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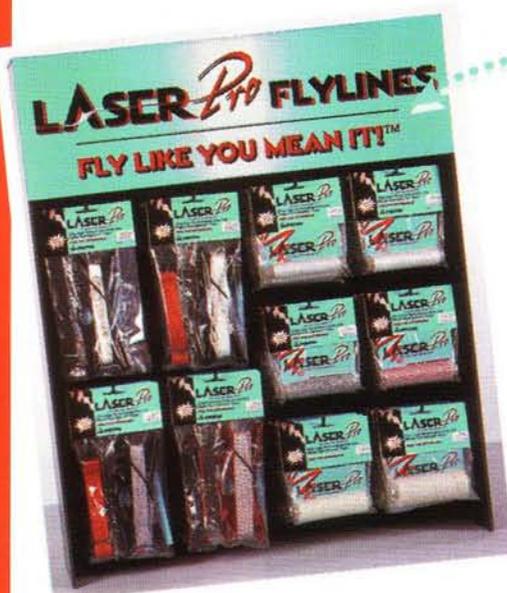
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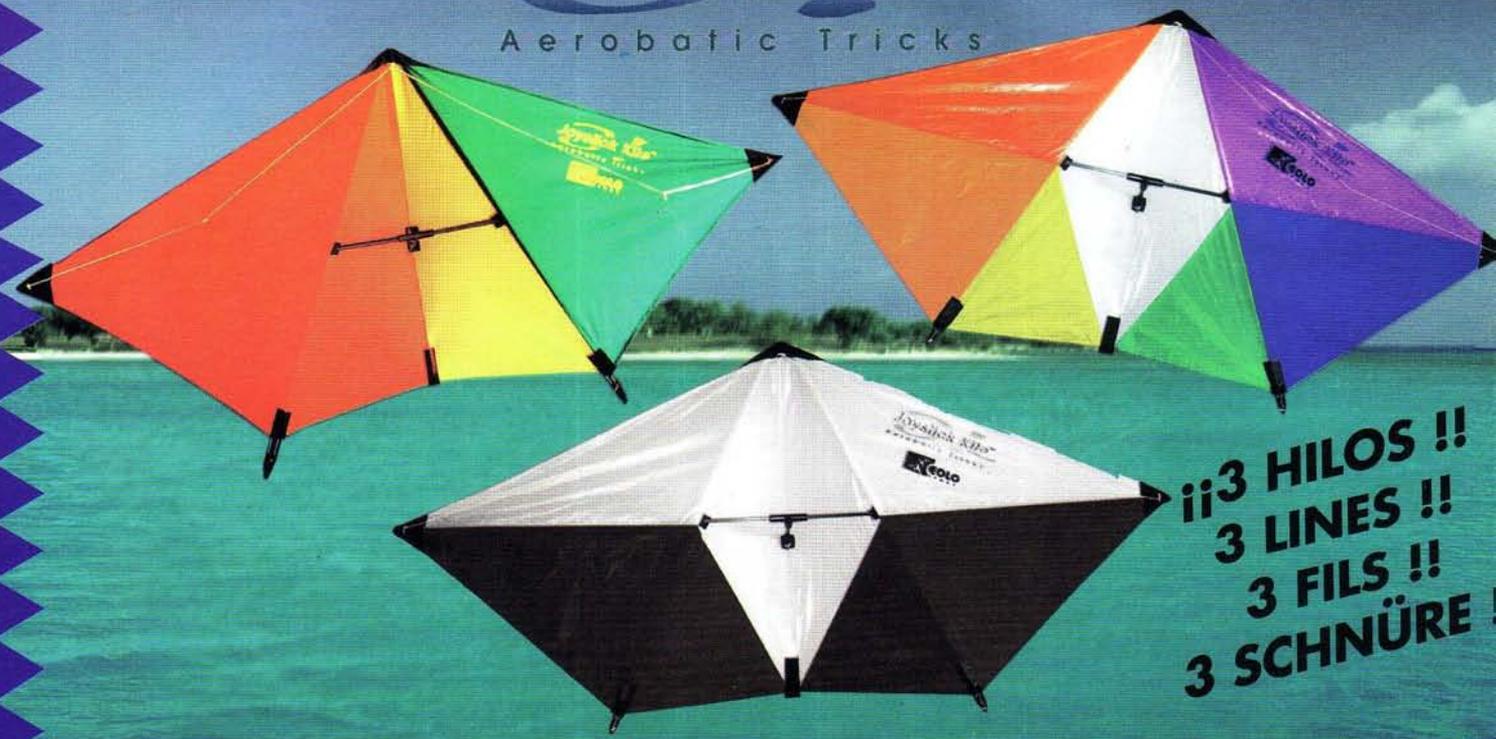
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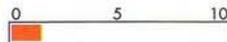
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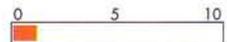
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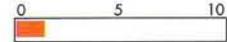
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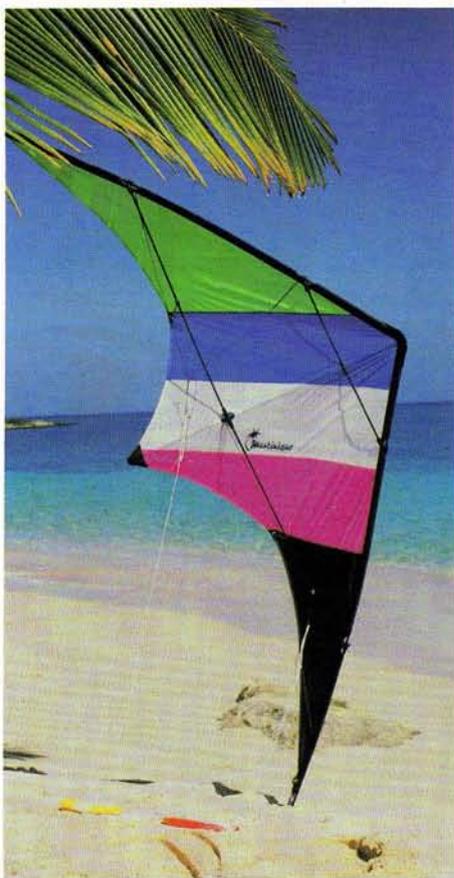
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Trooping through the streets of Fredrikstad, Norway are some of the least inhibited kitefliers you will ever meet. It's a great August event (see story on page 36). Photograph by Mel Govig.



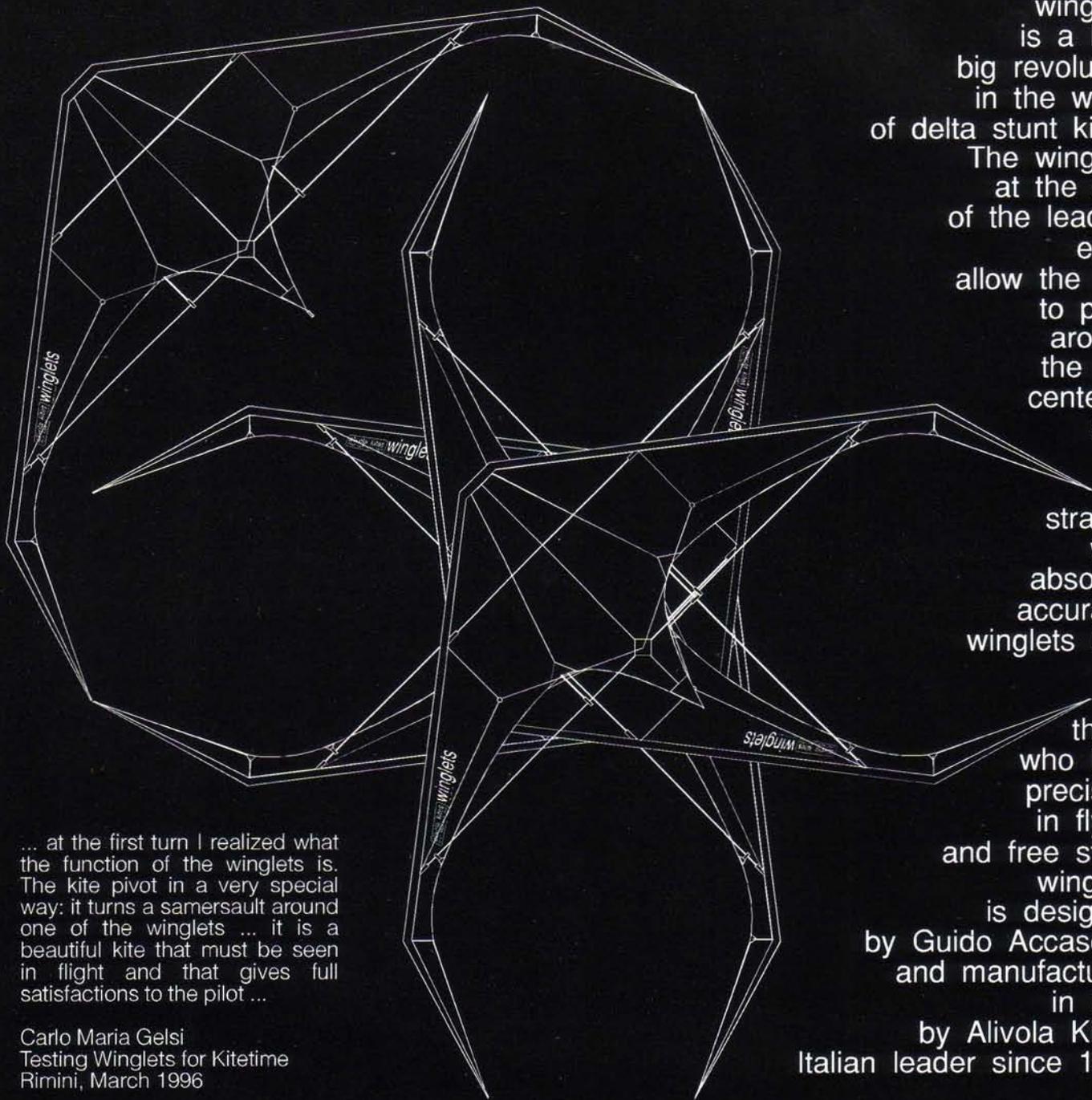
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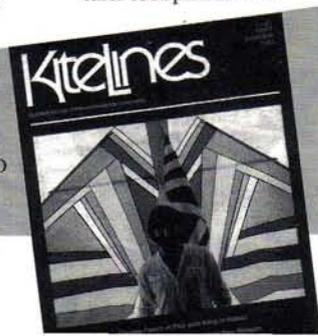
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Creative: I Hate that Word



DEBBIE ROSEN MCKERRROW

Your editor on the field at the Maryland Kite Festival in April.

Creative" is such an over-worked cliché. We ask that word to carry every kind of vaguely positive feeling we have about someone's work.

What does it mean?

If you ask me, "creative" *should* refer to things (or people who make things) that are really new and unprecedented. But what is? Don't we all, to some degree, stand on the shoulders of creators before us? "Creative" is a relative term.

I bumped into these thoughts at the latest Smithsonian Kite Festival on the Mall in Washington, DC. I was teamed with Becky Tebaldi of Laurel, Maryland to judge Beauty

in the Air. Neither of us felt well qualified for our roles by education (no degrees in art on either side), but we at least brought some knowledge of kites to the job. Becky had been flying for about two years, mostly with stunt kites. I've been, for 29 years, a fairly intense student of kites in all varieties.

Both of us were impressed with "creative" kites, however unfairly we muddled that concept with "beautiful" kites. But we had very different ideas of what was creative.

A white cellular kite at launch struck Becky as new and amazing—but I couldn't get too excited about a tetrahedral kite. Two Cross Decks appeared (Carl Crowell design). Becky was awed by the first one, but when the second one flew she realized neither kite was so "creative" after all.

Luckily, we managed to agree on the recipient of the award, mainly because flight, as a component of "Beauty in the Air," was marginal for many of the kites in the light

and variable winds. Only a few were really contenders.

Why care so much? Why is "creativity" important? Something in our culture teaches us to admire it. Yet in China and some other countries, the emphasis is on tradition, on maintaining the classic designs and the tested ways, preserving and venerating the old—not forever chasing the new, and then the newer.

Kite Lines has a department called "Innovations"—but we haven't used it much lately (this issue is an exception). It got so we couldn't find many kites that were really new enough for us. Are we jaded?

It doesn't feel that way. You can go to any kite festival, I swear, and you will find something new, something creative.

Whoops! Cliché eruption again.

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LETTERS

New Views

A Stealth Artist Replies

Brian Lemin (Winter-Spring 1996 *Kite Lines*) decries the hijacking of kiting by stealthy artists, then falls on his sword by describing his artistic approach to winning an award. Perhaps he should take a bow for unleashing the monster which now has him miffed.

As a participant at four and judge at the last two Festivals of the Winds, I am gratified to see *ordinary kitemakers* expand their horizons... and explore new shapes, graphics, and materials with spectacular results.

Sure, bona fide artists the world over will continue to discover what we kites have known a long time—the sky is the greatest art gallery you can find. And what's more, it's free.

So Brian, me old mate, here's how you get noticed: give the five dollar kite to the neighborhood kids, frame up that quilt and bring it to the next festival. You may not win an overseas trip but you will have the pleasure of flying with all the other *stealth artists* who proudly call their expensive patchwork/appliquéd quilts—kites.

—Peter Lloyd
Greensborough, Victoria, Australia

Better the Second Time

I was inspired to go back through my collection of previous issues of *Kite Lines*. Would you believe they are even better on second reading than before? ...perhaps, because they made me see from a fresh perspective how wide-ranging and timeless our shared interest in kites can be, and how effectively you've presented that message over the years...

—Robert Eskridge
Miami, Florida, USA

Corrections & Clarifications

In the Winter-Spring 1996 *Kite Lines*, statistics for the Epcot World Festival of Kites should have been: two months of preparation, a 16-day show and 70 kites hired.

Also the width measurement for the mid-wing panel on the Tekaweya kite in Design Workshop should have been 18½ inches.

We regret the errors.

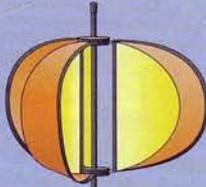
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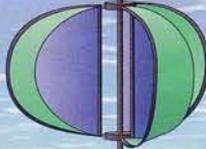
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The Euro-Baleno

By Claudio Capelli

The Euro-Baleno has been described by my friend Ricardo Vadala as "...more than a kite, it's a sort of an open work of art, with a thousand ways of flying, according to the use made of it." But is it a kite?

I'd like to go back to the article "The Arch Ribbon—A New Delight in Kiting" (Fall 1992 *Kite Lines*) and the stimulating philosophical question, "Is the Arch Ribbon a Kite?" This question was further explored in "What Is a Kite?" by Paul Siemen (Summer-Fall 1995 *Kite Lines*).

I think the arch ribbon is a kite in all regards but I naturally wonder what family it belongs to. I see the arch ribbon as the "dilation" or rather, the "magnificent exasperation" of the sled: look at the arch ribbon's two tow points located at the lateral ends and all its sticks which are longitudinally located.

In contrast, the Euro-Baleno has no spars and is kept in shape by a 17-leg bridle. And while the arch ribbon is flat, the Euro-Baleno is concave, the result of joining together 16 shaped segments to produce an airfoil.

It is evident that the two kites can't be identified by the same name and neither one should be seen as a modified version of the other. If the arch ribbon belongs to the sled family, the Euro-Baleno is perhaps rooted in the parafoil or in a windsock such as the Bol by Michel Gressier.

I wanted to make the Euro-Baleno because I wanted a kite that worked as a frame for the Club Cervia Volante's kites in photographs at festivals. The following plan is an homage to the European Community on behalf of Club Cervia Volante. Perhaps by changing the proportions between stars and stripes this Euro-Baleno could become a splendid banner for the United States. Many other variations could be made, of course.

Incidentally, sometimes I call the Euro-Baleno the "Blob," which is the sound the kite makes when it takes shape in the wind.



Above, the Euro-Baleno flies in Norway at the Isegran Kite Festival, 1995. Right, the Euro-Baleno becomes a ring in flight.



Origin

For my first kite, called Arcobaleno (rainbow) I had to cut and sew 112 pieces of fabric—quite a thing considering I was trying to make something almost totally new without any certainty about the results.

Nevertheless I immersed myself in my work, believing in my own intuition. I would use 16 trapezoidal sections made up of seven strips in rainbow colors. The result was to be an arch with a diameter of 14 m and an overall surface of 24 sq m. (The Euro-Baleno is 35 sq m, a larger version of the Arcobaleno.) Four hundred meters of bridling line and several heavy duty carabiners added to the cost. I was going broke!

Luckily the kite worked quite well. It flew better than I had hoped and much to my pleasure it would gain shape and remain aloft even in a whisper of wind.

The 17 long bridles gave me some problems, particularly on the ground before flights, forcing continuous untangling.

I got around this problem by dividing the bridle legs into three groups and methodically following a preplanned schedule. I would lay out and anchor the central group of bridles, displaying the sail on the ground. Then I would switch to the second and third groups of bridles. To ease the whole handling I devised a few tricks that enabled me to launch the kite and play with it, despite its size.

Something happened during one of these experiments. My brother Marco and I tied

one piece of line, about 15 m long, to each end of the arch. This string was meant as a preset diameter for the kite.

My brother was holding one end of the string and when he came closer to me, I came closer to him. The arch then resembled a horseshoe in the strong wind. Suddenly, I had an idea. I asked Marco to let go of the string and for a moment, holding the center of the string, I felt myself being pulled by the kite. The arch was then almost closed and was pulling strongly upwards.

We retrieved the kite and I joined the two ends of the arch. I started to pay out line slowly

and the ring rose like a big soap bubble, reaching a respectable angle of flight and sitting high in the sky. I couldn't believe it!

Because of the strong wind the ring was sometimes wavering. At times it looked like it would turn on itself but then, as if by magic, it would regain its position and float majestically in the sky. This was it! Almost by chance I had finally realized a ring kite—the complex, absurd, impossible *missing ring!*

Today, I am still filled with enthusiasm by the Euro-Baleno's versatility. Its ability to fly while changing shape is ever disarming.

Materials

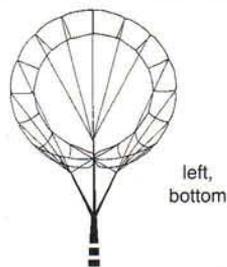
- 35 sq m of 1.5-oz ripstop for sail (approximately 35 yds 41-in wide)
- 40 m x 7 cm of 10-oz Dacron polyester, for reinforcing tabs and bridle straps
- four 5-cm grommets
- 160-lb-test Dacron line
- 1000-lb-test Dacron line

Directions

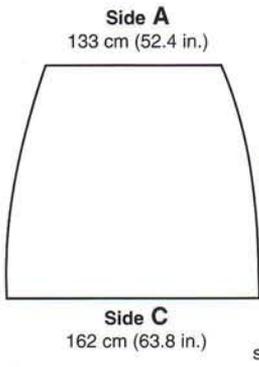
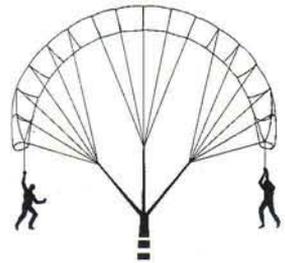
1. Trace on cardboard three trapezoids and cut out as in D, E and F.
2. Use as templates to cut cloth: blue G, green H, yellow I, orange J and red K, adding 15 mm for the seam. Repeat the same operation 12 times for D, twice for E and twice for F.
3. Sew the colors of every scheme, 12 times for D and twice for E and F, using standard appliqué techniques.
4. Assemble the pieces according to sequence L, sewing one to the other along side B.

EURO-BALENO

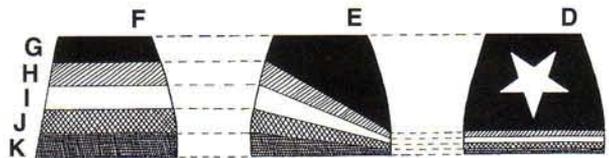
drawings, not to scale,
by Claudio Capelli



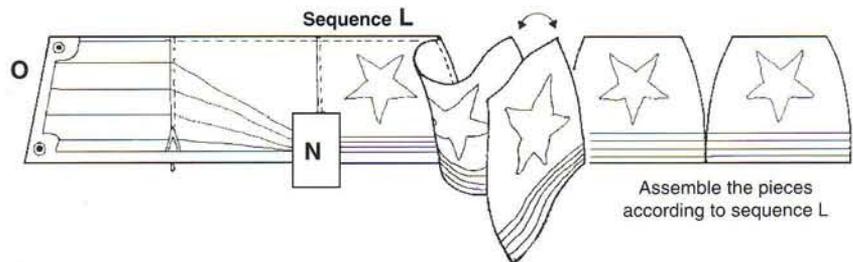
left,
bottom



Side B (height)
150 cm (59 in.)
template for
single trapezoid

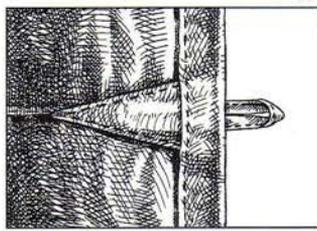


three trapezoids
D, E, F

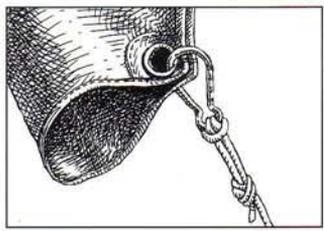


Assemble the pieces
according to sequence L

Stitch in the bridle tapes



Finish the corners with grommets



#1

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5. Turn over the seams (all in the same direction) and edge together side C, folding the material 15 mm.
6. Sew all the seams on side A with tapes on which the bridles will be fixed and reinforced with cloth folded into a triangle and measuring 8 x 16 cm. Fold 7 cm of Dacron to 3.5 cm along the same side A, taking care to pass the bridle tapes through cuts in the Dacron along the fold for 2 to 3 cm (fig. N).
7. Complete with Dacron tape and reinforce the end corners of the kite by finishing

- the corners with metal grommets of 4 or 5 cm (fig. O).
8. To finish, bridle the kite at its 17 points on side A with 17 lines of 160-lb Dacron, 35 m long, divided into three groups, each of which joins a main 15-m line, 1000-lb test.
- Be sure the Euro-Baleno is safely anchored before launch! ◇

Claudio Capelli is an artist and active kiter living in Cervia, Italy. He was a founder of the Club Aquilonisti Cervia Volante.

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The Fold Black

By Andreas Ågren

Inspired by Chinese Rigid Wing kites such as the Swallow, the Fold Black is simply the wing part of the Rigid Wing, only tripled.

The Fold Black comes in two versions, A and B. B is more or less A turned over back to front. I have to admit that the B version is the result of an early mistake I made when I put the skeleton on the wrong side of the kite. As a matter of fact, because of the symmetrical design, either of the two edges will do as a leading edge. You decide which when you tie the bridle.

The sail material is stiff Tyvek (Type 10, like Tyvek envelopes or housewrap air barrier), the spine is a triangular wooden stick (a "fillet" from a lumber yard) and the spars are thin bamboo sticks from a window blind (an import store is a good supplier for these).

I haven't yet managed to make the Fold Black dismountable, and since the foldings are rather sensitive, I have to use a transportation box to and from the field.

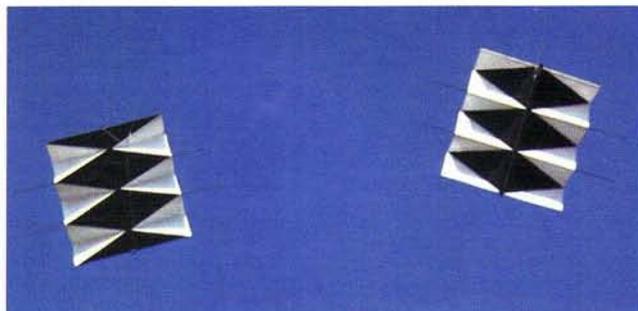
I haven't yet managed to make the Fold Black dismountable, and since the foldings are rather sensitive, I have to use a transportation box to and from the field.

Materials

- Cardboard or poster board for templates
- Stiff (Type 10) Tyvek for sail
- Thin bamboo, approximately 330 and 600 mm (from matchstick screen) for spars
- White glue
- Triangular wooden stick (fillet), triangle base approximately 10 mm, stick length 380 mm, for spine
- Bridle line is less than 700 mm. (If the extending spars are shorter than suggested, make a shorter bridle line to avoid tangling the bridle in the extending sticks.) The towing point is about $\frac{2}{3}$ of the length of the kite from the leading edge.
- Acrylic paint (black)

Directions

1. Make three copies of the template for Model A and cut them out, leaving an edge on



Left, Andreas Ågren ties flying lines on his two Fold Blacks. Above, Model A and Model B Fold Blacks make a study in contrasting pairs as they fly together in the Norwegian sky.

both sides of each so you can glue them together. Also leave an edge of about 10 mm at the top. These edges are the shaded parts in Figure 1. The top edge is for connecting to the other half and the end parts are for hiding the leading and trailing edge sticks.

2. Glue the three parts together. You now have the template for one side of the kite.
3. Copy the template onto the Tyvek twice.
4. In order to locate the starting points on the Tyvek for the lines going from the center to the edge, push a needle through the three points indicated in Figure 1 to make a mark in the Tyvek.
5. Now prepare the folding lines in the

Tyvek by drawing all lines with a dull point (like a pencil without the lead).

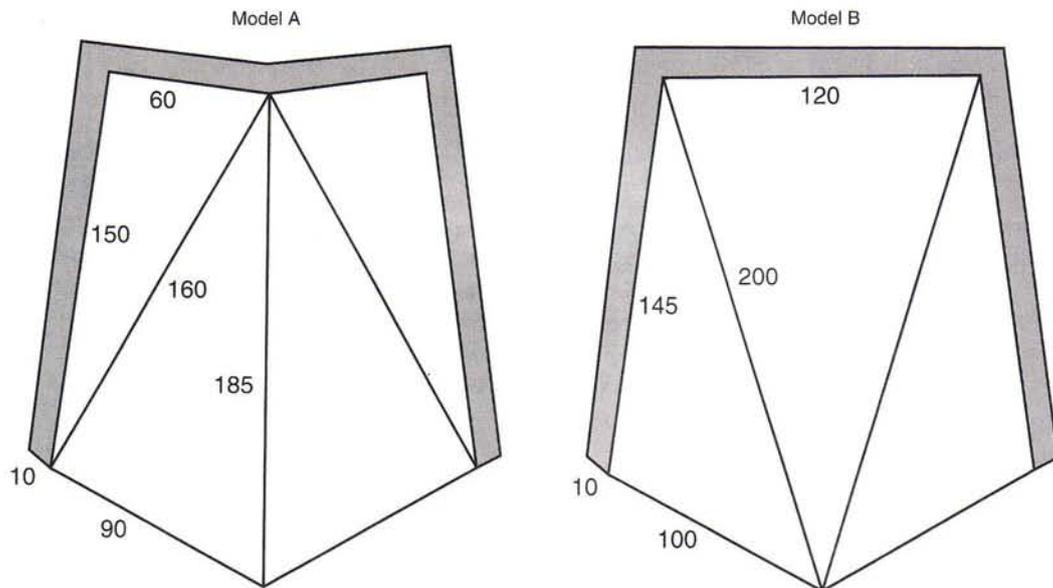
6. Paint the shaded triangles and paint the spar sticks. I use acrylic paint (black), which covers well.

