the Ampeer

April 2003

The EFO Officers:

President:
Ken Myers
1911 Bradshaw Ct.
Walled Lake, MI 48390
phone: (248) 669-8124

Vice-President:
Richard Utkan
240 Cabinet
Milford, MI 48381
phone: (248) 685-1705

Secretary/Treasurer:
Debbie McNeely
4733 Crows Nest Ct.
Brighton, MI 48116
phone: (810) 220-2297

Board of Directors:
Jim McNeely
4733 Crows Nest Ct.
Brighton, MI 48116
phone: (810) 220-2297

Board of Directors:
Jeff Hauser
18200 Rosetta
Eastpointe, MI 48021
phone: (810) 772-2499

Ampeer Editor:
Ken Myers
1911 Bradshaw Ct.
Walled Lake, MI 48390
phone: (248) 669-8124

Ampeer subscriptions are $10 a year US & Canada and $17 a year world wide.

The Next Meeting:
Date: Sunday, April 27 **Time**: 10:00 a.m.
Place: Midwest R/C Society 5 Mi. Road flying field

What's In The April 2003 Issue:

Indoor Flying in Northern Michigan

From: John Zook johnzook@voyager.net

Hi Ken and to all in the club!

I wanted to tell you about my experiences flying indoors. Some of the members of our small club in Charlevoix have been involved with this for a short time now. We started out with one person trying it and now we have three and several more people interested .

Last Saturday, Feb. 22, we got together for an afternoon of fun and flying, even though the weather outside was typically northern Michigan. I brought my GWS Tiger Moth and Slow Stick. Jim Maine (club member) brought his newly completed DJ Aerotech Road Kill Curtis Wright Jr, as well as his recently completed Sig Demoiselle.

I was very impressed with the way the Demoiselle flew inside this small gym. After experimenting with different props and battery packs, the little antique ROG'ed and flew around the gym in a most scale like manner. It is a beautiful little plane to watch in the air, as well as fascinating to see the swivel tail operate as did the original did.

The Curtis Wright would ROG, however it seemed to have a problem making turns, which was attributed to its straight wing (no dihedral) and seemingly weak ailerons. Since then Jim has changed the wing to full dihedral and is now waiting for this Sunday to try the new version.

I flew the Tiger Moth around the gym several times making a constant turning maneuver in order to avoid flying into the walls, which seemed too close for comfort. I managed to make a number of circuits around the gym until the little Bipe climbed a bit too high into the rafters, and as I over corrected it downward into the stage area where a heavy curtain sent it to the floor, breaking the struts. Oh well, after recovering from my initial embarrassment I retrieved the TM and assessed the damage. Only the cabanes were broken.

The Slow Stick, for its size, flew quite well at a slow enough speed to get it around the gym. We sure could use a larger venue though. It seems to be able to make tight turns without stalling, so I'm going to try it again this weekend.

One other member, Dr. Richard Wakulat (aka Doc), brought a Wright Flyer type covered with plastic wrap. After several attempts, the plane still experienced turning problems and was returned to the hangar for modifications.

Another club member, Bill Rohweder,

also attended, but did not bring a plane. I hope to see him in attendance next Sunday with his TM.

Even with the unplanned landings and failures, we all had a great time and gained a little more experience flying indoors.

One thing that was learned is that even though a small slow flyer may be able to handle tight turns in open space, flying indoors presents a different sort of problem, none more so than the psychological effect of trying to fly in an enclosed space.

We are hoping to locate a larger venue in which to fly a little more comfortably. All in all it is a great way to break the monotony of long Michigan winters. We have some fun as well as getting club members together. We might even gain some possible new members.

Until then, keep 'em flying quietly and cleanly,
John Zook

Upcoming Efliowa
(E-fly Iowa)
Saturday, September 6 &
Sunday, September 7, 2003

Place: Seven Cities Sod Farm - Junction of I-80 and Iowa 130. For details and map:

visit www.rc-dymond.com/efliowa/

Last year we had excellent weather and 42 registered pilots that had more than their share of air time. This year promises to be even bigger and better. For pictures of last years event

http://fisheye.ws/efliowa/

Hope to see you there!!!!!

