

the

Ampeer

April		The EFO Officers		2012	
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No Mailed Ampeer Subscriptions		The Next Meeting: Saturday, April 7 (tentative) 10 a.m. MRCS Flying Field			

What's In This Issue:
 Keith Shaw Birthday Party Electric Fly-in - Power System for a World Models Giant Scale (GS) Spitfire - The February EFO Meeting - A Tiger Moth - Returning to E-flying in Australia - Upcoming E-vents

Keith Shaw Birthday Party Electric Fly-in 2012

The Balsa Butchers will once again be hosting the “Keith Shaw Birthday Party Electric Fly-In” at their field near Coldwater, MI. The event will take place on June 2 and 3, 2012.

Contest Director: Dave Grife - E-mail: grifed@yahoo.com or Phone: 517.279.8445

Please e-mail or call with any questions.

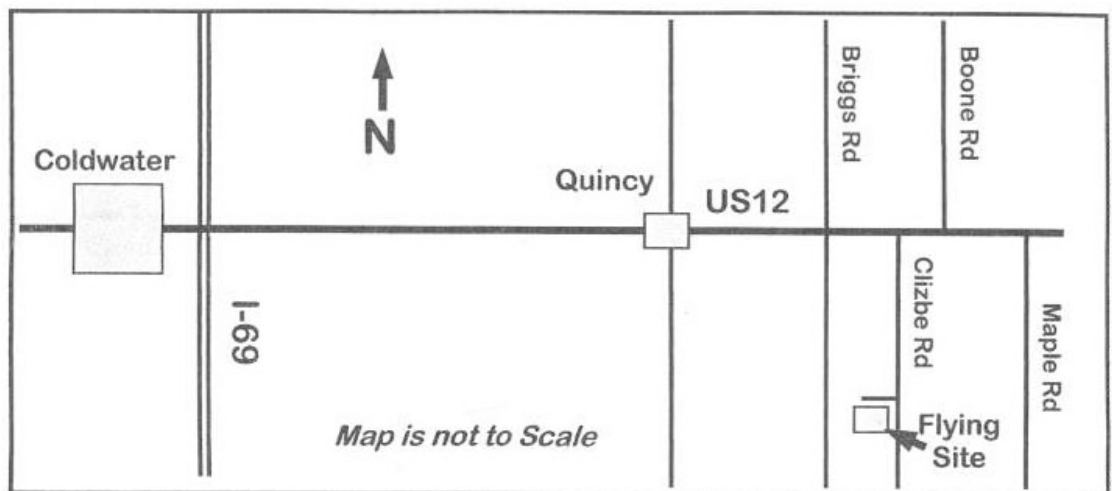
The Flying Field will be open Friday, June 1 for early arrivals

Saturday, June 2, hours are from 9 a.m. 'til 5 p.m.

Sunday, June 5, hours are from 9 a.m. 'til 3 p.m.

Landing Fee is \$10 for the weekend.

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.



Power System for a World Models Giant Scale (GS) Spitfire

From Scott Lillis via email



Howdy,

First a little background and a question or two. I'm currently building a World Models Giant Scale (GS) Spitfire.

Glow version: <http://www.airborne-models.com/html/productdetails.asp?ProductID=55>

Wing Area: 1138 sq.in.

RTF Weight: 13 lb.

Engine: 2-stroke 160 cu.in. (glow) KM

My previous one was gas powered and this one is going to be electric.

Video of Scott's gasoline powered version:

<http://www.youtube.com/watch?v=gVXRKKwu1O8>

Electric: <http://www.airborne-models.com/Econvert/spitfire/spitfire.asp>

Power System: C50-14XL Acro, 6.7:1 gear ratio, APC-electric, 20x15 prop, 10 series 4 parallel Lithium Polymer cells from Thunderpower

Weight: 14.5 lb.

Current: 68 amps

Ken's estimated static watts in: 68 amps * 35 volts (10 cells in series at 3.5v per cell) = 2380 watts in

http://www.electric-f3a.com/Motor%20pages/hacker_data.htm shows measured data for this motor and a 20x15 prop. At 68 amps, the RPM might be about 5400-5000 RPM based on examples on the Web page.

