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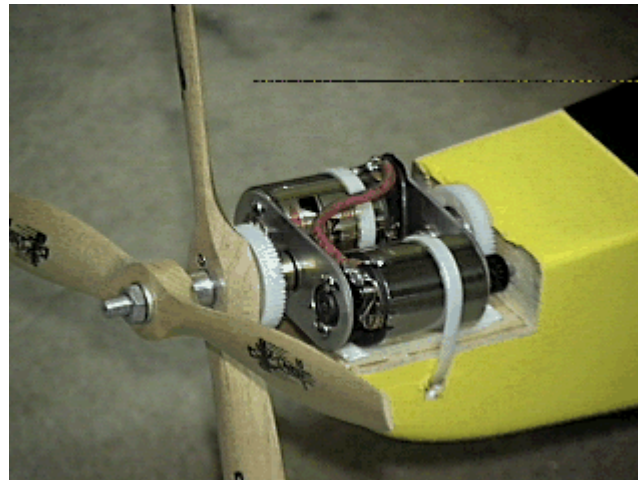
**The Next Meeting:**  
**Date: Thursday, November 7, 1996**  
**Room 1, Dublin Elem. School, just N. of the village of Union Lake on Union Lake Road - 7:30 P.M.**

**Phil's New Dual Motor Drive**  
from Phil Thayer  
103473.26@compuserve.com

Ken,

Super job on your homepage! Must keep you busy. Liked the Snappys (?) of Keiths new plane, can't wait to see it on Sat! Attached is my dual prop drive, counter rotate AP29's on 8 cells. Draws 25 amps. Flies 3 lb plane with ease while making a very strange but cool sound!

Phil



**More Gear-Drive News-Modelair-Tech MGB-50 ARRIVES!!!**

Modelair-Tech announces the release of a new, small, electric model powerplant... the MGB-50 is made up of the M-50 (a "400" sized) DC electric motor and GB-50, 2.14:1 gearbox. The M-50 motor is rated at 50 watts of output, and can be

**What's in this issue?**

**Dual Contra Rotating Drive - New Speed 400 geared - Thoughts on ModelCad - Heli Challenge Revisited - the EFO Oct. meeting - Good E-Flight Hobby Shop in Canada - Get Hold of NEAC - TigerKitten Power - 1997 E-Nats - Items for Sale - New Products and Safety Warning via Charge Ahead**

Ampeer

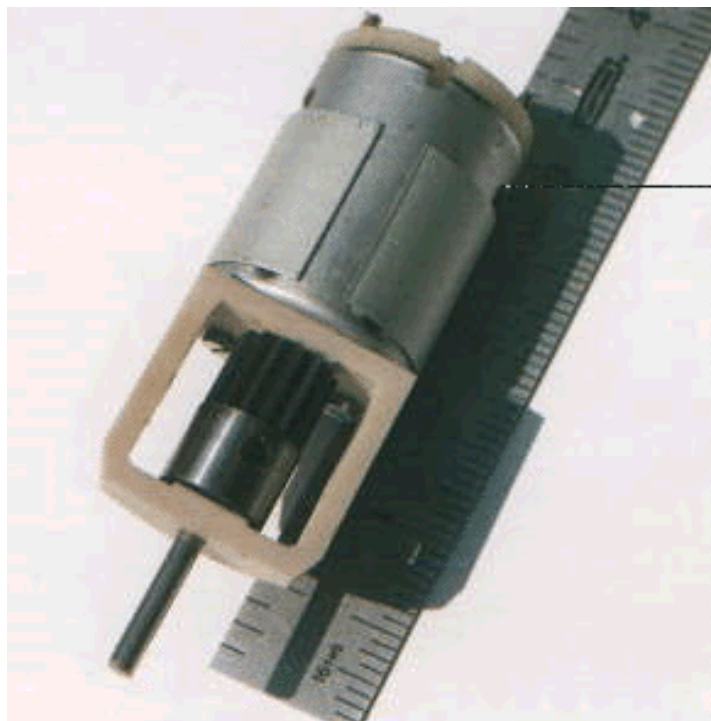
run on 7-10 cells. The gearbox is of conventional spur and pinion design and both gears are made of steel. The gearbox case and shaft

support is of tough, injection molded nylon. The combo is capable of flying 200-300 sq.in. sport models, 288-400 sq.in. powered sailplane or old timer models, and 350-600 sq.in. multi-motored models. The high voltage nature of the M-50 motor makes this a very good motor for small model endurance flights, or where larger more efficient propellers are desired. The matching GB-50 gearbox, is smooth running and able to absorb more power than delivered by the M-50 motor. Gearbox output shafts (1/8" steel) are simply set screwed into place, allowing easy replacement in the event of damage in a crash. The gearbox can be moved to another "400" type motor after the useful life of the M-50 has been reached.