7. Cut the three slots and fold along the lines, mountain folds and valley folds according to the lines in Figure 2.

8. Then glue both halves together, closely observing the alignment. To make the alignment easier you can draw small lines exactly on the middle of each triangle base on the unpainted side. These are also the positions of two of the spar sticks.

9. Measure the length of the kite; it should be 360 mm. Add 20 mm and cut the triangular fillet that long (380 mm).

TEMPLATE FOR PART OF ONE WING (in millimeters)



FOLD BLACK

drawings not to scale
by Andreas Ågren

This excess part should have the same width as the triangle base of the spine.

Press needle point through junctions to make marks on Tyvek sheet.

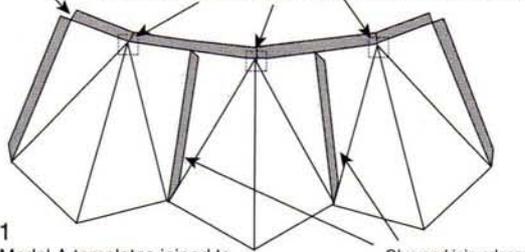


FIG 1
three Model A templates joined to complete template for one side

Glue and join edges.

Place alignment line on middle of base.

Cut slots.

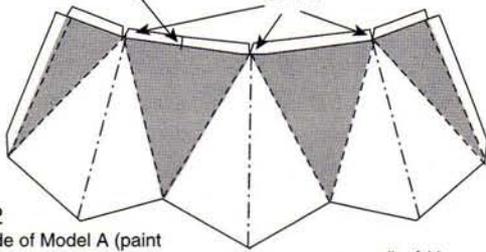


FIG 2
one side of Model A (paint and fold one side at a time)

----- valley fold
----- mountain fold

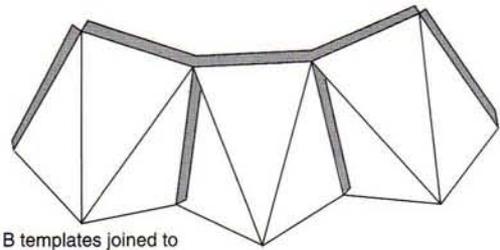


FIG 5
three Model B templates joined to complete the template for one side

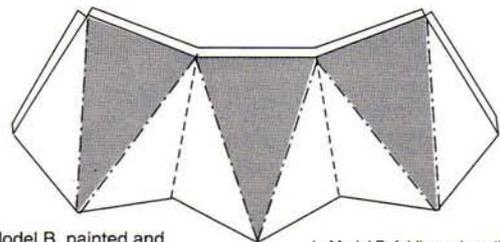


FIG 6
one side of Model B, painted and ready for joining to the other half

In Model B, foldings along the gray triangles are valley folds.

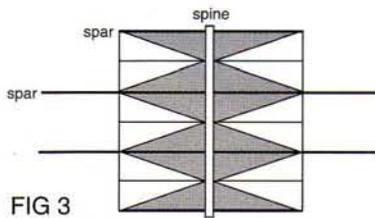
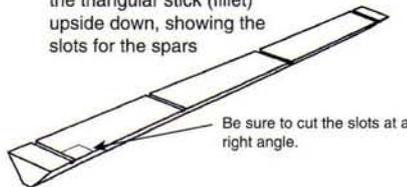


FIG 3
back of Model A view with the two halves joined

FIG 4
the triangular stick (fillet) upside down, showing the slots for the spars



Be sure to cut the slots at a right angle.

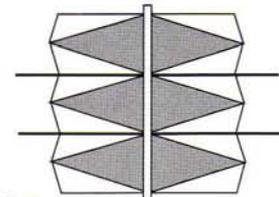


FIG 7
back view of Model B

10. Figure 3 shows the position of the spine and the spars on the back of the kite. The two halves will be joined by gluing the edges pointed out in Figure 1. Place the spine on this joining area. The gray areas in the drawings are flat and the white areas form the air stream channels. Put the spine on the back of the kite, leaving 10 mm extending on each end. On the spine, mark accurately the position of the four spars.

11. Cut four slots in the spine, just deep and wide enough for the spars to fit tightly, as in Figure 4. Glue the spine and spars onto each other and then onto the Tyvek in one move. Make adjustments so everything is aligned.

12. When this has dried, fold and glue the extra Tyvek over the leading and trailing spars.

13. Cut the leading and trailing spars to

align with the Tyvek and the middle spars to equal length. Since the extended parts are only decoration, cut to suit your taste.

14. Tie a two-point bridle to the kite, on the spine ends sticking out. You should color them now if you haven't already. The kite's towing point position isn't very sensitive, but it should be about $\frac{2}{3}$ the length of the kite from the leading edge, whichever edge you choose to be leading.

Figures 5, 6 and 7 show the similar process for building Model B.

Flying

The Fold Black flies without tails, and I like to fly A and B on a forked string, pretty close to each other. I enjoy hearing people discuss whether they are exactly alike or not, and what, if any, the difference might be...

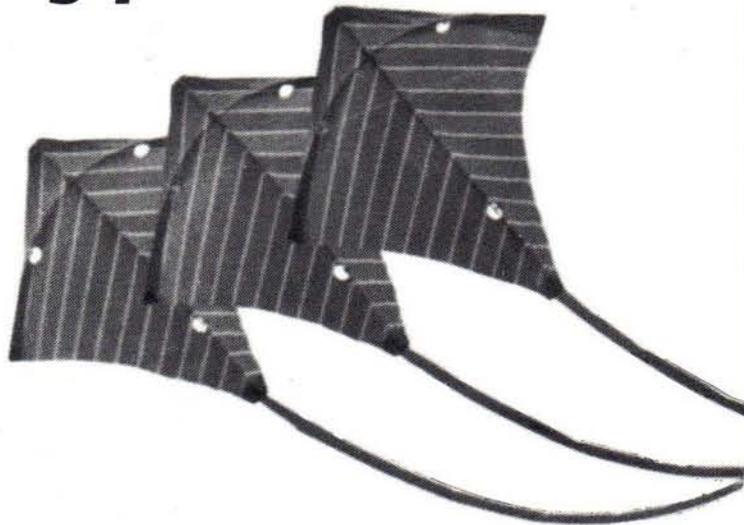
Variations

So far I have made these kites only triple-winged, but I suppose you can make as many wings as you like. If you cut out each kite half in one piece, you would have a geometrical limitation on how many wings could be attached to each other before you would have a complete circle.

Your comments are welcome, especially if you come up with a Model C! ◇

Andreas Ågren, a software engineer by trade, lives in Sala, Sweden, six hours away from Fredrikstad, Norway. He had not even flown a kite until his 42nd year (four years ago) when he attended the Cervia Volante International Kite Festival in Italy as a member of the club called Sala Kite and Tango Party.

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New Faces Indoors & Out

By Felix Cartagena, Mel Govig, Valerie Govig & Michael J. Graves

The 333

For those who have met all the challenges of dual-line kites, then gone on to quadliners and mastered them, too—for you there is something *really new*, a *three-line* kite from Guildworks Flight Studio.

This is the company that brought us the Synergy Deca, based on the tensegrity creations of Buckminster Fuller. Now Guildworks has introduced the 333, using the same concepts as the Deca but employing only three carbon rods instead of ten. The structure is provided by a system of strings held under tension. The ends of the three carbon rods fit into plastic caps that remain fixed to the kite's bridle system. The result is a smallish three-pointed kite that looks like it would be right at home in a medieval court jester's bag of tricks.

The kite is only confusing to assemble the first time. Guildworks provides a clear set of assembly instructions, but the new owner should do as I did, put the kite together one time at home before heading outside.

The 333 comes with a collapsible handle that's as curious as the kite itself. Comprised of rods and strings, it mirrors the kite, resembling a small 333 without a sail. The handle's central parts are padded with foam for comfort. The handle allows the kite to be flown easily from one hand, which is part of the kite's appeal.

Rounding out the ensemble is a set of 35-ft Spectra-blend lines and an interesting custom line winder/handle of plastic-coated wire that has been wound into a collection of loops. While it was possible to figure-eight-wind onto the handle, we found that the soft metal wire was easily deformed from rattling around in a line bag. We preferred to leave the handle assembled and wind the lines around one side of it.

Outdoors with the 333, we found that, even once the kite is assembled, it is not immediately apparent which side should face the flier. In truth, it is possible to fly the kite with either the sail or the frame toward you. Though the sail stays nearly flat, you get a choice of slightly dihedral or slightly anhedral shapes in flight! In light wind, the anhedral mode (frame toward the flier) proved to generate the best lift but was more sensitive to the hand than dihedral

mode (sail towards the flier).

In general, the 333 flies like a quad-line kite. After only a few minutes' flight it is very easy to hover, move sideways, forward or backward. The kite is nearly omnidirectional; it makes diagonal moves almost as easily as it moves up or down. In this regard it is actually easier to fly than many quadliners because it doesn't have a high degree of left/right separation of control.

The 333 can be turned by simply twisting the handle. Multiple rotations take much practice, but can be accomplished by passing the handle from hand to hand as the kite turns.

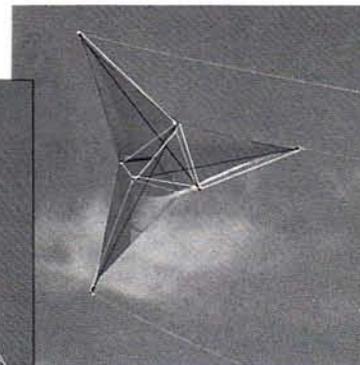
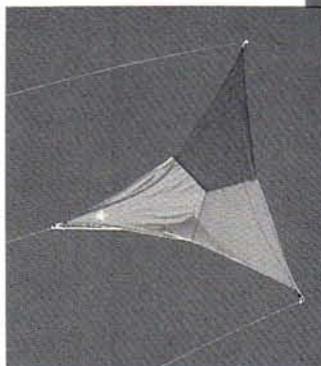
Light winds proved a challenge for the 333; a rewarding experience required a breeze of 4 mph or more. On some outings we met winds up to 15 mph. The 333 handled these speeds without a problem. Considerable practice was required to hold the 333 steady under gusty conditions. In strong winds the kite's speed made it a real handful, though it never developed a significant amount of pull.

With enough wind, the 333 gave us a reasonable wind window, and climbed directly overhead with no problem. As with most multiline kites, launching and landing were very easy. The kite did not, in general, appreciate twists in the flying lines. If the lines made a wrap, the 333 was difficult to control.

As a one-handed kite, it in theory permits one flier to control a pair of kites. In my own case, it allowed me to fly in spite of an injured arm that prevented dual- or quad-line flying for several weeks. It might work, too, as part of a team ballet of mixed dual- and triple-line kites.

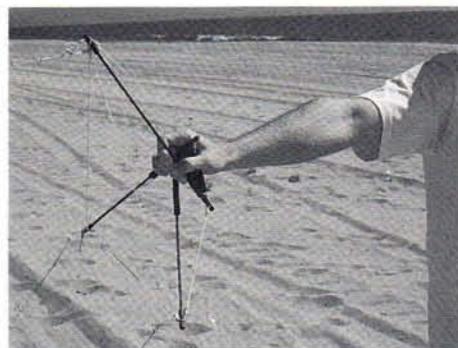
Just flying one of these kites provoked gaping jaws, big grins and constant questions ("What is *that*?") wherever we flew it. If you're seeking a new flying experience, you'll appreciate the unique character of the 333.

—M.J.G.



The 333 flies almost equally well in anhedral mode (left)

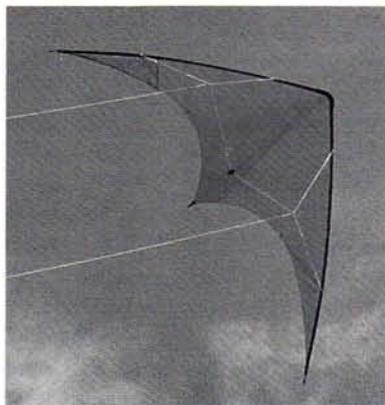
as in "normal" dihedral mode (right). Below is the 333's funky collapsible handle, a mirror of the kite structure itself. (Look Ma, one hand!)



The X4i

Peter Werba's Buena Vista Kite Company has defined an entirely new class of sport kite with the introduction of their X4i. With its tiny 4-ft wingspan, the X4i proves that sport kites don't need to be large and costly to fly in no wind.

The X4i has a very pared-down design. It



The X4i was built to fly indoors—outdoors it doesn't like much wind.

uses high-quality materials and minimalist construction techniques. The smaller scale permits using lower-cost solid carbon rod for the kite's frame. The sail is .5-oz ripstop polyester with a thin pocket of heavier nylon tape to add durability to the leading edge and nose. For fittings, the frame uses light, punched-vinyl caps,

resulting in an affordable 4-ft kite with wing loading comparable to larger designs.

The X4i started its tests with a winder and a short set of very light Spectra lines. Most of our flights took place in a small hall, where neither wind nor air-conditioning was an intruding factor. We used Spectra lines varying in length from 12 to 13 ft and in strength from 15- to 20-lb-test.

Weighing a mere 1.25 oz, this kite seems to float on memories of wind. Because it's so much smaller than the usual indoor kites, we found that the weight of the lines had much greater influence on the kite's performance, particularly in spinning moves with slack-line stalls and floats. Its very small sail area requires a sensitive hand to tell that it's actually there. Despite its light feel, the smaller wingspan and shorter lines matched the kite's hemisphere to our indoor space.

At the outset the X4i does not appear to be a radical kite because its turning radius is not exceptionally tight, nor does it exhibit much oversteer. We were at first a little disappointed that the X4i did not corner as crisply as we would have liked, but with practice we overcame this through flying technique. In skilled hands, the X4i is capable of a wide range of moves: stalls, floats, slides and axels only begin the list of tricks it will do.

We were particularly thrilled by the X4i's ability to double-axel with ease. The secret is in the kite's light weight. It's possible to initiate an axel, then just move slightly toward the kite, allowing it to continue its rotation on slack lines. The kite simply keeps on rotating through the floating spin. Even triple axels were not out of the question.

Building a kite this light involves some compromises. In the case of the X4i, Buena Vista has chosen to trade wind range for low mass. The light carbon rods cannot hold the kite's shape in winds even as little as 3 mph. This trait limits the kite's range outdoors, where there are few truly windless days. Even indoors, it's possible to overload the frame with an aggressive pull as the kite goes "over-the-top."

The X4i is an important kite. It opens up new opportunities and allows more kitefliers to try their hand at indoor flying without spending a fortune for the privilege.

Stunters			DATA CHART	One-Liners		
333	X4i	Spec	Name of Kite	Gyro-Kite	Ghost	Marilyn
			Manufacturer			
Guildworks	Buena Vista	Jordan Air	Gyro-Kite	Nick James	Sky Delight	
\$90	\$70	\$70	Retail Price	\$19.95	\$45	\$199
RN	RP	RP	Sail Material	MP	RN	RN
n/a	RP	RP	Leading Edge Material	n/a	n/a	n/a
CFt	CFr	CFr	Framing Materials	MP	FGr	GR, FGGr
MP	V	V	Fittings	MP	MP	MP
39 x 33	48 x 22	50 x 26.5	Dimensions (in.)	19 x 10	34 x 50	42 x 36
n/a	5.5	5	Sail Depth at stand-offs (in.)	n/a	n/a	n/a
370	348	344	Sail Area (sq.in.)	n/a	310	1024
2.625	1.25	1.625	Weight (oz.)	4.5	1.8	7.6
1.022	.517	.680	Sail Loading (oz./sq.ft.)	n/a	.840	.940
6-20	0-2	0-5	Suggested Wind Range	8-30	5-15	5-15
50-80	20	35	Suggested Line (lbs.)	100	10	50
N	I-SK	I-SK	Skill Level Required	I	N	I
1-2	<1	<1	Assembly Time (minutes)	5	<1	3
VG	VG	VG	Ease of Launch/Relaunch	G	E	VG
G	G	G	Ease of Landing/Ground Work	G	n/a	n/a
S-M	M-F	F	Straight Speed	n/a	n/a	n/a
S	M	F	Speed in Turns	n/a	n/a	n/a
G	VG	G	Precision/Tracking	n/a	n/a	n/a
L	L	L	Amount of Pull	M	L	M-H
SI	SI	SI	Amount of Noise	M	n/a	M
VG	VG	VG	Visual Appeal/Graphics	VG	E	VG
E	VG	VG	Workmanship	VG	VG	VG
E	E	E	Portability	G	VG	VG
E	E	VG	Durability	A-G	VG	VG

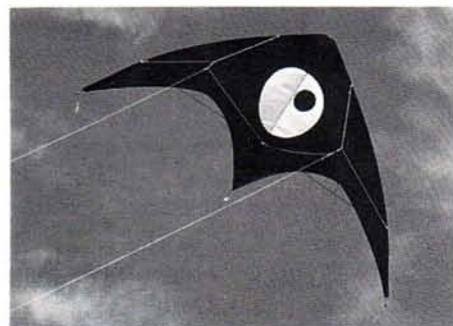
NOTES: Retail price (US dollars) is "advertised" or "suggested." Wind range (mph) covers minimum and maximum speeds deemed suitable by our evaluators. Dimensions are in the following order: width x height. Measurements and (usually) drawings are made with the kite standing on the floor facing the viewer. Materials: RN—Ripstop Nylon, RP—Ripstop Polyester, DT—Dacron Tape, WD—Wooden Dowels, B—Bamboo, FG—Fiberglass, GR—Graphite, EP—Epoxy, CF—Carbon Fiber, r—Rods, t—Tubes, MP—Molded Plastic, V—Vinyl. Speed: SL—Slow, M—Medium, F—Fast. Skill levels: N—Novice, I—Intermediate, SK—Skilled. Pull: L—Low, M—Medium, H—High. Noise: SI—Silent, L—Low, M—Medium, H—High. Other ratings: P—Poor, A—Acceptable, G—Good, VG—Very Good, E—Excellent, n/a—not applicable.

There will no doubt be other makers to follow this path, but Buena Vista's X4i has set the standard. It holds a prime spot in my kite bag. —M.J.G.

The Spec

Jordan Air has long been a leader in ultralight sport kites. Their new Spec joins Buena Vista's X4i in the first wave of a new genre of affordable small-wingspan kites for indoor and light-wind use.

Like the X4i before it, the Spec features a small size and achieves its ultralight weight from the combination of microcarbon rod and lightweight ripstop polyester. The Spec is unusual because it doesn't use the same size of rod throughout its frame. The varied spar sizes give you extra stiffness, though at the expense of some added weight.



The nimble Spec shows off outdoors.

In its geometry, the Spec shows typical Jordan Air style. The leading edges are curved and the resulting stress in the frame tightens the sail across the trailing edge. This sail tension is controlled by strings sewn in place at the wingtips and the base of the

spine. Since the sail is tight, I recommend that you untie these strings when packing the Spec for storage. This will cut down chances for damage in stowing.

Visually, the Spec has a clean look. It features a single-panel sail with circular appliqué. The sail is sewn with a combination of zigzag and straight stitches. Like the older Jordan Air X-1 Microlite, the Spec's leading edge pocket is formed from the same piece of lightweight cloth as the rest of the sail. This technique, though acceptable, sacrifices a degree of durability in favor of lower weight.

Jordan Air obviously has gone to anorexic extremes to keep the weight off. In particular, they have used extremely short, tight vinyl fittings for the frame. These are structurally adequate and admirably light, but they may frustrate some fliers during the assembly process.

We flew the Spec under a variety of conditions both indoors and out. We used 30-lb-test Spectra line, 12 to 35 ft long.

The Spec flew in tight, quick turns with noticeable oversteer, which we attributed to the shape of the kite's sail. Though it was a challenge to fly, the kite's greater mass gave it a very consistent, solid feel.

None of our normal indoor routines threw the Spec off its stride. It cut hard turns with a nice, crisp snap and was also very reliable at 3D catch-and-toss tricks. It liked to do pinpoint stalls but on long horizontal slides was more stubborn. While it did not maintain a flat spin quite as long as the Buena Vista X4i, we felt it was easier to set up and control that spin.

In general the Spec is a well balanced kite. We never felt that we were overpowering it at any time throughout our testing, despite deliberate attempts to do so.

We were happy to see that the Spec was also well suited to use outdoors. The kite was fast and frolicsome in winds up to 5 mph. Flown on a set of 35-ft lines, the Spec handled like a much larger kite.

For calm days outside or for showing off your moves indoors, the Jordan Air Spec straddles the border between indoor and outdoor flying. Such versatility at a bargain price makes it an attractive choice for the flier with a not-so-full bag of kites. —M.J.G.

The Gyro-Kite

This kite (also called the Copter-Kite in some advertising) had the benefit of study by, first, the Kite Lines staff, then about eight distinguished Maryland Kite Society members. Everyone pronounced the kite a dud. It wouldn't even launch, let alone fly.

But one fellow, Kenny Sesker by name, assured us he had a Gyro-Kite and it worked fine for him. Master tinkerer Felix Cartagena took this as a personal challenge. Luckily, after dozens of crashes, its little molded plastic fuselage with snap-on whirling blades and wire landing skids remained entirely intact.

In the battle between man and machine, Felix emerged the victor. Here is his story:

By the time everyone had written off the Gyro-Kite as a nonflier, I had it all to myself to play with. Holding the kite at a 45-degree angle to the wind, I realized that no one had really let the rotor spin up to a speed that would create lift.

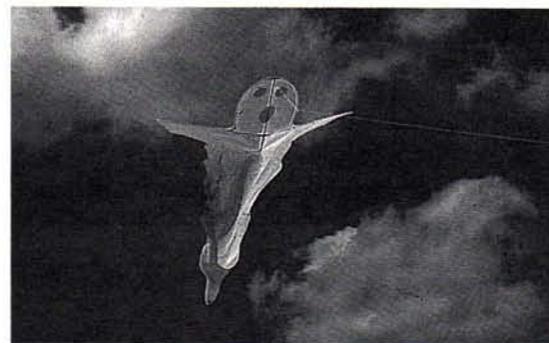
After a seemingly endless wait, the rotor started making a helicopter "thup-thup-thup" sound and the kite tugged at my grip. On release it flew up, veered to the left...and crashed again. I adjusted the rotor mast to offset the gyroscopic pull on the kite so that on the next flight it flew straight up. Of course, this caught everyone's attention.

My friend Arnold Simon suggested running the line through a stake so that I could be the pilot as well as the launcher. The first flight with this setup was picture perfect. The Gyro-Kite rose to a high angle as I slowly walked backward. As the kite was pulled to the ground, I was able to land it squarely on the landing skids.

On my long drive home from the kite festival, I pondered why so many proficient kitefliers could not make the Gyro-Kite fly. Simply put, they were treating it as a "normal" kite, using quick successive line tugs to gain altitude and drifting the kite by line releases. For an autogyro kite to fly, the launcher needs to determine that the rotor is spinning fast enough to create lift. When flying, the kite needs constant tension on the



The Gyro-Kite (left) whirs well with proper handling. Below, the Ghost ripples and Marilyn hums.



line. Quick jerks on the line create instability while fast line release reduces airspeed across the rotor, slowing the blades down and thereby reducing lift.

Once you understand how the Gyro-Kite flies, it becomes a challenging experience that gets better with practice. —F.C.

The Ghost

The Ghost has a true touch of the ethereal in its design. Nick James of England uses white ripstop nylon, fiberglass rods and a molded fitting to set the dihedral on the Ghost, giving it very up-to-date construction. But in the air, it is a 1950s hark back to Casper the Friendly Ghost, with slanting eyes and mouth—just spooky enough.

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WHAT'S NEW: KITES...Continued

ground, it flies much like a Thai cobra but instead of bowed bamboo at the head it has fiberglass.

Clever construction techniques include the even bow and arm sleeves, cut as part of the original outline and then sewn with a double row of stitches to form the sleeve. The real touch of genius is the pocket at the end of the Ghost's tail which catches the wind and helps to prevent the nose-down descent typical of this species of kite.

This is a pleasant kite for kids of all ages: light on the line, easy to launch, hard to break and fun to fly. —M.G.

The Marilyn

Joel Scholz of Sky Delight Kites makes two Flying Faces, kites of similar structure but different graphic design. One is a geisha and the other is a Marilyn Monroe. We tested a Marilyn, who flies well, though she looks a little overdone in the appliqué (as if she'd been too long in makeup).

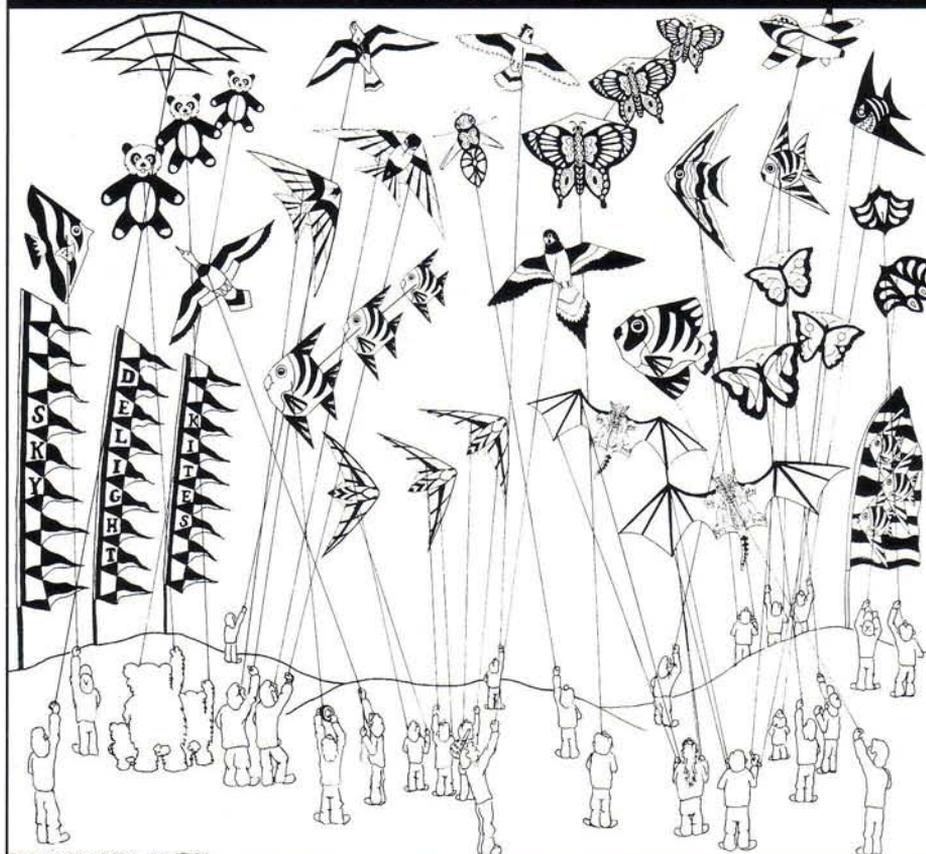
She is structurally symmetric, but graphically asymmetric. Marilyn's blond hair takes the form of the classic bag sleeves of the Japanese *yakko* and cicada kites. Like them, she handles winds from 5 to 20 mph, centered and steady, going to angles of 60 degrees.

