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SKY-SCRAPERS BKLYN NY
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FLYOFF

Round 15 / Fall 1991

The SKYSCRAPERS Quarterly

Edited by Bob Hatschek

What's Up? — XV

Skyscraper notes at the FF Nats

Once again, Lawrenceville was the place to be in June, and once again we'll give you a highly personalized impression of the 1991 Free Flight National Championships. (You'll get detailed results and, hopefully, some photographic coverage in other publications.) Fewer Skyscrapers made the trek this year, typically for one of two reasons: The mid-June date is before school lets out, just about making it impossible for either teachers or students. And several members opted out because of the lack of rooms at the Executive Inn.

Although we slipped a bit in total hardware, the Skyscrapers seem to own F1J. After Jack Nix's flyoff win in last year's 40-mph howler, Skyscrapers John Carbone, Jim Boccikinfuso, and Jean Pailet all maxed out to sweep the top three places. Pailet also took second in A/1 (F1H) and third in 1/2A.

Larry Davidson took enough prizes in his events to win top championship honors among the RC Old Timer fraternity. Leading into the seventh round, Bob Gutai had a disastrous timer failure (just before "glide") in FAI Power (F1C) and spun in to fourth. And Hatschek proved conclusively that down air makes fuses burn faster; he combined four booming maxes with an early d/t for sixth place in Coupe (F1G)—right after the five guys that maxed out. Also slipping a bit was Skyscraper adoptee Guy Eaves, who notched a first and a second in .020 Replica and 1/2A NosGas after winning both last October.

Coupe winner Chuck Markos—if he were a Skyscraper—would have sewed up this year's Purple Shaft. For his winning second flyoff flight—a max—he installed a borrowed Walston retrieval transmitter. As he was tracking it down, the signal suddenly disappeared. Then he noticed a combine working the wheat field. Ultimately he found some bits of familiar tissue.

Overall, it was a great meet! But there were some negatives that we'll comment on another time so future Nats planners can come closer to perfection. (Absolute perfection is impossible, of course, because of conflicting factors, but it could be done better.)

One of my most pleasant experiences was when several contestants volunteered compliments on the way the Skyscrapers ran the official table on Thursday. That chore was ably handled by Jean Pailet and John Walsh with a bit of backup by other members.

The World Championships — First word

Congratulations! That's the first word for the 1991 FF World Championships: First, on the fact that it was held at all—in Yugoslavia, with a revolution going on at the same time. Second, to all the participants, winners or not. And third, to the winners —especially those winners who brought five medals back home to North America!

Fragmentary reports via Fax from the US team and Aug. *FFN* include: The Yugoslav strife did prevent some teams and some individuals from attending. Some of the rental cars carried Slovenian registration, resulting in some unfriendly reactions (Zrenjanin is in Serbia) until the renters added visible national identification. Weather was quite variable.

Every flight by every contestant is a story in itself. Doug Rowsell's story is that he d/t'ed 7 sec early in the 6-min flyoff round.

F1A (75 flyers, 26 teams, 13 in flyoff)

1	M. Kochkarev, USSR	1260+240+300
2	S. Makarov, USSR	1260+240+260+286
3	J. Parker, USA	1260+240+260+221
4	U. Rusch, Germany	1260+240+160
5	Liu Qing, China	1260+215
19	R. Weller, USA	180 180 168 180 180 180 180 = 1248
27	R. Isaacson, USA	154 180 180 180 180 180 180 = 1234

1	USSR	3775	(1, 2, 15)
2	USA	3742	(3, 19, 27)
3	North Korea	3738	(6, 13, 36)
19	Canada	3267	(52, 54, 69)

F1B (65 flyers, 23 teams, 17 in flyoff)

1	A. Andriukov, USSR	1290+240+300+360+420
2	T. Mathews, Canada	1290+240+300+360+401
3	D. Rowsell, Canada	1290+240+300+353
4	E. Cofalik (W/C), Poland	1290+240+300+336
5	S. Stefanchuk, USSR	1290+240+300+297
24	R. Maves, USA	210 139 180 180 180 180 180 = 1249
36	N. Furutani, USA	210 180 133 180 180 156 180 = 1219
43	G. Xenakis, USA	122 180 180 180 180 169 180 = 1191

1	USSR	3870	(1, 5, 10)
2	Poland	3870	(4, 9, 11)
3	China	3778	(12, 21, 32)
10	USA	3659	(24, 36, 43)
17	Canada	3440	(2, 3, 64)

F1C (45 flyers, 17 teams, 16 in flyoff)

