

Ampeer

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Ampeer subscriptions are \$10 a year U.S. & Canada and \$17 a year world wide.

The Next Meeting:
Date: Thursday, July 3 Time: 7:30 or ASAP
The Rushton Road Flying field, South Lyon, MI
Located between 9 Mi. & 8 Mi. , east side of Rushton Rd.

Prop(er) Selection
from Carlo Ciarniello
e-mail at: C.Ciarniello@mbtld.com

Ken,
The following is some experience I've had with Electric powered aircraft:

I have been flying RC for over 10 years. A number of years ago I acquired an Astro Cobalt 05 direct drive motor and scratch built an "Ugly Stick" type aircraft to try out the system. Although I cannot remember the specs on this plane the flight performance was excellent with all the basic maneuvers easily performed. Alas, without a spinner or landing gear this plane suffered the bent shaft syndrome on each flight!

This past Christmas a new Cobalt 15G and an Astro 111 charger were acquired and the electric bug hit again.

This time I built scale and constructed the Electric PT-19

detailed in RCM a number of years ago. Weight was 75 oz. with two 6-cell car type batteries (1200 mAh, brand?). The motor was propped with a Zinger 12-6 turning 6400 rpm and performance was good. Loops and clean rolls from level flight with about 5 minutes of flight using a "RCM/CANO" speed controller. On the fourth flight I changed the prop to an APC 11-7, big mistake, as the flight was terminated with the classic take-off, stall, cartwheel landing. This experience dictated some serious investigation into the best prop for this combination.

(For some other details on this type of situation, see "Choosing the Right Prop", Ampeer, Feb. '97 km)

The following are the results of my experiments with 4 props:

12 1200mah cells (no name brand used):

Prop	RPM	AMPS	VOLTS	THRUST
Stock Zinger 12-8	5600	23	12.2	36 oz
Mod #1, Zinger 12-8	5700	22	12.3	39 oz
Mod #2, Zinger 12-8	5700	20	11.75	39 oz
MA Electric 11-7E	6000	18	12.0	31 oz
APC 12-6	6400	16	12.4	36 oz

14 800mah AR Sanyo cells:

Prop	RPM	AMPS	VOLTS	THRUST
Mod #1, Zinger 12-8	6200	24	12.8	48 oz

What's in this issue?

Prop Info - Sr. Kadet Rating - News from NZ - More on Ben Almojuela - April EFO Meeting - Toledo '97 - Good Words about MaxCim - Tale of 2 planes: the sequel - Upcoming Events See You All at the Mid-America Flies!

Note: - Mod #1, Zinger 12-8 is an undercambered prop with scimitar shaped tips (similar to APC). A modification that I undertook with great care! (*Remember, YOU are totally responsible for any prop modifications! You assume all risks in trying any prop modifications. The information here is presented for INFORMATION only, not recommendation. km*)

Mod #2, Zinger 12-8 is an undercambered prop cut to 11.5 inches in diameter then drooped hardwood tips (tips droop 1/4 inch) attached with CA then sanded to profile. Again great care was taken to maintain the airfoil through the droop. Prop was then balanced and repainted.

All readings were taken 20 seconds after full throttle was applied with a fresh charged battery pack.

The biggest disappointment with the results was the performance of the MA 11-7E prop. The real surprise was the current drop after adding drooped tips to the modified Zinger prop. The efficiencies gained by performing the prop modifications was worth the effort. The plan now is to prop the 15G to draw 25 amps with the most efficient prop. Also the resulting rpm with 12 cells seems low and I suspect that the batteries are at fault here. The voltage was never constant and was dropping steadily. (*This is the way it is. km*) In fact the readings were taken 20 seconds after starting the motor and within 30 to 40 seconds the voltages were all below 12 volts using 12 cells!

Next I will try a modified Zinger 13-8 with drooped tips in order to get the current up to a target draw of 25 amps. I will keep you up to date.

My last project is a scratch built 1/6 scale Monocoupe 110 Special painted in John Livingston colors (red and yellow). The plans for this model were drawn with electric power in mind. The end result is a fully cowled, struts, wheel pants and rigging included plane which weighs 70 oz. This includes the Astro 15 geared, 12 1200 mAh cells, speed control, 3 mini servos and a 250 mAh Rx battery. Wing area is 480 square inches. Flights will start this month as soon as the 13-8 zinger props have been modified with drooped tips.

If anyone is interested I will have computer drawn plans for the Monocoupe available soon. My mailing address is:

Carlo Ciarniello
C-35 Centennial Drive
RR #1 Powell River, B.C.
Canada
V8A-4Z2

Keep up the good work.

