Established 1936
SKY-SCRAPERS BKLYN NY
AMA Club Charter 470

# FLYOFF

Round 26 / Summer 1994

The SKYSCRAPERS Quarterly

Edited by Bob Hatschek

## What's Up? XXVI

### Spring is sprung, the grass is riz. . .

I wunda where da boidies is.

Most old Brooklynites will undoubtedly recognize that piece of punished poetry as pertinent to Springtime. Which a bunch of Skyscrapers and other free-flighters greeted at 3:28 pm on Mar. 20 at Galeville. It was a beautiful day—sunshine strong enough to burn a winter-pale face. A bit breezy early, but calming to the point that Bill Buss's 4:30 winning flyoff in Coupe only drifted about a quarter mile. What I'm saying is that the Skyscrapers' Second Annual St. Valentine's Day Massacre (P-30, Coupe, and Cat Glider) was finally held on the day the Sun crossed the equator into the Northern Hemisphere.

There was still plenty of snow around. The Pelatowskis' winding stooge was pounded into the pack ice and held fine. Runways were plowed, but you had to "climb out" of the runway if your model drifted that way. The crust on the snow held up in most places and you only occasionally sank to knee depth in the softer snow underneath.

So now it's June and we're several meets farther into the season. In general, it does seem that winter is over. And, through May at least, it appears that the infamous seven-day-weather cycle is yielding favorable weekends!

### Results of the 'Massacre'

| | | | | | | |
|---|---|---|---|---|---|---|
| **Coupe d'Hiver** | | | | | | |
| Bill Buss | 120 | 120 | 120 | +270 | = | 630 |
| Vic Nippert | 120 | 120 | 120 | +105 | = | 465 |
| Ed Pelatowski | 91 | 71 | 120 | | = | 282 |
| Art Phillips | 119 | 78 | 79 | | = | 276 |
| **P-30** | | | | | | |
| Larry Pelatowski | 120 | 120 | 120 | | = | 360 |
| Bob Hatschek | 74 | 120 | 110 | | = | 304 |
| Ed Pelatowski | 74 | 94 | 88 | | = | 256 |
| Vic Nippert | 72 | 50 | 120 | | = | 242 |

| | **Catapult** | | **Glider** | | | | |
|---|---|---|---|---|---|---|---|
| Vic Nippert | 27 | 28 | 45 | 19 | 35 | 40 | = 120 |
| Joe Wagner | 21 | 6 | 5 | 29 | 15 | 26 | = 76 |

### Updates on the Contest Calendar

Round 25 gave more than a page to the 1994 Contest Calender for Northeastern Free-Flighters. It was pretty accurate. But we just can't seem to get it perfect! Since that went to press, we've had a few changes:

The Old Timer bash scheduled for July 31 at Westover AFB has been canceled, George Armstead informs us. It seems the Air Force wants to use its property at that time. Because most of the SAM fans are going to Muncie Sept. 11-16, the Connecticut group decided to just call off the Westover meet.

Brooks Goodnow of the Western NY FF Society reports that the 25th Empire State Championships (Aug. 12-14) has been moved from the Poormon Farm in Fayette to the Seneca Army Activity Airfield (about 2 miles south of the main gate of the Seneca Army Depot in Romillus, NY. Access starts at 8 a.m. Friday for testing, with official events starting at noon. Anybody wishing to join the group for Saturday evening dinner at Abigail's (in Seneca Falls) should contact Brooks Goodnow by 6 p.m. Friday.

The 45th Inter-Cities FAI Meet is scheduled for July 30-31 at Muncie with "America's Cup" and "Selected Contest" status (qualifying the winner, if he's a US resident, for the US Team Selection Finals). First round is scheduled to start at 2:00 Saturday. Get further information from either Jerry McGlashan (514/695-7415) or Paul Crowley (313/294-1236).

### 5th Pacific Free Flight Champs

We got an invitation to attend the 5th Pacific Free Flight Champs, scheduled for Sept. 16-19 in Omarama, New Zealand. That's in the South Island amidst "spectacular lakes and alpine scenery...offering some of the world's best fly fishing rivers." The site is about 2 km by 5 km.

Contest manager Chris Murphy (18 McGeorge Ave., Mornington, Dunedin 9001, New Zealand) writes that several Russians and other Europeans, a small horde of Aussies, and a bunch of US West Coasters are expected. Scheduled events are F1A, B, C, G, H, J, P-30, HLG, an event the Kiwis call "Aggregate," and Nostalgia Power. Write to Chris for additional details.

### Hey, I'm okay now! But thanks for asking

Got a nice letter from Joe Macay a couple of days after Round 25 was mailed. He was surprised to learn that I'd caught Lyme disease ("It must have been a very persistent tick that nailed you.") and he hoped I was on the road to recovery.

Please know that I am fully recovered. I apologize that I did not make that abundantly clear in my little sidebar justifying the medical article in *FLYOFF*. The point is: If you nab Lyme early it's fairly easy to cure with a few weeks of the right antibiotic. But if you let it go it can get very nasty and much harder to eliminate.

