THE

SCATER

published by Southern California Aero Team



THE

SCATTER

published by Southern California Aero Team

(30)

September 1963

President: Craig Cusick
Editor: Bill Hartill, 7513 Sausalito, Canoga Park, Calif.
Corresponding Secretary: John Wordin, 2915 W. Victory Blvd., Apt. F., Burbank, Calif. Zip 91505
Subscriptions: $2.00 per year

ATENCION!

A todos los aeromodelistas de idioma Latina.

La publicacion SCATTER les hace una atenta invitacion a todos aquellos interesados en las categorias de F.A.I. (interna cionales) vuelo libre especialmente alos que radican en centro Y suramerica Y Mexico, para que sumitan material para publicacion, asi como ideas, planos, comentarios, actividades de clubs, etc., etc.

Pueden tambien mandar sus ideas acerca de motores alas, cables, helices, en fin todo aquello que sea de importancia.

"SCATTER" ha tenido un exito sorprendente con todos los aeromodelistas del mundo, excepto por la aucencia de los modelistas latinos Y por esto que estamos haciendo este llamado A Latino American Y los paises Europeos de habla espanola.

Asi es que empiezen a sacarle punta a sus lapizes Y mandenos sus cartas lo antes posible pues estas seran altamente apreciadas.

Manden su correspondencia A:

Alberto Vela
13280 13th St.
Chino, California
U.S.A.

To all Spanish speaking FAI free flight modellers, we offer an invitation to correspond with us. Albert has volunteered to do the translating and if we can find each other through the SCATTER, perhaps we can all find out more about what everyone is doing.

SCATTER Cover Art

This beautiful portrait was done by Scat man Al Vela and is an example of

things to come. (For the SCATTER, that is.) Although the likeness was not intended as any personal representation, still we thought it quite appropriate in defining a growing popular opinion of the "Spirit of Wiener-Neustadt."

SCAT CONTESTS

The SCAT Nordic team challenge was flown at Sepulveda Basin on Sept. 29. Unfortunately three factors cut down the number of competitors to only four 3 man teams for the Nordic challenge and four contestants in Wakefield. The three factors were the following:

1. FF Scale contest on the same day, same field.
2. FF contest on the same day at Santa Anna
3. Unbearably hot weather of 120°.

The contest scheduling foul-up was forced on us over our objections. The ccntest coordinator was attempting to make the best of a situation caused by the mistakes of others. However, in situations like this the coordinator can't afford to be a "nice guy", and is better off if he makes hard nosed decisions.

Well I didn't mean to preach about that but it slipped out. Anyway with all that heat, all competitive spirit sagged considerably. The Nordic challenge amounted to SCAT #1 and #2 teams against San Valeers #1 and #2. SCAT #2, consisting of Hutchinson, Hartill, and Wiehle put down the other threats with a total of 2040 seconds. Hutchinson pulled down high time of 762 secs.

The San Valeers put forth a noble effort and were racing all over the field apparently oblivious to the heat. In looking at the scores you get the impression that what really counts is how many max's you can make. Finding the thermal is the skill part of the contest, while the flighttime generated without a thermal was up to luck.

Even more ridiculous were the Wakefielders winding their gum bands in temperatures high enough to anneal the prop shafts, never mind the rubber. Warren Williams made it look easy for 1st with 861 secs. Harry Johnson came in second with 724 secs. Harry has been putting up a terrific record of wins this year and we expect to be seeing a lot more of this very serious and competent Wakefielder.

MONTREAL-SCAT CHALLENGE

The June issue carried half the results of this epic battle with our friends from Montreal. This consisted of their results. As explained, we finked out and didn't get our flights in until now. Nevertheless we did finally rise to the challenge--and were roundly trounced. Results as follows:

Wake:	Bob Van Nest	180	180	180	157	180	= 877
Nordic:	Bob Van Nest	129	145	180	180	102	= 736
Power:	Bob Van Nest	174	180	116	27	40	= 537

SCAT	2150
Montreal	2337

As you might notice we selected by democratic action, our team. This allowed the rest of us to carefully surpervise,coach, and advise the team on his technique. This was particularly important since Montreal decreed that cheating would be punishable by death. Bob managed to get all his flights in by rounds, with plenty of retrievers available. In power a vicious power pattern problem crept in which defied solution at the time, leading to rather disappointing flights. (Saturn).

1963NATIONAL FAI CHAMPIONSHIPS

One of the big problems of this contest is the name. What do you call it without getting it confused with either the "Nationals" or the "FAI Internationals"? Perhaps it would help to go back to the beginning. In the latter part of 1962 an idea for an "Inter-American Championships" was brought forward by Gerry Ritz. It was planned that this contest be held every other year between the "FAI Internationals" and that contestants be made up of teams from the countries of North, Central and South America. Don Thompson and Ritz developed plans for this meet up to the point of obtaining technical and financial assistance from AMA. The AMA did agree to back the contest technically but not financially. It was at this point in time that the AMA became aware of its own serious financial difficulties and thus could not accept such additional financial responsibility. A study by SCAT at the time showed that approximately $10,000 would be needed to handle the meet in Los Angeles. This, of course, would have covered local transportation, housing, meals, equipment, guards, insurance etc., and assumed no donated services.

