

# PINEY MOUNTAIN AIR FORCE

## DATA - LETTER

VOLUME II, No. 2

2 February 1982

Whole Number 15



Dear Kiteflier:

\* "Groundhogs who fly seldom shy from shadows."

LITHO IN U.S.A.

JESSE C. DONALDSON, rotor kite pioneer, told us this in his letter of 1 December: "My first rotor kite was made in 1942."

Readers may recall that an article in *Life* magazine, 8 December 1947, caused a PMAF founder to commence his own rotor kite experiments. Jesse was the featured inventor in that article. In 1980, thirty-three years later, your non-editor had the heady privilege of meeting Jesse at the Kill Devil Hills kitefly organized by MARY AMES and JOHN STUBBINGS of Kite Kingdom. Since then, we have exchanged letters in fine rapport. Besides being a loyal supporter of PMAF, Jesse heads up Florida Windmill, an experimental labor of love. If you seek expert wind energy consultation, write to: Jesse C. Donaldson, c/o Florida Windmill, Box 7511, Cocoa Beach, Florida 32922.

Jesse tells us that he has found a kind of fluted styrofoam moulding that incorporates "Z" and "S" curves in a cross-section that is about 5/16" x 11"; about 48" in length. He remarks: ". . . Your rotor kite builders could make use of the piece of styrofoam [found in a lumber and home supply place] I have described.

"I am taking time out from the windmill to do a little kite work. Since your story on the Hornbeam sled, I have devised a couple of no-stick sleds. None have been too successful. Part of the trouble was ground turbulence. If it collapses in flight, you have to start over from the ground.

"Will try to keep you posted on the success of the no-stick sleds; also, how the

three-blade rotor works with the curved styrofoam."

More: Did you ever hear of an autogyro hang-glider? Jesse built one in 1942. We'll try to work up a sketch of it in another *DL*.

\*

HOD TAYLOR, another grand old gentleman of kiting, sent this: "Have just received my first issue of the Piney Mountain Air Force *DATA-LETTER* and it is great. I like it. I realize now that I have been missing out on some very informative kite chatter and other interesting and usable information.

"I would appreciate the opportunity of catching up on what I have missed by receiving the first twelve issues of *DATA-LETTER*. For which find check enclosed.

"Keep up the good work."

\*

"JUST ELLEN" sends this from Arlington: ". . . Although my enjoyment of kites is far more emotional and (creatively) recreational, and I sometimes don't understand what the hell you're talking about in the *DATA-LETTER*, I can always comprehend the good-natured, well-seasoned humor that runs through and between the lines you and the trolls compose. . . ."

△

[Dear Just Tellin': Sometimes we, too, don't understand what the hell we're talking about; but this we do know: fliers who read and enjoy *DATA-LETTER* always tend to be unusually intelligent, sensitive; handsome —Beautiful! (We read all of it and enjoy it very much.) —Non-editor]

## MORE WAYS TO LAY OUT A PENTAGON†

MARTY SHIGEO SASAKI suggests:

Figure 1:

1. Use a compass and draw a circle within which the pentagon is to be inscribed.
2. Draw the diameter AB through the center of the circle.
3. Divide AB into five equal parts marked by stations 0 through 5.

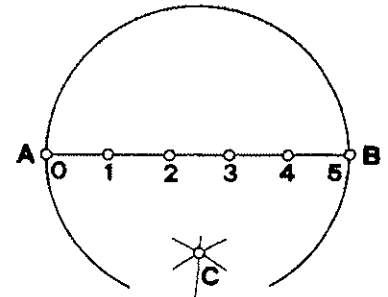


Figure 1

Figure 2:

4. Set the compass to length AB, use A and B successively as centers, and mark two short arcs that intersect above the circle at point C.
5. Draw a line from intersection C through station 2 until it cuts the circle at point D.
6. Draw line AD, which forms one side of an inscribed pentagon.

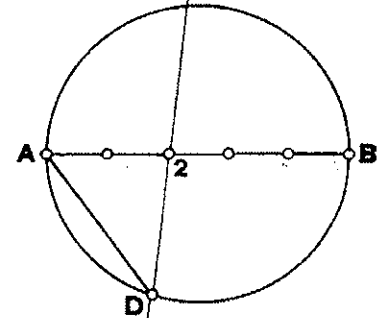


Figure 2

Figure 3:

7. Set the compass to length AD and mark points around the circumference of the circle such that  $AD = DE = EF = FG = GA$ .
8. Draw lines successively from point to point to finish the pentagon construction. (Connect alternate points if a five-sided, inscribed, regular star-figure is desired.)