### Hey, we're now the "USA," officially

If you've always wondered how come we had to label all our International class models with an "N, " it was because that's the ICAO (International Civil Aviation Organization) code for

aircraft of the United States, and that was the marking system adopted by the CIAM (International Committee for Aero Modeling) division of the FAI (Federacion Aeronautique Internationale) for model airplanes. Well, with the proliferation of new countries, the CIAM decided to adopt a new system of designations that might be somewhat more easily recognizable. And the system they settled on was that of the International Olympic Committee (IOC). It becomes mandatory for your models in 1997, but you'll probably be seeing the new designations in results lists of international meets. What follows, borrowed from *Free Flight news*, is a list of the new designations for nations active in the free flight aeromodeling world:

| | | | |
|---|---|---|---|
| Argentina | ARG | Kazakhstan | KAZ |
| Armenia | ARM | D.P.R. of Korea | PRK |
| Australia | AUS | Latvia | LAT |
| Austria | AUT | Lithuania | LTU |
| Azerbaijan | AZE | Mexico | MEX |
| Belarus | BLR | Moldova | MLD |
| Belgium | BEL | Netherlands | NED |
| Bosnia-Herzegovina | BIH | NewZealand | NZL |
| Brazil | BRA | Norway | NOR |
| Bulgaria | BUL | Pakistan | PAK |
| Canada | CAN | Peru | PER |
| Chile | CHI | Poland | POL |
| People's Rep. of China | CHN | Portugal | POR |
| Croatia | CRO | Romania | ROM |
| Cuba | CUB | Russia | RUS |
| Czech Republic | CZE | Slovakia | SVK |
| Denmark | DEN | Slovenia | SLN |
| Estonia | EST | South Africa | RSA |
| Finland | FIN | Spain | ESP |
| France | FRA | Sweden | SWE |
| Georgia | GEO | Switzerland | SUI |
| Germany | GER | Ukraine | UKR |
| Great Britain | GBR | Uruguay | URU |
| Hungary | HUN | USA | USA |
| Israel | ISR | Uzbekistan | UZB |
| Italy | ITA | Venezuela | VEN |
| Japan | JPN | Yugoslavia | YUG |

## Promises, promises. *FLYOFF* keeps one

Back in the Spring of '88, in the very first issue of *FLYOFF*, we promised that some future issue would have an article on making things out of music wire. All we have run so far is a few formulas for calculating twist in torsion (in an article on torquemeters) and a brief description of how to wind coil springs (in answer to a reader's specific question). But we never forgot that promise, and we kept a special file on the subject. Over the years that file grew rather fat, and the subject demanded photographic illustration. It was getting too long for *FLYOFF* and no longer well suited to publication in these pages.

And since the subject should also be of interest to modelers other than free-flighters, we offered it to *Model Aviation*. They've accepted it, they're planning to give it four pages, and they expect to get it published "by early 1995." Since virtually all *FLYOFF* readers also get *Model Aviation*, when you see it, remember that it was really written for you.

## Skyscrapers International Challenge 1994

Galeville, May 28-29, 1994. Dave Acton, CD. Once again, scheduling beyond our control—specifically the US Team Selection Finals in the Fall—forced the Skyscrapers to hold their annual International Challenge on Memorial Day Weekend. It's a good weekend, on which the club has traditionally held its Annual Spring Meet, but it seems to be too early in the season for many FAI-event flyers.

**F1A — A2 Towline** (3 flyers)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Andrew Barron | 180 | 180 | 134 | 164 | 174 | 90 | 0 | 922 |
| 2 | Bob Sifleet | 72 | 117 | 82 | 140 | 180 | 93 | 105 | 789 |
| 3 | Aram Schlosberg | 115 | 113 | 132 | — | — | 141 | 69 | 570 |

Team Scores, F1A: Sifleet & Barron 1711

**F1B — Wakefield** (10 flyers)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Jerry McGlashan | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 1260 |
| 2 | Rod Ioerger | 180 | 180 | 157 | 180 | 180 | 179 | 180 | 1236 |
| 3 | Ed Pelatowski | 180 | 180 | 180 | 180 | 180 | 138 | 180 | 1218 |
| 4 | Larry Pelatowski | 180 | 169 | 180 | 180 | 180 | 180 | 103 | 1172 |
| 5 | Joe Williams | 180 | 138 | 155 | 180 | 180 | 155 | 180 | 1168 |
| 6 | Fred Blom | 170 | 180 | 144 | 180 | 166 | 180 | 82 | 1102 |
| 7 | Jim Brooks | 159 | 167 | 105 | 175 | 110 | 150 | 180 | 1046 |
| 8 | Bill Buss | 180 | 140 | 149 | 180 | 176 | 180 | — | 1005 |
| 9 | Tom Ioerger | 165 | 112 | 160 | 123 | 25 | — | — | 585 |
| 10 | Vic Nippert | 129 | 148 | 180 | — | — | — | — | 457 |

Team Scores, F1B: Brooks & McGlashan 2390; Pelatowski & Pelatowski 2306; Blom & Williams 2270

**F1C — FAI Power** (1 flyer)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Bob Sifleet | 180 | — | — | — | — | — | — | 180 |