A Reply from Ken

Dear Carlo,

Thank you very much for all of your info on your props and the AF15G. This once again confirms what was stated

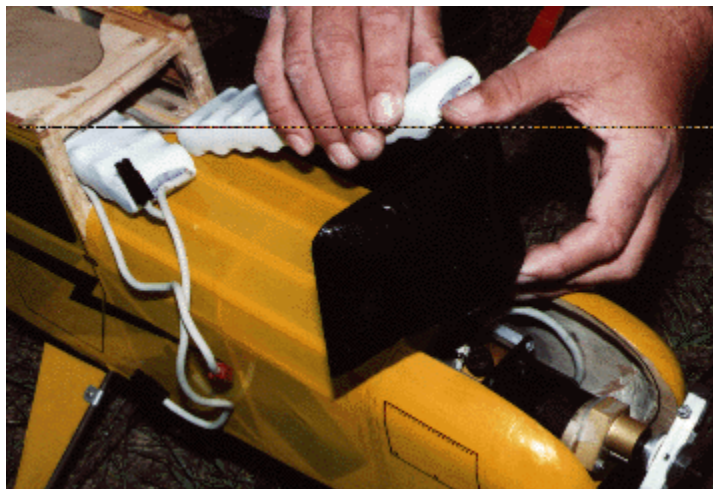
in "Choosing the Right Prop", Ampeer, Feb. '97.

According to some quick calculations I did with ElectriCalc, when you were using the APC 11x7 on your PT-19, you were getting less than 45 watts of input power per pound. It has been recommended that 50 watts of input power is the minimum to even consider. I personally have changed this to 50 watts of output power per pound for good, fun sport flying. Unfortunately, you confirmed this the hard way! Hopefully we will all learn from your experience! Thanks for sharing with us.

A Sig Kadet Senior Rating

from Mr. Kadet Sr. himself - Herm Perez
e-mail at: hermperez@worldnet.att.net

I would like to add an entry..you already have a Kadet Senior but its over weight at 8.5lbs, my Kadets weigh from 6.5lbs. to 7lbs..using either 18 Panasonic 1700 or 20 Sanyo 1700SCRC. They are very responsive and have a duration of 15-23 minutes with the Sanyo cells. I give them a (5) ***** rating since they are the best planes I have ever flown, including glow powered. Bob Benton and I have built and flown about 9 of these things. Build it completely stock, don't beef up, ditch the nose landing gear and use a light weight covering such as Micafilm or transparent Monokote..never use one of the heavy fabrics since they can give you a 20oz penalty in weight. Kadets are large and they use lots of covering material.



In this photo of one of Herm's Sr. Kadets note the AF40G and the placement of the battery packs.

News from New Zealand

from John Roberts
e-mail at: JROBERTS@ait.ac.nz

<http://web.ait.ac.nz/homepages/staff/jroberts/models.html>

I've just been reading the latest Ampeer and thought I

would let you know that there are some modellers here in New Zealand who regularly read it. I fly electric but mostly gas models still (electric performance systems are still rather costly) there are at least 2 in the club who have gone completely electric and a few others who are heading that way. Anyway, Ampeer is a great mag.

I am also writing a home page for my son's primary school (he is in the equivalent of about grade 2) and I've used Dublin to show the school a good example of the things you can do with a home page. I'll let you know as soon as it is on line, there would be good opportunities for your kids to talk to ours. New Zealand primary schools are ages 5 to approximately 11 - 12.

cheers - JOHN
(Check out John's model page. A visit to other countries is always fun. There are several e-fliers I'm in contact with down there. Hope they're having a good "winter" now, and you folks in Australia too! km)

Thanks Ben!

from Wade Meyer

e-mail at: WadeMeyer@aol.com

It seems that there are many great reasons for pursuing the hobby of electrically powered radio control aircraft, but for me, the most important is the people. The newsletter editors and columnists put out fresh information month after month, year after year and on the field every day! Every last one of them deserves our special thanks. All e-fliers are a very special breed! Thanks to all of you for making all of us what we are. And now on with some more words of praise for Ben from Wade. km

I just read the April '97 Ampeer issue and found the article from Ben Almojuela very interesting. You see I have worked with Ben at Boeing off-and-on for a few years (small world, huh?). We share some of the same interests, have traveled together, co-hosted social gatherings and talked RC quite a bit. Ben urged me to give electrics a try as my RC roots are in gas sport/aerobatic planes and thermal sailplanes, invited me to an electric fly-in (which I attended and was impressed) and invited me to come fly with him at his home on Whidbey Island (with his own 'quiet' airfield right behind his home). In short, he has 'sparked' my interest in electrics and continued to keep the spark alive. Thanks to Ben, I have a real interest in flying quietly. I am flying my first electric plane (a PuddleMaster) and finishing my second (an electric Lazy Bee).

All that and I never knew that Ben was the editor of the Charge Ahead newsletter or president of the PSEMF! Ben's modesty is something many of us could learn from. I hope you get the pleasure of meeting Ben some day. I think you'll

enjoy it. You can be sure I'll send him a note on Monday when I get into work!

