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**The Next Meeting:
Thursday, Jan. 4, 1996
Dublin Community Center, Union Lake Rd.
Union Lake, MI - Everyone Welcome!**

Ampeer

From the: **ELECTRIC MODEL FLYER**
September 1995 comes -
A MINIATURE HIGH RATE SPEED CONTROLLER
by Keith Walker
the EMF is edited by Rod Campbell,
34 Hopkins Ct., Mississauga, Ont, Canada
L5A 2V1
Keith Walker can be reached at 18 Welsford
Gardens, #313, Don Mills, Ont, Canada
M3A 2P5

I have finally found the time to document the high rate speed controller that I promised to you all about a year ago. I hope the results will make up for the long wait.

I have designed this one in two halves. The power MOSFETs are mounted on a separate printed circuit board. This is so that you can use this controller for anything from a speed 400 to a twelve cell, 30 amp motor just by plugging it onto the correct FET board.

The FET board can be wired directly to the motor brush-holders with heavy wire. This will eliminate the resistance of a pair of connectors and long power wires, and will

keep the FETs in a ventilated area in the plane.

I have used the same controller for both an Astro 05 and an AP 29 motor. I leave the FET boards on the motors, and move the rest of the controller from plane to plane.

Construction is very straight foreword. You can make a printed circuit board from the pattern here using a photographic method. If you don't have the equipment to do this, you can mark the hole centres on a piece of copper clad board, and hand paint the circuit as I described in previous construction articles.

If you prefer, you can wire one up on prototype P.C. board that has holes all over it, on 0.1" centres, and a copper pad on each hole. Just use the circuit board pattern as a wiring guide and wire the components together using their own leads. Use a bit of insulation on the wires where they are very close together.

Test the finished circuit using a 12 volt lamp bulb, or a motor with no propeller on it. The two adjustments are interactive, but with a little patience, they can be set to correct settings.

What's in this issue?

High Rate Controller by Walker - Get Speed 400 supplies - Vagas Event - New event proposal - 1/4 scale Mystery Ship - Bob Aberle on the NATs & NEAC - New from ModelAir-Tech - Lofty Pursuits Speed 400 controller - MaxCim Brushless Motors - **The LAST PAGE FIRST**

Start with both potentiometers set to the centre of their travel.

Set the transmitter throttle stick to the middle of its range. Adjust VR2 to give about half throttle. If the range is too large or small for the throw of the throttle stick, move VR1 a little one way, and re-set VR2 to half throttle at mid stick setting. If the range changes in the wrong direction, move VR1 in the opposite direction, and try again. After a few times, the range will be where you prefer it. Just make sure that the motor will turn completely off at the lowest throttle setting, and is fully on at the highest setting.

I hope you have fun with this project, and that you enjoy flying with the results of your labours. Good flying, Keith

Speed 400 Batteries

Scott Chapman of Midwest, Wyoming, is a "glider guider" who has a great interest in Speed 400 motors and battery packs for them. He owns a hobby shop in that area, and will be specializing in Speed 400 motors, kits, battery packs and more. He has 6 cell, 600 mAh packs available now for \$24.95. You can reach him at 1-800-359-0233 between 10 A.M. and 4 P.M. Rocy Mountain Time.

From the:

Las Vegas Radio Control Club
 2500 Teddy Drive #2
 Las Vegas, Nevada 89102
 (702) 876-4718
 (702) 252-3614 fax

On February 24 and 25, 1996, LVRC will be hosting the third annual WATTS HAPPENING electric fly-in at the TOC flying site in Las Vegas, Nevada. There will be a seminar Saturday night at Sam's Town Hotel and Gambling Hall featuring several well known electric modelers and manufacturers. We will have free tables at the flying site for manufacturers and a tailgate swap meet. We have the flying site and location for the west's largest electric flying meet and that is our goal.

We would like to extend a personal invitation for you to come to the meet and fly and show off your stuff. (I sure wish - some day - some day! km)

