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SKY-SCRAPERS BKLYN NY
AMA Club Charter 470

FLYOFF

Round 23 / Fall 1993

The **SKYSCRAPERS** Quarterly

Edited by Bob Hatschek

Skyscrapers 27th International Challenge
May 29-30, 1993, Aram Schlosberg, CD

Winds exceeding the FAI maximum blew out Saturday's flying and so F1A, B, and C were rescheduled for five rounds on Sunday—which pleasantly surprised everyone with near-perfect weather, although the strength of the breeze did increase later in the day.

F1A — A2 Towline (5 flyers)

1	Andrew Barron *	180	180	180	180	171	891
2	Bob Sifleet	180	94	180	180	180	814
3	Kevork Fags	90	63	108	180	77	518
4	Matt Gagliano *	28	180	—	180	125	513
5	Aram Schlosberg	—	—	—	5	—	5

F1B — Wakefield (12 flyers)

1	Bill Buss *	180	180	180	180	180	900
2	Jerry McGlashan	180	180	180	180	162	882
3	Jim Brooks	180	180	180	180	133	853
4	Joe Williams	82	180	180	160	180	782
5	Fred Blom	76	180	180	180	125	741
5	Larry Pelatowski *	180	119	82	180	180	741

F1C — FAI Power (3 flyers)

1	Bob Sifleet	180	180	180	180	180	900
1	Bob Gutai *	180	180	180	180	180	900
3	Gil Morris *	180	180	180	180	—	720

* Winning 2-man teams

F1G — Coupe d'Hiver (3 flyers)

1	Joe Williams	119	120	53	120	120	532
2	Bob Hatschek	120	62	120	82	120	504
3	Bill Buss	90	120	120	83	72	485

F1H — A/1 Towline (4 flyers)

1	Rod Ioerger	113	120	120	43	120	516
2	Jean Pailet	—	68	120	71	74	333
3	Fred Blom	—	118	39	67	104	328
4	Tom Ioerger	35	120	120	—	—	275

F1J — FAI Mini-Power (5 flyers)

1	John Carbone	120	120	110	120	120	590
2	Jean Pailet	120	48	120	120	120	528
3	Dave Rounsaville	—	90	120	120	120	450
4	Bill Buss	93	68	—	—	—	161
5	Alan Abriss	51	63	—	—	—	114

HL Glider — Best 6 of 10, 60 max (9 flyers)

1	Larry Pelatowski	60	36	60	60	55	60	60	60	—	—	360
2	Tom Ioerger	60	60	60	55	30	28	24	60	34	22	329
3	Art Ellis	—	—	35	60	45	60	60	40	60	21	325
4	Ed Pelatowski	60	34	60	60	14	36	43	25	25	36	295
5	Jean Pailet	—	—	28	26	27	60	49	32	60	32	261

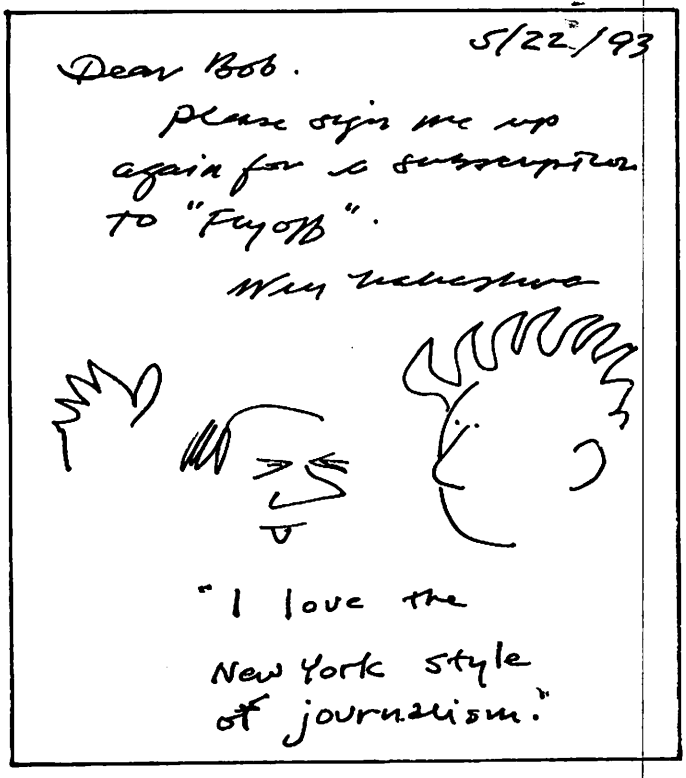
FLYOFF mail. . .that we especially enjoyed:

John W. Gritz, D.D.S.,M.S.—Orthodontics

Mr. Hatschek,

Doc asked me to mail you this payment and I thought I would like to include this note thanking you for the free time! Whenever he receives something from you he hides in his office for a while and it seems so amazing how much work the girls and I get done.

Thanks again,
Dee Dee Castro
Office Manager



What's Up? — XXIII

'Au pays des 1001 formules...'
or 'Im Lande der 1001 Klassen...'

What that says, in French and in German, is "In the land of the 1001 classes..." and those words lead off an article in *Vol Libre* in both of those languages which invites European free-flighters to send proxy teams to compete in the 1993 Moffett event at the USOC. We endorse the invitation—and we hope the Europeans can come in person.