One last thing. I have seen mention of a plane called the PuddleBlaster. It seems to be a twin version of the Ace PuddleMaster. I like my PuddleMaster and a twin version seems like fun. A couple of people have rated it quite highly in the plane ratings. Do you have any information on this plane? (Sorry, can anyone help Wade? km) Was it in a magazine as a construction/conversion article? Any idea of the magazine name and issue?

Thanks a bunch - Wade Meyer

Rev-up Props ARE AVAILABLE

In a conversation with Chris Machin, Progress Company, Rev-up props are available directly from him at (913) 776-5754 or you can write to Progress Company, P.O. Box 1306, Manhattan, KS 66505-1306

The April Meeting

Lots of airplane talk at the April meeting. Of course the Toledo show followed the meeting, the next day, so there was also a good deal of discussion on who was going and when.



Bob Blau brought in his twin FAI 05 powered Pucara built from the Kress Jets' kit. The triple bladed props are just for show. This is a really light plane and should fly well.

John Geyer had his AF 15 direct drive GP ElectroStreak.

This is the second one he has built. The first one was flown stock, but this one uses, what has become the "typical" installation of the AF15 on direct drive. He has also made up a really nice "field pack" consisting of a gel-cell battery and his SR Smart Charger. He demonstrated many of the features of the Smart Charger. He's seen holding his Streak and charger.





Ken Myers showed off and discussed his yet unnamed design. It is a low-wing sport model of approximately 440 sq.in. It has a wing span of 55 inches and fuselage length of 37 inches. The wing uses D-tube construction. Its finished weight should be between 53 and 55 ounces. It uses a NACA 2412 airfoil and has the horizontal stab and elevator lifted from the *Blitz*, featured in the June 1990 *Model Aviation*. The rest of the plane is a fresh design.

As seen in this photo, it weighs 43.8 oz. with the motor/belt-drive and a nine-cell 1700SCRC battery pack. Radio installation remains to be completed.

Ken has CADed the plans and written up the construction. More details should be available soon.

The Toledo Exposition - hosted by the Weak Signals .

This annual event draws people from all over the US and Canada to see what was new in R/C. This year's event was held on April 4, 5, & 6.

Astro Flight has gone brushless! The 020, as it is designated, sells for about \$200 for the motor and controller. The first production units were available in April. Astro Flight's new higher gear ratio gear boxes are now available. See May's Ampeer.

Also new is the Whatt Meter. I'm not sure I have the spelling correct, but it tells you "WHAT" your motor and batteries are doing. It measures Amps, Volts and Watts, thus WHATT it is doing! Really great device - you need one to go along with the AF Motor Handbook, a must for all e-flighters.

SR Batteries was proudly showing off their new X440™. These planes ARE better made than anything I could do! The joints are absolutely PERFECT! Each kit is personally inspected by Steve or Larry, to assure the highest quality. It is a great value at \$199! This is a picture of "MINE", when I took it out of the box and set it on the dining room table.

Yes, the earlier photos you've seen are red and this one is purple. Larry is getting different batches in different colors so that folks can fly together, as in one design contests, and still pick out their own plane - nice touch. It is very complete and comes with SR's own instructions - no "funny" foreign translation here. Richard Utkan and I will

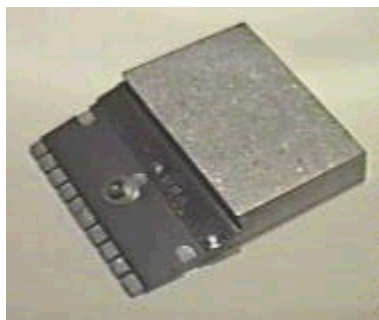
be doing an "assembly" and flight report on it soon. Watch for it.

Tom Stream, of **Stream R/C Models**, was there with his Akro Pro 25E. It is a sport/aerobatic type model for 10 cells. It was powered by a MEC Turbo 10, it now has a SR Max10. What's the difference? About the same flight performance but double the time. It now does over 7 minutes of aerobatics on 10 1800Max SR cells. Stats: Span 46", Area 410 sq.in., 64 oz. Contact Stream R/C Models, P.O.Box 113, Newport News, VA 23601 (804) 591-0720 This is the original Stream electric. Stream's first electric, the Schneider 60E's was also there. It can fly with wheels or floats and uses a geared AF25 or AF40. It is a very nice kit, and very good flier.