**F1G — Coupe d'Hiver** (5 flyers)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | Joe Williams | 120 | 120 | 120 | 120 | 120 | 600 |
| 2 | Bob Hatschek | 120 | 115 | 120 | 120 | 120 | 595 |
| 3 | Bill Buss | 120 | 111 | 120 | 120 | 120 | 591 |
| 4 | Vic Nippert | 76 | 120 | 102 | 113 | 74 | 485 |
| 5 | Al Abriss | 45 | 47 | 68 | 77 | — | 237 |

**F1H — A-1 Towline** (6 flyers)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | Rod Ioerger | 111 | 120 | 120 | 120 | 85 | 556 |
| 2 | Jean Pailet | 58 | 120 | 120 | 112 | 57 | 467 |
| 3 | Vic Nippert | 74 | 61 | 87 | 120 | 81 | 423 |
| 4 | Ed Pelatowski | 64 | 51 | 57 | 108 | 98 | 378 |
| 5 | Fred Blom | 120 | — | — | — | — | 120 |
| 6 | Kay Fags | 23 | 30 | — | — | — | 53 |

**F1J — FAI mini-power** (2 flyers)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | Jean Pailet | 78 | 120 | 67 | 120 | 110 | 495 |
| 2 | Bob Geyer | — | — | 50 | 61 | — | 111 |

**Hand Launched Glider** — German Flight Rules (6 flyers)

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Vic Nippert | 20 | 7 | 60 | 50 | 35 | 60 | 60 | 35 | 51 | 42 | 323 |
| 2 | Larry Pelatowski | 36 | 8 | 49 | 34 | 18 | 28 | 52 | 25 | 60 | 34 | 265 |
| 3 | Jean Pailet | 16 | 36 | 14 | 40 | 24 | 60 | 26 | 29 | 22 | 20 | 215 |
| 4 | Kay Fags | 23 | 16 | 10 | 10 | 10 | 27 | 3 | 20 | 19 | 16 | 121 |
| 5 | Tom Ioerger | | | | | 19 | 22 | 60 | 3 | | | 104 |
| 6 | Rod Ioerger | | | | | 3 | 31 | | | | | 34 |

## Keep your 'powder' dry, boys!

We've all had the problem—especially here in the humid Northeast—of cyanoacrylate curing (even partially) in our field boxes and becoming unusable. Water vapor, as well as heat, is one of the things that kick off CyAs. At home, of course, we store it in the refrigerator to extend the shelf life. Well, Al Abriss has come up with a way to prevent premature cure due to excess moisture. Here's the story:

"While using some drugstore-variety 'crazy glue,' I noticed a tablet of silica gel dessicant attached inside of the cap. This seemed like a good idea, so now I store my Zap CyA in a small ZipLock bag with a packet of silica gel that came packed with a new camera. Using this storage method, a bottle of thin CyA that's been in my flight box for the past seven months shows no signs of thickening. Usually seven months in my flight box turns CyA into unusable goop!"

But before you buy a new camera for the packet of silica gel, check your pharmacist. Your heavily medicated editor has found little silica gel "cans" in bottles of prescription pills. My pharmacist tells me that these little moisture absorbers come with a variety of different medications and he just throws them away when the pills are all gone. Maybe you, too, can arrange with your pharmacist to save some of them for you.

## Personal feelings about the BOM rule

This is an editorial, a personal exposition of how this one modeler feels about the "builder of model" rule. Please read it. You may or may not agree with me. But you'll know me a lot better after you've read it.

I started building solid scale models in the Fall of 1936, and I graduated to ones that theoretically could be flown by 1937. My first one was a stick and tissue kit (Megow, for a dime) for a 15" Nieuport biplane. It didn't last long, but it really turned me on! My birthday brought me a book (by Maj. Edwin T. Hamilton, I believe). My first "original design" rubber job was a 16" outdoor ROG stick model based on Maj Hamilton's lessons. Christmas got me a subscription to *Model Airplane News*, edited by Charles Hampson Grant.

Both sources stressed how to design and construct flying models, not where to buy them. I joined a model airplane club that had a shop and meeting room a block and a half from where I lived. The club's leaders also stressed design and construction—self sufficiency, in fact. My first contest, early in 1938, I entered with an original design HLG, and I placed third. I loved it!

Perhaps naively, I thought model meets were competitions to see who could produce the best models. They were! I think they still are!

Beyond that there's a matter of personal satisfaction. When I build a model of somebody else's design and it proves to be topnotch, well, that's what was expected, right. If it turns out to be a dud, I get sore about it. When the dud is a model of my own design as well as construction, I just can't get that angry about it because it has inevitably taught me some new lessons. And on those occasions when I have a successful model that started out as a drawing on my own sketchpad it really feeds my personal pride of accomplishment.

If I won a prize with a model I'd purchased, that win would be an empty one, indeed!

