiring about the Seniorita. Unfortunately, his address bounced it back to me as undeliverable, so here is my reply, in hope that he may see it here.

I'm looking for a construction article to convert the Sig Seniorita to electric. I'm putting an Astro cobalt 25 geared in it. I seem to remember a few years ago one of the magazines ran an article on this subject. I specifically want to know how to mount the batteries and the motor and what else would need to be beefed up to handle the extra weight.

I don't remember the article, but lots of folks have done it. Please check <http://members.aol.com/KMyersEFO/page384.htm> and you can hook up

with 3 people who've rated it 4 and 5 stars, and they should be able to tell you how they mounted the motor and batteries.

I would mount the motor like I do in a lot of my planes. I



use a 1/8" plywood plate that fits across the "engine" area and uses Nyrod over the motor with 2/56 screws through holes in the plate to hold the motor in place. I've attached two photos. There is some triangle stock and sandpaper to hold the motor in place. The motor shown is a geared 25.



The batteries can be either Velcroed to the bottom, inside of the fuselage with a keeper stick going across the fuselage over the battery, or a removable ramp can be made to slide the battery in at an angle through the windscreen. Sorry, I don't have a photo of that one.

Nothing really needs to be beefed up.

### Kyosho Flash EP or Ken Eats Crow!

From: Bjørn Vidar Alsaker [valsaker@online.no](mailto:valsaker@online.no)

Hello again Mr. Myers!

I wrote you early in December of last year and asked about the Kyosho Flash EP. You told me not to spend any money on the plane, and I didn't. But my wife gave it to me for Christmas. Probably she had found out that I was looking around for a new plane and had mentioned the Flash. Well, when you get a present from your wife you can't change it, so I built it. And I must say that I'm very pleased with the model, and that's why I write you back. It's a very good plane with plenty of thrust for aerobatic flight. I've tried to make a web page out of it with some video picks and some pictures of the best electric plane that I've tried. Everything is built stock except for the mounting of aileron servo, and I have changed the battery compartment to give room for 8 cells 1700 mAh or my new 2400 mAh battery. I've used HS-81 servos and fly it with the landing gear on. It takes off from short grass in about 10-15 meters.

I hope this is of interest to you since there are a lot of negative things to read about this great plane. Probably due to Kyosho who has told people to use 6 to 7 cell 1400 mAh batteries.

### Please Send Ampeer Subscriptions or Renewals to:

Ken Myers  
1911 Bradshaw Ct.  
Walled Lake, MI 48390



Enjoy,  
 Bjørn Vidar Alsaker  
[http://home.online.no/~valsaker/Sport/Kyosho\\_Flash/kyosho\\_flash.htm](http://home.online.no/~valsaker/Sport/Kyosho_Flash/kyosho_flash.htm)  
<http://home.online.no/~valsaker/Videos/videos.htm>

*I am very happy that the Flash has worked out so well for you. Congratulations! KM*

**Sanyo NiCad and NiMH Supplier**

From: Steve Hill [sjslhill@iglou.com](mailto:sjslhill@iglou.com)

Hill's R/C can supply Sanyo cells at very reasonable prices. Steve sells matched or unmatched cells, as well as loose or assembled packs. He tests batteries for a major Sanyo distributor in exchange for special pricing on Sanyo products. For more information visit:  
<http://sjslhill.hypermart.net>

**Carlo Ciarniello's W1 Tailless Model**

From: Doug Garner [dougdot@zfree.co.nz](mailto:dougdot@zfree.co.nz)

Hi Ken,

Greetings from New Zealand. I made the W1 and powered it with a Graupner Speed 400 geared 2.33 motor; 7x600 battery; 9x5 folding prop and Kontronik Easy 3000 motor controller. I used an Eppler 205 airfoil and it is a great flyer, very docile and it thermals seemingly every time I fly it. It needs a little more reflex with this airfoil, about 5/16 inch at the root. I just thought you would like to know particularly after his tragic death.