The unit comes stock without motor mounts or a prop adapter. 1/8" (3.2mm) output shaft prop adapters and clam shell type motor mounts are available through most hobby stores. The MGB-50 is sold for \$24.95. Up to 3 motor/gearboxes can be shipped for \$3.00, after that, please remit \$5.00 for S&H. It is planned to sell motors and gearboxes separately at a later date.

**A NOTE FROM KEN:** Please get hold of the data sheet. THIS IS THE WAY ALL DATA SHEETS SHOULD BE. ALL SIZES AND THE ESSENTIAL MOTOR DATA!!! I am impressed with this much information available to us. I wish all others would follow suit! Great job TOM and BOB. You can get the data sheet from ModelAir-Tech or I've a pretty good copy of it on the EFO Website at <http://members.gnn.com/KenMyers/homepage.htm>

ModelAir-Tech  
P.O. Box 12033  
Hauppauge, NY 11788-0818  
Phone: 516-979-1475  
e-mail [THunt95147@aol.com](mailto:THunt95147@aol.com)



### Thoughts on ModelCad

Lex Davidson

[ldavidson@hrc.govt.nz](mailto:ldavidson@hrc.govt.nz)

Dear Ken,

Thank you for putting my request for information on the Robbe 400/20 motor into AMPEER. I got a response (before I had found my rough note had been published) from Australia.

I noted your comments in the October issue about ModelCad. I think all the CAD programmes have a steep learning curve, particularly if the user has not had any drafting training. I hadn't, and some of the concepts took a while to grasp. Version one of ModelCad came out in the late 80's (I think), anyway a while before Windows was in general use. I got my copy soon after they started to advertise and before any reviews were written. One particular review in a very notable mag was incredulous. The reviewer endorsed the product but had obviously not had any previous CAD experience and missed some of the best features. Among these is/was the ability of ModelCad's print programme. It supported many printers. Even with a grotty old 9 pin dot matrix you could print good full size plans. I keep an old wide carriage printer (under the bed) just for this job. It also ran acceptably on low capacity machines. When an upgrade came out (Windows time now) with a "Parallel" command I moved up. Faxed off to SBC with a request for the "fastest" version-- so they sent the DOS version. They must have thought I wanted an urgent upgrade as they sent it airmail!! \$99 for the software and a

big box and \$90 for the postage! Naturally that was at a time when our \$ was weak (at least on Mastercard conversion rate).

Frankly the upgrade to Version3 for DOS was a bit disappointing. I had thought the "Parallel" command would let me put wing skins on airfoil sections. It didn't. It did draw some huge interesting curves when I tried though. I sent a fax off to SBC with these and two other problems and got a very prompt response. "Sorry" 2 out of 3 were known bugs. The third was new and unique to my installation. Amongst the known was the "parallel" problem.

OK there are a couple of negatives but many more positives and for the \$ I would certainly recommend the product and the company support.

Now the good news. I have just tried the latest Windows version and it is neat. A friend in the local model industry (Airsail International) was to put together a plan for a 1/4 scale version of there very successful 60" Auster--- so they bought ModelCad on the basis of the adverts (i.e. it was for drawing models). After a bit of frustration (a lot, remember that learning curve) he gave me a ring. So I got to have a play with the Windows version.--Do I wish I had brought that! It is terrific, a bit slower to load and zoom but just so much easier/ convenient and so many more features (eg. better import/export). It can import airfoils from **Plotfoil** files. The sample I have sent you includes a whole table of data from Excel. I couldn't do that with the DOS version (Actually I never tried and I'm not going to now). SBC have a good reputation for support. ModelCad users here would have direct imported and got their support from other users or SBC-- but there is now a local agent. They don't even know how to change and display a line type!!

Hopefully you will have received with this ModelCad file(s) of my **EG 400 OD**. This was my learning exercise for Windows ModelCad. The Fuse, tailplane and Wing outline/ rib spacing were done on the DOS version then put into Ken's Windows version for the flash bits. The original was (naturally) built from a "brown paper" drawing and flew straight off the proverbial. MK11 will have a shortened nose and I will try a V tail. Very pleased with the result so far.

There aren't any airfoil sections on the plan as I plot these direct from **Plotfoil**. This software is free from a number of sites, comes with a Windows front end and is very easy to get going. Hundred of sections including RG's S and SD's. The airfoil section files are all plain text. As new one scome up it is easy to type up the coordinates. Neat and free.

The Robbe 400/20 with gear box is strange. The shaft speed is/was around 30,000RPM. I don't see how a wee can motor will stay in form at these speeds (yet the new Robbe 400 Fan motors are at 47,000rpm no load). My RPM are dropping and it isn't the battery!!

I have also attached the Excel spreadsheet with the data printed in the ModelCad plan. This is a collection of bits from various magazines and while crude gives a reasonable indication of whether or not there will be enough grunt for the purpose.