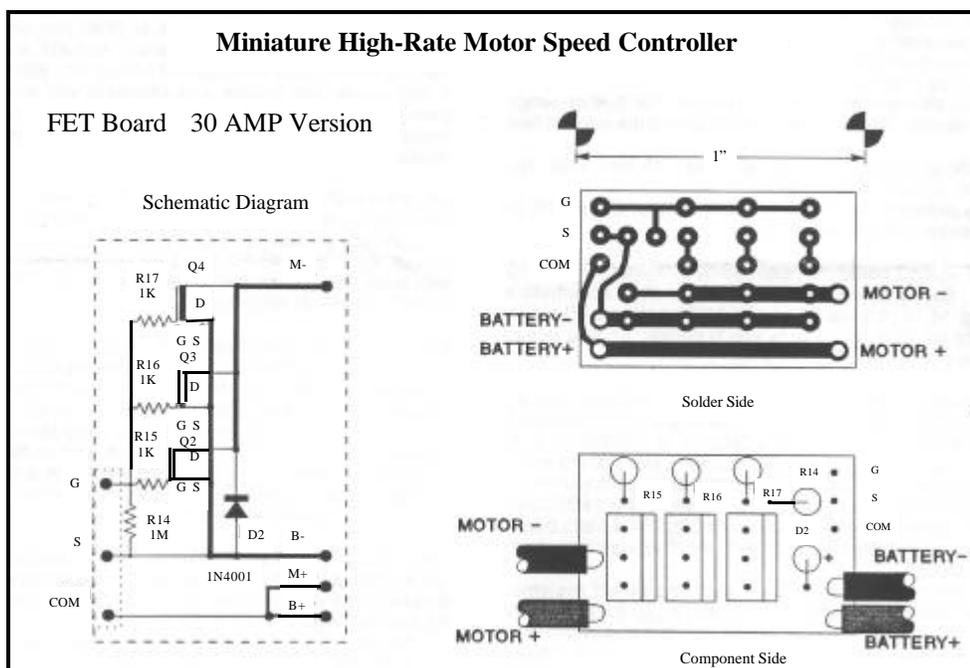
There will be some fun type competition but mostly there will be open flying for the electric models. We want the event to be low key, where the modelers can come to share and fly, yet still see the latest equipment and supplies available.

We look forward to seeing you in February.

PARTS LIST

All resistors are 1/10th watt. Capacitors C1 thru C5 are 6 Volt working (or higher)

R1,R12	100 K OHM	C1,C3,C4	0.1 uF
R2,R4,R5,R6,R8,R9	10 K OHM	C2	2.2 uF
R3	220 K OHM	C5	10 uF
R7	4.7 K OHM	C6	0.01 uF 25VWkg.
R10	22 K OHM		
R11,R13,R15,R16		D1	1N4148
R17	1 K OHM	D2,D3	1N4001 (1A, 50V)
R14	1 M OHM	Q1	2N3906
VR1,VR2	25 K OHM	Q2,Q3,Q4	IRFZ 40 (or equiv.)



Sincerely,
 Dick Corby, Contest Director
 Dave Jones
 Fred Reese
 Eric Shults

A Proposal for a Battery Weight Class of Electrics
by Martin Irvine

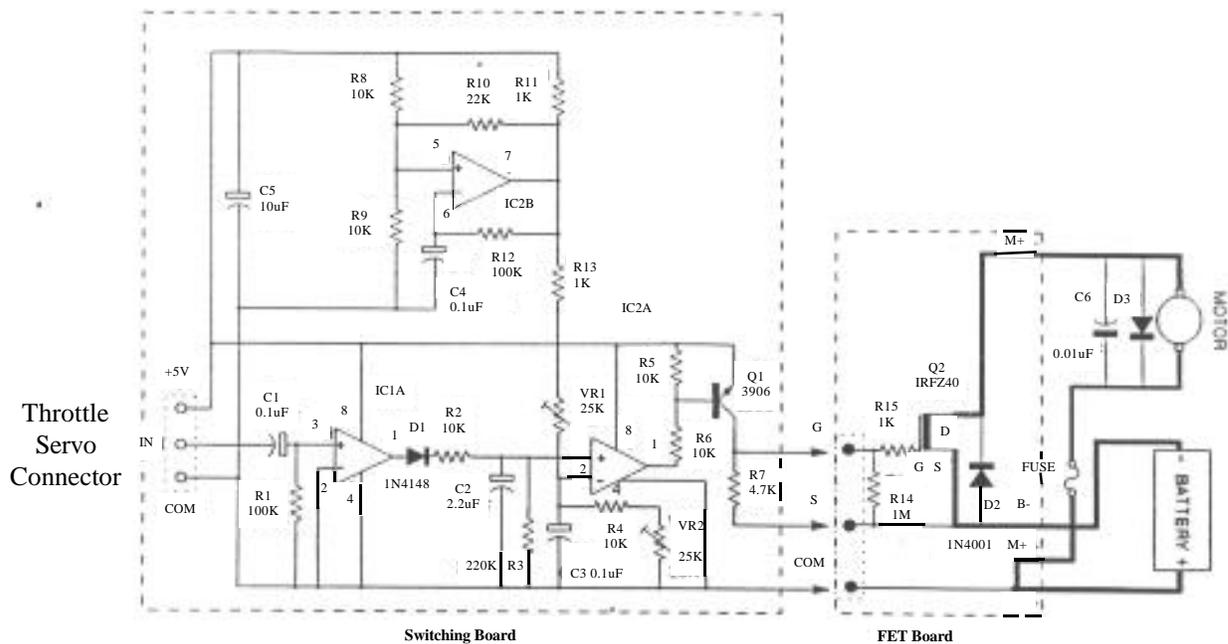
1331 Rockwood Dr.
 Kingston, Ont K7P 2M8
 Canada
 (413) 389-9457