For further information:
Jon McVay AMA 6004
319-895-6527 Togflier@AOL.com

Folks, please remember to get me your meet notifications as soon as possible, just like Jon. KM

Info on Keith Shaw's Jungmann
From: Keith Shaw Ann Arbor, MI

My restored Jungmann has an Aveox 1412/4Y on 20 CP1700s or 2000NiMH, with a Modelair-tech H-500 belt drive, 2.6:1 ratio. Initial prop tests show 15/10 @ 5.5K @ 23 amps, so I may go up to a 16/10 or 16/12 after flight tests. A 15.5" prop is scale diameter.

The Bucker Jungmann (pronounced BOO-ker YOUNG-man) was a mid 1930s German two seat trainer and aerobatic mount. Having flown both the Jungmann and its more famous sibling, the Jungmeister, I much prefer the Jungmann for aerobatic work. It is smoother and has a more "balanced" control authority on all three axes, while giving up none of the legendary Bucker snap and knife edge characteristics. As much as I love my Great Lakes and Stearman, the Jungmann has to get my vote for favorite aerobatic biplane.

My Jungmann is 1/5th scale, 59" span. It was built as a glow plane in 1974, powered with a SuperTigre .56 with a 12 ounce fuel tank, used a 13/5 prop, and weighed 7 pounds (112 oz.) when fueled. It has served long and hard, flying countless airshows and just good sport flying. The Monokote had gotten so brittle, it was like Japanese tissue, so a restoration was started a couple of years ago. The entire airframe was stripped, damaged and fuel-soaked woodwork was repaired or replaced. The 1/4" plywood firewall was removed, and a new balsa cowl was made to replace the old heavy fiberglass one, while new built-up tail surfaces replaced the solid sheet originals. The incredible heavy wheels, 8 ounces for the Pair, were replaced with Dave Brown types. The old Kraft radio with KPS-15s has been replaced by a more modern Airtronics with smaller, lighter and much more powerful ball-bearing servos.

The final result of all this work has ended up with a flying weight of 7 lb. 4 oz. (116 oz.). That's right, only a net quarter-pound gain to convert a glow plane to electric, which must be some sort of a record.

I look forward to flying with a very old friend this summer.

Data For Keith Shaw's Jungmann

If not noted by Keith the Data has been approximated by Ken Myers

Wing Area: 840 sq.in.
Weight: 116 oz. – 7 lb. 4 oz.
Wing Loading: 19.89 oz./sq.ft.
Wing Span: 59 in.
Aveox 1412/4Y
Wt. 10.2 oz.
Kv = 725, Io = 0.065, Rm = 0.065
Model Airtech H-500 ratio: 2.6:1, Wt. 3 oz.
Total Motor + reducer Wt. = 13.2 oz.
20 Sanyo CP-1700 (1.69 oz.) = 32.4 oz.
20 Panasonic 2000 NiMH (1.5 oz.) = 30 oz.
Motor + reducer % of total = 11.4%
CP-1700 cell weight % of total = 27.9%
Total motor + reducer + CP-1700 battery = 39.3%
Note the following mathematical estimations are

based on the voltage near the beginning of the pack discharge and apply to static testing conditions. Amp draw will decrease in the air and as the pack discharges through the flight, but since most of us tach and test on the ground, these figures can be used for comparison.