The craftsmanship of this kite is top notch. For example, a bonus with this kite is an effective hummer incorporated into its structure. The bow in the main cross-spar is maintained by a piece of recording tape, held in place by vinyl end caps on the carbon fiber spar. The hummer makes Marilyn a strong singer, even in low winds, though the sound is rather throaty for a girlish MM.

Maybe Scholz hopes that the popularity of the famous Hollywood bombshell will transfer to his kite. Strangely enough, she seemed to come to life on the stage of the sky. In the bright light of the sun and at a distance, we could better appreciate her. But for us the graphics were not too important. It was the ease of flying that appealed to us—if it were just a plain kite we would have enjoyed it just as much.

Whether you like the Marilyn kite or not, you might have trouble separating its performance from its image. Is this a Norma Jean kite at heart, a plain good flier? Or does the glamour make it something else? We couldn't decide. —M.G./V.G.

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Slack-Line Maneuvers

Sport Kite Magic! by David Gomberg (Neotsu, Oregon, USA: Gomberg Kite Productions, Intl., 1996), softcover, 124 pages, \$13.95.

In 1988, David Gomberg wrote the first book on the subject of dual-line flying, *Stunt Kites!* Even though he revised and reprinted the book periodically, it was getting out of date. Now it's likely to be eclipsed altogether by his new book *Sport Kite Magic!*, which is not only a better book but almost a better introductory book. In its first four pages, "Introduction—Basic Magic: A Refresher Course," Gomberg manages to condense most of the contents of his first book. Then he goes on to "Advanced flying techniques for more kiting fun!" to quote the subtitle.

This book has many virtues. It is well organized: you can easily find your way around in it. It has lots of fresh information, especially the chapter on indoor kiteflying. And it is, for the most part, written in an exceptionally clear and entertaining style. Gomberg is really polishing his prose these days. He views the sport mostly from a competition perspective, but he stresses that learning the maneuvers can give purely personal satisfaction too.

One distinction this book has over his first is that he relies less heavily on the contributions of others (the first book was "edited by" Gomberg). This time, though he again consulted with a number of fliers (and

still talks as "we"), Gomberg has written every word himself. He still uses boxes everywhere, but they contain, instead of quotes from others, his own tips and comments.

There are some real gems of observation in *Magic!*, such as the "maximum high" and "maximum low" concept in tow point adjustment; and the "walk of shame," a pithy articulation that will forever define that activity. The descriptions of maneuvers, some appearing in print for the first time, are often excellent. And the advice is good, including, for example, how to visualize maneuvers in practice sessions and how to recover from an unplanned mess. The book's best quality is that it makes stunt flying approachable: "Hey, I could do this!"

Not to say this book is without flaws. It has serious ones (which may be forgivable to some), such as a fair share of spelling errors. There are missing elements: no references to the people or events unfolding today and creating all these maneuvers; no single, separate safety statement; a certain lack of depth in coverage of the subject; no index, glossary or bibliography.

But the book's greatest weakness is its physical presentation. Apparently untutored in graphics and typesetting, the author-publisher gives us words that are easy to read—but formatted so they are not easy to want to read. The illustrations are just barely adequate. The layout is lifeless. We

hope Gomberg's latest will not put off potential readers. Those who decide to read it will be rewarded. —V.G./M.J.G.

Two Bloodshot Eyes in the Sky

Aerial Photographs Taken From a Kite: Yesterday and today (L'Aerophotographie Prise Par Cerf-Volant: Hier et aujourd'hui) by Geoffroy de Beaufort and Michel Dusariez (Brussels: KAPWA Foundation Publishing, 1995), in English and French editions, softcover, 142 pages, \$39.95. (Includes a reprint of the 1890 book *La Photographie Aérienne Par Cerf-Volant* by the inventor of the craft, Arthur Batut.)

And *Photographie Aérienne avec Cerf-Volant: Comment s'y Prendre? (Kite Aerial Photography: How Is It Done?)* by Christian Becot (Tourlaville, France: C. Becot, 1995), in French, 52 pages, \$16.95.

There is a dearth of good books on kite aerial photography (KAP), especially in English. Books available recently are dated or simplistic or idiosyncratic or all of the above.

Now we have two new books devoted to this esoteric branch of kiting. But neither is quite satisfactory.

Most disappointing is *Aerial Photographs Taken From a Kite*—but first, the good points. De Beaufort is a KAP historian, so there is much good writing here about how we got to where we are today. De Beaufort and Dusariez are among the founders of the Kite Aerial Photography Worldwide Association (KAPWA), which published an excellent bilingual quarterly journal from 1985 to 1993. They reprint here several good short articles, charts and diagrams by journal subscribers on various aspects of the craft, and most survive the translation well. The 35 to 40 black and white photos and many diagrams are sharp and well printed for the most part.

Now the disappointments: The authors have more knowledge between them of KAP than almost anyone, but they've kept most of it to themselves. Discussions of equipment such as cameras and film are very general. Too much space is devoted to reiteration of the authors' credentials and the history of KAPWA, and to Dusariez' vitriolic—slanderous?—diatribes on the people, practices and scholarship he doesn't like.

In type and layout, the book is pure word-processor, dull and nondescript. Most

SPELLING TEST

AXEL OR AXLE? By definition, according to David Gomberg's new book *Sport Kite Magic!*, this maneuver stops the kite in midair, lays it forward on its face, then spins it around. Good.

But do you spell it like the wheel shaft (axle) or the skating figure (axel)? Either word fits, but what was in the mind of the first person to fly it and name it?

Kite Lines spoke to Steve Thomas of Palo Alto, California, who launched the move in 1992 and claims it was the first in the trend to "3D" maneuvers. He named it, broke it into steps, taught it, promoted it—"like selling a product," he says. At about the same time, Miguel Rodriguez of Richmond, California came up with the coin toss, similar to the axel but performed on the ground. Now cool slack-line moves are propagating like fruit flies and kites are being tailor-made for them.

So... what did Steve Thomas have in mind when he named the axel? The *skating figure*, he says—but he didn't know what the skating figure *itself* was named after.

Dictionaries tell us that the axel was named for Axel Paulsen, a Norwegian figure skater of the 1930s. His figure was made up of 1½ turns, leaving from the right skate and landing on the left.

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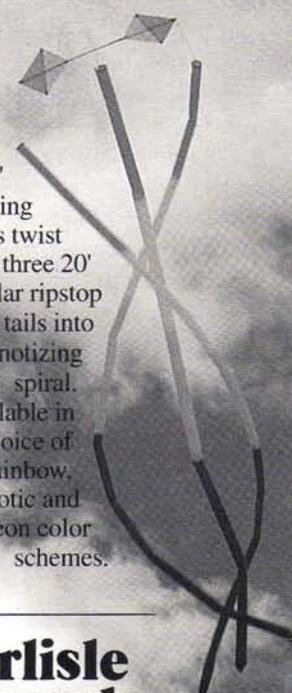
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WHAT'S NEW: BOOKS...Continued

of the photographs are horizontal and printed full size, so you often have to rotate the book 90 degrees. Organization is haphazard, going from a long dissertation on archaic methods of clicking the shutter to modern timers, then to methods of suspending the rig and radio control, and then to camera angle theory. The book's focus is confusing, and the level of detail varies widely.

In the preface, the authors refer to the vast reservoir of information available to them, but they say they're not going to publish it now—they want to wait and see if public response to *this* book warrants writing another one! This book would have been better if the authors had tapped the reservoir more heavily and left out the spite.

The other KAP book on the scene, *Photographie Aérienne avec Cerf-Volant*, is in French only and obviously self-published. Black and white with a color cover, it's more nuts and bolts with lots of amateur drawings and diagrams.

From its appearance, you don't expect as much from this book, but it has enough illustrations that you can get plenty of ideas, even if you don't know French. The text is perfunctory, although Becot often gives advantages and disadvantages when he gives a choice of solutions to a problem.

This book has an attractive cover, but the rest could really use the attention of a graphic designer. Curiously, all of the illustrations are grouped at the back, after the bibliography, rather than accompanying the text. A knowledgeable proofreader would have helped too: Silas J. Conyne's pride and joy is referred to throughout as "Conyme," which is original, at least.

Which of these books would I recommend to a beginner? Probably, Becot's, despite its homeliness and the language barrier. Advanced practitioners and former KAPWA readers might get something historical out of the de Beaufort/ Dusariez book, but the rest they've seen (and heard) before. —B.L.

A Pair about People

The World on a String: What's New, Who's News in Kiting by Ben Ruhe and Ali Fujino (Seattle, Drachen Design, 1993), softcover, 31 pages, \$5.00.

And *1991 Kite Pin Invitational* by Ben-

jamin Ruhe and Ali Fujino (Seattle, Drachen Foundation, 1995), 53 pages, \$5.00.

These two books are written and published by the same people and deal with the same subject, kite "personalities," with no overlapping of persons. A reader will want both books, even though they are really catalogs, because, as can happen with catalogs, they're good reading.

The World on a String was prepared for a traveling exhibition of 13 kitemakers organized for the World Kite Museum in Washington State by Drachen Design, Inc. (now the Drachen Foundation). The second book, *1991 Kite Pin Invitational*, was published (oddly in 1995) apparently to give permanence to the biographical sketches that accompanied a launching exhibit by Drachen Design of 24 kiter-designed pins.

Both the books are attractively designed if you regard them as advertising rather than literature. Does the content live up to the appearance? The human aspect in kiteflying is the focus and the writing has merit (but it needed more editing—there are mistakes).

Shortcomings exist. Only one or two kites per person are shown, and in mostly small pictures at that. Some of the full-page personal photos appear to have been enlarged from small originals; they are blurry and unworthy. The subjects themselves vary in impact, some of them coming forth with clear character (such as Pierre Fabre), others remaining distant and faint (such as Chen Zhao Ji). Rhapsodic generalities in the prose do not make up for this.

Nevertheless, these books and their related exhibits deserve credit for bestowing extra stature on kitefliers. —V.G.

Book Obituaries

❖ Great loss: *Phantastische Drachenwelt* by Wolfgang Schimmelpennig has gone out of print... ❖ TRAGIC loss: *The Penguin Book of Kites* by David Pelham has gone out of print. The great classic, called *The Bible* by John Spendlove, the foundation on which so many works (literature and kites) have grown—is gone. We have called the publisher and reached only the hardest of hearts. We are told that a "sponsored" reprint is possible (meaning, someone else pays for it, in large numbers). Let us pray. —V.G.

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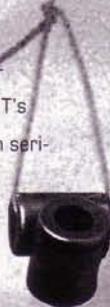
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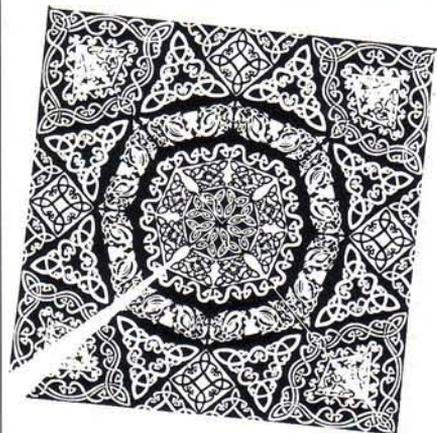
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Kite Fishing, Indonesian Style

Article and Photographs by Eiji Ohashi



Top, in the boat at right is Suhailin, 44. With him are Jamal, 25 and Jawito, 19. Below, a garfish is caught, one of about 80 they will catch today.

In Indonesia, kite fishing is simple and almost primitive. It is different from the dynamic kite fishing found in South Africa, where a fisherman can catch sharks by angling from dry land (*Kite Lines* Summer-Fall 1983). Kite fishermen in Indonesia do not fish for demonstration or as a hobby. They make their living by kite fishing, even today.

In August 1994 I went to the Lampung Kite Festival on Sumatra, an island in Indonesia. After the festival, Anshori Djausal, the president of the Lampung Kite Association,



took me to see kite fishing in the Lampung Bay. We went to a village called Lempasing, about one hour by car from the capital city of the Lampung province.

In Lempasing I was welcomed by three fishermen: Suhailin, his son Jawito and his brother-in-law Jamal. We took the boat out to fish and after a half hour on the sea, we arrived at the fishing ground.

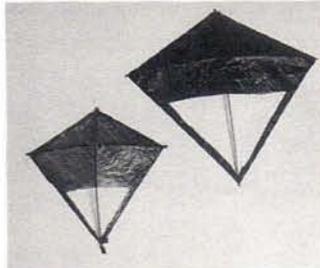
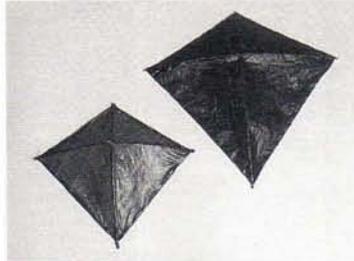
The kites used in fishing are two-stick diamonds made of bamboo and plastic. They come in two sizes, small and large. In light winds, Suhailin uses the large kites and in strong winds he uses the small kites. In very strong winds, he cuts away an aft portion of the sail, to adapt to the windspeed.

They catch garfish, a species which are always swimming at about 0.5–1 foot below the surface of the sea. So, it is important for the fishermen to keep the bait on the surface. This means the kite must be flown at a settled altitude each time. The garfish are too wary to be caught with an ordinary fishing rod. Besides, fishing rods can't keep the bait on the surface of the sea as easily as a rod attached to a kite and line.

The Lampung Kite Festival invited fliers from all over the world to their three-day event. Every morning of the festival, the association brought the guests to the seaside



Left, the kite is flown from a pole to secure the desired altitude. The fishers go out every morning, from 6:00 to 11:00, then they sell their fish to the canning factory. Right, a stamp of the British Indian Ocean Territory commemorates the tradition of kite fishing.



Left, two sizes of kites are used, large for light winds, small for strong winds. In very

heavy winds, Suhailin cuts the bottom of the kites' sails to adjust for the wind speed.

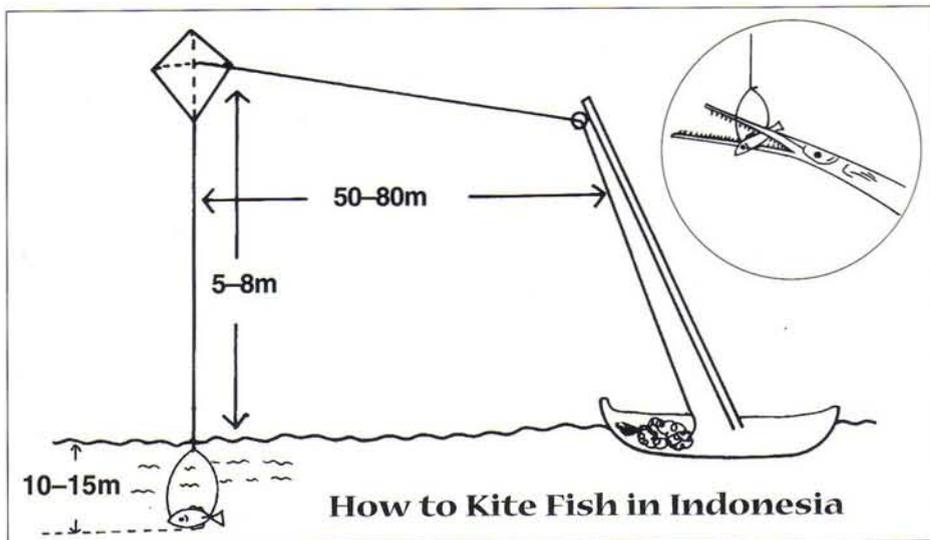
Below, a noose and bait trap the fish's nose.



to see kite fishing. Some of us kite-fished in the sea but because there were over 100 kitefliers and not so many boats, others watched on the shore. In future years, the association is planning their festival for July and will again bring kitefliers to participate in or watch the kite fishing.

In Lempasing village, there is no electricity, no telephones, no cars. Yet I think these kite fishermen are the happiest kitefliers in the world. ◇

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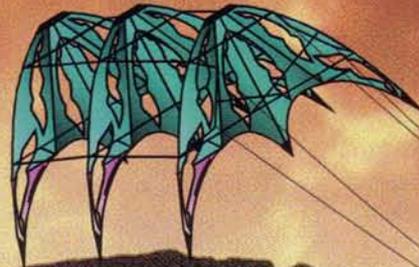
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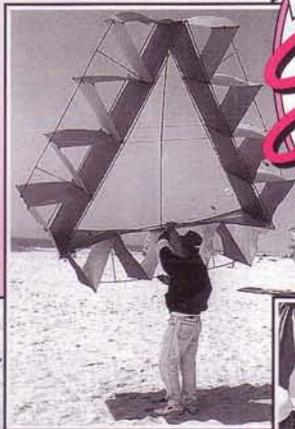
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This 10-day international festival on the north coast of France launches the new season in Europe in a big and beautiful way. Over 500 fliers came to Berck-sur-Mer this year to create a spectacle that drew and delighted huge crowds.

Berck is only a small seaside resort town but for 10 years now its office of tourism has supported first Michel Dusariez and then Gérard Clément in their organizing to create a festival which features first-class kites and kitefliers from around the globe.

It works. On a gray, overcast Easter Sunday, which was the culmination of the festival this year, it was estimated that over 200,000 spectators flooded the streets, beach and esplanade to fly and view the kites. I was thrilled, amazed and gratified to be part of this festival, and to entertain a crowd that seemed to have a substantial knowledge and appreciation for kites.

Berck (also called Berck-Plage) has turned kiteflying into a real spectator sport, emphasizing the extravagant display of everyone's greatest efforts and newest inventions.

French national television covered the event for their news and also assigned crews to make an hour-long special. French radio covered the festival live and I found myself being interviewed (speaking almost no French!) while I had an 18-foot delta up in a crowded sky, and a camera on another kite line held over the nearby rooftops.

For me as a kite aerial photographer, Berck is a mecca. The early pioneers of kite aerial photography—men such as Arthur Batut and Émile Wenz—often practiced and refined their techniques at Berck because of the wide open beach, good winds and great hospitality. It's 100 years later and nothing has changed. The beach is huge, the wind always present and I can't say enough

Commitment to Play

Kite Festival at Berck-sur-Mer

ARTICLE BY CRAIG M. WILSON
PHOTOGRAPHS BY CRAIG M. WILSON & DAVID GOMBERG



Top left, a grand Couronne (Crown) kite by France's dean of kiting, André Cassagnes (framed inside kite). Top right, a kite aerial photograph of the esplanade at Berck on a day with a lighter crowd. Above, when the whole beach at Berck comes alive it is as great a subject for kite aerial photography as any seen by Batut and Wenz 100 years ago.

good things about the food and the many new friends I made, especially the opportunity to meet and share with a dozen or so of the world's finest kite aerial photographers.

During a 10-day festival you would think

the planners would organize all sorts of competitions but thankfully there were few contests and no schedule of events to speak of. The only real exceptions were the opening weekend festivities which featured the

French national stunt kite competitions and a rokkaku "battle" with about 45 kites which was staged a few times during the festival. It was really not as much a battle as it was a demonstration to thrill the crowd.

A wide sidewalk and boulevard runs along the seawall. During the festival, the street is closed for the crowds to fill the area and watch. Most of the hotels are right on the street and you can see the kites from your window. Bistros and bars are on a lower level and extend under the boulevard. You can walk off the sand and into a restaurant for lunch. After a few hours of flying each morning, a lunch break is needed. As one might expect, in France you must take your time and enjoy your meals. So two hours later kiteflying resumes.



D.G.

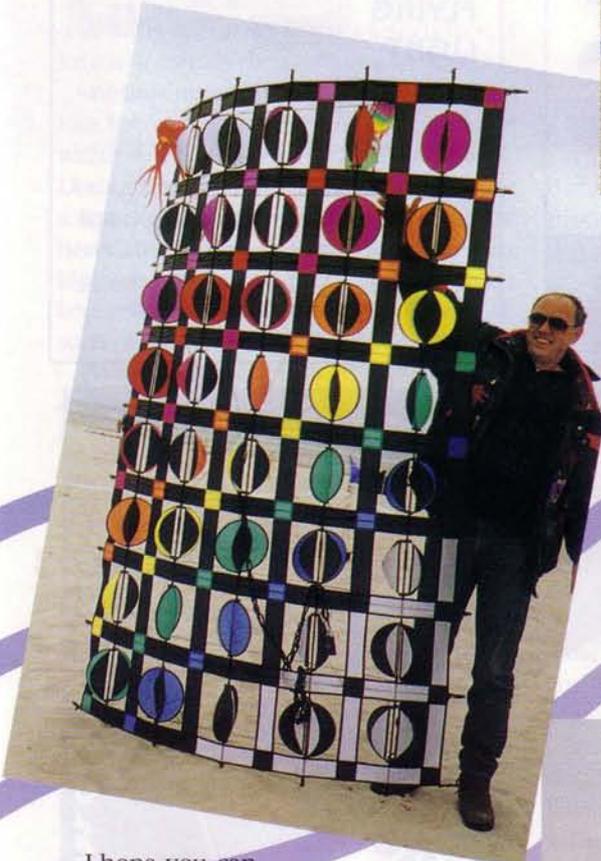


C.W.

erages, important decisions are made, such as which restaurant to try for dinner.

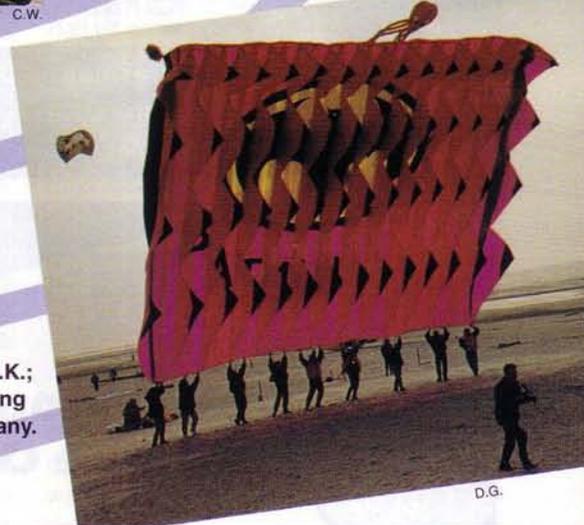
There is another reason why the festival seemed so special to me. This was the first time that my wife and children have joined me for a kite festival. In the past, taking a family vacation exclusively to fly kites and hang around my kiteflying friends was utterly out of the question. But the opportunity to go to France was just too good, too juicy for them to dodge. My two children, aged 8 and 9, told me at the end of the festival that it had been more fun than Disney World.

It is a testament to the quality of Berck that it was my wife Betsy shedding tears the last two days of the festival and on the way home. The experience of friendship at Berck was so moving that it strengthened our love for each other. Quite unexpectedly, my family came to appreciate, understand—and share in—my passion for kites.



D.G.

From top clockwise:
An amazing rolling and counter-rotating quad-line kite by Uwe Gryzbeck of Germany; a confab of kite aerial photographers Peter Van Erkel, Ralf Beutnagel and Wolfgang Bieck; launch of "the world's largest true parafoil," 13 meters wide, by Berliners Michael Rohr and Jürgen Haitenhof; inventive kites by Axel Kostros of Germany; terrestrial art: hedgehogs by Anne Harris of the U.K.; innovative Edo-style kite with winking eyes by Wolfgang Grimsel of Germany.



D.G.

I hope you can see what makes this festival such a success: that there isn't anything to compete for, that the participants are just fans of kiting who come from near and far to see what is new in the air, and that this relaxed atmosphere gives you plenty of time to get comfortable and be sociable.

The festival felt like a reward for a very good thing I must have done, maybe in a past life. By 6 o'clock, kites were being packed up and carried to the storage tent where the hospitality room for the kitefliers was located. There, over a few bev-



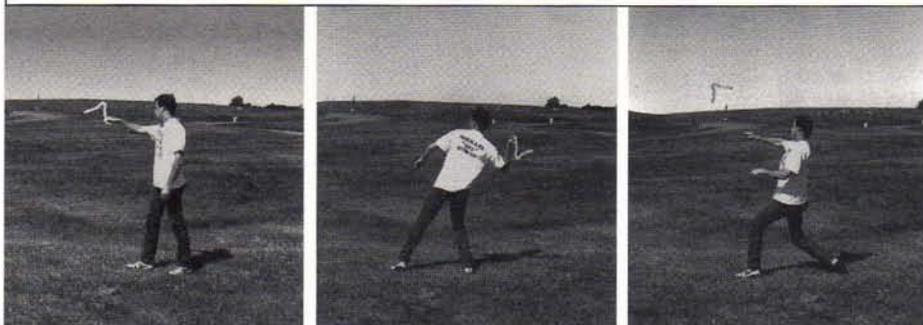
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Kitefliers and the Glow of St. Elmo's Fire

by Jan Fischer

illustration by George Peters

Saint Elmo's fire n. [*St. Elmo* (Erasmus) bishop and patron saint of sailors]: a flaming phenomenon sometimes seen in stormy weather at prominent points on an airplane or ship and on land that is of the nature of a brush discharge of electricity—called also *St. Elmo's light*.

...**B**ut from my own experience, I know it can also be seen on a kite line.

At the end of October 1992 I attended a kite festival in Lünen, Germany, and the weather was quite bad, with a lot of rain. During the nightfly on Saturday I was flying a Sanjo rokkaku kite with two toy panda bears attached at about 200 meters. This kite was a pilot for my night kite which bore reflective material and LEDs showing all sorts of light patterns.

When Ruud Bronnenberg's kite touched a spot on the line between my two kites, he felt a tickling feeling and at the intersection of the lines a vague glow began to emanate. The phenomenon repeated quickly on the line between the night kite and the rokkaku pilot kite, and with a soft sputtering sound it grew to a length of almost 50 mm (about 3 inches). Within moments there were about five spots on the line. When we saw the lights we decided to put our kites down. We soon discovered that the spots could only be removed by laying the lines down in the wet grass and then standing on them.

Many people don't believe this story, but Trees Verschoor, another kiteflier, told me this was St. Elmo's fire.

I was curious about this phenomenon and had many questions, so I did a bit of research.

Who is St. Elmo?

In ancient times St. Elmo's fire was called Castor and Pollux, because according to Greek legend it was seen for the first time on the head of the twin stars. During the Middle Ages it acquired its current name from the Italian bishop St. Elmo, the patron saint of Mediterranean seamen.

Actually, Elmo is a corruption of the name Erasmus. Legend says Erasmus died

during a severe storm at sea. In his last moments he promised to return and show himself to the crew if they survived the storm. After his death, the crew waited anxiously for a sign. Then a strange glowing light appeared at the masthead. It was Erasmus, fulfilling his promise to the crew and in their minds becoming their protector.