Final bit -- Why do you guys want to fly 400 pylon on a 2 pylon course? (*We didn't at the electric Nats. We used the standard triangular course. Thanks for sharing your thoughts. I liked ModelCad and it worked for me for years. I love Ashlar's DrawingBoard. Either will let you design for others. km*)

**ModelCad**, \$99.95, available from ViaGrafix Corp., One American Way, Pryor, OK 74361-8801  
918-825-4844

<http://www.viagrafix.com>

(You can get it MUCH cheaper if you buy directly from them at Toledo, or I would guess any other trade show.)

**Ashlar DrawingBoard**, \$169.00, available from MCE Software, 801 Pine St., Seattle, WA 98101  
800-392-3046

<http://www.mcesoft.com/software>

#### Help on LeCrate

Sender: nspag@aol.com

Subject: Davey - Le Crate

Ken,

Thanks for the help with Don Belfort. I've written him and hopefully we can connect. Do you have any idea about locating plans or a kit of the Le Crate by Davey? Any help would be appreciated.

Thanks again.

Nick

*If you can help Nick out, but don't have e-mail available, please drop me a line and I'll pass the info on to Nick.*

#### Helicopter Challenge Revisited

Sender: mmckinne@learn.senecac.on.ca

from: MARTYN MCKINNEY

Subject: Helicopter Challenge

Ken:

Just a note to update you on my helicopter challenge.

During the the past 6 months I have received a number of enquiries from interested parties.

Two of the most interesting were from Wolfgang Nitschmann, the author of the original article in the Ampeer and Norbert Gruentjens, the president of Ikarus, the company that makes the ECO helicopter.

On August 17, 1996 in Schramberg Germany there was a

helicopter meet and both Mr. Nitschmann and Mr. Gruentjens E-Mailed me to inform me that there had been a flight of 63 minutes with an electric helicopter.

My reponse was to ask them for more technical information so that I could write a magazine article for one of the U.S. hobby magazines but so far neither has responded.

As of this date no one has made any claim to the prize.

I wanted to notify you of a change in my E-mail address which I would be grateful if you would modify as the send-to address for anyone wishing to contact me from your web page.

I have recently tried to send myself an E-mail letter from your web page without success.

Thanks again,  
Martyn McKinney

*The e-mail address at the head of this letter is the updated address.*

### The October EFO Meeting

I started the meeting with a bit of bad news. Long time EFO member, and good friend, **Gus Wiklund** had passed away. Gus had been very active in our club, building our frequency board, helping in every capacity at the EFO/Falcon's Mid-America Flies for almost 10 years, and helping to try and locate a "home field" for the EFO. I will miss him terribly.

I also have the responsibility of seeing that his very good R/C items are put to good use. Please see the info and price sheet in this issue. Prices include postage in the U.S. and Canada. Elsewhere in the world, we'll have to work it out, if you are interested.

I then discussed the initial flights of Keith's Bearcat. I love this plane. I also discussed how nice and powerfully the Zlin performed with the Astro brushless prototype. Way cool.

An order has been placed with **Pat March**, of Skonk Works, for electric round the pole/pylon equipment, plans, kits and motors. We will hopefully have the equipment put together by the November meeting and I'll distribute the plans, kits and motors, so that maybe we can have our first flights in January. (The December meeting will be at the **McNeely's** new home. Thanks Debbie and Jim! - more on that in the next issue.)

**Richard Utkan** showed his "plastic" P-38 that he picked up at swap shop. It seems to have been designed for electric, but appears "heavy". He also showed off his Fast Eddie, which I had build about 10 years ago. Great to see it up and flying again! Thanks Richard.

I then presented the following information on how to select a prop for a model R/C aircraft. The information and worksheets are printed here. By following the examples, you'll easily see step one in powering your model, how to pick the prop. That's right, pick the prop first and then match the power system to the required prop.

Please note that the following data applies to typical R/C aircraft; ie stand-off scale, sport, aerobatic and trainers. They also apply to multi-motor aircraft, with appropriate divisions. Other prop and power system calculations are required for "special purpose" projects and are not covered here, but the following covers more than 80% of what the "typical" sport flying R/C pilot flies. **Please note that I did not say electric R/C flier!**