*Thanks Doug. It is wonderful that we can keep creating great designs, even after the originator has passed on. Thanks for sharing with us. Carlo was a very active contributor to the Ampeer. I still think of him often. KM*

**Upcoming Ft. Wayne Electric Fly, June 23**

From: Ray Hayes [skybench.aerotech@gte.net](mailto:skybench.aerotech@gte.net)

call or fax.....1-(219) 434-1322

9218 Thunder Hill Place, Ft. Wayne, Indiana 46804

website.. <http://www.skybench.com>

Dear Ken,

This is my first time at putting on an Electric event, and I have tried hard to come up with a format that would attract some folks. The flying field is located at the Ft. Wayne State School (Stellhorn and St. Joe ) and has been LOFT's club flying site for over 25 years, it is

large and mowed.

I would appreciate your help in promoting this event. I am not on any of the chat rooms, so if you have the time to announce our event to the World of Electric Flyers I would really appreciate it.

Please also note that I am putting this same event on at Lansing's GLASS Sailplane club's flying site, a huge sod farm near Grand Ledge, **August 18**. That club is gaining interest in Electrics. Hopefully in the fall I will be able to put this event on at the Muncie flying site.

Any help in promoting attendance to the Electra Fly will be greatly appreciated. Steve Moskal of the Chicago area is bringing some scale ships and more are certainly welcomed. If you have any ideas to improve this event's attendance please let me know.

Best regards,  
 Ray Hayes

**S-Models – New Name, Old Friend**

From: Sture Smidt [sture.smidt@komtek.no](mailto:sture.smidt@komtek.no)

Ken,

I now have the name "S-Models" for my plane kits and designs. The link is:

[http://www.komtek.no/fly/S\\_Models\\_mainpage.htm](http://www.komtek.no/fly/S_Models_mainpage.htm)

Besides my plan and kit for the Fenix, I will soon have plans for an EDF (electric ducted fan) called ARROW which is designed after the KISS principle. Simple models are the only ones I can afford in terms of spare time these days with wife, children and a house. I fly my ECO 8 though, 209 flights in a year isn't bad for me (plus my regular fixed wing flying).

I have had some response after my article in Electric Flight, and I look forward to see your results with the kit.

With best regards  
 Sture Smidt

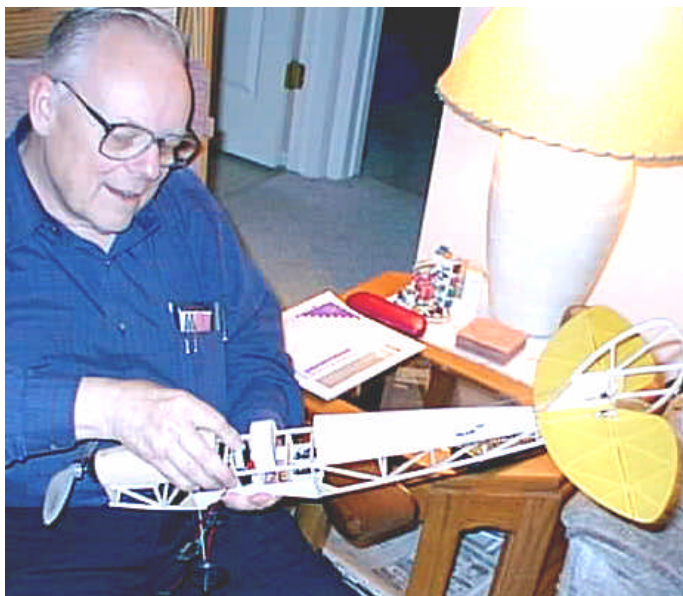
(Photo from Sture's Site)



