

the

Ampeer

January		The EFO Officers		2005	
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Ampeer subscriptions are \$10 a year US & Canada and \$17 a year worldwide		The Next Meeting: Date: Monday, January 3 Time: 7:30 p.m. Place: 769 Akehurst, White Lake (see directions)			

What's In This Issue:
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The Meaning of Some Brushless Motor Designations

Received the following questions from Merle Davies via email:

Hi Ken,

Advertisements for AXI Motors describe the models i.e. "4120/14 External Rotor" Motor (MORE power than a "Gas Glow 40"). What do these Identification terms mean to the Electric Modeler?

4120/14 means the stator is 41mm by 20mm with 14 turns. External rotor means the can rotates, commonly called an outrunner. More power than a "gas glow 40". Advertising hype. KM

A like explanation of the AVEOX Motor Model Designations would also be helpful.

The following is the example given on the Aveox site. KM

"Designation; 1409/2Y means 1.4" diameter. 0.9" magnet length, 2 turn in the Y (Wye) wind configuration."

What do these terms mean to the Electric Modeler? *They give a hint to the physical size of the motor and a little*

hint as to the Kv (RPM/volt). The 14-turn will have a lower Kv than the 2-turn. Is any of this information in the motor nomenclature really useful? Not to me. KM

Motor Kv Question

From Rick Keiser Ahuligan12

Ken,

Thank you for another newsletter. I am a bit confused about Kv ratings for motors; I think it means rpm per volt of input. How does this relate to motor size and power? Is a higher rating better, more efficient use of power etc? I just got used to 300, 400, size motors and what to expect. I have an MPJ 400 size, a Razor 350 and two .020 Astro brushless motors and am familiar with what they will fly. Please explain in English, as my math is limited, or refer me to an article that I can peruse if you can.

Electrics have come a long way in the last ten years and you have always helped me in the past and I am grateful. Regards,
Rick Keiser
Lancaster, Pa

What you already know is what you need to know. You know that a certain motor/battery/prop combination will fly a given aircraft in a certain manner. That is what you need to know, and you are on the right track.

*Kv isn't good or bad. Kv is the RPM per volt out, or based on the back EMF (eback). It doesn't have a lot to do with volts out of the battery, or even into the motor terminals. Kv is directly related to Kt. Kt is the torque constant. For ALL electric motors $Kv * Kt = 1355$. Without getting into the math that means that a lower Kv motor has a higher Kt, and since Kt is the torque constant, the motor has higher torque. Given the same volts and amps, the lower Kv motor, with its higher torque, can swing a larger prop at a lower rpm. It is common to use a gear reducer on a high Kv motor to physically change the Kv to a lower Kv thus raising its Kt and the size prop it can swing at the same volts and amps.*

One thing to keep in mind is that motors with the same Kv are not equivalent, even though they might be about the same physical size. Here are two motors of about the same physical size (weight) and with the same Kv, but as you can see from the math I've worked for you, they are not equivalent.

AXI 2820/10 Kv 1100, Rm 0.042, Io 2.5 Weight: 5.7 oz.

Cermark CEM 600BL3 Kv 1100, Rm 0.09, Io 2.58 Weight 8.47 oz. (Tom Hunt review)

Both motors compared at 10 volts in and assuming the same controller with the controller losses ignored for this comparison.

AXI I_{stall} = 10/.042 = 238 amps

Cermark I_{stall} = 10/.09 = 111 amps

*AXI amps at max eff = $\text{SQRT}(2.5*238) = 24.4$ amps*

Maximum eff = $((24.4-2.5)/24.4)^2 = 94.7\%$

*Cermark amps at max eff = $\text{SQRT}(2.58*111) = 16.9$ amps*

Maximum eff = $((16.9-2.58)/16.9)^2 = 92\%$

Reported real world results:

Aberle AXI 2820/10 (Bonnie review)

10x5 APC e 9527 RPM at 24.7 amps

Hunt Cermark

10x5 APC e 9790 RPM at 29.2 amps

I hope you see from this example that the Rm and Io both play an extremely important part in the overall motor performance.

