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Aug

The EFO Officers:

2003

# Ampeer

**President:**  
Ken Myers  
1911 Bradshaw Ct.  
Walled Lake, MI  
48390  
phone: (248) 669-8124

**Vice-President:**  
Richard Utkan  
240 Cabinet  
Milford, MI 48381  
phone: (248) 685-1705

**Secretary/Treasurer:**  
Debbie McNeely  
4733 Crows Nest Ct.  
Brighton, MI 48116  
phone: (810) 220-2297

**Board of Directors:**  
Jim McNeely  
4733 Crows Nest Ct.  
Brighton, MI 48116  
phone: (810) 220-2297

**Board of Directors:**  
Jeff Hauser  
18200 Rosetta  
Eastpointe, MI 48021  
phone: (810) 772-2499

**Ampeer Editor:**  
Ken Myers  
1911 Bradshaw Ct.  
Walled Lake, MI 48390  
phone: (248) 669-8124

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**The Next Meetings:**  
**Please see the Upcoming August EFO Meetings in this  
issue for dates and times.**

**What's In The August 2003 Issue:**

Portable Pond – More from Parsons on His F7-F – A Push-E Cat Success – Motor Designation Question – New Flight Sim – Zero Seven – Motors from Australia – Upcoming August EFO Meetings – Indoor Nats Report – Kyosho Viento – SR Gets the “Blues” - The Plank – More on my Cap 232 – Li-Po Battery Flights of the F-7-F – Upcoming Skyhawks Event – Full-scale Electric



neighbor's that has a 20' to 40' by 6' or 8' relatively flat ground space. Cut the grass short. Make a rectangle with vertically aligned 1"x 6" or 1" x 8" wood planks. Have the long dimension in the direction of the prevailing wind for water takeoffs and skilled (lucky) water landings. Hold the planks in place with 1/4" diameter by 12" metal rods each side. Do not use nails. Overlap the planks instead of butt joining them. No

**Portable Pond**

From: Lowrie McLarty jmclarty@wi.rr.com

I have attached a short story of a way to setup a portable pond for small R/C takeoffs and landings. Many lakes and ponds in Wisconsin that allow flying have weather and water conditions for large R/C only - as well as permissions required and the need for a boat.

**A DIY Portable Pond for Backyard R/C Floatplanes and Flying boats.**

This idea is for those flyers without safe or available water for taxiing, takeoffs and landings.

**This is what you do.**

Pick a place in your yard plus your

saw cutting is needed. Purchase polyethylene plastic sheet as wide and long as necessary to drape at least a foot beyond the top edges of the planks. Do not use nails or any permanent attachment method. Tuck the plastic sheeting into the corners while filling the rectangle with water to about a 2" or 3" depth. The water can be drained each day for reasons of safety and cleanliness. Also note that grass under the pond will not grow well after a week or so without sun and air. Draining the water, removing the plastic, then stacking the planks and rods makes the pond portable. It is easily transported and assembled at remote sites. Add hose water or use a bucket brigade to make your own body of water dedicated to backyard type R/C.

Photos are a Portable Pond in Princeton, NJ with son David with float

plane, son Ross with flying boat and a twin hull hydrofoil takeoff.



### More from Dan Parsons on His F-7-F

Enthusied is hardly the word about my Tigercat. It goes way beyond that!

Now, to the Li-Po pack. I haven't ordered yet, but from the info that Thunder Power is putting out on the "R/C GroupsDiscussion" Web site, I will be ordering the 3S3P pack using the new 2200 mAh, "high current" cells.

*(Dan sent me this email on April 1. Today is May 3. I just visited the Flight Energy site <<http://www.flightenergy.com/>> and there are no signs of the Li-Po cells he is referring to. There are no prices posted and no way of ordering the packs is apparent. Weight given for the 1950 mAh pack is 1.25 oz. KM)*

This will replace the 10 cell Sanyo 2600 NiMH pack I'm now using. And things just keep getting better because this pack will weigh only 14.5 oz., which is 8 oz. less than the 2600 NiMH pack! This new 3S3P pack is not yet available because Thunder Power is conducting tests on them. They estimate 8 weeks, but I'll bet it's longer. If these batteries are as good as they say, it's well worth the wait.