Motor data: Hacker C50-14XL Acro, 6.7:1 gear ratio Kv 1160 / 6.7 = 173

<http://www.espritmodel.com/hacker-c50-acro-xl-series-motors.aspx>
KM

The plane should come in around 14 lb. I bought a Castle Creations Ice Hv 80 speed controller and a Turnigy G160 Brushless Outrunner 290Kv (6364-290, 632g). I'm only interested in scale flying not hovering. It is the battery requirement where I'm stuck. On YouTube I found a video of an AT-6 at 14 lb. on 6 cells, that with the right prop, flew very well.

Crunching the numbers it looks like I could fly on 5 cells. I'm guessing I need 2, 5-cell 5000 mAh packs to really do the job. Not sure if it would fly well on 2, 4-cell packs or not. I can send any specs you might want on the plane, motor etc., a link to the AT-6 or videos of my gasser version.

If I could use 4-cell packs I wouldn't have to buy another charger, just not sure how much it will take to do the job.

And a follow-up email with answers to my questions:

The gasoline powered model was powered by a Ryobi 31cc. I believe I was flying an APC 17x6 prop. It was probably not the right prop, but it flew ok and takeoffs and landings were sweet. Search for k4lll on youtube for videos of the spitfire.

I am just not sure what battery packs to use or will be required. When you look at the specs on HobbyKing's website, it looks like a 5-cell will do the job but I am guessing 10 cells or 2 fives will do a better job. I can swing at least a 20 inch prop. A fellow did an electric conversion a few years ago and he flew a 20 inch prop.

Here is a link to the AT-6 on a 6-cell 5000mAh, 20x15 prop.
<http://www.youtube.com/watch?v=P25MRqDbXfY>
WARNING: You may want to turn the sound off. The video is accompanied by inane, non-useful music. KM

Ken's Notes and Thoughts:

Data posted with the Video:

This model weighs 14 lb., has an 83" wingspan. Flying with an Exceed R/C Monster Power 160 (6364-245, 654g), on 6S1P 5000mAh. Turning a 20x15 APC electric prop, at about 4400 rpm. Putting out just under 1000 watts (about 978 watts) Can get about 7-8 min flight time.

Ken's NOTES ON THE ABOVE DATA: The motor is NOT "putting out just under 1000 watts". The power system is taking **IN** 978 watts. If the power system is 80% efficient, then it is putting **OUT** about 782 watts. Watts in per pound = 978 watts in / 14 lb. = 69.86 watts in per lb.

Using a 6S1P Li-Poly at 987 watts in suggests a mid-40s to : amp draw, which fits with the motor's Kv.

The video was disappointing to me because the pilot never pulled one vertical maneuver. The closest he came was when he did somewhat of a Cobra roll.

Using my Glow to Electric Excel Workbook, the AT-6 looks like this:

Name of Plane:	Midwest AT-6					
Recommended Largest 2-stroke:	0.19	displacement in cubic inches				
Recommended Largest 4-stroke:	0.00	displacement in cubic inches				
Mfg. Max. Weight:	14.00	lb.				
Mfg. wing area:	1000	sq.in. 1018				
Desired watts in per pound:	50	Use 100 if in doubt				
Cubic area:	18.30	cubic feet				
Wing Cube Loading:	12.24	oz./cu.ft.				
Average watts in:	83.51	selected from watts in/cu.ft. table				
Median watts in:	76.90	selected from watts in/cu.ft. table				
Suggested Power:	978	watts in				
Lightest Motor:	391	g				
Heaviest Motor:	611	g				
80% watts in:	783	watts out				
Largest Dia. Prop:	20	in. (see dia. note)				
Prop pitch:	15	in.				
Target RPM:	4181	As of Dec 2011				
Pitch Speed:	59.39	mph - verify with pitch speed table				
Stall Speed:	21.01	mph				
Pitch Speed to Stall Speed:	2.83:1					
Number of Li-Poly cells:	2	3	4	5	6	7
Anticipated Amp Draw:	139.8	93.2	69.9	55.9	46.6	39.9
Estimated Kv (RPM/v):	736	487	363	288	238	203
Kv (RPM/v) Range High:	775	513	382	303	251	213
Kv (RPM/v) Range Low:	699	463	345	274	226	193
Approx. Li-Poly capacity:	13975	9317	6988	5590	4658	3993
Approx. Battery weight:	755	755	755	755	755	755
ESC amp rating = or greater	175	116	87	70	58	50

The engine displacement inputs were adjusted to reflect the reported 978 watts in in the Suggested Power: cell.