The February EFO Meeting

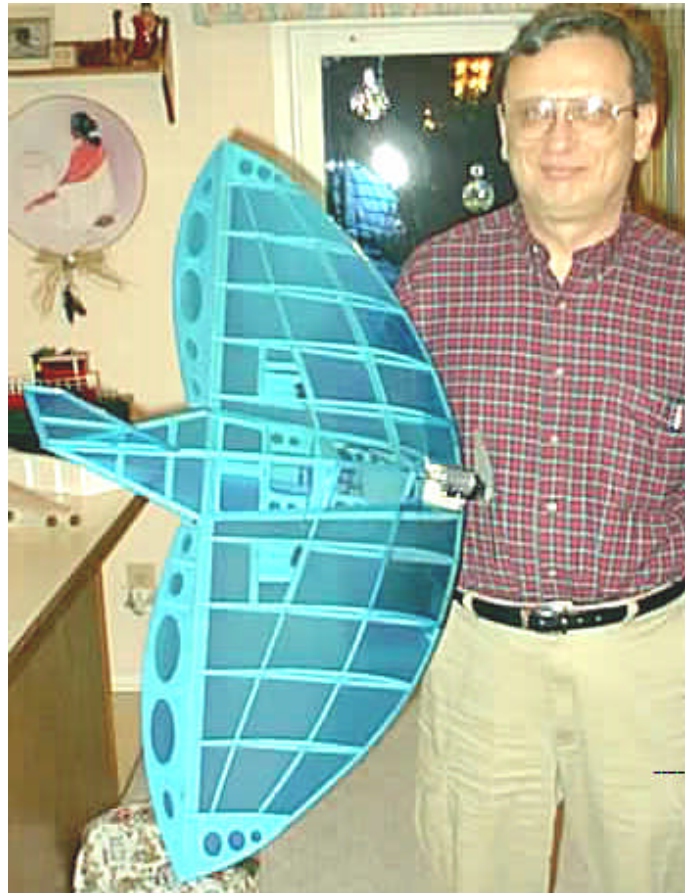


Jack Lemon showed off his new indoor Tiger Moth. He is building it using the outlines only from the Sterling kit. The structure is unique and all his own. He has created a thrust adjustment “stick” that allows for vertical and horizontal adjustment of the motor thrust angle. It can be seen in the picture. When it is finished, it should weigh 11 ounces ready to fly. It is covered with tissue. The tissue was lightly coated with Balsa Rite and ironed on with a Monokote trim iron. It is designed with both indoor and outdoor flying in mind.



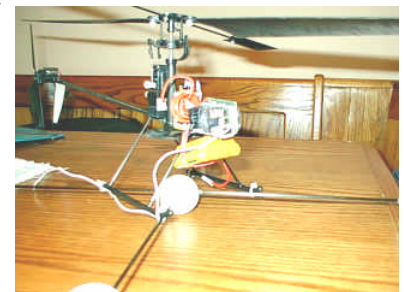
Don Skiff shared the plans that he is drawing up for Bill Higgen’s unique twin for S400 power. It has a 52” span with an elliptical wing plan form. It flies nicely and

is thoughtfully designed. This may become a plan available in one of the magazines, so we’ll keep you posted.



Rick Sawicki showed his Elipstik 460 ARF from Northeast Sailplane, 948 Hercules Dr., Suite 12, Colchester, VT 05446 – phone: 1-802-655-7700 – Web site: [www.nesail.com](http://www.nesail.com). Rick added a pod to the bottom to carry various size battery packs and the R/C gear. It uses a S400 for power. It weighed 13.6 ounces with the original S280 power and now weighs 16.5 ounces with the S400 power.

Pete Foss showed off his Piccolo helicopter, which he purchased directly from Germany. It has the Icarus receiver with a 72 MHz JR single channel crystal. It took him a day plus a couple of hours to put it together, and he’s been having a lot of fun flying it.



Richard Utkan shared his tug boat, which he produced from R/C Modeler plans. While the plans called mostly for the use of cardboard, Ric hard has used cardboard, fiberglass and balsa. It has a homemade



drive-train and forward only speed control. The railings are made of chopsticks and string that has been soaked with CA.

Ken demonstrated how he's gathering motor constants now. The demonstration took a little longer than expected because the motors that showed up either didn't have prop adapters or had hard to count gear ratios. Both are necessary for getting the motor constants.

**The Upcoming March Meeting**

The March 1 meeting will be at Ken's house at 7:30. Please bring those winter projects to share. Ken will also demonstrate what to do with the motor constants, once you have gathered them.

**Ed's Airforce**

From: Ed Silva, 1 Cedar Crest Rd.,  
Wilmington, MA 01887  
edjoy@mediaone.net

Photo 1 is called the Squert and was designed by Derek Woodward. It was featured in the 12/97 issue of RCM. Wing span: 36.25" Fuselage length: 25.25", Wing area: 270 sq.in., Motor SP400, Aeronaut 6x3 folder, Hitec 535 Rx, 2 Hitec 101 servos, New Creations M-20 ESC, Weight with 7-cell 600 is 22 oz. Nice flier, 5-7 minutes of flight.