Dear Ken:

This is an update on the 370 gm Battery Scale article in the last EMFSO newsletter, (which I believe you get). I have gotten enough feedback on the original set of rules to (cont. on page 4)

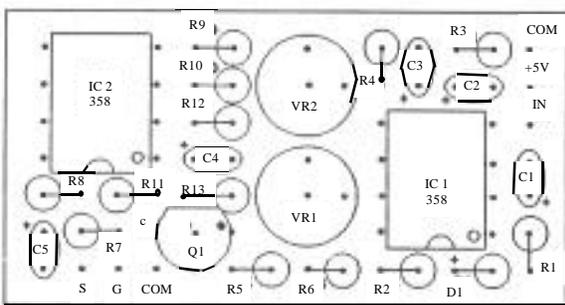
Miniature High-Rate Motor Speed Controller

Schematic Diagram

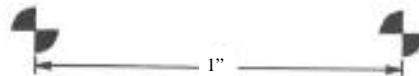
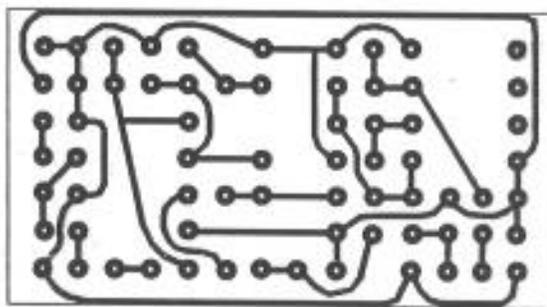


Switching Board

Component Side

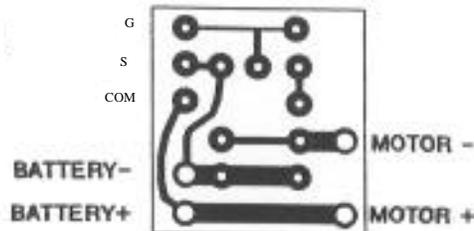
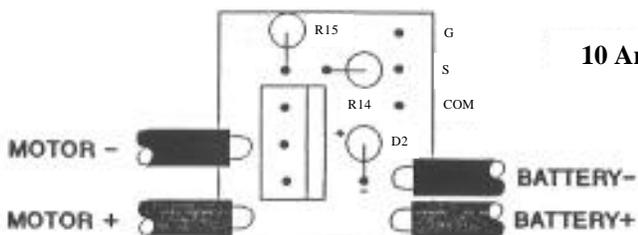


Foil Side



FET Board

10 Amp Version



encourage me to modify the proposal slightly, and send it out to other newsletter editors. I am planning to have such an event at the 2nd Annual Kingston Electric Fly on the 29th and 30th of June 1996.

Blue skies,
Martin

In the last issue of the EMFSO newsletter I proposed a 370 gram battery weight scale contest for electric models

based on the spirit of the SAM 1/2A Texaco Scale event. To this end, equipment had to be inexpensive and easily available and the models suitable for every day flying in a reasonable variety of conditions, not just dead calm.

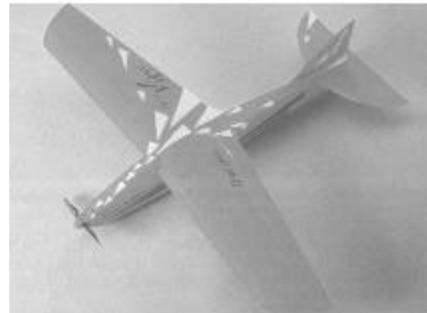
The 370 gram weight limit on battery packs had been chosen to maximize the power options available, and allowing us to take advantage of future battery technology
(cont. on page 5)

“Watts Happening 1996”

Las Vegas Third Annual Electric Radio Control Fly-In.

Presented by
Las Vegas Radio Control Club

February 24 & 25 1996



Venue: -

TOC Site - Sam Boyd Stadium,
Boulder Highway and Russel Road,
Las Vegas, Nevada

**S p e c i a l p r i z e f o r s m a l l e s t
f l y i n g R / C m o d e l .**

Open flying most of the time with a few special events - lots of awards and prizes.