The performance section of the worksheet shows that the plane is "okay", but not stellar.

The pitch speed to stall speed ratio of 2.83:1 is a bit low for an **advanced WWII trainer**, in my opinion.

With 6 Li-Poly cells (Number of Li-Poly cells:) the Kv suggestion falls between 226 (Kv (RPM/v)

Range Low:) and 251 (Kv (RPM/v) Range High:). The AT-6 used a 245Kv motor. With an estimated amp draw of 46.6 (Anticipated Amp Draw:) the suggested cell capacity was 4658mAh (Approx. Li-Poly capacity:). A 5000mAh pack was used in the AT-6 yielding the expected 7 minute to 8 minute flight time.

Scott's Conversion of the Spitfire

Using the Excel worksheet, shown on the next page, the engine displacement inputs were adjusted to reflect about 1400 watts in in the Suggested Power: cell. The 1400 watts in is used to provide 100 watts in per pound for the anticipated 14 lb.

Spitfire.

When an APC 20x13E prop is used, the performance section looks good. The Target RPM:, Pitch Speed:, Stall Speed:, and Pitch Speed to Stall Speed: indicated good performance.

When the Number of Li-Poly cells: is 6, the suggested Kv is between 271 and 301. Scott's motor has a 290Kv. His motor weighs 632g and falls within the suggested weight range of 561g (Lightest Motor:) to 876g (Heaviest Motor). The suggested amp draw (Anticipated Amp Draw:) is about 66.8 amps. That suggests an 83-amp ESC (ESC amp rating =

or greater). Scott's is an 80-amp ESC, so that's not a real problem. The problem comes with the suggested battery capacity of 6677mAh (Approx. Battery capacity:). Li-Poly cells with a capacity in this range are difficult or impossible to locate.

Some Solutions to the Battery Capacity Problem

The following solutions mention specific brands of Li-Poly cells. They are used **ONLY FOR**

Name of Plane:	World Models GS Spitfire				
Recommended Largest 2-stroke:	0.43	displacement in cubic inches			
Recommended Largest 4-stroke:	0.00	displacement in cubic inches			
Mfg. Max. Weight:	14.00	lb.			
Mfg. wing area:	1138	sq.in.		1018	
Desired watts in per pound:	100	Use 100 if in doubt			
Cubic area:	22.22	cubic feet			
Wing Cube Loading:	10.08	oz./cu.ft.			
Average watts in:	83.51	selected from watts in/cu.ft. table			
Median watts in:	76.90	selected from watts in/cu.ft. table			
Suggested Power:	1402	watts in			
Lightest Motor:	561	g (Level 1)			
Heaviest Motor:	876	g (Level 2)			
80% watts in:	1122	watts out (Level 3)			
Largest Dia. Prop:	20	in. (see dia. note) (Level 4)			
Prop pitch:	13	in. (Level 5)			
Target RPM:	4945	(Level 6)			
Pitch Speed:	60.87	mph - verify with pitch speed table (Level 7)			
Stall Speed:	19.70	mph			
Pitch Speed to Stall Speed:	3.09	:1			
Number of Li-Poly cells:	2	3	4	5	6
Anticipated Amp Draw:	200.3	133.5	100.2	80.1	66.8
Estimated Kv (RPM/v):	874	580	433	344	286
Kv (RPM/v) Range High:	920	611	456	363	301
Kv (RPM/v) Range Low:	830	551	411	327	271
Approx. Li-Poly capacity:	20031	13354	10016	8012	6677
Approx. Battery weight:	1083	1083	1083	1083	1083
ESC amp rating = or greater	250	167	125	100	83

Solution 2:

The flight time could be increased by using parallel battery packs.

Two GENS ACE 3300mah 6S1P could be combined in parallel to form a 6S2P pack with a 6600mAh capacity.

<http://www.hobbypartz.com/98p-25c-3300-6s1p.html>

The weight for the 6600mAh battery would be 1065g, which is very close to the weight suggested by the worksheet.

The usable capacity of this battery would be 6600mAh * 0.8 or 5280mAh. 5.28Ah * 60 minutes = 316.8 amp minutes / 66.8 amps = 4.74

minutes * 1.75 (my factor) = 8.3 minutes.