Matt Orme and Dave Palumbo talked with interested e-flier about the benefits of the **Aveox** brushless motor. Not to be "OUTDONE" by Astro Flight, they too have a NEW \$200 brushless system. They are also bringing out a renewed line of kits, including one of my all time favorites, the Sky Knight! Ducted fans are gaining in popularity, and Aveox is leading the way. They also have the excellent Robbe Peak Charger/Cycler in stock. It charges and cycles up to 30 cells. To get the latest info from Aveox, visit their site at <http://www.aveox.com>

Tom Cimato, Mr. **MaxCim**, had a booth to show off his brushless motors, which can now use up to 25 cells! With his very special controller, which allows easy selection of rotation and automatic timing for either rotation and just two motors to choose from, the Y or D wind, he makes brushless simple. 7 - 25 cells and lots of gear ratio choices, make this the most versatile power system on the market. Keith flew Tom's Telemaster at KRC, with this system in it, and couldn't believe all the power from such a "tiny" motor. Keith has now remotored his Messerschmitt aerobatic plane with this power system. It was on display at Tom's booth.

The controller has a 35 Amp continuous, 60 Amp peak rating, which is over 1200 Watts of available power. He is also a supplier of ElectricCalc, the superb electric flight program. Send an e-mail to Tom at 76331.3712@compuserve.com or you can reach MaxCim Motors, (Tom Cimato) 57 Hawthorne Dr., Orchard Park, NY 14127-1958 (716) 662-5651



Harry Higley had a useful item that came home with me. Actually, as soon as I walked through the doors I headed for the Harry Higley booth. I had been told, by Doug Ward,

that this is the tool to have. It trims Monokote™, and other heat shrink coverings, to a neat 1/8" overlap and allows usage of the WHOLE single edged razorblade. It is called Harry's Ever Sharp Monokote Trim Tool - ya gotta get one!

JOMAR PRODUCTS raises the bar for electronic speed controls. From the design team of Joe Utasi and Sergio Zigras come three new state-of-the-art electronic throttles for the electric R/C enthusiast. (according to the EMS info sheet) Each is sure to set a new standard for others to try to follow.

NANOMAX Indoor/Ultralite BEC Throttle - Super small size, only .5" x .6", weighs just .4 ounce, designed for 4 to 7 cells at up to 8 amps. BEC output as low as 3.3 volts for operation on 4 cells with "Throttle Up" function for low battery warning. NANOMAX features automatic setup on power-on, high rate switching for better efficiency and famous Jomar glitch filtering software for smooth operation even in harsh radio conditions. New "Reverse Exponential Power Curve" (ala Bob Kopski) enables better throttle control with more useable stick range. It should have been available in May 1997.

MICROMAX SPEED 400 Throttle - A Surface Mount design in a small 1.1" diameter size for mounting directly to the terminals of a Speed 400 motor eliminating motor leads and excess weight at only 5/8 ounce. Designed for 5 to 8 cell battery packs and Speed 400 or smaller size motors the MICROMAX Speed 400 features an external MOSFET BEC for longer flight times than its competitors. "Throttle Up" function for low battery warning. Super efficient power MOSFETS and miniature heatsink provide a 20 amp continuous current rating. MICROMAX Speed 400 features automatic setup on power-on, high rate switching for better efficiency and famous Jomar glitch filtering software for smooth operation even in harsh radio conditions. New "Reverse Exponential Power Curve" (ala Bob Kopski) enables better throttle control with more useable stick range. Supplied with SERMOSTM connectors and a receiver connector of your choice. Available May 1997. (*I paid \$35 for mine at the show. km*)

MINIMAX 2 Throttle - A Surface Mount design in a small 1" x 1.25" size and weighing under 3/4 ounce. Designed for 1 to 16 cell battery packs or 5 to 8 cell operation with selectable BEC. Eight SI4410 MOSFETS provide a low on resistance of .0017 ohm for longer flight times than its competitors. The super efficient power MOSFETS and miniature heatsink provide a 40 amp continuous current rating. In the 5 to 8 cell BEC mode an external pass SI4410 MOSFET means lower power losses and more flying time. "Throttle Up" function for low battery warning. MINI MAX 2 features automatic setup on

power-on, high rate switching for better efficiency and famous Jomar glitch filtering software for smooth operation even in harsh radio conditions. New "Reverse Exponential Power Curve" (ala Bob Kopski) enables better throttle control with more useable stick range. Supplied with SERMOS™ connectors and a receiver connector of your choice. It should have been available in May 1997.

To get hold of these ESC's contact:

ELECTRONIC MODEL SYSTEMS

22605 East La Palma Avenue

Suite 518

Yorba Linda, CA 92887

or phone (714) 692-1393, (800) 845-8978 (Orders Only)

Flight Town USA - Bill Griggs and Tim McDonough manned a booth dedicated mostly to Speed 400 items that they market. If you have an internet connection, you can see what they were offering by visiting Bill's site at <http://ourworld.compuserve.com/homepages/griggskill> and Tim's site at <http://www.inw.net/~tpm>

This is the place to go for great Speed 400 kits and products. You've got to check out their new kits, including Jim Ryan's now famous P-38 for twin Speed 400's.