BTW, a local flyer is test flying the earlier Li-Po batteries for Thunder Power and has been getting 29-30 minute flights on his large helicopter. Also, he had Gary Kyle try the 3S3P, 7800 mAh (*My calculations indicate this was a 3S4P pack. With the info below, this indicates about a 4 oz. weight saving. KM*) pack in his 50" P-47, replacing the Sanyo Nicad 10-cell, 2400 mAh pack. He flew the pack to exhaustion and got 42 minutes!! Gary flies aerobatics most of his flights. He is an outstanding pilot and is our electric "guru" here in Albuquerque.

*(I'm just wondering out loud how aerobatic that 42 minute flight was.  $7.8 \text{ Ah} * 60 = 468 \text{ amp minutes} / 42 \text{ minutes} = 11.14 \text{ amps}$ . It just seems to me like a pretty low aerobatic amp draw. My 10-cell, 488 sq.in., 58 oz. TigerShark flies about 7.5 minutes with 10 RC-1700's for an average amp draw of 13.6 amps. While it is a*

*very good flying, fully aerobatic plane, I'd hardly call its flights "exciting". KM)*

### A Push-E Cat Success

*I loved this email. It is very rewarding to me to find that some folks read and heeded my getting started information in the January 2003 Ampeer. Thanks Reed.*

From Reed Jackson [rrjacks@sandia.gov](mailto:rrjacks@sandia.gov)

Hi Ken,

You are great to answer all the emails you must get; thank you.

We had a GREAT weekend! My Push-E Cat (PEC) flies! (<http://www.rc-aero.com/kits/pushe/index.html>) After reading some articles on increasing pitch and length of props for high altitude flying, I added 3/8 inch height to the motor platform and mounted an APC 7x6 prop to the speed 480 motor. Using Zagi KR-1700AU 8 cell packs, we flew multiple recharges on both Saturday and Sunday. We saw 10+ minute flights (more like 15 minutes) using full power to climb and then dead stick glides or 1/2 power slow descents (it won't quite hold altitude on 1/2 power). My model weighs 33 ounces (on the kitchen scale) and is fun to fly even if it is a little sluggish on the controls.

The best part is that I am a new R/C pilot and can fly myself. I also (after a few flights getting the feel of the aircraft) hooked up the trainer cord and all my children flew it from altitude down to 50 feet or so with little problem. They are 11, 9, 8, and 5 years old! Yes, my 5 year old can fly the Push-E Cat quite well! My 11 and 9 year olds did a few approaches and they were so smooth I let them land the plane and they were thrilled!

Thanks again for all the info in the newsletter and all your help to us newcomers. We are having fun and will probably get a second Push-E Cat for the second radio after everyone is comfortable with flying. We crashed a few times and just picked up the pieces and flew some more.

I'm sure I will have more questions in the future but for now, we are in the air and having a ball!

By the way, Garrison Aerodrome, Push-E Cat producer (<http://www.rc-aero.com/>), has an addendum to the building plans that advises the builder to add some vertical tail in front of the original tail to produce a larger moment arm for Push-E Cats over 30 ounces. I added this modification and it makes a big difference to the yaw stability of the plane. If anyone writes to you with Push-E Cat problems, you might point them to this addendum.

The message above was written early this year, but I still can't figure out why I never sent it. It was written mostly to encourage you and thank you. I also have a question for you.

**First an update:** We have put the Push-E Cat through it's paces. The kids are flying it really well. I think it is time to start thinking about our next airplane.

What would you suggest for the following constraints: Aileron equipped and mildly aerobatic, Hand launch and land in sparse 12 inch high prairie grass (I live in the high desert and we fly out of our backyard) Able to be adapted (if needed) for our altitude of 6500 feet. (if it is marginal at sea level, it probably won't fly here)

Any suggestions? The Push-E Cats foam and strapping tape was interesting, but I am experienced at balsa built-up also. I have never done any foam core vacuum bagging or sheeting or any fiberglass lay-ups.

Thanks again, you are great!

Reed Jackson

Tearing up the skies over New Mexico!

*My first response to Reed was to build a plane like the Aveox Embat (<http://www.aveox.com/embat.html>) or SR Batteries AcroPro (<http://www.srbatteries.com/acropro.htm>) minus the landing gear. I also told him to take a look at Tower Hobbies Great Planes Electrostreak ARF (<http://www2.towerhobbies.com/cgi-bin/wti0001p?&I=LXAVR3&P=7>).*

*Upon sleeping on those recommendations, I thought that the Garrison Aerodrome Hot Cat (<http://www.rc-aero.com/kits/hotcat/index.html>) or Bowman's Hobbies Scooter E (<http://www.bowmanshobbies.com/scooter.html>) might be better for his rough landing area. I think he needs a shoulder wing plane for easy launching and no landing gear to tangle in the tall grass.*

### Motor Designation Question

From: Walter Steckenreiter [walter@thevillages.net](mailto:walter@thevillages.net)

Dear Ken,

I have been flying R/C for many years. A friend of mine is getting started in the hobby, he is interested in electric's.