Since then, when sailors see St. Elmo's fire they generally interpret it as a sign that the worst of the storm is over and the crew will survive. Christopher Columbus is said to have cheered his mutinous crew on the long voyage to America by pointing to a glow at the masthead and predicting an end to their troubles. Ferdinand Magellan often wrote in his journal about the feelings of hope that the lights of St. Elmo inspired during times of danger. But sailors say if St. Elmo's fire comes down onto the ship's deck instead of the masts or rigging, this is an ominous sign of danger or death.

Another legend says Erasmus was a Syrian bishop in the early fourth century who died a martyr. His remains were honored in a small seaside village, Gaëta. Because the village was populated by fishermen and sailors, Erasmus was made patron saint of sailors. When superstitious sailors observed a glowing light at the masts of their ships, they assumed it was their patron saint, Erasmus, watching over them.

What is the "fire"?

St. Elmo's fire manifests as a vague glow, usually in tall objects such as masts, steeples and fences. It is normally present during

unstable weather conditions including rain, hail or snow and is most prevalent during thunderstorms. The flashes of light, which may become a few centimeters long, can be very lively and have a red, white, blue or violet color. Sometimes they are noticed as a mixture of small dancing flames, in some cases accompanied by a rustling or crackling noise that sounds like twigs burning. On other occasions the flames stand still and glow, and a tickling feeling can be felt.

Frequently, airplane pilots can see St. Elmo's fire along the frames of their windows and wings when they fly through charged clouds. They nickname it "the little ghost." Campers may also see it in mountain regions when thunderstorms are passing over high peaks.

When you see it for the first time, I'm sure you'll be startled, since the objects it touches often seem to be enveloped in the glowing light. Don't be frightened—St. Elmo's fire is typically innocent in nature, and not life-threatening as in the case of lightning. However, in certain situations St. Elmo's fire can be dangerous. Some believe it destroyed the German airship Hindenburg in 1937 by causing the hydrogen gas in the airship's balloon to explode.

Why does it happen?

St. Elmo's fire is an exchange of electrical charges—from a spot with too much charge to a spot with not enough charge. It doesn't come about by means of a spark, as in the case of lightning. With St. Elmo's fire the process is executed gently, through so-called glow discharges. These discharges are created

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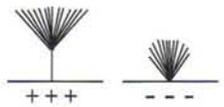
Quantities	Ready-to-Fly Kite	Fly-Me™ Paper Kite Kit
10 to 49	\$3.50 each	\$.50 each
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when the air's electrical field reaches some 10,000 volts per centimeter and the current is over 0.0001 amperes per square centimeter.



On the left, the positive discharge form; on the right the negative discharge form.

There are positive and negative discharges. Positive discharges are in the shape of a plume of light with fine beams on a stem, that are far apart and can be a few centimeters long. Negative discharges are settled on a bright point and are of a fragile structure, so that the limited beams cannot be distinguished. The plumes of light are always smaller than one centimeter and are separated a little.

St. Elmo's fire generally appears when the worst of a storm is over. Thus, the light appears because of glow discharges from the end of a storm—not because St. Elmo is looking out for the sailors' welfare.

Can it happen to kitefliers?

From this information, it seems probable. The lights of St. Elmo may be seen in the future by some kitefliers. If anyone else experiences St. Elmo's fire or already has tales to tell about it, please write to the author c/o *Kite Lines*, PO Box 466, Randallstown, MD 21133-0466, USA. ◇

This article was first published in Dutch in the journal of the *Tako Kichi Vliegerclub Noord-Holland*.

That Beautiful Windmill

Tales of St. Elmo's fire: A remarkable story comes from Mr. H. van der Wal of Friesland, the Netherlands:

In the winter of 1908, I worked on a farm that had a windmill. At about half past six I walked up to the mill. Suddenly I noticed I had sparks at my cap and they were increasing in number. On my eyebrows and fingertips were sparks as well. In the nearby woods I noticed the same phenomenon!

The tips of the trees were one sea of sparks. When I arrived at the mill I saw a startling scene: the windmill's sails turned quickly and were one rotating circle of sparks. A beautiful sight! It lasted for over 15 minutes. When I stopped at the mill, it was dry again. I remained miller at that mill for 40 years, but I never saw anything like that again.

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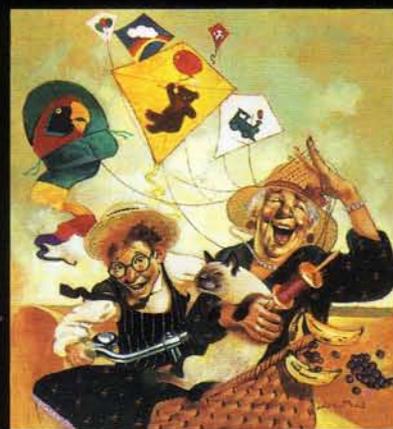
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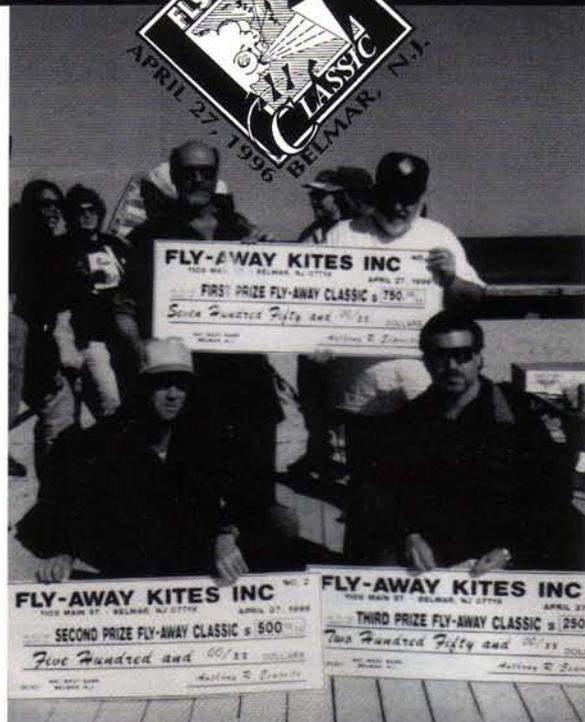
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(Top left to right) Rich Javens, Anthony Esposito
(bottom left to right) Doug Laubach and Lance Wagner.

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For kites who like to put on a big show, the festival in Fredrikstad will not be for them. That is exactly what makes it a particular charm, even an honor to be an invited guest for the occasion.

According to Truls Hansen, my host and one of the three founders of the festival, "Norwegians look for any excuse for a party. The kite festival is a good excuse."

Under sponsorship of the Arts and Culture Council of the city of Fredrikstad, the

dragefestival (kite festival) is organized by the wind art group called Free as the Breeze, consisting of three local sculptor/kites and their spouses: Truls Hansen & Solveig Letmoile, Terje Westfoss & Sofie Dessen and Egil Syversen & Tonje Kolle. They were joined by other kitefliers, dancers, musicians and writers.

The aim of the festival is not just to perform but to share, especially with families and most especially with children. Only

slightly "international," the festival's guest list has had an admittedly slow growth. According to Truls, the kites "...have to fit in your house, they have to want to have fun." No flashy displays are expected, just an integration into the fabric of a well-orchestrated "day in the park." The green and beautiful site is the island of Isegran, within Fredrikstad, in the scenic Oslo fjord.

Speaking of orchestration, music and dance are as important to the festival as



Opposite page: far left, Stefan Andersson of Göteborg, Sweden flies a paper and bamboo train based on a design by Eiji Ohashi.

Right top: Wind Art Group member Truls Hansen helps Poul Christoffersen of Copenhagen untangle his bannered flying line.

Right bottom: The famous Kite-of-Many-Colors by Terje Westfoss, Truls Hansen and Egil Syversen. It has evolved over 10 years and has never flown the same twice.

This page: left, the Borg Internasjonale Folkedansklubb performs a traditional folk dance.

Below left, kite magician and nose flautist Bengt Carling from Stockholm.

Below, the Luren Folkemusikkforum performs with zest.



w ♦ a ♦ y

kiteflying. The festival is a grand party—in the daytime for the children, and in the nighttime for the kitefliers and performers. This year it began with a parade through town on Friday and ended with a pseudo-solemn grand march on Sunday evening.

Most kite festivals seem to keep children and other spectators behind barriers to prevent their interfering with the kitefliers. At Isegran it's the opposite: the international guests are allowed to fly kites among the chil-

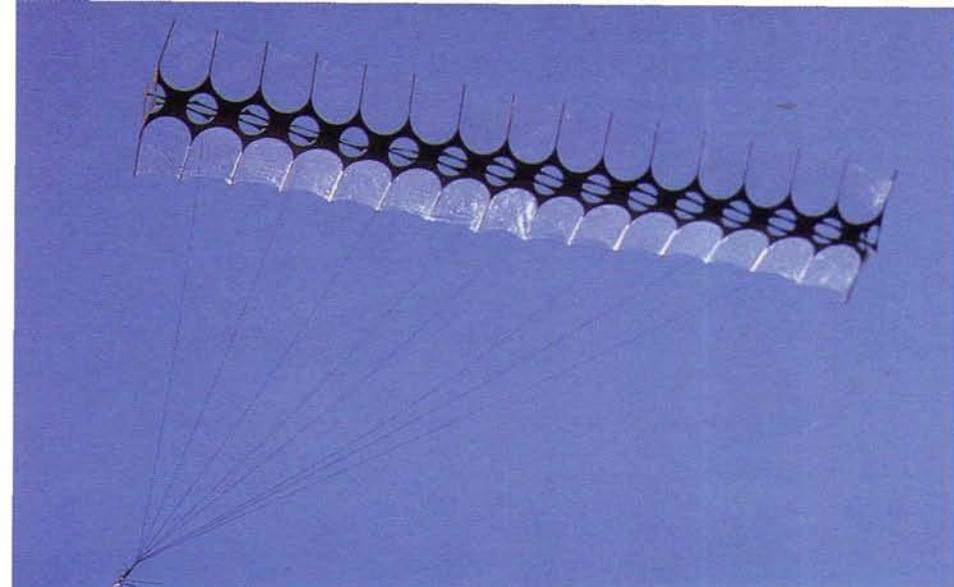
dren, so long as the guests don't interfere with the children's kiteflying. In addition, there is a kitemaking pavilion which this year was ably conducted by Tommelise and Feppe Pettersen, local art teachers.

In the casual atmosphere at Isegran, smaller kites are not just flown, but examined and applauded by an appreciative crowd.

Coming from Norwegian background, I was prepared to think well of the Nørsk;

Isegran Dragefestival
August 19–20, 1995
Fifth Annual
Fredrikstad, Norway

article & photographs
by Mel Govig



Clockwise from top left: A three-meter box kite of plastic, poster board and bamboo by Stefan Karlström of Sweden can be separated at the center and folded flat for transport.

Heidi Jansson and Eva Syversen pose with an Eddy kite decorated with the historic water wheel in Isegran Park.

Ketil Olav Sand of Norway taught students at a previous workshop to build Papuan-style fishing kites using paper in place of leaves. This kite is by Kari Waerum.

Stefan Andersson shows his sky-eyes kite of paper and bamboo while Terje Westfoss looks on.

I was unprepared for the uninhibited hospitality shown to me and the other international guests.

Perhaps it's something in the Scandinavian air or song and dance that puts everyone at their ease—and that's when the best kiteflying happens. ◇



Who Makes It Run?

In addition to the wind art group, Free as the Breeze, the following helped produce the Isegran Dragefestival:

Groups

- *Tara*, a traditional Irish folk music ensemble
- *Sisu*, a group of local drummers who play drums of four continents
- *Luren Folkemusikkforum*, a local folk music group with a repertoire from Basin Street to Berlin, Iceland to South Africa
- *Borg Internasjonale Folkedansklubb*, performing traditional folk dances, mostly from countries abutting the North Sea
- *Sturm & Drang*, a musical group performing across all cultures and eras for the Saturday night party

Individuals

- David Papuga, a Scotsman on bagpipes, and Eivor Langseth on the Alpine horn, who played "Amazing Grace" in different keys together
- Kjell Erik Vintron (Kev) of Norway, who read his poetry to the accompaniment of Bengt Carling of Sweden on nose flute, gong and flagellator
- Klaus Hagerup, Norwegian novelist, reading from his next novel, which includes kites
- Ketil Olav Sand, Norwegian kiter
- Claudio Capelli, Caterina Capelli and Pluto Bondi, kitefliers from Cervia, Italy
- Pea Hov of Fredrikstad, festival producer

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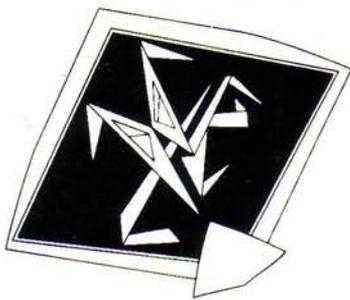
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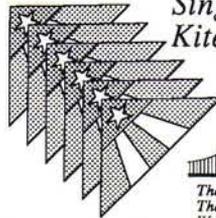


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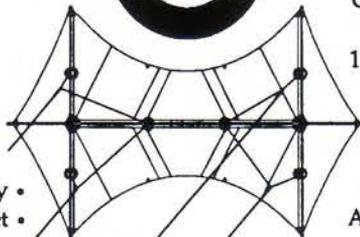
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Flip & Drill

1 "Flexi-Flip" Made Easy

From Glen E. Rothstein, Newhall, California: While flying my Flexifoil Prospeed 6+ with the Ultraflex spar, I decided to see what would happen if I tried a "feather." To my surprise and delight, it flipped! This method is much easier than grabbing the lines and pulling.

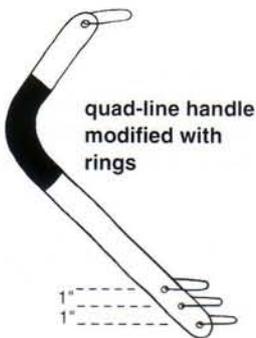
Here's how... With your arms down at your sides, bring the kite almost to the top of the window and fling your arms up like you're executing a feather. This works well up to about 8 mph. When the wind is higher, try it with the kite up around the 10 to 11 o'clock position of the window. Often you can get it to flip twice based on momentum.

Happy flying (and flipping)!

2 Just Adjust the Handle

From Norman Ferkin, Gloucester, England: I find that no two quad-line kites fly alike, so I often need to correct flying. The simplest way is not by altering the length of the top or bottom lines, but by modifying the handles. I just drilled two more holes into the handle and fitted them to move rings. It's surprising how this small adjustment can make a difference.

Also, to stop your larks-head knot from slipping and upsetting your bridle adjustments, just draw that part of the line across a piece of beeswax.



I assure you, it will stay put.

It Works for Me is your place to share your favorite kite hint or trick. Each published item earns your choice of (1) any book(s) from the Kite Lines Bookstore to a value of \$16 or (2) a one-year subscription or extension to *Kite Lines*. Send details, drawings and/or photographs to *Kite Lines*, P. O. Box 466, Randallstown, MD 21133-0466, USA, or fax 410-922-4262.

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SQUADRON
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POWER kites

A SURVEY of Traction Kites from the User-Friendly to the High-Performance

Kiters who discover the exhilaration of buggying, skiing, body surfing and skating behind today's large, powerful kites must first choose equipment.

And picking a traction kite is not an easy matter. How big should it be? Which kites are more controllable? Which require more skill to fly?

Don't expect simple answers. For five months our fearless team of kitefliers tested traction kites from diverse parts of the globe. We won't draw any conclusions for you. But we'll describe general features, unique attributes and significant strengths and weaknesses to make choosing your traction kite a bit easier.

Introducing the Team

By design, our intrepid team members ranged in traction kiting experience from novice to expert, in weight from 110 to 190 pounds, and in age from 37 to 49 years. No one on the team has any business connection with the kite industry.

Our contacts with kites outside of Manitoba, Canada are generally limited to e-mail, phone, and charge card. *Kite Lines* preferred our isolation for the test, and after giving us general guidelines, left us to our own devices.

Four members of the Manitoba Kite Flyers Association reviewed the kites:

- John Kaminski, principal dancer in the

Royal Winnipeg Ballet and a 20-year kiteflier, was brand new to traction kiting when he joined our team. John helped us understand the challenges facing new fliers.

- Sharon Musto, our newest kiting fanatic. She started flying stunts only a year ago, but is now passionately hooked on buggying, kite skiing, and parabear dropping. Sometimes known as the "Den Mother" because of her interest in ursine kiting creatures, Sharon's small physical size and keen eye provided important balance for our opinions.

- Ken Ruhr, hairstylist shop-owner, another 20-year kiteflier, is accomplished in all forms of kiting. Ken was hooked on being tugged around by stacked kites well before any of us heard of a buggy. His skill and opinions are respected.

- And me, Jim Welsh, professor of Educational Technology at the University of Manitoba and committed kiting kook. Ken calls me "Jim-Too-Many-Kites." I served as team leader.

We started out with a fifth veteran flier, but for personal reasons he was unable to complete the testing program. Beyond this group we had numerous supportive friends and spouses who assisted us, and who, for want of space, must remain nameless. We thank them all.

Article by Jim Welsh

Photographs by Jim Welsh & Sharon Musto

How We Did the Tests

We focused on soft, sparless kites because they're used the most by traction kites. While our fantasy was to cover every single traction kite made anywhere, we soon realized that there had to be limits. We tried to include a representative midsize kite from every maker. We think our final collection represents a good balance between the wide range of types available and obtainability.

For the tests of quad-line kites, we prepared four identical sets of flying lines. The power lines were 300 lb-test, the brake lines were 200 lbs, and the line length was 70 ft. For the dual-line kites we set up line sets of 75, 100, 125 and 150 ft. We began by selecting a kite (the Skytiger) as the standard against which others were assessed.

We flew the kites both on foot and from buggies. Some but not all the kites were later assessed on skis. Wind conditions ranged from smooth as silk to dangerously gusty. We tested kites below and above their recommended wind ranges. Zero wind flights were not uncommon. Flights with some kites were attempted in winds over 40 mph—a painful error in judgment.

Every kite was flown several times by each team member. Between flights we compared perceptions. Each kite was reflown until we reached a consensus.

Our Two Basic Classes

We loosely categorized traction kites as:

- user-friendly (relatively easy to control and having enough power for traction activities), and
- high-performance (requiring more skill to fly and generating more power).

Manufacturers who produce both types of kites urge that traction kiting skills be learned on the user-friendly models. They also suggest that accomplished fliers who want to add a kiting element to a sport in which they are weak (for example, skiing) are better served by the user-friendly kites.

Remember: BE CAREFUL!

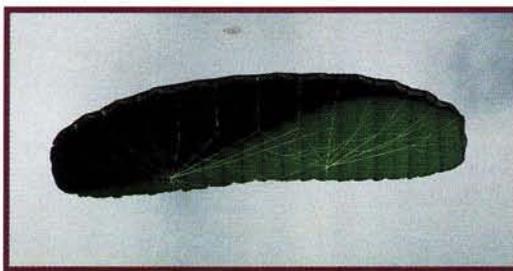
All the manufacturers and distributors I talked to stressed the need for safety in traction kiting. Neophytes should learn to fly well on small kites before trying out larger ones and engaging in traction activities. Of course, use common sense: wear safety equipment, shun strong or gusty winds, avoid power lines, respect others and (always) **underestimate your ability.**

The makers also remind readers that kites of the sizes we tested are designed to create power, not to fly in circles and squares. Buyers primarily interested in circles and squares are better served by different kites.

—J.W.



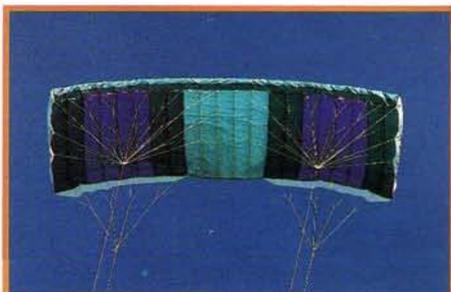
Parawing with control bar



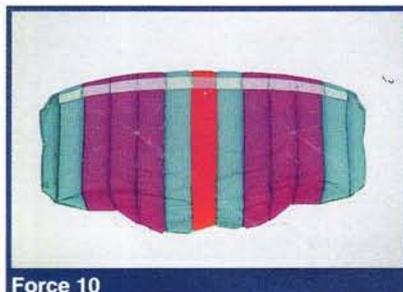
Peel Standard



Wild Wing



Skytiger



Force 10

How the Kites Work

The most obvious difference in the kites we tested was the number of lines they use. At present, traction kites have either two lines (dual-line) or four (quad-line) with accordingly different characteristics. (The Parawing, which has a control bar instead of handles, is a special case and our comments on it are reserved for its own review.)

Dual-line traction kites

- The hand and arm movements that control dual-liners are similar to those used for regular dual-line stunt kites. However, traction kites generally require longer arm movements to induce turns and are slower in responding.

- Fliers of dual-line traction kites often own several line sets between 75–150 ft and longer. Typically the short lines are used in high winds and the long lines in light winds.

- Longer lines keep a kite in the power zone longer and provide the large flying space needed for sweeping turns. Long lines work well in wide open spaces, but are a liability where space is limited. They can also be a challenge if the wind is strong or turbulent.

- A dual-liner that crashes may be impossible to relaunch without first walking to the kite and straightening it out.

- Often, kitefliers report that long-distance buggying with a dual-liner is more relaxing than it is with a quad-liner.

Quad-line traction kites

- Quad-liners perform best when flown using a combination of arm movements and wrist rotations. Arm movements cause slow,

wide turns and side slides; wrist rotations cause more rapid turns. Rapid turns are important—they increase mobility and can get you out of trouble quickly.

- Generally, quad-liners are flown on lines between 50–75 ft. As with their dual-line counterparts, large quad-line kites benefit from longer lines in light winds.

- Quad-liners are more controllable than dual-liners. They turn more rapidly and can be held in any position in the wind window and, except in extreme conditions, they can be landed anywhere within it. They can be kept on the ground by holding the brake lines back and can be launched and relaunched with a simple tug on the lines.

- Most of today's growth and innovation in traction kites is in soft quad-liners. In 1989, the Quadrifoil 25 began the parade of the "bags." Interestingly, the Quadrifoil 25 is more like the new kites of the last year than the kites that were introduced in earlier days (1989–1994).

Trends in Traction Kites

Semi-elliptical shapes

If you lay a Quadrifoil 25 on its back, its leading and trailing edges are semi-elliptical in shape so its wingtips are not as wide as the body of the kite, and because its back surface is larger than its front, it doesn't lie flat. Many kites that followed the Quadrifoil 25 were flat with straight edges. Ted Dougherty, the designer of the Quadrifoil 25, says the move to a flat, rectangular design was a production decision—such kites were easier to manufacture. But with that decision came a less aerodynamic kite. Now, manufacturers are focusing on improving performance. Current kites are not

flat, they have curved or semi-elliptical leading and trailing edges, and their wingtips are rounder and shorter in chord than the rest of the the kite.

High aspect ratios

The new kites are wider in span and shorter in chord than their predecessors. This change produces a more powerful kite.

Cross-cell venting

Almost all of the current crop of traction kites share the cross-cell venting design feature, namely holes in the partitions that separate the cells. Air entering one cell can move into adjacent cells. When wind direction and force are variable, cross venting assists in maintaining inflation, and therefore power. Cross venting is also valuable at the edge of the wind window and in light wind conditions where luffing (deflating of the kite in midair) can be a problem.

The Kites

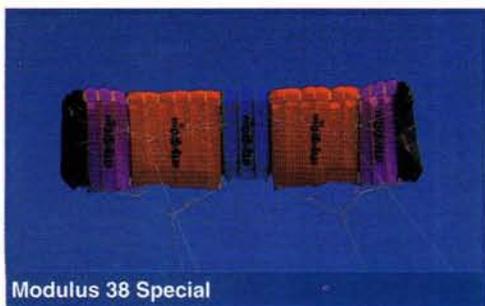
DUAL-LINE KITES

The Peel

Designed by Peter Lynn of New Zealand specifically to haul buggies and boats, the Peel takes a prominent role in today's traction kiting. Those who fly a Peel respect the smooth power generated throughout its wind envelope.

We flew a 5 sq m standard Peel on lines between 75–150 ft and immediately noticed that the long lines preferred by a Peel require large flying fields. Because of the long lines the Peel is in the power zone a long time, so if you get into trouble, let go—we recommend quick release handles (sometimes called "dead-man release" handles). Since the Peel is such a wide

(Note: The Modulus is shown incorrectly bridled but was tested correctly bridled.)



Modulus 38 Special



Traction 3M



Quadrifoil Q4



Quadrifoil Competition C2



Quad-Trac 5



Quad-Trac Pro Foil 3

kite, its turning radius is large. So too are the long arm movements needed for tight turns—we routinely found ourselves with one of our arms fully extended and our other arm's hand hovering beside our ear. Discovering when to initiate turns to avoid luffing at the edge of the wind window took some time.

Bugging with the Peel was a straightforward matter. We easily mastered the figure-eight maneuver used to generate forward speed. Long reaches were relaxing affairs. We soon learned to plan and initiate turns earlier than we did with the quad-liners. Quick maneuvers remained a challenge.

We enjoyed the Peel most in clean wind, but were frustrated in gusty conditions and varying wind direction. Partly because of our own limitations, the Peel routinely luffed. When it did, we were usually unable to relaunch it from our buggies. Also when it collapsed, its wingtips frequently folded into its complex bridle and created a bit of a mess.

We noted that the Peel lacks cross-cell vents and we wondered if adding them would reduce luffing problems. The Peel remains a competitive kite.

The Wild Wing

Greens of Burnley in the United Kingdom manufactures a variety of sky toys and kites, including its entry in the traction kiting marketplace, the Wild Wing.

The Wild Wing 300 is cross-cell vented and has wingtips much shorter in chord than the body of the kite. Consequently, it turns quickly and is fairly stable in turbulence and at the edges of the wind window. Normal steering movements turned the Wild Wing on its bridle points. The Wild Wing accelerated rapidly and surprised us with its speed.

We flew the Wild Wing on test lines

between 75–150 ft. On short lines we appreciated its tight turning radius. On longer lines it enjoyed a broad power zone. Discovering the extent of the Wild Wing's wind window and learning when to initiate turns to avoid window edge problems took very little time.

At only 3 sq m, the Wild Wing's suitability for bugging on grass was a question for us. As it turned out, our concerns were unwarranted. Once the winds picked up, power was more than adequate. The stated wind range of 15 to 25 mph for a 155-lb kiteflier bugging on grass is reasonable.

The Wild Wing is easy to control and predictable. Its flying characteristics are unique—it pulls like a traction kite but responds more like a dual-line stunter.

QUAD-LINE KITES

The Force 10

Force 10's current traction kite, made in Israel, has a new shape (more oval than rectangular), and new handles. Its trailing edge has a tighter curve than its leading edge. The Force 10 is more than twice as wide at its center as at its wingtips. It is also thickest at its center, and it tapers progressively toward its wingtips, where it is only as thick as the overlapped seam that connects its back and front skins. The Force 10's wingtip cells are closed at the leading edge and are inflated through cross-cell venting. The bridle lines are sewn rather than tied.