### EFO Meeting - 10/3/96

#### Starting at the BEGINNING (read that FRONT)

$$\text{Area} = \pi * r^2$$

#### Minimum Prop Diameter

$$150 \text{ ounces per square foot of prop disk area} \\ 150/144 \text{ sq.in. (1 sq.ft.)} = \text{model weight} / (\pi * \text{prop radius}^2) \\ \text{to find a constant to make the math easier} \\ (144/150) * \pi = 0.3055775 \\ (0.3055775 \text{ is the } 150 \text{ oz./sq.ft. constant}) \\ \text{then} \\ \text{prop radius}$$

$$= \text{square root of (model weight * 0.3055775)}$$

**Example:** 50 ounce model

$$\text{prop radius} = \text{square root of (50 * 0.305575)}$$

$$50 * 0.305575 = 15.278874$$

$$\text{square root of } 15.278874 = 3.9088201$$

$$\text{diameter} = 2 * 3.9088201 = 7.8176402$$

#### A Better Prop Diameter is:

$$100 \text{ ounces per square foot of disk area} \\ 100/144 \text{ sq.in. (1 sq.ft.)} = \text{model weight} / (\pi * \text{prop radius}^2) \\ 144/100 * \pi = 0.4583662 \\ (\text{this is the } 100 \text{ oz./sq.ft. constant})$$

**Example:** 50 ounce model

$$\text{radius} = \text{square root of (50 * 0.4583662)}$$

$$\text{radius} = \text{square root of } 22.918311$$

$$\text{radius} = 4.78733073$$

$$\text{diameter} = 2 * 4.78733073 = 9.5746147$$

Try these examples:

**Example 1:** (ElectriCUB)

48 oz. model (480 sq.in. <3.33 sq.ft> of wing area at 14.4 oz./sq.ft wing loading - *Yeah, right!*)

Remember that diameter at 150 oz./sq.ft:  
 = (square root of (model weight \* 0.3055775)) \* 2

150 oz./sq.ft of prop area, diameter = \_\_\_\_\_

Remember that diameter at 100 oz./sq.ft.  
 =(square root of (50 \* 0.4583662)) \* 2

100 oz./sq.ft. of prop area, diameter = \_\_\_\_\_

**Example 2:** (Senior Skyvolt)

80 oz. model (576 sq.in. <4 sq.ft> of wing area at 20 oz./sq.ft. wing loading)

150 oz./sq.ft of prop area, diameter = \_\_\_\_\_

100 oz./sq.ft. of prop area, diameter = \_\_\_\_\_

**Example 3:** (Rocket)

16 oz. model (144 sq.in. <1 sq.ft.> of wing area at 16 oz./sq. wing loading)

150 oz./sq.ft of prop area, diameter = \_\_\_\_\_

100 oz./sq.ft. of prop area, diameter = \_\_\_\_\_

*Answers on page 7*

**Finding the Pitch of the Prop**

To figure the pitch of the prop, the stall speed of the aircraft is needed. The types of aircraft under discussion fall into the "normal" range, therefore the stall speed is equal to about 3.7 times the square root of the wing loading in ounces per square foot.

**Example 1:**

48 oz. model (480 sq.in. <3.33 sq.ft> of wing area at 14.4 oz./sq.ft wing loading) (ElectricUB)

**Step 1:** 480 sq.in. of wing area / 144 (number of sq.in. in a sq.ft.) = 3.3333333 sq.ft of wing area

**Step 2:** 48 ounces / 3.3333333 sq.ft of wing area = 14.4 ounces / square foot

**Step 3:** square root of 14.4 = 3.7947332

**Step 4:** 3.7 times 3.7947332 = 14.040513 mph

According to *Keith Shaw*, "In order to just do a nice inside loop, the plane must enter at twice the stall speed. To do clean inside loops, rolls, and other sport-type aerobatics, three times stall speed is needed. Anything over 4 times the stall speed gives 'fighter-type' performance and extended vertical aerobatics."

ElectricUB speeds:

2 \* Stall speed = 28 mph    3 \* Stall speed = 42 mph

4 \* Stall speed = 56 mph

**Example 2:**

80 oz. model (576 sq.in. <4 sq.ft> of wing area at 20 oz./sq.ft. wing loading) (Senior Skyvolt)

Remember that

stall speed = 3.7 \* square root of the wing loading

Stall Speed = \_\_\_\_\_ mph

2 \* Stall = \_\_\_\_\_    3 \* Stall = \_\_\_\_\_

4 \* Stall = \_\_\_\_\_

**Example 3:**

16 oz. model (144 sq.in. <1 sq.ft.> of wing area at 16 oz./sq. wing loading) (Rocket)

Stall Speed = \_\_\_\_\_ mph

2 \* Stall = \_\_\_\_\_    3 \* Stall = \_\_\_\_\_

4 \* Stall = \_\_\_\_\_

*Answers on page 7*

The easiest method for finding miles per hour of a model is **mph = pitch \* rpm in thousands**. Although simplistic, it is good enough for this purpose.