He came to me for help. He wanted to know what the "speed 400" motor designation stood for. We researched hi and low and found many references to "speed 350, Speed 400" etc. but could not find what the

number actually represented. Perhaps you can enlighten us.

### My Response:

I had read over the years that it had something to do with the can length in mm. That is NOT true! If you ever here it, don't believe it.

The name Speed 400 means nothing. There is no Speed 350, that I've ever run across, but there is a Speed 300 motor, which when geared and sold by some companies is called a 370 motor - same motor, just one direct drive, one geared. Graupner uses the word Speed in front of their motors. It has no meaning whatsoever. The Graupner motors are, for the most part, Mabuchi industrial motors. The various Graupner Speed 400 motors are based on the Mabuchi RS-380 motor. For more info on the Mabuchi motors, visit <http://www.mabuchi-motor.co.jp/english/product/>

To muddy the waters even further, various suppliers are calling some of their small brushless motors Speed 400 "replacements". These brushless motors advertise themselves as having more power for the same weight.

When thinking about motors, think about input power. Typical input power for the Mabuchi motors goes from 6 cells times 10 amps = 60 watts to 10 cells times 10 amps = 100 watts. So a Speed 400 ranges in power from 60 to 100 watts of input power. These motors are not very efficient and their power out will be closer to 36 watts for a 6-cell system to 60 watts for a 10-cell system. The brushless replacements for Speed 400 allow current draws of 15+ amps without hurting the motor and better efficiency at the same weight.

I know this doesn't help, but that's the way it is, it's just a meaningless name.

### New Flight Simulator

From: Kevin Earland [kevin@realitycraft.com](mailto:kevin@realitycraft.com)

Kevin dropped a line to inform us that there is a new PC R/C flight simulation program available. It is called RC Plane Master. It is available for a free 7-day trial at: <http://www.realitycraft.com>

According to the site, it is a hyper-realistic and affordable flight simulator. Features include:

**FREE** trial demo.

**FREE** add-on aircraft.

**FREE** add-on sceneries.

**FREE** updates.

**FREE** support via email.

Easy to use physics editor - allows you to change the flying characteristics of the planes without having to be an expert.

All flight surfaces move and can break off when hit.  
Awesome high detail graphics with engines, exhausts, transparent canopies and even model pilots.

Accurate and fast collision detection and real crashes - with ALL objects.

2 pilot split screen action.

2 pilot dog fighting mode.

Stunning smoke and propeller effects.

5 different views, 4 of which have adjustable settings.

You can move the standing view around so you can stand at any point on the landscape.

You can create a new starting point from the current position of the aircraft.

Adjustable field of view - so the aircraft don't go out of sight too quickly.

Advanced wind simulation that follows the landscape with adjustable strength, turbulence and wind gradient settings.

Fly **electric**, IC, jets and even rocket planes.

Engine cut feature.

Ability to speed up or slow down the simulation speed.

Many adjustable graphics options that can allow it to run fast on older machines.

Easy to use interface that remembers your settings.

All aircraft and sceneries can be viewed and selected in 3D before flying.

The downloadable version is about \$49.50US and a CD-ROM version for about \$65.99US.

*(Please be sure to check out the system requirements and interfaces available. KM)*



**Zero Seven**

From: Robert Comerford flyelectric@dodo.com.au

Here is photo of my latest. It is a David Boddington design. I was given the plan having foolishly commented that it would make a good electric after one of our club members turned up with a .10 or .15 i/c powered one. The plan comes from Model Flyer Magazine. I built an extra rib bay either side as I had considered using a

heavier power plant. Apart from some extra wing strengthening for the proposed heavy power plant, it is basically as per plan except for mods for electric power. Power is 6V S400, 1.85:1 reduction, 8x3.8 GWS prop, 8-cell 500AR pack for fuel. It takes off in a few yards and climbs at about 45 degrees. Loops, rudder rolls, touch and goes, ROGs off a rough strip, 8+ minute flights of fooling around. I suspect it will glide if asked with that extra wing area.

