

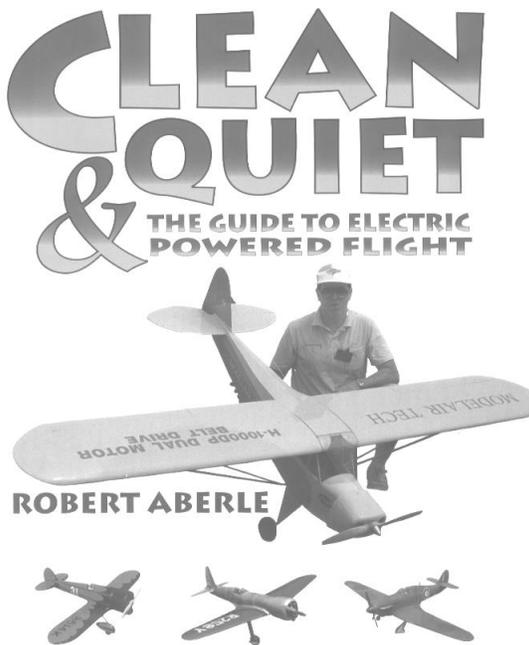
Ampeer

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

The Next Meeting: Thursday, November 2, at Dublin Community Center located on Union Lake Rd. near St. Pat's Church 8:00 P.M. (NOTE SPECIAL TIME)



From: BOB ABERLE
33 FALCON DRIVE
HAUPPAUGE, NY 11788-1204
(516) 265-7036

Dear Ken,

Enclosed is a copy of my new book. As

you will see the first press run contained a few minor errors. An errata sheet has been included which easily points out the problem areas. We decided to go this route rather than hold up the distribution any longer. Steps are already being taken to eliminate all of these errors in the second printing.

(note from Ken - These are all really minor!)

I'm hoping that you will be able to mention my book in the up coming issue of The AMPEER which reminds me I still never saw a copy of your issue where you covered the Electric Nats. *(You should have by now! I mailed it tonight. I just can't ever seem to get caught up!)*

I've included a copy of the standard order form for information purposes. My publisher will sell copies direct for \$12.95 plus \$3.00 postage (for the first copy and .50 cents for each additional copy). They accept Master Card and VISA. The address is:

Douglas Charles Press
440 Mendon Road
N. Attleborough, MA 02760

What's in this issue?

NOTE NEXT MEETING TIME 8:00 P.M. - Aberle's New Book - News from Modelair-Tech - Ampeer Online - Sanyo 1Ah cell gone? - Cargo Lifting - Kyosho DCM 20 - Electric Wonder - Homemade Fan - Plastic Wrap It - New from Aveox - R/C Magazine OnLine

Orders may be called in to (508) 761-5414. Dealer inquiries are welcomed. Dealers may contact my publisher, Mr. Chuck Durang at (508) 761-7721 (phone and FAX).

Please make sure to mention that my buddy, Frank Fanelli, did the editing of this book, which was quite an effort.

As ever,
Bob Aberle

* * * * *

Thanks Bob for a wonderful, up-to-date book. Readers, want the latest information on e-flight including; history, advantages (we need to be told?), flight systems, motor, props, batteries & chargers, speed controllers, connectors & wires, fuses, switches, charging, radio systems, selecting powertrains, suitable aircraft, aircraft selection, flying electrics, learning more about electric, the future of electrics and a current appendix of suppliers and electric information. WOW. With winter and the Christmas season coming on, you might want to suggest to Santa that this would be a great addition to your library. It is easily readable and clear. I've had a hard time putting it down since I've opened it. The only thing I can see missing is the computer/e-flight connection and a list of all the wonderful e-flight newsletters. (Is that biased or what?) Try it, you'll like it.



R/C Model Aircraft Products and Engineering

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

MODELAIR-TECH Introduces the **LOWWATT!!!**
The first in a line of "Stick Scale" small electric R/C models.

The LOWWATT is a small, Speed 400 powered sport model (sort of Piper, sort of Cessna) capable of 4 minute flights on a 6 cell 500 MAh battery pack.

The model is constructed primarily with 1/8 by 1/4

balsa sticks. No formers to cut. No ribs to cut. Just sticks!!! A 1/16 ply motor mount disk and a 1/8 lite ply landing gear mount plate is the only wood not 1/8 x 1/4. (landing gear is optional as this is a hand launched model anyway).