1	R. Archer, USA	1320+240+300+360+420+480+540+512
2	E. Verbitski, USSR	1320+240+300+360+420+480+540+442
3	Wang Xian, China	1320+240+300+360+420+480+540+392
4	V. Strukov, USSR	1320+240+300+360+420+480+494
5	C. Wachtler, Germany	1320+240+300+360+390
23	K. Phair, USA	240 180 180 139 180 180 180 = 1279
27	K. Oliver, USA	180 180 180 180 180 180 180 = 1260

1	China	3960	(3, 9, 14)
2	Poland	3960	(11, 17, 18)
3	Germany	3918	(5, 16, 24)
7	USA	3859	(1, 23, 27)

FLYOFF 1991 Free Flight contest calendar for the Northeast (As of July 19, 1991)

Any sponsor of a FF meet (unrestricted entry) within 500 miles of NYC is urged to notify *FLYOFF*. Listing depends on space. Priority is: "Modern" (AMA, FAI, MAAC); NFFS NosGas; SAM FF; FAC; Indoor.

List is not complete and is subject to change. We have no information on some meets. See footnotes for details. Confirm all data with sponsor and ask for any last minute changes.

Dates	Site	Sponsor / Meet	Notes	Info contact (Phone or send S.A.S.E.)
8/24-25	CFB Borden, Ont	Canadian Unofficial FF "Nats"	0, 12	Peter Allnutt, 2460 Weston Rd, Apt 1707, Weston, Ont, M9N 2A4, Canada (Tel 416/249-0032)
8/25	NAS Johnsville, PA	Delaware Valley Federation	1	Jim Van Sant, 337 Parkview Ave, Penndel, PA 19047 (Tel 215/757-2513)
8/31-9/2	Caleville, NY	FAI FF Team Semifinal	7	Dave Acton, RD #3 Box 227, Mahopac, NY 10541 (Tel 914/628-0526)
9/7-8	Gananoque, Ont.	Eastern Canada Open	0, 6	K.B. Condon, 254 Westcroft Rd, Beaconsfield, Que, H9W 2M4, Canada (Tel 514/695-9877)
9/15	Caleville, NY	Bath BAM Bash	1	Clay Ott, 6018 Nor-Bath Blvd, Bath, PA 18014
9/22	Caleville, NY	Skyscraper September Monthly	9	Dave Acton (see above)
10/5-6	CFB Borden, Ont	Canada Autumn Cup	0, 2, 5, 7	Leslie Parkes, 21 Misty Moor Dr, Richmond Hill, Ont L4C 6P9, Canada (Tel 416/731-2585)
10/6-11	Jean, NV	SAM Champs	1	Mike Granieri, Dreyden Rd, Box 78, Pottersville, NJ 07974 (Tel 201/439-2933)
10/12-13	Caleville, NY	Skyscraper Intl Challenge	2, 3, 8	Vito Gagliano, 104 Cherry St, Floral Park, NY 11001 (Tel 516/488-4217)
10/27	Caleville, NY	Skyscraper October Monthly	9	Dave Acton (see above)
12/27-30	Palm Bay, FL	King Orange International	0, 2, 7	FAI events: Jim Bradley, 1337 Pine Sap Ct, Orlando, FL 32825; (Tel 407/277-9132)

Notes: All meets include FF (AMA, FAI, MAAC, SAM, or NFFS). As of this date, NAS Johnsville and Wright-Patterson AFB are again available. Check all info for last minute changes.

0. Specific events not known.
1. Similar to 1990
2. American Cup points.
3. Selected contest, '93 Team.
4. Open events Sat; FAI Sun.
5. F1G, H, J Sat; F1A, B, C Sun
6. Old-Timer Sat; FAI & Open Sun
7. F1A, F1B, F1C
8. F1A, F1B, F1C, F1G, F1H, F1J, German HLG
9. 1/2A, ABCD, F1ABC, PW30, NosGas, .02Repl, HLG, Cat G, P30, P30U, Mulv – Category III
10. Sat—PW30, P30, F1A. Sun—Dawn Mulv, 1/2A, F1B, F1C, HLG, NosGas. Category III
11. Dates are Wed-Fri. SAM events only (Gas, Rubber, HLG; & RC)
12. No FF at Canadian Nats (7/1-7, Huron Park) except Rub scale, Peanut; Indoor. Unofficial FF "Nats" is not MAAC sponsored

Shuriken diary

By Jean Pailet, the Skyscrapers

Monday, Oct. 15, 1990 — Test flying day at the '90 Nats at Lawrenceville. Test flights on SHOCer 280 with hastily installed Shuriken .050 (engine received three days prior to departure for Nats) are successful and encouraging. On "last" flight of the day—with Rocca carbon fiber single-blade folding prop—d/t fails to function (Fuse apparently did not ignite or burn properly) and model flies off towards southeast in a boomer. Many hours spent in frustrating search over many miles and many acres!