Hotel Closest to flying Site:-

Sam's Town Hotel & Gambling Hall, 5111 Boulder Highway, Las Vegas.

Reservations: 1-800-634-6371 or 1-702-456-7777

Symposium:-

**Saturday February 24, 7:30 - 11 P.M. at Sam's Town
Hotel and Gambling Hall - entry \$10 per person.**

Raffle Drawing:-

**To be held Sunday February 23
at the flying site.**

**First prize - electric R/C aircraft
Other prizes to be announced at the contest.
Raffle tickets \$1.00 each or 6 for \$5.00.**

For Information or pre-
registration packet contact:
Dick Corby (702) 870-9522
or
Fred Reese (702) 876-4718

**Entry Fee
\$10.00
Per Day**

Tailgate Swap Shop - Bring your stuff to buy, sell or swap.

improvements, rather than tying people to any one pack. (For example, SAM rules for Texaco require the use of a 7x800AR pack. This was chosen as it was the best available at the time of the original rules, but now it is a dated cell, the performance of which is exceeded by several other cells.)

The 370 gram weight did allow a choice between 7x1400SCRs or 6x1700SCRCs, but to build a 370 gm 7x1400 pack requires careful construction with minimal solder and strapping and almost no wire or heatshrink. Not everyone can do this and many would prefer a commercially built pack. As availability and cost are more important than maintaining maximum power options, I propose the weight permitted be increased to 400 gm so that the commercial packs be allowable. This will probably mean that most fliers will go with 7x1700SCRCs, but the option for other cell combinations remains.

Powered gliders remain ineligible, as with the increased wing loading they might have too great an advantage.

The minimum wing loadings are up 1 and 2 oz. for several reasons. The first is that 10 oz./sq.ft., while achievable is going to take more careful construction and result in a more fragile model than many people want. Look at the construction required and the airframe weights achieved by the SAM fliers, (FM Dec. 92). Second is that at this size wing, 12 oz./sq.ft., these planes are going to be floaters anyway. Thirdly, we don't want them limited to calm days

The following is a set of provisional rules for 1996:

1. 400 gram Ni-Cd battery pack, (approximate 14 oz.) , (to include all straps, heatshrink, wiring and connectors), - removable for a weight check if necessary.
2. Must have radio control of motor shutdown and a fuse in the power circuit. (This is a MAAC rule.)
3. No folding props.
4. Must ROG, (Rise off Ground), (CDs can permit hand launch only if ground surface is impossible).
5. Documentation (for outline only) from either published 3-views, or published plans.
6. Powered gliders are not permitted.
7. Minimum wing loading of 12 oz /sq.ft. for monoplane, 9 oz./sq.ft. for multiwings.
8. Scale changes to be made minimal. Flat bottom wings permissible for all, undercamber only if the original had it.
9. 3 official flights - best two count -- 15 minute target time. Seconds above or below 15 minutes are "penalty points" - lowest point total win. To prevent pilots "planting" airplanes just to stop the clock, a model must be flyable immediately after landing, broken props excepted.

Control of the motor and the fuse are just safety features (and the fuse is a MAAC rule).

No folding prop keeps the cost down and evens things out a little bit for radial engine subjects.

ROG requires a respectable power loading and eliminates the advantage of retracted gear. Retracts are permitted.

With the 15 minute target flight, seconds above or below 15 minutes would accumulate. For example a 15 minute 32 second flight would score 32 points, (32 seconds above 15 minutes), while a 14 minute, 22 second flight would score 38 points, (38 seconds below 15 minutes). This might keep the planes a little lower where they could be better appreciated and ties would be unlikely. As it is, a 15 minute flight shouldn't be too hard to do and this choice would make "regular" flying as important as thermal flying.

Any airplane, from any time period is OK . With the 6 and 7 cell packs, car motors and chargers will work fine but probably all will work better with higher ratio, (3.0:1 or more), gearboxes. You try this event with a basic motor/gearbox combination and standard packs. Leisure makes a "Texaco" motor combination that may be very competitive.

OK, there is the proposal. Any thoughts? It still needs a name that is better than "400 gm Battery Scale".

Right now there are not a lot of commercial kits or plans available that would be good candidates, but there are some. For example, the American Eaglet from Spirit of Yesteryear would be a good possibility - lots of wing area and a proven flier. The Great Planes Cub is another, although it is a little small and not very scale. If you want to scratch build, there is Jim Zarembski's 1941 Taylorcraft (RCM July 84). This has a 62.5" wing span, 550 sq.in. area and weighs about 45 oz., (12 oz./sq.ft.). I have a plan of Steve Gray's 65" Pilatus Porter that looks promising, (520 sq.in., 48 oz.). All of these will also work well with lower gear ratios as well, which means you could fly with more power day to day and only use the high gear ratio for a contest.