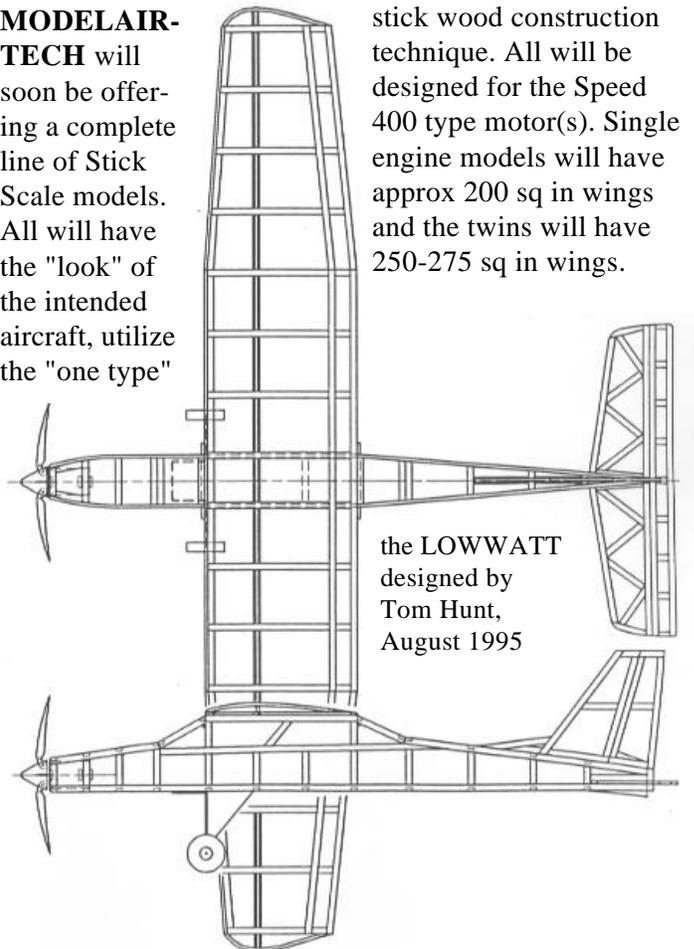
The model is approximately 24" long, with a 204 sq. in, 36" span wing. The model weighs, ready to fly with a 6 cell 500 MAh pack, between 14.5 and 16 oz.

A small lightweight 3 ch Rx and (2) micro servos are required to drive the elevator and rudder and a small BEC equipped SEC or on/off switch is recommended for motor control.

Plans for the LOWWATT are available immediately and full kits (sticks, plans, wire for landing gear and plywood pieces) will be available early winter 1995-96. Plans are \$8.00 (folded). Price for the kit will be at or near \$19.95.

MODELAIR-TECH will soon be offering a complete line of Stick Scale models. All will have the "look" of the intended aircraft, utilize the "one type"

stick wood construction technique. All will be designed for the Speed 400 type motor(s). Single engine models will have approx 200 sq in wings and the twins will have 250-275 sq in wings.



the LOWWATT
designed by
Tom Hunt,
August 1995

Ampeer Goes "High-Tech"

I've been archiving, to disk, the Ampeer and my magazines for about a year now. I am planning a "How to" on this soon, but for now I have an offer that can help both you and me. If you are on CompuServe I can

send you your Ampeer as a file.

Why Would You Want It This Way?

First, you can read and see it on your computer. The pictures will be much better. My master is always very good, but Office Max's copy machine doesn't always do the pictures justice. Secondly, you can easily keep "many" Ampeers on a single 1.44MB disk. No need to take up hard disk space. No need to keep paper files. I can use color pictures, which add a nice dimension. Want to have a printed copy or certain articles to share with flying buddies? Run it on your own printer, no problem. It could also lower your per year cost for the Ampeer, since there would be no printing and postage cost for you. I would probably have to have a few bucks from you, to cover "over-time" charges on CompuServe. This is a non-profit publication, but I can't support it. It must, at least, be self-supporting.

Why do I Want You to Have It This Way?

Folding, stapling and stamping newsletters is not what I enjoy most in life, especially with over 200 Ampeers. (And 150 Midwest Monitors - yes I also edit a glow club newsletter.) For those of you who don't realize it, I am the editor, chief writer, article finder, photographer, proofer, gofer and grunt!!! (By the way - thanks for all of your wonderful words of encouragement sent with your renewals. I really appreciate them.) Even if only 10% of you are capable of receiving the Ampeer this way, that would be almost 20 less "to do".

What Do You Have to Do to Receive the Ampeer via CompuServe

1. Go Adobe and download the Acrobat Viewer for free.
2. Notify me by e-mail that you have the reader. I am 102575,3410
Easy HUH?

I've tried this with Gordon Tarling, editor of Electric Flight - UK, and it seems to be working fine. Yes, he's on CompuServe. If you are an e-modeller, CompuServe is a good service to have, since it has ModelNet with its extensive library and forum areas. There are pros and cons for all of the services, but I've chosen CompuServe because of ModelNet. Of course any of you can send me e-mail from any other provider via the InterNet. My InterNet address is 102575.3410@compuserve.com

For those of you who feel that I've been talking giberish - never fear - the Ampeer will continue to arrive at your door thanks to the U.S. and international postal services.

SILENT ELECTCIC FLYERS of SAN DIEGO
PROUDLY PRESENTS

ELECTRIC FALL FUN FEST

NOVEMBER 11th and
12th, 1995

1ST PLACE PRIZE: AVEOX MOTOR SYSTEM
\$100.00 1 ST PLACE PRIZE FOR ALL UP/LAST DOWN
PRIZES COURTESY OF AVEOX FLIGHT SYSTEMS

SATURDAY NOV 11th

9 AM - HANDICAP CARGO LIFTING - MINUTES
FLOWN TIMES OZ's CARRIED.
10AM -7 CELL PYLON RACE - ROUND #1
10:30AM - ALL UP LAST DOWN - **** FIRST PLACE:
\$100.00 ****
11:30AM - LUNCH/ FUN FLY/ SCALE FLY/HELICOPTER
FLY
12:30 - 7 CELL PYLON RACE - ROUND #2
1 PM - HANDICAP CARGO LIFTING - ROUND #2
1:45 - 7 CELL PYLON RACE - ROUND #3
2:30 - 7 CELL PYLON RACE - ROUND #4

SUNDAY NOV 12th

9AM - F5B - ROUND #1 - HANDICAP, 10 CELLS = 15 PTS PER
LAP; 7 CELLS = 20 POINTS PER LAP, ALL OTHER FAI RULES
APPLY.