As far as SCAT knows no attempts were made to obtain financial backing from outside the AMA. SCAT did not check out possible sources in Los Angeles because of the uncertainty as to AMA interest in the whole project. You can't go to a potential sponsor without a plan, a chain of command and a real good argument as to why he should invest in your scheme.

For the time being the "Inter-American Championships" collapsed. We think it should be looked at again--starting now.

Well, anyway, SCAT, having been saddened by this turn of events, decided that something still ought to be done. In a letter to ICC chairman Ritz we proposed that a USA National FAI Postal Contest be held in 1963. The purpose of this contest was to raise much needed money for the FAI-AMA FF fund, boost interest in FAI events in general and also to act as a team spirit boost to our teams. Sort of a pre-game rally. Our plan was to pick a single date and schedule FAI FF contests in all the logical spots around the country. Money would go to the FAI fund for stateside transportation or wherever it would be needed to help our teams. Prizes would only be token affairs, say, certificates with, of course, recognition in the modelling press as incentive. We didn't feel that the actual times would mean too much because of the variable weather across the USA on any one day. On the other hand we did know that postal contests can be fun no matter what the outcome.

Ritz liked our suggestions and pointed out that he too had been thinking along similar lines. Gerry proposed a somewhat more ambitious undertaking which he called the "1963 National FAI Championships". As you all know this contest was conducted with local qualifying trials in August and early Sept. The top 50% of the qualifying trials contestants then went on to fly in the Sectional Finals which also were conducted locally.

Petro, falling a little short on one flight.

Phoenix still hasn't discovered FAI power and Wakefield. How can we get them to convert a little of that Nordic enthusiasm and expertise?

In general it appears that FAI events are bringing out new faces and some old ones too. Comments on this 1963 FAI Nationals ranged as follows:

> "Disappointed that the Inter-American Championships could not be held but this was better than nothing."
>
> "Good idea, let's get serious about this FAI flying."
>
> "Disappointed that we didn't get more advance notice."
>
> "Too much flying, why bother with a qualifying trials if the finals are being held locally?"

All in all, reaction has been favorable. One reasonable suggestion is that the qualifying trials were not necessary particularly here in the West where we have so many contests.

One of the good signs here is the revival of FAI interest in the San Francisco area. Southern California has a little more competition now.

The results--oh yes, the results. Here they are:

1963 FAI NATIONAL CHAMPIONSHIPS

United States FAI Winners

Eastern Area

FAI Power

1. Robert Sifleet	Baltimore, Md.	1295 secs
2. Norm Getzlaff	Cleveland, Ohio	855
3. Thomas McLaughlan	Pensacola, Fla.	841

Wakefield Rubber

1. Jim Eberts	Canton, Ohio	843
2. Mike Dikovitsky	Cleveland, Ohio	826
3. Bill Kozak	Cleveland, Ohio	810

Nordic A/2

1. David Christy	Hubbard, Ohio	818
2. Cliff Riedel	Cleveland, Ohio	705
3. William L. Davis	Chattanooga, Tenn.	704

The number of contestants and entry fees collected breaks down as follows:

1963 FAI Free Flight Qualifying Trials

Eastern Area

	Wakefield	Power	Nordic	Total	Entry Fees
Cleveland	11	6	11	28	53.00
Tullahoma, Tenn.	1	3	2	6	12.00
Warrington, Fla.		1		1	2.00
Baltimore		2	2	4	8.00
	12	12	15	37	75.00

Central Area

Chicago	4	10	10	24	53.00
Overland Pk, Kan.	1	3	1	5	10.00
Sioux Falls, S.Dak.		1		1	2.00
Denver	5	6	5	16	32.00
Tulsa		3	3	6	10.50
Omaha		1	1	2	4.00
Minneapolis	1	6	6	13	24.00
Fort Worth	1	6	1	8	11.50
	12	36	27	75	147.00

Western Area

Phoenix	1	2	8	11	15.00
San Diego	4	2	2	8	16.00
Elsinore	4	6	8	18	33.50
Sepulveda	7	8	10	25	48.00
San Francisco	8	7	7	22	41.00
	24	25	35	84	153.50
				Expenses	8.80
					144.70