Tuesday, Oct. 16, 1990 — Report heard from small airport near Vincennes (approximately 10 miles SE of Nats site at Mid-America Air Center) that a student pilot had seen the SHOCer Monday afternoon at 3000 feet altitude.

Wednesday-Thursday, Oct. 17-18, 1990 — Ground search was continued during all available "free" time. Fruitless!

Friday, Oct. 19, 1990 — Lost "Tow Soar" A-1 (F1H) on second official when its mechanical d/t timer malfunctioned. Spent more hours searching to no avail. Departed for Long Island.

October-November, 1990 — Receive phone call from couple living in Lawrenceville trailer park advising that they have found A-1 and will ship it back to me.

A-1 arrives in fairly good shape, considering unknown number of days weathering outdoors and minor damage that may have occurred in the mail.

Send reward and reimbursement for shipping costs to A-1 finder.

Saturday, March 9, 1991 — Was "honored" at the Skyscrapers annual banquet as the club awarded me the "Royal Order of the Purple Shaft" for "demonstrations of reliable and effective dethermalizing at the 1990 Nats."

Monday, June 17, 1991 — Test flying day at the '91 Nats at Lawrenceville. Fred Baldwin (designer, creator, manufacturer of Shuriken) joins us for dinner. He mentions having heard comments on the field this day that "someone knows who has the lost Shuriken SHOCer."

Tuesday, June 18, 1991 — Harry Murphy tells me that Bud Brown [a *FLYOFF* subscriber, incidentally, who lives in Lawrenceville] knows who found and has the plane and engine.

Wednesday, June 19,1991 — Locate and query Bud Brown, who advises as follows:

A friend of Bud's who is a flight instructor at Mid-America Air Center was told by a fellow flight instructor that he had found and

intended to sell a model plane and engine that he'd found last Fall because he understood that the engine was quite valuable.

Bud subsequently spoke directly with the flight instructor who claimed to have the model and who accurately described the "expensive" Shuriken engine. He again states that he has no intention of returning the model or engine to the rightful owner because of its value and he restates his intent to sell it.

Bud remembers the flight instructor's first name (Randy) but he cannot recall his last name.

I attempt to locate "Randy" at the Air Center tower/administration building in late afternoon, but only one student is present and he doesn't know "Randy."

Thursday, June 20, 1991 — Bud Brown has now remembered "Randy's" last name. Another visit to the tower/administration building yields Randy's phone number in Vincennes.

At 8:30 p.m. I contact Randy by phone at his home. He denies having the Shuriken SHOCer, and says he found a rubber-powered model and returned it to its owner. When advised that two people (Bud Brown and the other flight instructor) have stated that he told them he had the Shuriken SHOCer and intended to sell it, he still denies it.

I tell him that there is no point in further conversation at this time, but that I intend to pursue the matter further and will be contacting him again (End of conversation).

Friday, June 21, 1991 — Upon my arrival at the field, Abram Van Dover, the Nats CD, tells me to see Hank Sperzel [a *FLY-OFF* subscriber from Bellevue, Nebr, who also happens to be Skyscraper Clark Darling's brother-in-law] at his trailer because "He has your long-lost airplane."

I locate Hank's camper and, sure enough, he has my plane and engine. Hank relates the following:

There was a cookout at the trailer "camp" next to the flying field on the previous evening (Thursday). One of the "dinner guests" was old-timer flyer Tom Moriarty, from Omaha. At about 9:30 Tom left the cookout to return to his motel.. As Tom was driving off the airfield, another car approached his. The person in the second car asked if Tom was "with the group flying models at the airfield." When given an affirmative answer, he said that he had with him an airplane that he'd bought for "a couple of bucks" from some kids who had found it, and that he wanted to have it returned to its owner. Moriarty said that he would be happy to return the plane to its owner but that he'd like to have the stranger's name so that the rightful owner could express his thanks and probably offer a reward. Thereupon the stranger declined to discuss the matter further and drove off "into the night." Tom then left the model with Hank.

Postscript — The model was in excellent condition. Not weathered at all, with the only damage being where the identification label bearing the owner's name, address and phone number had been removed. The engine and the expensive Italian prop were also apparently undamaged and in fine condition—although it was apparent that the engine had been removed and subsequently reinstalled in the plane.

Post-postscript, Saturday, June 29, 1991 — Test flew the model and both engine and plane are fine and still in trim.

