THE

SCATER

published by Southern California Aero Team (18)

September 1962

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THE 12-METER WAKEFIELD

About this time every year we survey the wreckage piled in the corner, study our limp competition record, and make our annual decision to take up another hobby. We considered weight lifting (those things are heavy!), and also model railroading (didn't have a striped cap), and even toyed with the idea of racing for the America's Cup (our AMA card wouldn't get us in the N.Y. Yacht Club!)

We found our answer at last in that greatest of all hobbies known as "Let's Change the Rules." This popular pastime costs nothing and demands no skills.

With this decision made we returned to a study of the America's Cup event, hoping that here we would find fertile fields for our new rules-changing hobby. (These beaufiful boats have tough, detailed requirements too, you know). Then while looking over these "12-meter" specifications, we were struck with the possibility of applying a similar "formula" idea to our own FAI classes.

Of course the fai thful old Wakefield was our very first thought. Goodness knows they've been trying to "do-in" this rugged old die-hard for years! They've sawed off the wheels, taken away all the rubber but what holds on the wings, and even suggested stinky little engines up front...to say nothing of trying to replace it entirely with that "popular" (that's how the mags put it) class for the kiddos and arthritics known as the "Coupe de Grace."

The results of our efforts is "The 12-meter Wakefield Formula" and it looks like this:

$$\frac{A}{M}\left(\frac{14700}{A}\right) = T$$

$$\text{area} = \frac{14700}{\text{Rubber}} \qquad \text{Rubber} = \frac{14700}{\text{area}}$$

where: A=airframe weight in grams (without motor)
M=motor weight in grams
T=total allowable projected area (wing+stab) in sq. inches

and: A + M must equal a minimum of 230 grams

The idea is to allow designers wider approach concepts while not giving any single approach a big advantage over other "opinions" at the outset. Current wakefields fit nicely into the center of the formula, yet there is "room" (and reason?) to move off in opposite design directions from today's layout which in the last few years has become rather standardized (and sterile?).

Now if any sneaks in the crowd think to beat this game with that old black magic of the 50/50 power/weight ratio...let them try...and see what happens! Good doodling!

NEWS FROM THE READERS

This month's extension to the mailing list includes:

BRUNO MUKARI, Monza, Italy
FLOYD RICHARDS, Omaha, Nebr.
BOB SCHINDLER, Hales Corners, Wis.
RON FIRTH, Sheffield, England

Looks like some of the plans we're publishing are getting past the "looking" stage and are actually "activating" a few readers. Example:

RON FIRTH writes from England to say he's building Dick Gildersleeve's NORDIC IV, (Nov. '61 SCATTER). Good choice, Ron; Dick just missed this year's A/2 Team with this ship by less than a minute...hope it will be equally potent for you! Ron, it would appear, is one of those real busy modelers: in addition to his building and flying he serves as Chairman for the Northern Area Committee SMAE and helps out on the very well done Northern Area news letter published by John Pool and his rowdy group.

PAT CURTIS, Cape Province, South Africa, sends along word that he's trimming out his DRAFTEE DIP wake, by Charles Sotich (Feb. '62 SCATTER) and that it looks real good in the wind...might be worthwhile investigating for you guys who have much rough weather to contend with.

OCIE RANDALL who's been putting out the lively Fresno Model News for more years than anyone can remember has announced his retirement from his job with the city. Congrats., Ocie...guess you'll be a real terror at the local contests now with all that buildin' and flyin' time on your hands!

ART STANLEY from way up in Marblemount, Wash., tells us he's a Wakefield nut (are there any other kind?) who lives in a remote area and must do his flying alone. To solve his "anchor man" problem for winding he's rigged a car bumper attachment that works well. Heck yes, we'd like to publish it, Art, so send in a sketch. When you want to gotesting at five AM some morning even LA can become damn remote!