## 1994 Skyscraper Monthly Meet Results

**May 22,** (Hot, sunny, light breeze) Bob Lipori, CD

| HLG | | Cat G | | PW-30 | |
|---|---|---|---|---|---|
| Al Vollmer | 112 | Al Vollmer | 143 | Al Abriss | 2100 |
| Vic Nippert | 106 | Vic Nippert | 139 | Dave Acton | 1576 |
| Andras Vig | 93 | Andras Vig | 62 | Dick Delinski | 1498 |
| Harvey Poirier | 57 | **HLG, Jr** | | **ABCD** | |
| **P-30** | | John Barron | 53 | Clark Darling | 360 |
| Bob Hatschek | 328 | Peter Barron | 35 | Mal MacLean | 316 |
| Vic Nippert | 298 | Greg Abriss | 26 | **Mulvihill** | |
| L. Pelatowski | 264 | **1/2A** | | Bob Hatschek | 335 |
| Henry Cox | 220 | Larry Davidson | 333 | Ray Factor | 284 |
| John Barron (J) | 198 | **F1ABCn** | | Henry Cox | 61 |
| Bob Hudson | 77 | L. Pelatowski | 942 | John Barron (J) | 54 |
| **Moffett** | | **NosGas** | | Peter Barron (J) | 44 |
| Art Phillips | 169 | Mal MacLean | 215 | | |

## Setting CG—with precision

**by Walt Rozelle,** TTOMA

During a correspondence with West Coast power flyer Terry Thorkildsen, he mentioned that his superlative 1/2A Astrostar design would perform better if the CG were at 76%, rather than at 74% as shown on the plans in Model Aviation, (Dec. '88, and the A-B version in the June '90).

Moving the CG rearward by 2% on this design is equivalent to about 1/8 inch — tougher than you might think. And you keep reading instructions like: "Balance the model at a point $1^3/_8$ in. forward of the trailing edge." or "Establish the CG at 73% of the wing root chord."

But how do you really go about accurately balancing a model? Holding the model at the desired balance point with your thumbs is anything but accurate: Just try it—and look at the range of the balance point represented by the length of contact your thumbs make with the wing. How much is it?

Example: You are balancing a model with an 8-in. chord and your thumb contactis 3/8 in. wide. You have the model "balanced" level at the 75% point. Your thumbs are contacting 0.375/8 = 4.7% of the chord—meaning that your model actually balances between 72.7% and 77.3% of the chord. Not too accurate, huh? Here's a better way—adaptable to anything from a Peanut scale to a Class D juggernaut.

1. Select a doorway that is unobstructed on either side and is located so you can drive a small finishing nail into the trim, centered over the doorway opening, without incurring the wrath of the head of household.

2. Using a piece of strong string (like a DT line), make up a loop to a length that, when hung on the nail, will place the bottom of the loop at about top-of-the-head level.

3. Mark off the exact desired CG position on the underside of the center rib. With a pin vise and a short piece of music wire, carefully drill a vertical hole in the center rib.

4. Take about a 2-in. length of that wire and form a hook on one end. From the top, push the wire through the hole in the rib and make a $90^0$ bend about 1/2 in. from the bottom.

[Continued on page 8]

## Rod's Mulvihill, a winner for all ages

**By Tom Ioerger**

Here's the plan for the simple Category III Mulvihill model that I designed for Rod to build and fly as one of his moves into higher performance models. He built it in the 1986 time frame as near as we can recall. This would have made him ten or eleven at the time. The concept was to make a progression from P-30 into high powered models. My feeling is that a compact Mulvihill is one of the easiest models to be successful with since you are not limited to rubber motor size or model formula.