****FIRST PLACE: AVEOX 1412 MOTOR SYSTEM ****
NOT COUNTING F5B TEAM MEMBERS:

10AM - 7 CELL CARGO LIFT - 1 MIN. MINIMUM
FLIGHT IS ONLY RULE!
11 AM - LMR - HANDICAP - DEDUCT MOTOR RUN
SECONDS TIMES #CELLS FROM TOTAL TIME.
NOON - LUNCH/ FUN FLY/ SCALE FLY/ HELICOPTER
FLY
12:30 - DEMONSTRATIONS BY MODEL ELECT. CORP.
OF NEW POWER SYSTEMS!
1PM - F5B - ROUND#2
2PM -F5B- ROUND#3
3PM -AWARDS

NOVEMBER 11th and 12th, 1995
AT MISSION BAY PARK, SEAWORLD DR,
SAN DIEGO
1/4 mi. EAST OF SEAWORLD PARKING LOT
1/2 mi. WEST OF I 5, SAN DIEGO

CONTACTS: WAYNE WALKER (619) 284-6119
STEVE BELKNAP (619) 693-3739
ENTRY = \$5.00. PRIZES & RIBBONS TO 3RD PLACE

Sanyo to Uprate 1000 SCR Cells

by Steve Neu

from: Peak Charge, of the Silent Electric Flyers of San Diego - October 1995

Editor: Steve Manganelli

"1000 SCR cells will soon be a thing of the past" said Joe Carcone, manager of Sanyo Energy in Tijuana, Mexico. In an October 3rd phone conversation seeking information about new products, I was informed that some time in the next year the 1250 SCR cell will replace the widely used 1000 SCR cell raising the nominal capacity by 250 mAh. It seems that Sanyo can't leave well enough alone. The new cell will be the same size and about 2 grams heavier than the 1000s, but (here is the bad news) have a higher internal resistance. Joe is sending me some samples to test to see how they work in our R/C Electric application. I will keep you posted as to the results. The U.S. F5B team is getting a box of the "old cells" in case the new cells don't work as well in the high current F5B models.

I think this change will eventually effect the 1400 mAh cells also. We will see!!

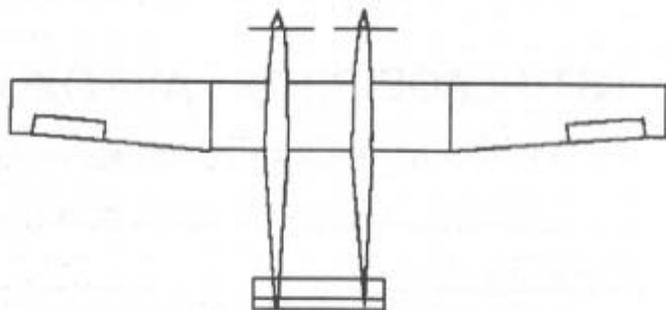
(Remember where you heard about this first, folks! - S.M.)

Congrats to San Diego!

The Silent Electric Flyers garnered a first place in 7-cell cargo, at the Astro Champs, lifting 15lbs. 11oz. Great job gentlemen! Check up coming model magazines for pictures of this unusual plane.

To get a very good report on this plane and how they did it, write to Steve Manganelli, 3296 Martinez St., San Diego, CA 92106-2959 or e-mail MANGANELLI_S@nadepni.navy.mil

Ask him how you can get hold of a copy of the October 1995 issue of the newsletter.



Crude sketch of the SEFSD Cargo Lifer a.k.a. MISS MADONNA!

WHY I LIKE THE KYOSHO DCM 20BB MOTOR

by Bob Canada

(This appears to be from the DEAF newsletter, based on the comments at the end, but I've lost the exact source. I apologize.)

Electric flyers are cynical about 20 to 50 watt motors. Rightly so because most small electrics require a lot of compromises, and expensive, exotic methods resulting in borderline flights, and crash prone flights. We are practically guaranteed less performance the smaller the motor. Ninety percent of commercially sold small motors are merely adaptations from other industry use. The Peck Silver Streak, Hyline's Elf, 50 watter, and Imp 30 watter, as well as Hobby Lobby's 400 have that familiar Mabuchi look in construction.

They also have another basic compromise, in my opinion. They all run with 3 to 4 cells and will not run much above 10,000 RPM. Note that the Kyosho 20BB runs on 6 cells and has (no load) 25000 max RPM. So what? I'll explain later.

This is not to say good models can't be built and flown with these other motors. There is plenty of challenge and reward for designing with these motors. I'm simply asserting that the power to weight ratios of these motors does not match the Kyosho 20BB.

Ironically, the Kyosho falls at the bottom of the power spectrum, 20 or so watts, which requires the lightest practical construction. Here is the rub. We are forced to build as light and strong as possible to realize the power potential of the Kyosho 20BB motor. Truthfully, I have been unable to find a 50 watt motor with the Kyosho's power to weight ratio.

Tom Davis found one once, but has never been able to find a purchase source. He called it the AYK Magnum AP racing motor. If anyone knows who can supply this motor, or its equivalent, please call me collect at 1 (901) 377-0877.

The motor in question turned 50,000 RPM no load, and weighed 1.9 ounces with ballbearing races. It measured 24mm and has a 2mm shaft. Japan is supposed to be loaded with them.