Remember you are likely to have at least 24 oz. of equipment, (motor, gearbox, battery and radio). An airframe of 24 oz. will allow you up to 4 sq.ft. (12 oz./sq.ft.). That is going to convert to a 60" airplane if it is a typical light aircraft - quite large. A little smaller may be better for breezy weather.

From Ken: I like this idea. It sounds like a lot of fun, a new challenge and fun to watch if you aren't participating. Scale is always appreciated by most people involved with model aviation.

1/4 Scale Mystery Ship

I received a nice note and the pictures of Dave Grife's great new project along with his Season's Greetings. "Here's a little update on my latest excess! 1/4 scale Travel Air Mystery Ship:

Span: 87"
 Prop: 22x14
 Wheels: 6"
 Area: 1300 sq.in.
 Weight: 18 lbs.

Motor: geared 90 on 36 cells

The plane was a semi-kit by Fred Reese. The fuselage is fiberglass and the flying surfaces are scratch built from plans. Two flights on it so far. Summer of '96 should be FUN."



Beautifully detailed dummy engine on Dave's 1/4 scale!



Some Thoughts from:

BOB ABERLE

33 FALCON DRIVE
 HAUPPAUGE, NY 11788-1204
 November 28, 1995

The following is from a letter to Mr. Frank Korman, 9354 Forest Hills, Dallas, TX 75238 - Editor of the DEAF newsletter. It is a personal letter from Bob, and is not connected with ModelAir-Tech and is presented here for your information and input.

I feel there are two problems to address at the moment and with a certain amount of urgency. The first is the conduct of the 1996 Electric NATS, to be held (as I understand) during the last weekend in July at the Muncie facility. The second involves the position of NEAC President or Director, to fill the vacancy created when Larry Sribnick recently decided to step down. Please feel free to circulate this letter or re-print it as you like with my complete permission.

1996 ELECTRIC NATS

Let me address the 1996 Electric NATS which I have been led to believe will be conducted over a three day period

of Friday, Saturday and Sunday, as it was in June of 1995. I think an overall Contest Director should be appointed and that person might well be an AMA Official, like Steve Kaluf, the AMA Competition Director or an AMA volunteer. Each of the individual events would then have an assigned Event Director (ED).

I'd like to see the fun flying again on Friday, with everyone welcome to fly any electric powered model they like. During that same day I'd like to see up to three "unofficial" proposed events staged as a trial run to determine future suitability. No prizes need be awarded for these events, other than possibly a

certificate of accomplishment The three proposed events are as follows:

- (1) **SPEED 400 Pylon Racing** --- limited to SPEED -400 power and 7 cells using a simple race course.
- (2) **Class 1/2A Electric Sailplane** - limited to SPEED-400 motors on 7 cells with 2 minute motor runs and three 8 minute max flights with spot landings.
- (3)- **1/2 A Electric Texaco** (old timer style) - again limited to SPEED -400 motors on 7 cells, but with the capacity limited in this case to 500 mAh.

These "unofficial" events could be run on a "no interference" basis with the regular Friday fun flying. Detailed rules for all three events would be published and circulated early in the year (like by February, 1996). Suggestions for Event Directors would be as follows: **Tom Hunt** for Pylon Racing and Bob Aberle for the Class 1/2A Electric Sailplane and 1/2A Electric Texaco. The event directors will prepare the rules, give the pilots briefing and conduct the events.

On Saturday and Sunday I believe we should have a repeat of last year with Class-A Electric Sailplane & Old Timer being on Saturday and Class-B electric Sailplane & Old timer on Sunday. Event Directors should be selected for each of the four events. My suggestion would be to assign

randomly people like **Tom Hunt, Bob Aberle, Paul Perret** and **Bills Jenkins** to these four spots. Each would coordinate rules, give the pilots briefing and conduct the event. The ED will also be allowed to fly in the event. Keep in mind these names are just suggestions to start the concept moving.