The Force 10 handles are longer than most. Unlike others, their tops are right angle elbows which point toward the kite. The top lines project through the open ends of the elbows. As a result of this structure, placing a finger above the power line is not possible. Loops of line at the tops of the handles are provided for attaching harness lines. The loops may also be used to peg the kite to the

ground, provided it has been landed upside down.

The Force 10 accelerates more quickly and powerfully than average and is quite responsive. It performs well in all parts of the wind window. The right touch turns it on its bridle points, although longer radius turns are more the norm. The Force 10 reacts best to short arm movements—adding large wrist rotations requires great effort and does not dramatically increase turning speed. At first blush we feared that this might be a liability, but in our traction activities it was not.

The Force 10 is both predictable and stable, and consequently requires little attention while in the air. Veteran traction kites will readily master the flying requirements and responses of the Force 10. New traction pilots who have experience with stunt kites will also have no trouble getting used to this user-friendly kite.

The Modulus

The Modulus by Spider Traction and Power Kites in Wales is not just a kite—it's a complete traction system. The 38 Special model we tested came complete with lines, handles, a sand or snow stake, a ground stake and a storage bag. The storage bag is designed to be opened from either end and has separate compartments for each component. Clips and pull ties that come with the bag attach it to the back of a buggy.

The unique feature of the 38 Special is that its size can be adjusted from 1.3 sq m to 3.8 sq m at intervals of .3 or .5 sq m by zipping in modules. Our test kite came with an optional bridled mini module that brought it up to 4.3 sq m. Module zippers are located on the front and back surfaces of both sides of each module. They extend from the leading edge most of the way back to the trailing edge. Some modules have bridle lines that also must be con-

Kite/ Manufacturer	Sail Area	Width/ Height	Lines	Recom. Line Length	Line Weight, Power/Brake	Wind Range†	Sail Material	Skill Level	List Price**
Force 10 4m Force 10 Power Kites	43.1 sq ft (4 sq m)	9.9 ft/max- 5.3 ft*	quad	75 ft	300-lb/150-lb	10-25	Carrington K42 ripstop nylon	user-friendly	\$650
Modulus 38 Special Spider Traction & Power Kites	13.9-40.9 sq ft (1.3-3.8 sq m)	in modules to 12.5 ft/3.3 ft	quad	70ft. Dyneema supplied	300-lb	12-60	Carrington K42 & Dimension ripstop	user-friendly/ high-performance	\$600 delivered
Parawing International Parawing Club	42 sq ft (4 sq m)	5 ft/8.5 ft	special	18.5 ft* supplied	supplied	12-20	Carrington K42 ripstop nylon	user-friendly	\$350
Parawing International Parawing Club	85 sq ft* (7.9 sq m)	5.8 ft/14.7 ft*	special	26 ft* supplied	supplied	10-20	Carrington K42 ripstop nylon	user-friendly	\$633
Peel Standard Peter Lynn International	53 sq ft (5 sq m)	16.7 ft/3.9 ft	dual	125 ft	300-lb	8-20	.75 oz ripstop nylon	high-performance	\$550
Quadrifoil Competition C2 Active People, Inc.	45 sq ft (4.2 sq m)	13.3 ft/3.87 ft	quad	50-100 ft	300-lb+ /200-lb+	4-20	Skytex Porcher (nylon)	high-performance	\$545
Quadrifoil Q4 Active People, Inc.	42 sq ft (3.9 sq m)	9.5 ft/4.43 ft	quad	30-100 ft	300-lb+/200-lb+	5-30	Carrington K42 ripstop nylon	user-friendly	\$332
Quad-Trac 5 Mile-High Kite Co.	53.8 sq ft (5 sq m)	10.17 ft/max- 5.75 ft	quad	80 ft	250-lb	3-30	.75 oz ripstop nylon	user-friendly	\$479
Quad-Trac Pro Foil 3 Mile-High Kite Co.	32.3 sq ft (3 sq m)	10 ft/max- 3.5 ft	quad	80 ft	250-lb	2-20	.5 oz polyester	high-performance	\$429
Skytiger Hi 40 3/4 oz Cobra Kites	40 sq ft (3.7 sq m)	12.25 ft/3.5 ft	quad	50-80 ft	250-300-lb/ 150-200-lb	3-20	.75 oz ripstop nylon	high-performance	\$495
Skytiger Hi 40 Icarex Cobra Kites	40 sq ft (3.7 sq m)	12.25 ft/3.5 ft	quad	50-80 ft	250-300-lb/ 150-200-lb	2-20	.6 oz Icarex	high performance	\$569
Traction 3M Concept Air	32.3 sq ft (3 sq m)	8.8 ft/3.8 ft*	quad	75 ft sheathed Dyneema supplied	330-lb/220-lb	12-25	.75 oz Bainbridge ripstop nylon	user-friendly	\$410
Traction 4.5M Concept Air	48.4 sq ft (4.5 sq m)	10.9 ft/4.3 ft*	quad	75 ft sheathed Dyneema supplied	330-lb/220-lb	9-25	.75 oz Bainbridge ripstop nylon	user-friendly	\$480
Wild Wing 300 Greens of Burnley	32.3 sq ft (3 sq m)	9.83 ft/4.25 ft*	dual	80-125 ft	300-lb	15-25	Carrington K42 ripstop nylon	user-friendly	\$264

*measurements supplied by the reviewers **suggested retail price in US currency †measurements in mph, supplied by manufacturers

nected. The modules are not cross-cell vented.

The Modulus kite allows a kiteflier to match kite size to wind conditions. Note that as modules are added, not only does the size of the kite increase, but also its aspect ratio. These increases combine to enhance the performance of the 38 Special. The downside of zipper construction is the heavier weight of the kite.

In strong and steady wind, the 38 Special maintained its shape and performed well. Acceleration and power were good, particularly when all modules were in place. In heavy wind we could easily land it in the center of the wind window. The 38 Special turned well when wrist rotations were used, but accorded if we combined them with excessive arm movements.

As could be expected, in variable winds that were near its posted bottom end of 12 mph, the 38 Special's performance dropped off. Gusts produced some accorded, and the kite was vulnerable to luffing.

In general, the Modulus fits our criteria for a user-friendly kite. Note, however, that when it is flown in high wind in its high aspect configuration, it is a high-performance kite.

The 38 Special lists its top end at 60 mph. We interpret this to mean that the kite can survive that wind, not that traction kites should be out in it.

The handles that came with the 38 Special have two noteworthy features. First, the section that extends above the top line connector is about an inch longer than in conventional

handles. Serving as a lever, the extension increases the mechanical advantage of thumb pressure used for turning. Second, the bottom line connector comes out of both sides of the handle rather than the front. The segment of the connector nearest the handle is a loop sleeved with vinyl for abrasion resistance. Hanging the handles by their loops over a ground stake or the foot peg of a buggy keeps the Modulus on the ground.

The self-contained Modulus is an innovative system. Kitefliers in high wind areas can use the 38 Special's modular construction to their benefit. Fliers in low wind areas could make another choice.

The Skytiger

Skytiger is manufactured in Canada by Tail Spin Kites for Cobra Kites in the USA. When the Skytiger Hi40 model was introduced, quad-line traction kites saw firsthand the increased power of a kite with a high aspect ratio.

The Skytiger uses trailing edge control flaps to improve turning response. While other kites are controlled through lines connected directly to the trailing edge of the kite, the Hi40 is maneuvered using two flaps attached aft of the inflated portion of the foil. The design is effective: wrist turns are easily initiated under all wind conditions and the Hi40 responds quickly and surely to all commands. We found it stable in all parts of the wind window and noticed that it traveled further around the edge than most other kites. At the window edge, espe-

cially in gusty wind, a light hand was an asset.

New kitefliers who purchase a Skytiger will be pleased with the clarity of the assembly and flying instructions that come with it. Fliers of more conventionally shaped kites who try the Hi40 may be surprised by its power and may need to sharpen their flying skills to manage its responsiveness.

We compared a Hi40 made of .75-oz nylon to one constructed of .6-oz polyester (Icarex). Did the lighter, more expensive fabric make a difference? Yes, the lighter kite did perform better when we were standing and flying in minimal winds, but when we were buggying on grass in low wind, the effective difference was small. Further, in medium to high wind, on our grass buggying field, we saw no difference. Repeating the test on a smooth concrete surface might have produced different results. Unfortunately no such surface was available to us, so the question is only partly resolved.

Regardless of fabric, the Skytiger Hi40 is a powerful, responsive performer.

The Traction

The Traction is manufactured by Concept Air of Quebec, Canada. It comes with a set of 75-ft sheathed Dyneema lines. (Dyneema is a fiber licensed as Spectra in the US.) The sheathing increases abrasion resistance, a useful attribute in traction settings. Sheathing also increases line drag considerably, a factor reflected in the Traction's recommended wind range. →

We tested a 3 sq m and a 4.5 sq m Traction kite. The kites came with lines and handles attached and flew without adjustment right out of the bag. Forward speed and pull were adequate and the kites tracked straight and responded predictably, although slowly. In high winds we wished they flew closer to the edge of the wind window than they did.

While most other kites are bridled at each cell, Traction kites are bridled at every other cell. As a consequence, they accordion in hard turns. This adversely affects their turn rate.

At about 20 inches, the Traction's handles were the longest handles we tested, by several inches. The power lines are connected about 1½ inches below the tops of the handles, about an inch lower than most other handles. This extra inch of handle was useful since thumb pressure applied to it provided extra torque for handle rotation. However, the extra length on the lower end of the handle required greater wrist strength to induce tight turns. In medium to heavy winds, wrist rotation turns were impossible. One option is to use the handles with a chest harness so control movements involve pulling on the bottom of the handles rather than rotating them. But this practice can present problems in gusty high-wind conditions.

In addition to their functional limitations, the Traction's handles are not cosmetically appealing—they're wrapped in colored tape and lack end caps. Concept Air is presently reviewing the design of the handles.

A member of our user-friendly group of kites, we found the Traction functional in straight flight, but ponderous in turns. Flying it without a chest harness was difficult.

THE QUADRIFOIL FAMILY

A product of Active People Group, located in Canada (Active People, Inc.), Germany and Switzerland (der Spieler), and Portugal (Papa-gaios de Monchique), the Quadrifoil is one of the senior statesmen of the traction kite industry. We flew one of the company's mainstays, the Q4, and its newer high performance kite, the Competition C2.

The Quadrifoil Q4

Designed by Ted Dougherty and originally an American product, the new Quadrifoils are shaped more aerodynamically than their predecessors, and use cross-cell venting to facilitate and maintain inflation.

The Q4 flew easily and comfortably, and responded well to commands. We were able to spin it on its center with no trouble at all. Power and speed were about average. Acceleration in gusty winds produced a smooth increase in power.

The Q4s currently being manufactured are slightly different from the one we tested and

those you may still find on dealers' shelves. The adjustment knots on the brake lines of the newest kites are closer to the kite than in older stock. To make the kite that we received fly properly I had to connect its brake lines about 15 inches above the existing adjustment knots. You may need to do the same.

The Quadrifoil Q4 is a user-friendly kite that traction kites will continue to enjoy.

The Quadrifoil Competition C2

The Quadrifoil Competition C2 is designed by Robert Graham, a leading designer of paragliders. It comes in a heavy-duty sports bag that conveniently attaches to the back of Peter Lynn buggies or their derivatives.

The Competition is wing-shaped and boasts an innovative bridle system. From a distance it appears that the power and brake lines are connected. In fact, the trailing edge bridle line passes through a metal ring connected to the leading edge bridle line near the point where flight lines are attached. The flying handles are

only about eight inches long, so the lines for each handle run almost parallel to one another. The consequences of this unique system are that little of the power of the kite is felt through the brake lines, and less wrist effort is required to induce turns on the Competition than on any other kite we tested.

The Competition's power and acceleration are extraordinary. On the other hand, its delicate trim makes it challenging to fly. In hard turns the Competition behaves like a stunt kite with oversteer, so compensating hand movements must be made. In the beginning, all of us struggled to master the delicate touch and very short steering movements required to control it. Later, as our skills improved, we were increasingly impressed by its responsiveness and rapid turns. Like other high-aspect-ratio kites, the Competition is vulnerable to luffing. However, good fliers will develop the feel needed to minimize the problem.

Because of the extreme power generated by the Competition, we usually found ourselves

TED DOUGHERTY Key Inventor in

If it weren't for the work of former Army parachute designer Ted Dougherty, who used his military experience to design the quad-line parafoil, traction kiting as we know it might not exist.

Today the designs of the 34-year-old inventor can be seen in the hands of thousands of kites around the world. Fourteen of his parafoil designs, in series from the Quadrifoil to the Quad-Trac to the Pro-Foil, are currently available. They have made Dougherty a prime force in today's traction kiting scene.

It began in 1984 when Dougherty made a parafoil and flew it as a kite on three lines. It was the start of his idea that he could control a kite with extra lines. Again, in 1986, while working as a master parachute rigger for the U.S. Army, the lightning bolt of inspiration came during a routine parachute drop. Recovering the chute, Dougherty used it as a "quad-line" kite after jumping.

After leaving the Army in 1986, Dougherty began to push the envelope in kite design. He broke the world record for largest stunt kite first in Ocean City, Maryland in September 1988 with a 460-sq-ft quad-line parafoil, and then again in

September 1990 with a 760-sq-ft dual-line parafoil. Among other early honors, he won the Kite Trade Association's award for Best New Kite in 1993. Early in 1994, he patented several improvements to the design and controls of stunt parafoils.

Before Dougherty's kites became available, traction kiting was done mostly with conventional dual-line kites, which are much harder to relaunch and don't have nearly the power of parafoils.

Dougherty's sparless quad-liner was built upon the heritage of the parafoil, invented by Domina Jalbert in 1964. But starting from parachutes, Dougherty realized there were problems with their construction which kept them from being good kites.

The material problems were easy to fix, but the design questions were more challenging. "There's a fine line between what's going to work and what's not."

The position of the maximum thickness of the wing is critical. Dougherty went through the entire NACA (National Advisory Council on Aerodynamics) source book of aerodynamic shapes page by page until he settled on two shapes which he figured would be "awful for parachutes but great for kites."



Ted Dougherty at ease.

flying with our index fingers above the top lines on the handles. Experienced quad kitefliers know that this position allows them to handle more power as it moves the direction of pull in the power lines closer to the alignment of the muscles and bones of the forearm. The drawback of this finger position was that during hard turns our index fingers were pinched by the power lines. Because the finger-above technique became the normal way we flew the Competition, I designed a replacement set of handles that resolved the problems.

You don't need a new set of handles to fly the Competition, but you do need to be an experienced kiteflier to control it.

Variations from Mile High

The Quad-Trac and Quad-Trac Pro Foil are more recent designs by Ted Dougherty. They are currently made by the Mile High Kite Company (formerly Skynasaur) in Colorado and employ what Dougherty calls a Variable Cam-

ber System, a bridle adjustment system that can facilitate low-wind flying or reduce pull in high wind. In practice, the system worked as advertised. We tested a Quad-Trac 5 and a Quad-Trac Pro Foil 3.

The Quad-Trac 5

This Quad-Trac 5 has a curved, semi-elliptical form that results in a responsive, easy-to-control kite. Stable in the air, the Quad-Trac handles well in all parts of the wind window. It accelerates quickly and is comfortable to fly.

Adjustment knots on the Quad-Trac's brake lines are not pre-tied; instructions direct the kiteflier to tie knots at the marks on them. This forces the kiteflier to think about bridle adjustment. Unfortunately, the marks on the bridle of our test kite were about a foot further from the kite than they had to be for the kite to fly properly. We suggest that if you discover that you have no tension on your brake lines, two-line the kite to the ground and tie some new knots nearer to the kite.

Overall, the Quad-Trac 5 is a user-friendly kite with a semi-elliptical shape that gives it a performance edge.

The Quad-Trac Pro Foil 3

Made of .5-oz polyester, the Quad-Trac Pro Foil was Ted Dougherty's newest traction kite at review time. At 3 sq m, the quad-lined Pro Foil 3 was the smallest quad-line we tested.

The Pro Foil combines a high aspect ratio with a semi-elliptical shape and cross-cell venting. The result is a powerful kite that accelerates rapidly and smoothly and turns quickly. The Pro Foil tracks well and is stable in all parts of the wind window. It can be controlled by wrist rotations even in heavy winds.

Our only disappointment with the Pro Foil was that none of the bridles were trimmed or sealed. This left the kite looking unfinished.

The Quad-Trac Pro Foil 3 is a user-friendly high-performance traction kite. It easily outperformed kites of similar size but more traditional shape that we matched it up against. →

Traction Kiting

Using one of these designs, he made a parafoil which, according to Dougherty, "worked wonderfully as a quad kite. However, as a dual-line kite it didn't turn well and would often tuck nose under." Rather than trying a quad-line design with his first wing shape, which would have been a radical idea at the time, he shelved the initial design and pursued the second wing form. With it, Dougherty eventually created a parafoil which performed well as both a dual- and quad-line stunter. Excited with his discovery, Dougherty started making kites for his friends and in 1988 he started his own company, Sparless Stunters, which became Kite Innovations in 1989.

In the same year, Revolution Enterprises released the first rigid quad-line kite. Its success prompted Dougherty to produce his own soft quad-liners, which launched a trend in modern traction kiting.

In designing kites, Dougherty deals with two major trade-offs in tackling the problem of induced drag. In each case, drag can only be reduced at the expense of performance.

One trade-off concerns the cross-section of the foil. If the foil is thick, you can get a lot of lift, but also a lot of drag; if it's thin, the drag decreases along with the lift.

The second trade-off is the aspect ratio, which is the kite's width (or span) in ratio to its length (or chord). As you lower the aspect ratio, the kite turns faster but the drag increases (in proportion to the kite's area). The reverse is also true.

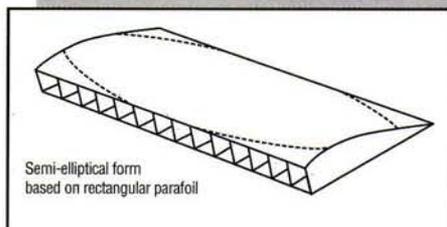
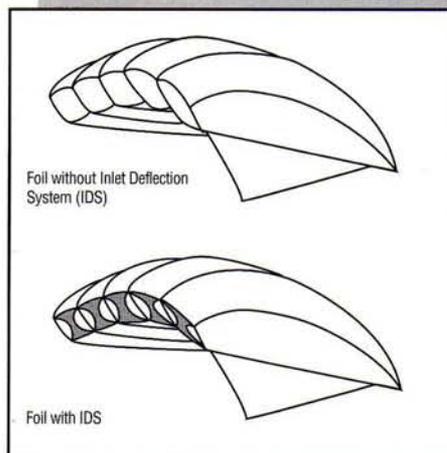
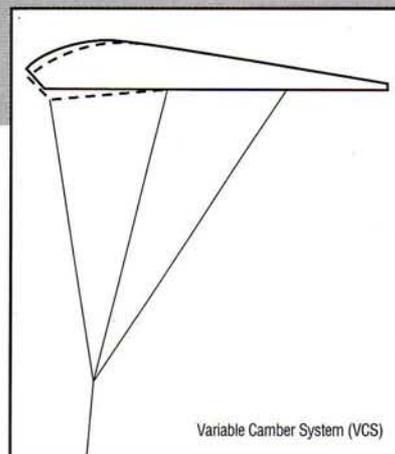
Another form of induced drag is created by wing-tip vortices, which are the streams of air rolling off the ends of the foils. Inspired by the wing designs of the British Spitfire and Japanese Zero, Dougherty turned the parafoil wing from a rectangle into a semi-ellipse.

Early in 1994, Dougherty improved the design of his parafoils by the introduction of the variable camber system, or VCS, and the inlet deflection system, or IDS, both of his invention. The VCS allows the flier, through simple adjustments on the bridle, to alter the shape of the cross-section and change the parafoil's lift and penetration to suit the wind.

The IDS is an hourglass-shaped piece of fabric sewn into the mouth of each cell along the parafoil's leading edge. This piece of fabric ensures that the mouth will inflate into a rectangular shape rather than an oval shape which compromises the kite's aerodynamics. Some kite manufacturers sew mesh into the mouths, but the mesh often traps sand inside. The IDS supports the shape of the mouth while allowing wind and sand to freely exit.

What's next for Ted Dougherty? He is now working on several new projects but is not yet willing to divulge any details. This bright light in the kite world is not resting on his laurels. We can expect to see his contributions continue well into the 21st century.

—W. Bryon Caver



THE PARAWING

The German-born (but U.S.-made) Parawing is unlike any other kite we tested. It doesn't have lines in the usual sense—instead, its bridle lines are connected directly to a control bar the kiteflier holds. For the 42-sq-ft Parawing we flew, the bridle lines were 18.5 ft long, so that is the distance the kite is from the kiteflier.

Bridle lines from the leading edge of the kite are attached to one end of the control bar; lines from the trailing edge of the kite are attached to the other end of the bar. Some Parawings have bridle lines attached to the control bar at points between those extremes.

It took only a few minutes to learn basic control of the Parawing. Mastering fine control took longer. The kite is directed by tilting and/or by rotating the control bar.

At first, all of us overflowed the edge of the wind window, and the Parawing luffed. Once we learned to stop the forward motion of the Parawing as it approached the edge, we solved the majority of our luffing problems.

Bugging with the Parawing was comfortable on reaches but awkward in turns. To turn 180 degrees, the bar must be rotated 180 degrees. Doing this requires shuffling hand positions and momentarily holding back the kite with one hand.

Turns under high power were difficult. We inferred from a video that came with our test kites that the solution was to attach the control bar to a body harness. A flier can then control the Parawing with one hand. But the control bars on our test kites weren't set up for a body harness, so we couldn't assess this option.

Because the Parawing is so close to the kiteflier, it is "sailed" more than flown in the usual sense. We could feel changes in wind conditions almost instantly. Even with its cross-cell venting, flying the Parawing in turbulent winds right at the edge of the wind window left us vulnerable to luffing.

Responses to forward and reverse commands were almost immediate; responses to turn commands were a bit slower, but still quite fast. Because the Parawing is so near the flier, it was easy to maneuver it in close quarters. A tug on the control bar was all we needed to launch and relaunch.

The Parawing's major limitation is its inability to reach beyond ground winds to cleaner and stronger winds higher up. Parawing kitefliers generally need larger kites than other traction kites to obtain the same power.

What Have We Learned?

- To begin with, there is a kite for every flier. Take your pick, they all work. Our test kites varied greatly in performance and in the techniques they needed. This is healthy: different

strokes for different folks.

However, the trend is toward quad-line models. Why? They are easier to launch and land and, in general, are more manageable in the air. I'm not suggesting the demise of the two-liner. It will continue to have a following and, for the time being, will likely retain its apparent supremacy in very light winds.

- Our two dual-line kites, the Peel and the Wild Wing, were enjoyable to fly. The Peel is race-proven, available in many sizes, but difficult to fly in "dirty" winds. The Wild Wing is available in only two sizes, but is quicker in turns and more forgiving than the Peel. Direct comparisons of power and acceleration were not possible because our test kites were dissimilar in size.

- The Parawing will likely remain a niche kite. Purchasers should seek advice on size because Parawings need to be larger than other traction kites to generate the same power. Body weight is the operative factor when determining the proper size.

- Some quad-line kites in the user-friendly category thrive on being controlled by arm and wrist rotations; for others, arm movements are the primary source of control. The Modulus, Quadrifoil Q4 and Quad-Trac fit in the former category. The Force 10's performance characteristics show that membership in the latter category is not necessarily a liability. The Traction, however, was another matter. With it, the benefit normally achieved by wrist rotations could only be gained through the mechanical advantage provided by a chest harness. We found this limiting.

- Our unanimous picks for the quad-line high-performance group were distinguished by their superior acceleration and power, by their performance in both light and heavy winds, and by their responsiveness and sensitivity to commands. The Quadrifoil Competition, Quad-Trac Pro Foil and Skytiger all meet these criteria.

Why are these kites for experienced fliers? Two reasons: First, unless anticipated, their rapid acceleration leads to out-of-seat experiences while bugging and bunny-hops-to-a-face-plant while standing and flying. Second, because little physical effort is required to steer them, and they are very responsive, a veteran's touch is needed to manage them.

- Traction kites have a broad range of flying traits and requirements. Even experienced fliers need to spend time to discover the

A Question of SIZE

Some manufacturers must be measuring their kites with cloth tapes that have been washed in hot water and dried in a hot dryer. Either that or they are measuring fabric before they cut and sew it. By my measure, one test kite was well over 20 percent smaller than advertised. Two others were out by over 10 percent. Part of the problem is the question of what is to be measured. Should it be the front surface or the back surface? And what should be done with keels and flaps?

I suggest using posted sizes as a guide only. Frankly, as in other aspects of life, performance is more important than size. Some current three-meter kites have as much power as older four-meter models.

And by the way, you won't encounter the 20 percent kite. I spoke to its distributor about my finding, and the kite's promotional literature was revised. —J.W.

nuances of a new kite. How much time? For us, the time ranged from as little as an hour to as long as several days. Finding optimum line settings and learning new steering movements takes time. Give new kites a chance.

- New fliers need help to safely learn traction kiting. Most manufacturers don't provide it. The kites should come with a manual that includes guidance not only on safety, but also on assembly, adjustments and basic flying skills.

I formally field tested the manuals that I received with two literate potential traction kites. Only the manual from Skytiger met minimum expectations.

- Quad-line handles can be improved upon. The challenges: to permit flying in heavy wind with one-finger-above-the-power-line, and to eliminate finger pinch from the line while doing so.

So Which Kite Is for You?

The key to making a good choice is to be honest with yourself. Start by listing how well you fly, the wind and space where you fly and what you want to do in traction. Then read the reviews to check out the flying features. Consult with reputable dealers or experienced kites who regularly fly traction kites. Finally, be aware of changing availability. Some of the kites we tested may be scarce by the time this is published. New ones may be out there, too. The market is volatile.

And if you're going to be in Manitoba, Canada, bring your buggy or skis. We have plenty of kites up here. When the tests were over, I had to buy a whole new set of kites. Those I had owned no longer met my traction needs. ◇

BUGGYING d o w n

Article & Photographs
by Andrew Beattie

I SPENT THE ENTIRE WEEK LIVING OFF ADRENALIN...

It was the Buggy Boogie Thang 2, January 1996, at El Mirage Dry Lake outside Victorville, California. The Thang is Corey Jensen's pilgrimage to the desert to worship the gods of wind and speed in the company of good friends.

