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**The Next Meeting:
Saturday & Sunday, June 1 & 2
Mid-America Flies
Saline, MI - Everyone Welcome!**

Ampeer

From KAN Kerken Airfield News
Your favorite R/C soaring pages from Germany
Speed 500 & 600 motors
modified by Ken Myers

General information about the SPEED
500 & 600 series

Identify your motor

- Graupner (and others) are using some special terms to identify their motors:
- SPEED 500** length 50 mm (just shy of 2 in.), shaft diameter 3.17 mm (1/8 in.)
- SPEED 600** length 60 mm (about 2 3/8 in.), shaft diameter 3.17 mm (1/8 in.)
- ECO** or **E** low amature cuent
- BB** shaft bearing with ball race(s)
- TURBO** 5 slot armature
- RACE** high speed motor
- COMPETITION** high speed motor, tuned exchangeable brushes, ball race bearings
- EXPERT** for competition and expert use

Speed 500

The SPEED 500 series has two classes. The high performance and high quality group consisting of the motors no. 1740, 3305, 3315 and 3317. The other motors are

the economy group for general purpose use. This group consists of motor no. 1788, 1789, 1799 and 3322.

All motors of the Speed 500 series have a 3-slot armature. Graupner recommends the SPEED 500 motors for sport models with an all up weight of about 1000 - 1250g (35 - 44 oz.), the span shouldn't exceed 1200 mm (47 in.).

Symbols used in the following tables:

- Un nominal voltage (V)
- Ri armature resistance (Ohm)
- Io armature current idle, no load (A)
- Eta = efficiency (%)
- I_Eta = armature current at best efficiency
- n = revolutions / minute n/V = typical motor speed per volt

(continued on the next page)

Thoughts on the S-400 Provisional Classes
from Glen Poole

Hi, do you know where springtime is? Well it is not here in the Midwest. Springtime is the time to fly' and I can't wait -for it to come. I'm sure that you would

What's in this issue?

Speed 500 & 600 Motors - Thoughts on S400 at E-Nats - Cooling Tube (revisited) - Electric Flight Videos - E RTP? - Multi-motor Drive Units - What's Ahead for Charge Ahead? - EFO May Meeting - News from MaxCim - New Batteries? - From Model Airtech - New MI. Meet

SPEED 500 Series Overview

Type	<u>SPEED RX</u>	<u>SPEED</u>		
	<u>540 RB VZ</u>	<u>SPEED 500 E 12V</u>	<u>500 RACE</u>	<u>SPEED 500</u>
Cat.-No.	1740	1788	1789	1799
Un (V)	7.2	12	7.2	7.2
Ri (Ohm)	0.007	1.2	0.075	0.122
Io (A)	1.7	0.4	2	1.5
n/V	2740	1040	2850	2360
Eta (%)	82	67	76	66
I_Eta(A)	14	2	14	9
Weight(g)	170 (6 oz.)	158 (5.6 oz.)	164 (5.75 oz.)	162 (5.7 oz.)

Type	<u>SPEED 500</u>	<u>SPEED 500</u>	<u>SPEED 500</u>	<u>Speed 500</u>
	<u>BB RACE VS</u>	<u>BB Competition</u>	<u>BB Competition</u>	
Cat.-No.	3305	3315	3317	3322
Un (V)	7.2	8.4	8.4	8.4
Ri (Ohm)	0.0064	0.08	0.07	0.16
Io(A)	1.4	1.7	2.7	1.2
n/V	3100	2750	3050	2000
Eta (%)	82	89	87	69
I_Eta(A)	17	13	16	9
Weight (g)	166 (5.85 oz.)	196 (6.9 oz.)	196 (6.9 oz.)	160 (5.65 oz.)

