THE

SCATTER

published by Southern California Aero Team

(35)

March - April 1964

President: Bob Van Nest
Editor: Bill Hartill, 7513 Sausalito, Canoga Park, California
Subscription Manager: Bob Wiehle, 7939 Wish Avenue, Van Nuys, California

Subscriptions: $2.00

Well here we are with another double-barreled edition of the SCATTER. And right in the middle of the Team Qualifying Trials, Nationals and all sorts of activities. First news of primary importance to report is the following:

FAI Meeting:

The C.I.A.M. Bureau meeting of the FAI was held in London on the 14th and 15th April 1964. The U.S.A. was represented by Dr. Walt Good, the C.I.A.M. Vice President and Chairman of the R/C Sub-Committee. Mr. H. J. Nicholls, President of C.I.A.M. (Great Britain), presided as Chairman. The main business of importance to the F/F Sub-Committee was the schedule for the 1965 World Championships. This was discussed as follows:

V. WORLD CHAMPIONSHIPS IN 1965

b) Free Flight.

The Federation of Clubs of Aeromodelling of Mexico has offered to organize the World Championships for Free Flight in Mexico in 1965.

Owing to the great distance that separate the majority of clubs from Mexico, it was decided that the Chairman, Mr. H. J. Nicholls, would write to the Secretary General of the Federation to thank him for his club's kind offer, explaining why it had to be refused and telling him that the Mexican team of Free Flight aeromodellers would be most welcome, should it participate in the Championships.

Mr. S. Pimenoff (Finland) declared that he thought it possible for his club to organize the F/F Championships during the first half of July 1965. He will make enquiries upon his return to Helsinki and hopes to succed in obtaining the nesessary authorization.

Mr. Pimenoff was warmly congratulated on his tentative propasal.

VI. TECHNICAL SUB-CO'MITTEES

a) Free Flight.

A letter from Austria was read, concerning "slope gliders" equiped with a magnetic guidance system, which is popular in some countries. After discussion on the question of the need to give an international status to this kind of aeromodelling activity, the Bureau recommended that National Aero Clubs study it and give their opinion on the subject at the next C.I.A.M. meetihg.

The minutes of this meeting revive what seems to be a perpetual problem for the FAI. How should the World Championships organizers be designated? For some time now the World Championships have been held in Europe. The most recent exception was the 1954 contest held at Suffolk County Air Force Base, Long Island, N.Y. Some of the countries sending representitives included Japan, Argentina, Guatemala, Mexico, U.S.A., Canada, Sweden and England. Wi l we never again have a World Championships in the Western Hemisphere?

The non-European Countries of the world seem to be automatically ignored when the FAI decides what site is not "too far away" to hold the World Championships. The Association of Aeromodelling Clubs of the Republic of Mexico asks, "too far away from where?" Perhaps we should buy Mr. Nicholls a globe of the World to help him in his deliberations of what is too far away for who. Also on this subject, although the FAI- C.I.A.M. has very definate ideas about not having the World Championships in Mexico, Japan, Australia, Argentina or Canada, they still as of this date and several international meetings, do not have a firm commitment from any country.

Perhaps what the C.I.A.M. needs is representation based on the number of registered FAI modellers in each country. Also why doesn't the C.I.A.M. write a clear outline of what is expected from a prospective World Championships Organizer? Why Aren't the ambiguities of the sporting Code cleared up? There always seems to be plenty of complaints after the contest but why can't we learn from past mistakes? For example in spite of indignant denials by the Presidentof the C.I.A.M., the sporting Code is not clear on the subject of parts falling off the model. Paragraphs 1.4.5 and 3.4.1 are in direct conflict. Instead of denials why can't we have a clarification?

Mark IV Saturn Craig Cusick, North Hollywood, California

Craig and some of his friends have been beating on this design for quite a while now and have achieved a very good win rate. Although there are some of us that like a little different design layout (life would be dull otherwise) Craig's experiences make good reading in His "Tale of the Saturn".

"The Saturn probably came to the attention of a number of FAI power modellers at the '59 nats at Los Alamitos, when Howard Timlin won a fly off against the high aspect ratio design flown by Werner Petri. Saturn had been drawn up a short time before in about March '59.