Finale, July 1991 — I offer my sincere thanks and appreciation to Fred, Murph, Bud, Bud's flight instructor friend, Van, Tom, Hank, and anybody else who may anonymously have had a hand in passing along the information that ultimately resulted in getting the Shuriken SHOCer back to me.

Skyscrapers Spring Meet, 1991

Galeville, May 25, 26. CDs: Ron Felix & John Carbone

Saturday was sunny and hot, with temperature in the 90s and moderate to strong breezes from the south and southwest. Sunday turned somewhat cooler and cloudier, with breezes more moderate and reversed—coming from the north to northeast and eventually swinging to easterly. Entry numbers below may be low due to some contestants not turning in flight cards with low scores.

F1A—Nordic A/2 (7 entries)

Jim Bradley	144	180	180	174	180	180	60	1098
Aram Schlosberg	178	180	180	53	146	180	180	1097
Vic Nippert	131	180	116	55	78	180	180	920
Charlie Gagliano	180	180	29	—	—	—	—	389
Matt Gagliano	175	33	35	—	—	55	—	298

F1B—Wakefield (12 entries)

Gerry McGlashan	7 x 180 = 1260						+114	1374
Jim Brooks	7 x 180 = 1260						+99	1359
Chris Pelatowski	180	148	180	180	180	180	180	1228
Bill Buss	149	166	153	180	180	180	149	1157
Joe Williams	121	172	180	157	162	112	180	1084

F1C—FAI Power (5 entries)

Bob Gutai	180	180	180	180	180	180	180	1260
Gil Morris	180	180	180	180	124	180	167	1191
Ed Keck	71	180	180	180	180	165	180	1136
Dennis Phillips	125	66	57	163	86	180	127	804
Kent Brandt	15	—	—	—	—	—	—	15

1/2A Power (11 entries)

Dave Merithew	120	120	120	+120	480
John Walsh	120	120	120	+92	452
Jim Bocckinfuso	120	120	114		354
Dick Delinski	111	120	98		329
Joe Wagner	120	90	92		302

Nostalgia Gas (7 entries)

Emmett Holt	120	120	120		360
Brooks Goodnow	98	116	120		334
Dick Delinski	120	120	89		329
Dennis Phillips	120	79	111		310
Jim Bocckinfuso	120	99	89		308

Dawn Mulvi (12)

Bob Lipori	329
Ray Factor	291
Joe Williams	267
Bob Hatschek	263
Jim Brooks	260

P-30, Open (9)

John Walsh	120	120	120	360
Bill Buss	87	120	86	293
Rod Ioerger	91	101	61	253
D. Richard	113	53	55	221
Stan Colson	37	82	76	195

PeeWee 30 (4)

Alan Abriss	1613
Bill Colish	881

P-30, Jr-Sr (2)

Rod Ioerger	89	85	99	273
A. Pelatowski	120	64	50	234

HLG, Open (7)

Ed Pelatowski	298
Art Ellis	205
Charlie Gagliano	183
John Walsh	137
Alan Abriss	87

HLG, Jr-Sr (6)

Dominic Gagliano	105
Rod Ioerger	81
John-Paul Gagliano	44
Danny Colish	36
Breen Ellis	30

Tests, comparisons: Shuriken & Cox .049

by Bob Beecroft, San Diego Orbiteers

[Written March 26, 1991, this article is reprinted from the April 1991 issue of El Torbellino, *the newsletter of the San Diego Orbiteers, edited by George Peace.]*

The motors in these tests are the Shuriken .050 rear exhaust with mini-pipe option and a Cox .049, set up using commonly available KK off-the-shelf items, i.e. #512 NV assy, KK piston and liner, cylinder shims, Glo-Bee Sport plug, etc.

This new little motor was received some time ago and has had some difficulty in the hands of this old-school free-flighter. First off, the side-exhaust motor was delivered instead of the rear-exhaust as ordered. That was handled quickly by the manufacturer after a confirming phone call to them that what I'd ordered was available.

With the new motor in hand, initial tests were made back in November. Break-in procedure was according to my old school of thought: several short runs at high rpm, under little load to loosen the motor up, yet not overheat it. The first runs were on mild fuel (24% nitro) moving quickly to the recommended 50% given the ABC construction of it, differing considerably from the Cox procedure here.

Initial tests were disappointing, as I thought any well set-up Cox could match. Conversation with Fred Baldwin, the manufacturer, convinced me to alter my break-in procedure. After an approximate 30 minute hard running on 50% (6 ounces) the motor was hardly even hot. These tests were discouraging also. As it can be noted from the results, the Cox ran better by a considerable margin. And the Cox responded to an increase in nitro from 50% to 70% by some 2000 rpm. The Shuriken didn't respond favorably to the additional nitro.