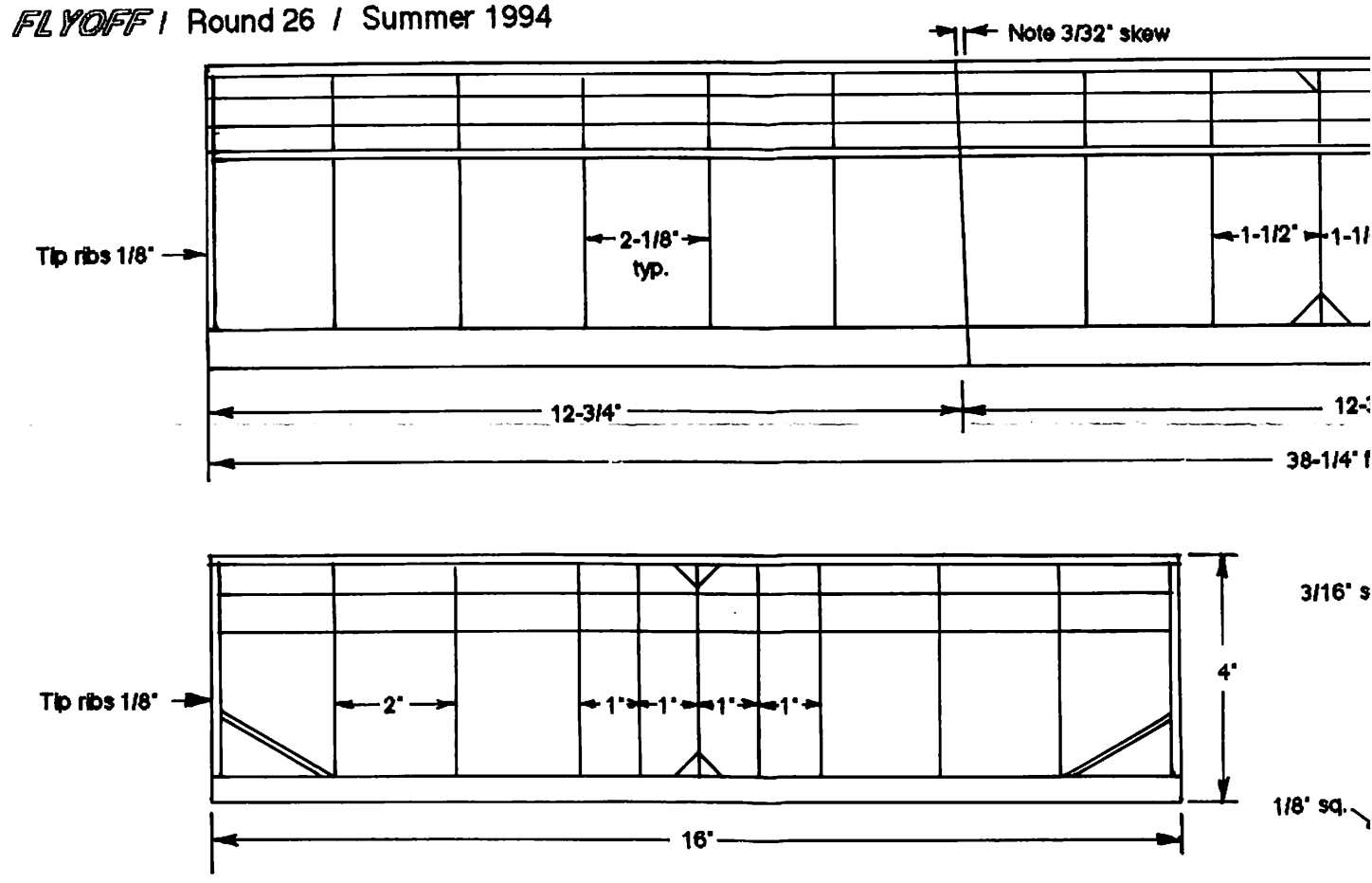
Rod had had some success with the Square Eagle P-30 from Blue Ridge Models and we had substituted a rolled-tube fuselage into this model to make it stiffer and easier to build. Rod and I made the decision to draw up a 130% "Round Eagle" and then move things around to fit the KISS principle (Keep It Simple, Stupid).

The fuselage is 1/16 x 4 x 36 sheet rolled into a tube. Use very light A-grain balsa. The prop is a 16 x 19 Coupe Prop, again from Blue Ridge Models, but any good Coupe prop will do. The fin is notched to serve as a stabilizer stop for the DT,

### Rod's Mulvihill — for beginners of all ages

**by Tom Ioerger, Baltimore Aerocraftsmen**

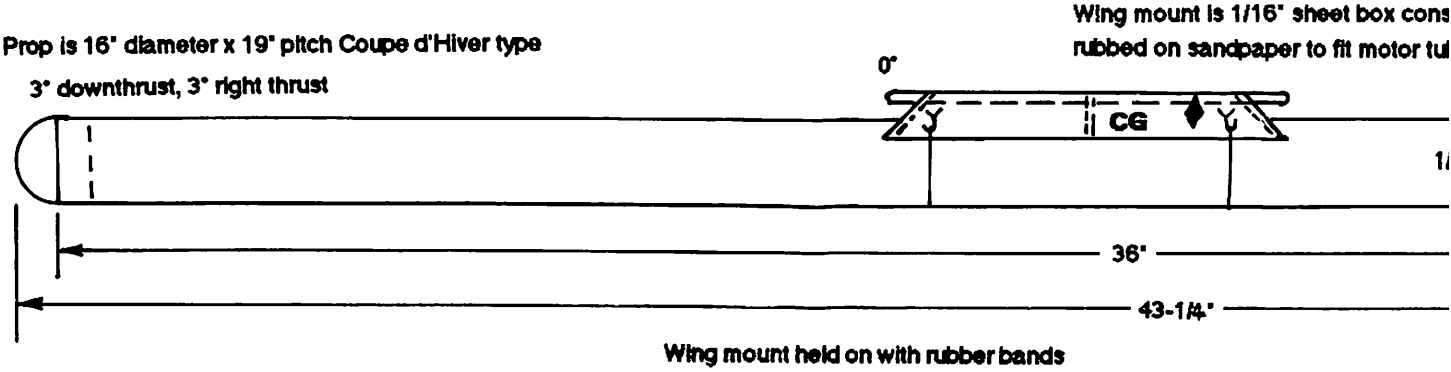
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Prop is 16" diameter x 19" pitch Coupe d'Hiver type