Something new for me was the method I used to strengthen the wing aft of the spar. I had run out of suitable balsa sheet on the day. To stiffen the wing, I front sheeted the centre with the available sheet and applied diagonal bracing to the rear but made each cross brace a 'T' section. Came out very stiff. Covering was cheap plastic gift wrap ironed on using Balsaloc. Body and tail have just an over-spray of cheap enamel paint. Hinges are sewn with cotton with a strip of office sticky tape down one side (superglued on) to seal the gap. I can feel an aileron version coming on.

The vital stats for the Zero Seven are; Weight 587g or 20 oz., max power 160 watts/Kg or 77 watts/pound.

#### **Motors from Australia**

From: Malcolm Buckmaster mkbuck@alphalink.com.au

Dear Ken,

I would like to introduce my home business which is now operating as a supplementary income to my partial retirement situation. Up until the present, I have been reluctant to advertise internationally, as I have been concerned that it is not possible to obtain or afford Product Liability Insurance in your country. (A very litigious environment. Unfortunately Australia is rapidly catching up.)

If you visit my present Website, you will find an illustrated catalogue of E-flight products which are largely unique to A-L A. The site address is:  
alphalink.com.au/~mkbuck

These products have been well received throughout this country, and I find I am making batches of 3-4 units every 3-4 months for most of the items listed.

I wonder if you would consider this operation as suitable for inclusion of an entry and a link in your List of Manufacturers page? *(It's done.)*

*(As it turns out, I actually have one of Malcolm's*

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Ken Myers  
1911 Bradshaw Ct.

*motors. I've not used it in a project yet, but it is extremely well made, and since I pulled it out after looking at the photos and info on his site, I know that I'll be using this excellent motor in a project soon. I'll keep Ampeer readers posted about my experiences. I highly recommend that you visit his site and view the very wide range of motors available. KM)*

### Upcoming August EFO Meetings

The first August EFO meeting will be the PMAC (Pontiac Miniature Aircraft Club) electric fly-in on **August 9 & 10**. In an effort to help make this first electric meet for PMAC a success, \$5 of the entry fee will be paid for, with EFO funds, for all current dues paying EFO members. You can tell if you are a current member if you receive the paper Ampeer and you see **M03** after your name on your mailing label. If you receive the email notice, and you are not sure whether you've paid you 2003 dues, just send me an email. Also, you can pay your 2003 dues at the meet, if you have not done so already and \$5 will go toward your registration fee. Remember, you will need your AMA card to fly in this AMA sanctioned event. The PMAC field is located on White Lake Rd. just east of Teggerdine on the south side of the road in the Pontiac Lake State Recreation Area in Waterford Township. A State Park sticker is required and will be included in your entry fee.

The second meeting will be held at Camp Dearborn in Milford. This is a joint venture with the Michigan International Soaring Society (MISS). The public is being invited to come and fly, so bring trainer type electrics, along with your other planes, and buddy boxes if you have them. The event is scheduled from 10 a.m. to about 4 p.m. with lunch being provided by MISS. The date is Sunday, **August 17**.

This is a great chance to interact with the public, so bring some planes and let's show 'em what it's all about.

### Indoor Nats Report

Ken Myers

On May 31 and June 1 the National Indoor Remote-Control Aircraft Council (NIRAC) held the 1st Annual Indoor Nationals at the Oakland Yard Athletic Dome in Waterford Michigan. The event was CDed by Dave Robelen, who is now the president of the organization. Sponsors included; Ddynamic Web Enterprises, Sig Manufacturing Co. And Horizon Hobbies.

Planes were limited to a maximum of 12 oz. While this facility can easily and safely handle heavier planes,



**Sig showed off some great planes. Note the Bristol Scout, great flying Antoinette, and the tiny Rascal.**

this is the limit imposed by NIRAC rules.

I was able to help out and be one of the judges for scale and pattern flying. This was a very enjoyable task, and I was happy to help out.



There were several very impressive planes at this meet. Doug Ward had a SE-5A created from a Falco kit. The kit is produced in England and is 1/15-scale. It uses a WesTec DC5.4 motor geared 6:1 with two 210 mAh LiPo cells. It weighed in at 3 oz.

I really liked the Sig Mfg. Co. Bristol Scout. It features a Mabuchi 180 motor, 4.4:1 gearbox, 8.5x8 prop and uses 720 mAh NiMH cells. I was very impressed by the Antoinette as flown by Scott Christensen in the scale competition. This is a graceful, beautiful flying indoor aircraft. Scott won the Sport Scale competition with this plane.