Using 15x10 prop:
*Watts in 585 (23.4*1.25*20) Watt/lb. 80.7*
Watts to motor 499
Watts to prop 450 Watt/lb. 62
RPM 5,525

Using 16x10
*Watts in 687.5 (27.5*1.25*20) Watt/lb. 94.8*
Watts to motor 568.8
Watts to prop 506.4 Watt/lb. 69.8
RPM 5,275

Using 16x12
*Watts in 762.5 (30.5*1.25*20) Watt/lb. 105.2*
Watts to motor 616.5
Watts to prop 543.2 Watt/lb. 74.9
RPM 5,081

Orme's Rule: 17 – 24 cells
Ken's Modified Orme's Rule: 17 – 28 cells
Flight Factor: 2.108
Diameter Factor w/ 15x10: 1.523
Pitch Factor w/ 15x10: 0.667
"Speed" to RPM Factor w/ 15x10: 3.35

If the last four factors are not familiar to you, I will explain them in the future. I just wanted to get them listed now, so that we can refer to them in the future.

For a photo of Keith's plane, please see the March Ampeer "February EFO Meeting".

New Models From RBC

From: Rob Bulk info@rbckits.com

Hello Friends,

We have updated our pages with some new models: The Frechdachs, a high wing aileron trainer for Speed 700 and 10 cells.

Design Features: All Formers And Ribs CNC Cut Unique Tab Lock Design
Specifications: Wing Area: 40 dm^2 Wing Span; 1750 mm Flight Weight: Starts at 1750 grams Wing Loading: 45gr dm^2 4 Channel Elevator, Ailerons, Rudder & Throttle
Kit Includes: Photo Instructions Full Size Rolled Cad Plans With All Parts Shown Preformed Landing gear Control Horns, Steering Cables, Waterslid e Decals As on the original
Required to Complete: Any inexpensive 4 Channel Radio Light weight Receiver: Light weight Servos: About 9 to 25grams Motor: Speed 700 to Kontronik Fun 600 Electric Speed Controller Battery: 10 x 3300HV Thick and Thin CA glue

The Blohm & Voss P212-03 a Third Reich secret weapon, which did not make it into production, but it fly's excellently.
Design Features: All Formers And Ribs CNC Cut Unique Tab Lock Design One Piece Design Unique Motor/Fan compartment closing. Easy Battery Access through Canopy
Specifications: Wing Area: 20 dm^2 Wing Span; 1050 mm Flight Weight: Starts at 1200 grams Wing Loading: 64gr dm^2 to 75gr dm^2 4 Channel Elevator, Ailerons & Throttle (ailevons needs delta mixer)
Kit Includes: Photo Instructions Full Size Rolled Cad Plans With All Parts Shown Vacuformed Canopy , Intake Duct Paper Intake Tube , PVC Outlet Tube Control Horns , Steering Cables **Now Included!** Waterslide Decals As On The Model
Required to Complete: 3 Channel Radio with delta mixer Light weight Receiver: Light weight Servos: About 9 grams Motor: Kontronik Fun 400-36 or Fun 400-28 Electric Speed Controller smile 40-6-12 Wemotec Mini Fan 480 Battery: 10 x 1250SCR or 12 x CP1300 Thick and Thin CA glue Bungee Launch req. The B & V needs a 8mm x 7,5mtr bungee with 8 kg of pulling power.

New models to expect soon: the Yak-23 and the Cessna Birddog.

Have a look and enjoy.

Rob Bulk
RBCkits WWW.RBCKITS.COM

New Product Release from Hobbico
From: Heather Rose HROSE@hobbico.com
Presented for informational purposes only.

The "ready-when-you-are" electric.
Flight-ready in just a few hours!
Spanning less than 50", the Lightnin' Bug is small enough to fit fully assembled in a vehicle for easy, spontaneous flying.
Comes 90% pre-assembled, with an all-wood, jig-built airframe that's expertly covered in premium iron-on covering.
A Speed 400 motor with gear reduction unit and prop is included.
Slow, relaxing flight makes the Lightnin' Bug ideal for novice and experienced pilots alike.
Ideal for flying at a school yard or sports field!