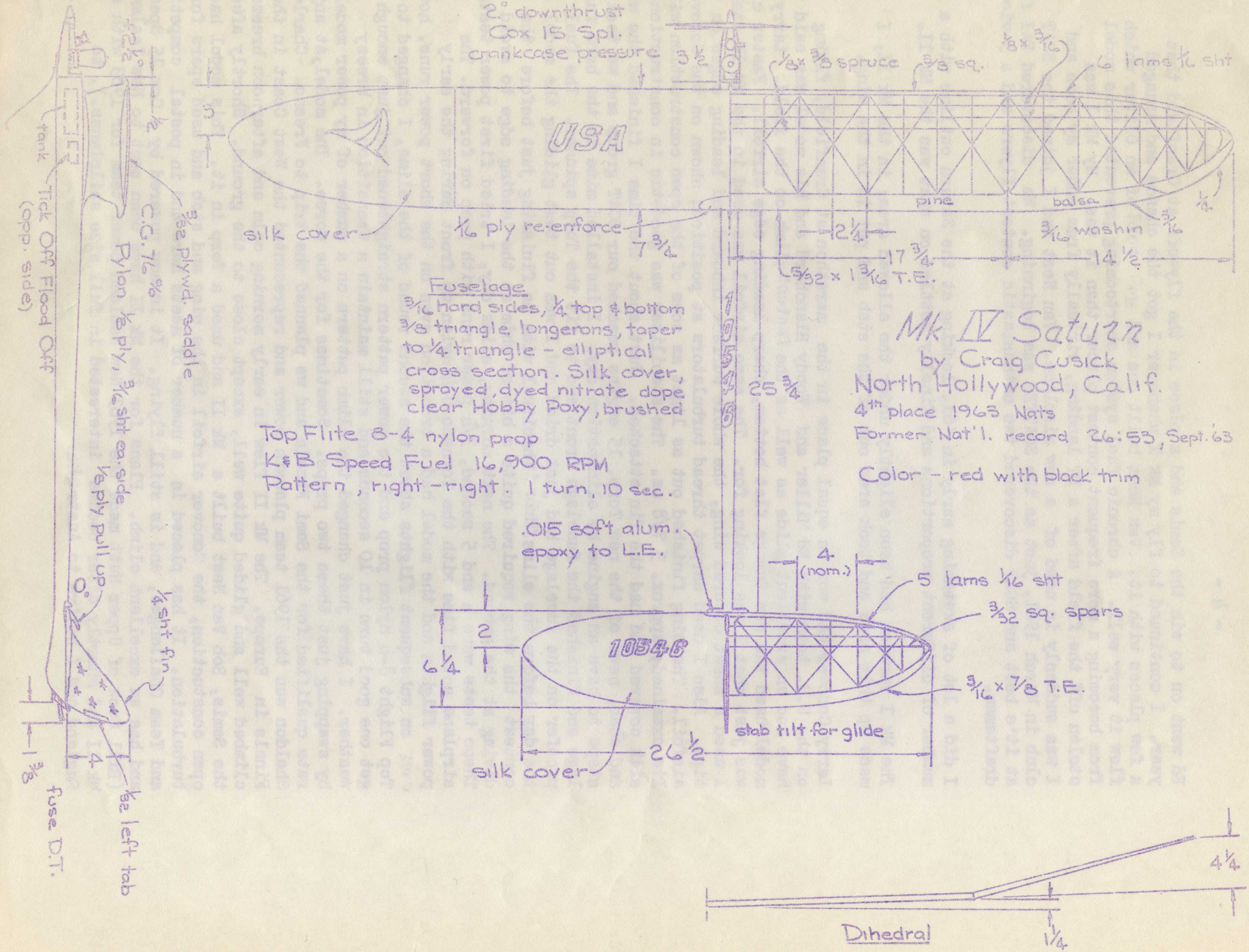
I was living in San Antonio while stationed in the army there and got aquainted with Howard, who was oneof the few antive free flighters in San Antonio at the time. We had flown Dawns and Ramrods in AMA events and in early '59, became interested in FAI events, particularly Power. My subscription to the Montreal Model Club bulletin gave a great push in this direction.

I think we both admired elliptical surfaces and used them on the wings and stab of the first Saturn, even though curved tips slow my building down, perhaps mostly in my mind. There were some elliptical surfaced designs being flown when we drew up the Mk 1 as a sketch. We wanted something just a bit different to distinguish this models looks from those of other models with round flying surfaces. This is where the swept back fin came in. I started an outline that suggested the basic swept shape and Howard picked it up from there and refined the outline. The other shapes just sort of fell into place. Other features had been agreed upon. The four panel wing with split ribs at the tips. The G 610b airfoil, simply because it had proven a reliable airfoil in many other models and looked capable of carrying the FAI weight. The Oliver Tiger Mk III modified was"the"engine then, and was chosen to power the first model. Howard chose a fuselage of thick, light balsa sheet that could be rounded to a shapein rounding with the shapes of the wing and stab, the model was finished in undyed red silk, nitrate doped clear on wing and stab. The fuselage was finished in light grey auto primer, slightly polished after spraying. The model was finished and tested just in time for the '59 FAI elims and Semi Finals. It topped the elim results and was edged in the Semi's by Larry Conover's Lucky Lindy for the trip to Europe. The trip that was never taken. The model was trimmed for a right-right flight pattern, however, some off wind launches during the elims showed an equally stable climb to the left. (I, incidentally, have never been able to do this.) Timlin's Mk 1 had no washin or other built in adjustments other than stab tilt for the glide. After the Semi Finals, Howard took the airplane to the Nationals in California, where he won the fly-off. Plans for the Saturn appeared in the Air Trails Annual for 1960.