Total Entry Fees - - $366.70

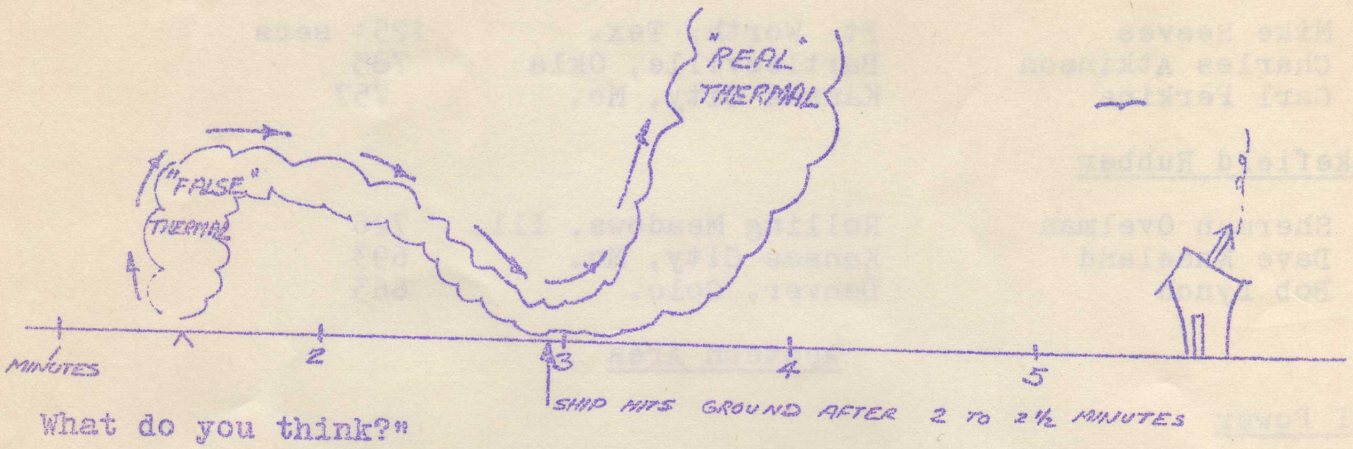
In the Western Zone we would have had more entries if the zone committee man (me) had been more on the ball and gotten Tacoma and Salt Lake City prime on the contest with more lead time. The fine cooperation from all the participating CD's did make possible what was considered a worthwhile contest.

John Lenderman ran a very good contest up in the Bay area. He reports in as follows:

> "Our weather, like your elims, was tracherous! It had most of us baffled all day. Galbreath dropped one on the 3rd with a 2:03 after his usual spectacular climb. Hermes came down in 1:18 on his last round and stood there scratching his head. I lost my only good Nordic when, for some reason the DT didn't pop. Simpson was really consistant and on the 7th round I timed with Tom Smith. We didn't look at the watches until we lost sight of it, and found he was only 3.2 secs short of the 4 mins."

At the Basin the weather was pretty good. In Wakefield first round, there were 6 maxs out of 7 entries. FAI had 4 max's out of 7 in the first round, five in the second, 6 in the third. Nordic was spotty except for the winner,

my dropped flight was 2:36. It was real funny--I had climbed quite high in what I considered the frontal area of a thermal, and was soaring very nicely, when it seemed as if the thermal was swept away, and a huge hole was left. The ship descended rapidly until reaching 30 ft., then continued a normal glide until landing. The wind velocity couldn't have been more than 3 mph, so the only thing it could be is the false thermal we all launch into at one time or another. It must be that a good thermal pushes a mass of air ahead of it, with a dead spot in between--something like this---



What do you think?"

Well, John, first of all let me say that I am not crazy about your thermal sketch. I don't see how the thermal could look like that. However, the symptoms you speak of seem to be common. If a model goes up in a thermal and then comes down in a downdraft either of two things is happening.

(a) the thermal has disintegrated and become a downdraft.
(b) the model has flown out of the thermal and into an adjacent downdraft.

The first explanation doesn't seem too logical, or could it happen? If thermals are born they must die also. Perhaps on an average day many thermals are forming but only a few are reinforced and continue to build while the others collapse. The collapsing thermal may lead to reinforcement from other adjacent downdrafts, in a downward direction.

The second explanation is a little easier to visualize but how can you really tell?

John goes on to discuss FAI elims for '64.

"Has the SCAT group made any recommendations or decisions on the method of running elims for next year? Our FAI flyers would like to get something rolling now instead of waiting until May or June next year. We had in mind a series of elims--say four or five, where each flyer would put in ten flights. We would use possibly three or four of these elims to pick the top three men--i.e. totals of thirty or forty flights. This would get the most consistent men to the semi-finals. We would like to push for a centralized finals, to make certain we get the best U.S. team, whether they be all Easterners, Westerners, or SCAT flyers, or Condors."

John, this is the approach that the SCAT club and myself favor. We feel that previous systems have failed because they have failed to measure true

Central Area

FAI Power

1. Dave Wilson	Ft. Worth, Tex.	1292 secs
2. H. B. Spence	Ft. Worth, Tex.	869
3. Bob Schindler	Hales Corner, Wis.	828

Nordic A/2

1. Mike Reeves	Ft. Worth, Tex.	1251 secs
2. Charles Atkinson	Bartlesville, Okla	783
3. Carl Perkins	Kansas City, Mo.	757

Wakefield Rubber

1. Sherman Ovelman	Rolling Meadows, Ill.	726
2. Dave Kneeland	Kansas City, Mo.	693
3. Bob Lynch	Denver, Colo.	663

Western Area

FAI Power

1. Roger Simpson	Sacramento, Calif.	1346 secs
2. Craig Cusick	N. Hollywood, Calif.	1339
3. Al Vela	Chino, Calif.	895

Nordic A/2

1. Bob Petro	Santee, Calif.	874
2. Bill Longenberg	Phoenix, Ariz.	840
3. Larry Van Nest	N. Hollywood, Calif.	800

Wakefield Rubber

1. Frank Newquist	Santa Monica, Calif.	885
2. Harry Johnson	Palos Verdes, Calif.	874
3. Rolland Dexter	San Diego, Calif.	857

Congratulations to all the winners. How about some 3 views? (THAT IS AN ORDER)

HOW TO MISS A MAX - John Lenderman, Santa Clara, Calif.