The IMPULSE 4A Ni-Cd Fast charger for 1 to 18 Cells, available from **TRC Engineering**, 10707 Whispering Valley Lane, Middleville, MI 49333, (616) 795-9585

TRC has been making great charges for a long time. This one, according to their handout, features:

Discharges single cells and computes mAh capacity!

Large, easy to read, LCD shows input voltage, output voltage, and mAh of cells

Input protected against input power reversals!

Low input voltage indicator!

Beeper lets you know when slow charging has begun!

Adjustable and regulated output from 0 to 5 Amps!

Ultra sensitive end of charge detector!

One year warranty on parts and labor!

The TRC IMPULSE 4A is compact and extremely efficient. When charging 14 cells, the efficiency is an amazing 90%. It handles all battery packs from one to eighteen cells and any mAh rating. There is very little heating of cells due to the super sensitive zero rate end of charge detector.

* * * * *



Dave Grife, of Coldwater, MI showed a beautiful 27% Extra 300 powered by an Astro Flight Geared 90. It weighs only 13 pounds, much less

than the glow counterparts sitting all around it. Most of the show's spectators didn't realize that it was an electric, until it was pointed out to them! Please note the extra special pilot that Dave has installed! WOW! Giant scale e-power



has arrived. Keith Shaw also showed his now famous Bearcat. For pictures of the Bearcat, see earlier issues of this year's *Ampeer*.

I'm sure that many of you recognize Dave's famous pilot!

Foreign Correspondence...

from the April '97 Issue of *Watts Current*
the newsletter of the Westmoreland Electric Soaring Society
Editor: Doug Ward e-mail at: DWard79207@aol.com

After having had a near brush with a major model mishap, Bob Jacquot, WESS's own resident member who is at home in Germany sends in the following report DW:

"Some time ago I mentioned that I was planning on replacing the Astro 25G in the Schneider 60E with a brushless motor. In Bernard Cnwley's article in the August issue of MAN he noted that they are quite efficient at partial throttle settings, give longer flight times, and have much more power, not to mention being practically maintenance-free. That intrigued me.

Without knowing exactly where to start, I thought I would pose a set of questions to the two major manufacturers of these types of motors concerning their recommendations for two of my planes, the Schneider and the Fleet.

Tom Cimato, of MaxCim, replied immediately with the detailed output of a computer analysis program, E-Calc, which contained all the comparative performance characteristics of their motors and the Astros I have been using. There was no response to my query from Brand X perhaps they don't need the business!

(I am sure they do. I'm not sure what happened, and why they didn't respond. I've found them to be extremely responsive to modeler's needs and requests. They also have a virtual motor tester on their site where you can try out their motors with various cell counts, props and gear ratios. km)

A lengthy e-mail correspondence with Tom Cimato followed where he showed remarkable patience with the many questions that I had. This was an indication to me that he was committed to servicing his customers. Subsequently, I ordered the Max 15-13Y motor with the 2.5:1 gearbox and the 35-21 controller for 7-21 cells with BEC, the same

equipment that the E-Calc program suggested. Within a few days, a neat package showed up in my mailbox and upon opening it, I was struck by how, with obvious TLC, this beautifully machined motor, controller and motor mount were so carefully nested in fitted foam rubber.

Since the Astro 25G had been previously mounted in the Schneider, I set about to remove it, and to fabricate a new firewall for the Max 15. A jig that gave me the location of the prop boss and shaft made finding the exact location for the motor mount a snap. In short, the entire installation was a piece of cake.

To test the system on my bench with my setup was easy. It performed just like downtown. However, upon installation in the airplane, my range checks were not what I thought they should be. All I had done was to substitute the brushless motor for the brush type. I contacted Mr. Cimato about this and he immediately jumped on the problem, identifying a possible problem related to our European frequencies while explaining that range checks on 72 MHz in the US had yielded better range check results than those of an analog system as confirmed by Bernard Cawley's article. Eventually, we determined that my Graupner receiver had an intermittent response to noise and that by adding an opto-coupler (furnished by MaxCim) to isolate the controller from the receiver, the result was a large range boost. A replacement receiver solved the problem entirely.

The controller itself is micro-processor based and, as such, needs no adjustment for idle or top end as does an analog controller. The transmitter is switched on first with the throttle in "off," and the trim lever centered; then the receiver and controller are switched on. The microprocessor reads the position of the throttle and trim and sets itself accordingly. Back trim is braking action. It works!

Flight tests: I ordered another motor and controller to put in the Fleet and installed it in January. Because of the horrible weather we were having here, I wasn't able to make any flight tests until late in February.

The day was cold and windy, but I wanted to see how these motors performed. I made preliminary range tests with excellent results and then proceeded to fly both the Schneider and the Fleet. Without making definitive performance tests (it was too cold), I noted remarkably greater power with these motors and I was getting at least a 25% increase in flight time from the batteries.

The bottom line is that I am quite pleased with this motor and it's performance and very much impressed with Tom Cimato's dedication to serving his customers. I can't remember EVER having received this type of personal help from any firm with which I've done business in the past.