If you look carefully at the data, you should be able to see which is the most efficient at higher power levels. If you want to make the best of say 350 watts

in, you should be able to see which of these two motors will give you more output and which one will turn the watts in into the most heat instead of power out.

Charging Parallel Li-Po Battery Packs

From Doug Ingraham dpi@rapidnet.com

The following is an answer to a question that I had forwarded to Doug, software designer of the AF109 charger, for an expert answer regarding charging parallel Li-Po packs. The original question is reprinted before Doug's answer. KM

I have a query regarding charging Li-poly batteries, which I hope you can answer for me.

I am building a Lancaster and am powering it with 4 magnetic Mayhem motors with 3 cell 2100 mAh 11.1 volt Li-poly (Thunder Power) batteries feeding each motor independently. It is the charging of these battery packs that has my attention.

At present I am using a Triton charger to charge each pack individually this takes 75 min. Knowing the inherent dangers of Li-poly batteries, I'm seeking advice before I attempt charging 2 packs in parallel or even four packs if possible. I can switch to an Astro Flight 109 charger if that will do the job.

My object is to have the least time out (or down time) to charge batteries when at the field.

My Lanc is scratch built, foam, from Chris Golds' plans, Span 105" expected end weight 25 lb. Plane is about 75% complete.

Any info will be welcomed, as I am new in electrics.

Thanks,

Albert, Lucknow, Ontario

(Doug's Reply)

If the packs have the same number of cells in series and are at the same state of charge (full or empty) you can charge them in parallel. If I were doing this project (*the one this reply is about*) I would parallel the packs and just leave them paralleled all the time. This would give you a 3S4P pack with a capacity of 8.4AH. The Astro 109 should be able to charge this in less than 2 hours. Before you parallel them you will want to charge them all separately to get them to the same state of charge (full).

Doug Ingraham
Rapid City, SD USA

A Couple of Interesting Suppliers

RE: A letter of Introduction from a Skymasters RC Member RossWJones@Comcast.net

Ken,

Thank you very much for your past support in the *Ampeer!*

I wanted you to know about a new website I just built for us Poor, Ill Attended R/C folks...

www.rjrcooltools.com

Have a look and let me know what you think and/or what I'm missing!

Regards,
Ross D. Wegryn-Jones

Do yourself a favor and visit Ross's site to see what he has from Bondhus, Moody, Olfa, Wiha and other suppliers. Make your modeling life easier. KM

And another interesting one from jen@priva.com

After some late night surfing I happened upon your page about r/c flying. I saw you had an extensive amount of aviation related images and information and figured I would suggest my site to you as a possible addition. It offers collectible model aircraft, as well as military tanks, vehicles and artillery that are historically authentic and highly detailed.

My site is here: <http://www.militarymodels.com> and I've worked hard to make it a great military aircraft resource. I am currently developing a links page for the site and would love to add your site to it once it is up and running.

Thank you for taking the time to review my site and I hope you find it to be a valuable resource for your visitors.

Sincerely,
Jen Doerschuk
Legacy Military Aircraft

Powering a Pair of RC Seaplanes

From Les Harding jharding@chartermi.net

A friend of mine from the Midwest RC Society asked about using electric power in a couple of seaplanes he plans to build. I thought this would be a

good time to go over how I choose an electric power system. KM

Ken:

The following is the information regarding the two aircraft I would like to make into electric.

The Republic "Seabee" wingspan is 52" in length by 6.5" in cord depth. The wing is completely rectangular in shape. This gave me 338 sq.in.



Photo of Full Scale

The "Lake Buccaneer" wing is 58.5" in length by a wing cord of 8.5" at root to 5.75" at wing tip. I took a general cord depth of 8" which gave me 468 sq.in. (could be closer to 417. I'll use 420. KM)



Photo of Full Scale

However I will leave the real figures up to you and look forward to your answer as to what electric power and stuff I'll need.