John sends along the following odds and ends:

"We had an interesting contest this past Sunday. A group of Wakefield flyers decided to get together at least once a month, and choose up 3 man teams. The flying would be on a rounds basis, and we determined to fly regardless of weather---unless, of course, the conditions were impossible. This past Sunday was beautiful, and we had two teams. The Hermes' were on a trip to Seattle---the job is moving them up the first of the month. At any rate, three of the six flyers topped 14 minutes, and the others weren't too far behind. Bilgri and I dropped one max, and fortunately he ended up with 2:31 while

of the rapidly failing light the organizers rushed the competitors remaining, into a rather hectic finale.

Is this sort of thing really necessary? Why can't the finals start in the morning? Instead we get half baked proposals to foul up the model specs to try to eliminate fly-offs.

Doug also sends word that he and the boys up Sacramento way are all fired up for the next team selection trials. The Condors and 900 Club have offered the use of their field and man power for the semis. Doug suggests that the semis should be held more centrally in the area (more than what?) so that "men from all over the area will not have so far to go."

This business of semi finals site location is pretty tricky. If done on a geographic basis the central site would be Emigrant Pass, Nevada. If you figure in Alaska and Hawaii, the center shifts to Ketchikan, Alaska.

If you compute a mass-weighted center accounting for the number of possible competitors and where they live where will it fall? How can you predict how many people from what location will travel to semi-final site X? More on this next issue.

HENRIK DAHL - Baerum, Norway

Here is a Wakefield front end that looks just as exotic as the "high priced spread" but can be built with ordinary hand tools.

Henrik speaks as follows:

"I am very glad to be able to read the SCATTER and I wonder how You and Your clubmates get time to prepare all the stuff You are publishing.

For some time I have planned to send in some stuff, but I think my Wakefields are too less 'out of the rut' to be worth publication.

My personal opinion is that far too often Wakefielders make trouble for themselves by using gimmics which are too complicated to be reliable.

For the last two years I have been using the propeller-assembly shown in the drawing. It is very easy to make and need no special equipment. The propeller blades are freely pivoting without any sort of stopper (held in place by centrifugal forces). To adjust the pitch I first try until the desired motor run is obtained, then I assure that both blades have the same pitch (by looking at them when turning; The blade that travels in front has the greater pitch). The absence of stopper on the propeller-blades don't seem to detract from performance (I have tried with stoppers, but did at least not gain anything).

The adjustable pitch make possible some experiments. Contrary to popular opinion I consider the fast climb (about 30 sec.) the most safe, because it seems that the blades are less suspect to stall. For the same reason (fear of propstall) I use thick blades (4mm max), but I think it would be advantageous to use thinner blades with narrow chord (I was very impressed by Jim Pattersons Wake at Leutkirch). Recently I have been using a motor run of about 45 sec., but it don't

consistency. We also agree that we need a centralized semi-finals.

Many serious FAI modellers have said:

> "I don't care where the semi-finals are, I will go anyway, but we have to worry about the other guy that may not want to travel to a central site."

In talking with many modellers the following points become obvious:

a) The USA needs to pick the best teams it can.

b) A centralized semi-finals fly-off is essential to picking the best teams.

c) Travel distance does not appear to be a serious problem to the seriou FAI flyer that intends to prepare himself to be a potential team member.

Team membership is not a trifling thing, it is not a prize, and it is not a private possession. It is a responsibility and an obligation. The AMA sends to Europe--teams of modellers. These teams are sent there to compete as representatives from our country in a sport requiring exacting skill, endurance, craftsmanship, team cooperation and lots of hard work.

Selecting team members on a geographic basis has no justification whatever from the standpoint of what the team members are supposed to do at the finals.

Of course, we all recognize that driving half way across the country is a sport that not all of us can afford. To some this is an insurmountable obstacle. For this reason we have attempted to accomodate all modellers at all levels of interest, capability and resources. The program has not worked. Modellers in Florida, Washington, Utah, and etc still have a 1000 mile trip to the semi-finals. And they all don't get to fly against each other. Only us with us, him with him, and you with her.

We would like very much to hear more opinions and ideas from our readers on this challenging subject.

DOUG GALBREATH, Davis, Calif.

Doug checked in from Vienna with a very interesting letter. One of the biggest problems for the power boys was that the fuel did not arrive in time for the contest. For a finely turned engine, airplane and prop combination this can be a grave crisis. Doug was flying with some local brew fuel and borrowed props. (His engines wouldn't turn the props he brought with the fuel change). The Italian team members graciously contributed 3 props, but these had to last 8 rounds. In round 6 his model came down in a brick yard, breaking the fuselage a little and breaking the prop. With 10 minute rounds all there was time for was a prop change. Engine timer bothers then plagued Doug for the 7th and 8th rounds which may have been brought on by an unbalanced prop.

Doug mentions that because of rather loose contest organization things got started rather late and the fly-off rounds started after sundown. Because

seem so safe as the shorter run I used earlier, although performance has rised a bit.

