JOE BILGRI WINS FAI INDOOR

USA 1ST TEAM

BILL BIGGE THIRD

CARL REDLIN EIGHTH

WELL DONE, TEAM!

INDIVIDUAL RESULTS

1.	Bilgri	USA	37:49
2.	Rieke	Germany	35:11
3.	Bigge	USA	34:56
4.	Hamalainen	Finland	33:03
5.	Read	Great Britain	32:48
6.	Hewell	Hermany	32:00
7.	Hyvarinen	Finland	31:02
8.	Redlin	USA	30:56
9.	Ocsody	Hungary	30:41
10.	Englund	Finland	30:04

TEAM RESULTS

1.	USA
2.	Finland
3.	Germany
4.	Great Britain
5.	Hungary

***After the contest, Max Hacklinger of Germany made a flight of 44:20 !

THE SCATER 7

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President-Bill Hartill; Secretary-Milt Harker; Editor-Ken Sykora, 6717 Wilkinson, Apt. 205, North Hollywood, California

THREE MINUTE MODEL OR THREE MINUTE THERMAL?

We hear from all sides that the "3-minute" FAI free flight model is a reality in all classes...and, on this basis, it's time for new rules to further handicap these models.

The results of the recent Finals, however, seem to conflict with this "established fact," Even with the "spoon-feeding" approach to this competition (i.e. reasonable weather, smooth organization, good site, and an HOUR to find each thermal, with a personally assigned timer) this outstanding worldwide collection of skilled FAI modelers couldn't make the "3-minute" model materialize! Only eight of 200 contestants made five maximums, and only one went on to a six-flight perfect score!

Looking at these facts, we humbly asked, "Where were all the 3-minute models?" And for answers we got..."That flight was made in bad air", or, "HE hit a downdraft on that flight."

O.K., we'll accept that. But doesn't this mean we'll now have to call them "3-minute THERMAL models?"

Wouldn't a more realistic picture of "all-around" performance of these fine models be found in the average times they produced when they didn't thermal? If you look at it this way, the best ones will consistantly do more like 2:30 to 2:40.

So why were many contestants convinced they had 3-minute ships before the Finals? Simple. WE've been trapped by our own advancements! The models are getting steadily better, true. But even faster we're mastering an unbeatable method of winning...the "science" of thermal finding. And present flying rules "coddle" us in every way to make it easier. This makes 3 minutes look like a snap...when the big thermals are on the field. But obviously, thermals didn't cooperate at the Finals...and most of these models with 3-minute"backyard" averages seemingly left their performance figures back on their home fields.

Therefore, these certainly aren't "dead certain" 3-minute models. But, they are close enough to it to provide a realistic goal for the serious designer who won't settle for anything less than a genuine 3-minute plus all-weather model!

Ah ha! but the rules trends won't let you do this! The only answer seems to be to tear up all the current specifications and start all over... with new model restrictions. And where is this same old approach leading us? Well, think about this: How would you like to tow a 700 gram Nordic

with a 20 meter line?...how about a 500 gram Wakefield with a 10 gram motor?...and a 1200 gram Power job with a .5cc engine and a 5 second run? Too foolish? Impossible? Well, just look at the rules of five years ago, then look ahead four or five years..and think again!

Worst of all, this "downhill" rules approach proves nothing...except that you must find five thermals to win; while your model's potential in a downdraft becomes more and more meaningless! It's just never occured, evidently, to rules designers that these tough handicaps work against the model only in bad air...once it's in a good thermal, it makes no difference whether this model weighs 40 grams or 400! So we designers have been pushed into this corner until we can accept only one fact: "Either hook a thermal, or forget the whole flight!" (And at the Finals, this has come to mean, one bad-air flight, and you can just forget the contest!)

Of course the thermal will always be with us, and will remain some factor in the "luck of the game." But must this thermal become the sole CRUTCH which determines the winner, while better design and trimming become only secondary?

So, what is a better direction for future rules? How about this: Keep hands off model specifications for three or four years at a time, and simultaneously develop flying handicaps that demand greater performance and consistancy.

There are many places to start. What about more rounds? (Just one extra round made a lot of difference at the Finals!) And how about less "coddling" of flyers during rounds?...Like allowing a contestant just five minutes, after the round started, to get in the air! Sure thermal luck would be involved here too; but how consistantly lucky can any single contestant be expected to be? With several rounds (perhaps 7 or 8) of this kind of flying wouldn't the consistantly better "all-weather" model have the decided advantage? And isn't that what we're all after?...better and better models...or is it better and better thermals?