Wingspan: 49.5 in (1257mm)
Length: 30.5 in (775mm)
Approx. Weight: 20-25 oz (567-709g)
Includes: Speed 400 motor, gear reduction unit, prop
Requires: 2-channel radio, electronic speed control, battery

GBGA1072 Lightnin' Bug Park Flyer ARF Yellow
GBGA1073 Lightnin' Bug Park Flyer ARF Red

Retail $199.99
Street 129.99

DUE IN STOCK LATE MARCH

Lil' Horten
From: Phil Pham xpham@earthlink.net

Thanks for your help Ken.... Got the Horten article.... Here is a construction picture I posted on ezonemag.com-dunno if I'm eligible anymore for their EDF contest since I 'spilled the beans' :). Btw, I'll be the smallest Horten Ho 9 scale model (if it flies) EDF anyways, that I know of for kp-44 fans.
I'll send you more as it progresses if you're interested!

Phil Pham
Huntington Beach, CA

Nieuport 17

My friend, Pete Waters of Northville, MI, just finished up this Nieuport 17. There is no trick photography or perspective change. No it's not electric, but it is "cool", and I just wanted to share it with all of you.

Some of John Lewis's Planes

John was a very special guest at the February EFO meeting, having driven up from Kansas City. We were thrilled to have him and his wife with us. He mailed some photos and information on his planes to share with us. He thanked us for a very enjoyable evening and then shared the following.

"By the way, I do agree with you about learning to fly electric. I personally found the Push-E Cat to have been excellent for me to get "stick time" and get the correct flight pattern around the landing field fixed in my mind. Also, the Amptique was wonderful, from the point

Please Send Ampeer Subscriptions or Renewals to:
Ken Myers
1911 Bradshaw Ct.
Walled Lake, MI 48390

of view that it could fly so slowly."

John's Push-E Cat uses Graupner Speed 400 with 8 1600 mAh NiMH cells. John has hours of flying this plane teaching himself to fly the correct pattern. It was a great help to him in his early learning days.

John's Amptique, shown below, is perhaps his favorite plane. It uses an Astro Flight brushless 020G with a 13x8 folder. He uses a 7 cell 2200 mAh NiMH battery most of the time in this plane. It gives 6 climbs to almost out of site.

John's fleet includes; 2 Sig LT-25s (one with AF15G & one with MaxCim brushless), GP .40 size J-3 Cub w/ MaxCim, Amptique w/AF020G, Cutie w/Phasor 15/3, Sig Rascal w/Speed 400, Sig 4-Star 40 w/MaxCim, PushE-Cat w/Speed 400, Sig Somethin' Extra w/Hacker B50 11XL and 2M Lil Bird w/Hacker B20 15L.

His first small plane was the 2M Lil Bird. He found that the suggested motor "was useless." He uses a Hacker B20 15 geared 4.4:1 using an 11x8 prop.

The Great Planes 1/5-scale Cub is his latest project. It is powered by a MaxCim N32=13Y with a new planetary gearbox fitted by Tom Cimato. For flight he uses 20 cells and a 16x10 prop. The one shown on the plane if for show.

Below is John's second Sig 4-Star 40. Power is a MaxCim N30-13Y geared 3.75:1. The motor turns a 16x10 prop with the power supplied by 20 3000 mAh NiMH cells.

The LT-25 on the left was built per my recommendation on the EFO Web site: **Astro Flight cobalt 15 motor** with the standard Astro Flight geardrive, but with the 11-tooth pinion installed to change the gear ratio to 2.82:1 from the standard 2.38:1

turning a 12x8 wood prop with 14 cells. It uses a controller that was especially designed for John by Castle Creations. Patrick only lives about 6 miles from John in Kansas City.

The one on the right uses a MaxCim 32-13Y geared 3.75:1. It turns an APC prop with 20 cells. A bit more exciting than the trainer version!

The Sig Somethin' Extra is powered by a Hacker B50 11XL geared 5.2:1 with an 18x12 Thin Electric APC prop. It uses 20 3000 mAh cells and is equipped with an "Ultimate" BEC. It weighs 112 oz. (7 lb.) and pulls approximately 45 amps static.