As you might suspect, I recommend this motor highly. I cannot make a comparison with Brand X because my initial

contact as a potential customer was overlooked or ignored. The Max 15 is a great product and I'm perfectly satisfied with it."

(Thanks, Bob. As usual, your correspondence helps to define the purpose of this newsletter.-DW)

(Thanks Bob and Doug. I want it clearly understood that this letter was published IN PRAISE of Mr. Cimato. As I said earlier in my note, I have always found Brand-X extremely responsive to modellers. It is my personal belief that this was an isolated case, so please be sure to contact all of the folks you wish to get info from, at least a couple of times. If you use e-mail and the system drops a packet somewhere, well, your message is gone. But, in praise of Mr. Cimato - Way to go Tom! :-) km)

Tale of Two Models - the Sequel

by Lynn Heffern
via Peak Charge

the newsletter of the Silent Electric Flyers of San Diego
edited by: Steve Belknap: e-mail at LetIfly@aol.com

In my previous article, "A Tale of Two Models", I discussed a pair of Great Planes Sportster models, .20 size. One, excellently made by John Hood, was successful, with a few problems. The other plane, made by the author, crashed on the first flight due to over weight, under prop. and lack of pilot skill.

John's 20 is still around. He finds that it flies much better with a pack of 1000 mAh cells than a pack of 1400 mAh cells. This adds credibility to the theory that an Astro 25 and 16 cells is on the margin of too much weight for the 20 size Sportster to carry well. It does fly pretty fast, and still lands extremely fast. I believe that this model would fly very well with a geared Astro 15 and 12 to 14 (1000 mAh) cells.

I decided that the best alternative to fly the Astro 25 Geared motor I had was to go up one size in planes. I purchased a Great Planes 40 sized Super Sportster kit and built it per plans. I even used a gas motor mount for the motor. No changes were really required to convert it other than motor/battery ventilation and velcro to attach the motor battery.

In an effort to reduce weight significantly, I cut out a lot of wood from the tail feathers and a bit from the fuselage. I also reduced the shear web weight by putting them between the spars instead of gluing them to the trailing edge as directed by the plans. *(That is where they belong anyway! km)* I used plastic Nyrods instead of the steel ones supplied and shortened them by moving the servos way back in the fuselage. I saved all the wood I cut out in a paper lunch bag and weighed it up when the plane was complete. Counting

the weight of the bag 1 only saved 2.6 ounces. This was minuscule compared to the 6 lb. 2 oz. weight of the finished product, and greatly weakened the assemblies effected. I feel a better place to save weight would be to hand select the wood for the wing spars and the sheeting for the "D" box on the leading edge. I added a generous air scoop on the nose and exhausted the air through a hole in the canopy covered by a reversed scoop. I located the receiver battery and two servos aft of the wing two bulkheads to aid in balancing the plane. The receiver was one station aft of the wing. The motor battery pack was mounted over the wing just forward of the aileron servo. No additional weight was required to balance the plane fore and aft. *(And NONE should ever be added to an electric model. With that Ni-Cad balast, it can be moved to balance any model. km)*

The finished plane, ready to fly with an Astro 25 geared moron 16 cell pack of 1700 mAh Sanyo batteries and three full sized servos weighs 6 lb. 2 oz. That's just 2 oz. over the max. weight called for in the kit. The plane flies well, does not exhibit the problems experienced with the 20 sized version and has survived 6 flights to date. In the hands of Steve Belknap or Steve Nue it flies excellently. When I fly it I still have bit of a learning curve to overcome, but I trust the plane to fly well if I do my part. I consider this trust an extremely important characteristic in any plane. I OY

Bob Boucher's comments on propellers used on the first model were right on target. Using an 11X9 Master Airscrew Electric prop, the motor turns 7,500 rpm for a top speed of 64 miles per hour (calculated). The plane climbs at a satisfactory rate and will zoom around doing aerobatics for 4 minutes, longer if I just cruise. Wring loading (550 sq inches/95 oz) is a hefty 25.7 oz., so the plane still must be flown fairly fast and landed a little faster than normal. It has bent the landing gear back about 1 inch on two occasions due to rapid landings and rutted runways. This may have been aggravated by the fact that I extended the landing gear 1 inch to provide ground clearance for the prop.

For those who like to play with specs., the plane produces 109.7 watts per pound of input power. That is, (19.2 volts x 35 amps = 672 watts total)/ 98 ounces total weight. Per Bob Benjamin's comments, a plane requires around 50 watts per pound of input power to take off and fly, and about 60 watts per pound to perform basic aerobatics and 70 watts for advanced aerobatics. These figures give an idea of the planes performance potential.

From research on the internet I have found several others who have built the same plane and equipped it with an Astro 40 direct drive and 18 to 20 SCRC cells. They report similar results and flight times.