We believe it's time to start thinking about long range rules that inspire better designing for consistancy, and place less emphasis on thermal flying as the only way to win. This could provide us with exciting Finals which wouldn't be decided, for most of the contestants, until the last round was flown!

Ah well, maybe we're just dreaming...maybe we're nuts...yeah, like those who would try to fool the thermal...by adding a few grams of lead?...

NEWS FROM THE READERS

This month's "paid-up" group includes:

JACK FLORENZIE, Jersey City, N.J.
EDGAR FRANKLIN, Bergenfield, N.J.
BOB DUNHAM, Tulsa, Okla.
DICK PAUL, Brooklyn, N.Y.
BILL BELL, Delray Beach, Fla.
. BUCKLEY, Auckland, New Zealand
AL TAIBI, Lakewood, Calif.
DON ASSEL, Canton, Ohio
WALTER KUTAY, Mt. Prospect, Ill.
BILL McGARVEY, Auckland, New Zealand
VINCENT COSTANZO, Sierra Madre, Cal
CARL GOLDBERG, Chicago, Ill.
LEONARD LORTZ, Kent, Wash.
ANDY FAYKUN, Beverly Hills, Cal.
DAVE COPPLE, Los Angeles, Calif.
RAY HANSEN, Long Beach, Calif.
HARRY ORR, Jr., Coventry, Conn.
ED DOLBY, Rockland, Mass.
N.E. Wakefield Group, Lexington, Mass.
ARTHUR COLLINSON, Bradford Forks, Eng.

WALTER KUTAY writes to ask for some back issues he's missed. Sorry we didn't have 'em all Walt, but they are almost gone. As for any other readers with the same needs, we'll just have to say sorry, and try to save you the four cent stamp. We just don't run that many over our mailing list number, and what few battered extras are left usually disappear someplace.

DICK PAUL of Brooklyn also asks for back numbers and has a few nice things to say about our approach. Also, he sends along a donation...thanks! much!...with the hope that we won't let this thing die for lack of support. Well, funny thing is, Dick, that's completely out of our hands. Whether the SCATTER lasts or not depends on its truestaff...namely YOU, and every other FAIer who gives us the stuff to print...we just type it up and lick the stamps.

K. BUCKLEY of Auckland, N.Z. says he's glad to find another technical publication, like ours...and weeps a tear for the passing of the Montreal effort. (They keep asking, Barry...looks like you made quite a few dents that will be a long time straightening out!)

ED VESELSKY writes a fast letter from St. Louis about the comment we made in the July NFR column on the poor showing at Tulsa in Power. What he was talking about was the poor attendance at the Marion, Ill. elims. Sorry Ed, we had the right idea, but wrong town, and I guess we said it wrong. As for the quantity or <u>quality</u> of the power (or any other FF event) competition around Tulsa, <u>we know</u> about that! Dunham, Hodges, et al, have taken our measure too many times in everything from Wale field to Flying Scale for us not to have a mighty healthy respect for <u>all</u> those guys!

BØRGE HANSEN sends a very interesting letter from Denmark. This guy has been on the A/2 team 10 times! (Wow! if they follow the accepted American pattern he must have a <u>whole</u> magazine to write each month!) But kidding aside, here's a glider man with some real solid experience who should be able to give all the "run-and-hope" boys a lot of useful tips. He's going to send drawings of his latest A/2 and an article on A/2 trimming by one of his clubmates, Arne Hansen (no relation). Børge promises to keep us supplied with other such "goodies" in the future, too. Yes, Børge, we will most certainly keep up the correspondence and thanks much for the stuff that's already promised.