Data For John Lewis's Somethin' Extra

If not noted by John the Data has been approximated by Ken Myers

Wing Area: 614 sq.in. (mfg.)
Weight: 112 oz. – 7 lb.
Wing Loading: 26.27 oz./sq.ft.
Wing Span: 51.5 in. (mfg.)
Hacker B50 11XL
Wt. 11.7 oz.
Kv = 1435, Io = 1.12, Rm = 0.0152
5.2:1 reducer: Wt. 2 oz.
Total Motor + reducer Wt. = 13.7 oz.
20 3000 NiMH (2.08 oz.) = 41.6 oz.
Motor + reducer % of total = 12.2%
Cell weight % of total = 37.1%
Total motor + reducer + 3000 NiMH battery = 49.4%

Note the following mathematical estimations are based on the voltage near the beginning of the pack discharge and apply to static testing conditions. Amp draw will decrease in the air and as the pack discharges through the flight, but since most of us tach and test on the ground, these figures can be used for comparison.
Using 18x12 prop:
*Watts in 1092.5 (43.7*1.25*20) Watt/lb. 156*
Watts to motor 792.68
Watts to prop 744.08 Watt/lb. 106.3
RPM 4,823
Orme's Rule: 12 – 18 cells
Ken's Modified Orme's Rule: 12 – 21 cells
Flight Factor: 3.090
Diameter Factor w/ 18x12: 2.270
Pitch Factor w/ 18x12: 0.67
"Speed" to RPM Factor w/ 18x12: 3.05

For another photo of John's plane, please see the March Ampeer "February EFO Meeting".

Advice On Electric Conversions

From: Michael J. Singleton msingle@sanctum.com

I'm looking for general info on converting balsa models that were designed for glow power, to electric. I've seen a few articles on converting specific kits, but I'm really looking for a set of "general guidelines" that could be applied to the majority of balsa kits designed for glow engines.

It seems there are a huge number of balsa kits for the glow engine people. I'd like to be able to work with some of them, as they seem to have an almost endless supply of my favorite types, WW I and WW II war birds, as well as the current crop of military aircraft.

To be clear, I'm not talking about ARF's or RTF's, more along the lines of a box of parts and a set of plans. I enjoy building "from the ground, up."

If you have any advice on the subject of electric conversion in your database, I'd love to hear it! Or, if you know of an on-line source, that would be great, too. I do post on the E-Zone forum from time to time, but I haven't found what I'm looking for there.

Great web site, by the way!

Mike S.
Spring Hill, FL

First, download the four parts to Keith Shaw's Talk to the EMFSO.
http://members.aol.com/kmyersefo/shaw1.pdf
http://members.aol.com/kmyersefo/shaw2.pdf
http://members.aol.com/kmyersefo/shaw3.pdf
http://members.aol.com/kmyersefo/shaw4.pdf

Next, read Keith's articles on Scale, Twins and Charging Into Electric Flight.
http://members.aol.com/kmyersefo/scale.pdf
http://members.aol.com/kmyersefo/twins.pdf
http://members.aol.com/kmyersefo/chrg2ef.pdf

There is also an article by Tom Hunt on converting

NIRAC

(NATIONAL INDOOR REMOTE-CONTROLLED AIRCRAFT COUNCIL)

COMPETITION NOTICE

FIRST ANNUAL INDOOR R/C CHAMPIONSHIP

DATES: Saturday May 31, 2003
And Sunday, June 1, 2003

Location: Oakland Yard, Waterford, Michigan (approx. 100 miles north of Toledo, northwest of Detroit and just east of the Pontiac International Airport)

Facility Size: 240 X 300 feet, with an 82 feet ceiling

Contest Director: Dave Robelen @ aplusfarm@hovac.com

Events: 6 events planned, with trophies to third place
An overall high point Championship Award
Individual Event rules and a registration form can be found on the NIRAC website: www.nirac.org
Hobby Vendors will be selling on-site
Information on local lodging and a Saturday night banquet can be obtained from John Worth @ johnworth@cox.net
General information available from NIRAC President
Bob Wilder @ rjwmaw5@attbi.com
And
NIRAC Vice President
Bob Aberle @ baberle@optonline.net

Pre-Registration is recommended!

glow kits to electric power.
http://members.aol.com/kmyersefo/convert.pdf

Today, I would plan on going brushless in most decent size Warbirds and bipes converted from glow kits. In general, Top Flight kits are not the easiest to convert, as they tend to have a lot of built in weight that is not easy to remove unless you have a bit of experience. If you, or anyone else, would like some recommendations for specific conversions, please feel free to email me. I'll be more than happy to send along my recommendations.