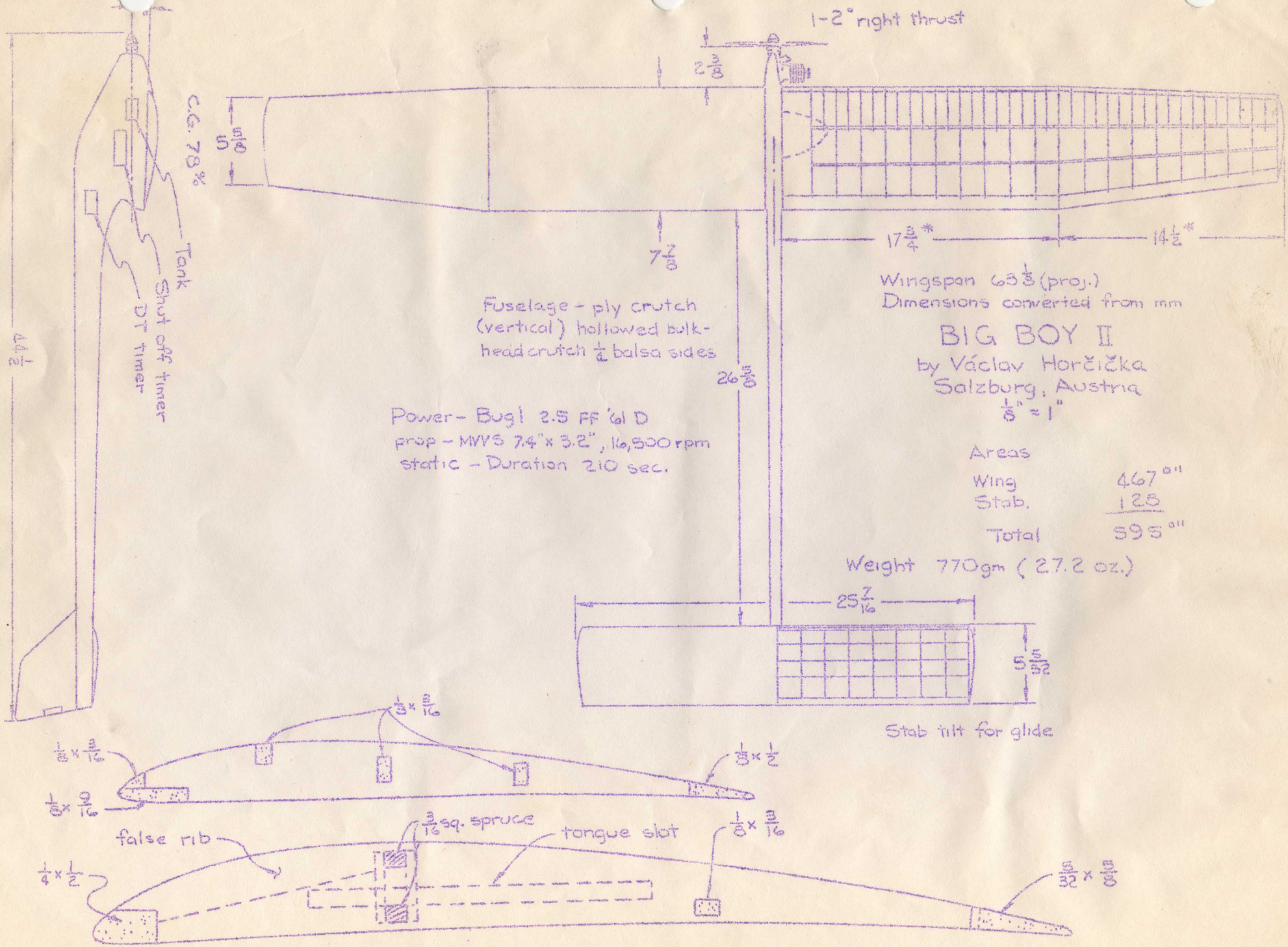
"BIG BOY" MK'S I & II FAI Power Model by Vaclav Horčička, (Salzburg, Austria)

(Ed. note: This plan and article came to us by way of Keith Hoover, Chicago. Thanks, Keith. Now hang on, dear readers, here comes another of those famous Japanese translations from the original German which have made us infamous throughout the modeling world!)

This model was developed from its predecessor, my design Big Boy I. endeavoring to improve the glide, preferably without reduction in climb altitude. This improvement was through three modifications, which were the airfoil was changed (BB I had an NACA 4409 section), the leading edge sheeting was removed, and the C.G. was moved back 5%. The model was gentle to trim and had good stability. The sinking speed was approximately 6 meters/second, which is 2-3 m/sec better than BB I.

The model makes 2 to 2-1/2 turns to the left under power and has good transition into its lefthand glide pattern.