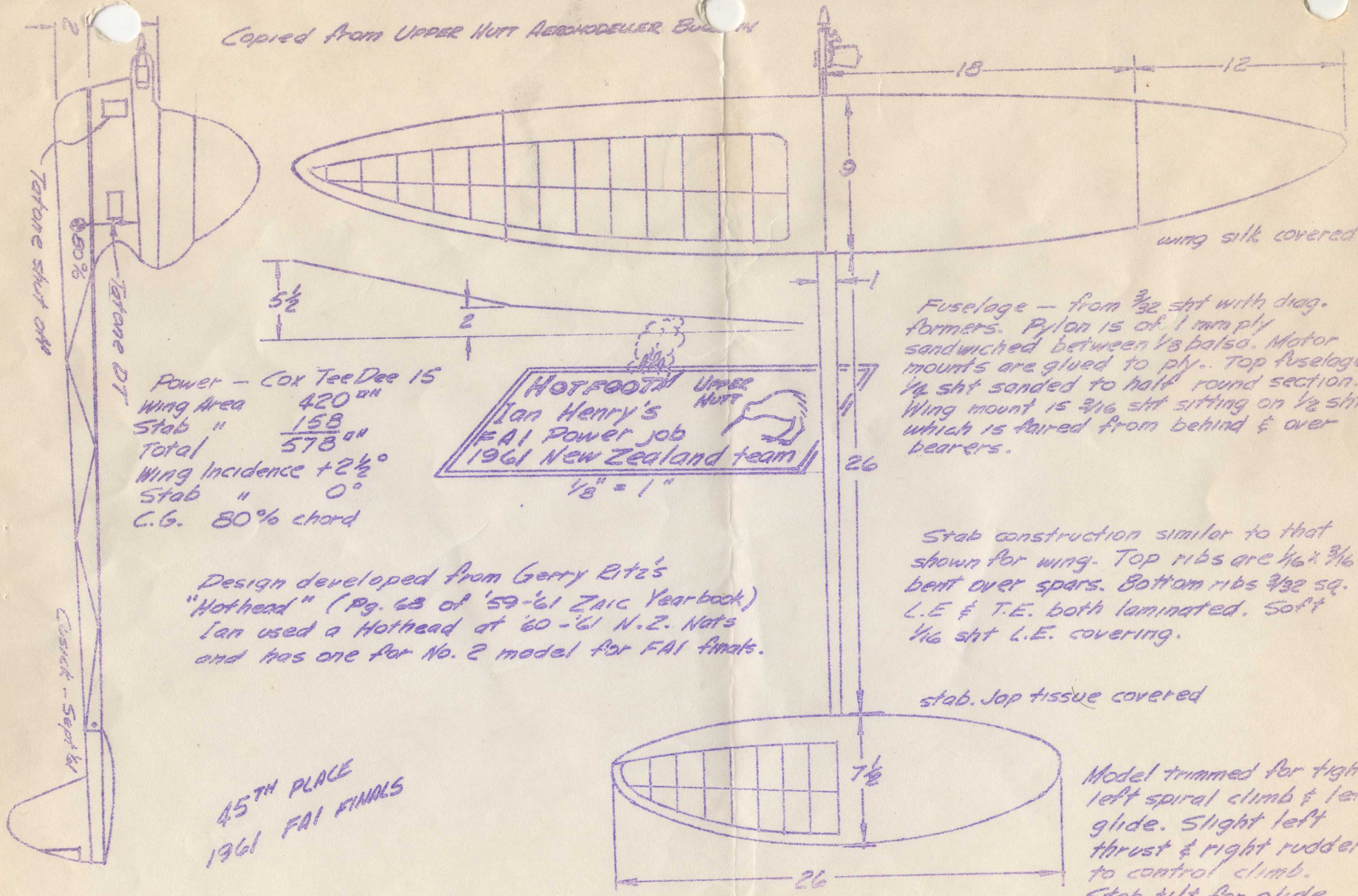
HARRY RYKS, Muncie, Indiana, sends along some comments on rules in general. Says he thinks FAI influence on the regular AMA rules has added too much weight, thus discouraging many. (Seems that's all solved, now Harry, we've just heard the new "unlimited" AMA rules went through...the kiddos can now throw away the scales and hunt their thermals with wild abandon!) He continues that in the matter of FAI Power he seems to be out of step with everybody else. He's bucking the trend he sees in higher aspect ratios since the 10-second rule came in. He reasons thermals are wider and more powerful the higher you go up; while the "holes are bigger and closer" nearer the deck. His personal solution is currently low aspect ratios. Benedick airfoils and high thrustline; all pointed toward maximum climb. You can see two of his approaches on pages 62 & 63 of Zaic's '61 Year Book.

<u>1961 NEW ZEALAND FAI POWER TEAM MODEL, "HOTFOOT", by Ian Henry</u>

(Ed. note: This slick looking power job was picked up from Bill Cook's topflite Upper Hutt Aeromodellers bulletin).