These should turn out to be really neat birds. Talk to you soon, and thank you!!

Les Harding

I received the following from Les when I asked him about prop size.

Both aircraft are powered by .23 to .25 2-stroke engines. Both have pusher props and show 8x6 props. They do not leave much room for your fingers. Could use a three blade on them if this would give more power. Weight wise, the Seabee, bare, no motor, batteries, and other stuff, about 10-12 oz.

The Buccaneer would weigh about 12-14 oz. If needed, I could build lighter.

My reply:

How much will the finished airframes weigh?

Seabee (338/144)^{1.5} = 3.6 * 3.5 = 12.6 oz. ideal

Seabee (338/144)^{1.5} = 3.6 * 4 = 14.4 oz. acceptable

Expected or Target Weight:

Ideal: 12.6 * 2.86 = 36 oz. 2.25 lb.

Acceptable: 14.4 * 2.86 = 41.2 oz. 2.58 lb.

170 to 200 watts of input power with a cobalt or brushless motor should be sufficient.

Wing loading: 15.3 oz./sq.ft. to 17.6 oz./sq.ft.

Wing cubic loading: 10 oz/cu.ft to 11.5 oz./cu.ft.

Buccaneer (420/144)^{1.5} = 4.98 * 3.5 = 17.4 oz. ideal

Buccaneer (490/144)^{1.5} = 4.98 * 4 = 19.9 oz.

acceptable

Expected or Target Weight:

Ideal: 17.4 * 2.86 = 49.8 oz. 3.1 lb.

Acceptable: 19.9 * 2.86 = 56.9 oz. 3.6 lb.

233 to 270 watts of input power with a cobalt or brushless motor should be sufficient.

Wing loading: 15.3 oz./sq.ft. to 17.6 oz./sq.ft.

Wing cubic loading: 10 oz/cu.ft to 11.4 oz./cu.ft.

Recommended onboard radio system (both planes):

Receiver: FMA M5 Sub Micro Receiver for 72 Mhz
0.3 oz. \$54.95

Servos: 3 each Hitec HS-85BB 0.67 oz ea \$23.99 ea

Castle Creations Pegasus-35P 0.75 oz. \$49.95

Onboard Radio Weight: = 3.1 oz.

Cost: \$189.87

Recommended power systems using an 8x6 prop.

Astro Flight Cobalt 15 wt. 7.5 oz. \$99.95

or

Kyosho EndoPlasma \$24.99

Astro Flight #701 gearbox \$34.95

Astro Flight 11-tooth pinion to give 2.82:1 gear ratio
\$4.95

Geared motor total: 8.5 oz. \$64.95

9-cell GP 2200 Ni-MH 1.62 oz ea = 14.58 oz. \$78.00

10-cell GP-3300 SCHR Ni-MH 2.2 oz ea = 22 oz.
\$96.00

Heaviest weight for the Seabee:

Airframe: 14.4

Motor: 8.5

Airborne radio: 3.1

9-cell battery: 14.58 = Total 40.58 oz.

Other weight: 4 oz. = Total Weight 44.58 Acceptable

Heaviest weight for the Buccaneer:

Airframe: 19.9

Motor: 8.5

Airborne radio: 3.1

10-cell battery: 22 = Total 53.5 oz.

Other weight: 5 oz. = Total Weight 58.5 Acceptable

The above weights try to represent "worse case" weights. The "Other weight" is an estimate and includes such things as props, pushrods, switch harnesses, wire and other weight that seems to creep into any project, and may be less or a little more, but I use about 10% of the component weights to form this guesstimate.

What about Li-Po cells?

The Kokam 3S1P 15C pack 6.1 oz and \$83.50 could be the battery used with either of these power systems. The Seabee would then weigh about 36.1 oz. and the Buccaneer 42.6 oz. For the weight savings and price, I'd say go for the Li-Po's if you don't already have a charger that could charge at least 10 NiCad or NiMH batteries, and you would have to get a new charger for Li-Po charging. I highly recommend the AF-109 as the Li-Po charger.