**Photo 1**



Photo 2 and 3 is the Difina La Querandi designed by Dennis Topsfield, also in RCM. This is my first twin. Wing span: 56.5", Fuselage length: 37.5", 402 Sq.in., 2 7.2v Speed 400's, APC 5.5x4.5 props, Futaba FP - R127DF Rx, 600 mAh Rx battery, 4 Hitec 101 servos,

**Photo 2**



Pegasus 35 ESC, Weight: 52 oz., 7-cell 1700 mAh power pack. It has not flown yet because of the weather.

**Photo 3**



Photo 4 is the Tiger Kitten designed by Bob Benjamin and built from the Ace kit. Wing span: 54", Fuselage length: 38", Wing area: 450 sq.in., Astro Flight 15 geared, 12 1700's, Master Airscrew 11x7 electric prop, RCD 3200 Rx w/600 mAh Rx battery, 3 Hitec 101 servos, Viper Speed Demon ESC, Weight: 76 oz.

**Photo 4**



Photo 5 is the Die Schwinge (Birdwing) designed by Hal Debolt. It appeared in the 4/94 issue of Model Airplane News. Wing span: 60", Fuselage length: 45", Wing area: 550 sq.in., Astro Flight 05 geared, 7 1700's, 11x7 SonicTronic prop, Futaba R-114H Rx, 2 Hitec HS-80's, FMA 30 ESC, Weight: 48.5 oz. I don't care for the speed control. It has too little variation, almost like an off/on switch.

**Photo 5**

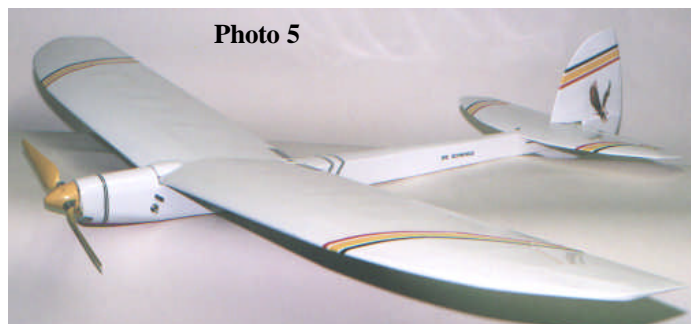


Photo 6 is the Crackle designed by Steven Pauly. It appeared in the 1/98 issue of Model Airplane News. Wing span: 46", Fuselage length: 36.25", Wing area: 445 sq.in., Astro Flight 05, 8 1700's, Graupner 8x4.5 folder, Hitec 535 Rx w/270 mAh Rx pack, Joma r MiniMax ESC, Weight: 50 oz. Great flier. It can do everything in the hands of a good pilot (not me ; - )

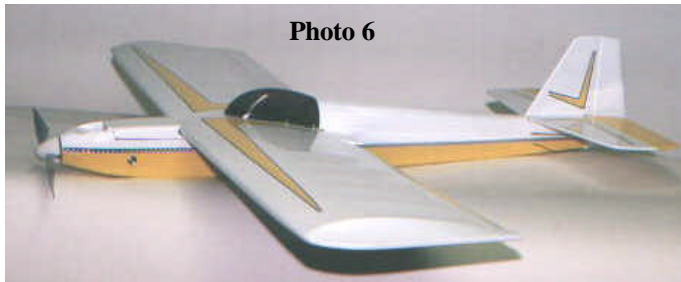
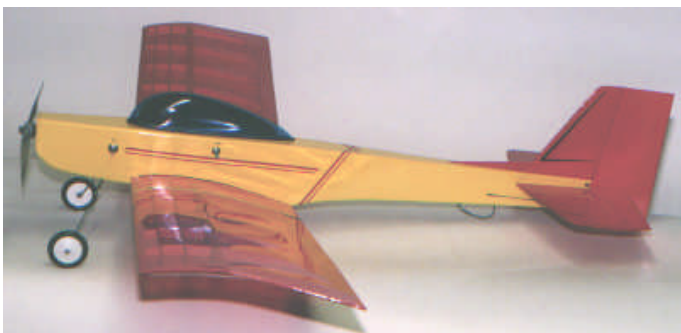


Photo 7 is the Mega Pepper designed by Dave Roblen and featured in the 7/00 issue of Model Airplane News. Wing span: 44", Fuselage length: 30", Wing area: 352 sq.in., Speed 400, Olymus gearbox, APC 9x4.5 electric prop, Hitec 555 Rx, 2 HS -81 servos, Astro Flight 215D ESC, 7 600 mAh battery, Weight: 22 oz. I love this plane. It is easy to get 10 minute flights using the full range of speed.