Scott could also, but I would not recommend, use a total of four 3S 3300mAh packs and combine 2 packs in series to become a 6S and then combine the two 6S packs in parallel to become a 6S2P 6600mAh pack.

If the battery consisted of four GENS ACE 3300mah 3S1P, then it should weigh about 1462g. <http://www.hobbypartz.com/98p-25c-3300-3s1p.html>

Besides being a 'wiring nightmare', this battery and its associated wiring would be at least 14 oz. heavier than the 6S2P 6600mAh battery.

The flying time multiplying factor (1.75) that I use is based on my flying style. I've learned, what I believe, is quite good throttle management over the decades of flying electrically powered planes. I seldom fly 'wide open' when doing level flight and go to full power for vertical maneuvers and ease off the throttle on the down side of the vertical. Each person's flying time factor will vary, but still be proportional to the estimates given.

Hobby King 'Messes' Up Scott's Order

After completing the calculations for the 290Kv motor, I received the following email from Scott.

EXAMPLE and are not necessarily recommend nor endorsed.

Solution 1:

Accept a shorter flight time. A GENS ACE 5500mah 6S1P could be used.

<http://www.hobbypartz.com/98p-25c-5500-6s1p.html>

It weighs 890g and is rated at 25C. A 5500mAh battery has a usable capacity of 4400mAh, which is 80% of 5500mAh. Using only 80% of the battery's rated capacity is recommended for longer battery life. The expected flight time would be 4.4Ah * 60 minutes = 264 amp minutes / 66.8 amps (anticipated amp draw) = 3.95 minutes * 1.75 (a factor that works for my flying style) = 6.91 minutes - let's call it 7 minutes.

This would require Scott to purchase a new charger, since he indicated that he can only charge up to a 4S pack.

He could also use two 3S packs in series, and then use his 4-cell charger to charge each pack.

<http://www.hobbypartz.com/98p-25c-5500-3s1p.html>

A 3S pack of this type weighs 468g. The total battery weight would be 936g/33 oz.

Scott writes, "Just so you know, I had trouble with my Hobby King order and did get the 245Kv motor instead."

Okay, Geez! Time to rework the workbook page.

Flight time should be about $5500\text{mAh} * 0.80$ (80% of the rated capacity for longevity) = 4400mAh or $4.4\text{Ah} * 60$ minutes = 264 amp minutes / 57.7 amps = 4.58 minutes * 1.75 [flight time factor] = 8 minutes.

Name of Plane:	World Models GS Spitfire					
Recommended Largest 2-stroke:	0.43	displacement in cubic inches				
Recommended Largest 4-stroke:	0.00	displacement in cubic inches				
Mfg. Max. Weight:	14.50	lb.				
Mfg. wing area:	1138	sq.in. 1018				
Desired watts in per pound:	100	Use 100 if in doubt				
Cubic area:	22.22	cubic feet (Le				
Wing Cube Loading:	10.44	oz./cu.ft.				
Average watts in:	83.51	selected from watts in/cu.ft. table				
Median watts in:	76.90	selected from watts in/cu.ft. table				
Suggested Power:	1415	watts in				
Lightest Motor:	566	g (Level 1 0.00 - 2				
Heaviest Motor:	884	g (Level 2 3.00 - 4				
80% watts in:	1132	watts out (Level 3 5.00 - 6				
Largest Dia. Prop:	20	in. (see dia. note) (Level 4 7.00 - 9				
Prop pitch:	13	in. (Level 5 10.00 - 12				
Target RPM:	4959	(Level 6 13 - 16				
Pitch Speed:	61.05	mph - verify with pitch speed table (Level 7 17+) Exp				
Stall Speed:	20.05	mph				
Pitch Speed to Stall Speed:	3.05	:1				
Number of Li-Poly cells:	2	3	4	5	6	7
Anticipated Amp Draw:	202.1	134.7	101.0	80.8	67.4	57.7
Estimated Kv (RPM/v):	877	582	434	345	286	244
Kv (RPM/v) Range High:	923	612	457	364	302	257
Kv (RPM/v) Range Low:	833	553	412	328	272	232
Approx. Li-Poly capacity:	20210	13473	10105	8084	6737	5774
Approx. Battery weight:	1092	1092	1092	1092	1092	1092
ESC amp rating = or greater	253	168	126	101	84	72

Scott's 4-cell charger can charge each pack separately. That is probably not the best solution, as 4-cell chargers tend to have low charge rates. A higher capacity charger would allow faster charging at home and especially at the field. A charger that can charge a 4S Li-Poly at about 3C (15 to 16.5 amps) would be good. That would be at least a 300 watt charger.