Average performance of this Big Boy II with a 9 second motor run on the MVVS engine (210 X 90 prop @ 16,500 rpm) is 210 seconds. With the Tornado 8 X 4 nylon prop (15,800 rpm) the performance is 190 seconds.


1-2° right thrust
2 3/8
C.G. 70%
5 5/8
7 7/8
17 3/4 *
14 1/2 *
Wingspan 63 1/3 (proj.)
Dimensions converted from mm
BIG BOY II
by Václav Horčička
Salzburg, Austria
1/8" = 1"
Fuselage - ply crutch (vertical) hollowed bulk-head crutch 1/4 balsa sides
Power - Bug 2.5 FF '61 D
prop - MVVS 7.4" x 3.2", 16,500 rpm
static - Duration 210 sec.
Areas
Wing 467 sq in
Stab. 128
Total 595 sq in
Weight 770gm (27.2 oz.)
26 3/8
25 7/16
5 5/32
Tank
Shut off timer
DT timer
21 1/4
Stab tilt for glide
1/8 x 3/16
1/8 x 3/16
1/8 x 9/16
1/8 x 1/2
false rib
3/16 sq. spruce
tongue slot
1/8 x 3/16
1/4 x 1/2
5/32 x 5/8

Big Boy II was first flown at the World Championships at Leutkirch in 1961 and placed 13th. Since then it has been flown in four more competitions in both Austria and Germany and obtained a first place every time. In spite of its powerful motors the model is very forgiving and uncritical.

The average flight time in the five competitions mentioned is 165 seconds.

WHAT HAPPENED AT THE WEST COAST SEMI-FINALS (?) by Bill Hartill

I don't know whether to end that sentence with a period, exclamation mark, or question mark. With so much effort expended in so short a time in the most grueling of hot, dusty conditions the head-on collision with the fickle finger becomes difficult to describe adequately. We are still in a state of shock.

The Fresno field, is very dry, dusty, and flat. Retrieving is relatively unrestricted, except--the ground is covered with small hummocks, topped with desert grass reinforcements. Between the hummocks about 1 to 2 feet apart is soft sand...a beautiful tank trap. The south end of the field is a sand trap which a car cannot get through at all. Bouncing over this terrain all day one soon expects to meet "The Desert Fox" (James Mason) in a bunker, plotting the next panzer attack.

The SCAT boys came well equipped for this one. Four of us took days off from work, arrived Thursday night, and tested Friday. Bob Van Nest and I towed up 15 ft. travel trailers for field relief from the sun, ice, and food storage, etc. Nights we stayed at a Fresno motel. For retrieving, we improved over the 2-way citizen's band radios used last time by using car mounted units which increased range and avoided battery drainage. Bamboo poles taped to the door frames supported the antennas. We used station wagons for retrieving. Worked great but the heat, sand, etc., strained the cars. We had: one stuck in the sand, two dead batteries, one stalled engine (ignition wire shorted out) three radiators boiled over, and two ran out of gas. At least we're ready for the Pan American Road Race!

Back to the contest. 6:00 AM Saturday the huge contest crew (3 guys) started processing (?) Nordics. Luckily not many wanted to fly early. Was light enough to fly at 6:30 and things got jammed up a bit at the end of the round. A protest was made against two hapless souls who didn't manage to squeeze their flights into the limit of that first round. No excuse; capitulate!

The first two rounds were flown without lift or "down". No one could honestly detect any vertical motion. Frantic last minute adjustments were tried with thicknesses of paper under stab trailing edges. Several of us were able to eke out a few more seconds this way. I think high time for the first two rounds was around 2:39. In the third round the thermals started and the hunt was on. After a few rounds it looked like Hank Cole was moving steadily ahead---but no, it was not to be.

Somehow Hank dropped one after making it look so easy. Immediately the spirit changed. Everyone was back in the contest again. We renewed thermal hunting with a vengeance. Most launches were made in spurts. Nothing in the air for several minutes, everybody waiting for everybody else, then there would be 6 to 7 circling in the same thermal. One of the tricks used (too bad I didn't think of it) was to get a timer as the round started, and then sit down wind. As the "pack" picks up all the timers they put up most of the flights for the round. The "sleeper" down wind then just picks out which thermal looks the best as sampled by the "pack."