But that's not the point! [Continued on page 7]

Printed by Fletcher Printing Co, Fairlee, VT 05045

BABU for the New Moffett Event

By Bob Hatschek, the Skyscrapers

BABU is unconventional, but not unprecedented. To the best of my knowledge, the Austrian A/2 flyer Oskar Czepa was the first to use a fat boom for cross-section in about 1950. Dick Quermann's 1953 "Last Straw" Wakefield was the first rubber job to use this approach. And Frank Ehling, for whom AMA's Muncie complex is named, used a fat rudder for cross-section on another Wakefield in the early 50s.

It has advantages: I believe it's lighter than it would be with a conventional waistline, the rear-end blob adds both directional and longitudinal damping (to help the small rudder and stab), and with the strap-on take-off gear it gives me a spare Mulvihill model at the mere expense of building an extra boom and rudder.

To those who view such unconventional configurations as somehow "cheating," my position is that it is merely meeting the rules (which are, after all, arbitrary in themselves) in the most advantageous way possible. Like the military's Wart Hog, BABU is designed to fulfill a mission—and to hell with looks! The basic design is derived from my *Liberty* Coupes (5 built) and *Icarus* Mulvihills (4 built), all of which have been highly successful.

The current Moffett Trophy rules were developed by Jim Bennett, and were detailed in the NFFS *24th Sympo* (1991). They are as follows: 203 sq. in. maximum total projected area for wing and stabilizer—an even 13 sq. dm in the metric system. Length (from the front prop bearing back to the last thing that goes over the fence) not to exceed projected wingspan. Minimum fuselage cross-sectional area equal to $L^2/150$ (Length squared divided by 150). Airframe weight (less rubber) to be at least 50 grams per 100 sq. in. of wing area. Must be capable of standing unassisted on three points for mandatory ROG takeoff on all flights. No other restrictions other than the use of rubber power.

Some building notes

My wings are unconventional in that I make them in two pieces, joined by a 4" length of 3/32" carbon fiber rod in 1/8" aluminum tubes at the main spar and a short length of 1/32" wire in 1/16" aluminum tubes at the leading edge. The main spar consists of 1/16" x 1/8" balsa on top with a short bottom spar of the same size from the root out about 6" and there spliced to the top spar. The joiner tube is bound between these and a triangular filler makes a short web. Narrow strips of .003" carbon fiber sheet are added on top and bottom out to the dihedral break. A one-piece wing with a modified saddle would be lighter and simpler.

For a right climb, left glide, all wing panels are as flat as I can build them, and left rudder is used. Tip "washout" is accomplished by skewing the dihedral breaks.

Center section of the anhedraled stab is triangular. This is a building convenience, but please note that the main panel incidence is nothing near the center section's—which requires a rather long adjusting screw or a tall pile of shims at the T.E.

To build the bulky boom, I soaked the longerons in "household ammonia" both when I laid out the sides and when I assembled the sides into a three-dimensional structure. Curving the sides will shorten the boom about 3/4". Make a balsa tube about 3/4" or 1" long that plugs into the rear of the motor tube. Then sand a circular opening in the front of the boom structure and glue this tube into it. Make sure that the overall length of the body from the prop bearing back does not exceed the projected span of your wing (see Moffett rules).

Not well detailed on the plan, the base of the takeoff gear is a piece of 1/32" plywood onto which a hinge of 3/32" aluminum tubing and .047 wire is fixed. This is faired and fitted to the motor tube by soft balsa blocks sanded to appropriate shapes after assembly. An 11" peg-leg of .070" carbon fiber rod is bound and glued to the wire hinge. When the gear is extended, the opposite end of the wire hinge acts as a stop against the ply base. And the gear is ratracted by a #8 rubber band from the front left hook on the wing saddle around the hook on the gear.

I have previously written extensively on the merits of high-aspect props for rubber jobs, and the more I use them, the more I'm convinced. The plans give full details for prop layout, together with references for earlier articles. But if you'd rather not carve the blades, order them from Superior Props (2412 Tucson Ave, Pensacola, FL 32526). Specify 24" diameter by 40" helical pitch, 1" blade width, 5/32" thick at the root end tapering to 3/32" thickness at the tips, without hinges or reinforcements at the butt end. Trim 1" from the butt ends, add the 1/8" carbon rods, and mount these blades at 30° pitch angle 8.4" from the shaft. This will give you a nominal 30" pitch reduced at the root and at the tip. The recommended block hinges (*FLYOFF 19*) allow pitch to be adjusted, as well as optimizing the fold.

The rudder plugs into a "socket" consisting of 1/8" sq. balsa about 5/8" long drilled axially to fit the .050" carbon rod pivot and wrapped with very light thread to prevent splitting. This is glued (approximately vertically) to a gusset-like partial former at the top of the boom. The plug is offset to the right side to clear the longeron. The rudder is retained and adjusted by an .015 music wire part (see plan) affixed to the base. The joggle bend at the end of this piece slips into a mating hole in a small 1/64" ply gusset glued near the rear of the boom.

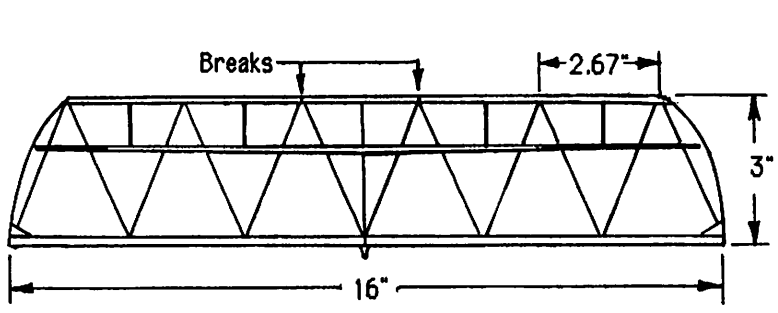
The original BABU is covered with Japanese tissue and well-doped (with nitrate) because I frequently fly on a soaking field. The weights tabulated on the drawing are accurate, but I have built wings of this size and type as light as 21 grams, stabs from under 4 to over 6, props as light as 17, and wing saddles a gram or two less. Even lighter weights can be achieved by covering with 1/4-mil Mylar, but the wing should first be torsionally stiffened with judicious application of .003 carbon capstrips.