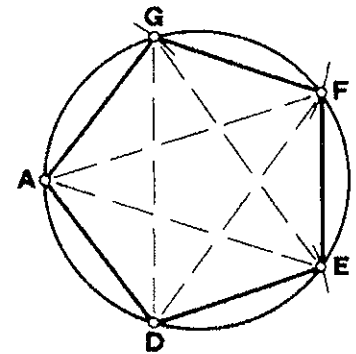
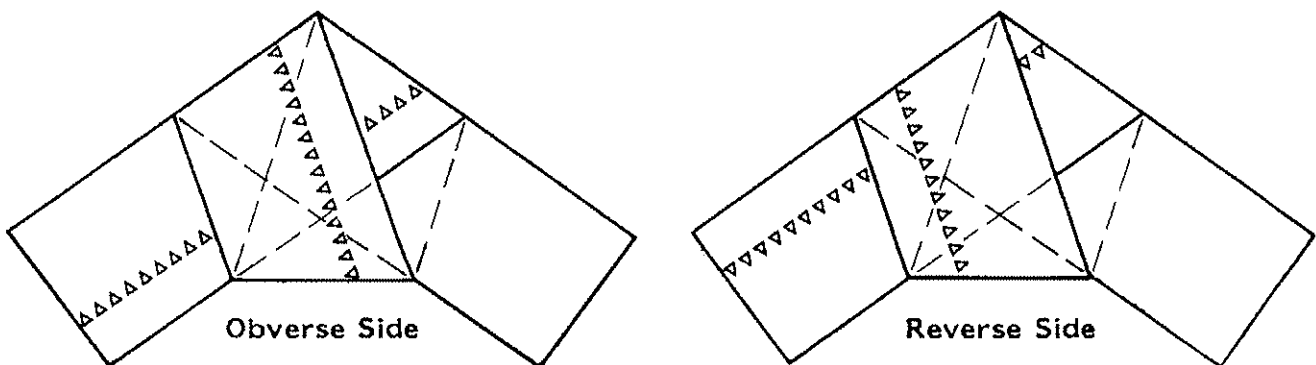


Figure 3

[Editorial Note: Marty's suggested layout method is not rigorously accurate—chords a bit short—but it's a very good approximation. Another "measuring stick" method is the use of a full-circle protractor: mark each  $72^\circ$  step. A good set of dividers works well, too.]

\*

WILLIAM P. EWALD, famous Kodak optics scientist (now retired to Longboat Key, FL), suggested this knotted ribbon—or tape—method:



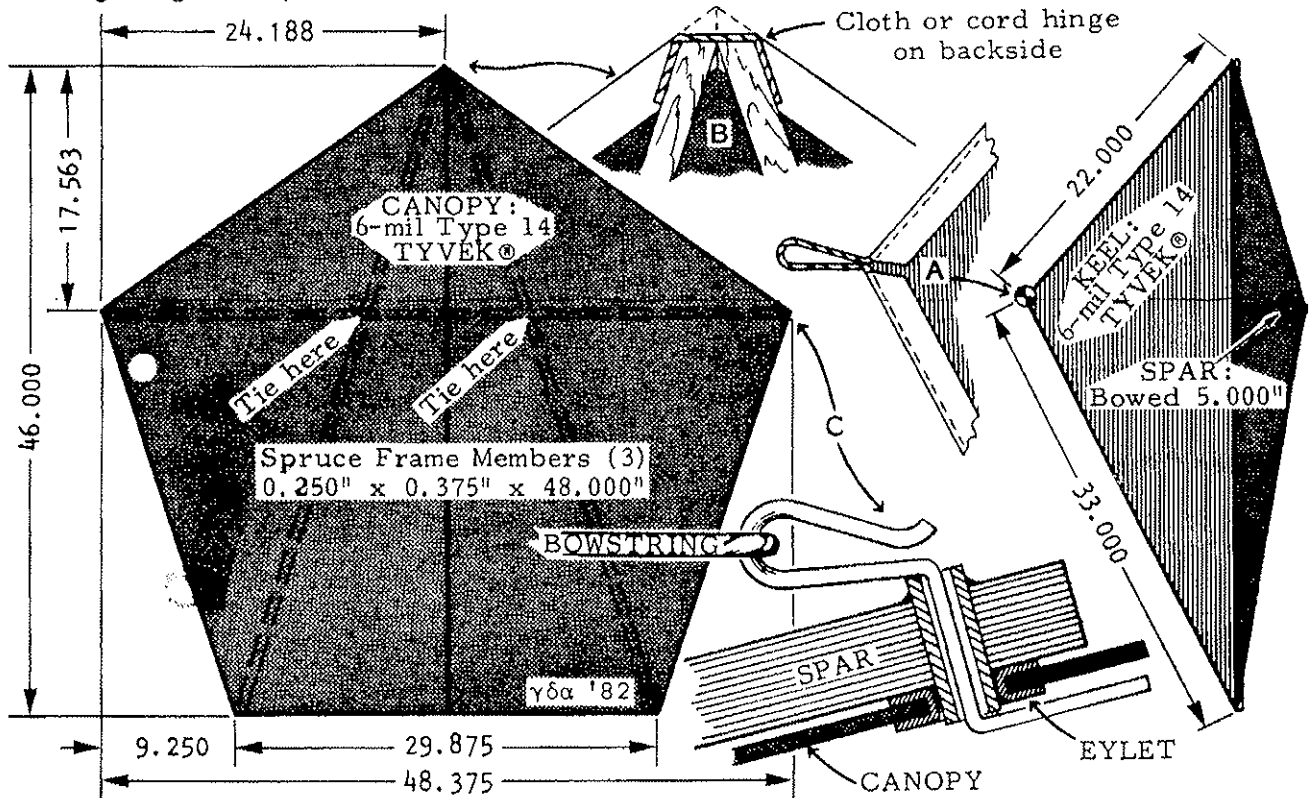
Feed the starving birds when your flying fields are encrusted with ice and snow; your Feathered Friends will then survive to embellish and bless your home-skies.

†Pentagon and star geometry were featured on pp. 2 & 3, DATA-LETTER No. 6, May 1981.

## HORNBEAM "QUINTESSENCE" A Keeled, Tailless Pentagon Bow-Kite

**QUINTESSENCE** = The Fifth Essence believed by ancient philosophers to be the highest elementary ingredient found everywhere in nature; the stuff of the stars and the heavens.

Partaking of the steady qualities of William A. Eddy's bow-kite or the Japanese classic, *Sanjo Rokkaku*, Hornbeam's three-stick pentagon also manages to spread a large lift-area; a functional area with virtually no flapping, luffing, loafing portions. Quintessence flies at a high angle and pulls hard. This Hornbeam kite should make a splendid camera lifter.



Weight (W) = 5.6 oz; Area (S) = 10.68 ft<sup>2</sup>; W/S = 0.52 oz/ft<sup>2</sup>; Aspect Ratio (R) = 1.522

**CONSTRUCTION HINTS:** Lay out the canopy to the inch dimensions shown, but add 1/2 inch of material to the leading edges and the sides. Fold this 1/2" of material against the main canopy surface and fix it in place with white glue. The wingtip corners should be reinforced with pieces of tagboard, vulcanized fibre, layers of masking tape, or scraps of Tyvek®. Drill 1/8" diameter holes 1/4" from the ends of the wingspar. Soft-pencil mark the spar center and match the mark with the centerline of the canopy. Poke a pencil through the holes in the spar-ends and mark the locations for the installation of two brass eyelets or small grommets in the canopy tips.

Lay out the keel triangle and allow 1/2" on the short sides for the foldover reinforcement as was done for the canopy. Lay a ten-inch length of stout line in the rein-

forcement folds and permit a one-inch loop, becket, or bight to protrude from the keel apex (see detail "A" on the sketch). Later, the kiteline will be attached to this becket. Lay the long edge of the keel in coincidence with the centerline of the canopy. Use 1" masking tape to secure the keel to the canopy; then fold the keel 180°—to the other side—and tape them again.

Glue, tape, or pocket the splayed longeron pair to the canopy back; hinge their apex (for transport) as shown in detail "B."