The winner, Ingersoll, made no fuss, strain, or noise. He just plain won. I am still not sure what technique he used; but it worked. Nice airplane, too.

My nemesis was a peculiar towing trait I hadn't paid much attention to before; for towing in average wind the ship follows o.k.; for calm I usually move the hook back 1/4 inch to make towing easier. I did this for the third round and the ship veered to the right and wouldn't follow. Couldn't get it up or down. Couldn't get under it. Very embarrassing. There goes the contest. Thought to myself, "What a silly kid stunt; what a way to blow it." In the last round, out of the running, I flew the new 25:1 aspect ratio ship with asymmetric wing. Maxed easily naturally. Chased with me on the roof, Patterson driving. Ship DT'd but stab twisted around and she went into a high speed flat spin losing no altitude and drifting faster than Jim could drive over the lousy field. Came to a fence and end of visual contact together. Werner retri and John Wordin saw it go under them (they were flying in Werner's Luscombe) but didn't realize it wasn't coming down. Werner and I searched from the air later but without luck.

Wakefield the next day. The first two rounds were again without up or down currents. Some airplanes were doing around 4 minutes. Some just barely over 3. And there were those with problems. Later as the air changed many held wound ships waiting for good air. In the second round (or third?) Hermes' ship came apart in the air after launch. Jim Patterson was blasting them up out of sight under power. Having held for his windings, I can attest to the gut tearing turns he was putting in. Jim blew one motor deliberately (outside the airplane) and how close he approached this figure I'll never tell. I'm too nervous. On all flights but one Jim checked the air for a minute or so before launching. On his one non-max flight he launched right away since it felt good. It wasn't. Many others did quite well through the day but only Hermes managed a perfect score.

Well, Monday and rower. Hermes was home resting. The C. D. Frank Gallo, turned the contest over to Ocie Handall so that he could fly. Again some ships were pushing 4 minutes without any apparent assistance; some were just cracking 3 minutes; and some just cracked. It appeared to me that this demonstrated "still air" ability went for naught. Seems we should have had the two "long flight" rounds first. Air was pretty good for running engines. Several of us were tach-ing over 18,000 on 8 X 4 Top-Flite nylon (Cox). Van Nest had home-brew fuel that did 18,750. Cusick was having trimming troubles with a new ship. Van Nest and the Max Men were looking good.

I decided to work on the trim of my new ship since it appeared to have more potential than the older one. Things were going pretty good until on one flight I was distracted and/or rattled and launched too much to the left. Loop to the left--lousy flight. Another stupid trick. Picked up the ship fired it up without changing anything, launched into a beautiful climb, perfect roll out and fat thermal. Later Van Nest and I launched together within a few feet of each other. We spiralled up together in the same hunk of air. I got higher and drifted to the east after pull out while Bob went a little west. He boomed away in a thermal and I didn't. This shows what the air was like.

Galbraith very confidently (actually devastatingly confident) proceeded to max out. Some of his flights were pretty close but what matter; he put on a convincing show.

Doug's ship looked like a Spacer. Asked why it needed the 12° downthrust built in, he said he hadn't tried it without it. Doug used a shot of oil into the cylinder to help starting. (Super Tigre).

Well, there it is. I can't call it a complete report but it's all I can remember. What lessons can be learned? I would guess the following:

1. One's state of readiness is still relative. This cannot be judged until the contest.
2. The difference between winning and losing depends on many factors. The most important one is always the one you've considered least.

NORDIC A/2 by Dick Colonna (Hampton, Va.)