I saw Howard off on the train to the Nats and prepared my family (wife and daughter) for the trip to California after my discharge from the Army.

It was March 1960 before I was settled enough and could set up a place to build. I renewed building and flying with my good friend and modelling buddy, Bob Van Nest. Bob and I have beenbuilding and flying together since 1949. We're good sounding boards for each others ideas.

I finished my first Mk I about April 1960 and powered it with a PAW 2.49 diesel which had been given to me by George Aldrich for just the purpose, while I was still in Texas. The model was covered in orange silk all over and fuel proofed, just in case I decided to change to a glow engine. I entered the elims in 1960 at Sepulveda Basin and was completely unprepared for the display of power shown by Ed Miller's modified Max II engine. My diesel could turn a nylon Tornado 8-4 prop about 14,300 RPM and got reasonable altitude in 15 seconds. Millers Max was capable of 16,400 and towed the larger, heavier Texan-Failon higher than any combination on the field.

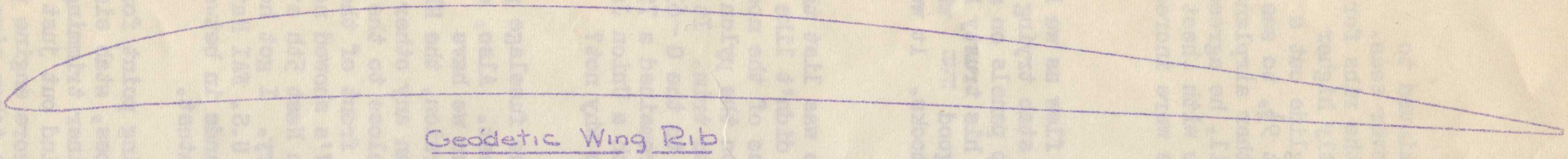

2° downthrust
Cox 15 Spl.
crankcase pressure
3½
⅛ x ⅜ spruce
⅜ sq.
⅛ x 3/16
6 lams ⅛ sht
USA
silk cover
⅛ ply re-enforce
7 ¾
pine
balsa
¼
2¼
3/16 washin
3/16
17 ¾
14 ½
5/32 x 1 3/16 T.E.
Fuselage
3/16 hard sides, ¼ top & bottom
⅜ triangle longerons, taper
to ¼ triangle - elliptical
cross section. Silk cover,
sprayed, dyed nitrate dope
clear Hobby Poxy, brushed
Top Flite 8-4 nylon prop
K&B Speed Fuel 16,900 RPM
Pattern, right-right. 1 turn, 10 sec.
25 ¾
Mk IV Saturn
by Craig Cusick
North Hollywood, Calif.
4th place 1963 Nats
Former Nat'l. record 26:53, Sept. 63
Color - red with black trim
.015 soft alum.
epoxy to L.E.
4
(nom.)
5 lams 1/16 sht
3/32 sq. spars
2
6 ¼
10546
3/16 x ⅞ T.E.
stab tilt for glide
26 ½
silk cover
tank
Tick Off Flood Off
(Cap. side)
C.G. 7½
Pylon ⅛ ply, 3/16 sht each side
⅛ ply pull up
3/32 plywd. saddle
0°
¼ sht fin
1 3/16
4
fuse D.T.
½ x ½ left tab
4¼
Dihedral
1¼

Ed went on to win the Semis and a place in the fly-off at Cranfield that year. I continued to fly my Mk I whenever I got the chance and managed a few places with it. Van Nest built one and got hold of an Oliver which flew it very well. A chronic fuel system shortcoming prevented this model from becoming a more frequent contest placer than it was. My Mk I was stolen off the field after a DT landing, virtually from under my nose and I was suddenly in need of a new airplane. Van Nest and I joined the SCAT club in March 1961, just as the SCATTER was beginning. We discovered FAI flying at it's best and SCAT discovered two enthusiastic contest flyers and a 3-view draftsman.

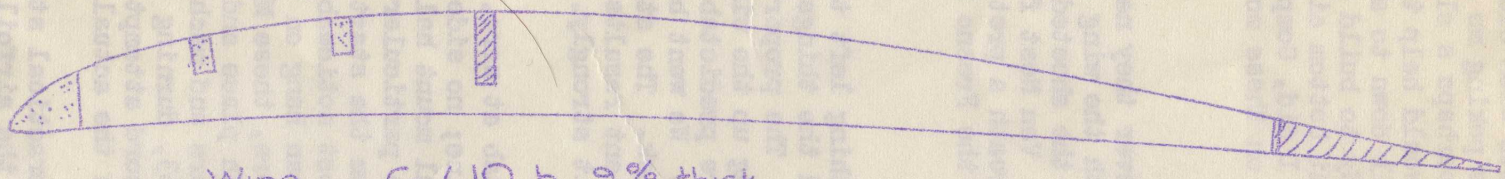
I did a lot of sketching early in '61, looking at the Saturn outline with a number of different proportions and finally settled on what was the Mk II.