SPEED 600 Series

Type	<u>SPEED 600</u>	<u>SPEED 600</u>	<u>SPEED 600</u>	<u>SPEED 600</u>	<u>SPEED 600</u>
	<u>BB 9.6V</u>	<u>9.6V</u>	<u>BB 7.2V</u>	<u>7.2V</u>	<u>8.4V</u>
Cat.-No.	1780	1786	1787	1793	3301
Ri (Ohm)	0.194	0.265	0.096	0.085	0.125
Io (A)	1.8	1.37	2.8	2.8	2.3
n/V	1584	1979	2638	2526	1890
Eta (%)	66	65	65	67	66
I_Eta(A)	9.4	7	14.5	15.9	12.5
Weight(g)	201 (7 oz.)	198 (7 oz.)	197 (7 oz.)	198 (7 oz.)	220 (7.75 oz.)
Flux-ring	no	no	no	no	yes

Type	<u>SPEED 600 BB</u>	<u>SPEED 600 BB</u>	<u>SPEED 600</u>	<u>SPEED 600 RB</u>
	<u>TURBO 12V</u>	<u>8.4V</u>	<u>ECO 7.2V</u>	<u>TURBO 14.4V</u>
Cat.-No.	3302	3316	3323	6314
Ri(Ohm)	0.285	0.125	0.156	0.44
Io (A)	1.1	1.95	1.5	0.7
n/V	1491	1932	1583	993
Eta (%)	70	69	67	73
I_Eta(A)	6.8	11.5	8.3	4.8
Weight(g)	212	221	221	217
Flux-ring	yes	yes	yes	yes

(cont. on next page)

Poole cont.

agree with me, we need to test fly and catch some THERMALS.

I am looking forward to the provisional events for the Speed 400 motors at the 96 Nats. I have just finished an O.T. for the S-400 Texaco event. It is the SO LONG cabin job from 1940. I used a Graupner 2.33/1 gearbox with a 7.2V motor with a 7cell battery pack (Sanyo AKA blue jackets). The radio is RCD micro receiver and micro servos. Total weight is 26.5 oz. being covered with transparent Monokote.

Also I am building a Mini-Challenger for the S-400 sailplane event. I have built the wing, stab, and rudder, just needing to finish the fuse. I will power the sailplane with a Graupner 4/1 geared 6V motor with 7 cell battery of 600SCR or 600AE depending on the final weight. Again I will cover with transparent Monokote.

I look forward to your ideas or comments on these new provisional events. My firm belief for the Texaco event is to build a little bigger airplane like the SO LONG (360 sq.in.) so you have a lighter wing loading and better performance. The S.A.M. event (Spirit of SAM) is for double size O.T. and they limit the battery weight. This is for double size rubber models and limits your choices. I believe the only limit should be S-400 motors and 7 cell battery packs. 300 sq.in. models are harder to fly especially when the wind picks up. I think the sailplane event is just fine being comparable to the Electroslot event from England, which is where the rules came from.

(picture on next page)

Some Math

How to calculate the motor parameters

There are various ways to calculate the motor parameters. The formulas shown below are close approximations of the actual motor performance.

Motor constant K

$$K = Uk/n$$

Uk (V) and n (rev/min) motor data from data sheet -

Example: 8.4 Volt /16000 rev/min = 0.000525 (data for SPEED 600 BB 8.4V No. 3316)

Note: This is the inverse of n/V which is rpm per volt

Motor series resistance Ri

$$Ri \text{ (Ohm)} = (UkL - nL \times K) / Im$$

UkL (V), nL (rev/min) and Im (A) measured under load conditions - Example: (6.5 Volt - 11600 rev/min x 0.00036)/24.3 Ampere = 0.093 Ohm (data for SPEED 500 BB No. 3315)

Remark: In case you use a reduction gear, multiply prop speed and gear ratio to calculate the motor speed under load!

Motor back EMF Uemk

$$Uemk(V) = nL \times K$$

Example: 11600 rev/min x 0.0003636 = 4.218 Volt (data for SPEED 500 BB No. 3315)

Motor resistor voltage drop Uri

$$Uri(V) = UkL - nL \times K$$

Example: 6.5 Volt - 11600 rev/min x 0.0003636 = 2.282 Volt (data for SPEED 500 BB No. 3315)

Power consumption Pin

$$Pin \text{ (W)} = Uk \times Im$$

Example: Pin = 6.5 Volt x 24.3 Ampere = 157.95 Watt (data for SPEED 500 BB No. 3315)

Power at motor shaft Pw

$$Pw(W) = (Uk - Ri \times Im) \times (Im - Io)$$

Example: (6.5 Volt - 0.093 Ohm x 24.3 Ampere) x (24.3 Ampere - 1.7 Ampere) = 95.82 Watt

Remark: measurements show a result about 10% below this value! 84 Watt (data for SPEED 500 BB No. 3315)