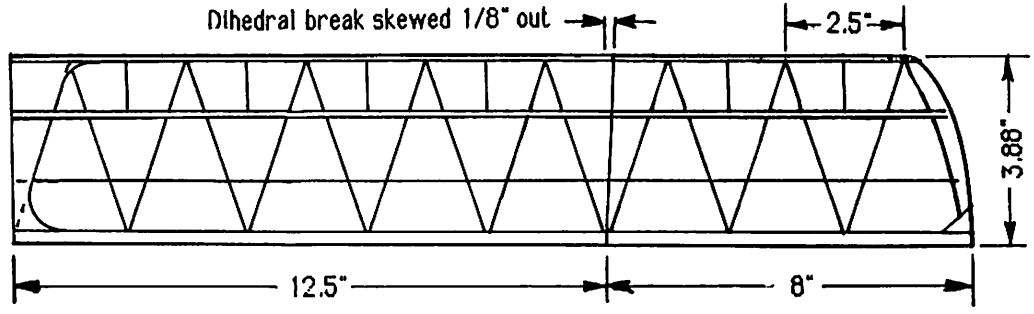
Flight trimming is straightforward. Off the bench, BABU should glide pretty straight. Smooth out the glide by shifting the wing saddle to put the CG about 2.7" behind the leading edge; then adjust the stab incidence to eliminate any stalling. Left rudder is applied to get the desired glide circle (fine tuning stab incidence as required), and the thrustline is shimmed down and right to tame the right-turning power pattern.

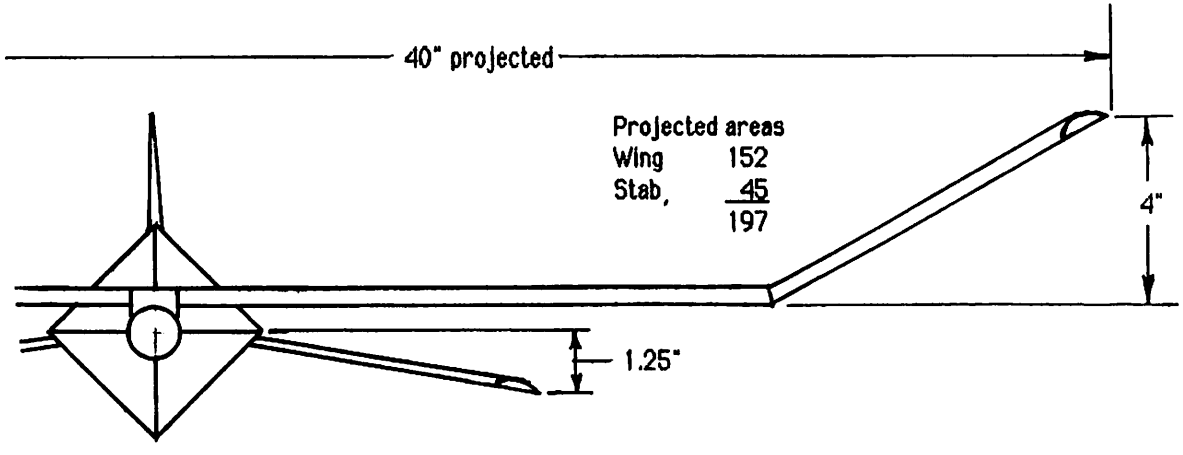
ROG takeoffs should not be a problem. But I will admit that my first two official attempts at Muncie (I did test it at Galeville) were flubs. What happened resulted from overconfidence. Since I only needed 120-second maxes, I followed my typical Mulvihill practice of underwinding, and it just didn't have the oomph to get airborne unassisted. After one bad one, I assumed I had released cross-wind. After two (you only get three delays), I realized I had better wind the damn thing up to at least 35 in.-oz of torque. Then I got six good takeoffs in a row.

What's my excuse for doing only 193 sec while going for 300 in the third flyoff flight? It was very late in the day (I had also maxed out in Mulvihill) and the air was deteriorating. That's not sour grapes; Bob Bienenstein won it flying in the same air—and my hat's off to him!

Where does the name, BABU, come from? It's an acronym standing for Big-Assed Bird, Unspeckled. George Perryman heartily approves of the title!