If you want to save the expense of a new charger, if you have one that can charge at least 10 cells, then the recommended batteries and heavier weights should be just fine.

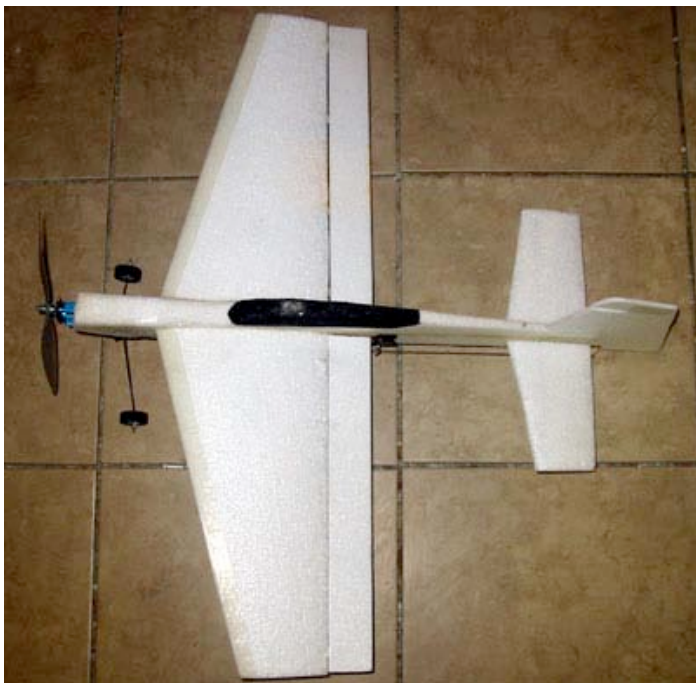
Monsoon RC

I just received an email from Monsoon RC (<http://www.monsoonrc.com>) and thought they had some interesting items to offer.

To see all that they have to offer, please visit their Web site. I found the Monsoon to be very interesting, so I'm sharing that information here. This is how they describe it on their site:

"The Monsoon from MonsoonRC, is in a class all its own as a cross between a Pattern and a 3D plane. This plane will perform most of the acrobatic tricks that a 3D plane will but since it is made from EPP foam, it will be much more durable. As a pattern

plane it will hold whatever line you put it on until you decide it is time to change directions. The Monsoon has a stabilator instead of the normal horizontal stab and elevator for better response on the pitch axis. If you cannot decide between a pattern plane or a 3D plane this is the one to get. The Monsoon is designed with the intermediate to advanced pilot in mind with the intent of pushing its flight envelope.”



The plane may change from the photo since this is a prototype.

The Monsoon comes with:

- Epp Foam Fuselage (Pre-assembled)
- Epp Wing Cores
- Depron Elevons
- Hardware Package
- Instructions

Specs:

- Wingspan: 33 Inches
- Length: 30 Inches
- Wing Area: Aprox. 200 Square Inches
- Weight: 13oz to 16oz

Required:

- Brushless Motor Himax 2025/5300 or Equivalent
- Phx 25 ESC or Equivalent
- 1200 to 1500 mah 3-cell Li-poly Battery
- 4+ Channel Pico Receiver
- 3 or 4 GWS Naro Standard Servos or HS 55

Assembly Materials:

- CA Glue
- Hot Glue Gun - Preferably Low Temp
- Contact Cement
- Hinge Tape

Soldering Iron

The Monsoon is \$59.95 Plus Shipping

Upcoming Las Vegas Soaring Club SuperFly IV

From Dick Corby sales@altacom.us

The Las Vegas Soaring Club SuperFly IV will take place beginning on November 12, 2005 and ending November 13, 2005. Start time will be 9:00 am. Located at Bennett Field in Las Vegas, Nevada.

This is the fourth annual ALL ELECTRIC FUN FLY. This is the first time it will be a two-day event and is growing bigger and better each year.