Efficiency Eta

$$Eta \text{ (%) } = Pw / Pin \times 100$$

Example: 95.82 Watt /157.95 Watt x 100=60.66 %

Remark: measurements show a result about 10% below this value! 54 % (data for SPEED 500 BB No.3315)

Power Loss PLo

$$PLo \text{ (w)} = Pin - Pw \text{ or } PLo \text{ (w)} = Pin \times (100 - Eta) / 100$$

Example: 157.95 Watt - 95.82 Watt = 62.13 Watt or

157.95 Watt x (100 - 60.66) / 100 = 62.13 Watt (data for SPEED 500 BB No. 3315)

Maximum amature current for SPEED 600 motors

$$Imax \text{ (A)} = \text{SQR}(40 \text{ Watt} / Ri)$$

SQR = square root: Example: SQR(40 Watt / 0.125 Ohm) = 17.88 Ampere

40 Watt as power loss PL was measured an acceptable value, you can increase it to PL = 60 Watt. 60 Watt will wear out the motor much faster than 40 Watt. For a SPEED 500 motor it is about the same, I guess (GB).

Model weight Wm as result of power at motor shaft Pw

$$Wm \text{ (g)} = Pw \times 10 \text{ (factor can be 10 to 15)}$$

$$\text{Weight in oz.} = (Pw \times 10) / 28.35$$

Example: 73.44 x 10 = 734 g or 73.44 x 10 / 28.35 = 25.89 oz. You can increase the factor up to 15 for a duration glider. A sports model shouldn't exceed a weight limit of 735 g for some sort of dynamic flying, gliders can have a higher weight - power ratio but the factor shouldn't exceed 15. This equation is based on practical tests and experience.

I have presented this information for your educational and entertainment use only. You can compare it with other data that you have, from other sources, and other formulas you may have acquired or use.



(Note the Chicago Buzzrds decal on the SO LONG. It is a copy of the original circa 1940. km)

**Yes, You've Seen This One Before:
But It's All Here NOW - SORRY**

Cool Your Batteries

from Tom Darragh
7383 Aqua Isle
Algonac, MI 48001

Most of my aircraft have batteries that are less than convenient to remove and I wanted to build a cooling fan that could be used at the flying field to reduce turn around time in the pits. I sent an inquiry to Bob Kopski looking for ideas and was surprised to hear that he uses a hair dryer.

Based upon this hint, my wife gave me an old dryer she no longer uses (a Windmere Turbo 1200). I found that it contained a small DC motor by Mabuchi. Further examination revealed that the heat coils on the dryer acted as large voltage dropping resistors and that diodes were used to convert to DC. I removed the heat coils and diodes, connected the motor to the dryers three position switch for a simple on/off function, replaced the AC plug on the cord with alligator clips and installed an in line fuse holder. The end result is a blower that runs on 12VDC, normally draws just over 400 MA and provides a generous volume of air. I fused it at 1 Amp because the start up surge was very close to 500 MA.

To route the cooling air from the blower into hatch openings on my various aircraft I made a 2 1/4 inch square tube nozzle with a 60 % angle on the open end from a plastic FOR SALE sign I purchased at ACE hardware. This material is about 1/32 thick and can be permanently bent at right angles by heating with a heat shrink gun and pressing it over the edge of a workbench with wooden blocks until it cools. I then connected the blower to this nozzle with a 3 foot piece of 3 inch diameter flexible plastic clothes dryer vent pipe (The white plastic accordion fold type with a coiled wire to give it shape). I removed the first "coil" of wire at each end by cutting the wire and fishing the pieces out of the "retaining pocket". The final step was to heat shrink the vent pipe plastic material onto the blower barrel and the nozzle with my heat shrink gun. The bottom line is that I now have an extremely versatile means of cooling battery packs for less than \$5.00 out of pocket (about \$15 to \$20.00 if you also have to replace your sweetheart's hair dryer).

Excellent Electric Flight Videos

Clay Howe has a wonderful video on the '95 KRC and because it was rained out on Sunday, he has an added bonus, the '95 Mid-America Flies, in Saline, MI. Yes, now

you can own a video with me on it - what a deal! Actually, this is a very professionally done tape and well worth watching to learn what e-power is TODAY!