The CellPro 10XP (<http://www.progressiverc.com/fma-cellpro-10xp.html>) with the appropriate adapter boards and plugs could charge both the 3S and the 4S pack at the same time.

The performance using 7 cells and the same 20x13 prop, especially the stall speed to pitch speed ratio, is better than the AT-6 and about the same as the 290Kv motor. A pitch speed to stall speed ratio greater than 3:1 is really better for this type of plane. Using 7 cells in series, the amp draw should be in the high 50's (Anticipated Amp Draw: 57.7). The suggested pack capacity, Approx. Li-Poly capacity: 5774mAh, is close enough to 5500mAh that decent flight time may be achieved with no paralleling necessary.

A 3S 5500mAh and 4S 5500mAh can be connected in series to create a 7S pack. A 4S GENS ACE 5500mAh weighs 612g. (<http://www.hobbypartz.com/98p-25c-5500-4s1p.html>) A 3S GENS ACE 5500mAh weighs 468g. (<http://www.hobbypartz.com/98p-25c-5500-3s1p.html>) The battery weight is then 1080g/38 oz. and is very close to the Approx. Battery weight: on the worksheet.

Receiving the 245Kv motor should work to Scott's advantage as he can 'play' with props without having to 'worry' too much about his 80-amp ESC. If a 20x13 draws more than about 60-amps, and he wants longer flight time, he can try a 20x11. If the 20x13 isn't drawing in the high 50s or close to 60 amps, he can try a 20x15, or if a bit less flight time is acceptable, he might like the way the 20x15 flies the plane better.

No matter which power system Scott uses, a power meter is a MUST, to check the amp draw of the power system to see that the amps and watts in are indeed in the intended range!

Scott might also want to do a Kv check on the motor that he has in hand. What Kv is and how to check it is found at <http://www.theampeer.org/Kv/kv.html>. There is also a link to a handy spreadsheet there for doing the math, once the measurements are taken.

Good luck with the conversion!

The February EFO Meeting

The February EFO was held at Ken's house.



Richard Utkan, EFO vice-president, lead off the meeting with his two-day project, a FuglyJet. It is an EDF design constructed from Dollar Tree foamboard and colored packing tape.

<http://www.rcgroups.com/forums/showthread.php?t=1577312>

Richard's version uses a 3500Kv outrunner in an EDF fan unit from the E-Flite Airliner. Power is provided by a 3S1P 1300mAh Li-Poly pack. The all-up-weight (AUW) is 17 oz. It features LEDs around the exhaust outlet. There are more pictures of Richard's plane in the RC Groups thread noted above.

The foamboard construction technique is discussed in this RC Groups thread -

<http://www.rcgroups.com/forums/showthread.php?t=1587275>



Denny Sumner shared his gorgeous Pou-du-Ciel. It was built from Traplet plans.

<http://shop.traplet.com/product.aspx?c=3221>

It's flying weight is 13 oz. Everyone was intrigued with the design, especially the "wing tilting" and many folks had some interesting stories about what they had read about the full-scale Pou-du-Ciel.

Some barebones photos of this model are here: <http://www.rcgroups.com/forums/showpost.php?p=20432671&postcount=154>

Bill Brown is building a Wright Model B from plans that **Jim Young** drew up for him. He rolled out the plans and explained a problem he was having on strut attachment.



Soon, everyone was involved in trying to give useful suggestions to Bill.



Ken Myers let the members know that **Keith Shaw's** surgery on his spinal column went well on February 14 and that he was now home.

Ken also noted that **Thayer Syme** is no longer the editor of *Fly RC*. Ken had received an email about this and confirmed it with Thayer.

Ken showed two segments from the Modern Marvels episodes “Tiny Weapons (2012)” and “Extreme Aircraft II (2007)” that had interesting information on sUVA type, military aircraft.