Now we get down to the specific rules for the 1996 season. Let me hit on some ideas and comments, pertaining to all four endurance events, in no particular order of importance:

- (1)- Three rounds only for each event, with no fourth or throw away round.
- (2) Three 8 minute precision max flights per event (no 10 or 12 minute flights!) In line with normal AMA rules! (The AMA has indicated that they would like their basic published rules to remain unchanged: So three 8 minute max flights will keep them happy!)
- (3) Spot landing circle to be 30 feet, using 15 feet radius check cord. Bonus points of 25 to be awarded for getting in and staying in the prescribed circle. If you lose any part of your model, even a broken prop blade, you forfeit your spot landing points for that round.
- (4) No equalizing of the scores on a computer system. All scoring should be raw in the sense that everything can be logically added up, point wise. (e.g. 8 minutes X 60 = 480 points plus 25 points for spot landing = 505 points total for a round!)
- (5)- Use whoever you want as a timer, but recognize that contest officials will be spot checking timers. If any disparity arises the official's watch counts.
- (6) Timer must call a mandatory control check prior to each and every launch ---- LEFT, RIGHT, UP, DOWN and motor burp. Failure to do this disqualifies the pilot from that particular round — a zero!
- (7)- During flight the only out of bounds areas will be the pit and parking areas. The idea here is to use as much of the flying field as is possible: A prescribed landing area will be established, usually within the cut grass area: Landing outside of such boundaries will result in a zero round.
- (8)- Each day the Pilot's Meeting will start at 9:00 A.M. As soon as this meeting is over, flying will begin and continue up until 4:00 P.M. Contest official flights may be made at anytime during the day. Flying round by round, event by event has been a major beef
- (9) The pre-contest safety check should be discarded. Each contestant shall be given a model questionnaire sheet which he may fill out voluntarily. This is for a model data bank to be used for any resulting contest report in the model press. Again this should be strictly voluntary!
- (10)- Registration fees ---- I'm not sure what can be done about this, but clearly the \$20.00 per event charged in 1995

was considered quite high by most entrants, especially when you are on fixed income and fly in all four events. Let's explore a reduction in these fees with the AMA

(11) Some modelers objected last year to manufacturers literature being handed out with the registration material. I have to admit "guilty" on that score. Let's decide a ground rule on this ahead of time. We either all do it or we all don't do it at all! I have also been asked by several hobby suppliers if they could attend and sell their merchandise, as is done at the KRC Electric Fly. Will the AMA allow that on their facility? Do they charge a fee? Do we want to encourage this at all?

Some of these comments and suggestions may not sit too well with some people. The majority of the people I talked with thought the 1995 NATS was a little too rigid in procedures for their personal liking. Hopefully some compromises can be made.

NEAC ORGANIZATION

I don't think there is any doubt that the NEAC organization resulted last year from the efforts of one Mr. Larry Sribnick. Larry put in a tremendous amount of effort and he also made the Electric NATS something to be proud of. At the time, Larry indicated that he only wanted to stay with the leadership role until things got going. He has always been sensitive about his industry involvement and only wanted to get things rolling. Well he did and we have much to thank Larry.

But now the baton must be passed on to a new NEAC leader to carry the ball in 1996. This role is important because it will provide the necessary communication link back to all of the major electric clubs throughout the country. Keeping NEAC information on one of the national computer networks is important for our continued growth. It will also assure that electric competitions, such as the "NATS", are coordinated in such a way as to encourage more and more people to participate.

The second in command of NEAC at the moment, if I'm not mistaken, is our good friend, Ben Mathews from Metairie, LA. I could think of no one better for the job. Unfortunately, there is a possibility that Ben might not accept the job, but he should be approached. Another possibility is Ken Myers the AMPEER Newsletter Editor, from the Michigan area. Ken attended the 1995 Electric NATS exclusively to help out as best he could. His efforts were well appreciated by all who attended. Those would be my suggestions.

I would like to hope that a NEAC successor is in place by year end and that 1996 Electric NATS details (dates, events and rules) be released no later than the end of February (1996), like just prior to the big WRAM Show in New York. It is also very important that we keep the AMA

apprised of what's going on. These are my thoughts
Sincerely,
Bob Aberle
AMA 215

New from ModelAir-Tech

P.O. Box 12033
Hauppauge, N.Y. 11788-0818
Phone: 516-979-1475
December 4, 1995

I couldn't figure out why all of a sudden I started getting orders for our little LOWWATT plans. Then one of the orders included a copy of a page from your AMPEER newsletter (November issue), which contained partly a write up on my book and an entire account and sketch of the LOWWATT. The very first thing I have to say is thanks for all that coverage and believe me people do read your newsletter. *(It is always a pleasure to spread the word about good e-products. km)*

You will find some new catalog information and a new part for your H-1000 belt drive. Our 1996 H-1000 MK-II belt drive now has molded-in beam mounting ears. Many requested this feature so we modified our dies. If the application doesn't dictate, you can simply cut them off

