

PINEY MOUNTAIN AIR FORCE

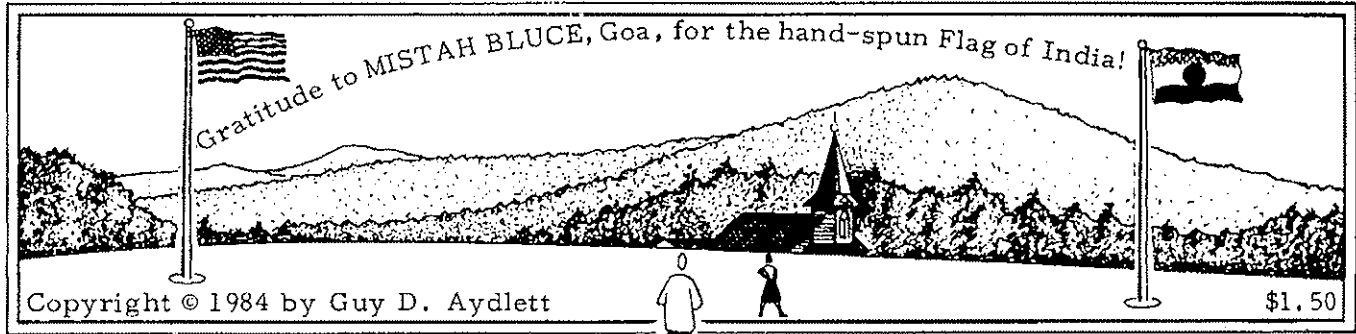
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DATA ☆ LETTER

VOLUME III, No. 4

April 1984

Whole Number 41



APRIL, The Fourth Month, brings 30 days of passably fair weather in our temperate north latitudes. April could be said to be the beginning of the finest kiteflying days of spring.

The 1st has been set aside to celebrate the follies of hoggerel hacks, editors of kite publications, and other dogsbodies.

THE CATAMARAN SAILBOAT was patented by Nathaniel Herreshoff on the 10th, in 1877.

PALM SUNDAY and Full Moon are on the 15th.

PASSOVER is the 17th; Good Friday, the 20th.

EASTER is on the 22nd: the 1st Sunday after the 1st Full Moon after the Vernal Equinox.

CLOOTIE CALHOUN of Gehenna, New Mexico asks: ". . . How did you find the area of the Papagaio Kite that you featured on page 2 of *Data Letter* No. 39? If I make the parrot kite in a different size, how can I find its area?"

[Answer No. 1: An accurately dimensioned layout of the kite was integrated by tracing its form with a Keuffel & Esser Compensating Polar Planimeter, No. 62 0000. The planimeter gave a direct area reading in inches², and a bit of arithmetic made the correction for scale and the conversion to metric units.

Answer No. 2: If you change the size, but maintain the proportions of the original kite, here is what to do: Divide our 4209 cm² area by the square of any convenient dimension of

the original—say, for example, the span of 134 cm. Then: $4209 \div (134)^2 = 0.2344$, which is an area constant that can be used to find the area of any Papagaio kite of any size, if you measure its wingspan. Try this: Assume your kite has a wingspan of 60 inches. You can find its area by multiplying the 0.2344 value by the span². Then: $0.2344 \times (60)^2 = 843.86 \text{ in}^2$, or 5.86 ft^2 . (Note that 0.2344 is a dimensionless number; a coefficient that can be used with any consistent set of measuring units. This area coefficient is equal to the reciprocal of the aspect ratio of the Papagaio.)

Data Letter Numbers 5 and 29 feature other methods for measuring the areas of irregular plane figures. In addition, see Nos. 6, 13, 15, 26, 28, and 38 for accurate ways to find the areas of several selected plane figures.]

BRITISH COLUMBIA KITEFLIERS ASSOCIATION reports that the first BCKA workshop of 1984 prompted 24 twelfth-grade students to make Hornbeam s---s (read Alliflexes) and ". . . all of them flew well except for one that was made by a Japanese! Was his face red! He didn't get the towing point right in the middle of the bridle [but] it was easily corrected." The Hornbeam lives on and on. . . .