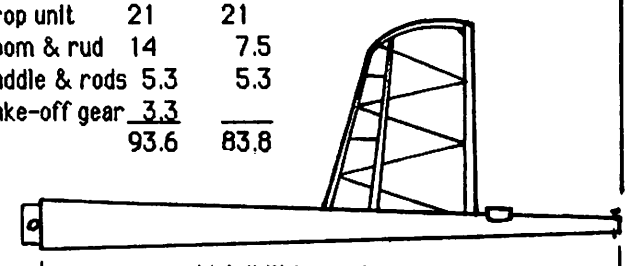




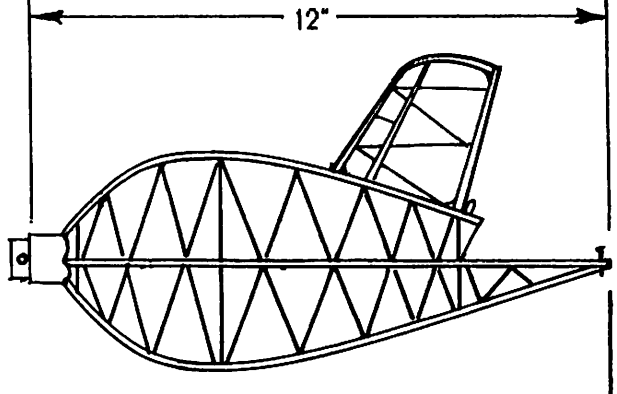
Projected areas

Wing	152
Stab,	45
	197

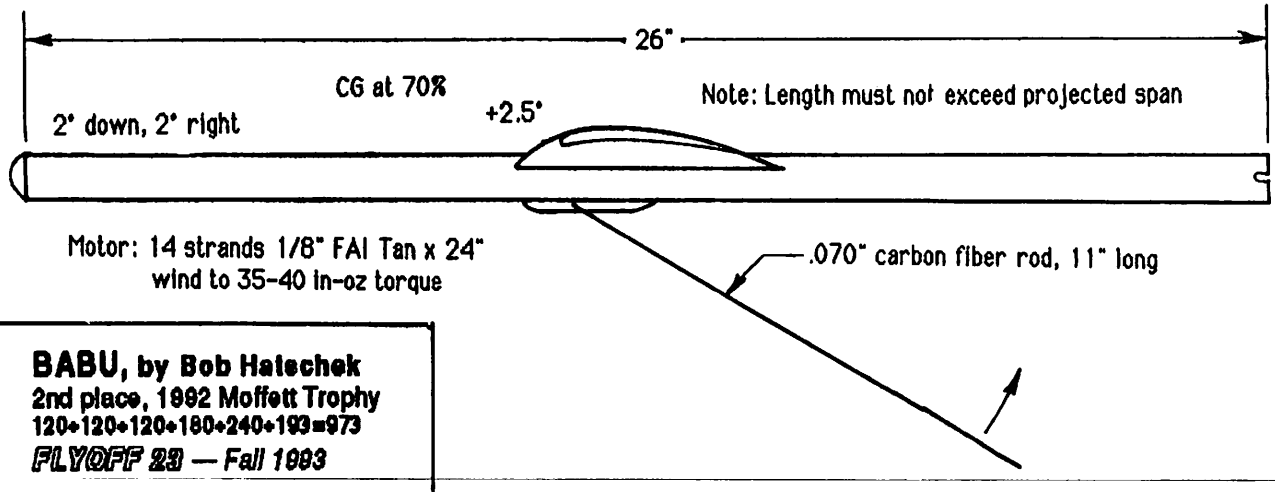
	Moffett	Mulvihill
Wings	26 gm	26 gm
Stab	5	5
Motor tube	19	19
Prop unit	21	21
Boom & rud	14	7.5
Saddle & rods	5.3	5.3
Take-off gear	3.3	
	93.6	83.8