He has the following videos:

1994 KRC - 1 hr 47 min of KRC electric fly coverage.

1995 KRC / Mid America - 1 hr 50 min of coverage of the KRC electric fly, and the Mid-America electric fly.

Either video is available in the following formats: VHS, 8mm, SVHS, HI8, Beta. PAL format is not available at this time - sorry.

The price for either video in VHS or 8mm format is: \$20 - this includes shipping to U.S. and Canadian addresses. Shipping to other addresses - add \$3 U.S. Add \$5 for SVHS, HI8, or Beta format.

Both videos (in VHS or 8mm format) may be purchased for \$35, includes shipping to U.S. and Canada. Add \$3 U.S. to other addresses.

To purchase video(s), mail a check or Money Order to:

Clay Howe
310 S Jefferson St
Sturgis, MI 49091 USA

Make checks or Money Orders payable to: CH Video - Clay Howe

You can also contact Clay at -
76450.2465@compuserve.com

Electric Round the Pole Flying
from Pat March

What is ERTF flying? I'll let Pat March tell you. He's been into this for a long, long time. If the pictures and ideas interest you - and they should if you live where the weather's not always good, then here's a way to fly indoors. Pat runs the Skonk Works, and their symbol ain't no cat!

**From Skonk Works 1996
Catalog - \$2**
(Ya gotta get this thing!)

**WELCOME TO
ELECTRIC ROUND**

THE PYLON FLIGHT!

In the late '60s, I thought I had invented ERTF. But the English had beat me to it. They had a twin engine Vikings Viking, with landing lights, running lights, retractable



landing gear and working flaps flying at an RAF charity function as early as 1945. This machine used home made AC motors!

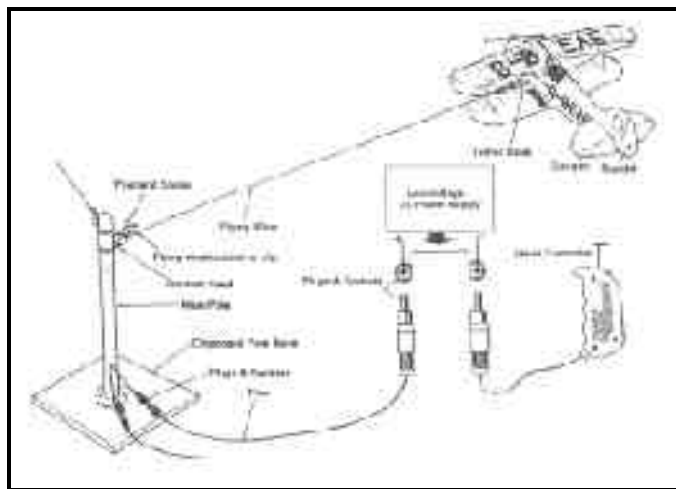


This is a photo of the plane Pat's talking about. It is a Vicker's Viking and was flown at Dorland Hall from 1945 through 1946. It had a span of 40 inches and made over 1000 flights! It was created by the staff of Aeromodeller. They also created a DeHavilland Vampire with the ducted fan unit being electrically driven. The Vampire also had a retractable undercarriage. - Photo from Introduction to Electric Flight, Ian Peacock, Argus Books, 1988.

Pat continues:

You need not make your own motors. We have a variety of good low voltage dc motors for you to use. Pylons have come a long way, too. Skonk Works provides one that allows you to operate elevators on your models. Many multi engine models have been flown. Ducted fans are practical, and we have two for you to choose from.

The educational value of ERTTP is incalculable. Novices learn not only practical skills in making their models, they also get a painless introduction to electrical theory and practice, as well as solid knowledge of geometry, some math, and physics. Participation in ERTTP modeling has led to solid careers in engineering and toolmaking. All this while having fun!



We invite you to get our catalog and look through it while letting your imagination run free. You will think of odd possibilities that you just have to try out!

We want to hear of your successes with ERTTP. We are also concerned when something does not work to your expectations. New ideas are welcome, but don't be surprised if I suggest that you do the development work! This can be rewarding or extremely frustrating. Most developments exhibit both aspects. Phone calls are welcome. You can usually get me from 7 to 7 (Eastern), 7 days a week. I love to talk modeling.

Some of my customers communicate by E-Mail. This is quick and economical. I check my computer at least once a day, and will respond to any inquiries or thoughts that you send me.