Once you have set up to build your first set of gears for the Kyosho 20BB motor there is a tremendous bonus. With conventional electrics we are all dependent pretty much on props, gearing, and motors off the shelf. Certainly this is fine, but because 25 to 50 watt motors are so small, we modelers can design our own props and gearing in a much wider range than those on the market today.

I guess that I'm trying to get across

that guys like Tom Davis and a few others are achieving spectacular results because of this prop and gearing flexibility. If the promise of these small planes holds true then we can all look forward to many inexpensive model such as B-17's and DC3's that will fly just fine.

Learning to scratch build props and gearing around the small motors is a small price to pay, and for tightwads, like me, a fraction of the cost of conventional electrics. Props and gearing in this power range are not subject to stress as are the more powerful 05 motors. This allows home brew props of the rubber band type.

Keith Shaw let the secret out in Shaw Speaks when he stated that finding the correct prop is all important, and much experimentation is needed.

Conventional electrics and wet power are stuck with what is on the shelf. Wee Watters can home brew props ad infinitum. Who is to say that a 7 to 1 gearing and a 6.5 by 7 pitch will not resonate perfectly with one particular plane and power package?

Finally, scratch gearing with a 48 inch pitch gear has proven to tame these small high RPM motors quite well. If you have been paying close attention to the War Power Motors bunch, (i.e. Model Electronics Corp. Ed.), up in Seattle you will understand that taming a high RPM motor is the secret to their astounding performance with 05 and larger ceramic magnet motors.

I hope this encourages some modelers to go back and bone up on old stick and tissue building skills, and get into this Wee Watt category, which for me, ranges between 25 and 50 watts. [I agree. Hopefully, Bob, and other Wee Watters will come to Dallas on September 30 for our Fly-In where they'll be able to shoot for Lightest RC Electric to Fly 10 Minutes, and so persuade more of us to buy in to the Wee Watt persuasion.]

Bob's address is: 5110 Oakmeadows, Memphis, TN 38134. Ph: (901) 377-0877.

ELECTRIC WONDER

Gary Warner

(Also from the DEAF newsletter)

Sig put out a little flying wing plane called the Wonder about a year ago and ever since I saw it, I knew it would make a good "E" conversion. The first thing I did was to run out and buy the first kit to arrive at Wild Bill's Hobby Shop.

After getting home and looking carefully at the kit, it became obvious that it was going to require some modification for an electric motor, so much so that I shelved the kit in the hopes of putting a 15 size glow engine in it. The biggest problem I had with the

design was the low, 338sq inches of wing area.

The kit was surprisingly heavy, and this would mean an estimated weight of 40-42oz if built stock. Maybe it would have flown at this weight, but I wasn't willing to take that chance what with a large investment of building time.

Moving on, (about 6 months later), my desire for a hot little "sportster" plane was increasing again. This came about because of our club scheduling an exhibition outing to a gas" field in order to show those guys just what electric powered planes can do.

Well, the Wonder was the first thing to come to mind. I once again took the plans out and looked them over carefully trying to find the best way of lightening the air frame. I also moved away from the cheaper and heavier motors to the lighter Astro 035. Finally I was convinced that the weight was going to be acceptable, around 32oz.

The biggest weight saving was to come from changing, replacing, and/or omitting wood in the kit. When it was all said and done, the only wood I used from the kit was the ribs, spars, trailing edge sheeting and two small plywood formers. All the other wood was replaced with thinner and lighter selections.

Another big weight savings came from not sheeting the top and bottom of the leading edges. The kit didn't call for any shear webbing, so I didn't see the need for "D" tube construction. Instead I added shear webbing for "0" strength and hoped the wing wouldn't flutter at high speed. The covering is Mica-Film, and the aileron control system was replaced with a flex cable system. The air frame weighs only 7oz - 7 to 10 oz less than the original kit. I was pleased.

As I said, the power is an Astro 035. I made my own motor mounts from aluminum and rubber banded the motor to the mount. This turned out to save a lot of weight. The fuselage was left mostly open under the wing and thus I could use most any size battery I had. Placing the aileron servo on its side in the wing such that nothing was sticking out into the fuselage helped in the battery compartment. The motor control is a Simprop 95 with a soft start. This really is only an on/off controller, but I chose it over a micro switch so that I could take advantage of the BEC function.

As everything was assembled and the first flights were near, I placed the plane, ready to fly, with a 7 cell SCRC 1700mAh pack on the scale. Total weight 31oz! I turned on the motor and checked amps and RPM. The prop used is a Graupner Super 6x6. Static RPM is about 15,100, and static amps about 35. A little playing around with these numbers and I knew I had a keeper.

The first available day for test flying was less than perfect. A lesser man, (maybe that should read "smarter man"), would have waited for better weather. The clouds were out in full, the temperature was in the 60's and the winds were 25 and gusting to 35. When bolting the wing on, I had to kneel behind the car so as to avoid having the wing blow into the next county. Anyway, the time had come. I hit the throttle, and up she went. I mean up, and up with a passion. After 5 seconds I grabbed all the down I could get and finally stopped the climb at about 500 feet. There was no question that this was going to have climbing power, but how about the maneuverability?

A little left stick rewarded me with the snappiest little full roll I had ever done with any plane. At this time I thought it might be a good idea to find the dual-rate switch. After having set the switch to give a roll rate less than 5 rolls per second, turns were much better.