All of the planes are scratch built except for the Tiger Kitten. All fly well, except the Querandi, which I recently completed, but I have not flown yet because of the weather.

### Recommendations for Electric Powered Flight Systems (Part 2)

By Ken Myers

Here are the formulas written out using the various **Flight Factors**.

*low-wing, mid-wing or high-wing* (performance types)

**target wing loading** = wing area in sq.in.<sup>1/3</sup> \* 2.5  
(\* means multiplied by)

**target weight** = wing area in sq.ft. \* target wing loading

**maximum wing loading** = wing area in sq.in.<sup>1/3</sup> \* 3

**maximum weight** = wing area in sq.ft. \* maximum wing loading

*trainers and light planes* (moderate performance types)

**target wing loading** = wing area in sq.in.<sup>1/3</sup> \* 2

**target weight** = wing area in sq.ft. \* target wing loading

**maximum wing loading** = wing area in sq.in.<sup>1/3</sup> \* 2.5

**maximum weight** = wing area in sq.ft. \* maximum wing loading

*powered thermal sailplanes and old-timers* (low performance types)

**target wing loading** = wing area in sq.in.<sup>1/3</sup> \* 1.15

**target weight** = wing area in sq.ft. \* target wing loading

**maximum wing loading** = wing area in sq.in.<sup>1/3</sup> \* 1.5

**maximum weight** = wing area in sq.ft. \* maximum wing loading

*biplanes*

**target wing loading** = wing area in sq.in.<sup>1/3</sup> \* 1.65

**target weight** = wing area in sq.ft. \* target wing loading

**maximum wing loading** = wing area in sq.in.<sup>1/3</sup> \* 2

**maximum weight** = wing area in sq.ft. \* maximum wing loading

The **target weight** is used to estimate the airframe weight, airborne radio system weight and power system requirements for a new project. The **maximum weight** is used as a control to verify a good chance for a successful plane. If the maximum weight is exceeded, the plane may still "fly." With the maximum weight exceeded, there is a good chance that many people would not call the plane successful or rewarding. Also, if the maximum weight is exceeded, the aircraft may become too difficult for the "average" modeler/pilot to fly because of an excessive wing loading for its size.

### Minimum Prop Diameter and Relative Pitch

*low-wing, mid-wing or high-wing* (performance types)

**minimum diameter** = (the square root of ((weight in ounces \* 1.15) / Pi)) \* 2

**pitch** = 0.75 diameter (/ means divided by)

*trainers and light planes* (moderate performance types)

**minimum diameter** = (the square root of ((weight in ounces \* 1.25) / Pi)) \* 2

**pitch** = 0.65 diameter

*powered thermal sailplanes and old-timers* (low performance types)

**minimum diameter** = (the square root of ((weight in ounces \* 2) / Pi)) \* 2

**pitch** = 0.65 diameter

*biplanes*

**minimum diameter** = (the square root of ((weight in ounces \* 1.4) / Pi)) \* 2

**pitch** = 0.5 diameter

### Component Weights

**power system weight** can equal up to about 55% of the



total weight

**onboard radio system weight** equals up to about 15% of the total weight to a certain point

**completed airframe weight** equals about 30% of the total weight

### Prop Watts Out

**Watts out** = (Diameter in inches/12)<sup>4</sup> \* (Pitch in inches/12)\*KRPM<sup>3</sup>\*Prop Multiplier

Diameter and pitch are in inches. **Prop Multipliers:** 1.31 typical wood prop, 1.18 folding carbon-fiber props, 1.11 standard APC props. KRPM is RPM in thousands.

**KRPM** = (Watts out/((Diameter/12)<sup>4</sup>\*(Pitch/12)\*multiplier))<sup>1/3</sup>

### Some Examples Using the Above Formulas

**670 sq.in. low-wing, mid-wing or high-wing** (performance types)

**Target Wing Loading** = 670<sup>1/3</sup>\*2.5 = 21.88 oz./sq.ft

**Target Weight** = 670/144\*21.88 = 101.78 oz. or 6.36 lb.

**Output Power Required** = 55 \* 6.36 = 350 watts

**Prop Diameter** = (SQRT((101.78\*1.15)/Pi))\*2 = 12.2 rounded to 12 inches

**Pitch** = 12\*0.75 = 9 inches

**Required RPM** = (350/((12/12)<sup>4</sup>\*(9/12)\*1.31))<sup>1/3</sup> = 7.089 KRPM or 7,089 RPM

The power system needs to turn a 12x9 "typical" wood prop at about 7,000 RPM or better to be acceptable for this use.