In closing I will say this plane is exciting to fly, and a
(cont. on last page)

Mid-America Electric Flies

AMA Sanctioned

(New Location - See Below & Map on Back)

Saturday, July 12 & Sunday, July 13 , 1997

Hosted by the:

Ann Arbor Falcons and Electric Flyers Only

New Site Provided by the:

Midwest R/C Society

your Contest Directors are:

Ken Myers phone (810) 669-8124 or
102575.3410@ compuserve.com

Keith Shaw (313) 973-6309

Flying both days is at the **NEW LOCATION**, the Midwest R/C Society Flying Field - 5 Mile Rd., Northville Twp., MI * * * * * (see map next page)

Registration: 8:30 A.M. both days

Flying from 9 A.M. to 5 P.M.

Gold Stickered Transmitters are REQUIRED!

All 50 frequencies will be used

Saturday's Events

All Up - Last Down
Longest Timed Flight
Best Scale (must fly)
Most Beautiful
Best Multi-motor
Best Sport Plane
CD's Choice

Sunday's Events

All Up - Last Down
Longest Timed Flight
Best Scale (must fly)
Most Beautiful
Best Mini-Electric
Best Biplane
CD's Choice

Refreshments will be available at the field both days.

There will be a pot-luck picnic at the field on Saturday evening.

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

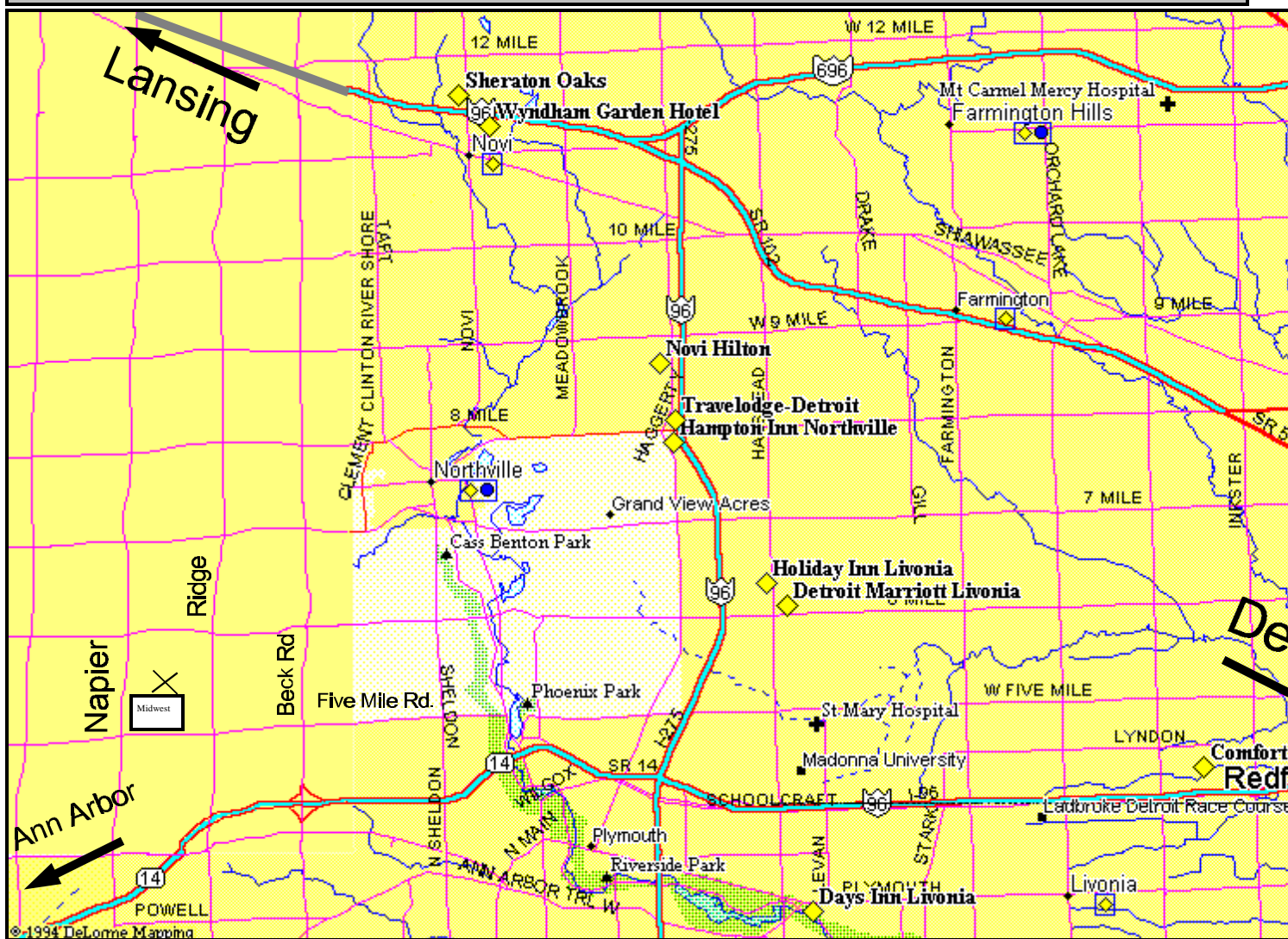
Even though this is called a contest, the purpose is fun and the enjoyment of sharing the electric experience.