One of my primary concerns with this design was the slow speed performance since the wings were so small. I shut the motor down and before I knew it, I was flying backwards at about 15MPH. I couldn't tell if the plane was really flying slow, or if it was just the wind making it look slow. At any rate, my fears of excessive landing speeds would not be a problem today. I came on in for a landing after only 1 1/2 minutes in the air.

The ailerons were quite effective all the way down to the slowest landing speeds.

Subsequent flights have been made with 1000mAh battery packs and the performance is very similar to the 1700mAh packs except for a noticeably slower landing speed. I haven't tried any other props on the plane and with good reason. First, the plane's flight with a 1700ma pack is 3-1/2 minutes of pure thrilling performance, and secondly the plane likes the speed afforded by the 6 inch pitch. It can do most anything the gas version of this

plane can do, and in my opinion it does it better.

The plane has now flown a number of times at the gas fields and the response is always the same: "I can't believe that that's an electric!". At one field, I launched fairly far away from a large group of pilots. I guess they didn't see me launch it because one of them came out to the runway while I was flying to ask me if the plane was powered by an OS 15. He said that the guys were wondering since only the OS or an electric was that quiet. When I told him that the plane was electric he

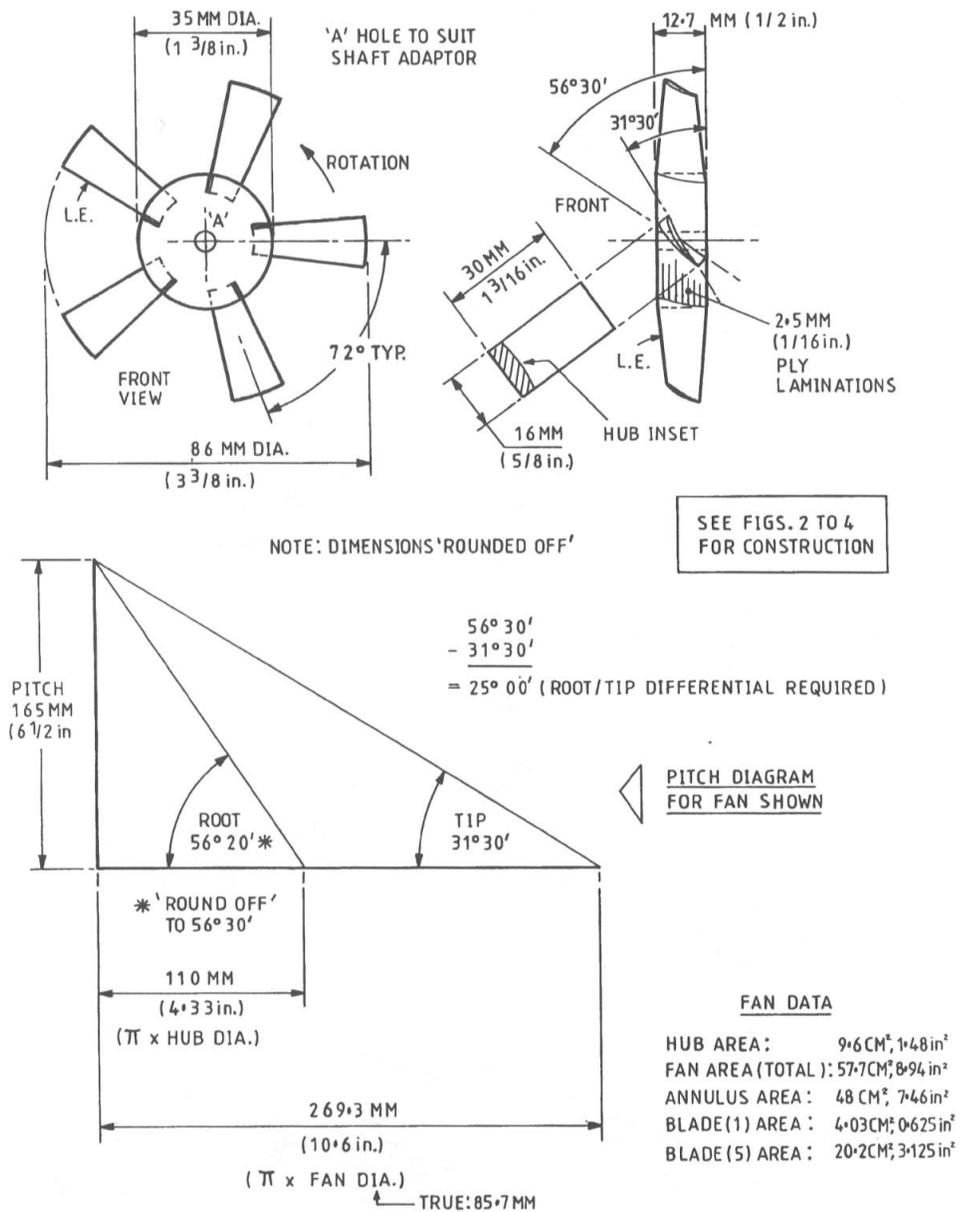


FIG. 1 : FAN DIMENSIONS/DATA

looked up in the sky as I flew by and said, "Wow! That sure is fast for and electric!"

As I think you can see, the plane filled the need to demonstrate electrics as capable, strong flying and practical R/C planes. God I love electrics! If you have any questions contact me at 333 Prestonwood, #605, Dallas, TX., 75081. Ph: (214) 235-1124.