My 7-Wheel Buggy

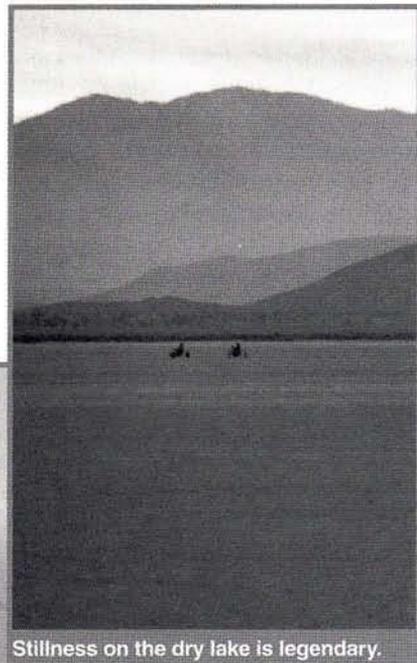
In a determined effort to use every last ounce of my luggage allowance, I brought a 7-wheel buggy to the States from the U.K. It consisted of a traditional Lynn buggy with a double rear axle fitting and a Shapson tandem adapter on the rear. The extra wheels have the advantage of delivering much more resistance to sliding sideways under excess power. The disadvantages of this setup are the added weight, the extra rolling resistance and an increased turning radius.

Also of note were my footpegs, which sprout right from the top of the forks. They allow me to take considerably more power before I am pulled up to stand on the forks —this is particularly useful when pulling a tandem. Again there are disadvantages: the high pegs are supremely uncomfortable, and when you are finally overpowered, you have built up so much tension you tend to follow a ballistic trajectory.

My buggy has hooks into which I can slip the strap of the "dead-man" handle. This means when I get overpow-



Long-legged pilot on a short wheel-base buggy.



Stillness on the dry lake is legendary.

2 mph and I had enough power to buggy beneath the huge sail. Satisfied with this, I pulled out my tandem and "volunteered" 10 year old Zachary Cameron to sit in the back. We had plenty of

power to trek across the lake. For the return trip, I decided to really go for it. As the wind rose to the point where a couple of others were beginning to see if they had enough power to buggy, the 13 sq m sail was cranking out as much as we could handle. Rather than ease off, I dumped the monster in the middle of the power window and let her rip. We screamed back to the camp at about 35 mph. I knew that we didn't have a hope of stopping safely under kite power, so I released the "dead-man" handle and steered the buggy to stop where the kite landed. I think my young passenger was as impressed as I was.

Building Bridles

Initially, I had no kites ready to fly. All the kites I brought were of my own design and they all had portions of the bridle unfinished. Upon arriving, I nonchalantly banged a grid of nails into the lakebed and wove a cross-bridle for the biggest kite (a whopping 13 sq m!) right there, under the sun. I had hoped that the result would be impressive—to casually complete the

biggest kite on the lake and launch it amidst the admiration of the assembled crowd.

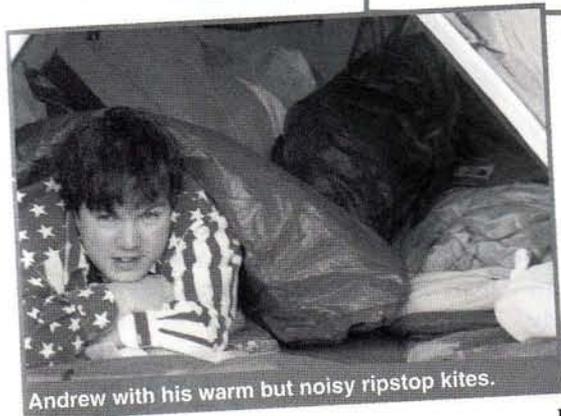
My ego was entitled to no such glory. The thing folded up and collapsed in an undignified heap. To my disgust, I found that I had attached all the primary bridles for the left and the right hand tips to the same side of the kite!

It was the following day before I'd sorted it all out, but this time the timing was perfect. I launched the kite in almost zero wind and it inflated easily. Within a minute or so, the wind had picked up to 1 or

IF...

lack of sanctioning,
lack of organization,
lack of schedule,
lack of insurance,
lack of toilets,
lack of rules,
lack of public address,
lack of directional signs or
lack of awards presentation
were a problem for you,

**you were in
the wrong place.**



Andrew with his warm but noisy ripstop kites.

C-C-Cold

I soon discovered that in the winter at El Mirage it gets real cold at night. Because money was tight, I decided to share a tent with Dean Jordan on Tuesday night. Someone provided a child's sleeping bag for me and someone else found me a blanket, but the bulk of the insulation came from several large ripstop kites, which filled most of the space in the tent. While the insulating properties of the trapped air was effective, the fabric had the distinct disadvantage of being noisy. I tend to fidget in my sleep. For some reason everyone called me "Russell" for the rest of the week.

Downwind Performance Tip

On one of the light-wind mornings, I decided to buggy two miles further down the lake where they were shooting a Chevrolet com-

mercial. The wind was only blowing 1 or 2 mph, so I found it exceedingly difficult to make any downwind progress at all—one false move and the canopy would collapse and fall out of the sky. But despite this I somehow stumbled across a technique by which I could travel downwind.

Starting from a position where I was already traveling at a reasonable speed, and the kite was directly overhead, I would turn the kite into a vertical dive right through the middle of the window. While the buggy was going exactly downwind, I would use the momentum of the buggy to follow a tack that went off to one side of the wind, using its course to force the kite toward the ground. This was the power stroke—the kite would soon speed up and as long as I continued to keep the line in tension, I would continue to accelerate past the speed of the wind.

Next I would turn the kite up and away from me, and then the buggy would head directly downwind as the kite continued its figure-eight pattern off to the other side, regaining the high-altitude position that begins another cycle.

Public Service Announcement

It is well known that it is unwise to pee into the wind. In the nuclear winds, however, it is also not advisable to pee directly downwind either, as the turbulence caused by your body causes it to splash in your face. We quickly learned to pee off to the side, into the non-turbulent air.

The Pewter Mug

The Buggy Boogie Thang 2 did not apply for and did not receive AKA sanctioning. It might sound odd at first, but this helped shape the whole event—it was a cooperative event for responsible adults. If lack of sanctioning, lack of organization, lack of schedule, lack of insurance, lack of toilets, lack of rules, lack of public address, lack of directional signs or lack of awards presentation were a problem for you, you were in the wrong place.

I brought an engraved, glass-bottomed pewter mug from England with the idea that it would be presented to the fastest, the coolest, the stupidest or otherwise the most deserving buggier on the lake. This idea never really got off the ground. The racing never amounted to much and I never found a quorum of people to make a decision, so it ended up going off in Corey's van.

Maybe this was appropriate. No big deal. No ceremony. No losers. No speeches. It just quietly ended up with its most deserving host.

Thanks, Corey for a great time. Without your spirit and vision, it wouldn't have happened. ◇

WHITHER? kitesailing?

By Peter Lynn

I'VE BEEN WORKING ALMOST FULL-TIME ON KITE TRACTION, with a primary focus on kitesailing since 1987. It's been my fortunate position to have a business and wife that can just about support this level of personal indulgence/obsession. It's great fun and I'm feeling quite pleased with progress in the field to date (mine and others), but are warm feelings good enough? Just how does the world of kitesailing stack up in 1996?

When I say kitesailing I mean systems capable of upwind courses which use kites attached by lines only (i.e., not tilt-rig sailboats). There may be good things happening in kitesailing in some places that I don't know about but there are definitely good things happening with the Roeseler team (Kiteski™) and with Bruno and Dominique Legaignoux (Wipicat).

Interestingly, there is almost no conflict between Kiteski, Wipicat and Peter Lynn, Ltd., even though we are working on essentially the same problem because each of us has chosen to concentrate on slightly different aspects. The entire kitesailing field has, so far, seen a very good level of cooperation between researchers, with little overt copying even in the absence of comprehensive intellectual property rights coverage of the breakthroughs that have occurred (such coverage is virtually impossible to finance anyway). If blatant copying occurs there will be no rational justification for continuing to do the needed research anyway, so let's hope!

What progress is Peter Lynn, Ltd. making in kitesailing? As it happens we have been entering an open-class sailboat race each New Year's Day for the last three years and so we have a rather objective assessment of our progress. This race, "The Clearwater Cup," is three laps on an upwind/downwind course with the main marks about 3 km apart. It starts at 2:00 P.M. irrespective of the conditions on a New Zealand alpine lake which has become something of a wind-surfing mecca. The race is open to any sail-powered craft that weighs less than 100 kg without crew and has traditionally been won by "A" class catamarans (single person 5.5 m x 2.3 m x 14 sq m development class multihulls).

In recent years windsurfers have been collecting some wins, but we are talking about very hot talent—not quite Olympic gold medalist Bruce Kendall, but some of the very few in the world who can frighten him. The upwind performance of these guys is amazing—it has to be to stay ahead of the cats.

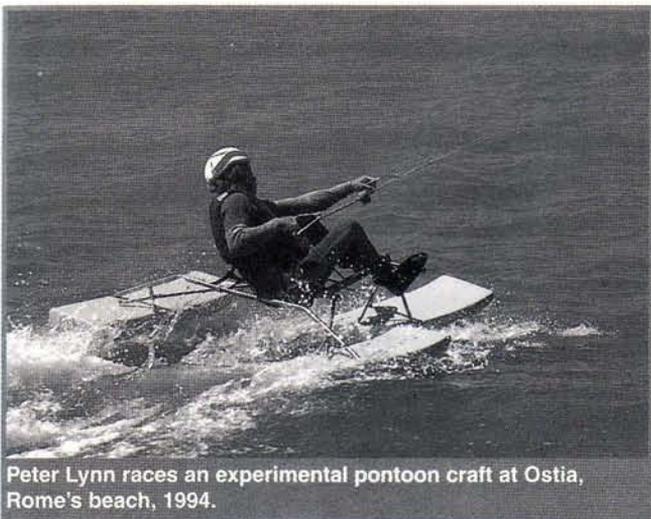
During the 1994 competition, in winds 20–30 km/hr, Philip McConnachie used a kitesailer (buggy-based) with a 5 sq m Peel. He started out confidently enough by rounding the first (reaching) mark but was not able to get to the top mark even once. Philip was put out by the rough conditions, poor upwind performance and by being slightly overpowered.

Back again in 1995 with more experience, a new boat with the same buggy layout, a bit lighter wind and a 7.5 sq m Peel, Philip eventually completed one full lap. He came in just as the winner, a windsurfer, finished three laps hotly pursued by the cats.

In 1996 three of us started on kitesailers with kites ranging in size from 7.5 to 10 sq m. The wind was lighter that day. Philip McConnachie was on a 3.5 m catamaran kitesailer with an 8 sq m four-line Paua (Lynn kite). Pete Lynn, Jr. was on an outrigger style trimaran kitesailer and I was on a 3.5 m catamaran kitesailer with almost surfboard-like hulls.

All of us easily made the top mark. Our upwind elapsed times were double that of the top windsurfers and cats, our downwind times were under half that of the next fastest craft and our overall times around the course were 1½ times that of the winner (because of spending far more time sailing upwind than downwind). So now we are half as fast as the competition upwind and twice as fast downwind; progress indeed!

These speeds would have beaten any windsurfer in the world 10 years ago. This was the good news. The bad news was that Philip and Pete Jr. never made it around a mark set in the huge wind-shadow of a forested island on the way back up from the bottom mark (even the yachtsmen could be heard cursing this shadow) and Philip with 50 m lines just had no chance. I had



Peter Lynn races an experimental pontoon craft at Ostia, Rome's beach, 1994.

MEL GOVIG

• The four-line kite was far superior because it didn't collapse and Philip's fight with the island was about having no wind there at all. He experienced no other problems with the kite, whereas Pete and I for all our experience did lose our kites about once per hour on average during these racing conditions.

• The big gains over 1995 came from hydrodynamic improvements. Unfortunately, there's no

real chance for significant further hydrodynamic gains as the boats we are now using are highly developed. Worse still, we benefited from a breakthrough hydrodynamic trick which, when applied to other sailboats, will improve their performance, and put us back a notch in relative terms.

• The L/D (lift-to-drag ratio) of the kites is *the* problem. We sometimes attain line/kite system L/D of over five but our sailboat competitors manage sail L/Ds of nine or more. We have no chance of footing it with conventional sailcraft on upwind courses

80 m lines and the benefit of watching Pete and Philip crash first. They had a total of about eight crashes there with much paddling back to shore and relaunching over about 1½ hours. I had a total of five relaunches during the race (though two of those were before I even crossed the start line). These relaunches cost me a total of just over an hour. I finished in 4 hours 5 minutes elapsed time. The winner was a Hobie leading a windsurfer and another cat by about 1½ minutes to complete in 2 hours 10 minutes.

So what did we learn?

until we can get kite L/Ds of nine or so as well. Unfortunately, there is what amounts to a sort of natural block for us. This is to be the subject of a separate article; suffice it to say that it is no accident that all styles of practical traction kites, be they hard, soft, two-line or four-line, have topped out at usable L/Ds of not much above five.

I believe our relative performance would have slipped a bit in stronger wind as windsurfers' downwind performances improve rapidly when winds exceed 9 m/s or so. In very light wind (drifters) our relative performance would also slip drastically as windsurfers can "pump" and "A" cats get very fast in the light winds.

Kite collapses and our lack of water-launching ability don't worry us too much. Both Kiteski and Wipicat have useable kite relaunching systems and we can develop such a facility when we need to, which will not be until I can find an answer (if there is one!) to the major problem of kite L/D. I just won't invest the time in developing a relaunching system until I know what our kites are finally going to look like (different systems suit different kites).

I wish I wasn't committed to so many festivals (more than 25, I think, in 1996) so I could have more time for kitesailing! ◇

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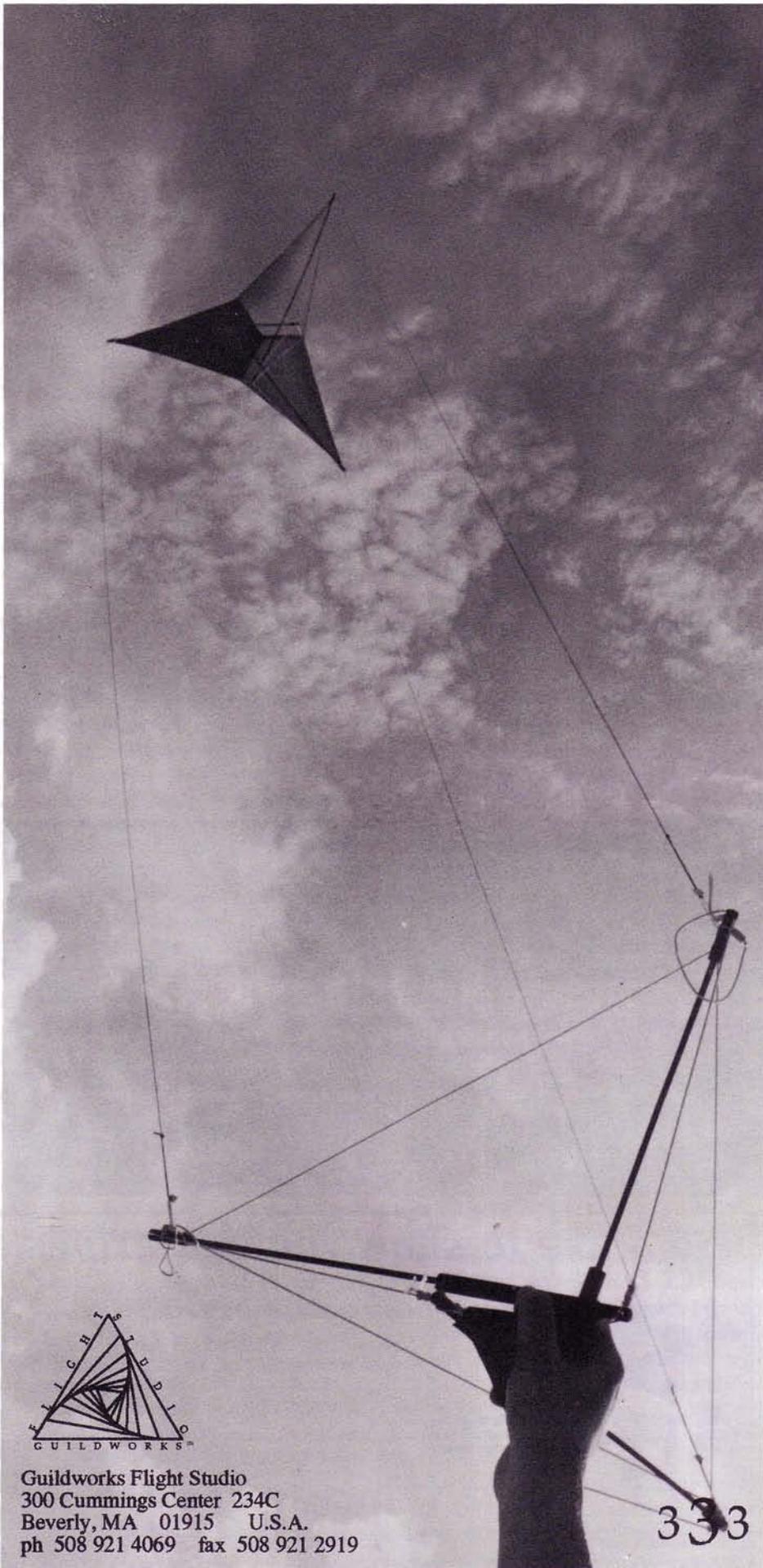
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Identifies you with
the chronicle of kit-
ing's contemporary history. Super gift for a
kite friend. A handsome 1 3/4" cloisonné pin in
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In appreciation for our new Lifetime
Subscribers, we publish their names
here in every issue or as appropriate to
their subscription category.

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Names in italics are deceased.

*Address unknown. Readers
who know the whereabouts
of these subscribers are asked
to notify *Kite Lines*.

In appreciation for those
who contributed to the
establishment of *Kite Tales*
and *Kite Lines*, we publish
their names here approxi-
mately every three years.

Celebrating 20 Years of Kite Lines!

In March of 1997, your magazine will be 20 years old.

To our knowledge, we have been publishing longer
than any kite journal in history.

Every reader and flier can be proud that their passion
has been part of the legacy and credibility uniquely
nurtured by *Kite Lines* and now enjoyed
by kitefliers everywhere.

For this we can only thank you, our readers.

But certainly a special thanks is due to
our Lifetime Subscribers, early and recent, who have
contributed so importantly to our sustenance.

We list their names with pride and gratitude.



Be a Lifetime Subscriber

Many loyal readers of *Kite Lines* have
begged us to reopen the special subscrip-
tion status of **Lifetime Subscriber**.

After publishing the magazine for
19+ years to an unusually high standard
while facing increasing expenses, we
think that now is the time to share the
burden—and with it share some joy.

We are making new plans for *Kite Lines*
that will allow us to hold onto our quality
while saving money. As anyone who's
ever done a budget knows, the choices
can be difficult and the transition even
more so. To ease us into a better pattern,
we are opening the **Lifetime Subscriber**
category to our readers for a limited time.

And as a way of acknowledging your
vital importance to *Kite Lines*, we will
print your illustrious name and home
town in these pages (unless you prefer to
remain anonymous). You can support
Kite Lines at any of several levels:

□ **Angels:** \$3,000 or more/lifetime.
Angels get a set of *Kite Lines* back issues
(as complete as we have), a kite made
and signed by Mel Govig, one copy of
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uct (including a contributors' pin) and
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Lifters get a kite made and signed by Mel
Govig, one copy of every *Aeolus Press*
publication or product (including a con-

tributor's pin) and receive their *Kite Lines*
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for the rest of their life or ours (whichev-
er comes first). And we publish your
name in every issue of *Kite Lines*.

□ **Strong Pullers:** \$300/year. Strong
Pullers get a contributor's pin and receive
their *Kite Lines* in a lovely Tyvek envelope
by air mail for one year, as well as a copy
of whatever we publish or produce in that
year. And we publish your name in every
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Fliers get a contributor's pin and receive
their *Kite Lines* in a lovely Tyvek envel-
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publish your name in every issue of *Kite
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Bearers get a contributor's pin and
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we publish your name in one issue of *Kite
Lines* as an example to the potentially
generous.

Donations of any size are welcome.
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ALL contributions will be thanked
with a personal letter.

You may, of course, support us
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that we not publish your name.

The Kite Lines Bookstore

serving the kiter's reading needs by mail

IF IT'S ABOUT KITES, the Kite Lines Bookstore probably has it—the common, the rare, the foreign, the domestic, the informative, the artistic, the good—and the bad. We carry nearly all the kite titles in print, even ones that give us a lot of trouble to obtain for you.

The Bookstore gives no endorsement to any

title, but we do guarantee your satisfaction with our service. We want you to feel like you're in your local bookstore. Pick a book. Look it over. If it's wrong for you, you can put it back on our shelf. No problem.

Kite books often go out of print without warning. If you want any of these, we suggest you snap them up now!

OUT OF PRINT—LAST COPIES AVAILABLE!

The *S.F. Cody Archive* from Sotheby's Auctioneers, London. Samuel Franklin Cody was the first person to fly in the U.K., a larger-than-life showman, sharpshooter and kite-maker. This luxurious catalog, full of information and photos (many in color), lists 271 objects of desire (kites, parts, posters, documents) recently auctioned at Sotheby's. Last copies exclusively from Kite Lines include auction results as well. Softcover, 100 pp., \$34.95



From AUSTRALIA . . .



Make Mine Fly by Helen Bushell. This 1988 edition is an excellent collection of tips, techniques, and hints (gathered since 1977) for beginners, experts, groups or individuals. Includes plans for the author's famous patented Trefoil Delta, plus several paper kites. Softcover, 90 pp., \$24.95



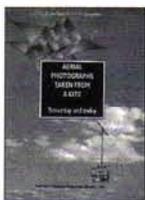
Kite-Folds by Beth Matthews. This improved edition has plans for 12 small kites, easily made from a single sheet of paper, plus the "Skyvelope." Clear instructions, lovely color photos, addendum on kites in teaching. Softcover, 36 pp., \$14.95



Lawrence Hargrave research by David A. Craddock of Australia, now in USA-printed edition at a price break: **Ravensbourne to Airborne** covers Hargrave's work on aerodynamics, gliders and kites, including his sketches of equipment, concepts and designs. No photos. Softcover, 57 pp., \$21.95
Construction Drawings for a Selection of Kites, companion volume of detailed plan drawings for a dozen moderate-size Hargrave kites. Softcover, 25 pp., \$14.95
Both books as package, \$34.95

From BELGIUM . . .

NEW! *Aerial Photographs Taken from a Kite* by G. de Beaufort and M. Dusariez, in English. History, systems, photos from the KAPWA Foundation archives. Includes a reprint of Batut's 1890 book. Softcover, 145 pp., \$39.95



From BERMUDA . . .

Bermuda Kites by Frank Watlington. Plans for five island kites, plus variations and hummers. Traditional methods and materials (flour and water paste: "a little cayenne pepper will keep away the roaches"). Tips and a little history. A charmer. Softcover, 24 pp., \$4.95



From BRAZIL . . .

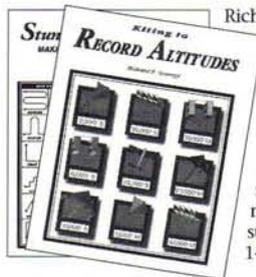
Arte de Fazer Pipas 2 (The Art of Kitemaking 2) by Silvio Voce, in Portuguese. How to make 10 non-Brazilian paper kites. Softcover, 56 pp., \$6.95
Arte de Fazer Pipas 1 gives plans for 14 kites—half are Brazilian. Softcover, 50 pp., \$6.95
Both books as package, \$12.95



From CANADA . . .



Kite Crazy (the book) by Carol Thomas. Accompanies the video. Plans for fighters, dual- and quad-liners. Reliable text, black-and-white drawings. Softcover, 176 pp., \$25.95
Kite Crazy (the video) by SOMA Film & Video, Canada. Famous kites teach how to make and fly 1-, 2- and 4-line kites. Good clear instructions and lovely footage, VHS format, 102 min., \$34.95
Special book/video package \$57.95



Richard P. Synergy's self-published books convey lots of information and enthusiasm: **Kiting to Record Altitudes** tells everything that can go wrong with altitude efforts. Softcover, 72 pp., \$15.95
Stunt Kite Basics covers safety, social aspects, equipment and maneuvers (32 in all). Emphasizes success in competitions. Softcover, 142 pp., \$15.95



Fishing for Angels: The Magic of Kites by David Evans. A very pretty, colorful book. Great kite lore and flying tips (just avoid the kite plans). Softcover, 63 pp., \$12.95

CANADA continued. . .



Go Fly a Kite: The Kite Builder's Manual by John Bostel. Novel plans; pleasing drawings, but lacking dimensions. Old-fashioned techniques. Softcover, 80 pp., \$12.95

From CHINA . . .



Chinese Artistic Kites by Ha Kuiming and Ha Yiqi. The celebrated kites of the Ha family of Beijing. History, structure, decoration, flight. Over 80 kites in richly printed color. Good English translation. Limited supplies. Softcover, 160 pp., \$16.95

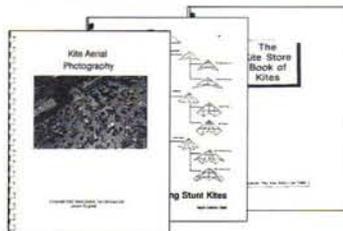
From ENGLAND . . .



A Beginner's Guide to Flying Indian Fighter Kites by Shirley Turpin. A well-compressed compendium of good advice gleaned from Stafford Wallace, British flier of Indian fighters. Discusses basic principles of fighter flying, line selection and handling, tuning, bridling, launching, changing direction, care, repairs, problem-solving. Simple but adequate black-and-white drawings. Softcover, 18 pp., \$4.95

ENGLAND continued. . .

Mark Cottrell's books are homely and self-published, with plans that may call for a magnifying glass—but they are also some of the most honest, entertaining and useful in print:
Kite Aerial Photography. Three kite plans and a system to compare trade-offs among features in a rig. Source lists. Softcover, 44 pp., \$10.95
Swept Wing Stunt Kites. Analysis of stunt design elements; four plans. Softcover, 43 pp., \$11.95
The Kite Store Book of Kites. 10 plans for original Cottrell kites plus philosophy and a 5.25" disk for computer design. Softcover, 48 pp., \$13.95



Box Kites Making and Flying by Dr. Bill Cochrane. Plans for 17 types of box kites, from basic designs to Hargrave, Conyne and tetrahedral types plus three Cody styles. A little history and aerodynamics but out-of-date building methods. Color photos in an attractive layout. Scanty appendixes. Hardcover, 96 pp., \$34.95



The Kite Lines Bookstore . . . Continued

ENGLAND continued. . .



Kite Cookery by Don Dunford. Plans for four kites, with building methods. Includes Dunford's idiosyncratic aerodynamics. Softcover, 47 pp., \$4.95



Kites: A Practical Handbook by Ron Moulton and Pat Lloyd. A solid pack of information in slight disorder. Excellent drawings of 25-plus kites, including such English examples as the Hewitt Flexkite, the Chapman Navy Dove, the Pearson Roller and the Benson Scorcher 2. Fine sections on sport kites and parachuting teddy bears. Outdated appendixes; some color photos. Softcover, 255 pp., \$27.95

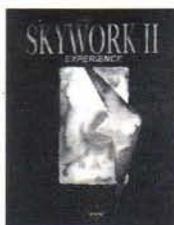
From FRANCE . . .