Ken then presented a power point presentation based on “P-40 Warhawk” by Keith Sparks in the February 2012 issue of *Model Aviation*. It was noted that Mr. Sparks’ model had a 123.5 watts in per pound power ratio, yet it did not fly very well, according to Mr. Sparks on p. 57; Flying. **Rick Sawicki** came up with what the problem was; lack of pitch speed due to under-pitching the prop.

Ken presented data and suggested that an 18x9 2-blade prop might have been a better choice since it allowed a pitch speed to stall speed ratio over 3:1. Mr. Sparks’ version had a ratio of only just slightly over 2:1.

Here is what Keith Shaw said in his Electric Sport Scale article in the July 1987 *Model Builder*.

“In order to just do a nice inside loop, the plane must enter at **TWICE** the stall speed. To do clean inside loops, rolls, and other sport-type aerobatics, **THREE TIMES** stall speed is needed. Anything over **4 TIMES** the stall speed gives "fighter-type" performance and extended vertical aerobatics.”

Ken also presented what he thought was a reasonable power system for the plane using the same 2100 watts in. He suggested a 11S1P 5500mAh Li-Poly and a motor weighing between 840g and 1313g with a Kv between 160 and 180 turning an APC 20x15E. It would give a pitch speed of about 75 mph and a pitch speed to stall speed ratio of over 4:1. The example motor he used was a Turnigy Aerodrive SK3 - 6374-168kv Brushless Outrunner with a weight of 840g.

There was one question that the group was left with. Is the Turnigy a bigger motor? The Turnigy motor is 190g heavier and there was one cell added to the battery, but the suggested watts in were maintained at about 2100, so is it a “bigger” motor?

The group closed the meeting by sharing lots of ‘goodies’ and talking about planes, RC, you name it! It was another great EFO meeting. Remember that anyone with an interest is always welcome!

A Tiger Moth

From Ross Taylor via email



Good afternoon Ken,

I just settled down in front of the computer after a happy hour of removing about 4” of wet snow from my driveway. Lo and behold, the December issue of the AmPeer was posted. It was just what I needed to take away the “I’m feeling sorry for myself, there’s no flying until spring” attitude.

Another really interesting issue, particularly your explanations regarding power system selections.

Congratulations on your award, it is richly deserved!

I’ve attached a couple of photos of my latest project. Unfortunately, I ran out of decent flying weather, so will have to wait until spring for the test flights.

It is a 1/5th scale Tiger Moth from Gordon Whitehead’s plans that were published in RCM around 2003. I sat on the project until I came in contact with a gent by the name of Bob Laserve, of Lased Design Service. Long story short, I e-mailed him a scan of the plans, and about two weeks later, a short kit arrived. Talk about service! Anyhow, two building seasons later, here she is, a representation of the third Tiger built, and the oldest one still flying regularly in England at the “Tiger Club” field.

WorldTex on the wings and tail, polyester dress lining and dope on the fuselage. It weighs 9 pounds, 10 ounces with the 20 cells, power is from a MaxCim geared 4.5-1, and I’ll start off with 20 3300mAh NiMH cells, as Gordon did, as she balances just about right on with that battery.

I cranked it up in my garage, and it blew crap all over the place, and dragged the vice that was holding it back across the floor, so power is there. Not very scientific, but I loaned my Wattmeter out, and it hasn’t come back. I will probably move on to 8 A123’s after it flies.

I’m still hoping to get to the Mid-Am one of these days, but in the meantime, thanks again for all

your hard work in getting the AmPeer out every month. I really look forward to it!



Cheers, and with best regards,
Ross

Returning to E-flying in Australia

From Robert Comerford via email

Hi Ken,

Just a further update on my return to electric flight.

A geared neodym motor in one of my sport models objected to being awoken after many years and showed its disgust by throwing a magnet in flight. After considering simply hanging the plane up until after Santa delivered me a new brushless motor and ESC my 'experimental compulsion disorder' took over. The motor mount had been sized to accept something as big as the Speed 700 and there was one (9.6V plain bearing) lying forlorn in the junk box. The motor was attached with Velcro and a tie wrap (as designed) and the 4S 2300mAh A123 pack was moved around in the battery box until the plane was balanced to my satisfaction. After some trials I settled on an 8x6 Taipan prop. The flight time exceeded 12 minutes with quite satisfactory performance in the air.