Another call to the manufacturer indicated more break-in was needed on smaller props yet. After some conversation (I wasn't convinced it needed any more loosening up), it was agreed to return the motor to the factory. Mr. Baldwin remachined the piston to lighten it to later specs (this being #51 engine of some 470 sold to date) and loosened it up some more. His tests were much more satisfactory as told to me on the telephone. The acid test was now for me to be able to duplicate his results here at home.

This past Sunday at our monthly I ran the engine, using a shorter mini-pipe suggested by the manufacturer. 50% fuel on the initial run without the pipe gave erratic needle valve adjustments. Addition of the shorter pipe broadened the NV a bunch and smooth runs bettering those of Mr. Baldwin were easily in hand. This was using the modified APC that I did especially for the Shuriken (cut to 5", trimmed back to the original shape, thinned out and tapered). This prop runs within 100 rpm of the recommended Tornado Black 5 x 3.

Any apprehension and reserve that I had initially about this engine are GONE. It easily betters the specs given with the engine and will no doubt have a long, long life. (To date 470 engines have been sold with only one returned, and that for a bad bearing.) Given the short lived nature of the Cox engine when set up properly and run very, very hard, the little Shuriken will be a welcome addition to the competition modeler's bag of tricks. No doubt, the Walston Retrieval System is a must, if not absolute necessity to ensure you keep close track of it. A beeper system is the minimum for security unless you're really flush.

A few parting notes for us free-flighter types using this new little devil: Spend some time breaking it in. I'd say a good 45 minutes to an hour, in just a few long, hard runs are the way to go. 50% nitro is a good place to start, running the motor at very near full lean, with a Cox grey 5 x 3 cut to perhaps $3^1/_4$ inches diameter (right, $3^1/_4$) run at around 32 to 34,000 rpm.

Handy wedges for trimming

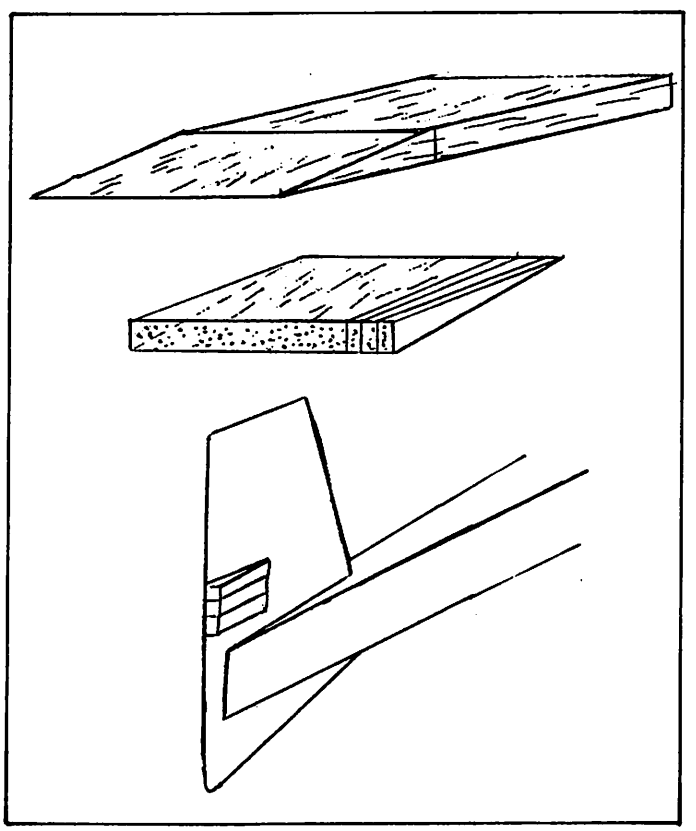
by Walt Rozelle, TTOMA and SAM 47

We have read numerous model construction articles that recommend "using a piece of TE stock" to add fin offset during trimming. But "a piece of TE stock" can cause excessive trim change. And trying to cut a series of narrow strips usually results in a pile of crumbling balsa chips. The reason for that is the grain direction in standard TE stock.

My answer is to form pieces of TE-shaped stock for fin trim with the grain running across the width of the stock—not the length. Just whack a piece off the end of a sheet of medium-hard 3/16" by 3" balsa. Mark off a length about $1^1/_2$" long. Plane and/or sand the end of the sheet down to a triangular shape before you cut it off. Make several while you're at it.