You can find me at Prodigy RKKM59A or Internet RKKM59A@PRODIGY.COM. - Happy Modeling!

or

SKONK WORKS
1890 Forestdale Ave.
Beavercreek, OH 45432

Phone 513-429-2411

On Multi-motor Drive Units

by Tom Hunt

from Charge Ahead! - April 1996

Editor: Ben Almojuela

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(Those are two zeros in his address)

Tom Hunt - answering a question that I'd wondered about, and the answer is what I expected. It makes one wonder why there are so many two motor drives out there now....

From: THunt95147@aol.com

Date: Thu, 11Apr 1996 18:4&31 -0400

Subject: Twin motor Belt drives

This message from THunt95147@aol.com distributed by EFLIGHT!

Ok guys... time to spill. Yes... two motors hooked to a single shaft is a slightly less efficient "power system" than a single larger motor. Weight is higher for the output power, and efficiency losses because of the extra belt or gear can amount to about 2-3%. Differences between the two motors

“separate” performance can also drop “system efficiency”... so why do it?

It's a cheap way of getting a larger electric model into the air if you already have two motors. I do not recommend a dual belt drive to anyone unless he already has two motors OR is looking for a cheaper way to swing an 18-24 inch prop on 28-40 cells! Two speed 700's or Dewalt drill motors and my dual drive with a 3/8 propeller shaft is about 40 - 80 dollars cheaper than an Astro Geared 60 or 90. And neither of these motors can swing 20 to 24 inch props! Too low a ratio!

Yes, a dual system like this weighs about 8-12 ounces more than a geared 60 or 90 but on a model that will eventually weigh about 15-18 pounds, does it really matter?

I have a 16 pound Nosen Cub that uses one of these drives on 32 cells and gets 10 - 12 minute flights on 1400mAh cells! I'm bored silly after 8! Can't beat the facts.

To be honest I've never thought about the effect of one motor's magnets on the other, but I do know that the separation between the motors in my drive is about two motor diameters, and since magnetic field strength is a function of the radius squared (I think) this should be far enough to not worry about it.

For those who wish to try this, my only recommendation would be to make sure that both motors are within 5% of each other. It is a fallacy that one motor drags down the other if it does not run the same. If one motor runs at 100% and the other at 95%, combined, they add power to the shaft at near 195%. So yes, if they matched exactly, it would be a better “system” but a marginally “reduced” power motor won't “kill” the system.

Thanks for your questions and comments, Tom Hunt.

Sad News from the Northwest

Ben Almojuela plans to retire as editor of *Charge Ahead*. He has been its editor since May of 1987! He plans to “give up the reins” at the end of this year. That is 10 years! What a wonderful service, and sacrifice Ben's given to his club, and all of electric power!

It is with sincere regret that I write this, since, they don't seem to have a new editor lined up, and there is the possibility that this publication may cease to exist!

That's bad for all of us, since I've “borrowed” many an article and idea from this fine publication.

You might drop Ben a line and thank him, even though you may not remember that you've gotten things from him, YOU HAVE!!! Both his “snail mail” and e-mail address are in the heading of the previous article.

THANKS BEN - WE E-FLIERS OF THE WORLD APPRECIATE ALL YOU'VE DONE! - Ken, et al!

The May EFO Meeting

The May meeting was well attended and included five guests. There were several aircraft present and Ken did a demo on building on glass.

The next meeting is the Mid-America Flies on June 1 and June 2. Please be sure to turn out to help and enjoy the days.



Larry Rice explains the finer points of his Clancy Aviation Lazy Bee. It is covered with LiteSpan, using Balsaloc to affix the LiteSpan to the fuselage.



Another photo of Larry's Lazy Bee. It is one strange looking plane.



Ernie Labelle shows off his Kress Beech 18. He has replaced the single belt-drive with two Speed 400 motors. This plane is absolutely gorgeous. It is finished in red and silver.



Another shot of Ernie's plane.



Vice-president, Richard Utkan, shows off his Skimmer 400 framework.



Guest Chuck Davenport shows off his original design. It has two wings, one with and one without ailerons.



Chuck also shared some of his "secrets" with us. He has some really nice techniques, even though he is "one of those loners" we all read about. It was a long trip for him, and we appreciate his coming.