The Mk I version had been slightly under the allowed area; in the Mk II, I made up this area and took area out of the stab and put it in the wing.

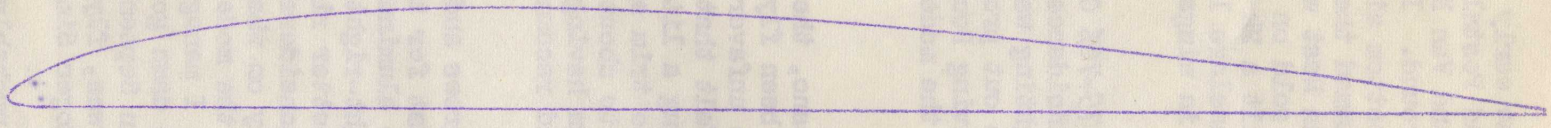
Larry Conover had won an equal place in the marathon at Cranfield, flying on the U.S. team with Ed Miller and Woody Blanchard and his model was said to have had an excellent glide as well as the fastest climb on the field. Larry's model used the now famous flat bottom, sharp leading edge airfoil. Faster climb was just what I was looking for. The same airfoil was used in the Mk II stab. I used a sheet covered wing, the whole surface inboard and leading edges on the tips. Also I used carpet thread turbulators at positions shown on the Conover airfoil. The wing finished out as light as some of the open construction wings I've examined; approx. 5 7/8 oz. The stabilizer was geodetic in construction, silk covered and had the fin attached. Just about the time I finished the wing and stab, news of the new Torp. 15 engine reached our SCAT group and we took steps to have an engine by elimination day. I installed mine in the bare fuselage and finished the fuselage front end to fit the Torp spinner. The fuel proofer on the fuselage had just dried and I was out test gliding the model the day before the elims. This is habitual with me finishing just before the contest the wing required quite a bit of shim at the leading edge to avoid diving at the ground. The next morning, elims day, I tried first power tests. These tests were 4 and 5 second, 3/4 power runs with prop on forward. The airplane acted fine with the Tornado 8-4 nylon up front during the early power flights and the model had a transition even on the short power runs, however on subsequent flights about the second round of the elims, I changed to a Top Flight 8-4 nylon prop and the power pattern straightened out just enough to get one good turn in 10 seconds and still maintain a transition in breezy weather. I have just changed the climb pattern on a number of my power models by swapping just these two props. Sometimes for the worse. The model, at any rate qualified for the Semi Finals and we planned the trip to Fresno. Charles Sheldon won the 1961 team placein power and represented the West Coast in the Finals in Europe. The Mk II flew in early morning calm and afternoon breezes, climbed well and glided quite well, except close to the ground. Shortly after the Semis, Bob Van Nest built a Mk II and used a Torp in it. This model had open constuction, the Conover airfoil in the wing and stab and used spars for turbulation. It has placed in a number of meets here and in postal competition and Team Challenges, and is still flying. It is now powered by a Cox 15 Speci and has an excellent climb. Plans for the Mk II have been sent to New Zealand (Bill Cook of Upper Hutt made the 1963 New Zealand power team for 1963 with a Mk II and shortly after became interested in full size sailplanes.), to England and I belive to Austr[illegible].



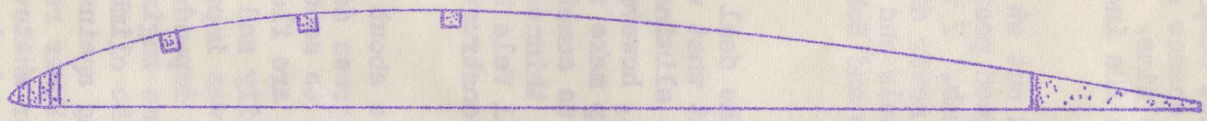
Geodetic Wing Rib



Wing G 610 b 9% thick



Geodetic Stab. Rib



Straight Stab. Rib

Fuselage section at pylon - same as Mk III (Scalter, Dec. 1962

Pressure tank layout - same as Mk III

Mk IV Saturn

sht. 2

Toward the end of 1961 and into the early months of 1962, I continued to fly the Mk II in local contests and Postal Contests with clubs over-seas. The old sketchpad was out again and Van Nest was poking me in the ribs for a little better glide close to ground. I felt perhaps a slightly higher aspect ratio wing with the flat bottom airfoil would help the glide out a bit. Just for good measure, I slimmed the airfoil down to about 9½, to see if the climb might get better. Van Nest was ready to build another airplane as well, and while not completely sold on the flat bottom airfoil, he agreed to give it one more chance and built a Mk III as I did, Complete with sheet top wings, tips too this time. The fuselage lengths on these models were increased proportionately with the increase in wingspan.