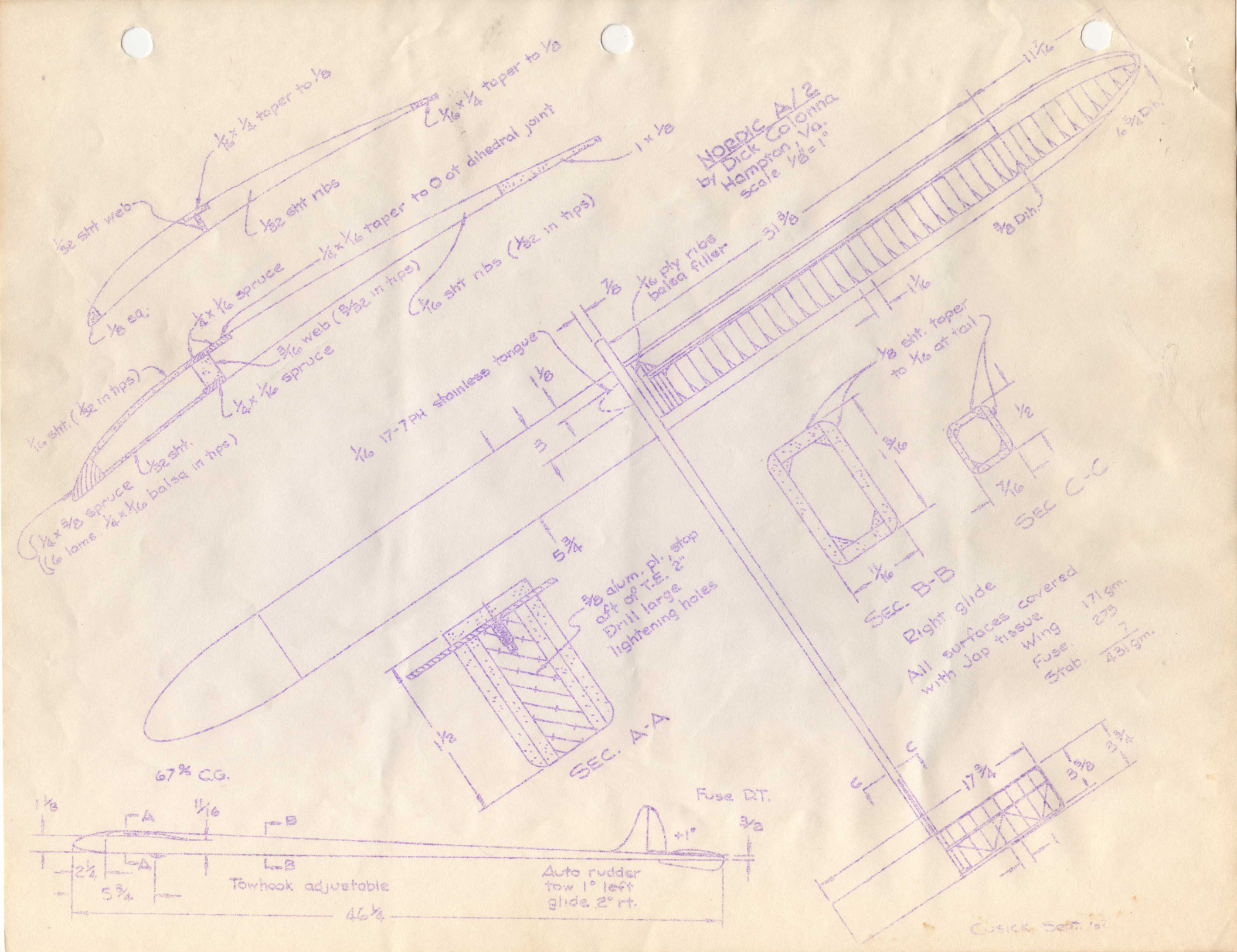
(Ed. note: Dick didn't send much info on this ship in the way of details, but he did mention some of its flying activities. He says it performed only fair at the '61 semi-finals but after more trimming and getting to know the model better he was able to win a 3rd at the '61 Nationals with four maxes plus. Although the ship is not brand new it is interesting to note that it seems to retain many of the "modern" design trends: i.e. ultra short nose moment, longish tail moment, rather high aspect ratio wing, careful attention to light tail structure, etc.

Like Dick's FAI Power model which we published some time back this ship at first glance is deceptively simple. After careful study of the various components, however you will begin to see that each "simple" structural unit has been carefully worked out...so that the happy result is fast, rugged, construction without any loss in refinement of design. Which goes to prove, I guess, that a model doesn't have to be either fragile or hard to build to be an effective design. Budding designers anxious to try their "first" hand at the drafting stage of modeling would do well to study the techniques utilized here by Dick to accomplish his end result.)

EAST COAST SEMI-FINALS REPORT by Sal Cannizzo, (Staten Island, N.Y.)