Besides doing the demo on how to build on glass, Ken showed his partially completed Speed 400 racer, the Rocket, by Bill Griggs, as well as Jeff Hauser's wings for Jeff's Rocket.

Doug, please have Al bring his Precedent to the meet. For some reason, I'd didn't "turn" on the video camera while I thought I was getting a picture of him and his beautiful plane. OOPS.

News from MaxCim Brushless Motors from Tom Cimato via e-mail

BTW, would you mind changing the description of the MaxCim Motors to 7-27 cells? That is, the Max15-13D is rated 7-18 cells, while the Max15-13Y is rated 10 to 27 cells. Both are capable of 375 watts continuous and 1000 Watts peak (45 sec.) The controller has a 21 cell, 35 Amp continuous, 60 Amp peak rating, which is over 1200 Watts of available power.

I know I have to become more pro-active in marketing and advertising, but I am doing with 2 motors and 1 controller what others need 5 to 7 motors and 3 controllers to accomplish.

Thanks for your support and great web page.

New Batteries?

From: Abraham Hao <abeh@worldnet.att.net>
Subject: New super high capacity battery

Ken :

I just found this exciting news in a trade magazine. Panasonic announces the new Super 300 batteries.

I got the data sheet via fax.

The internal impedance and max. recommended discharge current are not listed in the data sheet. According to the sales engineer, the internal impedance of the discharged cell is 20 milli ohm (0.02 ohm) and recommended max. discharge current is 2.5 C (8.75 Amp). The cells will be available from Panasonic authorized packager(s).

Completed data for Super 300 cells :

Model number : HHR350A

Size : L-A (4/3 A)

Nominal voltage : 1.2 V

Nominal capacity : 3500 mAh

Rapid Charge : 2 Amp, 2 Hours

Internal impedance : 0.02 ohm discharged

Recommended max. discharge current : 8.75 Amp

Diameter : 0.67"

Height : 2.64"

weight : 1.83 oz

Actually, the cell is little bit lighter than SCRC 1700 cell.

Powered by 6C SCRC 1700 pack, Speed 400 7.2v motor (P/N 1794) with 6:1 gear box and 15 x 12 Master Air Screw folder draws 8 + Amps static. My Lanzo bomber can get 35 minutes powered flight with this setup. The motor needs about 3 Amps for no sink flight. With Super 300 cells, 70 minutes powered flight should be typical.

This is the dream battery for endurance flight ! BTW, my Lanzo is not lightly built.

News from ModelAir-Tech

P.O. Box 12033

Hauppauge, N.Y. 11788-0818

Phone+Fax: 516-979-1475

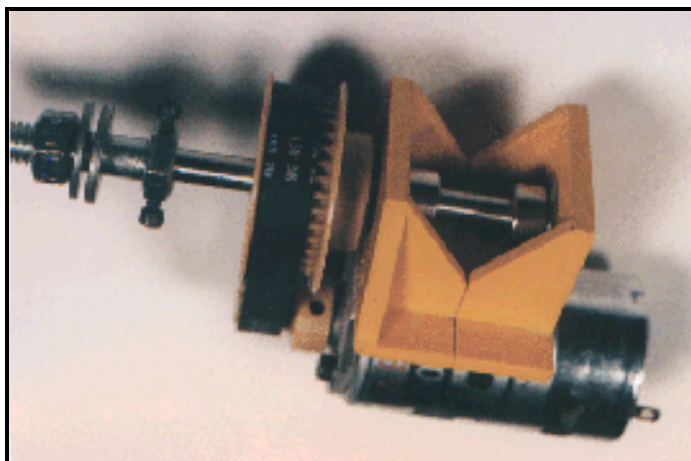
E-mail: Thunt95147@aol.com

MODELAIR-TECH would like to make the announcement of yet another version in our line of belt drives.....the H-500. Able to absorb 500 watts, it is smaller in size, weight and input power than our original H-1000 (1000 watt capable) that has been quite popular over the last year with "larger" electric model flyers. The H-500 was designed (at modeler's request) primarily for 1.4" (35.5 mm) diameter motors, such as the Speed 500/600 series, Astro Flight 035-15, Aveox 14xx, SR Max 7 and 10 and many other European motors of this diameter or smaller with a 1" (25mm) bolt spacing. It is most advantageous for those motors capable of running on 12-18 cells, where a small, light, high ratio reduction drive can fly 400-700 square inch sport and sport scale models with larger more efficient props.