Information will be updated at the date approaches on our website at <http://www.lasvegassoaring.org>, so check there often.

Charlevoix Area BUFFS New Year's Day Fly-in

From John Zook tzook@voyager.net

Hi Ken,

Just to let you and others know if they are planning on coming to Northern Michigan for the holiday, that the Charlevoix Area BUFFS are having their 26th annual New Year's Day Fun Fly. All are welcome. Bring some planes and help provide some moral support to those of us who fly with electrons.

There will be hot flying, hot chili and hot air.

We have a heated clubhouse and 150' paved runway.

The event starts at 10:00 am and lasts until 4:00 pm.

So if any of you are headed north, check us out.

Please feel free to contact me at 231-544-6921

Thanks,

John Zook

Comments and Compliments on Keith's Bugatti

Keith did a great job on his Bugatti and its write up here in the Ampeer. Many, many folks sent compliments on his achievement. Here are some to share with you all and to tell Keith "Well done!"

From Rod Woolley rwoolley@sympatico.ca

I have just finished reading the latest Ampeer at <http://members.aol.com/kmyersefo>

This month's issue is particularly interesting I find, but what really flipped my lid was Keith Shaw's

article about his Bugatti modifications. How that gentleman does it I do not know, but he has my greatest admiration. I read that article and I suffered the literal "jaw drop" in amazement! Most modelers have a bit of a struggle getting started and finding time for building but it just doesn't seem to apply to Keith! Me, I seem to take forever building and finishing off models, but Keith, well, I just do not know how he does it, and it such grand style. Not only does he manage to build a lot of models, but also they are scratch designs with a prototype and final version for each one. Just look at the finish on that Bugatti in the pictures and read the details of his meticulous approach to design improvements and flight-testing, and see if you are not equally impressed.

Rod in Ottawa (Where the weather stays fine enough to fly all year round!)

From David Hipperson ritzi@corplink.com.au

Loved this issue and the extensive report on the Bugatti racer by Keith Shaw. Way beyond my capabilities, but a thrill to read about the project. Thanks again.

David and Jan Hipperson,
Mount Evelyn, Victoria, Australia

From Wurpfel wurpfel@yahoo.de

I'm also a BUGATTI R100 fanatic...
Keith's plane looks nearly perfect! Well done!

The aerodynamic layout looked for me very tricky so I made a lil' BUGATTI out of depron and balsa as proof of concept.. and btw it fits in the top-case of my motorcycle.

The 20" BUGATTI performs well, with an cdr-BL and 2KOK350 it reaches 55 mph. Now I build a counter rotating double-cdr-drive. Its weight is 30gr (1 1/2 oz?) and have the double power ;)

The plane has good stall characteristics, no problem for experienced pilots.

Please check out my homepage,
<http://mypage.bluewin.ch/a-z/wurpfel/> for some pictures and videos.

Encouraged from the success, I'm now building a 1/6 scale one. I will use two LRK 430/30 BL-engines with nearly one KW each and a laminar-flow-profile.

Hopefully in spring 2005 maiden will be done..

cu
wurpfel



Photo from Wurpfel's Web site

The story in the Ampeer about Keith's Bugatti rocked!

Best regards,
Darwin Garrison

Watch for the good word on the Push-E-Cat kit, one of my favorite trainers, hopefully by next month.
KM

Upcoming January EFO Meeting

The first EFO meeting of 2005 will be held on **Monday**, January 3. No, the meeting date will not be changed from the usual 1st Thursday of the month, except for this meeting. The meeting will start at 7:30 p.m. at **769 Akehurst**, which is located in the **North Broadmoor** subdivision on the east side of Union Lake Rd, about a mile north of the village of Union Lake. Akehurst is the entry road for the subdivision. There are two entrances to the **North Broadmoor** subdivision. Akehurst is the south entrance road. For those coming from the south traveling on Union Lake Rd., it will be the first **North Broadmoor** entrance that you see. If you are coming down from Elizabeth Lake Rd. from the north end, it will be the second **North Broadmoor** entrance. It is the fourth house in on the south side of

Akehurst. There is a Real Estate One sign in the front yard. The house just west of it is also For Sale by the builder of the subdivision. You can park in that house's driveway, if you like.