Mulvihill boom & rudder

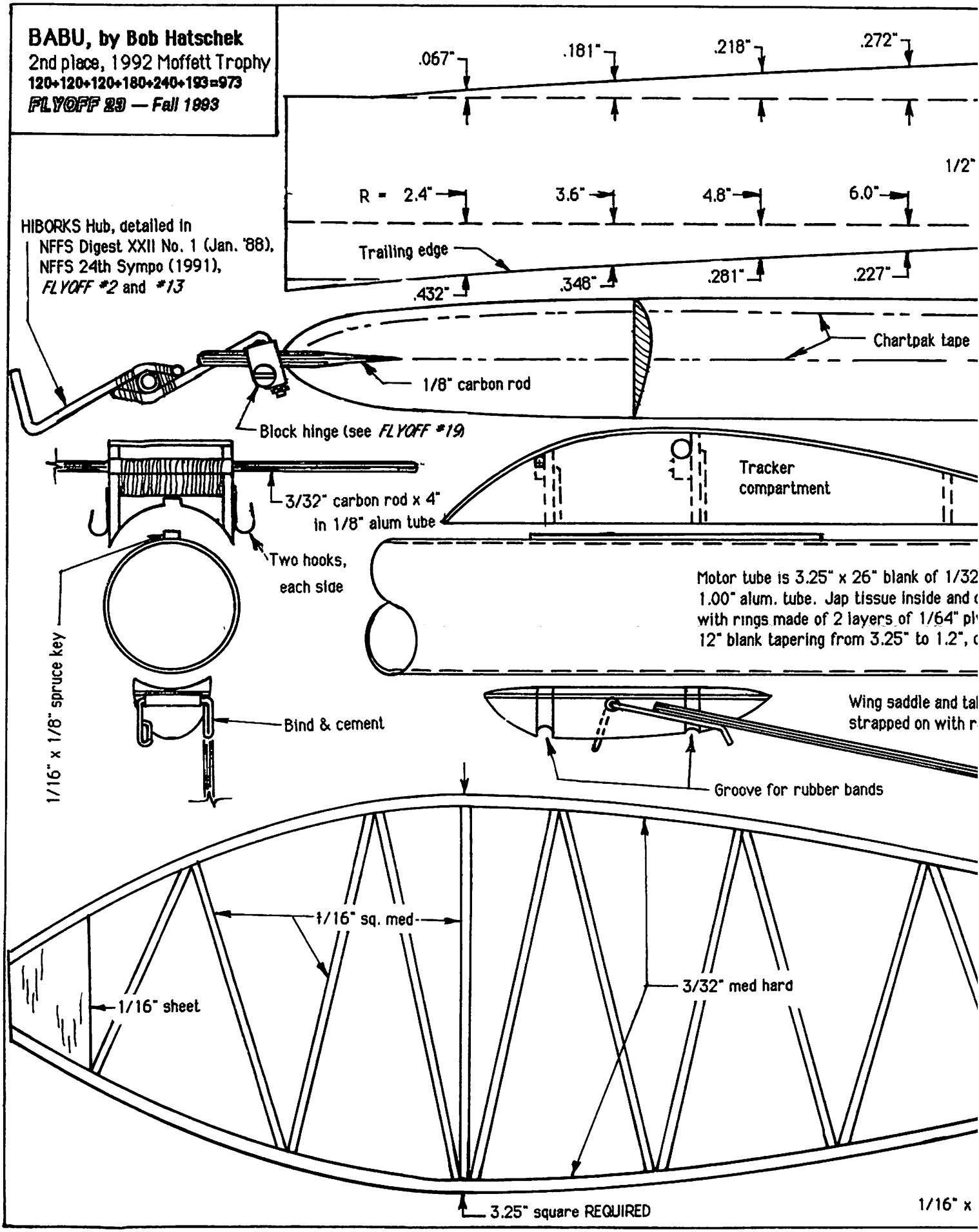


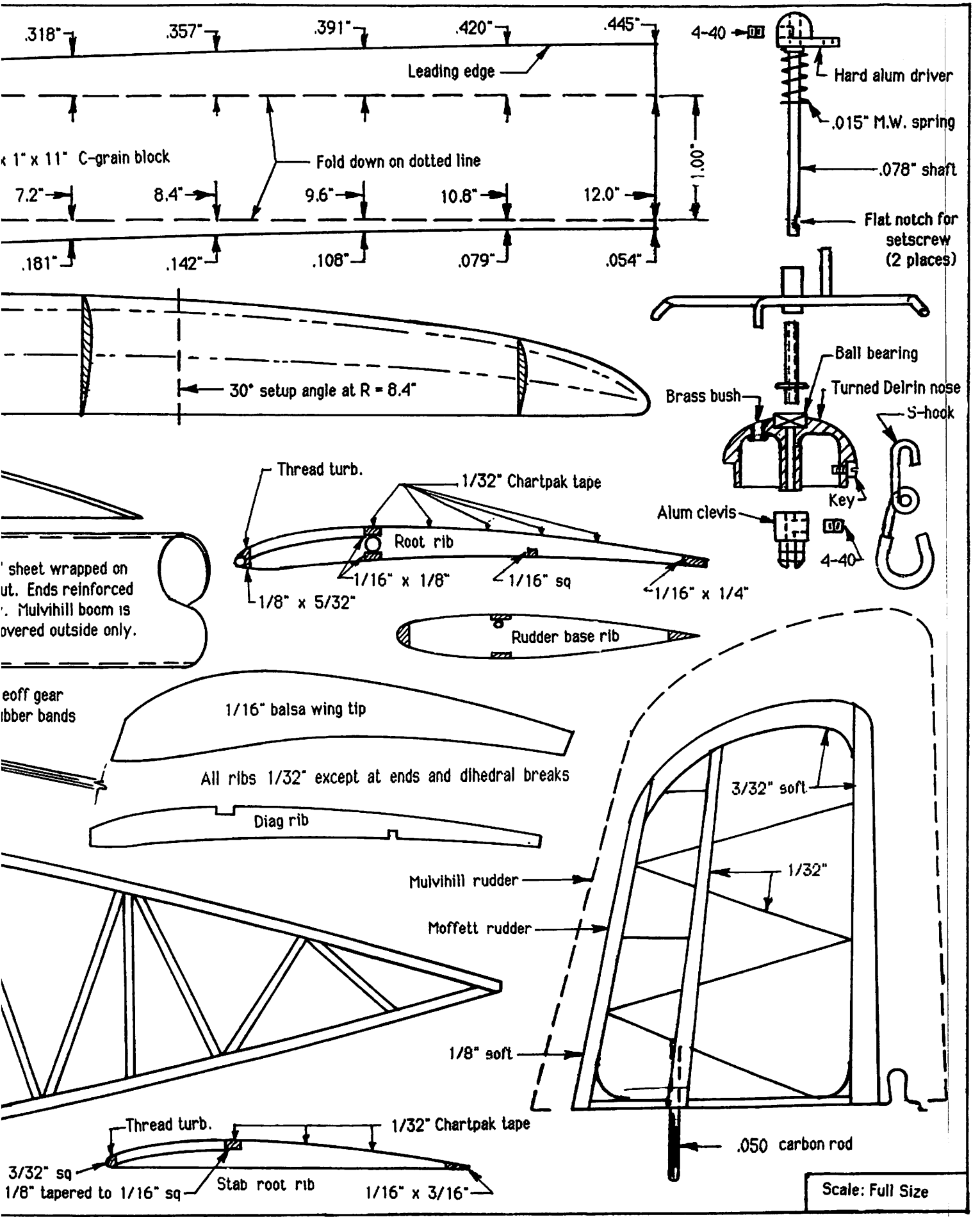
Moffett boom & rudder

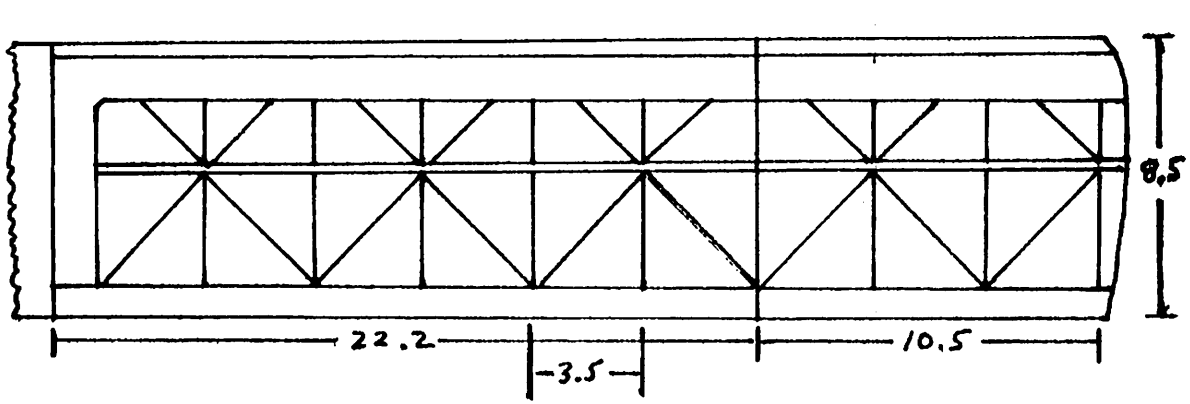


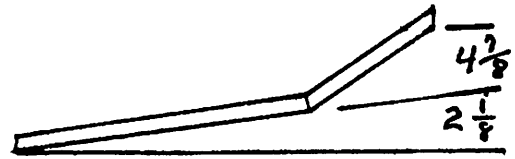
BABU, by Bob Hatschek
2nd place, 1992 Moffett Trophy
120+120+120+180+240+193=973
FLYOFF 23 — Fall 1993

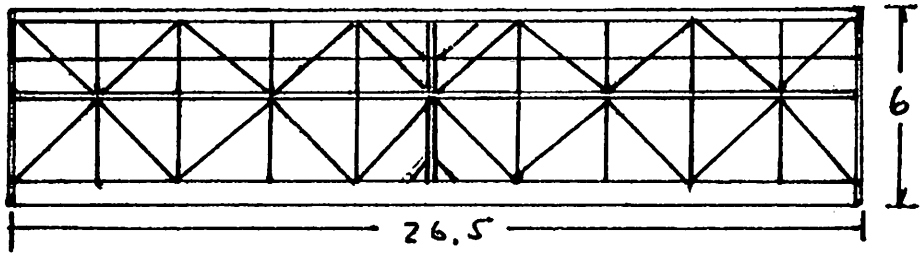
Scale: 1/4" = 1"

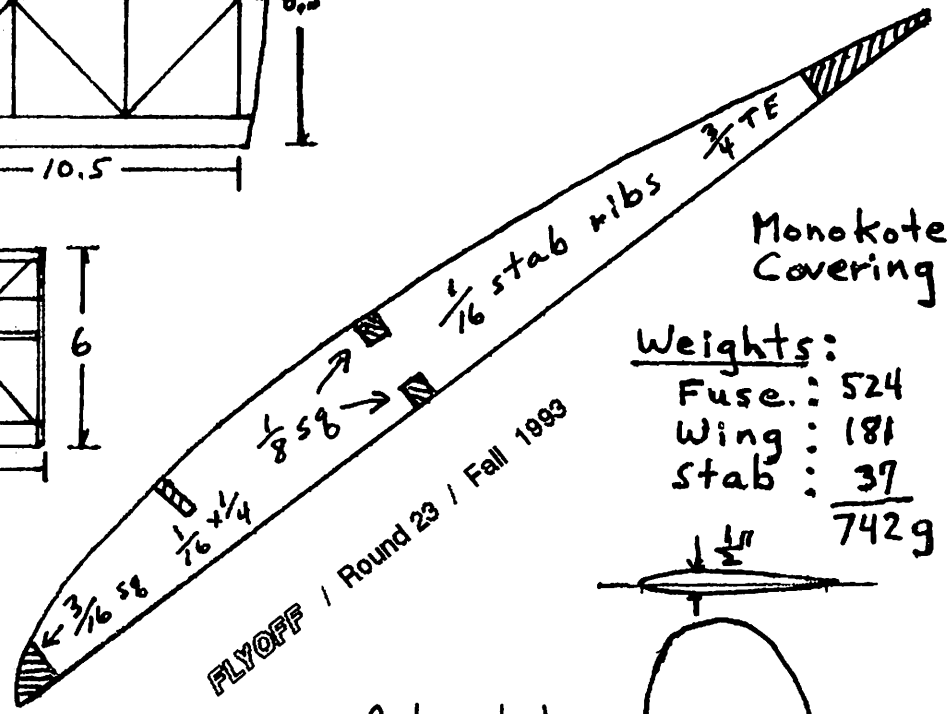

BABU, by Bob Hatschek
2nd place, 1992 Moffett Trophy
120+120+120+180+240+193=973
FLYOFF 23 — Fall 1993
.067"
.181"
.218"
.272"
1/2"
R = 2.4"
3.6"
4.8"
6.0"
Trailing edge
.432"
.348"
.281"
.227"
HIBORKS Hub, detailed in
NFFS Digest XXII No. 1 (Jan. '88),
NFFS 24th Sympo (1991),
FLYOFF #2 and #13
Chartpak tape
1/8" carbon rod
Block hinge (see FLYOFF #19)
Tracker
compartment
3/32" carbon rod x 4"
in 1/8" alum tube
Two hooks,
each side
Motor tube is 3.25" x 26" blank of 1/32
1.00" alum. tube. Jap tissue inside and
with rings made of 2 layers of 1/64" pl
12" blank tapering from 3.25" to 1.2",
1/16" x 1/8" spruce key
Bind & cement
Wing saddle and ta
strapped on with r
Groove for rubber bands
1/16" sq. med
1/16" sheet
3/32" med hard
3.25" square REQUIRED
1/16" x