DUCTED FAN IMPELLOR FOR 'HOT' 540 MOTORS

By Ian Brown

from: Autumn 1995 Electric Flight U.K, editor Gordon Tarling, 87 Cowley Mill Road, Uxbridge, Middx. UB8 2QD, Great Britain

Aircraft modellers are great experimenters and although there are several very good fan units in production, there is always a place for the homemade fan.

This fan is suitable for a mid-fuselage installation, or as a podded unit. With a 'hot' 540 motor, it will produce in the region of 20 ounces of static thrust-plus. A model of around 350 sq.in. should have the right wing loading for a good performance. Obviously, weight should be kept down, and performance will depend on the prototype chosen, intake/exit areas, and how 'draggy' the airframe is.

The big problem with making a fan has always been the blades. Ply or fibre blades are difficult to form, and reluctant to maintain their shape. Plastic blades, when cambered and twisted, tend to develop an irritating flat at the mid-blade position.

The method shown in the following diagrams will provide both camber and helical twist, while ensuring that all blades will match perfectly.

When assembling the fan, it is best to do this on a flat, non-stick surface, so that the blades will 'track' correctly.

The same 'Polypipel' plastic plumbing tube can be used to make the motor mounting stators. When

experimenting with various fans, it is best to use a static 'spinner' fairing in front of the fan, supported on narrow stators or even three wire supports. This will prevent the balancing problems associated with attaching a large spinner to the fan hub.

The fan shown is just one of various permutations possible using plastic pipe for the blades. For example, a larger diameter pipe will give less camber, and a variation to the diagonal cut, less twist, etc.

The principal is certainly not new - aeromodellers

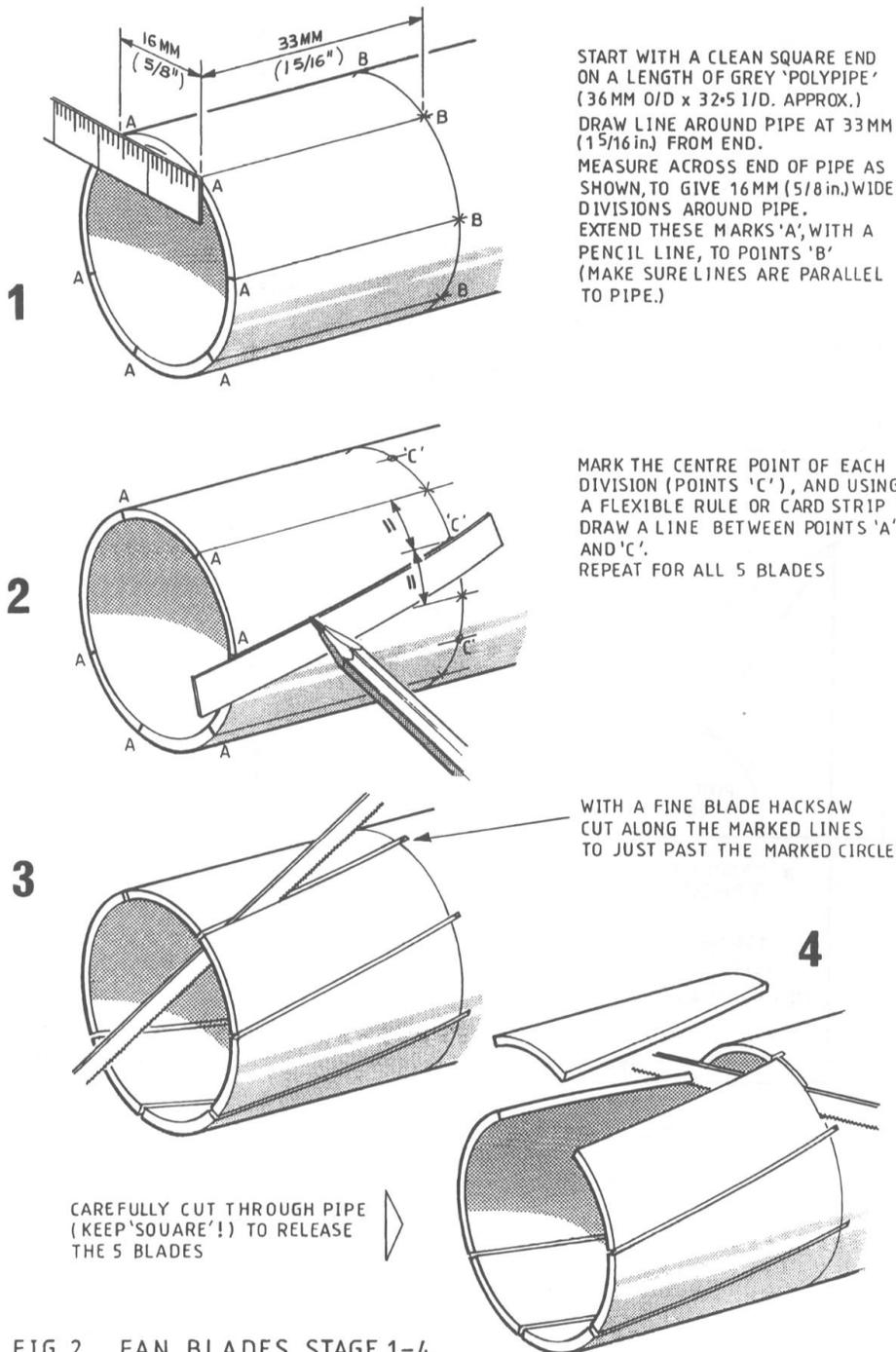


FIG. 2. FAN BLADES, STAGE 1-4

were binding bits of ply diagonally to treacle tins 'way back' The plastic pipe method means no 'forming' and no hunting for treacle tins!