The drive sports a dual, ball bearing supported 1/4" shaft for absorbing this type of wattage. The center to center distance (prop shaft to motor) is approximately 1.5". Beam mounting can be done from above or below the ears on the bearing holders. It is available in 3.27 and 3.6/1 currently, however, other ratios can be obtained by special order. The unit with a prop adapter weighs just under 4 ounces (115g). The unit is available only direct at this time for \$49.95 without prop adapter, \$54.95 with prop adapter. Please include \$5.00 shipping and handling and New York State tax where applicable.

Also, our belt drives normal intended for the Astro 60/90 and 18xx Aveox motors will now be known as the H-1500 (formerly H-1000SP). They have been flying 1/4 scale Cubs, and other "Golden Age" models weighing upwards of 18 pounds. They sport a 3/8" shaft for swinging 18-24" props on 28-40 cells. They are also only available direct by special order only at \$84.95 (with a built in prop adapter). Ratios are available from 2-3/1.

The basic H-1000 MKII and the H-1000 Dual Motor belt drives are, of course, still available.



The New ModelAir-Tech H-500 belt drive.

Join the Greater Detroit Soaring and Hiking Society for a Relaxed Day of Floating Flight!

All Electric Fliers have an open invitation to join the Greater Detroit Soaring and Hiking Society for an Electric Glider/Old Timer/Floater get together at Addison Oaks Park, North of Rochester, MI. The date is Saturday, August 24, 1996.

Gliders, Old Timers and floater type planes like the Amptique or PS Flyers are welcome. Please, no "fast" planes here. This is to be a relaxed day of fun flying. For further information contact - Hutch Hutchings at (810) 335-0844. See ya all there!

Mid-America Electric Fly

AMA Sanctioned

Saturday, June 1 & Sunday, June 2, 1996

Hosted by:

Ann Arbor Falcons and Electric Flyers Only

your Contest Directors are:

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

Keith Shaw (313) 973-6390

Flying both days is at the Ann Arbor Falcon's Field,
Monroe Rd., Saline, MI (see map)

Registration: 9 A.M. both days
Flying from 9 A.M. to 5 P.M.

Gold Stickered Transmitters are REQUIRED!

All 50 frequencies will be used

Wide band receivers will be accommodated as best as possible

Saturday's Events

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

Sunday's Events

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

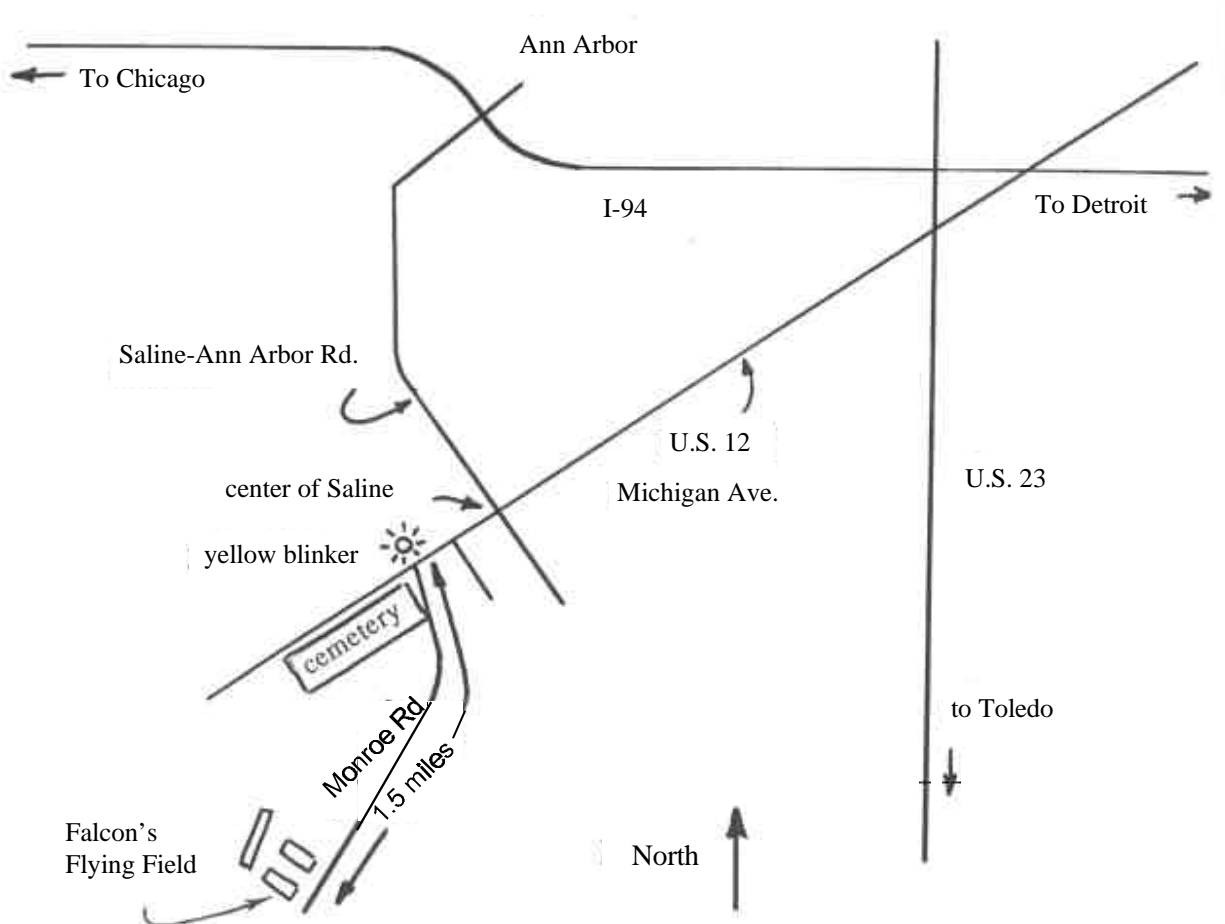
Refreshments will be available at teh field both days.
There will be a pot-luck picnic on Saturday evening.