READERS, PLEASE NOTICE: Your Non-editor disclaims any responsibility for the editorial content of any publication other than in *PMAF DATA LETTER*. We ask, without prejudice, that the names of our Hornbeam Hall family members be withdrawn from editorial mastheads of all commercial hobby publications.

THE METRIC SYSTEM OF MEASUREMENTS

by D. Waites and May Jours

METRICATION of weights and measures standards in the United States is as inevitable as taxes and other regulatory evils of society; but there is little need to run and hide in the woods in apprehension of your being forcibly dragged, screaming all the while, into a hell of memorized conversion arcanery. The bad news is just a great, ruddy herring; you just pick up your metre stick, and start making measurements of length without messing about with converting anything into anything else.

Just as easily handled are mass, volume, and temperature (weight, bulk, and heat) if they are measured with properly calibrated tools: balances, vessels, and thermometers.

The bad news is not too bad, is it?

The good news is this: The metric system is a consistent discipline of *decimal numbers*; the measuring units for all quantities are log-

ically integrated—length, mass, volume, and temperature. Arbitrary measuring units and their illogical fractions are pushed into limbo.

Had the English cloth yard been organized in antiquity as a decimal standard, it might have emerged today as the international standard of length; but it remains a polyglot mix of 1/2 of a fathom, 2/11 of a rod, 1/22 of a chain, 1/220 of a furlong, or 1/1760 of a mile. Going the other way, a yard is equal to 3 feet or 36 inches. The inch, in turn, is fractioned into halves, quarters, eighths, sixteenths, thirty-seconds, sixty-fourths—even as far as one hundred twenty-eighths! About here, engineers and mechanics wisely take refuge in the *decimal inch* to keep from dying of aggravated, nail-biting frustration.

Tired of handling nasty fractions? If so, try the lovely decimal number system, below:

METRE (m), THE UNIT OF LENGTH

1 metre is equal to:

- 1,000,000 microns (μ)
- 1,000 millimetres (mm)
- 100 centimetres (cm)
- 10 decimetres (dm)
- 1/1,000 kilometre (km)

SQUARE METRE (m²), THE UNIT OF AREA

1 square metre is equal to:

- 10,000 square centimetres (cm²)

KILOGRAMME (kg), THE UNIT OF MASS

1 kilogramme is equal to:

- 1,000 grammes (g)
- 1/1,000 of a metric ton (t)

CUBIC METRE (m³), THE UNIT OF VOLUME

1 Cubic metre is equal to:

- 1,000,000 cubic centimetres (cm³)
 - 1,000 cubic decimetres (dm³) (litres)[†]
- † 1 litre of pure water weighs 1 kilogramme.

THE CELSIUS UNIT OF TEMPERATURE

The Celsius, or centigrade, degree unit (°C) is equal to a 1/100 part of the temperature range between the freezing and boiling points of pure water: it freezes at 0°; boils at 100°.

METRIC PREFIXES

Deka = 10	Deci = 1/10
Hecto = 100	Centi = 1/100
Kilo = 1,000	Milli = 1/1,000

In the metric system of measurements, the metre (*meter*, if you prefer) is the principal unit for length; the litre (usually for liquids) and the cubic metre are the principal volume units; and the principal weight units are the gramme and the kilogramme.

Sub-divisions or multiples of metric units are in powers of 10, but not all of them are in common use. For example, the ordinarily used units of length are the kilometre, metre, centimetre, and millimetre; area units: square metre, square centimetre, and square millimetre; volume units: cubic metre, litre (cu-

bic decimetre), cubic centimetre, and cubic millimetre; and for mass, the commonly used weights are the kilogramme and the gramme.

Typical of the elegance of the system is the derivation of mass units from the amounts of pure water (standard conditions) contained in volumes that are cubes of length units:

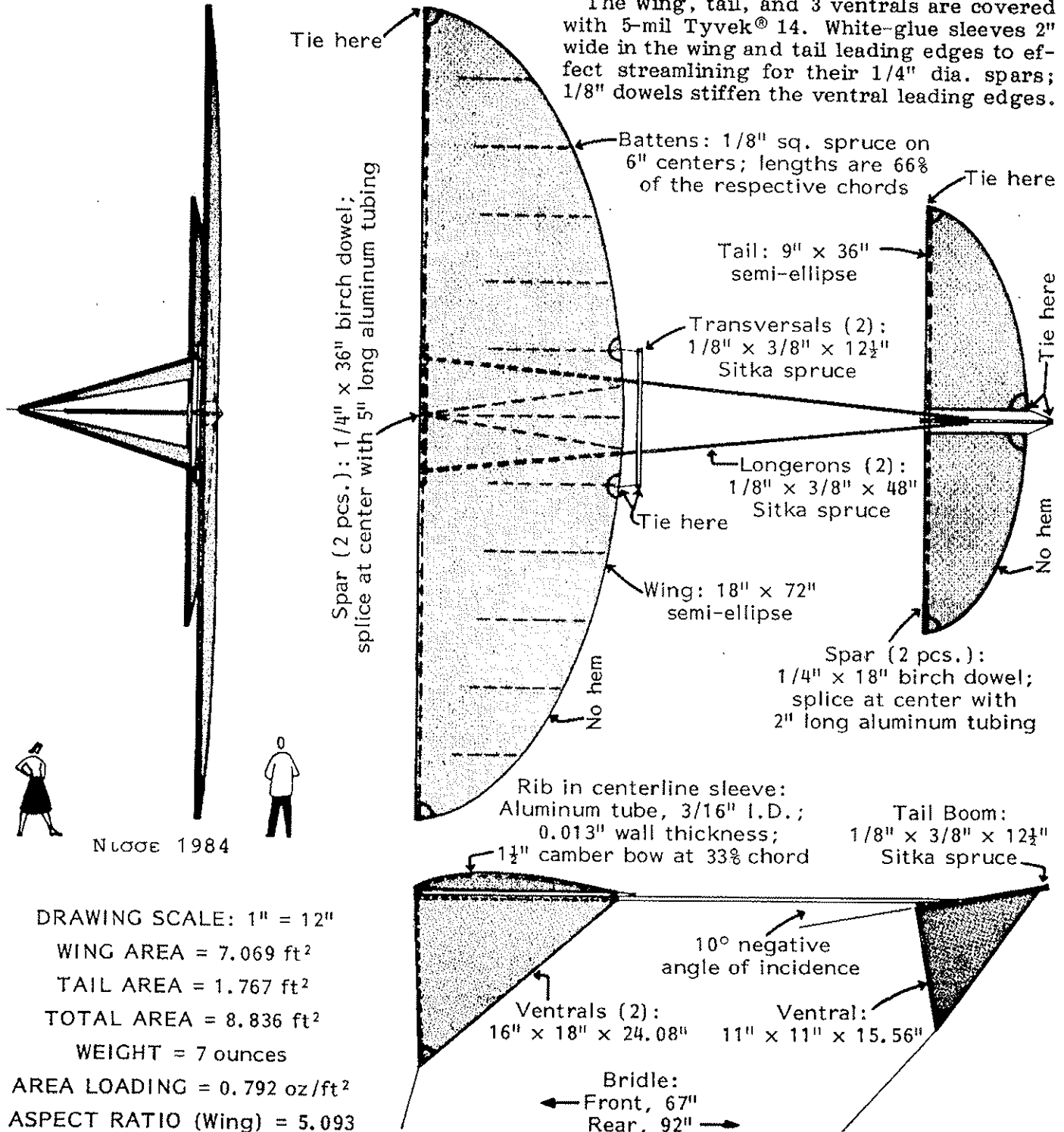
- 1 gramme = the weight of 1 cubic centimetre (cm³) of water
- 1 kilogramme = the weight of 1 cubic decimetre (dm³, litre) of water
- 1 metric ton = the weight of 1 cubic metre (m³) of water

DAS HOCHGEIER

bei Der Zeichenlehrer und Altlich Menschenfresser von Hornbalkenhalle

HIGH VULTURE is a kite of airplane form that was suggested by a *Nibelungen* elder who is an avid watcher of Piney Mountain buzzards. The original and only prototype is such an

excellent flier, in winds up to 20 knots, that we offer it, as is, to our readers who like to build, fly, and improve. See past *DL* issues for ellipse geometry and fabrication methods. The wing, tail, and 3 ventrals are covered with 5-mil Tyvek® 14. White-glue sleeves 2" wide in the wing and tail leading edges to effect streamlining for their 1/4" dia. spars; 1/8" dowels stiffen the ventral leading edges.