These little triangular-shaped pieces of wood will enable you to make fine trim changes to anything from a P-30 to a "strong" power model. Just slice it with the grain to the width you like, and then cut the length to what your model might need for trim change. Plop it in place with a dot or two of CyA and fly. Then retrim as you see fit. Always take your fine-tooth Zona saw with you when you go test flying. I am always surprised how slight a trim change you can effect with such a coarse looking instrument.

Example: For a large Nostalgia model that is considerably out of trim, I will just stack up $^1/_8$" widths of the special stock until I start coming into range. Then I simply start using thinner pieces. If you go slightly too far, reduce the length of one wedge at a time cutting it off from the thick end (at the TE of the fin).



The motor develops its power at near 35,000 rpm, so small props are the order of the day: either the little 5 x 3 Tornado Black Magnum , a modified APC as I have done, a glass copy of the old Top Flite 5¼ x 3 might be great, a new low-pitch 5½ or 6 inch prop (say, 2 or 2½ pitch) or some experimentation with single bladers are going to be the trick setup.

Personally, I'll be toying with the single blade prop. I believe that there are some real performance gains to be had with the single blade prop at this rpm level, due to the induced turbulence or wake of the "leading" blade. This is effectively cut in half with the single bladed prop, if the theory is correct.

Far from any original thinking, nothing is new in this world. One of our F1C team members, Ken Phair, is using this setup and doing well.

Care and feeding of props: At some 30 grand (and even on strong running Cox motors) real care in balancing can't be overemphasized. It is extremely important to fully balance props to be run at these speeds. You can't just take 'em out of the box and fly 'em without the danger of having something come apart. I highly recommend buying and using the Hi-Point Balancer (by brand name — not a second-rate copycat plastic model). Being an old-fashioned kind of guy, I still use the old razor blades — set on my LEVEL surface plate — to double-check myself.

In any case, the new engine is going to set the standard. It already has set the 1/2A Combat flyers on their ears. They run them long (5 minutes at a whack) and hard. Reports are that the more they run the better they run. Do you have to have one to win? No, of course not, just pick a thermal every time 'cause they don't know one motor from another, guaranteed. I think now, though, that this little engine is going to be what is in the winner's circle for a long time to come and that their owners will be singing their praise for them

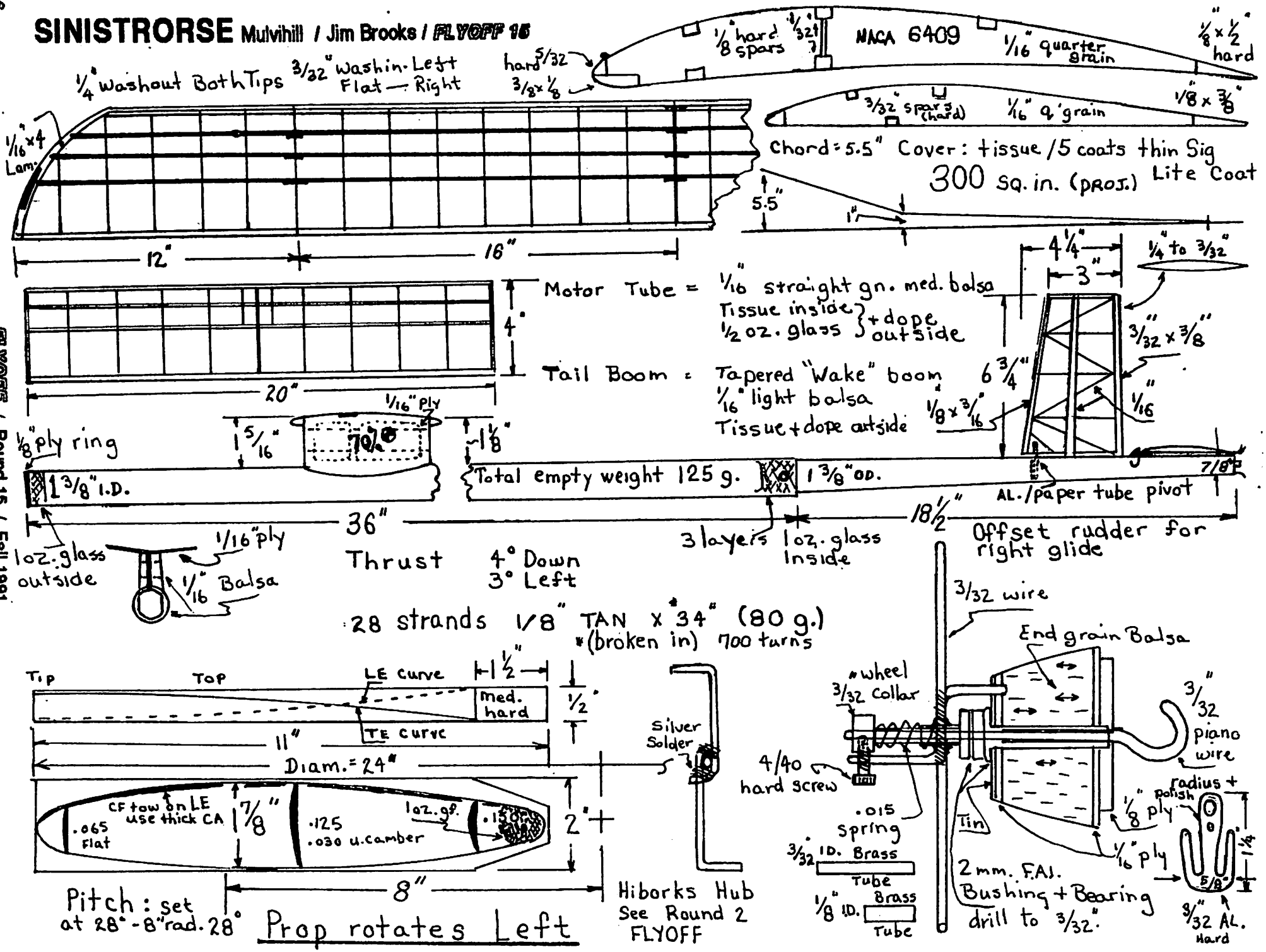
BV Competition Engines Shuriken .050 Break-in / Tests / Cox Comparison