Cook says: Ian's design is based on Gerry Ritz's "Hothead" and uses one of the new Cox Tee Dee .15 motors. He says these motors are all the reports say about them, and that's quite a lot. Wing and tail construction of

Copied from Upper Hutt Aeromodeller Bu[illegible]



Power – Cox Tee Dee 15
Wing Area 420 sq in
Stab " 158 sq in
Total 578 sq in
Wing Incidence +2½°
Stab " 0°
C.G. 80% chord

Design developed from Gerry Ritz's "Hothead" (Pg. 68 of '59-'61 ZAIC Yearbook) Ian used a Hothead at '60-'61 N.Z. Nats and has one for No. 2 model for FAI finals.

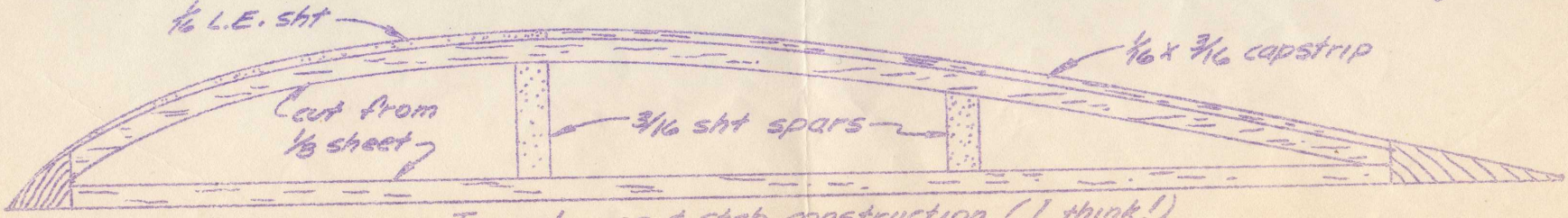
45TH PLACE
1961 FAI FINALS

Fuselage – from 3/32 sht with diag. formers. Pylon is of 1 mm ply sandwiched between ⅛ balsa. Motor mounts are glued to ply. Top fuselage ¼ sht sanded to half round section. Wing mount is 3/16 sht sitting on ½ sht which is faired from behind & over bearers.

Stab construction similar to that shown for wing. Top ribs are ¼6 × 3/16 bent over spars. Bottom ribs 3/32 sq. L.E & T.E. both laminated. Soft 1/16 sht L.E. covering.

stab. Jap tissue covered

Model trimmed for right left spiral climb & left glide. Slight left thrust & right rudder to control climb. Stab tilt for glide.



Typical wing & stab construction (I think!)

the "Hotfoot" is a little unusual but quite effective. I will quote from Ian.

"As the model is thousands of miles away I can only give you a rough estimate. The main spar in the wing is cut from 3/16" sheet, about 7/8" deep at the center rib. Rear spar about 1/2" deep, also 3/16", about 2-1/2" back from the main one. With the type of construction I used, you lay down the lower rib sections, then the center and upper dihedral break ribs, then measure the depth of spar at appropriate points, so the depth of spar can easily be worked out. Tailplane construction is similar". Get the idea?

IMPRESSIONS AT THE FINALS, by Jim Patterson

(Ed note: SCAT club member Jim Patterson was West Coast member for the 1961 US Wakefield Team.)

The contest, as most are, seemed to be one of picking thermals, or at least avoiding bad air. Several contestants stood, model in hand, for as long as 30 minutes waiting for the right air. One team, not so patient, launched pilot models upwind of the contest site to sample the air. Another tried a tethered A/2 right in the flying area, but officials quickly stopped this.

Leonard Lortz, of the US Nordic Team, became quite adept at timing thermals, and his predictions were helpful.

A party was held on the eve of the Wakefield event. One of the first to leave was George Reich; his parting comment was, "Don't forget what you came here for," and George didn't! Incidentally, at the banquet, George received the longest and loudest ovation of the evening.

(Ed note: Shortly after he returned home from Germany, Jim was "cornered" for an interview by several SCAT members. The following random comments were jotted down during this "bull session".

****I saw a Nordic flyer dressed only in his "jockey" shorts on the field... the better to feel thermal puffs with!

*****Saw a Russian Wakefield prop which was beautifully finished and unbelievably thin...must have been hardwood.

*****During the flying several members of the Czech team raced in circles under their ships, when the flight was short, whirling coats about their heads in an effort to break loose some lifting air.