NEW! Photographie Aérienne Avec Cerf-Volant: (Kite Aerial Photography: How Is It Done?) by Christian Becot, in French. Some tested, practical methods of kite aerial photography are described and compared. Includes drawings of systems and details (no kite plans) and bibliography. Limited supplies. Softcover, 52 pp., \$16.95

From GERMANY . . .

Skywork II Experience by Christine Schertel, in German. New volume following original *Skywork Experience*. Plans for 12 original, tested designs: nine stunters and three cellular kites, including a Hargrave, Cody and the "Revolver."



Attractive paintings instead of photographs. Softcover, 52 pp., \$19.95

Books by Werner Backes, in German, compact and reliable, have good ideas, instructions, color photographs and drawings: **Drachen bauen (Kitemaking)**. This well-rounded volume contains 35 kite plans plus numerous accessories and tips. Excellent, detailed drawings and fine photos throughout. Softcover, 128 pp., \$18.95
Drachen aus aller Welt (Kites from Everywhere). A 40-kite international sampler, including the Cloud Seeker, Cody, tetrahedral, rhombus and multicell boxes, parafoil, Roloplan and rokkaku. Also plans for trains, reels, aerial photography. Softcover, 128 pp., \$19.95
Neue drachen zum Nachbauen (New Kites to Replicate). Plans for 20 kites (including a diamond stunter) from available materials plus techniques and accessories. Good for workshops. Softcover, 128 pp., \$7.95



GERMANY continued. . .



Leistungsstarke Lenkdrachen zum Nachbauen (High Performance Stunt Kites to Make) by Peter Rieleit, in German. Plans for 12 original dual-liners (six deltas, three foils and three figure kites, including Superfly, banana, pteranodon). A stimulating, motivating, creative work. Includes fine charts plus tips on materials, sewing, knots and flying. Softcover, 96 pp., plus full-size fold-out airfoil pattern, \$24.95



... und sie fliegen heute noch — Geschichte und Geschichten um den Drachen (and They Still Fly Today—History and Tales about Kites) collected by Hans Snoek, in German. Poems, songs, tales, drawings, photos, plans from early days of Western kiting. Hardcover, 156 pp., \$34.95 **Band II (Vol. II)**, in German. Another fascinating scrapbook of kite lore. Hardcover, 156 pp., \$34.95

GERMANY continued. . .



Drachen mit Geschichte (Kites with History) by Walter Diem and Werner Schmidt, in German. Extensively researched, faithfully reproduced models from our rich kiting history. Brogden, Gomes, Grund, Hargrave, Kuznetzov, Lamson, Lecornu, Sauls, others. Detailed plan drawings and wonderful historic photos. Hardcover, 160 pp., \$29.95

From ITALY . . .



Aquiloni (Kites) by Guido Accascina, in Italian. A reliable mini encyclopedia, with kites in "family" groupings. Includes theory, techniques, sources, history, plans. Good printing including some color. Latest edition in standard pocketbook format. Softcover, 256 pp., now \$16.95



Aquiloni Acrobatici (Acrobatic Kites) by Cristina Sanvito and Giancarlo Galli, in Italian. The first Italian stunt kite book, a practical manual covering the basics and more. Graphics and drawings are neat and clear. Gives a brief history, safety tips, basic-to-advanced techniques and maneuvers plus a book list and valuable glossario translating standard English terms into Italian. Softcover, 141 pp., \$19.95

From JAPAN . . .

Tezukuri Omoshiro Dako Nyumon (A Primer of Interesting Handmade Kites) by Eiji Ohashi, in Japanese. Both traditional Asian and modern kites are among these easy-to-make figure and box kites as well as Ohashi's famous arch train. Color photos, drawings, full details. Softcover, 100 pp., \$29.95



From The NETHERLANDS . . .

Two stunt kite books by Servaas van der Horst and Nop Velthuisen, in English, cover all aspects of the sport in up-to-date high-tech style. Well organized and printed, the books contain excellent drawings and photos, including some in color: **Stunt Kites to Make and Fly**. The first book includes clear plans for 10 stunters, some with novel touches. Softcover, 96 pp., \$21.95
Stunt Kites II: New Designs, Buggies and Boats. Plans for 8 kites plus advice on how to design your own. Emphasizes "power" kites, has plans for a buggy. Softcover, 96 pp., \$22.95
NEW! Companion diskette 2.0 for IBM-compatibles, prints out templates of *S.K.II* plans; also simulates stunt maneuvers, \$19.95



NETHERLANDS continued. . .



Kleine Papieren Vliegers (Small Paper Kites) by Harm van Veen, in Dutch. A very original, colorful little book with clear and detailed plans for 10 artful miniatures plus a tiny reel. Complete techniques, even splitting bamboo. Softcover, 32 pp., \$11.95



Drachenreise (Kite Journey) by Ruedi Epple-Gass, in German. Interesting black-and-white book. Countries visited and researched include Turkey, Vietnam, Dominican Republic, spots in the South Pacific, Latin America, Europe. Political overtones. A few drawings of biodegradable kites of these countries, plus poems and flying tips. Softcover, 125 pp., \$42.95

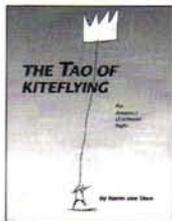


Drachen: Spiele mit dem Wind (Kites: Playing with the Wind) by Rainer Neuner, in German. Attractive introductory book with many color photos. Plans for eight kites (including numerous genki variants) and five wind toys. Selections geared to light winds. Minimal appendixes. Hardcover, 131 pp., \$39.95

The Kite Lines Bookstore . . . Continued

From The UNITED STATES . . .

NEW! *The Tao of Kiteflying: The Dynamics of Tethered Flight*, by Harm van Veen, in English. Tough questions about how kites fly are tackled by one of Holland's most respected kites. Clear writing and diagrams explain stability, scaling, the subtlety of the fighter kite and how to make two simple kites. Charming cartoons. Softcover, 56 pp., \$12.95



Kiteworks by Maxwell Eden. Revised edition. Hefty book with 50 kite plans (such as Yakko Stakk, Kaleidakite, Tri-D Box, Pterosaur) with detailed drawings based on material provided by respected designers. Sewing, aerodynamics, accessories and (un)related stories. Kite paintings, a few photos. Appendixes and index. Softcover, 287 pp., \$19.95



NOW in softcover! *Making & Flying Stunt Kites & One-Liners* by Wolfgang Schimmelpfennig, in English. A wide-ranging and up-to-date book emphasizing creativity. Superb technical drawings in color for six stunts and three single-liners designed by the author. A few oddities in the translation. Hardcover, 80 pp., \$19.95
New softcover, 80 pp., \$12.95

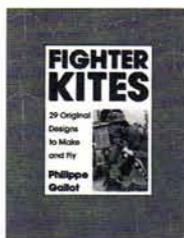


Books by Margaret Greger are ideal for beginner, expert or classroom: *Kites for Everyone*. Many well-selected kite plans shown in plain, straightforward style with variations and accessories. Second edition. Softcover, 136 pp., \$12.95
More Kites for Everyone. Some old kites, some new kites, plus more tips. Plans for 17 kites, from simple to complex. Softcover, 59 pp., \$9.95

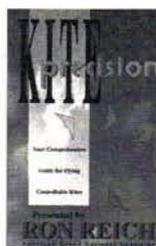


Books by Jim Rowlands have a few color photos within otherwise black-and-white pages of text and line drawings: *Soft Kites and Windssocks*. Same as British *Kites and Windssocks*. The best and most popular work from Rowlands. Plans for 11 kites (including whale, frog, parafoil and Flow Form), five windssocks, five drogues and two bags. Softcover, 104 pp., \$14.95
The Big Book of Kites. Same as British *Making and Flying Modern Kites*. Plans for 36 kites all on the simple side, plus materials and techniques. Softcover, 127 pp., \$14.95
One-Hour Kites. Same as British *Kites to Make and Fly*. Plans for 25 kites including Facet and stunters. Softcover, 95 pp., \$14.95

Fighter Kites by Philippe Gallot, in English. Plans for 29 kites, tips on flying, tools, materials, games, accessories. Clear illustrations, adequate instructions. Watch out for metric conversions. Softcover, 96 pp., \$12.95



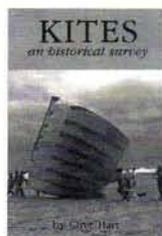
Kite Precision by Ron Reich. A celebrated stunt flier teaches you the Revolution, the Flexifoil, the basics of team flying and choreography. Friendly tone and touches of humor. Self-published, with lots of low-grade photos. Softcover, 182 pp., \$14.95



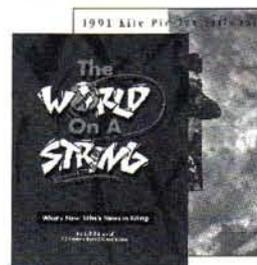
Books by David Gomberg are "home-made," lacking photos, but useful: **NEW!** *Sport Kite Magic!* Gomberg's best book yet is clearly written, covering the newer "tricks" and indoor flying. Softcover, 126 pp., \$13.95
Stunt Kites! Thorough coverage of the basics plus advice from 20 top fliers. No plans. Softcover, 88 pp., \$11.95
The Fighter Kite Book! Good information plus plans for a basic fighter and rules for contests. Beware drawings of bridles. Softcover, 74 pp., \$8.95



Kite books by Wayne Hosking are uneven in style: *Kites*. Lavishly printed, colorful kites. Good research on Asian kites. Makers unidentified. Softcover, 120 pp., \$15.95
Kites to Touch the Sky. A homemade black/white book of 32 plans for basic plastic kites. No photos. Softcover, 96 pp., \$9.95



Kites: An Historical Survey by Clive Hart. Revised, second edition (1982). Invaluable reference work with many black-and-white illustrations and photographs. Has the most extensive kite bibliography in print. No plans. Softcover, 210 pp., \$15.95

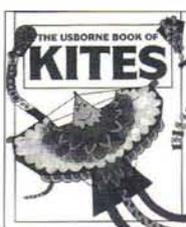


NEW! Drachen Foundation exhibit catalogs by Benjamin Ruhe and Ali Fujino. Kite personalities in focus, attractively packaged. *World on a String*, 13 kites. Softcover, 31 pp., \$5.00
1991 Kite Pin Invitational, 24 kites. Softcover, 53 pp., \$5.00...Both books as package, \$9.00

Make Your Own Kite (new kites) by John W. Jordan. Plans for nine original kites using unusual materials such as plastic foam. Clear and amusing reading from a genuine enthusiast. Black-and-white photos. Softcover edition out of print. Limited supply of hardcover edition, 90 pp., \$14.95



The Usborne Book of Kites by Susan Mayes. Cute, colorful collection for kids. Six easy kites, with clear, fully illustrated step-by-step instructions. Good introduction to materials, wind and flying. Many tips. Softcover, 32 pp., \$5.95



Super Kites III by Neil Thorburn. Many designs for delta-sled-box inventions. Tested, creative techniques using available materials (mostly plastic bags and wooden dowels). Some color photos brighten this "completely handmade" book. Softcover, 123 pp., \$8.95



Art That Flies by Tal Streeter and Pamela Houk. An attractive anthology of unusual kites and ideas from a 1990 Dayton (Ohio) Art Institute exhibit, featuring works by three noted artists. No plans. Limited supplies. Softcover, 139 pp., \$15.95

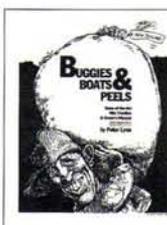


Ski the Beach by Stan Rogers. All you need to know about sand skiing with kites. The only book on this topic. Safety concerns are explained

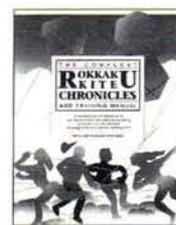
throughout. Loads of charts. Scads of black-and-white photos. Homemade layout and drawings. Softcover, 100 pp., \$13.95



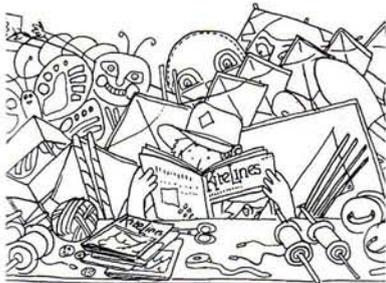
25 Kites that Fly by Leslie Hunt. Reprint of the 1929 original. Good old-fashioned kites (shield, elephant, yacht, etc.) using paper and wood. Hunt was a kitemaker for the U.S. Weather Bureau. Historical data and photographs. Softcover, 110 pp., \$3.95



Buggies, Boats & Peels: State of the Art Kite Traction by Peter Lynn. How to get started in kite buggying and kite-sailing. History, theory, how to "reach" (travel upwind) for top speed, how and when to turn, racing tactics, kite selection, buggy maintenance. Boat traction treated with similar thoroughness. Complete data on the Peter Lynn Peel. Second edition, softcover, 12 pages, \$6.95



The Compleat Rokkaku Kite Chronicles & Training Manual. Everything about the rokkaku challenges since the start in 1983. Includes reprinted historic material from *Kite Lines*, plus three detailed plans for making the rokkaku (by Mel Govig and Lincoln Chang) using modern materials. Appendix with resources. Softcover, 20 pages, \$6.95



ARE YOU MISSING SOMETHING?

BACK ISSUES of KITE LINES

Copies: **\$4.50 each** + \$1.00 each shipping
4 or more copies: **\$4.50 each**, free shipping

BACK ISSUES of *Kite Lines* offer a wealth of information and ideas: plans, tips, techniques (for both single- and multiline fliers), personalities, world records, festivals, reviews—an essential living history of today's kiting, saturated with inspiring stories and designs.

No wonder back issues of *Kite Lines* are avidly collected by so many enthusiasts. You can start now with the 16 issues available while supplies last in original paper form:

WINTER 1989-90 (Vol. 7, No. 4)

China by Tal Streeter and Skye Morrison; Sloboda on Dyeing Ripstop; Bill Green, inventor of the Delta; Modifying a Parachute; Stunting a Flow Form; Nishibayashi's Bat.

SUMMER 1990 (Vol. 8, No. 1)

Festivals in New Zealand, Berlin, Washington (England) and Australia; Parachute Stunter plans; Peter Lynn's Future Tech; Bobby Stanfield Climbs the Stone Mountain.

WINTER 1990-91 (Vol. 8, No. 2)

European Spectacular: Dieppe, Montpellier, Bristol, Berlin; Stunt Kite Survey; D'Alto on Whitehead (1901); Largest Eddy record; butterfly plans; power flight on suspended wire.

SPRING 1991 (Vol. 8, No. 3)

Whistling Kites of Nantong, China by Tal Streeter; Gomberg's Kite Pin Confessions; Quick & Easy Angle Estimating; Wind Shot stunter plans; record for Longest Kite.

SUMMER-FALL 1991 (Vol. 8, No. 4)

Pierre Fabre in Japan; Kinnaird's Rokkaku Strategies; Bill Kocher's Obtuse Tetra; Huntington Beach Scandal; Wildwood at its Best; Jalbert obituary; Sky Gallery: Peter Malinski.

WINTER 1991-92 (Vol. 9, No. 1)

Gubbio (Italy) is GaGa; The Sprint stunter contest in Italy; Richard Synergy in Poland; Tucker's Painless Parafoil plans; Sloboda on Painting Ripstop; SG: Roberto Guidori.

SPRING-SUMMER 1992 (Vol. 9, No. 2)

André Cassagnes, father of French kiting; Worldclass Thailand; Natural Fibers Festival; Bill Tyrrell flies high at Christmas Island; Stunter Survey; Heart kite; SG: George Peters.

FALL 1992 (Vol. 9, No. 3)

Castiglione (Italy) + Le Touquet, Barcelona,

Ostia; the Arch Ribbon—historic notes, tips; Kites Over Niagara Falls; Handling Tangles; Ianuzzi's Featherlight; SG: Kim Petersen.

WINTER 1992-93 (Vol. 9, No. 4)

Kite Power by Nop Velthuizen, with traction chronology; Fighter Kite Survey; Dieppe; the GX-3 by Graves & Atkins; spray-painting nylon; SG: Ron & Sandra Gibian.

SPRING 1993 (Vol. 10, No. 1)

Soul-Lifting Kites of Guatemala; Javanese Festival; Ed Alden's Family of Fighter Kites; celeb rokkakus; travel tips; Rameaux aeriels; quad-line Propeller; Jørgen Møller Hansen.

SUMMER-FALL 1993 (Vol. 10, No. 2)

Adrenaline tour of India; István Bodóczy's asymmetry; Crowell's Cross Deck; Sac City, Iowa festival classic; kites at the Pyramids; power on ice; SG: Tony Wolfenden.

WINTER 1993 (Vol. 10, No. 3)

North Sea events (Terschelling, Fanø, Scheveningen); Kite Camp Caravan; Rendez-Vous Mondial, Canada; AKA at Seaside; Sheryag's butterflies; SG: Wolfgang Schimmelpennig.

SPRING-SUMMER 1994 (Vol. 10, No. 4)

Kite Sailing; South America: Colombia & Brazil; buggy events + Scoot Buggy & Wheels of Doom plans; Kevin Shannon delta; Australia's Bondi Beach festival; SG: Reza Ragheb.

FALL 1994 (Vol. 11, No. 1)

Shirone's great museum; Korean fighters and who's who; Art & Ideas of Joan Montcada; the Thailand International; aerial photographer George Lawrence; SG: Jimmy Sampson.

WINTER-SPRING 1995 (Vol. 11, No. 2)

Dieppe; Hargrave commemoration; Stockholm event; spar study; new buggies; Streeter on Hiroshima; Shannon's cicada fighter; Alex Mason; Roger Maddy; SG: Scott Skinner.

SUMMER-FALL 1995 (Vol. 11, No. 3)

Great Festivals: New Zealand, Curaçao, Israel, Italy, Canada; kite artist Steve Brockett; The Smithsonian; Playsail & Windbow by George Peters; What Is a Kite?; SG: Pierre Fabre.

WINTER-SPRING 1996 (Vol. 11, No. 4)

Kites of Nepal; Mallorca Roundtable; Skiting the Greenland Ice Cap; Kite Patents by Ed Grauel; Düsseldorf, Peter Rieleit; Stan Rogers; Gomberg on Fanø; SG: Tom McAlister.

Great extra kite stuff!



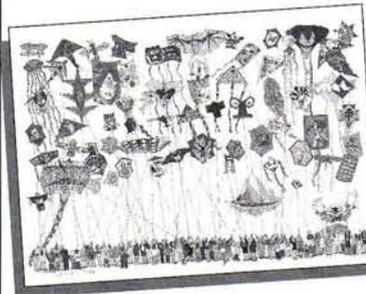
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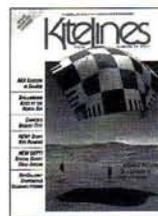
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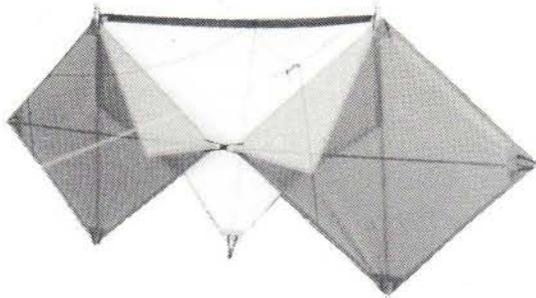
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News, Rumors & Miscellany

Animal rights activists were opposed to releasing doves at the opening of the Summer Olympic Games in Atlanta, Georgia this July (previously released doves had



flown into the torch). What to do? Fly dove kites, of course.

The committee rang up Jackite, the maker of Tyvek birds in Virginia. Could they design, produce and deliver 250 dove kites in 30 days? They could and they did.

You'll see these doves after the Olympics. About 100 signed originals as well as a more detailed production version will be available in kite and nature stores.

30 years of Smithsonian Kite Festivals were celebrated at the 1996 event on the Mall in Washington, DC. But nobody was happier than Michael, Cecilia and Mike (Jr.) Dallmer of Philadelphia, Pennsylvania. They had spent a half year designing and building their dragon kite, but it all paid off when they walked off with six awards, possibly the largest trophy haul in the history of the Smithsonian, which plans its awards to prevent overlapping.



VALERIE GOVIG

Cecelia and Michael Dallmer wear medieval garb to fly their dragon kite. Its cleverly hinged teeth allow for inflation from the mouth, helping the kite to soar strongly in the feeble winds at the Smithsonian.

Watch for *World of Wonder*, the television documentary series on the Discovery channel, which will air a new video "Warrior Kites of Hamamatsu" sometime in October. *World of Wonder* draws over 1 million viewers each time it airs.

Speaking of documentaries, a grant proposal is out to the national offices of PBS for a major film about

TWO WEEKS, TWO KITE EVENTS, ONE BEACH.

Through a progression of misunderstandings, mistrust and miscues, the Sixth Annual Miami Beach International Kite Festival (a Mike Simmons effort) and the First Annual Miami Beach Kite Show—It's Hot! (organized by Rick and Linda Gelinas) took place on successive weekends in mid-April along the glitzy art-deco promenade of South Beach.

Amazingly, both events went off well and enjoyed excellent weather.

The MBIKF featured the kites of Stretch Tucker of Florida, Cheryl and Larry Gleckner of Pennsylvania, Tom Casselman of Rhode Island, the huge spinners of Bob Anderson of California and other air displays.

The MBKSIH drew big sponsors, an impressive array of 13 international guests plus many U.S. luminaries.

South Beach is a near-ideal field for kiteflying, with room enough and variety of surface enough for flying almost anything. There are plenty of spectators, though some of them seem a bit self-absorbed.

The MBKSIH was put together in only six months' time. The field marshals, Suzanne and Bill Edison of Connecticut, were helped by a small army of volunteers from the a locally benefitting program called Kids 'n Cops 'n Kites as well as AKA members. Almost nothing was wanting in field arrangements. The guests were put up at a hotel right at the beach.

Among the hardest workers was Linda Brinson who, assisted by the visiting guests, ran kite workshops throughout the area the week before the festival and at the beach. Added fun fell from the sky: candy drops by Michael Alvares of Australia and Katsutaka Murooka of Japan. Michael dropped Koala bears, too (the kids went crazy!) In fact, all the kitefliers flew hard, demonstrating their skills to the spectators.

The guests represented many offshoots of kiting. Murooka took photos from his kite while a New York-based



CG

The MBIKF in full swing enjoys "line laundry" by Larry and Cheryl Gleckner and Bob Anderson's "baskets" further down the beach.



MG

The MBKSIH invites children to play with a new caterpillar ground toy by Peter Lynn of New Zealand.

the sky constantly with his trompe l'oeil art. Michel Gressier of France flew his majestic Bols.

From New Jersey, Jeanne and Ray Merry brought the complete Cobra Kites' arsenal, including their "artist series" of Flexifoils. Sue Taft and Lee Sedgwick of Pennsylvania exhibited their stunt kite expertise. Randy Tom of California flew his bevy of arch ribbons.

There were two pleasant surprises for me at Miami. The first was Linda Johnston Murosako of Seattle. Her kites had been made to hang on walls more than in the sky. I was surprised by the flying success of her art!

The second surprise was the presence of several Caribbean kitefliers, from Jamaica, Haiti, Puerto Rico and Tobago. I discovered that within a few blocks of South Beach every Caribbean nation is represented and all have their kite traditions, essentially the same: small paper kites with long tails to conquer the trade winds, mostly six-sided, mostly with a bowed head-stick, mostly with a hummer or "bull-roarer." Mostly beautiful.



MG

A fine Caribbean kite at the MBKSIH, a paper butterfly based on the classic regional hexagon.

When asked, neither of the Miami promoters seemed to be aware of this tradition. Maybe next year?

—Mel Govig
with reports from Cheryl Gleckner



MG

Linda Johnston Murosako at the MBKSIH brings fresh personal style to her kites using traditional paper and bamboo.

kites. Serious research started 18 months ago, inspired by the Junction (Texas) Kite Retreat. The whole process—scripting, filming, editing—will take another 30 months. Price tag? A cool half million.

The film is being described as no less than "a thorough exploration and documentation of the history, art and culture of kites" and will cover nearly the entire world of kiteflying in four half-hour segments.

Kiters are invited to offer info and suggestions. Call Ronnie Veerkamp of Windward Media (the company name is an accidental coincidence) of Lubbock and Houston, Texas, 800-788-0884. ◇



Some collectors specialize in pins from events they attend. Each year, the Chicago Sky Circus releases a new color.



One of my pins. Have anything to trade?



Namiusagi, a dramatic pin from the Japan Kite Association.



The Kiteport pin, one of the earliest and still most attractive pins.

Pin Collecting Is Dead.

Saturday at Rendez-Vous Mondial in Verdun, Canada. Midway through the rokkaku kite battle the rain comes.

"Pinwoman" Alice Hayden huddles under a fallen rok and moves over to make room for another flier whose kite has been cut from the air. It's Eric Curtis. "Hey!" she says. "I've been looking for you. You have a new pin."

The rokkaku battle ends and the rain worsens. It doesn't matter. Out there in the middle of a muddy field, shielded by a few ounces of appliquéd ripstop, a trade is underway.

Bruce Kapsten sashes his way up to the pair. "Pins?" he asks. Bruce turns back into the deluge to look for his exchange bag. Dedicated collectors can sniff out a new pin even in a downpour.

This mindless fascination with collecting little metal kite pins is over, right? The days of glittering vests and five pound baseball hats littered with cloisonné souvenirs are gone. At least that's what some people would have you believe. But they're wrong. They know they're wrong. And they're probably just jealous because they haven't kept their collections up.

Of course, this is the typical response of a committed pin enthusiast like me. A more forthright response is to say that kite pin collecting has matured.

Back in 1991, *Kite Lines* asked me to prepare the definitive article on cloisonné kite pins. After five years of collecting, I owned an awe-inspiring 350 pieces and was considered the undisputed



Happy Eddy, from Heinz Hasselberg of Germany, is now available in over 20 color variations.

world champion. In the kite community we called it "pin fever." But that was five years ago and the cloisonné revolution was just beginning.

Today, I have more than 2500 different pieces and so do many other kitefliers. It's pretty scary. It's mind-numbing to encounter a familiar design at a festival and strain to remember whether you have a light green one or the other dark green edition back at home. Berthold Guth, an avid German collector, actually carries color photocopies of his collection wherever he goes. He once tried to enter the binder in a pin contest, but was told that only actual pins could be submitted.

A circus tent borders the flying field in Lunen. It contains Germany's largest kite pin competition. Seventeen collections and 22 exhibits are on display. Security guards are posted to protect more than 100,000 pins. Even at a modest \$5 each, the displays are worth over half a million dollars.

An argument breaks out during the official count to determine the largest collection. The five judges retire to a neutral corner to consult the contest rules.

Rules? In a pin contest? Absolutely. This is serious stuff!