3° downthrust, 3° right thrust

Wing mount is 1/16" sheet box cons
rubbed on sandpaper to fit motor tu



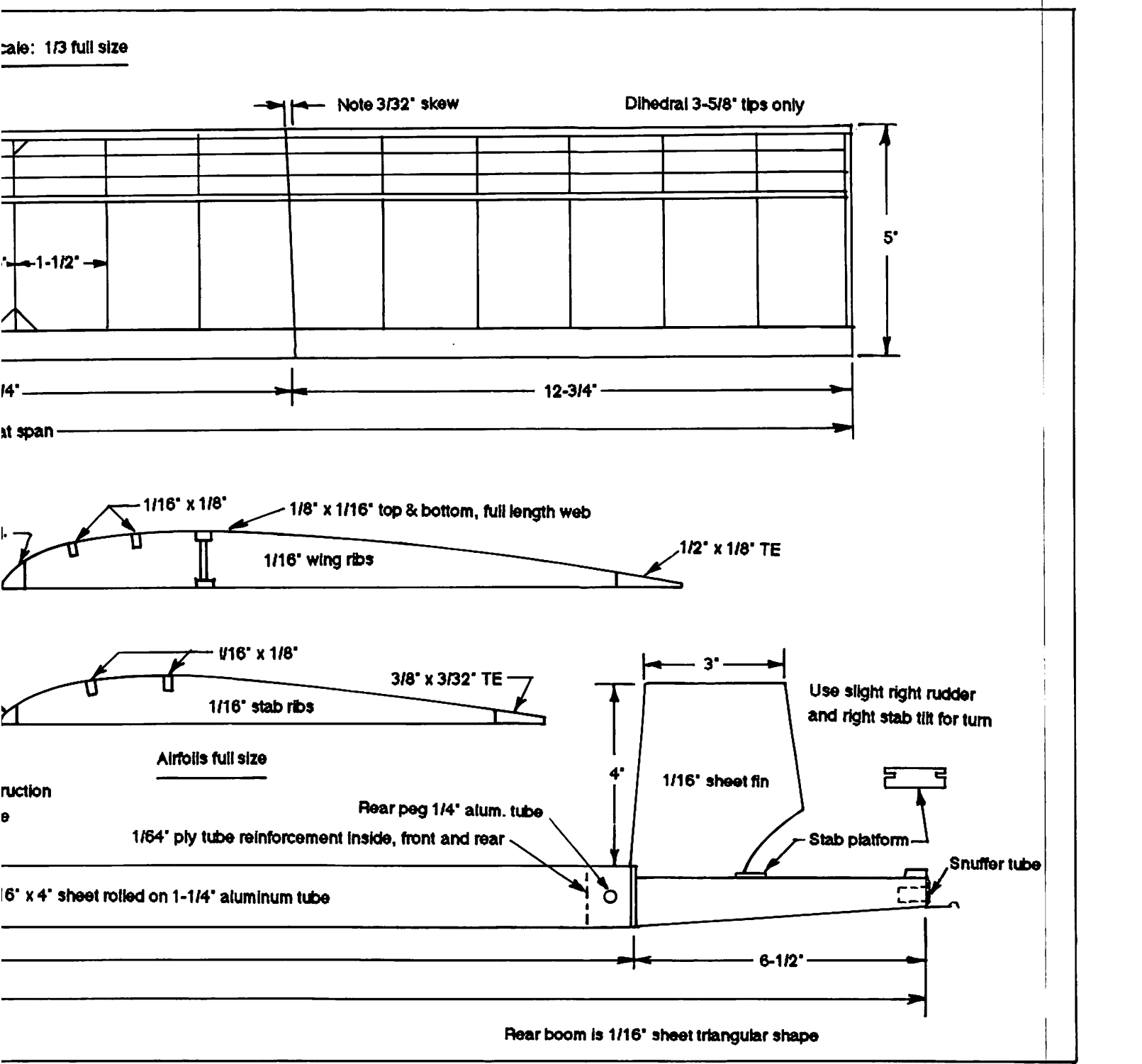

Wing mount held on with rubber bands

so that no DT limit wire is needed. The wing and stab airfoils are flat-bottomed and sharp-nosed for ease of construction and self-turbulation, respectively.

Note the slightly skewed wing panels. This idea is from the Square Eagle and it works as a built-in adjustment. The low-mounted wing at 0° incidence, along with the low-aspect-ratio stab, are from the French style force arrangements we use on our Wakefields. It worksd, but you must launch it steeply like a VIT machine.

This model is suitable to help any young flyer to move into serious competition [*or an inexperienced rubber flyer of any age. the Editor*]. Rod set the Category III Junior record with this model and he, along with Bob Sifleet and Fred Blom won the Mulvihill Team Trophy at the Nats one year. Rod has also won Junior Mulvihill at the Nats several times with this ship. The model is capable of about 4-1/2 minutes in Rod's hands in the early morning. For best results, build it around 90 grams.

The rubber motor is sized to fit the prop at 12 strands of 3/16 Tan II—but make sure there is plenty of power. The motor run should be about one minute long climbing strongly, which makes a two-minute max pretty likely.



## The first 25 rounds of the *FLYOFF*

We are getting an increasing number of subscriber queries, by mail and on the field, about topics that have already been written about in earlier issues of *FLYOFF*. So, for those subscribers who have maintained a file of issues, here's an "index" of the first 25 rounds. And for those who don't have such a file, here's a list of what you're missing. Only those articles with lasting value are described.

Some back issues are still available for $2 per copy, including postage ($3 per copy overseas). Just tell us which you want and send a check or money order (in US funds, drawn on a US bank, made out to "Skyscrapers"). You can use the order blank on page 7.