Request for Slide in Power Unit in March Ampeer

From: Greg Harvey gjharvey@mindspring.com

Armand,

I saw your request of "I have several 40" planes and would like to use the same Promax 400 Motor and Esc. It MUST be quickly removable and quickly installed from a plane to another. Like a cartridge if you want."

I think what you are looking for one of our members has been doing for quite some time. He has posted an article on our clubs web site, www.marcee.org , under articles you'll find one titled, "SLIDE IN POWER UNIT FOR ELECTRIC POWERED PLANES". Hope this is what you were looking for.

Greg Harvey
MARCEE webmaster
The direct URL for those interested in this article by Don Garnlund is:
http://www.marcee.org/Articles/SlidePowerUnit.html

The March EFO Meeting

The meeting started off with a little general discussion about Li-Po cells, because Ken had posted a question about using them in sport power applications on the eflight list. He was just fishing to see what he might learn. It became "very interesting" when the responses poured in. Norm brought up some very interesting points, and again shared his experti se on using them in low-power applications. Watch for Norm's article on them in next month's Ampeer.

Information on the techni que that Richard Utkan used for his "hollow" foam wing, which he showed last month, is on the Web at: http://www.foamfly.com. T his month he shared his version of a 250 sq.in. self-design that he plans on using a MPI Cobalt 14T in. MPI motors can be found at http://www.maxxprod.com. Richard's motor draws 17 amps swinging a 7x3 prop on 7 cells.

David Stacer shared his Frogs with us. The first one was built according to the plans he ordered at the foamfly site mentioned above. The second one he's building has some novel approaches to it. For example, the body is made from one piece of fanfold foam so that there is only one seam line. Very clever! Flying these inexpensive planes in the dome has given this budding pilot a lot of confidence.

Jim Maughan shared his modified T-52. Information on the stock T-15 can be found at: http://www.jkaerotech.com/T52.htm. Jim's uses the stock body

Richard Utkan of Milford, Mi sharing his 250 sq.in. sport plane and tail, but has a non-dihedral wing with ailerons that he picked up at a swap shop. It weighs 28.5 ounces and uses an 8-cell NiMH pack. The motor is a 380 (ie. Speed 400) with a 1.8:1 reducer. He reports that it flies quite well.

Note the routing and grooves for the foldable Frog fuselage.

David Stacer with his first Frog.

Steve Elwell shared information on his Mini SpeedWing and lot of his "small" gear, including a Berg receiver. The Speed Wing, a small flying wing, information can be found at http://www.speedwing.net on the Web.

Next EFO Meeting

The next EFO meeting will be on Sunday, April 27. It will be a "flying" meeting, so bring your planes. The meeting will be held at the Midwest R/C Society flying field on 5 Mi. Road in Northville Township. It will start at about 10 o'clock. You MUST have your current, 2003, AMA membership card with you to fly!!! Ken will be checking cards. Absolutely NO ONE will fly without their current AMA card. See you then.

Motor Mounts and Removable Tails

From Reuben Schneider, Phoenix, AZ

Reuben sent along the following:

Pictured (*on the next page*) are the motor mounts I have used for years to mount different motors. I use the smaller size for Speed 400 motors. The larger is for the Speed 500/600 motors. I even have a Speed 700 on one. They can be made any size. I use .032" aluminum. The oval air holes are drilled with a 3/16" drill. They are spaced evenly apart and the wall between is removed with a needle file.