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

Saturday's & Sunday's Awards:

Plaques for 1st in each category

Merchandise drawing for ALL entrants



**Mid-America Flies
Hotel List
1997**

Rates are believed to be per night on the weekend for 2, and were the best information I could get on 11/10/96.

Novi Hilton
21111 Haggerty Rd.
236 rooms
800-445-8667
810-349-4000
\$79

Sheraton Oaks
27000 Sheraton Dr.
206 rooms
810-348-5000
\$75 - \$85

Wyndham Garden Hotel
42100 Crescent Blvd.
152 rooms
800-222-4200
810-344-8800
\$64 - \$74

Hampton Inn Northville
20600 Haggerty Rd.
125 rooms
800-426-7866
313-462-1119
\$76

Travelodge Detroit
21100 Haggerty Rd.
124 rooms
800-578-7878
810-349-7400
\$55

Days Inn Livonia
36655 Plymouth Rd.
72 rooms
800-325-2525
313-427-1300
\$41

Detroit Marriott Livonia
17100 Laural Park Dr. N.
227 rooms
800-228-9290
313-462-3100
\$72 - \$79

Holiday Inn Livonia
17123 Laural Park Dr. N.
225 rooms
800-465-4329
313-464-1300
\$85

Comfort Inn Livonia
29235 Buckingham Ave.
112 rooms
800-221-2222
313-458-7111
\$65 - \$95

Hotel Baronette
27790 Novi Rd.
149 rooms
810-349-7800
\$79

To locate the Midwest R/C Society flying field, site of the 1997 Mid-America Electric Flies, look on the far left side of the map, where X marks the spot near Five Mile Road and Napier. The field entrance is off of Five Mile Road. M-14 can be entered and exited via Beck Road.

Upcoming Events:

June 28 ONLY NCRCC 10th Annual Electric Fly, NCRCC's Ortolani Field, Ellington, CT, CD Ron Torrito, (860) 528-2227 or e-mail 102127.1060@compuserve.com

June 28/29 - Knights of the Air R/C Club, Springfield, Illinois, Tim McDonough, 127 S. Oaklane Road, Springfield, Illinois 62707 (Email: tpm@inw.net)

June 28/29 - Kingston Radio Control Modellers, Electric Fun-Fly, Martin Irvine (613) 389-9457

July 12/13 - Mid-America Electric Flies, Ann Arbor Falcons/EFO, location, Midwest R/C Society Field, 5 Mi. Rd, Northville Twp, MI Ken Myers/Keith Shaw

Aug. 2 - 5 - AMA Headquarters, Muncie, IN Doug Ward, R.D. #1, Box 189, Irwin, PA 15642 (412) 446-5891 DWard79207@aol.com

Aug. 16/17 Halton Hills, George Ball Memorial Electric Fun Fly, Ont. Geoff Miller (905) 454-5198

September 6 & 7 Rhode Island Quahog Electric Fly, Don Bousquet (401) 780-7437 or Tom Hunt (526) 981-0372

September 20 & 21 Queen City Airport, Allentown, PA: KRC - setup on the 19th. For more info e-mail Anthony Assetto at 102723.2566@compuserve.com

October 4 & 5 11th Annual DEAF Fly-In, Dallas R/C Club Field in Seagoville Greg Judy (817) 468-0962 email 75267.224@compuserve.com

A Tale of Two Planes - cont. from page 7

successful, easy electric conversion to build, but definitely not a beginner's plane. Pilots used to flying low and mid wing planes will enjoy it.

Looking for Canard Info

e-mail at: ippo@infotronica.com

Ciao Ken,

My name is Filippo, I'm writing from Milano, Italy. The question is: do you know where to find plans for electric canards and for electric tailless?

I've already tried to fly a canard, designed by AutoCad (something like this ...), and it flew well, but finally that bird found a rock, and ...

I have some experience with standard airplanes (12 built, 3 of which designed by me), so I'm not afraid in construction job.

I thank you very much in advance

Regards,

Filippo

Can anyone help? If you don't have access to e-mail, you could send me the info and I'd forward it. km



The Ampeer
Ken Myers
1911 Bradshaw Ct.
Walled Lake, MI 48390

**Next Meeting: Thursday, July 3, 1997,
Time: 7:30 or ASAP**

**The Rushton Road Flying field, South Lyon, MI
Located between 9 Mi. & 8 Mi. , east side of
Rushton Rd.**