Bring your latest projects to share.

Dues will be collected at the meeting.

Received the following from Steve Elwell, EFO member, so thought this would be a good place to share it.

Are you flying any new planes? With so many cheaper and lighter planes, motors and batteries finding their way into the marketplace I would hope that you've been acquiring some new toys. :)

I have been flying an Edge 540 Shock Flyer, with Python 60 (from Hobby Lobby) and it is a blast to fly. I never thought that 7 ounces of plane could yield so much fun. Actually with a 730x2 TP pack it is about 7.2oz and with a 340x3 pack it is about 6.8 oz. It flies very nicely in the dome. (*As we saw at the Dec. EFO meeting. KM*) I am going to try to build a few of my own variants of the Shock Flyer and power them with the (17g) Feigao brushless motor and GWS D gearbox. If I can keep the weight down the Feigao might work out well for a small 3D plane. I think I saw one powering a Shock Flyer at the dome the last time I was there. I would love to plug one of those into my 4.5 oz Mini Speed Wing. Hopefully I'll get around to that soon. So many ideas, but never enough time to get around to them all. Winter might provide a bit more indoor workshop-time!

Soon I am going to try one of those \$10 home-built CD-Rom motors on my small planes. Tom and I got one each a while back but haven't managed to find the time to wind them. They aren't as efficient as some of the more costly motors, but for many planes they'd still work out just fine. Can you believe all of the brushless solutions we now have in this hobby? It really is quite amazing.

Recently I put together an E-Flite Ultimate Bipe (with HiMax 2015-5400 and TP 1320x2) but I haven't flown it much. I had the CG way too far back on the first flight and it was quite a handful keep this thing from flopping out of the sky. Then 2nd flight went much better and I expect things to improve when I find the time, dry weather and some lower winds.

I goofed up lately and toasted a few expensive 2-cell packs, using my old (original) Kokam charger -

my Shulze is much better about not letting ME let that happen. I believe the newly revised Kokam charger also detects incorrect voltage selections. While I do think that Li-Po pack flames are very rare incidents, just to be safe I have recently started using a small flowerpot to charge my Li-Po cells - when practical. I put the pack on the flowerpot base, and then I place the pot itself upside down over the cell, with the leads poking up and out the whole in the bottom of the pot. I would think that would handle most any Li-Po mishap.

The need for speed has also managed to allow me to damage a Kokam 3x2000 pack, while pushing my Mega 3T powered ProJeti harder than I should. With the small props (~4.75x4.75) it doesn't unload much in the air, so what you see/read [on the ground] with your wattmeter is close to what you get [in the air]. This ProJeti is sure a lot of fun - a bit over 100mph. I decided to get a little crazy on Sunday (At Ray Field in New Hudson) and try the ProJeti with 12xCP1300 Ni-Cd and a 5.5x7.5 prop (~425W, @50A). It seemed to move a little quicker, but not for long on the smaller cells with higher current draw. Launching it was also a bit of an adventure. With the 5.5" diameter prop I decided that full throttle launching could risk the fingers, so I had someone toss it (really hard) with power off. The trick with this setup and power-off launch is that the startup torque can roll the plane into the ground. Additionally, the added weight of the 12xCP1300 pack (15oz vs. 6oz for the 2000x3 LiPo) yields launch performance similar to that of a red brick - an expensive red brick! :) I managed to stay on the throttle, and with full-high-rate up-elevator, I saved it about 10" off the ground - I got an applause for that one! :) Then I was in for a fun-filled 3-minute flight - that "long" duration only because I managed the throttle most of the time. I may not be trying that combination again.