**Power System Weight** = 101.78 \* 0.55 = 55.98 oz.

**Onboard Radio System Weight** = 101.78 \* 0.15 = 15.27 oz.

**Completed Airframe Weight** = 101.78 \* 0.30 = 30.53 oz.

**670 sq.in. trainers and light planes** (moderate performance types)

**Target Wing Loading** = 670<sup>1/3</sup>\*2 = 17.5 oz./sq.ft

**Target Weight** = 670/144\*17.5 = 81.42 oz. or 5.09 lb.

**Output Power Required** = 45 \* 5.09 = 229 watts

**Prop Diameter** = (SQRT((81.42\*1.25)/Pi))\*2 = 11.38 rounded to 11 inches

**Pitch** = 11\*0.65 = 7.15 rounded to 7 inches

**Required RPM** = (229/((11/12)<sup>4</sup>\*(7/12)\*1.31))<sup>1/3</sup> = 7.515KRPM or 7,515 RPM

The power system needs to turn an 11x7 "typical" wood prop at about 7,500 RPM or better to be acceptable for this use.

**Power System Weight** = 81.42 \* 0.55 = 44.78 oz.

**Onboard Radio System Weight** = 81.42 \* 0.15 = 12.21 oz.

**Completed Airframe Weight** = 81.42 \* 0.30 = 24.43

oz.

**670 sq.in. powered thermal sailplanes and old-timers** (low performance types)

**Target Wing Loading** = 670<sup>1/3</sup>\*1.15 = 10.06 oz./sq.ft

**Target Weight** = 670/144\*17.5 = 46.81 oz. or 2.92 lb.

**Output Power Required** = 35 \* 2.92 = 102 watts

**Prop Diameter** = (SQRT((46.81\*2)/Pi))\*2 = 10.92 rounded to 11 inches

**Pitch** = 11\*0.65 = 7.15 rounded to 7 inches

**Required RPM** = (102/((11/12)<sup>4</sup>\*(7/12)\*1.18))<sup>1/3</sup> = 5.943KRPM or 5,943 RPM

The power system needs to turn an 11x7 folder at about 5,900 RPM or better to be acceptable for this use.

**Power System Weight** = 46.81 \* 0.55 = 25.75 oz.

**Onboard Radio System Weight** = 46.81 \* 0.15 = 7.02 oz.

**Completed Airframe Weight** = 46.81 \* 0.30 = 14.04 oz.

**670 sq.in. biplane**

**Target Wing Loading** = 670<sup>1/3</sup>\*1.65 = 14.44 oz./sq.ft

**Target Weight** = 670/144\*14.44 = 67.19 oz. or 4.2 lb.

**Output Power Required** = 50 \* 4.2 = 210 watts

**Prop Diameter** = (SQRT((67.19\*1.4)/Pi))\*2 = 10.94 rounded to 11 inches

**Pitch** = 11\*0.5 = 5.5 rounded to 6 inches

**Required RPM** = (210/((11/12)<sup>4</sup>\*(6/12)\*1.31))<sup>1/3</sup> = 7.686 KRPM or 7,686 RPM

The power system needs to turn an 11x6 "typical" wood prop at about 7,500 RPM or better to be acceptable for this use.

**Power System Weight** = 67.19 \* 0.55 = 36.95 oz.

**Onboard Radio System Weight** = 67.19 \* 0.15 = 10.08 oz.

**Completed Airframe Weight** = 67.19 \* 0.30 = 20.16 oz.

**How about a multi?**

**670 sq.in. low-wing, mid-wing or high-wing**

(performance types) twin

**Target Wing Loading** = 670<sup>1/3</sup>\*2.5 = 21.88 oz./sq.ft

**Target Weight** = 670/144\*21.88 = 101.78 oz. or 6.36 lb.

**Output Power Required** = 55 \* 6.36 = 350 watts

Since it is a twin the weight needs to be cut in half for the following.