*****Many well constructed ships...and one of the best was the Italian A/2 by Soave Paolo; it was beautiful!

*****For those who haven't heard, Sheldon's Power models didn't arrive in time for the Power event...with a little encouragement, he put one together "on the spot".

*****The Polish Wakefield Team had their usual high quality of "master machinest" hardware on their prop fittings.

****The Russians wanted to know where Ritz was.

*****I was asked how I ranked, numerically, on the Team. The Europeans still have a hard time invisioning the physical size of the US, and many do

not understand at all our system of team selection by trails in three widely separated sections of this country. Perhaps most of them are used to teams formed from smaller groups, which results in many familiar faces year after year.

*****Biggest surprize of the contest: Our German maid at the hotel strolled in to change the linen while we were standing there shaving, dressed only in our shorts...then, two days later, we discovered she spoke perfect English! Pardon, Jungfrau!

*****AERO MODELLER Editor Moulton thinks SCATTER editor Sykora is a hothead. (Ed. note: Oh well, Mother likes me.)

*****The team spirit of the entire Italian group was something to watch!

*****One of the Czech boys had a pair of shorts that would make Brigit Bardot blush!

*****The use of 14 strands or more, was almost universal in Wakefield. Most of these models were quite high climbing, considering the 50 gram limit. George Reich used 16 strands, and probably climbed as high as any other model on the field. In the fly-off he was the highest.

*****Carl Perkins lost time on one of his Wakefield flights when a Piper Cub which was taking off flew under his model, disturbing the air.

PLANFORM FORMULAS by John Wordin

Equation No. 1 is the basic relation between the span, area, and aspect ratio. It gives the span for any planform when the area and aspect ratio are know. In general these are the quantities known in designing the international class of model. The root chord and tip chord can then be found using the formulas shown in the tables for the individual types of planform.

Symbols: A = aspect ratio; B = Span; S = Wing area; C_r = Root chord; C_t = Tip chord; $\frac{C_t}{C_r} = \lambda$ Taper ratio

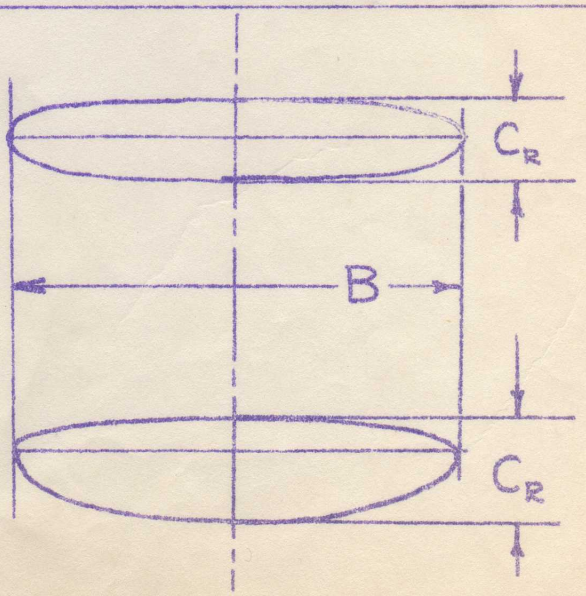
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$B = \sqrt{SA}$ BASIC ASPECT RATIO FORMULA

ELLIPSE

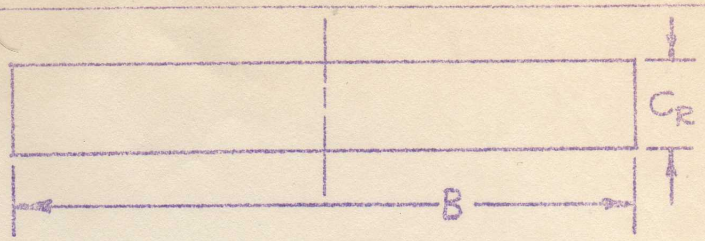
$$C_R = \frac{4S}{\pi B}$$

HOLDS TRUE FOR ANY ELLIPSE, SYMMETRICAL OR $\frac{1}{3}$-$\frac{2}{3}$ TYPE.