I think that the aerodynamics of the propeller in Wakefield would be a most fruitful field for further development."

ANOTHER WAKEFIELD TIP - Glenn Hill, Fort Worth, Texas

Glenn has been up burning the midnight oil working on a John Malkin Wakefield from the Jan. '62 SCATTER. Some changes include wire pylon, hinging fuselage DT. He promises pictures and results if DT works, if not, another sacrifice to those Texas thermals and a chewing good time for some more Texas cows. Enclosed are some good ideas by Glenn on a Wake prop hinge. This one also is easy to make and permits blade change and relatively easy pitch change.

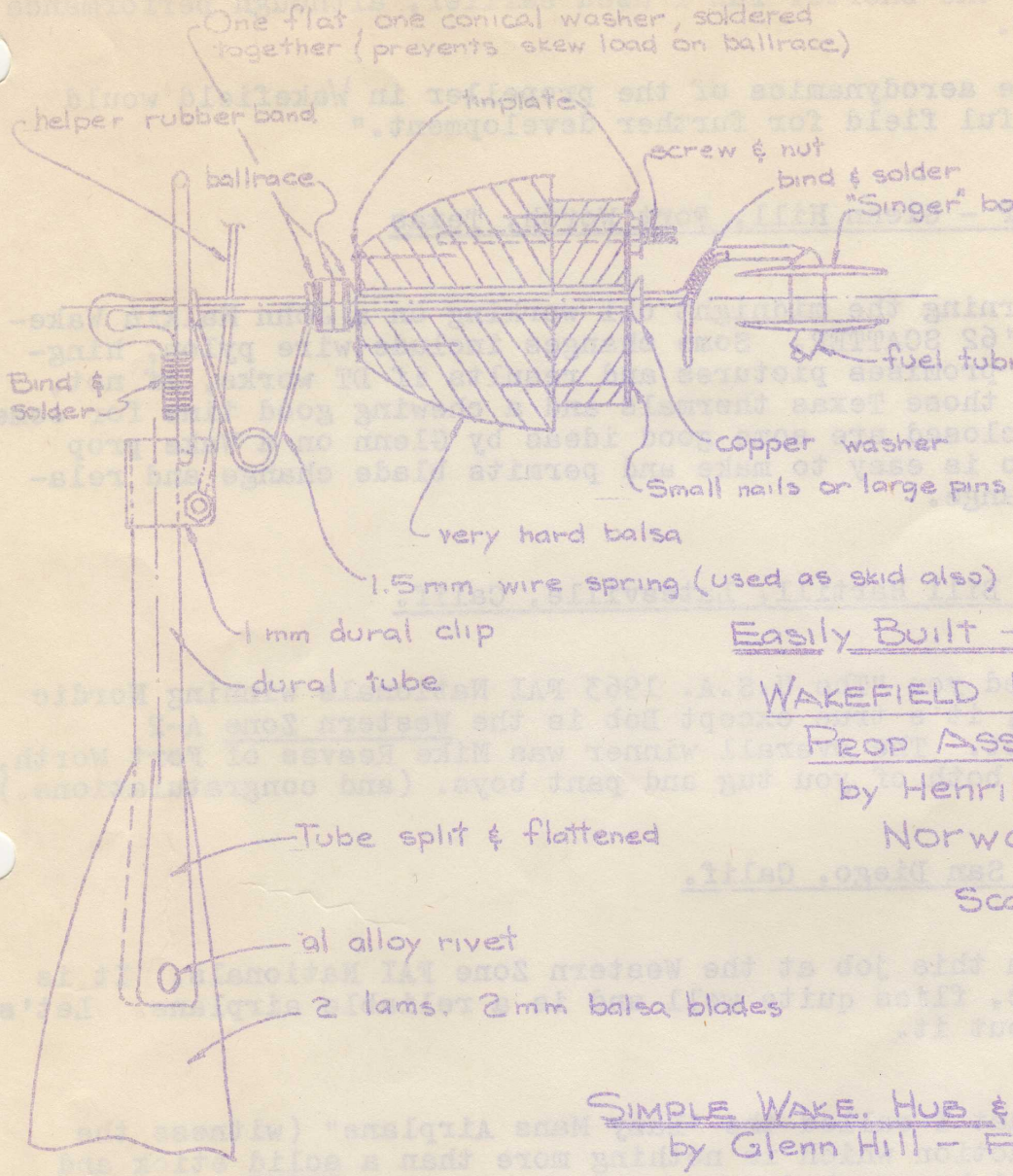
EDITOR GOOFS AGAIN - Bill Hartill, Latesville, Calif.

Last month we promised you "The U.S.A. 1963 FAI Nationals winning Nordic by Bob Petro." Well, it's true except Bob is the Western Zone A-2 winner in said contest. The overall winner was Mike Reeves of Fort Worth, Texas. Apologies to both of you tug and pant boys. (and congratulations.)

THISTLE - Bob Petro, San Diego, Calif.

Bob did 874 secs with this job at the Western Zone FAI Nationals. It is a good looking Nordic, flies quite well and is a reliable airplane. Let's have Bob tell you about it.