Here in the East Ed Hopper won the Nordic team place with a total of 780 seconds. The weather on Saturday for the Nordic event was good with temperatures around 92 and winds of 5 to 7 miles per hour. There were many holes and thermals were few especially for the fourth and fifth rounds. The only other fellow who really gave Ed a tough time was Mike Karlak from Cleveland. Karlak was flying a ship something simular to Linder's design. Hopper had a beautiful flying machine but I cannot give you any specs on it.

Wakefield had the most competition with three fellows being tied for first place at the end of the fifth round. (Ed. note: The East Coast area used only five rounds at their Semi-Finals). In the fly-off there was George Reich, Crowley, and myself. The weather was the same as the previous day except for the flyoff round which became very windy (about 20 mph). Times for this round were: 166 sec for myself, 122 for Reich, and I believe, 121 for Crowley. Crowley, who comes from Detroit, had a beautiful flying Wakefield which was the highest climbing and most straightforward design I have ever seen. It had square tips, very long M.A. with twin rudders. He used 14 strands of 1/4" flat Pirelli turning about a 22 X 24 prop. I'm not certain on the prop size. I used Frank Parmenter's "Langley" (published in American Modeler) with a 22 X 27 prop and 22 strands of 4mm pirelli which I wound to 500 turns. My motor run was approximately 50 sec. and flight pattern was right/left. The C.G. was one inch forward of the T.E. and not 1/2" as stated on the magazine plans.


Nordic A/2
Dick Colonna
by Hampton, Va.
scale 1/8" = 1"
1/32 x 1/2 taper to 1/8
1/16 x 1/4 taper to 1/8
1/32 strt web
1/32 strt ribs
1/16 x 1/16 taper to 0 at dihedral joint
1 x 1/8
1/16 sq.
1/4 x 1/16 spruce
3/16 web (3/32 in tips)
1/16 strt ribs (1/32 in tips)
1/16 strt. (1/32 in tips)
1/32 strt.
1/4 x 3/8 spruce
(6 lams. 1/4 x 1/16 balsa in tips)
1/16 17-7PH stainless tongue
1/8
3
7/8
1/16 ply ribs
balsa filler
3 1/8
1 1/16
1/8 strt. taper
to 1/16 at tail
3/16
1/2
7/16
1/16
SEC. B-B
SEC C-C
5 3/4
3/8 alum. pl., step
aft of T.E. 2"
Drill large
lightening holes
1/2
SEC. A-A
Right glide
All surfaces covered
with Jap tissue.
Wing 171 gm.
Fuse. 273
Stab. 43 gm.
487
67% C.G.
Fuse D.T.
1 1/8
A
1 1/16
B
+1°
3/8
2 1/4
5 3/4
LA
LB
Towhook adjustable
Auto rudder
tow 1° left
glide 2° rt.
46 1/4
17 3/4
6 1/8
3 1/4
Cusick Sept. '61

The Power event was won by Jim Warnock with 5 maxes, flying a Cox "Lightning Rod". Thermals for that day were very weak due to the overcast that prevailed during the day and the rain near the last round. He had to max out to win or any one of ten other guys could have beaten him. That's how close the times were until the fifth round.

MORE ON THE COX PLUG PROBLEM by Bill Hartill

(Ed. note: Since many of readers throughout the world can obtain and do use the new Cox .15, we thought these technical observations from the Fresno Semi-Finals would be of wide interest).

The SCAT and Max Men boys had Cox engines (the latest versions). Plugs were the big problem. No matter how hard we try we can't seem to convince the factory that they really burn out that fast. The new-new plugs are a little harder to get hot and seem to last a little longer, but can be burned out almost as fast as the others. The factory tests these plugs for hours. A shorted or burned out plug will stay hot once the engine is running though so what good is a continously running endurance test? To hell with excuses let's learn how to make better plugs. Twenty plugs are the least I would want to have available for a seven round semi-finals.

Chuck Diller who has a shoe box full of engine parts to prove it, says that TD Racing is the hottest fuel for the Cox without putting the engine over the hill prematurely. The Super Tigre seems to have the same proglem, too. How much thought have the engine makers given to engine wear accelerated by chemical attack from hot fuels?

COMING NEXT MONTH

Next bash we'll show you a Power job from Russia, and Norm Ingersoll's West Coast '63 Team A/2, and Don Assel will kick around the subject of FAI design in general, and....quien sabe?