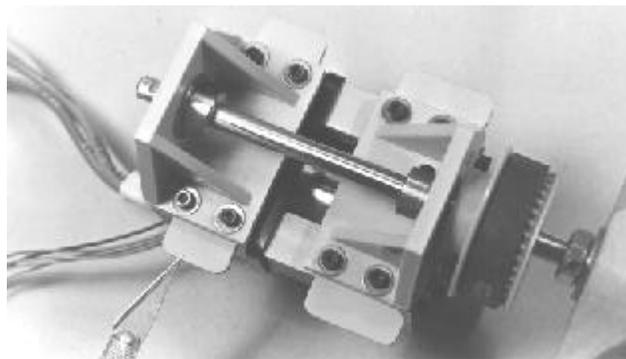
Also new are two electric old timer designs. One is the PLAYBOY SR and the other the Foote WESTENER. I'm going to be flying the PLAYBOY and Tom the WESTENER next season. In October I drove down to visit Ben Mathews and fly in his Gulf States meets. I did well with the DEFIANT getting 4th place out of 17 with only a few points off a max possible score. Naturally I was beaten by George Parks, Paul Perret and by Bill Jenkins during the last 5 minutes of the contest. Our 1/6 scale Top Flite Piper Cub, with an H-1000/ SPEED 700 motor, at 8 3/4 pounds, won first in the Electric Sport Scale event, edging out Kirk Massey's 1/4 scale Nosen Cub. Too bad I couldn't have fit our own Nosen Cub in the little Honda, that would have been some show.

We are also going to get into the kit business very shortly. The first will be the LOWWATT, with the sticks and plans inserted into a mailing tube. Right on the tails of that will be the next in our "STICK SERIES" a smaller version of our MEGAWATT, which Tom has called the "DIMWATT". I have enclosed a set of plans for this little "T" tailed gem. Jay Putt, SEFLI founder, is building the prototype for demo at the WRAM Show, where we will have a booth. *(The plans for the LOWWATT & DIMWATT went home with EFO members at the Christmas party, and hopefully we'll see them at the field this year. Thanks for the plans. - km)*

Our MEGAWATT is Tom's answer for a design to compete with Andy Clancy's big new LAZY BEE. At 1300

square inches it is big. In fact the plans will show an 80 inch span wing as an alternative, in case you would like to fly in the IMAA "Big Bird" events. Tom designed this model in one day. Framed it in a second day, covered it on a third and flew it on the fourth day. It flies like an electric powered parachute, but still can do just about every maneuver in the books. It would also make an excellent glider tow plane.

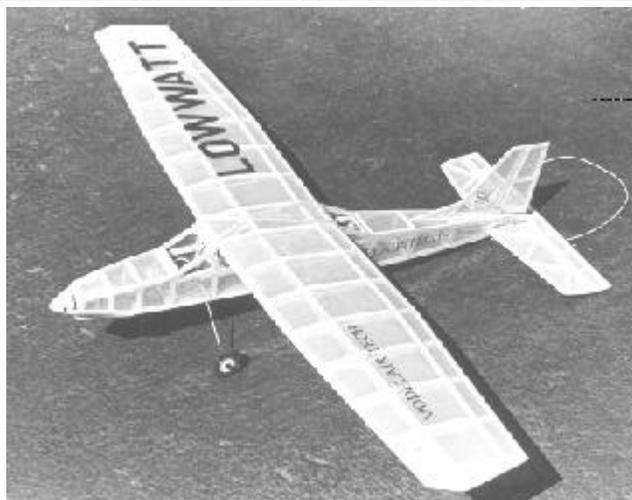
Finally we have established a new "electric conversion" section at our plans service. Overlay plans have been made up to show how to convert many of the popular glow powered kits and ARF's, to electric power. We will be offering a choice of these plans free with the purchase of each H-1000 belt drive unit.



ModelAir-Tech H-1000 MK-II model with standard 1/4-inch diameter prop shaft. Note the newly added molded in beam mounting ears.



Tom Hunt, chief designer of MODELAIR-TECH, with his new ultra-large sport electric model called the MEGAWATT - 7.5 pounds total weight with an H-1000 belt drive and an inexpensive DeWalt drill motor. Full kit to be available in 1996.



MODELAIR-TECH's new "Stick Series" concept sports this little "LOWWATT" design. Built completely from 1/8 x 1/4 balsa sticks, without the need for wing ribs or formers. Speed 400 power, total flying weight is 16 ounces. Full kits available in 1996.

The new Spring '96 catalog, which is devoted exclusively to electric flight, is offered FREE of charge, but an addressed business envelope with two stamps is requested. They have full FAX facilities on their regular phone line. Tom Hunt may also be reached through America-On-Line. His address is: THunt95147@aol.com.