The Mk III's trimmed out at about 75-76% CG, however they never flew as we had hoped. We had designed positive incidence in both the wing and stab trying for a fast, one turn climb. I was fighting warps in the sheeted tip panels on my model and the thing never did trim out properly. Van Nest flew his trusty Mk II at the 1962 Semi Finals and was giving Doug Galbreath a pretty good [illegible] when the DT timer hung up and Bob lost the model over the Fresno hummocks. It wqs later returned.

Since we had blown the deal at Fresno, the only thing left to do was list the things we liked about what we had been flying and the things we didn't like and make attempts to eliminate the unfavorables. The proportions of the model were fair in general, however we felt that lifting up the wing on the pylon a slight bit would help make the thing a little more predictable to trim. It would at least give us something to trim against. We went back to the G-610b airfoil in the wing, thinned down to about 9% thick. The stab remained a 7% flat bottom sip curve. Al Vela had been having excellent results with a Union Jack type wing and stab construction and recommended it strongly. So why not?

The wing went back to about 2½ degrees and the stab at zero. The fuselage provided for about ¼ degrees downthrust for the engine; no sidethrust. Also, our fuselages were built to accept the aluminum radial mount half pan we have adopted. The models are flown right-right. This particular version, the Mk IV, trimmed out more easily and flew better right from the start than any other version. The glide was improved considerably, most noticeably close to the ground. Climb speed depends mostly on what you can hang on the front of the model. Using the same engines as the models before, these Mk IV's showed no increase at all in the climb rate. I managed a 4th place and Van Nest 5th at the 1963 Nationals flying against some damn good flyers and machinery. I got hold of the National FAI Power record in September 1963, durning the U.S. FAI National Postal competition or whatever it was, flying record attempt rounds in between contest rounds. Second place to Roger Simpson in the actual contest.

As far as a next step goes- we're probably at a practical stopping point for wing aspect ratio and we've been through most of the airfoil types, stab sizes, fuselage lengths and CG ranges for non-auto surfaced models. Finer trimming is in order as well as simply fly the silk off the models and find out just what you can expect from it in all conditions. The search for more engine power is not going to end soon either, the Chernys and Galbreaths have taken time to find out what it takes to makes the Tigres go and they're certainly not going to stand still as we thread our way along."

SCATTER INDEX * Jan. to Dec. 1963

Model	Designer	Month
Wakefield		
CB 20	C.J. Burger	Feb.
Olympia	Carl Hermes	May
Nats winner	John Lenderman	June
1963 Wakefield	Don Krus	Nov.
Nordic		
Record A-2	H. Andressen	Jan.
Floridian	Bill Bell	March
Soarcerer	Don Thompson	April
Tuggy Buzzard	Bill Hartill	July
Zombie	John Wordin	Aug.
Scharrelbink	E. Nicolaas	Nov.
Thistle	Bob Petro	Sept.
String-along XIV	J. Scarborough	Dec.
FAI Power		
Lightning 7	Doug Joyce	Jan.
Hi Society	George Albright	Feb.
Scarlet Pimpernel	Andy Crisp	Feb.
FAI lander	Val Ure	March
Jankhals	M. van Dijk	April
Smokey The Bear	Bill Hartill	June
Amazoom	Hill/Wilson	July
Liberty Belle Mk2	Al Vela	Oct.
Flevoschiumer	T. van Dijk	Dec.
Gadgets		
Wing Jig	Bob Norton	Aug.
Fuel tank	Ed Schnakenburg	Aug.
Wake Hub	Henrik Dahl	Sept.
Wake Hinge	Glenn Hill	Sept.
Engine mount	Bob Van Nest	Oct.
Trailing edge	Bill Roseberry	Oct.
Wake loading stick	Henrik Dahl	Dec.
Articles		
Tail Volume vs C.G. (survey)	Bill Bogart	Feb.
Builder of model rule	Editor	Feb., May
Gott. 183 and 342	Editor	March
What Size Tail	Bill Bogart	April, May

1963 World Championships Results	Moulton	June
Sevenage, Upper Hutt, Scat - Postal meet	Editor	June
Thermals	Editor	June
Flat Plates	John Wordin	June
Montreal, Scat Postal contest	Editor	June
U.S.A, Nationals	Editor	July
Wake Champs Report	Carl Hermes	Aug.
Power Champs Report	Doug Galbreath	Sept.
1963 FAI National Championships	Editor	Sept.
Latin American Invitation	Al Vela	Sept.
Paris FAI meeting	John Worth	Oct.
International Postal Meet	Editor	Nov.
U.S,A. Team Selection Ideas	Editor	Nov.
Wake prop-rubber	George Xenakis	Dec.
Rubber energy storage	Fred Pearce	Dec.