.318"
.357"
.391"
.420"
.445"
Leading edge
x 1" x 11" C-grain block
Fold down on dotted line
1.00"
7.2"
8.4"
9.6"
10.8"
12.0"
.181"
.142"
.108"
.079"
.054"
30° setup angle at R = 8.4"
4-40
Hard alum driver
.015" M.W. spring
.078" shaft
Flat notch for setscrew (2 places)
Ball bearing
Brass bush
Turned Delrin nose
S-hook
Key
Alum clevis
4-40
' sheet wrapped on
ut. Ends reinforced
'. Mulvihill boom is
overed outside only.
Thread turb.
1/32" Chartpak tape
Root rib
1/16" x 1/8"
1/16" sq
1/16" x 1/4"
1/8" x 5/32"
Rudder base rib
eoff gear
ubber bands
1/16" balsa wing tip
All ribs 1/32" except at ends and dihedral breaks
Diag rib
3/32" soft
1/32"
Mulvihill rudder
Moffett rudder
1/8" soft
.050 carbon rod
Thread turb.
1/32" Chartpak tape
3/32" sq
1/8" tapered to 1/16" sq
Stab root rib
1/16" x 3/16"
Scale: Full Size







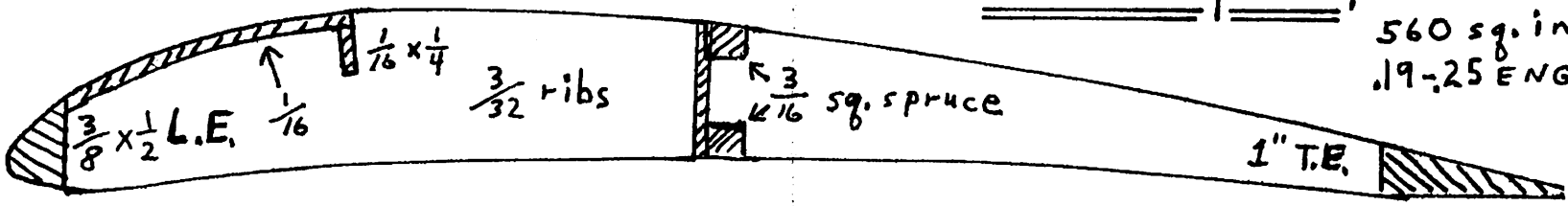


Monokote Covering

Weights:

Fuse.	524
Wing	181
Stab	37
	742g





Windwhip A-B, BRAD BANE

560 sq. in.

.19-.25 ENG.

Windwhip A-B

by Brad Bane, WNYFFS

When I look at the many similar designs that are around, I always wonder why I should build one particular design instead of the others. Let me address this question first in relation to Windwhip.

The heart of this airplane is that big, fat, undercambered airfoil. It goes against the usual thin, sharp entry, flat bottom foil that we usually see. This accomplishes several things that I think give this design an edge in competition. They are:

1. The glide. When built light, nothing out-glides this plane.
2. Strength vs. weight. Thick wings are easier to build strong and light.
3. Thermaling. This ship seems to center itself in thermals and not fly through them.

There's no doubt that the thick airfoil compromises the climb, but with the power available from schneurle-ported engines, this is minimized. Because emphasis is not on hot climb, consistency can be achieved—even if the power pattern is less than perfect. Many times I've launched this plane badly or with the engine not running quite right and have still been saved by the glide. It's nice to have an airplane that compensates for your mistakes.

I fly the Windwhip either right-right or right-left with no apparent difference in performance. I also use no wash-in or wash-out, but a little left thrust is sometimes helpful in the initial climb phase. I would not try to fly the Windwhip without an autostab, but an autorudder is not necessary if the plane is built light so that it can roll out on top.

Most free-flighters in the Northeast have seen Ruth and me flying Windwhips quite often, so that its performance qualities are well known: It isn't fancy, but it works!

[Full-size plans for the Windwhip A-B may be available. Write to Brad Bane, 60 Lake Ave., Lyndonville, NY 14098.—*The Editor*]

A 'Better-idea' glider

Got a phone call from Texas in July. Don Simpkins just loved the "Idea Glider" in *FLYOFF 22* and built one. But he had an even better and simpler idea for the wing pivot: Slip a short piece of brass tubing over the carbon-fiber body, epoxy it in position, then drill it horizontally for a thinner, music wire pivot pin. Slight modification to the wing mount is obvious. Do it!

[Continued from page 1]

That lead-in accurately describes free-flight competition in this country. The USA truthfully is "The land of the 1001 classes." Another word for it is anarchy. We have divided ourselves up so finely that we are no longer visible, we cannot be seen, and we are no longer heard in the councils of BIG MODEL AVIATION. Hell, we don't even hear ourselves whimpering!

AMA has shuffled off the responsibility for free-flight by foisting it off on Special Interest Groups (SIGs). Alphabetically, we have FAC, NFFS, and SAM—all great, high-minded organizations, and each has taken over a corner of free flight that was largely abandoned by AMA—even though AMA is nominally still in the act as an affiliate of NAA and US representative of FAI.