**RPM = (mph / pitch) \* 1000**

Make a Pitch Chart

**Example 1:**

48 oz. model (480 sq.in. <3.33 sq.ft> of wing area at 14.4 oz./sq.ft wing loading) (ElectricUB)

For twice the Stall speed and a 4 pitch of this example it is 28 / 4 = 7 \* 1000 = 7,000 RPM

**Required RPM for 14 oz./sq.ft. model**

	2*Stall(28)	3*Stall(42)	4*Stall(56)
Pitch	RPM	RPM	RPM
4	7,000	10,500	14,000
5	5,600	8,400	11,200
6	4,667	7,000	9,333
8	3,500	5,250	7,000
9	3,111	4,667	6,222
10	2,800	4,200	5,600

**Example 2:**

80 oz. model (576 sq.in. <4 sq.ft> of wing area at 20 oz./sq.ft. wing loading) (Senior Skyvolt)

**Required RPM for 20 oz./sq.ft. model**

	2*Stall(33)	3*Stall(50)	4*Stall(66)
Pitch	RPM	RPM	RPM
4	8,250	12,500	16,500
5			
6			
7			
8			
9			
10			

**Example 3:**

16 oz. model (144 sq.in. <1 sq.ft.> of wing area at 16 oz./sq. wing loading) (Rocket)

**Required RPM for 20 oz./sq.ft. model**

	2*Stall(30)	3*Stall(44)	4*Stall(59)
Pitch	RPM	RPM	RPM
4			
5			
6			
7			
8			
9			
10			

Next month we'll look at the power required to "run" these props at the RPMs suggested.

**Looking for a Canadian Hobby Shop that Knows E-Power?**

Your search could be over. Ray Duczek, long time Ampeer subscriber, owns Ray's Hobby Shop, 356 Mitton S., Sarnia, Ont. You can reach him at (519) 337-0635. It is the only hobby shop in the Sarnia area, and the best part is "he's one of us!" Check him out when in the Sarnia/Port Huron area.

**Need to Get Hold of NEAC?**

The AMA is making it easier for us to get to the head man of any Special Interest Group (SIG). Ours is NEAC, and Doug Ward is now our leader. To find out what is happening or just to contact Doug, you can now write him at:

**Academy of Model Aeronautics**  
**Attn: NEAC (or any other SIG you like)**  
**P.O. Box 3028**  
**Muncie, IN 47302-1028**

This will make transitions to new "leaders" much easier and help to see that all correspondence is sent to the right person. Nice going AMA!!!

**Powering the TigerKitten**

from an e-mail from Thomas Miles

Thomas recently wrote to say the MEC Turbo 10+ is a very potent power system for the ACE TigerKitten. He stated that the designer, Bob Benjamin, has recently done an article for RCM on this combination.

He also stated the Doug Ward had it wrong in that Bob is a consultant for MEC. Bob is a great artist, designer and writer for many magazines. He is also a consultant for many firms.

**The 1997 Electric Nats**

from Doug Ward, NEAC President  
 DWard79207@aol.com

After a long, arduous day at the bargaining table in Muncie, I came away with the best deal I could wangle. There was a choice of three arrangements: 1)Thurs-Fri-Sat-Sun; 2) Fri-Sat-Sun-Mon; 3) Sun-Mon-Tues-Wed. As you can see,I put in for four days and got them all. Only option 3 worked in our favor because there would have been the dreaded frequency sharing on options 1 and 2. I thought this would make an expensive hobby even more so, and by picking option three we are also the last events of the Nats season. We have clear channels and the run of the place. Immediately prior to our arrival will be free flight and Soaring flying simultaneously. I also managed to stay off of the 12-13 of July weekend as you requested, although a preliminary, Muncie-made schedule had us right in there on top of the Mid America Flies.

The dates are: Sunday, August 3 through Wednesday August 6. With the other options I was straddling a weekend as last year, but it seemed to me that if you were going to fly in the Nats, you would be there no matter what the days of the week were. As it turned out, everybody gave a little and got a little. I think we did well.

To contact Doug via the postal service:

Doug Ward  
 R.D. #1, Box 189  
 Irwin, PA 15642

(Thanks for your hard work Doug! km)

**Answers for Worksheet****Prop Diameter****Example 1:** (ElectriCUB)

48 oz. model (480 sq.in. <3.33 sq.ft> of wing area at 14.4 oz./sq.ft wing loading - *Yeah, right!*)

150 oz./sq.ft of prop area, diameter = 7.8176403  
or 8 inches

100 oz./sq.ft. of prop area, diameter = 9.5746144  
or 9.5 inches

**Example 2:** (Senior Skyvolt)

80 oz. model (576 sq.in. <4 sq.ft> of wing area at 20 oz./sq.ft. wing loading)

150 oz./sq.ft of prop area, diameter = 9.8886197  
or 10 inches

100 oz./sq.ft. of prop area, diameter = 12.111036  
or 12 inches

**Example 3:** (Rocket)

16 oz. model (144 sq.in. <1 sq.ft.> of wing area at 16 oz./sq. wing loading)