So, that's it, may your 'whirly - bits' never fly apart! (Please Note that I have spread the diagrams for this fan over pages 6, 7, & 8. - km)

Covering Small Models with Reynolds Colored Plastic Wrap

BY Ken Bassett

from Silence Please, editor Fred Dippel, July 1995

Reynolds Plastic Wrap is a food grade film and is usually found in food supermarkets. It comes in 4 colors, Crystal Red, Crystal Blue, Crystal Green and Crystal Yellow. In my town, only the A & P carries the stuff and they don't always have all the colors. A call to the Reynolds Co. assured me that this is an established product and should be around for the foreseeable future.

Additionally, they advised that occasionally, other colors are available such as orange for Halloween. The colors are somewhat muted, however, they are intense enough to look good in all but the brightest sunlight.

The film has approximately the same weight as colored Japanese tissue and is easily applied with Balsa-Loc. This is the creamy white stuff sold by Peck Polymers and others to apply Lite Span covering. You must thin the Balsa-Loc with water just enough to get it to flow easily off the brush or else you will get a lumpy effect on all attachment surfaces.

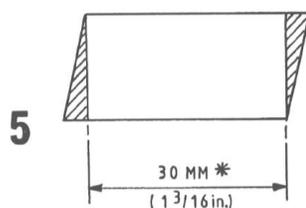
Apply the film to framework without heat. The reason for holding off on the heat is to make sure you don't have any tiny wrinkles trapped on the edges. When all looks good, use a very warm, but not hot iron to seal the covering. If the iron "grabs" or rolls the film, it is too hot. If you don't plan to shrink the covering it will hold on well enough using only the heat from your finger tips. Just rub slowly and gently to soften the Balsa Loc thru the film.

Shrinking the material is best done with one or two fast, low passes with a Monokote type blower on high heat. Do not linger or you will soften the Balsa Loc

and get edge creep-or worse, you will burn through and have to remove the stuff and start all over. If you have an accident you might try Toulene (available at paint stores)-it melts the stuff in seconds and the residue is easily scraped away, but some color dye will get into the wood. A wrap around, even if only 1/32" will practically eliminate edge creep and is a necessity when working with 1/20 stick.

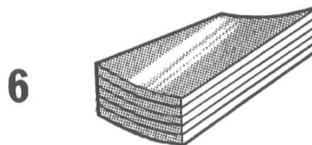
When fully shrunk, this material only has a gentle pull and will not warp light structures. Medium weight 1/20 sticks will not bow in if supported at least every 2 1/4 inches. Experimentation with other adhesives

FIG. 3. FAN BLADES, STAGE 5-7, SHAPING



THE BLADES WILL NOW LOOK AS SHOWN OPPOSITE. CUT AWAY SHADED PORTIONS TO GIVE DIMENSION SHOWN *

NOTE: THE DIMENSION QUOTED ALLOWS FOR A 3/16 in. INSERT IN HUB, LEAVING A 1 in. BLADE

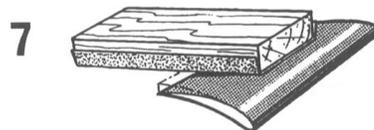


'STACK' BLADES AND CHECK THEY ARE ALL SIMILAR. SAND EDGES IF REQD.

BLADE SECTION-ENLARGED



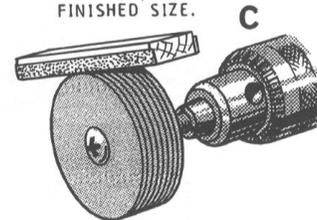
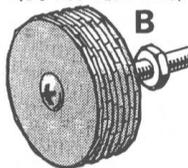
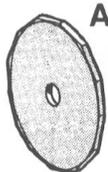
SHAPE BLADES TO AIRFOIL SECTION WITH MEDIUM 'WET AND DRY' PAPER FINISH WITH 'FINE' GRADE



ROUGH-CUT 8 DISCS OF 2.5MM (1/16 in.) PLY

SECURE ALL 8 DISCS WITH NUT AND BOLT (DO NOT GLUE YET!)

USING ELECTRIC DRILL OR LATHE, SAND TO FINISHED SIZE.



CUT BLADE SLOTS STRAIGHT ACROSS

SLACKEN NUT/BOLT, AND ROTATE DISCS TO SUIT BLADE ANGLE/SHAPE

CLEAN OUT SLOTS AND FIT BLADES. RUN 'CYANO' GLUE INTO SLOTS. REMOVE NUT/BOLT, AND SOAK 'CYANO' INTO LAMINATIONS. SAND BLADE TIPS TO SUIT DUCT. BALANCE ASSEMBLY. OPTIONAL: DRILL AND PEG.