"Basicly it's what I called the 'Lazy Mans Airplane" (witness the fuselage construction which is nothing more than a solid stick and sheet rudder. It has worked very well for me though. It whips like crazy but has never broken in bad cartwheel landings. It's as light aft of the C.G. as any other type because the total volume of wood is less than anything short of a fiber glass tube. The airfoil is Ritz's 'Windy Weather' section taken from his series of articles in M.A.N. Also used the same section in stab by the reasoning that its got to fly in the same wind also so 'why not'? Wing structure is diagonally stressed between each rib and uses Ritz's method for the 7075-T6 tounge and root rib construction. The rudder shape was borrowed from Frank Ehlings beginners A-1 design because---I liked it! And besides, did you ever try to design a different rudder shape than anyone else just for the sake of being different? Also I used thread turbulators 1/4 back from L.E on wing because it seemed to up the dead air time a little. But the airfoil didn't need the help in wind--just like Ritz said. Tests in heavy evening dead air indicate a 2:30 average and it can hold it's own when the air gets rough. The ship has a nice 'sniffing" flight pattern and the only thing I can account for this is 1/2° more incidence in the right wing. Maybe the theory is wrong but I believe the extra drag counteracts the rudder



Easily Built – No Machinework

Wakefield Noseblock & Prop Assembly

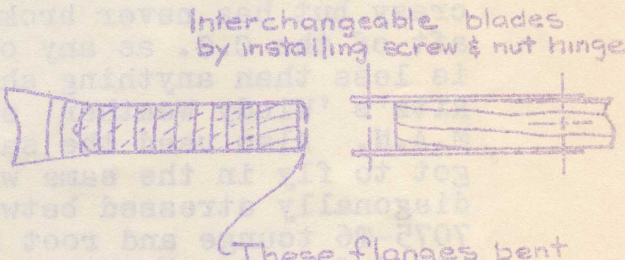
by Henrik Dahl

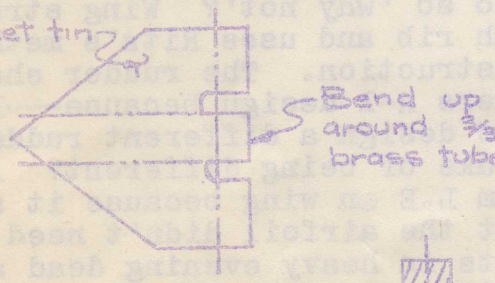
Norway

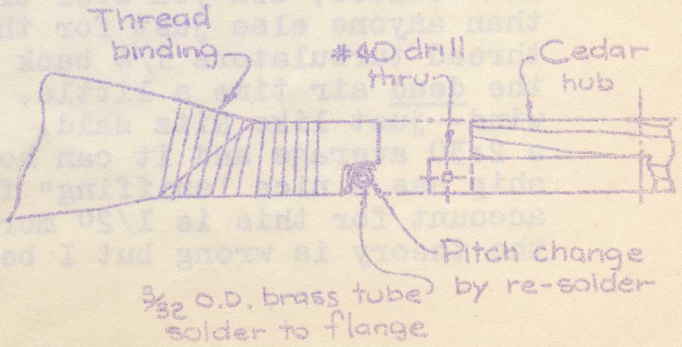
Scale: None

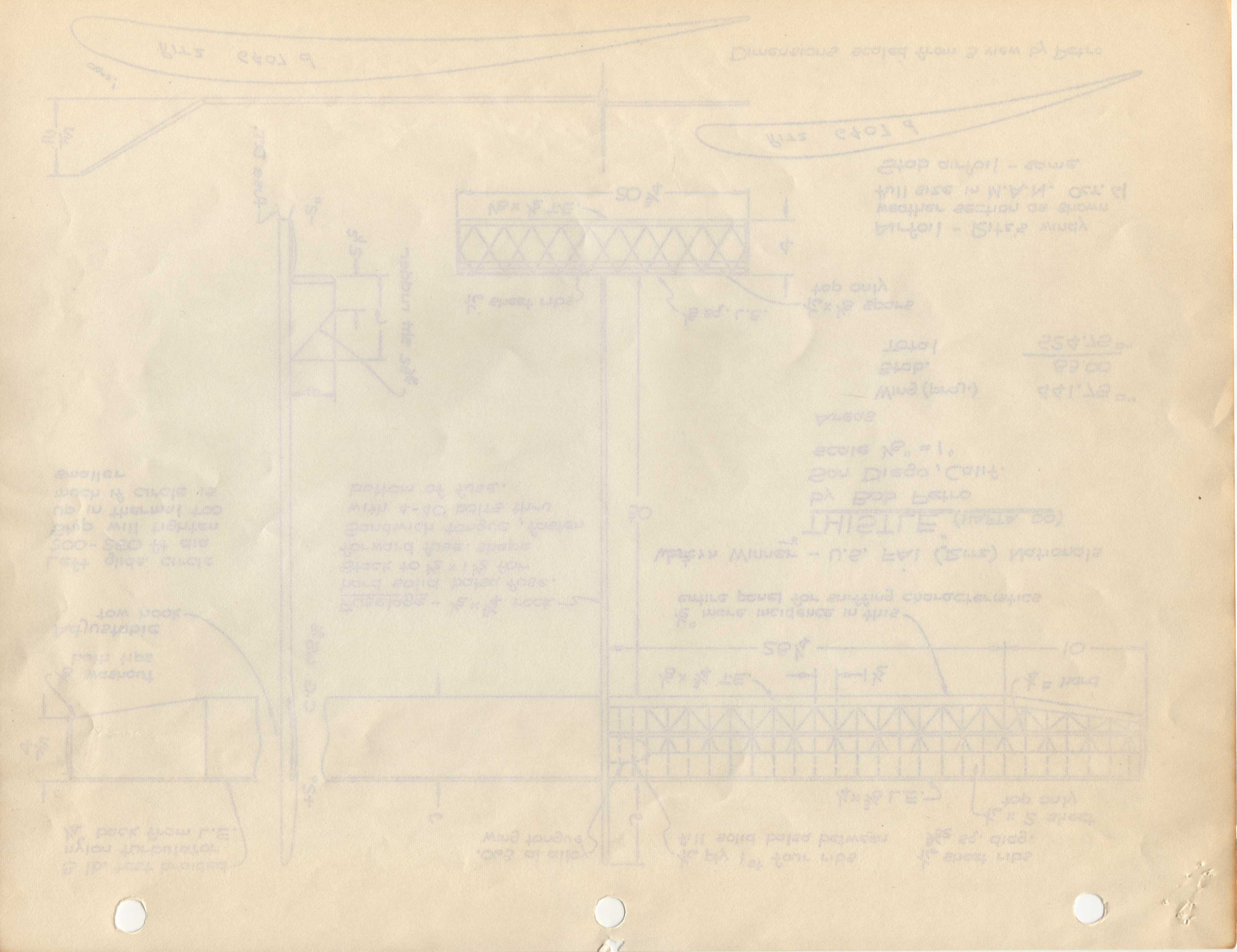
Simple Wake. Hub & Hinge Idea

by Glenn Hill – Fort Worth, Texas









KEY TO PICTURE PAGE

1. From "Down Under...and a little to the Right" comes this first shot of JOHN MALKIN, of the well known Upper Hutt, N.Z. group. Looks like you've got enough towing room, John! Well built, rugged-looking ship, too.

2. This power job is the work of DAVE GOODWIN, Leeds, England, He sez it's a modified "Texan" (Ed Miller design) with a bit of Lucky Lindy tom foolery back at the rudders. Dave writes that the airfoil is flat bottom with some droop in the T.E.; the result of some correspondence exchanges with designer Miller.

3. Again from Upper Hutt, comes another A/2. This one by WELLY CHOY. Interesting one about this ship is a close-up we received of the stab. Shows a hasty field repair including, among other things, a chunk of 1/8th square nailed on the L.E. to hold things together. Ship was towed right up and maxed beautifully. (Could start a trend in stab turbulators???)