Next I'll be stepping up to a 4x2000 (15C) Li-Po pack, which would yield about 430W (14.5Vx30A). If I can fit 4x2100 (20C) into the ProJeti, then I will go with those larger cells instead. That should allow me to safely get about 600W (14.5V x 40A) out of it. Using voltage to get the power I want will allow me to keep things cooler as there is very little cooling airflow with this plane - unless you add scoops - which add lots of drag. I have some cooling holes, but I am not sure that they are accomplishing much cooling. With 4 Li-Po cells I'll of course have to use

a receiver battery pack or UBEC for receiver power. My CC Phoenix-45 can handle BEC on the 12xCP1300 Ni-Cd pack but not a 4 cell Li-Po pack. Once I figure out the best power setup (which means, the most powerful) I'll start assembling the Red Reno Racer version, which I have still new in the box. Hobby Lobby says that they have stopped producing the ProJetti so there are only a few left. I made sure to grab one of the last 5 red Reno Racer versions before they were gone for good.

Take care,
Steve

Thanks for the update and tips Steve. It is always good to know what the EFO members are up to.

Please remember the date, Monday, Jan. 3 and place, 769 Akehurst, White Lake for the January EFO meeting. The phone number there is 248.698.4668. You might want that should you "get lost." ;-) KM

My SR Batteries X250

By Ken Myers



At home before the X250 decal was added



At the flying field

Back in 2000 I built the SR Batteries (www.srbatteries.com) X250. The construction and review article is still on the EFO site. It has been my "fly it every time I go to the flying field plane". I have no idea how many hours it has on it, but it is a lot!

Today it is only 28-degrees F outside with about a 15 mph wind. Although it is sunny, it is not a day I'd care to go to the field, yet I've been flying the X250 at the flying field on a beautiful autumn day with no wind (my choice!) and about 70-degrees F.

The X250 and flying field are in my PC!

Yes, I've imported the X250 into the REFLEX XTR RC flight simulator program (www.reflex-sim.de). While the top photo at the lead of this article is the "real thing", the bottom image capture is my virtual X250.

This project turned into a real challenge, since the tutorial to use the RMK (Reflex Model Konstruktion) program was only available in German. Since I can't read or speak German, this made it difficult for me to use the tutorial, to say the least!

My only solution was to translate the German tutorial. I used the Google language tool to create a very rough, and I mean very rough, translation. I then rewrote the whole tutorial in English while learning the RMK program following the tutorial.

After successfully completing the tutorial, I was able to take the digital photos of my real X250 and translate my real model into a virtual 3D model for importing into the REFLEX XTR RC flight simulator program.

I then set up a spreadsheet to compare the physical characteristics of the planes in the REFLEX XTR program and see how they related to my X250. I input the data I defined for the X250 into the physical characteristics of the REFLEX program and the result is a virtual model of my X250 that flies "virtually" the same as my real world X250, while looking exactly like it.

The real world look and feel of the REFLEX XTR program enhances my experience when I fly my virtual X250. The only thing I miss from the experience is the other folks around to talk to, but the instant recharge of the batteries is really nice!

I have made my English version of the RMK tutorial available at the EFO site. My virtual X250 is there as well so that its associated files can be downloaded for use with the REFLEX XTR program. Anyone with the REFLEX XTR program can now fly

my version of the SR Batteries X250. I can also provide my Excel spreadsheet for anyone interested when importing his or her own aircraft.

To say the least, I'm extremely happy with this RC flight simulator. It "flies" very well, looks great and the main feature I wanted, the ability to import my own planes, works well and is "relatively" easy.

I still have a lot to learn about the parameters used in the REFLEX XTR RC flight simulator program and more to learn about the RMK program, but this has been a ton o' fun! The RMK program is part of the REFLEX XTR program, so there is no added cost.

The REFLEX XTR program is distributed in the US by MRC

(<http://www.modelrectifier.com/products/rcFlightSimulators/index.asp>). The Model Airplane News Review by John Reid is available on the Web at http://www.modelairplanenews.com/reviews/mrcreflex_1.asp. Model Retailer also has a review at <http://www.modelretailer.com/mod/default.aspx?c=a&id=288>.