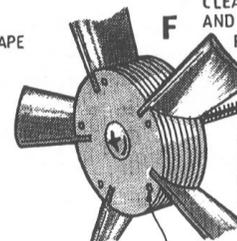
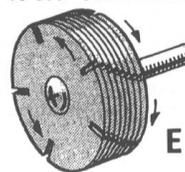
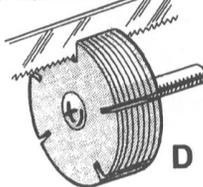
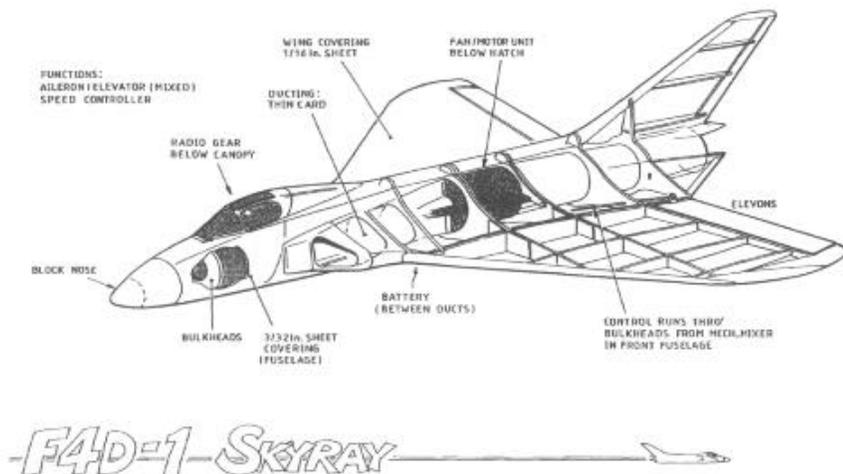


FIG. 4. FAN HUB AND BLADE FITTING



A SUGGESTED PROTOTYPE FOR AN ELECTRIC DUCTED FAN MODEL

Alan Brown '95

may be worthwhile as Balsa Loc is rarely found in hobby shops. Try thinned DUCO or similar cements.

Very deep coloring can be accomplished with Rit Dye (available at supermarkets, K-mart, etc.). You must put the film on a frame-if you just plop it in the hot dye you will end up with a sloppy tie-dye effect. I use a large disposable party tray and can dye one piece in it that is just big enough for a small peanut size model. Getting 2 or more pieces dyed to the same intensity will require some careful timing and monitoring of dye temperature.

I heat up a quart of dye mixture in the microwave until it starts to steam then dump it into the tray. Slosh the frame around a bit to prevent uneven distribution of color. Be careful, the dye will also stain clothing and other things. After dyeing, rinse thoroughly to remove all residue.

Application of stripes, numbers, etc. hasn't been tried yet; no info available. Try spray painting one side of the material and apply paint side down for a super shiny opaque finish-metal flake might be interesting. GOOD LUCK.

This stuff will not sag or droop in cool evening air like tissue and is 100% waterproof. The major downside is the static cling. If the film comes into contact with itself as on a thin tail plane section, it is difficult to persuade it to separate. Try a blast from the heat gun. This same effect causes dust to gather very quickly. Clean with a damp paper towel-avoid soaps and cleaners as they may mar the surface or leave residue.

If you try this film on a rubber job, you must lubricate lightly and use a rubber tensioning device or else the inside of the film will get slobbered up.

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Aveox is proud to announce the development of a new Kevlar wrapped rotor assembly that can operate at speeds in excess of 80,000 rpm. This has enabled the use of our 10 cell I4I2/2Y motor with 27 cells when coupled with a 3.8:1 Planeta gearbox and a 15x12 prop to win all current European F5B contests. All Aveox rotors are currently manufactured to withstand these very high rpm's. The only limitations are the current levels that the different stator winds can tolerate. The hobbyist now has a single motor that can be used with the full range of cell counts, and props, when matched with the appropriate gearbox. Call Aveox, or write

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R/C OnLine MAGAZINE

Reviewed by Paul Tarling - from E.F.U.K. same issue noted earlier.

Over the past few years, the Internet and CompuServe have become widely popular with a variety of people. Now, there are well over a million people hooked onto the Internet and CompuServe, and a number of those people are modellers.

Many different magazines, World Wide Web pages and CompuServe forums have appeared boasting massive coverage of the modelling world. RC Online is a relatively new addition to the Net. It is available through a variety of places but, unfortunately, has to be downloaded. RC Online currently has no World Wide Web page, but it's coming. Until then, we modellers will have to suffer the DOS version.

RC Online is presented as a series of CompuServe .GIF files. These files tend to be large in size, so the magazine comes compressed. The size of the

(continued on the last page)

selfextracting compressed file tends to be rather large, so it is best if you download it at BT's weekend rates in order to save a few bob!

When I first started up RC Online, I was greeted by a very friendly help page. This page told me all the controls I needed to navigate through the magazine. The layout was very friendly, and I easily found my way through it.

The first article I came across was about the IMMA meeting in May. As I walked through the article, I was amazed at some of the photographs that had been added. Unlike any magazine you can buy in the shops, they were of extremely high quality.

I was glad to find later on in the magazine, that every type of modelling was covered, from Aeroplanes to radio controlled cars. There was also a classified adverts section, slope soaring section and many product reviews. Dedicated Electrics coverage is somewhat weak at the moment, but I am reliably informed that this will shortly be rectified.

R/C Online is available from the following locations:
Internet: [FTP://ftp.gate.net](ftp://ftp.gate.net) in the pub/users/rconline directory



Nov 5 Midwest R/C swap meet Northville - Herb Judd (810) 477-0349

Dec 31 DAM annual red eye fun fly - Rich Vukmirovich (313) 537-2546

Jan 21 Michigan Min. Aircraft Assoc. swap & symposium - Wayne & Ford - Larry Dalrymple (313) 722-2489



Compuserve: Go MODELNET, in the Newsletters Library



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

**Next Meeting, Oct. 5, 8:00,
at the Dublin Community**