While I am aware this power system is very inefficient, I asked myself just how efficient did it need to be? I find a 12 minute flight time quite OK for this type of model. I have lost the short takeoff ability that I had with the geared neo driving an 11" prop but once in the air the plane is quite pleasant to fly making use of speed rather than torque to perform vertical manoeuvres. It may well be that the new brushless will have to wait until I have worn this motor out. Without the reduced weight

and increased capacity of the A123's the performance would have been unacceptable using my previous 10 cell NiCad packs. So with that success in mind I may have to rethink the retirement of the geared Speed 400s also thrown in said junk box.

On another note, after ground testing my planes to determine how the radio control gear responded to depleted 4S 2300mAh A123 packs I have ceased to be concerned about having no suitable autotcut in my existing 35A brushed ESCs.

Use of a timer is now more of an indication that I should cease low level flying and stay up high. I have deliberately run the battery down in flight several times now and have found no issues except for having to make a dead stick landing. Given most of my landings are performed this way this is not really an issue. This has worked with both my JR FM receivers and Orange DSM receivers operating a variety of servos. I normally use a separate receiver pack for planes that spend most of their flight soaring with the motor shut off (gliders and old timers) and will continue to do so.

I am now considering a 2S pack of smaller Lithium Phosphates with a diode in series to drop the voltage and a separate charge lead (without diode) to replace my aging nicad receiver pack. Perhaps others have already done this?

Keep warm.

Regards
Bob Comerford

Announcing: Mid-America Electric Flies 2012

At the 7 Mile Road MRCS Field
5th Year at This MRCS Location!

AMA Sanctioned

Saturday, July 7 & Sunday, July 8, 2012

Hosted by the:

Ann Arbor Falcons and Electric Flyers Only

Flying Site 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 5 P.M. Sat. & 10 A.M. to 3 P.M. Sunday

Pilot Entry Fee \$15 a day or \$25 both days
Parking Donation Requested from Spectators

Saturday's Awards

Best Scale
 Most Beautiful
 Best Ducted Fan
 Best Sport Plane
 CD's Choice

Sunday's Awards

Best Scale
 Most Beautiful
 Best Mini-Electric
 Best Multi-motor
 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

To locate the Midwest R/C Society 7 Mile Rd. flying field, site of the 2012 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.

Two Hotels Added to the Hotel's List

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

April 7, Saturday (tentative) First EFO flying meeting of the season, 10 a.m., Midwest RC 7 Mi. Rd. Flying Field. Everyone with an interest is welcome to come. Must have current AMA membership (card) to fly.

April 11 Wednesday, 7 p.m. **Horizon Hobby** Pre-Toledo Visit, Ultimate Soccer Arenas, South Blvd., west of Opdyke, hosted by the Skymasters, NO CHARGE, Everyone Welcome, Questions - Joe Hass, 248-321-7934. See the latest from Horizon Hobby before anyone else.

April 13, 14, 15 58th Weak Signals Toledo RC Expo, Seagate Centre, Toledo, OH <http://www.toledoshow.com>

May 19 & 20 Watts Over Wetzell, Radio Control Club of Detroit, contact Mike Pavlock (586)-295-3053 or email <http://www.rccd.org/WOW.htm>

June 2 & 3 Keith Shaw Birthday Party Electric Fly-In", Balsa Butcher's Field near Coldwater, MI, contact Dave Grife phone: 517.279.8445 email: grifed@yahoo.com

July 8 & 9 Mid-America Electric Flies, Midwest RC Society flying field, 7 Mile Rd., Salem Township, MI. Keith Shaw and Ken Myers CDs. Email Ken for info

For Sale

Thunderpower 4S1P 1350mah 20C. Used once. Too much for a fan unit in an EDF. Was \$45 new, will sell for \$30.

I am also looking for some 6S1P packs, 45C or higher. Its for an EDF.

Michael Cohen
734-478-7812
precisionaero@hotmail.com



The Ampeer/Ken Myers
1911 Bradshaw Ct.
Commerce Twp., MI 48390

<http://www.theampeer.org>

The Next Monthly Meeting:

Date: Saturday, April 7, 2012 **Time:** 10 a.m.

Place: MRCS 7 Mile Rd. Flying Field