4. Editor BILL HARTILL cranks the turns on his "Super Thunderbird" (Oct. '61 SCATTER) while SCATman, MILT HARKER applies the "anchor". (And we mean anchor!...notice that Hartill is doing all the leaning!)

5. There are a lot of beautifully complex Wakefields...but it takes a real master of the art to produce an almost "stark" design that still ranks as a pretty airplane. We think long-time Wake. expert BOB DUNHAM of Tulsa, Okla. has done a fine job. Agree?

6. Interesting telephoto shot shows JIM PATTERSON launching for fellow clubman DON HUTCHINSON on the LA Model Airport...home base for the SCAT Club. Case you're wondering, the man-made mound in the background is the local Nike Missile Base. Boy! Have we got a protected flying site...(or.... Prime Target?????)

7. SCATman DICK GILDERSLEEVE claims this is a trick he learned from the German A/2 expert, Lindner. We say he's looking for crabgrass fleas!.... the hard way!

8. This shot shows how well a detailed picture can turn out even with our printing...when it's done right! Credit goes to FUDO TAKAGI who snapped this shot of BOB VAN NEST'S timer set-up and engine pan at a San Diego contest. (see Aeromodeller Annual, 1962-63)

9. DICK GILDERSLEEVE shows the proper launch technique with this heave on an unidentified A/2. Nice ship...with plenty of both ribs and T.E.! Dick's style seems faultless...i.e. wings level; nost slightly up; tail well away from the Homburg; and belly well cooled!

10. Mr. KURT VAN NEST, one of SCAT's strong reserve team, display's three of his A/2's. He seems to be keeping a wary eye on the unidentified assistant on the left!

11. SCAT's leading exponent of the "bent banana school", JIM TREGO is shown launching one of the earlier models of his now well-known "Snicker" design (SCATTER May '61).

turn circle until some faster moving air comes along like a gust or thermal and increases the lift on that wing enough to throw it into the glide turn from the 'sniffing' attitude then it's on its way. This 1/2° also shows up to good advantage on the towline in that if you tow into a thermal, the ship will peel itself off into the turn at the top of the line but if you are in a calm or slight breeze the ship follows nicely straight behind you.

The name of Thistle came about because I built the ship in a frantic haste to fly in last years elims and didn't have time really to build an 'ultimate' or even a good spare. Consequently; THISTLE--hafta do!!