**Prop Diameter** = (SQRT((101.78\*0.5\*1.15)/Pi))\*2 = 8.63 rounded to 8 inches **\*note:** with multi-motor planes, rounding down the prop diameter seems to work better.

**Pitch** = 8\*0.75 = 6 inches

**Required RPM** per motor = ((350/2)/((8/12)<sup>4</sup>\*(6/12)\*1.31))<sup>1/3</sup> = 11.059 KRPM or 11,059 RPM

## Up Coming Events

**May 5 & 6** Triad Electric Weekend; Coordinator: Dr. John Mountjoy phone 336.772.7609 or email [jmtjoy@triad.rr.com](mailto:jmtjoy@triad.rr.com)  
May 5, 2000 WSRC Field, CD: Nat Shepard phone: 704.633.1788  
May 6, 2001 Rams Field, CD: Dr. Colin Mckinley, 336.924.5890

**June 16 & 17**All-Electric Fun Fly at Fentress Navy Airfield in Tidewater, VA. The field is only 1/2 hour drive from Virginia Beach. contact: Brad Tennant [Btenn\\_10@aol.com](mailto:Btenn_10@aol.com)

**June 23** Electric Fly, Ft. Wayne, IN - Ray Hayes skybench. [aerotech@gte.net](mailto:aerotech@gte.net), call or fax.....1-(219) 434-1322 9218 Thunder Hill Place, Ft. Wayne, Indiana 46804 website.. [www.skybench.com](http://www.skybench.com)  
The flying field is located at the Ft. Wayne State School (Stellhorn and St. Joe )

**June 9**, Skymasters (Rochester, MI) "Small Fry" Electric & Sailplane - Under 2.5-2 cycle, 3.4-4 cycle, Any size electric & glider. Contact: Greg Cardillo 248-391-6803

**June 22-23-24** MARCEE (Minnesota area radio control electric enthusiasts) fun fly near Minneapolis / St Paul more info at [www.marcee.20m.com](http://www.marcee.20m.com) or Rich Ness at [r\\_ness@msn.com](mailto:r_ness@msn.com) or 651-451-8998

**July 7 & 8** Mid-Am 2001, Electric Fly-In, Northville Twp., MI

Near Plymouth, MI. CD's Ken Myers and Keith Shaw. Contact: [KMyersEFO@aol.com](mailto:KMyersEFO@aol.com) or 248.669.8124.

**July 21** Lexington Miniature Aircraft Club (KY), second annual Bluegrass Electric Fly-In Lexington, KY. web page located at <http://fly.to/lmac>. Keith Hollifield

**August 18** Electric Fly, Grand Ledge, MI - Ray Hayes skybench. [aerotech@gte.net](mailto:aerotech@gte.net), call or fax.....1-(219) 434-1322, 9218 Thunder Hill Place, Ft. Wayne, Indiana 46804 website.. [www.skybench.com](http://www.skybench.com)  
Lansing's GLASS Sailplane club's flying site, a huge sod farm near Grand Ledge. The club is gaining interest in Electrics.

**September 14, 15, 16** Neat Fair 2001 - Peaceful Valley Campsite in Shinhopple (Downsville), NY Info: [www.nyblimp.com/NEAT.htm](http://www.nyblimp.com/NEAT.htm) or email [neatfair@aol.com](mailto:neatfair@aol.com)

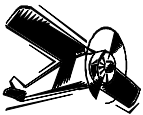
The power system needs two motors with 8x6 "typical" wood props at about 11,000 RPM or better to be acceptable for this use.

**Power System Weight** =  $101.78 * 0.55 = 55.98 \text{ oz.}$

**Onboard Radio System Weight** =  $101.78 * 0.15 = 15.27 \text{ oz.}$

**Completed Airframe Weight** =  $101.78 * 0.30 = 30.53 \text{ oz.}$

Remember that the example above is for a performance twin, the same principle applies to the other types of multi-motor projects by using the performance type information and appropriate divisor.



The Ampeer/Ken Myers  
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<http://members.aol.com/KMyersEFO>

### The Next Meeting:

Date: Thursday, March 1, 2001 Time: 7:30 P.M.

Ken Myers's house - 248.669.8124

1911 Bradshaw Ct., Walled Lake, MI