CONSTANT CHORD

$$C_R = \frac{S}{B}$$



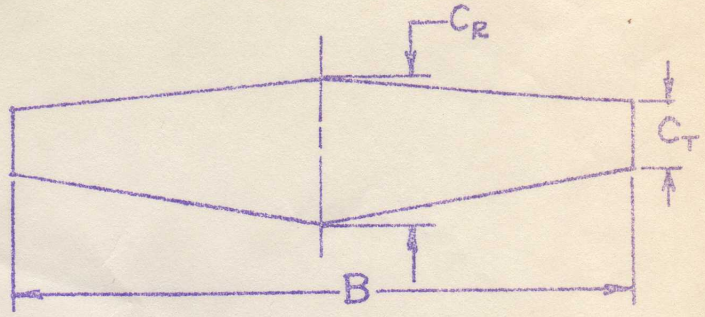
STRAIGHT TAPER

$S = \frac{B}{2}(C_R + C_T)$ WHEN CHORDS ARE KNOWN

$S = \frac{BC_R}{2}(1+\lambda)$ WHEN TAPER RATIO KNOWN

$C_R = \frac{2S}{B} - C_T$ WHEN TIP CHORD IS KNOWN

$C_T = \frac{2S}{B} - C_R$ WHEN ROOT CHORD IS KNOWN

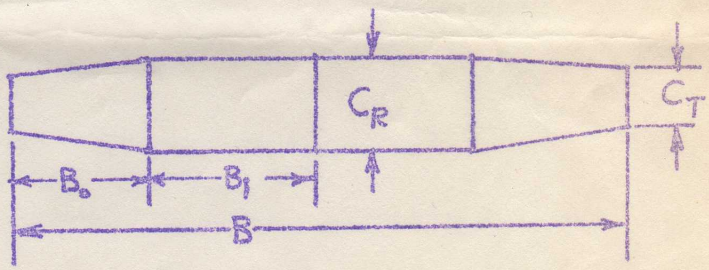


CONSTANT CHORD & STRAIGHT TAPER

$S = 2\left[B_i C_R + \frac{B_o}{2}(C_R + C_T)\right]$

$B = 2(B_o + B_i)$

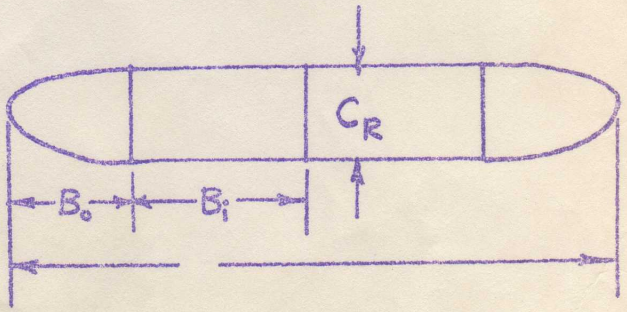
INTERMEDIATE SPANS B_i & B_o MUST BE KNOWN



CONSTANT CHORD & ELLIPTICAL TIPS

$S = 2\left[C_R B_i + \frac{\pi C_R B_o}{2}\right]$

$B = 2(B_o + B_i)$



SUPER THUNDERBIRD, Wakefield, by Bill Hartill

This Wakefield is descended directly from the "Thunderbird", (April 61 SCATTER). The basic layout was arranged to give a short nose as well all the other unusual attributes claimed in a description of this type ("low drag, high lift wing section, high aspect ratio, streamlined," etc.) The Thunderbird worked out quite well, particularly for Milt Harker who held the AMA Wakefield record for awhile. The success of this ship, particularly the method of fuselage construction, encouraged me to try the next logical step. And so Super Thunderbird was hatched. (Ed note: i.e. an egg was laid!) As can be seen by the drawings, a good looking fuselage with elliptical cross section can be made by using large tapered triangular longerons inside a sheet box. After assembly the corners are rounded off, the tail boom is added and the whole thing silk covered. This method allows any shape or contour to be used and eliminates the un-appealing look of the long, skinny constant diameter tube that is now so popular. The longerons were mointened to help bending and then glued to the side sheets. Then using about 7 hands, (Ed note: Bill has three small sons, and one large dog) the top and bottom sheets are added. Then carve.

The plug-in wing blended into the fuselage top permits the use of generous fillets for both strength and low drag. The popular me thod of using a tongue screwed or bolted to the fuselage (in Nordics) does not permit the use of fillets. After the fuselage was completed and silked a piece was cut from the top to add the wing stub containing the music wires onto which the wings plug. The cut out piece was then carved so that it would fit back, and the fillets added. Who needs a pylon, hooks, gum bands, etc.?