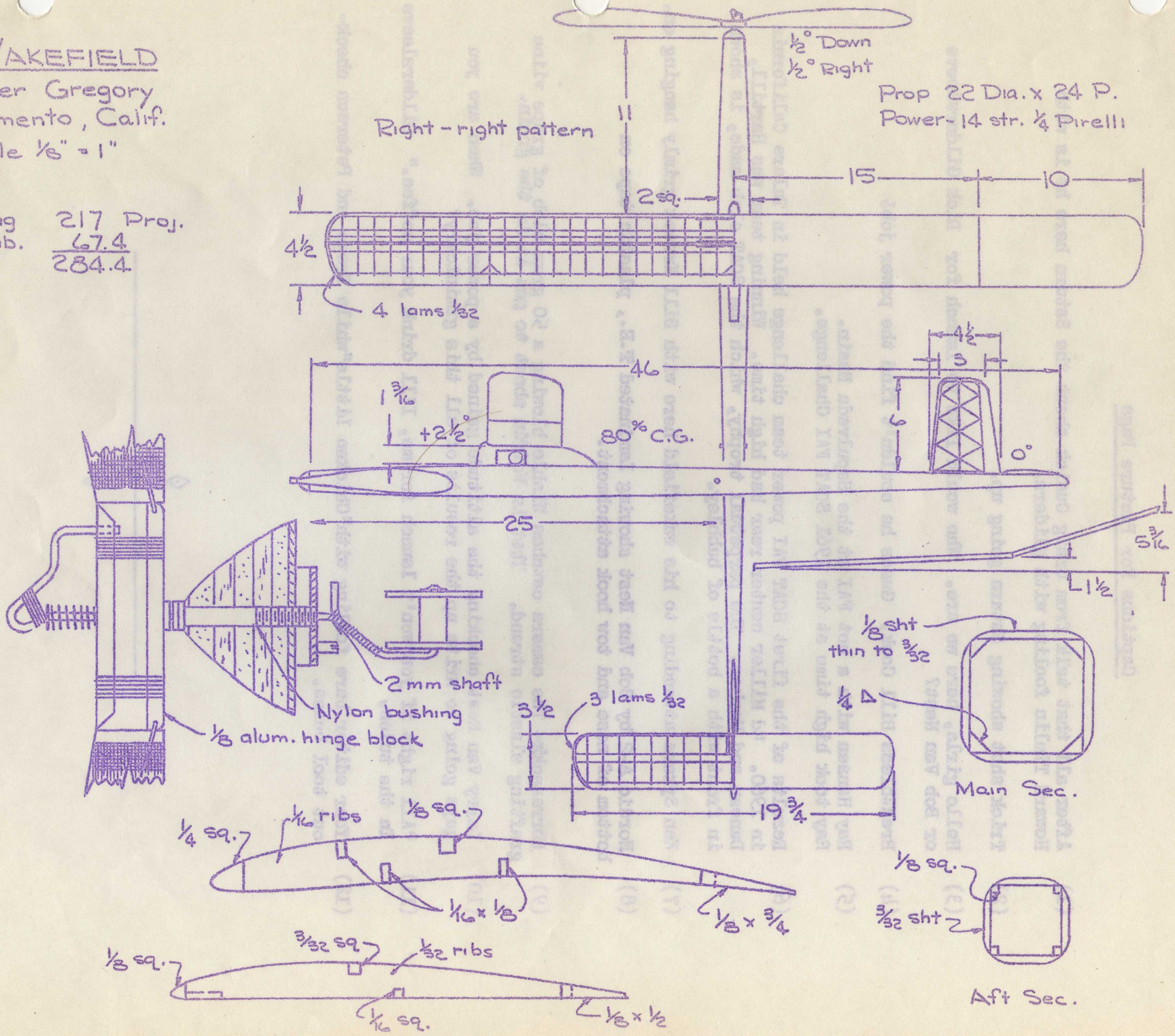
'64 WAKEFIELD

by Roger Gregory
Sacramento, Calif.

scale 1/8" = 1"

Areas

Wing	217 Proj.
Stab.	67.4
	284.4



Captions For Picture Page

(1) After all that talk from Craig Cusick about the Saturn here he is with Howard Timlin fooling with gliders.

(2) Trick shot showing Saturn going up.

(3) Hello girls, here we are. Who would like to launch for Dick Gildersleeve or Bob Van Nest?

(4) Breathless Bill Cook. Guess he couldn't find the power job!

(5) Ray Hansen with a hot FAI at the Sepulveda Basin.
Ray took high time at the 1961 SCAT FAI Challenge.

(6) Results of the first SCAT FAI power team challenge held in Tulare California in 1960. Ed Miller center rear had high time. Winning team was Hartill, Duncan and Harker. The perpetual trophy, which the SCAT club made, is shown in front with a bottle of bubbley.

(7) Ken Sykora attending to his wakefield here with Bill Krecek grimly hanging on.

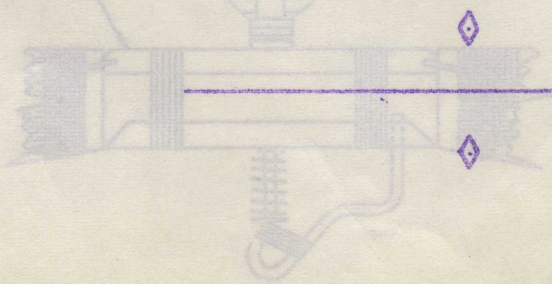
(8) Nordic A-2 by Bob Van Nest showing Laminated F.E., plastic tape on bottom of nose and tow hook attachment.