I also grabbed a photo of Bob Wilder's Eindexer as it was being judged. It came in 3rd in the Sport Scale event.

For all the results and more about NIRAC, visit

their Web site at <http://www.nirac.org>.

I was very impressed with the systems and planes available from Dynamic Web Enterprises (DWE). There systems are for SubMicro flight. You really have to see these tiny planes and the system they have to fly them. There Web site is <http://www.smallrc.com>. If you think you'd like to fly R/C planes that will fit in your hand, you've really got to check them out.



### 10-Cell LT-25

From Rich Flichbaugh, South Dennis, MA

This Sig LT-25 is powered by a Mega brushless 22/20/3E using a Castle Creations Phoenix 35 brushless controller. It uses 10 Sanyo 2000 mAh cells, flies well for 8-10 minutes. This is my first attempt with an aileron plane and came out at 74 oz.



### Kyosho Viento Sailplane

From: Chispas [chispas@sapo.pt](mailto:chispas@sapo.pt)

Hi, Ken,

How is the flying season going? Here the wind season is fully on. Most of the flying is done on the slope, with my Mini Ellipse and the Multiplex Lucky, a real "lucky" one.

I am writing to you to tell you about my latest electric sailplane: the Kyosho Viento. It is an 2 meter class for 7 cells and with the looks of a hotliner. It is light: manufacturer announces 49.4 oz. (1400g) A UW but I managed to get 45 oz. (1285g) with an 6 cell 3000H NiMH pack and a 500 brushed, 15D turn motor, 2.8 gearbox and 11x8 prop. Rpm's: 6100; Amps: 30. The model is very fast and manageable but I think the very light built-up wing is not made for hard stunts. The

landings on the spot are very easy with the ailerons working as brakes.

I will get it to 40 oz. (1135g) A UW if I can get some CP1200 cells.

May the gods of Aeromodelling give you smooth landings.

Chispas  
Portugal



### RBC Kits Update

From: Rob Bulk [info@rbckits.com](mailto:info@rbckits.com)

We have updated our homepage with the new Yak 23 EDF and some small items like the Bungee Launch. The Birddog is in progress, but will take some time to finish.

Also we would like to inform you about the new telephone numbers we have.

Office : 0031-172-231869 Fax: 0031-172-231866

Workshop: 0031-172-404064

Handy : 06-55342083

And we would like to introduce 2 new USA dealers:

CFM - Classic Flying Machines

<http://www.webspawner.com/users/zuniwind/>

8 Prestbury Court Greensboro, NC 27455

Tel: 336-288-3092

Southeast Model Products

<http://hometown.aol.com/southeastmodel/>

10106 Trilliums Dr. Orlando, Fl. 32825

Tel : 407-382-0614

We have updated the Gallery with new beautiful models from customers.

We now can take PayPal payments from overseas customers.

Have a look and enjoy [www.rbckits.com](http://www.rbckits.com)

Rob Bulk - RBCKits



### SR Gets the "Blues"

From the June 28 FYI E-newsletter of  
SR Batteries

Larry has recovered well from his knee surgery. He is continuing to work on the Giant scale Jenny kit for glow and electric. After being able to return to the shop and flight line, he created his newest little kit. For obvious reasons it is called the "Blues". Here is the info from the newsletter.

"While working on the Jenny, I decided to take a break to clear my head. The best way for me to do that was to work on a different design. The result is our new \$29.95 "Blues" kit that we will release in a few weeks. (It should be available now. Check the Web site: <http://www.srbatteries.com> or call 631.286.0079 KM)

The Blues has a large 42" wing span with 300 square inches of wing area. It's construction is laser cut fan fold foam designed to take you one evening to build. It's powered by the same power system that's used in the GWS Tiger Moth and our Bantam and Bantam Bipe kits. We've flown it extensively indoors and it has gone through six generations of changes to make sure it's right. Flight times are in the 6 to 7 minute range with our 190 Series, seven cell pack and like I said, the kit price is only \$29.95!!!