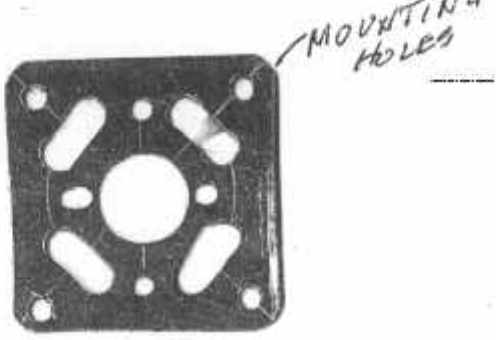
By turning the adapter 90 degrees, you can use it for more than one size. I use 1/8" Lite Ply for the attaching bulkhead with an adequate hole for the motor.

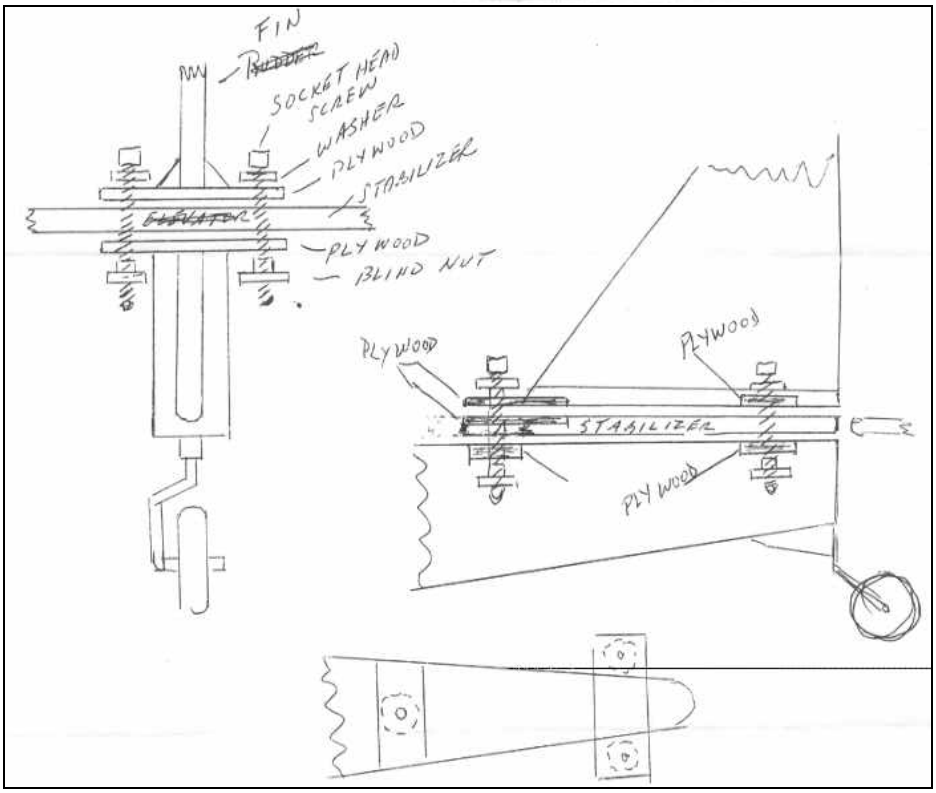
This also fits between the motor and gearbox if used,

and facilitates the mounting of the firewall.

Here is a copy of my system to make tail surfaces removable for easy transport.

I have, through the years, accumulated wings and tails, which I fit onto my generic fuselages for ugly, but fun, airplanes. Everything flies! The Flight of the Phoenix, revisited.





Above is an easily constructed, removable, tail section for ease of transportation of some models. The plywood (aircraft grade birch) can be from 1/16" and up, relative to the size of the model.

Super Universal Mounting System

Dave Grife sent an email to alert us to this unique mounting system. It is produced by one of Dave's Coldwater, MI club members. He also wanted me to remind you about the Coldwater club's annual Keith Shaw's Birthday Electric Fly-in. It will be held on June 6, 7 and 8. More details will follow.