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DRAWING SCALE: 1" = 12"
 WING AREA = 7.069 ft²
 TAIL AREA = 1.767 ft²
 TOTAL AREA = 8.836 ft²
 WEIGHT = 7 ounces
 AREA LOADING = 0.792 oz/ft²
 ASPECT RATIO (Wing) = 5.093

REFINEMENT FOR HORNBEAM MONOSPAR:
On *Monospar* (pp. 3 & 4, DL #24), the presence of dry heat can shrink the string and its adhesive in the leading edge folds and may cause the kite to have a tendency to collapse in brisk winds or when it approaches a near-overhead position. Also, strong winds may stretch the trailing edge hems and affect the virtues of the built-in darts.

We advise that the border string be routed along the entire trailing edge hems, and the use of about 6" of string in the hems of the leading edges—just enough to secure the loop or bridle bight at each wingtip.

*

ERRATUM: The aspect ratio value (AR) for *The Platonic Sweetheart* on page 3 of February 1984 *Data Letter* (#39) should have been $AR = 1.4434$. You may wish to hand-correct the value in your own copy if aspect ratios of kites are of interest. A reminder: If you multiply the reciprocal of AR (0.6928) by the square of the wingspan of the heart-shaped kite, the product will be the area of the kite.

*

REDEYE WHEELER, Connecticut, writes that the usually reliable *Hagers-Town Town and Country Almanack* "For The Year Of Our Lord 1984," promises three new moons in the month of April. Powers of observation! We missed seeing that item but will keep our eyes open throughout the days of April (always look for new moons in clear daylight). Redeye: "As Yogi Berra tells us, 'You can observe a lot by watching.'" And Redeye is almost guilty of hatching this egg of wisdom: "If you are naturally kind, you'll attract kitefliers and a lot of other persons you won't like." Also: "I am willing to believe kitefliers sometimes wash their hands." Both sages may be right.

And The Ghost of Voltaire whispered this:
"In the flush of youth, select your enemies from the ranks of those who worry the welkin with kites; in pale maturity you will bask in the comfortable knowledge that none of them won The Nobel Peace Prize."

*

THE DENIZENS of Hornbeam Hall love fliers of kites, gliders, airplanes, balloons, ultralights, gyros—eons—just about everything that flies or falls from the skies (almost—sky divers do make nasty messes if they neglect to deploy their 'chutes). We are even willing to believe editors of kite publications can be housebroken if they are given kind treatment.

*

MAIL YOUR AD promptly each month in DL?

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Q & A DEPARTMENT

Q: Is it true that Hornbeam Mark I kites are being flown in Europe as scientific research standards?

A: Yes. We are all pride and blushes.

Q: What in the hell is an EONON?

A: An eonon is a clestrine dag paradigm.

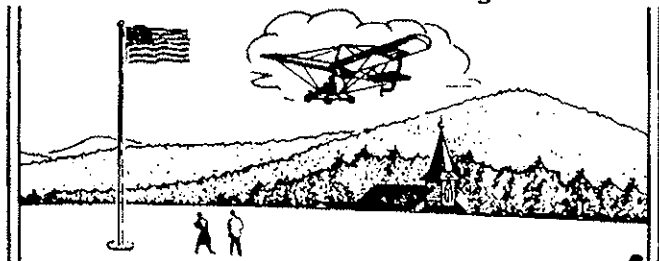
Q: Should kiteletter editors regularly be exterminated?

A: Early, often, and according to merit.

Q: Are all kite publications printed by offset lithography? Camera copy merely typed?

A: We believe so. Relief and intaglio printing seldom are used nowadays for magazine production. Photo composers often are used in large plants, but small publishers usually get their camera-ready text together on a "cold-strike" composer—really just a typewriter.

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DATA LETTER originates at Hornbeam Hall, the Albemarle County den of fliers who love our Earth planet and cherish the privilege of living and flying in its tenuous atmosphere. Receive 12 meaty issues by first class mail in North America for only \$10.00; by airmail to overseas fliers: \$12.50 (U.S. Dollars, only).

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