(9) Bbrraaackk- The camera catches Wiehle blowing a 50 gram blob of grape viine grafting elastic strand. Next is Wehlin about to get it in the groin.

(10) Larry Van Nest checking the altitude gained by a power job. When are you guys going to write up the results of all this giminickry?

(11) "All right if you won't launch for me, I'll drink your coffee." Gildersleeve In the tules.

(12) Your editor here fooling with "Chicken Little" while Trego and Peterson check-out tool boxes.



Dave Christy Nordic A-2- Hubbard Ohio

Dave sent us plans of what we think is a good looking Nordic. One suggestion we have would be to saw off about ½ of that top fin and put it under the fuselage. Dave describes the ship as follows:

> "Enclosed is a three view sketch of one of my Nordics. If you are interested in a fourth place job... Since I'm in the Air Force Reserve... your statement "that's an order" in the latest Scatter shook me, so here is the three views.
> The ship isn't anything very much out of the ordinary. Joe Hindes, my flying buddy, has two similar ships. The wing and stab set-up is per Hank Cole; see what I mean nothing really ORIGINAL. My other ship is more of a windy weather job.
>
> The wing airfoil is a Benedek 8556 bottom camber. The top camber was arrived at by taking the average between a B-6556 and a B-8556 to come up with a 7% thick airfoil. Sort of a 7556 ish, oh well! The stab airfoil was choosen after reading an article in the December 1962 Model Aviation entitled "Stablizer Airfoil Sections" by Craig Cusick and Ken Sykora. That was before I was getting SCATTER. The airfoil is a B-6405 modifed slightly to accept a 1/8x5/8 T.E.
>
> The turbulators, well the Δ's seem to be more powerful and seem to lift the right wing when the ship enters a thermal, tighting the circle. Note the scientific phrases!. This set-up sometimes causes trouble on [illegible] especially in a slight cross wind. I am going to increase the dihedral hoping to correct this."

Roger Gregory- Wakefield- Sacramento, California

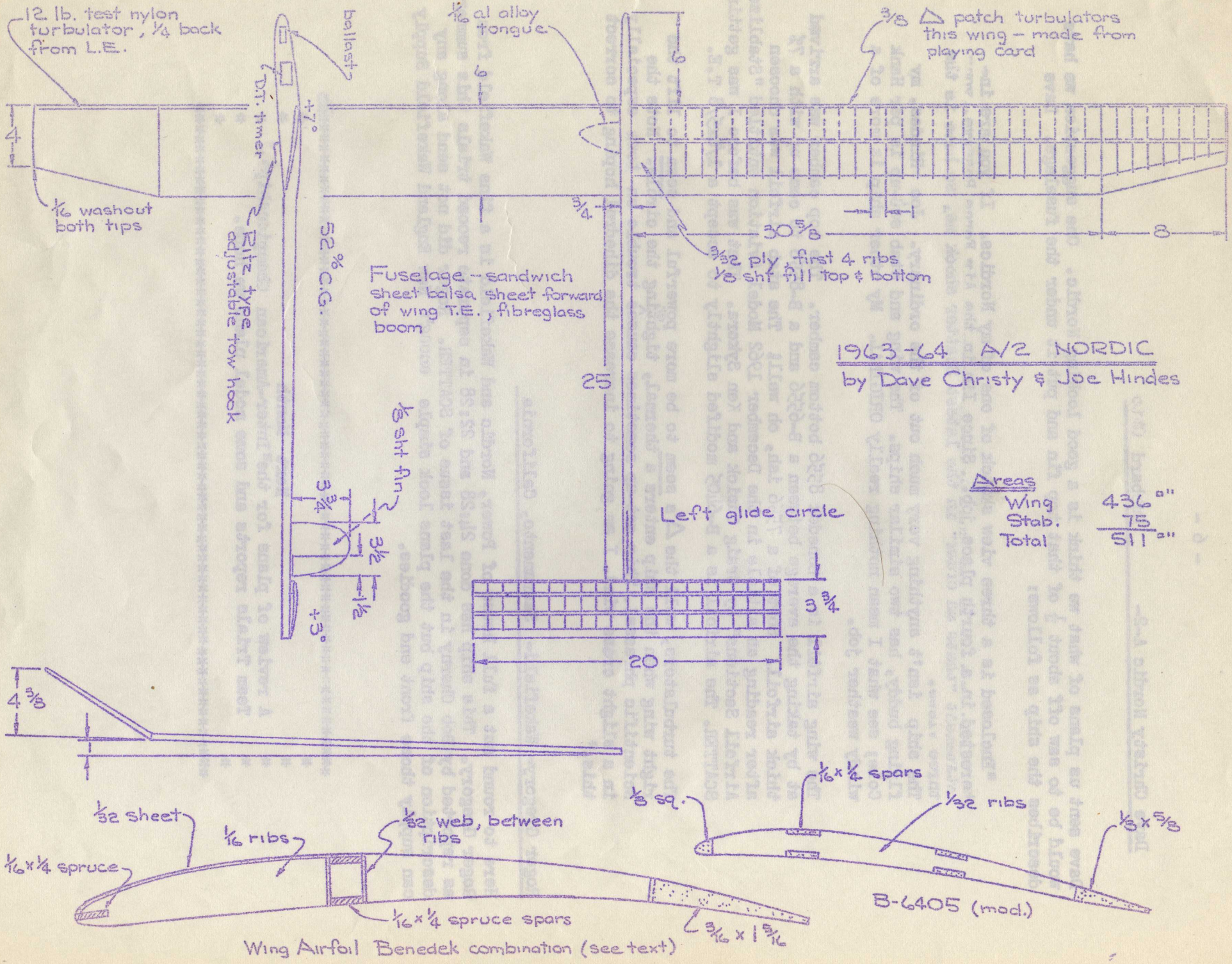
Here to round out a full house of Power, Nordic and Wakefield is a fine Wakefield from Roger Gregory. This ship has done 24:28 and 22:28 in seperate record trials this summer as reported by Bob Cherny in the last issue of SCATTER. Roger did not send along any description of the ship but the plans look simple enough New England Wakefield Supply can supply those front end goodies.