**Issues marked "OOPS" ("Out Of Print, Sorry") are no longer available.**

**Round 1 (OOPS)** — **Launching *FLYOFF*.** Lipori's **Icer P-30**, a many-times winner, and Langelius's **Ubiquitous Chili Bean** indoor trainer and fun machine.

**Round 2 (OOPS)** — The **HIBORKS prop hub**, reliable, efficient, easy to make. Hatschek's **Icarus Mini-Mulvihill.** And Charlie Gagliano's **Super Chuck.**

**Round 3** — **Solid-state booster battery**, Bill Prensky's low-cost electronic replacement for ignition-engine booster. **Mr. Mulligan**, full-size 16" Megow dime scale. Stan Wennerstrom's **P-30 / Cd'H torquemeter** simple and practical meter for rubber torques up to 10 or 40 in-oz. (From *Phoenix* newsletter).

**Round 4 (OOPS)** — Ken Nawyn explains how to make tapered **Tailboom mandrels the easy way.** And **Ebenezer**, the simplest all-sheet .02-powered beginner's model ever.

**Round 5** — **Spitball**, an .049 ROG/ROW NosGas model. **Heat and the free-flighter**, by Jim Bocckinfuso. Avoiding hot weather physical problems, and what to do if they do occur.

**Round 6 (OOPS)** — Oldtimer small stick **Ritz 1936 C Tractor**, full size wing and tail plans, notes and tips from three recent builders. **Coverings Revisited**, Moe Whittemore's roundup of FF covering materials (reprinted from *CIA Informer*).

**Round 7 (OOPS)** — **High-aspect props and Liberty II**, NFFS Small Rubber Model of the Year (1990), Hatschek's winning Coupe, with details on its radical propeller and suggestions for Wakefield and Mulvihill props.

**Round 8 (OOPS)** — Ed Keck's C-and D-gas record-holder **PrimeTime.** And **Thinking Nostalgically** with Walt Rozelle about selecting designs and engines for NosGas events.

**Round 9** — Jean Pailet's winning 1/2A **SHOC-King**, an update of the highly successful SHOCer design. Details of BV **Shuriken** engine with specs and full size drawings.

**Round 10** — A **Simple F1C** by Tony Mathews (from *Canada Free Flight*). A **P30/P30U** design by Bob Hatschek. Full size **Peanut Zlin Z 50 M** from *Modelár*

**Round 11** — **What's Dat** pusher canard P-30U by Art Phillips. **Balsa density table** by Hank Cox. Rozelle discusses **Power/weight ratios for nostalgia** engines.

**Round 12** — **Bunt Nordic thoughts** by the editor. Bocckinfuso on the **Klarich Strato-Streak kit.** Larry Davidson details his **Super Silking method.**

**Round 13 (OOPS)** — Full details on Hatschek's **Latest 1991** props for CdH, Wakefield, and Mulvihill.

**Round 14** — Full size plans for Jean Pailet's Nats-winning **Arm Soar HLG.** Historical 3-views of three US and USSR **Wakefields.** How to maintain CG **location.**

**Round 15 (OOPS)** — Jim Brooks's **Sinistrorse** Mulvihill. **Break-in for the Shuriken** by Beecroft (from *El Torbellino*). And Pailet's **Saga of the lost Shuriken.**

**Round 16** — **Modern Russian F1B** by Vladimir Feodorov. Bob Meuser questions the **Merits of delayed prop release.** The **great Galeville cleanup.**

**Round 17** — Full size drawings of Ed Keck's Nats-winning 1/2A **Mini PrimeTime.** Hatschek writes about **Springwinding.**

**Round 18** — **Covering with Mylar** (Brooks). **F1B for Juniors** (Ioerger). **DPR Comments** (Quermann). **Buying balsa** (Rozelle).

**Round 19** — **Bewitched** (F1J '91 Nats winner by Carbone), Russian **Bunt Nordic** (Yegarov), **Block Hinges** for rubber jobs (Hatschek), **Low-drag light-weight wheels** (Rozelle).

**Round 20** — **ShuriKing** (Pailet's '92 Nats winner in 1/2A and F1J). Dave Lacey on **Delayed prop release and launch velocity for Wakefields.**

**Round 21** — **How I Won the World Cup**, by Koei Tsuda, and Art Ellis's **Window Plane**, one of the most fantastic P-30 models ever and winner of the '92 Nats by a 13-minute margin.