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



map not to scale

Upcoming Events:

June 1 Puget Sound Silent Flyers Electric Fly-In & Swap Meet, PSSF Field, Lister Rd., Lacey, WA, Bob Benjamin (360) 352-2602 (field open to guests on June 2, as well.)

June 1/2 Mid-America Electric Flies, Saline, MI, Relaxed Fun Flying, All Up/Last Down, special awards, Ken Myers, (810) 669-8124 CompuServe 102575,3410 or InterNet 102575.3410@compuserve.com (NOTE: event moved to June this year)

June 15 through June 23, 3rd Annual Electric Duration Challenge, any flat field in the US or its territories, Jerry Smartt, (816) 438-5682 (See rules March Ampeer)

June 29, 9th Annual NCRCC Electric Fun-Fly, Ron Torrito, (203) 528-2227 Hartford, CT area

June 29/30, 14th Annual Electric R/C Fly-In, Boeing Kent Space Center Field, S 196th St. & 68th Ave. S., Kent, WA, Bernard Cawley (206) 839-9157 or 75613.2621@compuserve.com

July 13/14, Pinehollow '96 Northwest R/C Seaplane Champs,

Pinehollow Reservoir near Wamic, OR, special electric-powered category, Jim Weaver (503) 760-4558

July 13/14, Voltaires annual Fun Fly (Syracuse, NY area) Garret Wikoff (wikoff@ibm.net), 9494 Pendergast Lane, Phoenix, NY 13135 or Bruce Budelmann (budelman@ix.netcom.com)

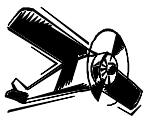
July 20-22 Electric Nationals, AMA Headquarters Site, contact Ken Myers

Aug. 17 SEFLI 3rd Annual Mountain Fly Inn, Cooper Hill Inn, East Dover, VT, contact Tom Hunt, (516) 981-2012 THunt95147@aol.com or Don Mott (516) 924-3385.

Aug. 24 Greater Detroit Soaring and Hiking Society Electric Glider/Old Timer/Floater get together, Addison Oaks Park, North of Rochester, MI Hutch Hutchings, (810) 335-0844

Sept. 20/22, KRC Electric Fly-in, Quakertown, Pa.

Oct. 5/6 DEAF Fly-In, LMR events & All Up/Last Down, highest RC, weight lifting, Dallas RC Club field, Seagoville, TX, Greg Judy (817) 468-0962



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

Next Meeting:

June 1 & 2, Saline, MI