****

Next Month

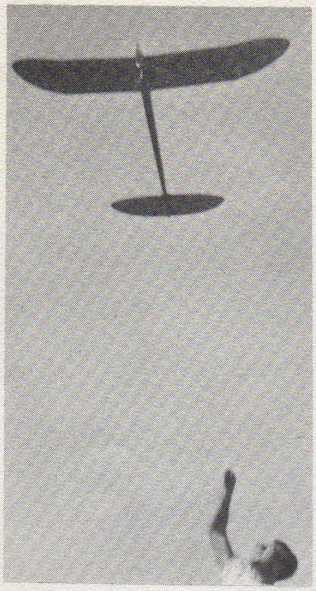
A review of plans for the "Inter-American Championship," Team Trials reports and some model plans we hope.

****


12. lb. test nylon turbulator, ¼ back from L.E.
ballast
Dt. timer
+7°
1/16 al alloy tongue
3/8 △ patch turbulators this wing – made from playing card
6
6
4
1/16 washout both tips
Klitz type adjustable tow hook
3/4
30 5/8
8
3/32 ply first 4 ribs
1/8 sht fill top & bottom
25% C.G.
Fuselage – sandwich sheet balsa sheet forward of wing T.E., fibreglass boom
25
1/8 sht fin
3/4
3/4
1/4
+3°
Left glide circle
3 3/4
20
1963-64 A/2 NORDIC
by Dave Christy & Joe Hindes
Areas
Wing 436 "
Stab. 75
Total 511 "
4 3/8
1/32 sheet
1/16 ribs
1/32 web, between ribs
1/16 x 1/4 spruce
1/16 x 1/4 spruce spars
3/16 x 1 5/16
1/8 sq.
1/16 x 1/4 spars
1/32 ribs
1/8 x 5/8
B-6405 (mod.)
Wing Airfoil Benedek combination (see text)



1



2



3



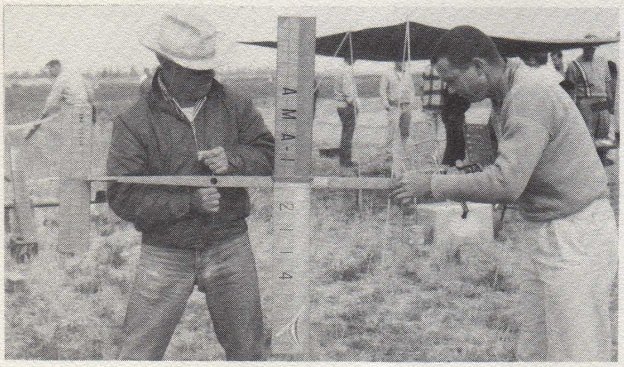
4



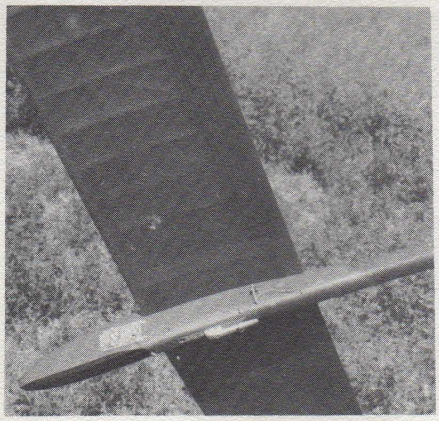
5



6



7



8



9



10



11



12