Success of this construction required choice, light wood for the fuselage. The front end details are quite important and require a lot of care and patience if, like me, you don't have a drill press. The stub and inboard panels of the wing have a pine spar and TE, the tips have a balsa TE and no spar. Dihedral joint is butted with no reinforcement. The inboard portion of the wings from the fuselage out 2 inches is covered on the bottom with 1/32 balsa. This is over the regular ribs. Butt ribs are ply.

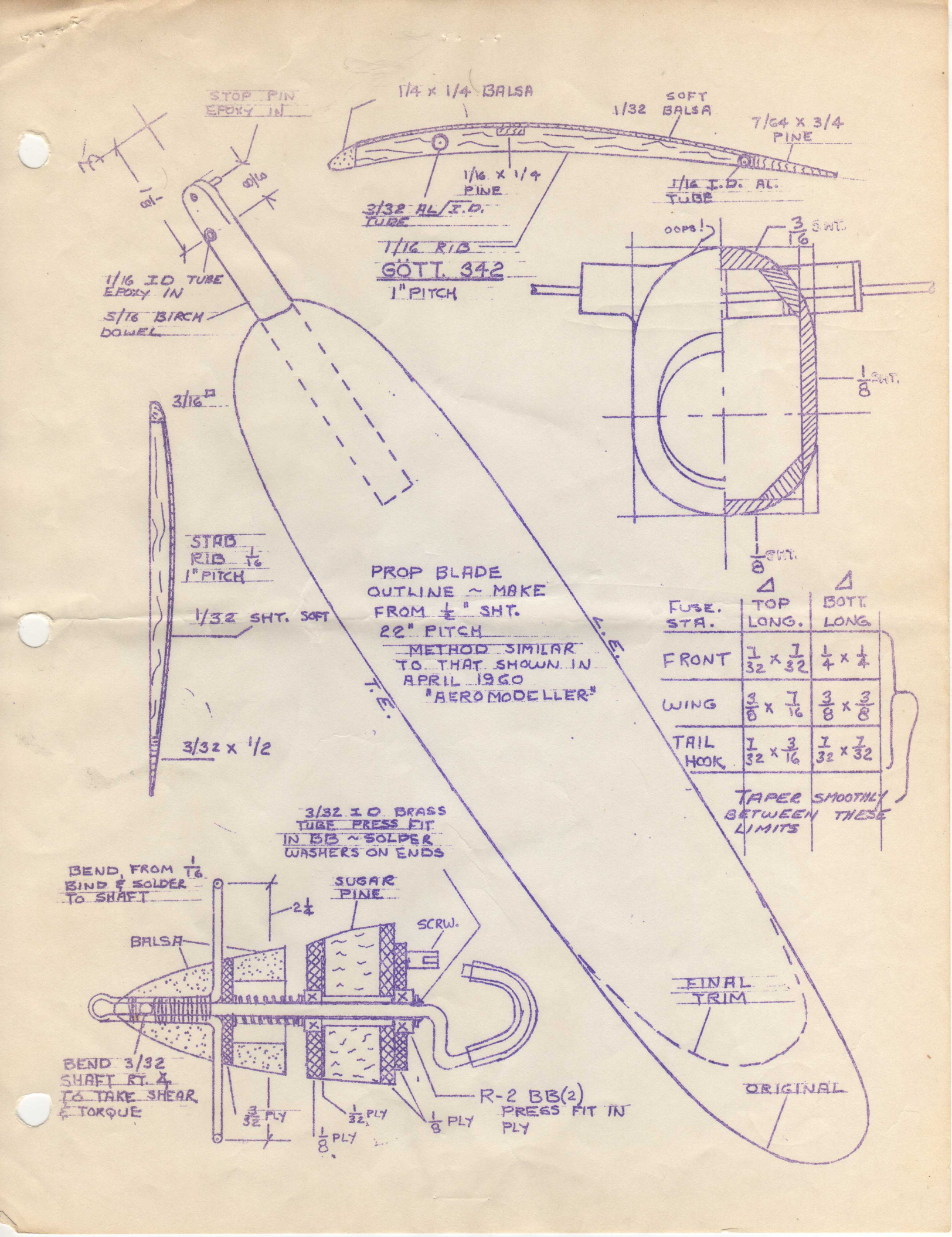
The prop was too big and the tips were cut to the shape shown in dotted lines. Some how or other the prop aspect ratio did not come out high enough and the blade area was too much. Some day I will try some different blades.