So we've basically got five different organizations concocting free-flight rules—each with a full dance card. The reigning philosophy seems to be: "Hey, wouldn't it be nice if we had an event for X? But we mustn't ever touch an existing event because that would be raining on somebody else's parade."

So we have become "the land of 1001 classes." The free flight cup runneth over. And we are drowning in the overflow!

It was a busy, BUSY weekend

What's up? XXII complained about the lack of advance planning for AAAA-meets—with two set for the Labor Day weekend there cannot be an honest-to-gosh FF Nats. That's still true, and we'd welcome early word on the scheduling of a real FF Nats for 1994.

But we'd better be careful about throwing stones in glass houses. Late last year *FLYOFF* contacted known meet sponsors in "our" part of the world—the northeastern US and eastern Canada—about 1993 plans. Response was incomplete and inaccurate—with the result that at least FIVE meets were scheduled for the weekend of Aug. 14-15: the Ontario Champs at Borden; the Empire State Champs at Fayette; and three at Galeville: a Skyscrapers Monthly on the 14th, the Mid-Hudson Modelmasters Annual on the 15th, and an FF Team Semifinal on both days.

Now this is being written before that weekend, and you're reading it after. But the inevitable result must be reduced participation in all events, reduced revenue for meet sponsors, and reduced enjoyment of our favorite sport—competition FF.

In total, the reasons for this overscheduling and undercoordination are many and complex. Blame lies all over, and not

[Continued on page 8]

FLYOFF Subscriptions & Renewals

Subscriptions: *FLYOFF* is published quarterly for active (dues paid) Skyscrapers. Others may subscribe to a minimum of five issues at a rate of $2.00 per issue in North America ($10.00 minimum) or $3.00 per issue overseas ($15 minimum). Payment must be in US funds, drawn on a US bank, payable to the "Skyscrapers."

Guarantee: All funds go into escrow and only when an issue is mailed is $2.00 ($3.00 overseas) withdrawn. Thus, if an issue is not published for any reason, money is available for refunds.

Expiration: Your subscription expires with the Round Number in the code on your address label. If that number is 23, this is your last issue. If you are an active Skyscraper, please pay your dues. If you are a non-member, please send appropriate payment.

Back issues: Some back issues (numbers below) are available at the original price of $2 per copy ($3 overseas). Circle desired Round No. on coupon, enclose payment, and mail to *FLYOFF*.

Articles: We also seek your free-flight contributions (letters, articles, drawings, ideas, etc). Unfortunately, we cannot pay in any currency other than the heartfelt gratitude of all *FLYOFF* readers.

Mail coupon and payment to:

FLYOFF
c/o R. L. Hatschek
316 Grosvenor Street
Douglaston, NY 11363-1011
USA

Enclosed is $_____ in US funds (payable to the Skyscrapers). Please enter my subscription starting with the (Check one) Current issue___, Next issue___, Extend present subscription___
Please also send circled back issues: No. 3 4 5 7 9 10 11 12 14 15 16 17 18 19 20 21 22

Name_____

Address_____

[Continued from page 7]
only on our own doorstep. But come on, guys, let's do it better next year. And better really means earlier!

FAI Supplies 'Tan II' rubber — First impressions

Got my first batches of Ed Dolby's "Tan II" rubber early this year It's great! Here are a few observations/suggestions: It stretches to over 900%. Reduce or eliminate slack. Take extra care in break-in and lubrication. Wind the hell out of it—more turns AND higher torque. Especially rewarding is that it seems to provide higher torque in the cruise portion of the climb. It goes well with my high-aspect, high-pitch props, and vice versa. But it's very "tender." Haven't blown any motors while winding, but they're heavily nicked and pretty well-shredded after only one flight.

1993 Skyscraper Monthly Meet Results

June 20, Bob Lipori, CD

Cat G		HLG		PW-30	
Vic Nippert	251	L. Pelatowski	117	Bob Langelius	2350
John Carbone	190	Andras Vig	79	Alan Abriss	1499
Jo Darling	142	R. Walsh (Jr)	10	Dick Delinski	1092
Clark Darling	32	**1/2A Gas**		**P-30**	
F1ABCn		JohnWalsh	316	Vic Nippert	332
? Pelatowski	691	**ABCD Gas**		L. Pelatowski	229
Mulvihill		Clark Darling	360	Hank Cox	50
Hank Cox	338	**P-30U**		**Payload**	
Vic Nippert	286	Art Phillips	344	Vic Nippert	310

Galeville Maintenance Fund, 7/28/93

Previous Contributions	Amount	Balance
Skyscrapers	2554.00	
Friends of the Skyscrapers	3057.00	
		5611. 00
Previous expenditures	—2425.00	
		3186. 00
New Contributions		
Skyscrapers	00.00	
		3186.00
Friends of the Skyscrapers		
EFFC field donations (7/93)	17.00	
Toby Feuer (7/93)	25.00	
Joe Williams (7/93)	20.00	
EFFC (7/93)	87.00	
Mid-Hudson Modelmasters (7/93)	70.00	
Ed Turner (7/93)	10.00	
	229.00	3415.00
New Expenditures		
Mowing trails (6/93)	—1000.00	
Current Balance (7/28/93)		$2415.00

Sincere thanks to all donors. We welcome additional contributions. Funds are held in a separate account, and a full accounting is published here. Please send donations (payable to "Skyscrapers") either to Tom Waddington, 3504 Carol Ct, Yorktown Hts, NY 10598 or to *FLYOFF*. Thank you!