150 oz./sq.ft of prop area, diameter = 4.4223252  
or 4.5 inches

100 oz./sq.ft. of prop area, diameter = 5.4162198  
or 5.5 inches

**Stall Speed Answers****Example 2:**

80 oz. model (576 sq.in. <4 sq.ft> of wing area at 20 oz./sq.ft. wing loading) (Senior Skyvolt)

Remember that

stall speed =  $3.7 * \text{square root of the wing loading}$

Stall Speed = 16.546903 mph

2 \* Stall = 33    3 \* Stall = 50    4 \* Stall = 66

**Example 3:**

16 oz. model (144 sq.in. <1 sq.ft.> of wing area at 16 oz./sq. wing loading) (Rocket)

Stall Speed = 14.8 mph

2 \* Stall = 30    3 \* Stall = 44    4 \* Stall = 59

**RPM Charts****Example 2:**

80 oz. model (576 sq.in. <4 sq.ft> of wing area at 20 oz./sq.ft. wing loading) (Senior Skyvolt)

**Required RPM for 20 oz./sq.ft. model**

	2*Stall(33)	3*Stall(50)	4*Stall(66)
Pitch	RPM	RPM	RPM
4	8,250	12,500	16,500
5	6,600	10,000	13,200
6	5,500	8,333	11,000
7	4,700	7,150	9,400
8	4,125	6,250	8,250
9	3,666	5,550	7,333
10	3,300	5,000	6,600

**Example 3:**

16 oz. model (144 sq.in. <1 sq.ft.> of wing area at 16 oz./sq. wing loading) (Rocket)

**Required RPM for 20 oz./sq.ft. model**

	2*Stall(30)	3*Stall(44)	4*Stall(59)
Pitch	RPM	RPM	RPM
4	7,500	11,000	14,750
5	6,000	8,800	11,600
6	5,000	7,333	9,830
7	4,300	6,300	8,400
8	3,750	5,500	7,375
9	3,333	4,900	6,555
10	3,000	4,400	5,900

**News From Charge Ahead Newsletter**

edited by Ben Almojuela  
benito.c.almojuela@boeing.com

**Product News and Notes**

by Bernard Cawley, Jr.

The new Hobby Lobby catalog (#28) is out - I just got mine a few days ago. There is an ever-expanding array of E-flight goodies in there, including more gearboxes, more fixed blade and folding props, and what appears to be the complete line of Czech Mega motors. Hobby Lobby continues to be the source for lots of good European electric equipment. Check it out! Contact Hobby Lobby at 5614 Franklin Park Circle, Brentwood, Tennessee 37027, (615) 373-1444. E-mail them at 74164.2423@compuserve.com. They also have a web page at <http://www.hobby-lobby.com> (though it doesn't have any electric airplane info on it - yet).

I was gratified to get the positive responses I've received on my Model Airplane News article (August 1996 issue) on brushless motors. As I said in the article, I am now a believer in the flexibility of application of brushless motors - they really can be put to a huge variety of applications and still outperform the systems we've been using for some time

- it is much like the early days of the Astro Challenger cobalts - a leap in performance (but also in price). By the way, there were two errors in the article that I know of - the photo caption of the two planes has their identities reversed, and the phone number give for MaxCim is incorrect. The right one is listed a little further below.

Neither brushless motor supplier has been resting on their laurels. Like Astro Flight, Aveox and MaxCim are constantly upgrading and expanding their product lines. The latest additions include special motor/gearbox combos for 7 and 10 cell limited motor run events from Aveox (called the F7LMR and F10LMR). They have also just added a longer version of their 1.4 inch diameter motor, the 1415/2Y.

Aveox can be reached at 31324 Via Colinas #103, Westlake Village, California 91362, (818) 597-8915, or e-mail them at 102252.401@compuserve.com. They have quite an extensive web site at <http://www.aveox.com>. Check out their 4 1/2 lb. 5,000 Watt motor/controller made for a Navy RPV helicopter there.

MaxCim has released a second version of their digital brushless controller which is good to 25 cells (up from 21). This expands the upper power limit of their motors to over 1100W (from a 7 1/2 ounce motor). MaxCim Motors may be reached at 57 Hawthorne Drive, Orchard Park, New York. 14127-1958, (716) 662-5651. E-mail Tom Cimato at 76331.3712@compuserve.com.

And, to top off brushless news, Astro Flight showed a prototype of a small brushless motor at Toledo, and just a couple of days ago put out a new newsletter that says this small motor is to be available in small quantities in the fall.