The short nose required some lead nose ballast which put the ship over the minimum weight. This problem is one of craftsmanship though, and should be designed around. The stab should be lightened up.

First competition for the Super Thunderbird was the LA Wakefield Qualifications where I methodically failed to qualify. (Send self-addressed, stamped envelope for list of excellent excuses.) Since then a new AMA Wakefield record (23.50) has been applied for.

FROM "OUR MAN IN MUNCHEN"

Like any modeling publication worth its salt, the SCATTER wouldn't think of letting an important event like the FAI Finals go by without getting you a first hand report by a staff correspondent. The following "on-the-spot" report comes from our Man in Munchen, John Peterson. (Since John was also helping our teams, taking pictures, drinking the crazy dark beer, and other things, the following represents the random notes he jotted down on the back of a match book cover!)



FUSE. STA.	TOP LONG.	BOTT. LONG.
FRONT	1/32 x 1/32	1/4 x 1/4
WING	3/8 x 1/16	3/8 x 3/8
TAIL HOOK	1/32 x 3/16	1/32 x 1/32

TAPER SMOOTHLY BETWEEN THESE LIMITS

*****the location was well chosen.

*****the lane leading in with flags of all nations flying.

*****the crowd of contestants and spectators crowding around a proven contender prior to launch.

*****the "thermal generators"--helpers attempting to generate lift by running under a model whirling shirts or towels in a circular motion to keep the too short flights up a couple of seconds longer.

*****broken rubber motors--ah la Patterson.

*****the teams in matching outfits.

*****the utter seriousness of the Russions.

*****the beautiful Italian built models.

*****the stark functionalism of Patterson's Wakefield, and the interest it generated.

*****the enthusiastic small boys climbing trees to retrieve enmeshed models.

*****the running, shouting modelers attempting to dissuade small boys from putting fingers through fragile wings while pulling models from trees.

*****the lazy, awkward flying wings flying in a semblance of uncontrolled controlability. (Ed Note: The European annual flying wing contest was held during the time of the Finals, at the same site.)

*****the general "sameness" of design for a given catagory.

*****the complete absence of smog.

*****the quite obvious interest in the Cox engines by the Europeans.

*****the universal approval of the SCATTER.

*****the boisterous French retrievers hanging all over the little Citroens.

*****the "human fence" of police attempting to hold off the pushing spectators prior to the Wakefield fly-off.

FROM THE NOTEPAD

*****On page 281 of the Sept. '61 issue of the English mag., MODEL AIRCRAFT, John Pool has the first part of an article on pitch and props (for rubber ships). This is plain-talk, meaty stuff which backs up his original writings on the same subjects in the March '58 issue of the same mag.

*****Reader B. F. Joyner writes that he has 1 n.n. Lactron rubber for sale. Prices: 1 lb. - $6.00, 5 lbs. - $25.00, 10 lbs. - $46.00 and 50 lbs. - $175.00. We know nothing about this stuff, but may be the same round rubber some FAI'ers have tried overseas. (1.5 mm and 2 mm also available.) B. F. also writes that he is offering a "FAI Model Design Service". Modeler just sends in specs. he wants met, and Joyner comes up with sketches, work-

ing drawings, or will even build a test model. All of this for a fee, of course. His address is: 370 Stonewall, Memphis, Tenn. (After they read this, we're quite sure our overseas readers will be certain US modelers are completely mad!)

*****Latest news from AMA is that Bill Winter, for many years editor of Model Airplane News, has been appointed editor of the official AMA publication Model Aviation. Winter will replace the former editor, Cliff Allum.

*****Memo to readers: In recent weeks we've received checks, money orders, etc. (for subscriptions, towlines, etc.) which are made out to the SCAT club. In the future, please make them out to the editor. Our club never has enough money on hand to open a bank account, so it is awkward to try to cash such payments. (Also, this makes it easier to transfer funds to the Editor's retirement fund in the Swiss banks!)

*****Late Flash! Gerry Ritz writes that plans are under way for a "Championships of the Americas". This would be a contest for the North and South Americas, and would feature the three FAI international classes. It would be run during the "off" years betweem the Finals meets in Europe. Sure hope it works out, Gerry!

COMING NEXT MONTH

For November we've got a write-up and some drawings of the latest in tow reels, a new Nordic A/2 design, and...well, what are you readers going to send us???

SYKORA
5717 WILKINSON
APT. 205
NO. HOLLYWOOD, CALIF.
U.S.A.