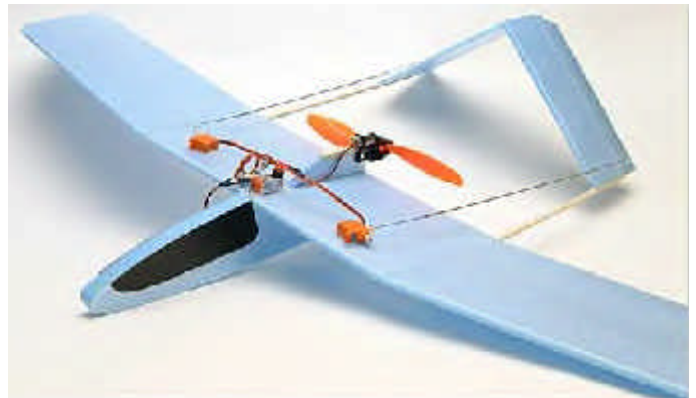
Although the Blues is meant to be an indoor or calm weather outdoor flyer, it has amazed us by how much wind this 8.3 oz. model will take. Winds of 10 to 12 mph seem to be no problem and like the Bantam, the Blues doesn't show any wing flutter when you pick up the speed the way the Tiger Moth does.

The kit is very complete the way all SR kits are. In addition to four sheets of laser cut parts, you get a spruce motor mount and tail booms, wire pushrods and aluminum tube pushrod stiffeners, DuBro Micro E/Z Link pushrod fasteners, Lexan Control Horns, SR Gapless Hinge Tape, DuBro servo mounting tape, Matte Black Canopy material, and full color plans and building instructions.

The best part is that the Blues is much less labor intensive to kit than our other designs so we can make the

Blues very affordable. In addition, as an FYI reader, if you purchase a Blues kit and either a Power System or Airborne Radio System before the end of July, we'll even throw in Free Priority Shipping within the US if you mention FYI when you place your order! Shipping and handling for a Blues kit ordered all by itself will be \$5. The Power System and Airborne Radio System are the same as those used in the Bantam and Bantam Bipe so you can check the kit section of our web site for details."

Photos are from the SR Batteries Web site.



### The Plank

From: Robert Comerford [flyelectric@dodo.com.au](mailto:flyelectric@dodo.com.au)

Here are some shots of one of Bob Meyer's latest planes. He calls this one his 'plank'. As you can see it comes in three parts. The vital dimensions are: Robbe 7 cell sports motor, 3 blade 9x5 prop, 10 x 1400SCR cells, 2240g, 3.5M span, retractable nose wheel.

The retract gear and the ESC are homemade as is the aircraft design and construction.

It's a well behaved aircraft in the air, but it needs a smooth strip to ROG. It will hand launch with a gentle push.

Regards,  
Bob Comerford  
Glen Innes NSW  
Australia

**More on the Vertical RC Cap 232**

By Ken Myers

Total flights on the new motor now total 40. On the third flight with the new motor, one of the wheels came off on landing. The heat-shrink had come off. This allowed the prop to strike the ground while still running and broke a couple of teeth on the main gear. I replaced the gear, using the original gear from the bent shaft and continued flying.

Because the spare motor I received from Maxx Products was labeled Mabuchi 4N and the one supplied in the gearbox was labeled Mabuchi 2N, I wanted to find out more about the 370 /Speed 300 motor, so I visited the Mabuchi site at:

[www.mabuchi-motor.co.jp/english/product](http://www.mabuchi-motor.co.jp/english/product)

There I learned that the motor we call the Speed 300 is probably the RK-370SD 2870, but there is so little information there, I could not tell. Since they will special build to order, it is almost impossible to use the information provided on their site.

I did learn about how Mabuchi labels their motors. It wasn't what I'd read before! To learn more about it, visit:

[http://www.mabuchi-motor.co.jp/english/product/pro\\_01.html](http://www.mabuchi-motor.co.jp/english/product/pro_01.html)

Decoding the motor mentioned above: R = round, K = carbon brush, 3 = code number for armature diameter, 7 = code number for magnet size or housing length, 0 = number of armature pole (0=3, 5=5, 8=8), 28 = diameter of magnet wire, 70 = number of turns of armature winding for each slot.

I couldn't get the front gearbox nut back on the shaft after replacing the main gear, so I had to substitute a 1/8" wheel collar. It seems to be working just fine.

I was having some trouble getting my motor data to agree with what I was getting with my tach and Whattmeter. It seems that the APC SF props have a significantly higher prop factor when figuring power out than the "typical" props used for calculating power out. I retested the motor with a freshly charged pack and found about what I expected 9.3 amps, 5,500 RPM with the APC 9x6 SF. Recharging the pack and using a Rev Up 9x6 yielded 7.2 amps and 6,350 RPM. When I used the data in my spreadsheet using a 9x5.5 prop (a Rev Up 9x6 is said to equal a "typical" 9x5.5) and 1.31 as the prop factor, it showed that the prediction was very close. I'd been using a prop factor of 2 for the 9" SF props, and that seems correct. Therefore for APC 9" series SF props the power out formula looks like this:

$$\text{Watts Out} = (9/12)^4 * 6/12 * 2 * \text{KRPM}^3$$

Bottom line, it pulls a lot harder.