The Astro Flight brushless "020" is smaller and lighter than any motor/control from either Aveox or MaxCim - aiming at about 150W, in a package with a total weight (motor and controller) of less than 4 ounces (and about \$200). Contact Astro Flight at 13311 Beach Avenue, Marina Del Rey, California 90292, (310) 821-6242 or (Watch for the upcoming Astro Flight WEBSITE km)

Speaking of Astro Flight, they recently began shipping the microprocessor-based replacement of the 112PK charger - known as the 112D. This has all the features and flexibility of the 110D (my current charger recommendation) in a package that can charge up to 36 cells. Like the current version of the 110D, it also has a variable rate trickle charge. This just leaves the AC/DC member of the family (the 111D) as "missing in action". Hey, Bob - I'm still looking forward to up to 18 cells on the AC side (I'd settle for 16) - since that would make traveling to meets so much more convenient than hauling a big charging battery into the motel room!

There is a wealth of up-to-the minute info available electronically these days. I've mentioned several suppliers' e-

mail addresses, and some have World Wide Web pages, too.

Several individuals have electric flight related web pages out there and some are chock full of information. Two I've spent more than a little time on are Jim Bourke's "E-Zone", which can be found at <http://world.std.com/~jbourke/ezone.html> and Ken Myers' "The Future is Electric" at <http://members.gnn.com/KenMyers/homepage.htm>. Ken's web site has links to all sorts of electric flight and model airplane resources all over the world. Jim Bourke also moderates an e-mail mailing list called eflight, whose members include all the folks listed above and many more from all over the world, including the editor of Electric Flight International and several folks from Australia. Info about the list can be found at the E-Zone, or drop Jim a note at [jbourke@world.std.com](mailto:jbourke@world.std.com).

### "Don't Do Nothin' Stupid"

by Bernard Cawley, Jr.

Whenever Ben runs a meet, one of his safety rules is "don't do nothin' stupid". Unfortunately I am sometimes guilty of doing stupid things. Here are two recent stories.

Please read and then **DON'T follow my example!**

I am sitting here, two days later, with a painful reminder that not paying attention when going flying can get us as electric flyers at least as easily as the wet power crowd, and that we have a few extra things to be aware of. And I can attest an MEC Turbo 10GT running on only 7 cells can do a good job at trying to remove the tip of one's finger!

Here's the story: I took Schneider and Elf to a meet about an hour's drive from home last weekend. When I got there I realized that I'd brought the wrong transmitter for Elf. But, since it's on the same frequency as the Schneider, and uses the same make of Tx and Rx (Airtronics) I figured that if I was careful with reversing switch settings, I'd be OK. So I proceeded to get ready to fly, checking the flight controls before going up to the flight line.

At the flight line I turned on the radio, put in the arming fuse, and the prop started up at "idle". Since I was running a microprocessor based ESC (Flightec SP) I figured I just needed to reboot the micro (though now as I think of it, the SP has fixed endpoints and range).

Anyway, I left the Tx on, the fuse in, and cycled the Rx switch (short pause at off). When I turned it on again, the motor jumped to full power (you guys saw this coming, right?). Anyway, of course the plane was unrestrained, and I reflexively reached out to restrain it. The worn 12x8 Master Airscrew folder did a number on the tip of my right middle

(cont. on next page)



Dear Ampeer Reader,

Due to the passing of EFO member, Gus Wiklund, and at the request of the family, I am offering the following items for sale. If you are interested in an item or items, please give me a call - 810-669-8124 or e-mail at 102575.3410@compuserve.com as soon as possible.

### Speed Controls:

Astro Flight 207 (I believe) Hydro Racing Control (good for seaplanes) probably never used; \$70

### Kits:

Sig Tri-Star: \$35

Davey Systems Curtiss Robin w/motor: \$25

### Motors:

Leisure LT-50 with gear-drive, unknown ratio: \$15.00

Astro Flight #6615 cobalt 15 direct drive, new in box \$80.00

Astro Flight #6610G FAI geared 15, new in box \$110.00

Astro Flight Geared 05, used \$70

Astro Flight Geared 05, new \$85

### Electrical:

4 pr Astro Flight ZERO-LOSS connectors: \$5.00 per pair

Simpson Model 1227 analog DC ammeter 0-50 amps: \$5.00

AF battery pack, 7 cell 1.0Ah cells, has been used: \$9.00

Astro Flight AC/DC charger for 6/7 cells, older model with timer but like new: \$20.00

### Accessories:

1 pr. Trexler 11G 4.5" wheels: \$9.00

Selector Sealing Iron: \$7.50

Top Flight Monokote Iron, like new: \$10

4 Futaba S-33 servos & a Futaba 270mAh battery pack, as package only: \$40.00

### Nothin' Stupid Cont.

finger as I tried to stop the plane by grabbing the inboard wing. I then reached over with my other hand and threw the throttle stick to full on - which shut the plane down!

My finger - actually, by that time my whole right hand, was pretty bloody - so I was done for the day (I'd flown the Schneider once, sloppily, before this). The walk in clinic I went to (thanks, Ben, for helping me find it) opted not to stitch up my fingertip, but put some "steri-strips" on to hold

the sliced portion in place. It hurt badly enough that I had to resort to some painkillers left over from my daughter's oral surgery to sleep any that night. I also got a tetanus shot out of the deal.