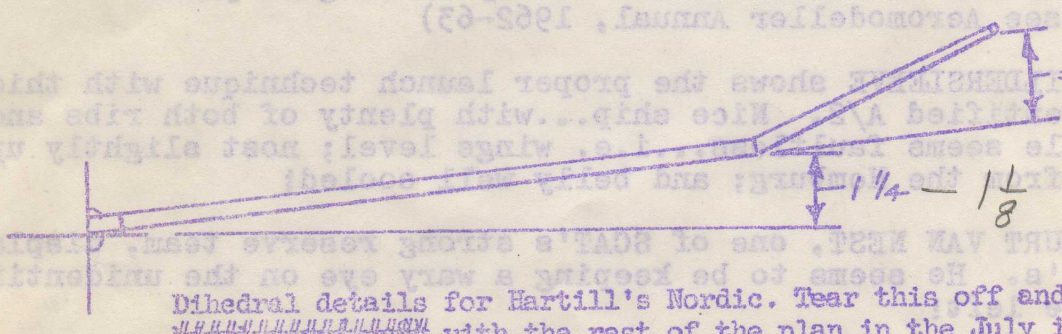
The ship is Jap tissue covered with four coats of nitrate on wing and two on stab. Incedently, the stab could be built much lighter I believe, just by using hard 1/32 ribs, narrower trailing edge and superfine tissue.

For a few comments on thermal flying; aside from practicing witch-craft I think the method that's worked best for me is to fly in short pants (ED. Good trick if you can do it!) and try to get the feel of rising air around your legs. It can be done if anyones are as hairy as mine. Besides, I find that this is about the only thing you have left when all the other usual signs are not there. Like other gliders upwind, wind shifts, dead calm periods, dust devils lifting tents off the ground etc, etc. Of course, you could start running upwind. You could but I can't. (I'm lazy, remember.) So when the breeze is steady and you are standing there with that determined puzzled look--T.G.F.H.L. (Thank goodness for hairy legs!)

If you are interested--THISTLE has won or placed at least fourth in every meet (Except the NATS) entered except I couldn't qualify it for the FAI team elims. Oh, well, there's always next year!"

Next Month ! Whatever it is----------

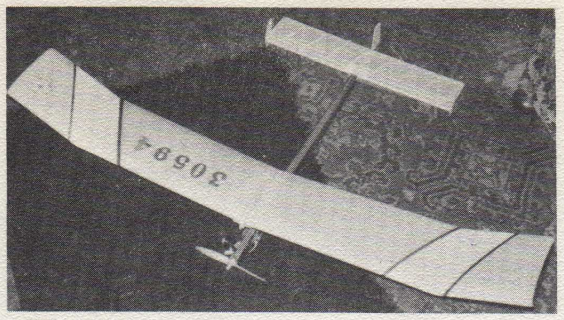
An Al Vela power job, and more lectures on team selection methods



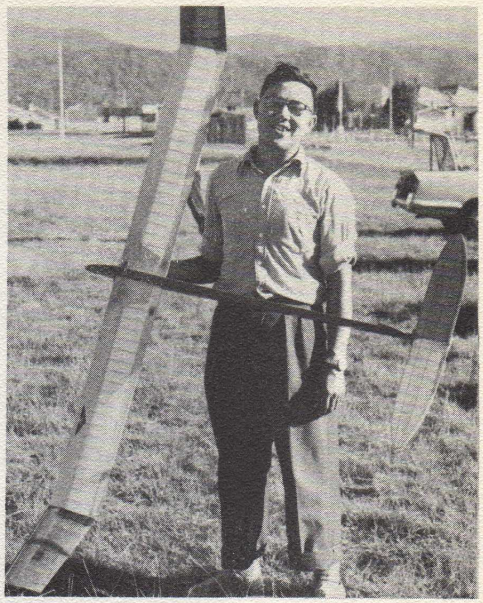
Dihedral details for Hartill's Nordic. Tear this off and stick it with the rest of the plan in the July issue.



1



2



3



4



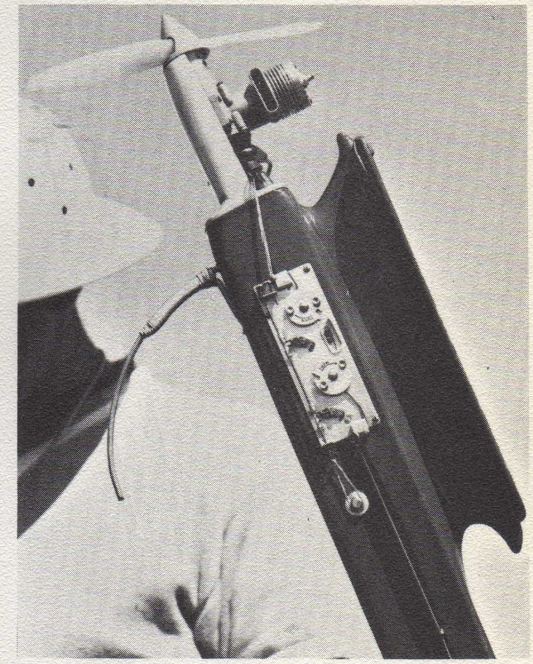
5



6



7



8



9



10



11