Both of the reviews give a retail and street price of over \$200, but I purchased mine, brand-new in the box, at a swap shop for \$180, no shipping and no tax from an Indiana hobby shop that was there. I've also seen it on the Web for \$189 or less. Look around for the best price.

I hope to have more of my planes available for the REFLEX XTR program as time permits.

**Be sure to check out the AMA District 7
Web site at: www.amadistrictvii.org**

Tom Hunt's Bugatti R100

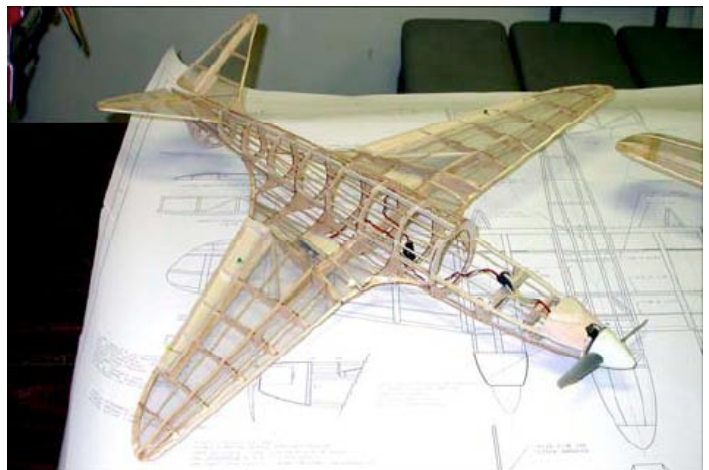
From: "*Silents Please*" April 2004

The Newsletter of the Silent Electric Flyers of Long Island

Editor: Tom Reilly

All pictures and text by Lionel Bernstein

Tom Hunt's "Work In Progress" model is the "Bugatti R100". This model, under construction with a 144 sq. in. wing that has a 30" span. The smooth lines of this scale aircraft are a good example of how Tom designs and builds these models. It was not ready for the trip to Toledo, but Tom wanted us to see how it was progressing. It will use a GWS IPS V drive and a 7 x 6 prop. Weight to be 8 oz. More to come on this beautiful airplane when he finishes it.



Tom's "Yakoschtik" from the same issue.

Upcoming E-vents 2005

April 16, (Tentative), Electric Model Aviation Show and AGM, Toronto Aerospace Museum, Toronto, Canada - Robert Pike, 416-724-7615
pikefly@sympatico

April 21-24, 2005 Southeast Electric Flight Festival
We have moved the event earlier in the spring so that we can get some cooler weather! Average high is 79 degrees :-)

DATE: April 21-24, 2005

WHERE: Americus, GA - Hodges Hobbies

EVENTS: LMR Sailplane competition on Thursday, Open flying the rest of the weekend.

WEBSITE: www.koolflightsystems.com/seff.htm

We expect to have another huge raffle, about 40 or so vendors, BBQ, awards, demo flights at noon, etc....

Pilot and vendor registration will begin no later than November.

May 15 - Rain Date: May 22 - KISHWAUKEE R/C FLYERS 2nd Annual Electric Fly-In
Registration: 8:00AM Fly: 9:00AM
Site: Kishwaukee R/C Flyers Club Field, Dekalb, IL

Restricted to electric powered aircraft.
Unobstructed fly over area.
AMA license required to fly.
\$10 Landing Fee includes free lunch for pilots.
Due to parking arrangements, no RV's please.
Food and beverages available.

Contact: Brad Evenson eflyer201@atcyber.net, phone: 815-522-3344 (after 7pm) or Rocko McCombs nightz13@yahoo.com, phone: 815-756-9313 (after 7pm)



The Ampeer/Ken Myers

769 Akehurst Ln.

White Lake, MI 48386

<http://members.aol.com/kmyersefo>

The Next Flying Meeting:

Date: Monday, January 3 **Time:** 7:30 p.m.

Place: 769 Akehurst, White Lake

(see directions in this issue)