When I got home I was able to repeat the runaway situation (while carefully restraining the Elf's fuselage) with the Schneider's Tx, and also demonstrate correct, expected operation with the Tx I normally use with the Elf.

Obviously I was stupid to have even attempted to fly without checking out, carefully, all the control functions. I simply should've put Elf away when I realized that the second Tx I had with me was for Timothy. So, I'm paying for being stupid and casual about the equipment.

But, I was also puzzled. I've used ESC's since the days of the original Jomar SC-1 and they've all operated the same way relative to a throttle stick's "direction". I know that the MaxCim control is NOT an exception, and so have no reason to have the throttle channel reversed on the Schneider's transmitter. That's why I didn't even check the throttle out before going up to fly.

To solve the mystery, I tested both combinations again. On the Schneider operation is fine and as expected with either transmitter. The Elf works correctly with one but not with the other. In doing the tests, however, I remembered something about that particular Tx-Rx combination I'd forgotten - that Tx (the Championship 7 I use with the Schneider) and that receiver (an Airtronics 4 channel "micro") have never talked to each other correctly on the throttle channel. So it is THAT problem that led directly to the rather loudly stimulated nerve endings on the tip of my right middle finger (which get a bump with each "i" I type).

The moral of the story for all of us is still the same, regardless of the exact cause: Pay attention! Don't take anything for granted when mixing equipment around! Do setups with the prop removed! **Electrics can bite!**

Then there was the time, not that long ago, I was at the Boeing Hawks' field. I had just taxiied out with the Schneider and was turning the airplane around to take off, when the throttle, then the control surfaces, started dancing around. Again I went out to the plane to cycle the power on the radio - thinking I had an AGC problem or something. While I was at it, I looked up and someone else was taxiing down the taxiway to take off after me. For some reason I looked again and noticed that he was flying a channel 24 flag from his antenna. "Hey", I said, "I'm on channel 24!".

Well, we both shut our planes down, and dashed back to the pit area - each of us wondering what one of us had done. How could this have happened?

Those of you who are local or who have come to one of our Fly-Ins know that the Boeing Hawks have a pair of "carousels" hanging over the transmitter impound table, with

an "in use" and "waiting" clip for each channel. You have "possession" of a frequency if your AMA card is in the "in use" clip for that channel. It turns out I had put my card in the clip for channel 25, while my radio was on channel 24.

That's how we both wound up at the flight line on the same frequency!

If I hadn't listened to my plane telling me "don't fly now" I'd have surely brought home a bag of bits!

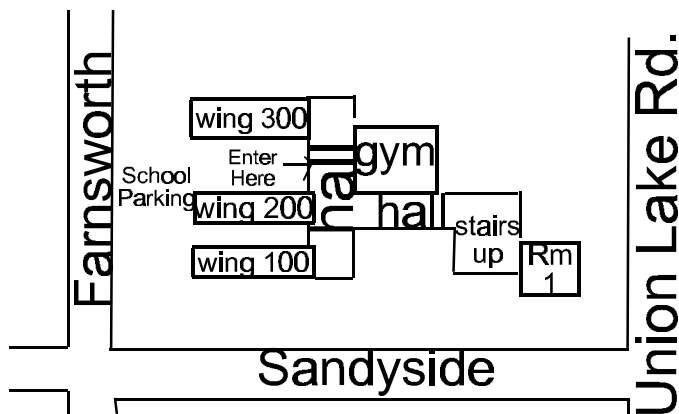
Again, the moral of the story: Pay attention! Details matter.

I sometimes think that the ability to throw a plane like the Elf in my car and just go fly at a nearby meadow has made my flight line procedures and field etiquette very sloppy. We all need to watch out.

(A special thanks goes to Bernard for sharing all of this information with us. It is hard to admit when we've done something not too bright, but by keeping this info foremost in our minds, hopefully others will be spared the pain, or worse. Thanks so much to Ben and Bernard for their fine publication! km)

#### Meeting Map

Dublin Elementary is just a bit north of the Dublin Community Center on Union Lake Road. Parking is off Farnsworth which can be reached by Sandyside.



#### Upcoming Events:

**November 2, 1996** Midwest's Largest R/C Swap Shop, Odeum Sports and Expo Center, Villa Park, IL, 10 - 4, for information call (630) 941-9292

To Reach Ken Myers, you can land mail to the address on the front page. My **E-mail address** is:  
102575.3410@compuserve.com

#### **EFO WEBSITE:**

<http://members.gnn.com/KenMyers/homepage.htm>



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

**Next Meeting: Thursday, November 7  
7:30 - Dublin Elementary School, Room 1  
on Union Lake Rd., just N. of Union Lake**