In the old days, pin contests would get bogged down over the so-called Warsaw Rule: I visited Poland once and flew kites there. This pin is from Poland. Therefore, it's a kite pin.

Sorry, but the prime directive of pin collecting is that the pin must feature the word "kite," show a picture of a kite, or refer to a recognized kite festival, club, team or person. The pin must be metal and cloisonné style. No plastic buttons, wood carvings or epoxy-coated kite drawings. Finally, different color variations or base metals of the same design count as different pins.

This last rule, more than anything else, created a mushroom effect in pin circles. Because you need to produce about 300 pins in order to buy them at a reasonable price, many festivals now regularly make three or four colors of the same design. It doesn't cost any more and allows you to entice collectors with several different pins instead of merely selling them one. There are versions of the same pin for volunteers, guests,



Each year, the Rendez-Vous Mondial festival in Verdun, Canada makes a new pin featuring their trademark sport kite.



A limited edition series of kites were made from these distinctive Japanese rokkaku pins, showing sun and carp.



A limited edition memorial pin honoring the late Leland Toy.

Isn't It?

By David Gomberg

contest winners and probably even the event organizer's mother. It's enough to make a diehard collector cry.

Gathering and keeping track of all those different colors is part of the challenge of building a meaningful collection. David Brittain of Colorado has 11 different colors of the Revolution pin. Next week, he may have 12.

Some people say that this proliferation has taken some of the fun out of the pin pursuit. It hasn't. There is still plenty of fun to go around.

The annual AKA Pin Challenge is in full bloom. People circle the room with framed displays of their 10 favorite pins. Grown men argue over who has the biggest single pin. For the costume event, women arrive as beauty queens, superheroes and mermaids.

Pete Dolphin will be elected president later in the week. But tonight he has a higher calling. Dressed as a gilded knight, he struts around the room with sword and helmet, his coat of mail created from thousands of different pins. Vic Eshpeter follows discreetly behind him, ready to pounce on anything that may fall loose to the floor.

If it starts being too serious, it stops being fun.

Has the interest in kite pins peaked?

Three years ago, AKA tried to organize mass ascensions of different types of kites on different days of their convention. For example, at noon on Tuesday, everyone was supposed to launch a box kite. It was a good idea, but only 10 people showed up. Last year, I suggested we try again, but offer a special pin to everyone who participated. You had to fly a kite to get the pin.

We weren't sure what to expect because, as one organizer said, "no one collects pins anymore." But the outcome awed us. On the third day nearly 200 rokkakus were launched. We gave away more than 600 pins and had to order extras. These mass launchings were one of the most amazing and joyful things I have ever done with a kite. And they happened because people wanted those darn pins.

Of course, the pins were free...

The Fanø festival crowd surges forward. Finally, the "official" pins arrive and five hapless volunteers sell them. The faithful besiege the volunteers, waving their money in the air. The swarm is so thick, once you make a purchase, you can't get out. It looks like a scene from the Chicago commodities exchange.

Two thousand pins are gone in 45 minutes.

Later we determine there are 11 "unofficial" event pins being sold at the beach.

To be honest, the number of people seriously gathering kite pins has diminished. The urge to own one of everything has waned because it simply isn't possible to have one of everything.

That said, I think more kites now own and collect at least some pins. They specialize in festivals they attend, in a special type of kite or just buy the ones they really like. You can't cross a kite field anywhere without seeing their hats, vests and jackets sparkling in the sunlight.

It is a worldwide phenomenon and swapping is still a quick, effective way to make friends. Besides, it's fun.

And those, my cloisonné-gathering friends, are the two best reasons to keep on collecting.

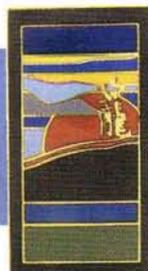


The official *Kite Lines* contributor pin. You have to write an article, be a Lifetime Subscriber (or know somebody) to get one of these.

It is the opening ceremonies at the Japan Kite Association convention. In the corner, a growing mob is oblivious to the mayor's speech, the food and even the flowing sake. A new roll of trading pins has been unveiled.

Hats, vests and hapi coats are littered with cloisonné treasures. One collector is seen with his knife out—shearing patches from his coat to offer in exchange.

It's madness. Cloisonné madness.



Day-to-night Edo-style kite set, designed and produced in Germany.



Can you spot the difference between these two pins made from kites by Randy Tom of San Diego, California? It's enough to make a collector crazy...

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FOR THE RECORD

Growth in Multiples

By Valerie Govig

Most in an Arch Ribbon Train*

Nobody had claimed it so Gary Lyons of Adelaide, Australia joined forces with Tony Wolfenden and Bruce Hawdon at the Semaphore Flight Fest, March 9-10, 1996 in Adelaide, to fly 870 kites in arches.

Note the plural. It would be very difficult to fly 875 kites in a single arch—even in several arches it's no piece of cake. But it was certainly a "major spectacle," as Lyons called it. His real agenda was not to set a record but to draw crowds to festivals.

It worked. The kites flew all day March 9, intermittently on March 10 and were given a spontaneous standing ovation by the stunt kitefliers who were there for the state sport kite championships.

Lyons had help. Tony Wolfenden made and brought 400 of the kites; Bruce Hawdon's 350 were made with Michael Alvares in school workshops in 1995; and 120 units were made in a 30-school project by Anne Marie Parry, partner with Lyons in The Kite Factory in Adelaide. The fliers were Wolfenden and Peter Lloyd from Melbourne, John McKellow from Sydney and John Daniell from Port MacQuarie. The flight was not initiated by any one person—"It just happened," Lyons said.

But not without labor. Each builder had made the kites in batches of 20 to 50 to allow joining and separating in numerous configurations. Wolfenden started with a single 200-kite arch, then when Peter Lloyd pulled out Hawdon's arches "they started playing with the shapes you can produce. It made for some interesting effects," as Lyons said. At one point there were 10 separate arches flown in a dome style.

All the kites were diamond-shaped and about 600 mm x 600 mm (2 ft x 2 ft). Sails were ripstop; spines were fiberglass or cane skewers.

Lyons says, "All the kites have been

**An arch ribbon train, as distinct from an arch ribbon (a long, continuous strip of material) or an arch train (a kite train with through-the-kite line, reversible dihedral and anchorage at each end) is a string of kites with spines only and a continuous cord for cross-sparring, flown shoulder-to-shoulder in the same plane laterally—like an arch ribbon with gaps, but having the effect in the air of a conventional train.*

returned to their owners and will be used at future events. We plan to go well over 1,000 next time!"

Indoor Records Take a Flying Leap

Although the *Guinness Book* doesn't yet include any records for indoor kiteflying, this new branch of the sport is hitting a growth spurt. As is shown by three records set in England recently and more being planned as we go to press.

We at *Kite Lines* had considered six indoor duration categories as having major interest:

1. Single-line kite, single flier
2. Single-line kite, team
3. Dual-line kite, single flier
4. Dual-line kite, team
5. Quad-line kite, single flier
6. Quad-line kite, team

The three records in England cracked categories 3 and 4, then went beyond, opening a new page, for multikiteflying indoors.

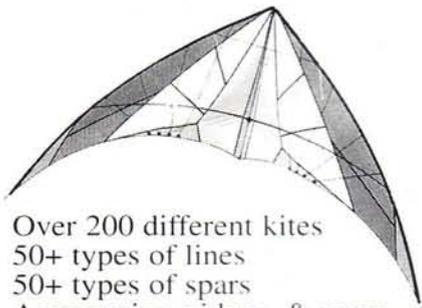
All three records were set on March 24, 1996 at the Way on High Indoor Kite Festival, Lady Hawkins Leisure Centre, Kington, Herefordshire. All the kites were made by Airdynamics, England and flown in zero wind, unaided by fans or ducts, with all doors closed. The fliers took no breaks, made no touchdowns and kept moving at all times. Several witnesses observed. And the record-holders for kiteflying duration indoors are:

- **Dual-line kite, single flier:** Greg Eynon, 3 hours 0 minutes 0 seconds.
- **Dual-line kite, team:** Greg Eynon, Peter Taylor, Simon Dann, James Medelin, Steve Woolley (hand-overs between fliers in flight), 3 hours 33 minutes 33 seconds.
- **Two dual-line kites, single flier:** Peter Taylor, 18 minutes 1 second.

Previous indoor kite records of note have been the following:

- **Absolute duration:** 39 hours 53 minutes set by the team of Carl Brewer, Bob McCort and Tom Sisson on February 7-8, 1981 in the Kingdome stadium, Seattle, Washington using an airplane/glider kite built by Brewer.
- **The first stunt kite duration record:** 4 hours 4 minutes 4 seconds by David W. Brittain on July 14, 1992 flying a Revolution quad-line kite in the Central Catholic High School gymnasium, Portland, Oregon. ◇

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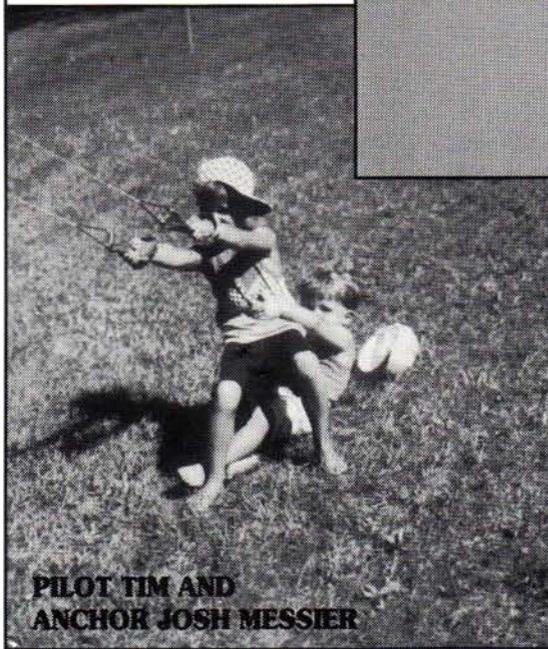
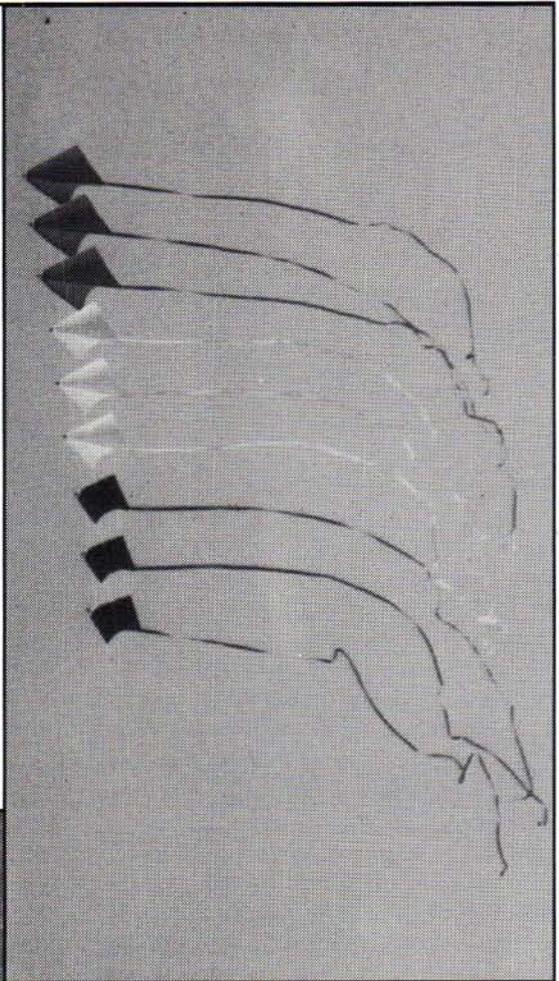
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RAYMOND PRUNTY HOLLAND, JR., of the Airplane Kite Company in Roswell, New Mexico died on November 29, 1993 at the age of 83. (*Kite Lines* learned the news in 1996.)

Holland was an engineer, inventor and author and an aerodynamic consultant to the U.S. Air Force and the space industry. He wrote many technical articles and two books, one titled *The Physical Nature of Flight*, which describes aerodynamics in layman's terms.

He held at least 26 patents, including nine for kites issued from 1938 to 1980. For the Airplane Kite Company he designed 15 to 20 kites in a range of styles (boxes, deltas, diamonds, squares, sleds, a dragonfly). At peak production, the company built 20,000 kites a year and was an early advertiser in *Kite Tales* (predecessor of *Kite Lines*).

Perhaps his best-known kite was the Wind Wizard, a ventless sled that was adapted and used by Walt Pasciak of Baltimore, Maryland in the Big Brothers program. Mel Govig asked Holland if the local club could use the design for children's workshops and publication. Holland graciously agreed. ("Hundreds of Sleds, Hundreds of Smiles" in the Winter 1977-78 *Kite Lines* became a widely distributed sled-making "system.") Holland was also a *Kite Lines* editorial advisor.

In about 1986, Holland stopped making kites when he became increasingly involved in a wind-powered electrical generator project. He used a room-sized wind tunnel at the back of his kite shop for some of his experiments.

He is survived by his wife and three daughters, one of whom, Linda Holland, serves as president of the Holland Corporation and continues the work of developing and testing the wind-powered generator.

—Valerie Govig

CLYDE T. SMITH of Belleville, Michigan, a continuous career kiter, died on February 6, 1996 at age 83.

He was a Ford automobile layout designer by trade but was involved with the wind all his life. He had windmills in his back yard and went sailing and ice boating for years.

He also flew kites—very much. He recorded his days of kiteflying in a log he kept in his billfold: 167 days in 1980, 107

days in 1981, 137 days in 1982, 280 days in 1983, 362 days in 1984. He was going for all 366 days in 1984 (a leap year) but on December 27 was taken to the hospital for a month, cutting his goal short by four days. After his recovery he went back to his kiteflying and kept adding to his log. He was willing to fly kites at night, in cold weather or briefly in light rain, and he contended that you could find an hour at some time during any day that would serve for kiteflying.

Clyde Smith traveled widely to kite events, had many kite friends worldwide and flew all kinds of kites, most of them made by his wife Dorothy, who died just 10 months before him.

In his last four months he took his first flight in a sailplane, and in his last two weeks he went ice boating with his children. He will be remembered for his unique record of continuous kiteflying and his buoyant personality.

—Valerie Govig
with thanks to Barbara Hall and Henry Tallbert

JUAN FIGUEROA of West Orange, New Jersey, an enthusiastic "regular" on the East Coast, died on February 7, 1996 of diabetes at the age of 40.

Born in Brooklyn, Figueroa was a computer technician who had flown kites since childhood. With Carmela Pallotta he often flew under the Verrazano Narrows Bridge, in Central Park, Battery Park and (his favorite site) Liberty State Park. He asked to have his ashes spread there. He was a Vietnam veteran; Pallotta said, "Kiting gave him inner peace."

The pair made and flew many kites together: an 18-ft genki, many fighters, a

Juan Figueroa works on his fighter kite appliqué at the 1993 Maryland Kite Retreat.



PHOTO COURTESY OF L.V.K.S. ARCHIVES

Cody, rokkakus, stunt kites and others. They took their kites to many local gatherings as well as to Colombia, Canada and Niagara Falls, New York. Figueroa particularly enjoyed Colombia because he spoke Spanish. He was a valuable translator for English-speaking guests at the kite festivals there.

Though he flew stunt kites, Figueroa used to say: "The Zen of kiteflying is in single line."

—Valerie Govig

with thanks to Carmela Pallotta

ELMER G. WHARTON, America's expert builder of Asian-style centipede kites, died on February 19, 1996 in Chicago, Illinois at the age of 71.

A theater graduate, he worked as an actor and model before going into kitchen design. He then became national director of training in kitchen sales at Sears, Roebuck. His interest in kites bloomed in the 1970s when he undertook the challenges of flying and bamboo framing of centipedes. He was a member and officer in the Chicagoland Sky Liners Kite Club and served as a vice president of the AKA in 1990.

At a kite festival in Japan, Wharton was introduced as "Emo Wonton" and the name was promptly adopted by friends who appreciated his expansive sense of humor.

Writing of him in "Kiting" (the AKA journal), Jim M. Miller recounted:

"He was a two-time champion at the Smithsonian Kite Festival and won the AKA Grand National Championship in 1988. He taught classes on centipede kites and bamboo usage at numerous workshops around the country. He also taught classes on kitemaking for kids in the Chicago area, and in the past several years devoted many hours to teaching kitemaking to the elderly at Heiwa Terrace, a Japanese retirement home.

"Elmer was well known for his wit and whimsy, which was often reflected in the originality of his kite creations. His flying outhouse, lady on a bicycle, pizza kite and many more were always favorites with the spectators at kite festivals.

"Because Elmer was not the kind of person to burden others with his problems, few knew that he had contracted cancer several years ago. His disease took a turn for the worse at the end of 1995. His active

Wharton, Wilcox, Gilgallon



Left, Elmer Wharton poses his lady-on-a-bicycle kite at the 1987 Smithsonian Kite Festival. Above, George Wilcox (center) guides his troops through the snow at the Maryland Kite Festival, 1974. Right, Pat Gilgallon lifts a Waldof Box for display in Detroit's Fisher Building in 1980.



ANNEKE DAVIS

life was celebrated at a memorial service in Chicago attended by hundreds of kitefliers and other friends who took turns sharing reminiscences of our good friend Elmer."

GEORGE CREAMER WILCOX, JR., kite promoter in the Scouting movement, died in Baltimore, Maryland at the age of 81 on March 17, 1996.

He had been a technical illustrator, teacher and co-founder of the Maryland Archaeological Society and very active (for 50 years) in Boy Scouting.

It was through Scouts that he became interested in kites. He and his troop made numerous kites, one a memorable 40-ft three-part paper box painted to resemble a totem pole, which flew in harsh weather, including snow flurries, and landed in a tree during the 1974 Maryland Kite Festival.

At about this time Wilcox wrote an official, detailed and eloquent petition to Scouting headquarters asking the organization to establish a Scout merit badge for kiteflying. It may have been the first attempt to place kiting in the program since Paul Garber wrote his manual for the Scouts in 1931.

It was not the last such effort: the AKA campaigned to win a Scout badge for kiting in 1990-91, but with no luck. Wilcox knew their discouragement. His reply from headquarters had said that his petition would be considered in about eight years. He lamented that the Scouting administration was

"as slow as molasses in January."

Wilcox is survived by his wife Eleanor (with whom he served as a festival judge for about 10 years), two sons and two grandchildren.

—Valerie Govig

PAT YORK GILGALLON, dynamic retailer of The Unique Place—World of Kites in Royal Oak, Michigan, died on May 3, 1996 at age 74. After some years of poor health, she had just sold the shop on March 1st to Gerald and Zella Honemann.

Gilgallon had been a model, artist, wife, mother and civic leader before she opened a kite shop in 1975. She pioneered the idea of a professional "pro shop" for kites. She organized training programs and "flight suits" for her staff and generously encouraged other retailers, such as the Mackinaw Kite Co. in Mackinaw City, Michigan. She was instrumental in the start of the 5/20 Kite Club in 1976; her shop's bulletin board for kites spurred connections in the region.

In 1982, when the AKA convention was held in Detroit, Gilgallon ran a survey of the kite trade and chaired the trade committee meeting where it was determined that government rules required that the kite business group have a separate association. The next year the Kite Trade Association was founded and later developed its own convention.

Every March and April from 1980 to 1988, Gilgallon filled the 60-foot-high

domed lobby of Detroit's Fisher Building with her collection of spectacular kites. She collected important kites and kite memorabilia, especially on her trips (to Japan, China, Egypt and Central America) and at the auctions at the AKA conventions, where she was often a bidder on one-of-a-kind top-dollar items. She was a particular fan of Domina Jalbert, designer of the parafoil, and she acquired a large stock of original Jalbert kites.

Gilgallon was one of the first members of the Mama-Sans, the international women's rokkaku kite team, founded in 1983. She was promotion-minded and on cruises would fly kites off the ship's stern.

In 1993 Gilgallon underwrote publication of Wayne Hosking's book *Kites to Touch the Sky*. She also helped him travel to Asia for study and future writing.

Gilgallon's collection of rare kites and related materials is expected to be up for sale once a list can be assembled. She leaves behind a legacy of entrepreneurship that was featured in the Retail Family Scrapbook (Winter 1988-89 *Kite Lines*). She was the only advertiser to appear in this magazine in every issue from the first in 1977. Her slogan was, "We are more than a commercial endeavor—we are an *idea!*"

She is survived by her husband Carl and her three sons, Carl Jr., John and Paul.

—Valerie Govig

with reporting from Barbara Felker

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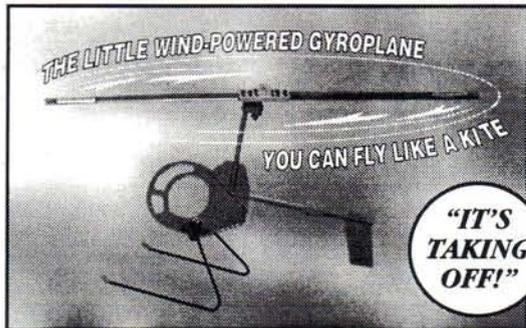
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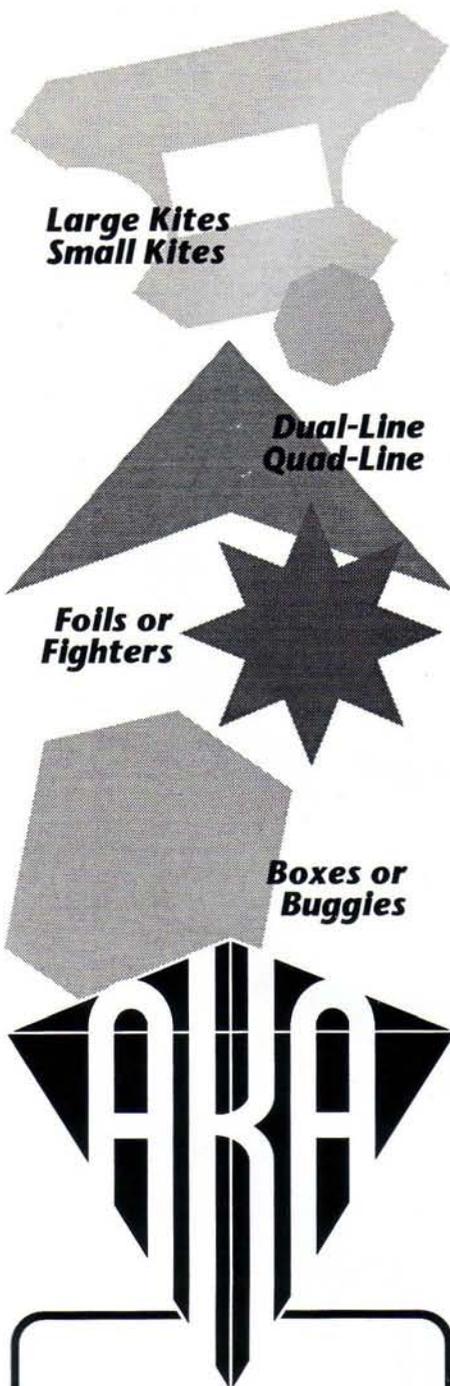
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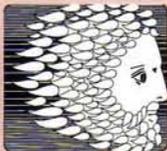
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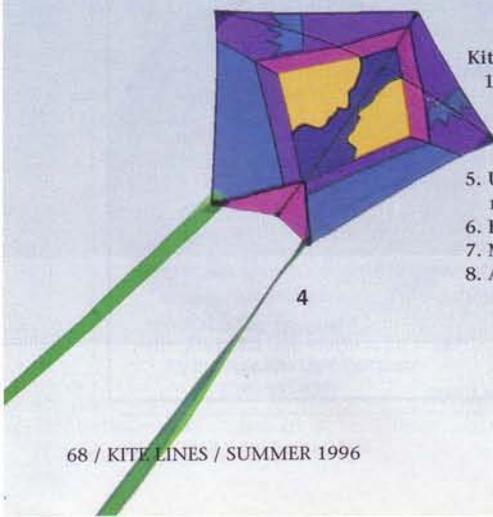
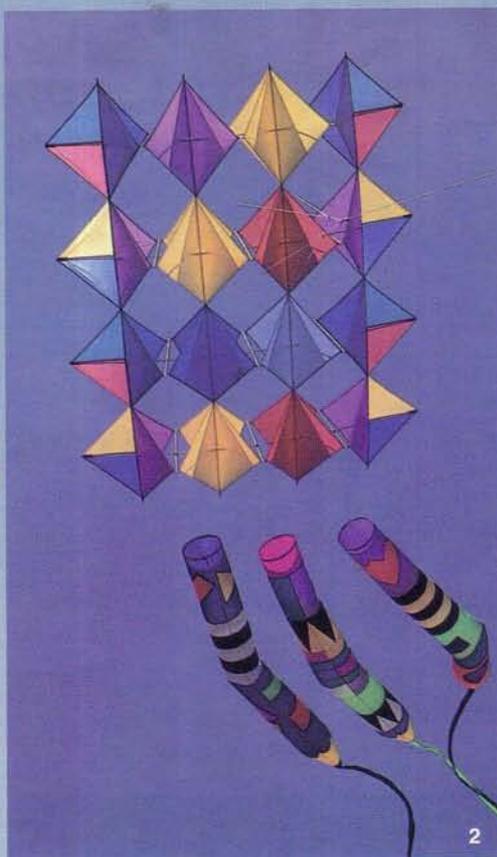
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SKYGALLERY

Michael Goddard



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3. Mask Delta: 1993, 12' span, ripstop nylon and dowel
4. Sky Dancer, Illusion: 1994, 2'6"x3', ripstop nylon and dowel
5. Untitled Flow Form: 1993, 7'6"x4'8" and 9' winged tube tail, ripstop nylon. Pencil Windsocks: 7' with 20' tails, ripstop nylon
6. Hot Spot Rokkaku: 1992, 7'6"x6'4", ripstop nylon, fiberglass and dowel
7. Mask Rokkaku: 1991, 7'6"x6'4", ripstop nylon, fiberglass and dowel
8. Akassa: 1996, 8'x8', ripstop nylon, carbon fiber and fiberglass





5



7



8



6



Kitemaker: Michael Goddard, 44, Derbyshire, England
Occupation: Graphic designer and lecturer. Lecturing brings me into contact with lots of young people. I always encourage my students to keep sketchbooks and to explore images using a wide range of media.
Kiteflying experience: I've spent 17 years making and flying kites. I've moved from simple appliqué designs to more complex multicell kites in the 1980s, to more sculptural soft kites and windsocks in the 1990s. I keep many sketchbooks to develop my kite themes. I usually complete 30 or 40 thumbnails before settling on a final design.
Average amount of time spent on kites: About three months for large kites
Favorite flying spot: Western isles of Scotland
Intent in kitemaking: To share experiences and pass on knowledge
Influences: Pelham's *Penguin Book of Kites* first caught my imagination. My recent influences are African masks, totems, Maori myths and tropical birds and fish. Also, the art of Modigliani, Matisse and Miró.
Photographers: Michael, Fran and Harry Goddard

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