I also found that the 10" APC SF have even a different prop factor. It appears to be 2.7, therefore when predicting power out the formula would be:

$$\text{Watts Out} = (9/12)^4 * 6/12 * 2.7 * \text{KRPM}^3$$

A standard wood prop, like the regular Master Airscrew uses the standard formula:

$$\text{Watt Outs} = (9/12)^4 * 6/12 * 1.31 * \text{KRPM}^3$$

This makes a significant difference when using the Calc programs.

This plane is just too much fun. It has been my most flown plane this summer. It flies well with other planes at a regular flying field. It flies well in the local park when safety conditions allow.

I sure wish that it hadn't disappeared from the supply chain, since I can highly recommend it to the intermediate and expert flier.

Li-Po Battery Flights of the F-7-F  
From: Dan Parsons [dapars@comcast.net](mailto:dapars@comcast.net)

*In the June issue of the Ampeer, and earlier in this issue, Dan shared his Aeronaut F-7-F Tigercat information with us. He was planning on flying it with Li-Po batteries. He got them, and here is a report on his experience with them.*

Hi Ken,

I received my Thunder Power 3S4P (1950 mAh Li-Poly cells ) pack several weeks ago and have flown 2 planes with it for a total of 10 flights so figured it's time to give the results. I first flew the pack in my old, four lb., 50 inch, P-51, using it as a test bed before using the pack in my F-7-F Tigercat twin.

The P-51 is powered by a MaxCim motor geared 4:1 and swinging a 10-8 Aeronaut fiberglass prop. I had been flying it using a 10 cell 1900 mAh Sanyo Nicad pack. This provided excellent performance for flight times of around 7 minutes. The increase in performance with the Thunder Power Li-Po pack was very evident! Flight time increased from 7 minutes to 27 minutes! Note: the flight time of 27 minutes was calculated by measuring the charge input required ( 5700 mAh ) to bring the pack back to full charge after two ten minute flights. I flew the first 10 minute flight and Gary Kyle, our electric guru, flew the second 10 minute flight. He is an outstanding pilot and put on a show of full aerobatics. Particularly impressive were the two consecutive and large outside loops starting from straight-and-level inverted flight. By the way, the static input is 30A and 330 watts. Temperature of the battery after every flight was 106 F as measured with a pyrometer.



After these flight tests and learning cycles of charging and discharging, it was time to install the Li-Po pack in my Tigercat ( 53 in. wing span and 81 oz. ). I had been flying it using a 10 cell, 2600 NiMH pack which provided excellent performance but only 5 minute flights. As with the P-51, the increase in flying performance with the Li-Po battery was very evident and the flight time increased from 5 minutes to 19 minutes! Temperature after flights, 106F. Average current draw during flights was 27A. Full power, 45-50 A.

I'm using a Triton charger and charging at the max of 2.5A capability of the Triton for Li-Po batteries. Thus, each pack of three cells in series ( 3S ) with 4 of these packs in parallel ( 4P ) is being charged at 600 ma. That is way below the recommended maximum of 1C or 1.9A. I got the Triton charger when I got the Li-Po pack and, so far, the Triton has worked flawlessly. I carefully monitor the charging, especially during the final phase of constant voltage charging which takes the battery to full charge. For further safety action, the battery is sitting on a concrete block with a heavy Pyrex dish covering the battery---this will contain it in case of a thermal runaway. It's temperature during charge never goes above ambient.

I am extremely pleased with the performance of the Thunder Power Li-Po battery. It is performing exactly as Charlie Wang, of Thunder Power, has said it would. If they hold up for many cycles under proper use, as early tests indicate, then we have a truly great breakthrough for electrics.

Maybe you can get Thunder Power packs at:  
<http://www.flightenergy.com/>

And more from Dan on July 8:

Hi Ken,

Glad to hear that Keith is getting good results with the Li-Polys on his larger planes; also Dave Grife.