Run	Prop	Fuel	Plug	Washers	Run time	RPM	Notes
1	#1	.5A+.5B	Supplied	3	2 min.	Unknown	Killed plug
2	#1	B	Glo-Bee Sport	3	1 min.	24,000	Quit trying to get 4-cycle
3	#1	B	Glo-Bee Sport	3	2 min.	Unknown	
4	#1	B	Glo-Bee Sport	3	4 min.	25,700	
5	#1	B	Glo-Bee Sport	3	3.5 min.	Unknown	
6	#1	B	Glo-Bee Sport	1	3 min.	26,500	
Tests 1 through 6 run 11/11/90 with supplied mini-pipe, full length. Used Pegasus Electronics tach. Manufacturer recommended 6 oz. of 50% nitro be run hard through engine — one long run, near full lean. Use 5 x 3 Cox grey cut to 3-3/4 inch diameter. Tests 7 through 11 run 3/2/91, at Taft, with Pegasus tach (Double-checked with Ralph Prey's digital tach).							
7	#2	B	Glo-Bee Sport	1	30 min. (?)	27,500-28,000	6oz. fuel
8	#2	B	Glo-Bee Sport	1	Same as 7	30,500-31,000	Pipe fell off
9	#3	B	Glo-Bee Sport	1	1 min.	21,000	Peaky needle valve
10	#4	B	Glo-Bee Sport	1	1 min.	25,800-26,000	
11	#4	70% nitro	Glo-Bee Sport	1	1 min.	25,500	
Motor returned to manufacturer; factory runs after piston lightened and loosened up. 3/16/91 tests by Fred Baldwin. Tests 12-15 used Futaba digital tach.							
12	#3	C	R5X	3	?	23,000	Full APC
13	#4	C	Flange	2	?	29,200	5-in. APC
14	#1	C	Flange	?	?	29,500	
15	#2			?	?	30,000	
Tests 16-18 3/24/91, at Brown Field. Pegasus tach.							
16	#4	B (50%)	R5X	3	4 min.	29,600	3-in. mini-pipe
17	#4	B (50%)	Glo-Bee Sport	3	1 min.	29,800-30,000	
18	#4	70%	Glo-Bee Sport	3	1 min.	30,000	
For comparison, Cox .049 runs, 3/2/91, at Taft. Pegasus tach.							
	#3	B (50%)	Glo-Bee Sport	1	1 min	21,000	
	#3	70%	Glo-Bee Sport	2	1 min.	22,500	
	#4	B	Glo-Bee Sport	1	1 min.	25,500	
	#4	70%	Glo-Bee Sport	2	1 min.	27,300	
	#5	70%	Glo-Bee Sport	2	1 min.	27,200	

Fuels: A, break-in: 22.25% castor oil, 24.75% nitro, 49.5%alcohol, 3.5% Hoppe's No. 9 (gun oil)
B, "cool brew:" 50% nitro, 17% Klotz KL 100, 7% propylene oxide, 25% alcohol, 1% Hoppe's No. 9
C: 50% nitro, 20% Klotz, 30% alcohol