Cut two pieces of 1/8" diameter x 0.013" wall-thickness brass tubing and epoxy one in each end of the wingspar. When the cement has cured, install the iron wire hooks as detailed at "C." Note that the hooks are free to swivel for easy assembly with the canopy; that the tension of the bowstring locks the canopy in the spar-tip hooks.

MORE FROM READERS:

MARTY SHIGEO SASAKI, Brookline, Mass. comments on recent items he found in *DL*: ". . . While constructing my first Hornbeam rotor kite I have found that cutting styro-foam with razor-type blades to be difficult. The blades keep getting dull and I end up crushing rather than cutting the foam. With a little experimentation, I found that cutting with my back saw produced much better results; but the resulting foam crumbs (foamdust?) stuck to everything. I finally found, in an art supply store, a small foam cutter that solved my problems. It is a battery operated device that uses a hot wire (nichrome) to melt the foam. It is fast, easy to use, and produces little mess.

"I have also found that setting up a small jig to hold the foam cutter speeded operations. Cutting the foam is now greatly simplified and I have started production of rotor kites for experimentation with multi-rotor kites as well as rotors in train, rotors with wings, etc. If anything interesting comes up, I'll send you a note. I'd appreciate any hints you might have.

"The Hornbeam sleds that I have made have truly been excellent flyers. Along with a high wind range they seem to hold their shape better than other sleds. I especially enjoy not having to cut vents.

"Please find attached another method for creating pentagons. This is . . . from the book *Nomadic Furniture* (James Hennessey and Victor Papanek, Pantheon Books, Random House: New York). I personally like this method the best of the ones that I have seen. It suffers from the need of a measuring stick, but since I own a measuring stick this really isn't a problem.

"Finally, let me thank you for your fine 'letter'. . . ."

(See the pentagon layouts on page 2.)

P. SCARFE, Reading, Berks., England: ". . . Please find enclosed bank draft. . . for back issues of *DATA-LETTER*."

"Sorry this is a scrappy note but I've just got in from work and want to catch the post.

"I'm hoping to move house in the near future; to a house that backs onto the best flying site in the town. . . , so I doubt if I'll be doing any kite-making for a while.

"Keep up the magnificent work; along with K.O.N. [*Kitefliers Occasional Newsletter*] you're the best thing that has hap-

pened to kiting.

"I'm in the same boat as Ozzie Markham [*DL No. 13, page 1*] here. . . ."

P<sup>2</sup> MORRISONS, Cambridge, MA to Nisse, the PMAF Graphic Arts Troll: "2 Φ's think your envelope is gassy, too! Cheers!"

WAYNE BATTELLE, New York: ". . . I do hope you can see your way clear to keep it coming—I find it much the most entertaining & informative kite publication around. Hope one of these days to make some contribution—a multi-circular celled breakdown job perhaps.

"My very best to the rest of the airforce."

DEASIL WIDDERSHINS, Piney Mountain: "I sure as hell hope you can't see your way clear to continue publication. My last jug of *Panther Pong* reeked of printer's ink.

"Fly your \*\*\*\*\* kites if you must; but if you insist on printing lies about them, be sure to keep the presses at least a furlong away from your redeye vats, dammit."

GERRY A. BOATE, Seattle: "You make me laugh. . . P.S.: Please sign me up again in February." [*We do? . . . P.S.: We did.*]

DORIS P. FITHIAN, Woodstown, NJ: "Keep trying. . . ."

"I searched the dusty shelves to come up with the female counterpart of curmudgeon and finally decided it was 'cronemudgeon.'" [*Never, never, Doris. All of us auld gaffers agree that all kiteflying ladies are not only young, but graceful and lovely. We refuse to believe in winch-wenches.—Nisse*]

GUST RAGNARSEN, Skellefteå, Sweden: ". . . Why do your flagpoles move about?" [*Once each month, the winds gust, Gust.*]

W. T. HATCH, Rivanna Bank Shipyard: "Keep that *DATA-LETTER* coming! It exactly fits the bottom of the gerbil cage; it eventually acquires great virtue. . . ."

**DATA-LETTER is published monthly by PMAF from its Hornbeam Hall bailiwick in The County of Albemarle. Welcome letters and contributions from readers should go to: Piney Mountain Air Force, Box 7304, Charlottesville, VA 22906.**