Here's some information on the SUM. All the information and photos were gathered from the producer's Web site at: http://www.cambriatool.com/

Super Universal Mounting System (cont.)

Cambria Tool & Machine, Inc.
121 West Mechanic Street
Hillsdale, Michigan 49242
The mounts are available from:

Esprit Model
1114 Lynbrook St.
NW Palm Bay FL, 32907
Phone: 1.321.729.4287 Hours:
Monday - Friday 10 AM to 7 PM
Saturday 9 AM to 5 PM
E-mail: sales@espritmodel.com
http://www.espritmodel.com/

New Creations R/C
P.O. Box 496
Willis, TX 77378
Phone: 1.936.856.4630 Hours:
Monday - Friday 8:00 AM to 5:00 PM
Saturday 8:00 AM to 12:00 PM
E-mail: sales@newcreations-rc.com
http://www.newcreations-rc.com

The philosophy is to "sell only the parts that the modeler needs, instead of an entire package. So, if you already own a "SUM" mount, and wish to change to a different motor, you only have to buy the front plate that will fit your new motor."

"All components are machined from 6061-T6 Aluminum. Nothing cast. All of the screws for the mount have 6-32 threads."

I strongly urge you to visit the Cambria Tool Web site to learn more about the SUM.

Up Coming Events
2003

April 4, 5, 6 Toledo R/C Expo, Seagate Center, downtown Toledo, OH

April 12 OWLS Electric Fly In, Morriston, FL, Kennyworld flying site. Contact: Bill Robinson CD, 17150 SE 60th St., Morriston, FL 32668, email: owlpres@netscape.net, An event for all types of electric planes.

May 17 7th Eagles Electric Fly In, Hope, NJ, Club Field, Contact: Joe Beshar CD, 198 Merritt Dr. Oradell, NJ 07649, Phone: 201.261.1281 - sponsor: Old Time Eagles

May 31st Greater Lansing Area Soaring Society [GLASS] electric fun fly. Site McLeod sod farm 4 mi. So. of Grand Ledge on M-100 then E. 1/2 mi. on Davis hwy. Speed 400 F5J & open AULD. Otherwise, just fun. ROG is difficult. Contact is Tom Gates. Ph: (517) 339-8787.

May 31, 2003 & June 1, 2003 FIRST ANNUAL INDOOR R/C CHAMPIONSHIP, Oakland Yard, Waterford, Michigan, 6 events planned, with trophies to third place + overall high point Championship Award, CD: Dave Robelen aplusfarm@hovac.com, more info: www.nirac.org

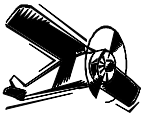
June 6, 7 & 8 Keith Shaw Birthday Electric Fly-in, Coldwater, MI, CD Dave Grife, email: grifesd@yahoo.com More details to follow.

June 6-7-8 River Valley Flyers Sixth Annual Electric Fun-Fly and Swap Meet, Wisconsin Rapids WI - Camping overnight at the flying site is permitted. For more information see club web page at www.rvf-rc.org or contract Richard Ida, Contest Director at inspector@tznet.com or (715) 325-5309 or Charles Benner Event Coordinator at cjbenner@tznet.com (715) 424-5179

June 7 Skymasters Small Fry, **Electric** & Sailplane Skymaster's field Pete Foss 248.236.0676

July 12 & 13 Mid-Am 2003, hosted by the Electric Flyers Only, Inc. & Ann Arbor Falcons. Tentative site: Midwest R/C field, 5 Mi. Rd., Northville Twp., MI Contact Ken Myers kmyersefo@aol.com or Phone: 248.669.8124

August 9 & 10 Pontiac Miniature Aircraft Club Electric Fun



The Ampeer/Ken Myers
1911 Bradshaw Ct.
Walled Lake, MI 48390
http://members.aol.com/KMyersEFO

The Next Meeting:
Date: Sunday, April 27 **Time:** 10:00 a.m.
Place: Midwest R/C Society 5 Mi. Rd flying field
All interested folks are welcome to join us – Must have AMA card on you to fly!