The kit conversions mentioned before, any one of which is available free with the purchase of the H-1000 are: Midwest BF-109, Altech Marketing's PILATUS PORTER, Sig's KADET SENIOR, Air Flair's SUNDANCER-40, Clancy Aviation's BIG LAZY BEE, ACE R/C's CLOUD-DANCER 40, and soon the Midwest CITABRIA.

Speed 400 Controller

Doug Ingraham of Lofty Pursuits Inc., 2274 Aster Court, Rapid City, SD 57702-5103 - phone (605) 343-8760 - has a little electric motor speed controller that weighs just 0.6 ounces. It can handle 6 - 10 cells at up to 10-12 amps. It also has a BEC which eliminates the need for a separate receiver battery pack. Price range is around \$50. It is a high rate type controller with a microprocessor that enables soft starts, or prevents starting if the throttle isn't at the idle position. Should you lose your R/C signal during flight, the motor is automatically shut down. This a perfect little controller for the Speed 400.

(Just a quick plug for Doug's home state, which many of you know I dealy love. If you've never been, get to South Dakota as soon as possible. It is a wonderful place to explore and visit. Look up Doug while you are visiting Mount Rushmore. What a place!)

For Sale

from: Ron Brandenburg
P.O. Box 4417
Union City, NJ 07087
(201) 866-8770

All items are new in the box:
Astro Flight Cobalt 25 w/gearbox \$105
Kyosho Soarus II electric glider ARF w/aileron \$90
Stream Schneider Sport 60 electric \$80
Please contact Ron for further information or details.

From MaxCim

Tom Cimato
Brushless DC Motors and Electronic Speed Controls
57 Hawthorne Drive
Orchard Park, NY 14127-1958
Tel/Fax: (716) 662-5651
CompuServe 76331,3712

We have on hand, for immediate delivery, the most efficient electric drives now available (and they are all American made). Brushless motors afford you with the pleasure of just plugging in your batteries and flying. You no longer have to break-in brushes, adjust pots, clean up dust or replace brushes. This is trouble free, no maintenance electric power.

You will see from the information, that comes with our motors, speed controllers and gearboxes, you can achieve significant thrust and efficiency. The data is actual measured performance taken on our torque reaction dyno.

The **Maxµ30-16** controller features a microprocessor for effortless installation with no set-up or adjustment required. The jumper selectable BEC (battery eliminator circuitry) offers you an advantage in reducing airborne weight. We have included a feature which protects your aircraft investment by having a separate BEC wire input, allowing you to power the receiver safely from the battery side of the motor power fuse.

Our gearbox is available in 2 ratios, 2.5:1 recommended for our "Y" winding (1457 rpm/volt) up to 20 cells, and 3:1 recommended for our "D" winding (2520 rpm/volt) up to 14 cells. Other ratios are available to match your prop and cell count, please inquire for specific recommendations.

We have enjoyed flights lasting 10-14 minutes with our 5.3 lb. Astro Porterfield Collegiate turning a Master Mrscrew 12 x 8 Electric Series prop over 6000 rpm on 14 cells. Dr. Colin McKinley of Winston-Salem flying his 1000 in.² Powerhouse old timer reports better climb and longer motor runs than with his geared AF 25.

We offer a complete drive system ready to mount, and

plug in. May we have your order?

Upcoming Events:

Sincerely,
Tom Cimato
President

Jan. 6 & 7 Flying Circuits, Inc - Fort Wayne, IN RC Swap Meet at the Allen County War Memorial Coliseum - Robert Parker (Meet Coordinator) (219) 483-6144

For more information contact Tom via FAX, PHONE or CompuServe. He is very active on ModelNet, the modelling forum on CompuServe.

Jan. 14 DAM R/C Swap Meet, Livonia, MI 19801 Farmington Rd., between 7 & 8 mile, 10 - 3; \$3 at the door - shop 'til you drop.

Thanks Debbie and Jim

What a wonderful party! Debbie and Jim McNeely are to be especially thanked for their wonder hospitality for our annual holiday party. We all had a wonderful time and watching Oshkosh "95" on a huge screen with surround-sound was fantastic. You folks are the greatest!



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

The LAST PAGE FIRST

I just wanted to let you know, that with the electronic version of the Ampeer, this address area will be used for any special notes - like this one. This issue will be officially known as the "first" electronic version, January 1996. This issue is indexed so that you may read the articles in your preferred order. To access the index, click the second button from the left in the button row. To return to the "full" view, just click the first button on the left in the button row. Enjoy.

**Next Meeting:
Thursday, Jan. 4 - 7:30**