**Round 22** — Tsuda's 1992 World-Cup-winning F1C **Cosmo Sky-Scrapers.** **Hat's Cat** "idea glider" for hand-held catapult, by Hatschek. And Prensky on **Radio Retrieval Trackers.**

**Round 23** — **BABU**, the unconventional rubber model that took second in Moffett at both the '92 and '93 USOC for Bob Hatschek. **Tips on Tan II.** And Ruth and Brad Bane's frequently winning **Windwhip A-B.**

**Round 24**—Pailet's **Tow Soar Two** A/1 glider that twice came within 1 sec of first at the Nats. **More on radio trackers.**

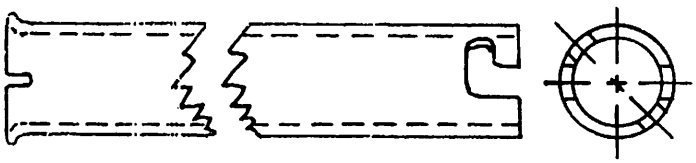
**Round 25—What you have to know about Lyme disease.** by Dr. Bob Perkins. Vic Nippert's **Little Miss Moffett.** And the **1994 Free-Flight Calendar for the Northeast..**

## Winding tubes, Southern style

**by Walt Rozelle,** TTOMA

Some folks call them "blast tubes." I like to think positively and say, "winding tubes." Whatever the name, most rubber flyers realize that not using one is courting disaster. (Yeah, George, I know: "Winding tubes are for sissies.")

Here are three modifications I make to the plain vanilla PVC winding tube. *[PVC pipe is available in any plumbing supply shop. My local hardware store carries it. But watch out what size you ask for; the nominal sizes are water pipe sizes, which bear little relationship to actual diameter. —the Editor]*



**Flared front end.** I owe this little trick to OFB Bill Baker, editor emeritus of the late lamented *Okie Free Flight Flyer* and FF Old-Timer columnist for *Model Aviation*. Cut the pipe to length (allowing a bit for working) and smooth the saw cut. Slowly rotate and heat one end over a low gas flame until it becomes pliable. Then quickly push a golf ball into the end and twist it back and forth while you apply pressure. Result: a nicely flared end on the tube. Finish it up by with sandpaper.

Suggestion: Cut a few scrap lengths of the PVC pipe and practice the flaring procedure until you get the hang of it. You will find that the PVC doesn't require much heat to soften and it "comes on" pretty quickly. The amount of pressure on the golf ball also deserves some practice.

And by all means, turn on the vent above your stove. No need to take chances on any gases that may be released when you heat the PVC (polyvinyl chloride).

**Wire slot.** After the flared end is cleaned up, drill a small hole (3/32" or so, depending on the size of your holding wire) through the tube 1/8" to 1/4" from the end. Cut through the flare on both sides to form slots. This is for the wire that you use to hold the rubber hook (or bobbin) at any point during your winding procedure when the winder is not attached.

**Rear bayonet slot.** How many times has your winding tube aggravatingly crept forward while you were winding?

Here's the cure: Drill two holes for your anchor peg about two to three peg diameters from the aft end of the winding tube. Slot these holes out the back of the tube.

Mark and drill two more holes of the same diameter at points about 45° clockwise when viewed from the rear from the original holes (see sketch). Now cut, file and smooth connecting slots between each pair of holes so that you have formed two L-shaped slots coming in from the rear and twisting clockwise (seen from behind).

The L-shaped slots permit you to insert the winding tube, push it onto the rear rubber peg and rotate it 45° to the right (clockwise from the front) to lock it onto the anchor peg. Normal rotation of the rubber motor during winding will tend to keep the peg locked and prevent the unwanted forward creep of the winding tube. After winding, you twist the tube left (counter-clockwise) to disengage it before pulling it out.

*[Lefty Jim Brooks and other backwards gumbanders should reverse all of the above directional directions. — the Editor]*

Now all you need to set this portion of your ground-support equipment apart in fine Southern style is to get one of those handy-dandy adjustable-length rubber-stuffes from Rex Hinson (1141 S. Waterview Dr, Inverness, FL 32650), a fellow long-time member of the Dixie Free-Flight Team. Rex also makes a nice torquemeter *[See ads in recent* NFFS Digests. *—Editor]* that adapts to either a Wilder winder or a Morrill Sidewinder.

**Postscript.** It is essential that the winding tube be longer than the model's motor tube—making it impossible to attach the propeller with the winding tube still inserted. YES, it did happen! Not until the model landed did the flyer realize why his climb had been so sluggish and his glide so like that of a pregnant pig! The poor flyer has suffered sufficient embarrassment and will thus remain anonymous.

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[Continued from page 3]

5. Eliminate any air circulation in the area, assemble the model, and hang it by the wire hook from the string loop. Steady the model and you will immediately have an accurate view of its balance. By moving components (such as timer, radio beeper, engine, etc), or shifting the pylon, or attaching bits of sheet lead with a piece of tape, you can arrive at a "dead-on" balance very quickly. Notice how apparent the result of adding even a minute amount of weight becomes.

6. If you're using small bits of lead to arrive at final balance, combine them on your scale and cut one piece of equal weight for epoxying onto the model. Then recheck the balance. Cut off the hook and remove the wire from the wing. If the hole in the rib is really bugging you, dab some CyA over both ends of it.

And then there are those models with two-piece plug-in wings—Nordics, many Wakefields, most F1Cs, and some oddball creations such as those perpetrated by the editor of this publication. In these instances the technique is just as simple; here are the variations:

1. With a pin-vise, drill a pin-sized hole about 1/2 in. deep on the fuselage vertical centerline at the desired CG location.

2. Glue a straight pin in the hole with CyA, and bend the end of the pin into a hook.

3. After balancing the model as before, carefully cut the pin off flush with the fuselage.

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