Props: #1 Windsor 6 x 3 cut to 4.288 in. diameter
#2 Cox 5 x 3 grey cut to 3.645 in. diameter
#3 APC 5.7 x 3 unmodified
#4 APC 5.7 x 3 cut to 5.0 in. diameter, tapered & thinned (Runs within 100 rpm of Tornado Black Magnum 5 x 3)
#5 Tornado Black Magnum 5 x 3

SINISTRORSE Mulvihill / Jim Brooks / FLYOFF 15



Sinistrorse — by Jim Brooks, MAAC 1813

Definition: A structure which spirals upward to the left when seen from the center. e.g. (1) certain leaf forms, (2) this Mulvihill model

[FLYOFF was very favorably impressed by the performance of this model at Lawrenceville—especially the climb—and Jim was asked to provide this article. How well did it do? Sinistrorse kept maxing through the 8-minute flight, and was prevented from going for the 9 by two very long retrieves and a cloudburst that ended the meet a bit prematurely. Final placing was second for the individual Mulvihill trophy and second in Mulvihill team (with Steve Landy's 18-min total and Bob Hatschek's 12:48). — The Editor]

This model is my first Mulvihill design. After a 20-year layoff, I returned to modeling 4 years ago and have slowly begun to learn Wakefield with CF composite, Kevlar, and aluminum structures that are ever thinner, lighter, and more rigid. Next will be hesitation props, VIT, or variable pitch.

I thought that a much more simple model could be successful in Mulvihill, so I laid down a design which reminds me of my Slim Jim 1/2A (Zaic *Yearbook*, 1965), which is simple, light, easy to fly, glides well, and handles wind.

In the first year or two of rubber I tried to fly right-right. Several problems emerged: (1) The model zoomed too much during the burst, and this initial power was wasted on a high-speed pass over the cars. (2) The cruise was too flat. (3) The model would not turn in the glide without an autorudder. And (4) I kept hitting myself in the back of the head with the stab on launch. As a left-hander, I'm about as coordinated on the right side as a tree sloth with vertigo.

Under the combined influence of three excellent Wakefield flyers—namely Cam Ackerly, Doug Rowsell, and Tony Mathews—I switched to left-handed props (hence no more misaligned stabs after launching) and a left-right pattern (hence no more high-speed zoom and a steeper angle of attack on the cruise).

The glide circle is achieved by deflecting the rudder for right turn. The power burst is controlled by minute left thrust adjustments, at around 3^0 left, and a small amount of washin on the left inner wing panel. On my Wakefield design I discovered that the difference between a steep, rolling climb in the burst followed by a steep cruise or a zoom or crash is less than 1/4 turn of a 2-56 screw controlling left thrust (approx. 3^0).

I adjust downthrust at approx. 4^0 to maintain a steep cruise and keep the CG at 70%, adjusting stab incidence to obtain a flat glide.

Fiddling about with these adjustments should produce a model which will climb almost vertically left with one and a half right rolls during the burst, then downshifting into a high angle-of-attack steeply climbing left cruise.

Glide is adjusted to wide right turns. The washin on the left wing will tighten the glide in a thermal, but will not produce a spin unless the turn is initially too tight. The tip washout improves stability.

I used 80 grams of rubber (two Wake motors double length), and I haven't experimented with more power so far.

The prop is simply carved from 1/2" sheet, set at 28^0 at an 8" radius, producing a non-helix with plenty of tip washout. It seems to get the model to above average height.

The noseblock and hub are based on the HIBORKS hub. Since I am terrible at building anything out of metal at close tolerances, this hub design allows me to produce a light, positive, easy-to-build unit with materials available at any hobby shop.

Although there's no claim that this is an early-morning winner, the design should be competitive at anybody's Mulvi or Open Rubber contest. So far in its first two contests, Sinistrorse has a first at Camp Borden *[Canada]* with 3 maxes and a second at the US Nats with 9 maxes (39 minutes total).

The next version will contain a direction if/location transmitter. Without a radio beacon I was unable to return in time to attempt the 9-minute max at Lawrenceville before the thunderstorm hit. The next version will also go on a diet. At 125 grams without rubber, a 5-minute max without lift may be pushing it.

It might be worthwhile to experiment with the wing—changing from the NACA 6409 to something thinner and with greater aspect ratio. However, the present design is easy to trim and stable.

For those of you who suffer from a right-handed disability, reverse almost everything I just said. And if you decide to build this model, I look forward to flying with (against) you.

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