I have at least 10 more flights on the Tigercat using the TP 3S4P battery with the 1950 mAh cells. Been flying at a sod farm that's out in the wide open spaces with no obstructions, houses, etc. which allows me to really open up the flight pattern and "wring" it out. I usually fly 2 flights per outing (by then I'm out of adrenaline!!) and pump about 2000 mAh back into the pack after the first flight to give me a little cushion. Been flying 8 to 9 minute flights and using an average of around 375 mAh per min. Performance is outstanding in every way! Pack temp. after 8 minute flight.---122F (ambient was 95F). Charlie says to limit temperature to

160F so I'm in very safe territory. If I wanted to fly 5 or 6 flights per outing, a second pack would allow that even with the slow charging rate of 2.5A of the Triton. So far, I don't find the slow charging to be any problem. When the 8 to 10A chargers become more available, I'll be all set. BTW, the elevation of the field is 6200 ft, which doesn't affect the motors but sure does landing speed. With the temp around 100, density altitude must be close to 10000 ft.

Dan

#### Upcoming Romeo Skyhawks Event

From: Pete Gayner [ppg2u@tir.com](mailto:ppg2u@tir.com)

Hi Ken,

We are having the Bob Kirkman Memorial Electric Fly-in event on August 2 starting at 10:00 AM. It will be held at our field in the Wolcott Mill MetroPark north of 29 Mile on the west side of Kunstman Road. Many of Bob's electric models and electric equipment will be on sale at that time.

#### Full-scale Electric

From: Dave Manley [DGManley@aol.com](mailto:DGManley@aol.com)

Hi Ken:

This appears to be the second full-scale, motor-launched sailplane.

<http://www.lange-flugzeugbau.com/english/english.html>

Visualization from the Web site above for the Antares Electric Motorglider.



Please be sure to note the two EFO meetings this month. Details in this issue.

See ya then.

Ken

**Up Coming Events  
2003**

**August 2** Bob Kirkman Memorial Electric Fly-in presented by the Romeo Skyhawks, Wolcott Mill MetroPark, north of 29 Mile on the west side of Kunstman Road. Starting at 10:00 A.M.

**August 2** Bluegrass Electric Fly, Lexington, KY, USA - Fourth Annual Bluegrass Electric Fly, an AMA sanction C event, from 9am to 5pm at the Lexington Model Airplane Club field outside of Lexington, KY. information at [www.lmacky.org](http://www.lmacky.org). Contest Director: Jeff Stringer, [jstringer@compuserve.com](mailto:jstringer@compuserve.com)

**August 9** Columbus E FlyIn, annual WMAA all electric fly-in will be held August 9th instead of August 2nd. For club info and directions check the club Web site [www.wmaa-wags.org](http://www.wmaa-wags.org)

**August 9 & 10** Pontiac Miniature Aircraft Club Electric Fun Fly, PMAC field near Pontiac, MI, More Info: Sterling Smith [smitty559@comcast.net](mailto:smitty559@comcast.net)

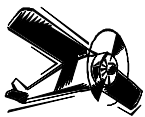
**Aug. 16-17** George Ball Memorial Electric Fun Fly - Directions: Halton Hills Flying Field, Mayfield Rd. & Winston Churchill Blvd. Contact: Robert Pike (416) 724-7615

**August 16** Propstoppers Electric Fun Fly, PA - Annual Walt Bryan Memorial Propstoppers Electric Fun Fly - Check details on [www.propstoppers.org](http://www.propstoppers.org) and review the newsletters for articles on prior events.

**August 23 & 24** Electric Fun Fly hosted by the Riverside Aero Modelers, King, NC, near Winston-Salem, CD Randy Covington phone: 336.983.9126 or email:

**August 23 & 24** Riverside Aero Modelers Electric Fun Fly, at their field in King, NC which is near Winston-Salem, NC CD: Randy Covington Covington Randy I@netzero.net or Phone: 336.983.9126

**August 24** DARTS ELECTRIC FLY IN (DEI), Dayton, OH - Info at [www.daytonsoaring.org/index.html](http://www.daytonsoaring.org/index.html) Twin Towers Area Park, 10:30 A.M. CONTACT: Brent Douglas at [bd150002@exchange.DAYTONOH.NCR.com](mailto:bd150002@exchange.DAYTONOH.NCR.com)



The Ampeer/Ken Myers  
1911 Bradshaw Ct.  
Walled Lake, MI 48390  
<http://members.aol.com/>

**The Next Meeting:**

Please see the Upcoming August EFO Meetings in this issue for dates and times.