20TH ANNIVERSARY EDITION

BONUS! KITE CALENDAR

Kitelines™

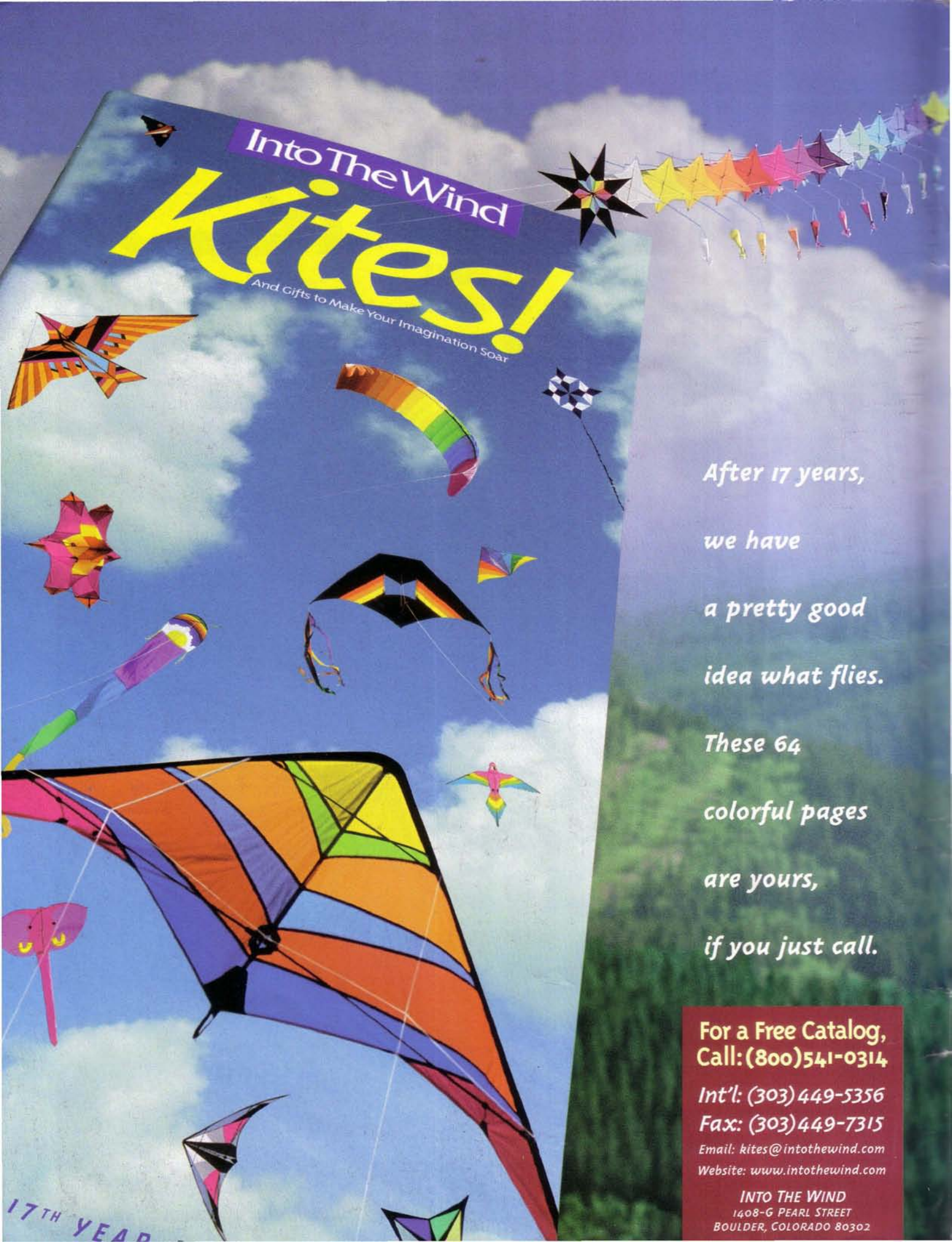
THE INTERNATIONAL KITE JOURNAL ▪ SPRING-SUMMER 1997 ▪ VOL.12 NO.3 ▪ $4.50 US

TOSA DAKO: The Delta's True Ancestor?
By Pierre Fabre

EXCLUSIVE: A Tour of India with Tal Streeter

BUBBLEOSITY: Making the Felix Cartagena Bubble Machine

SKYGALLERY: Jon Burkhardt's Celebrations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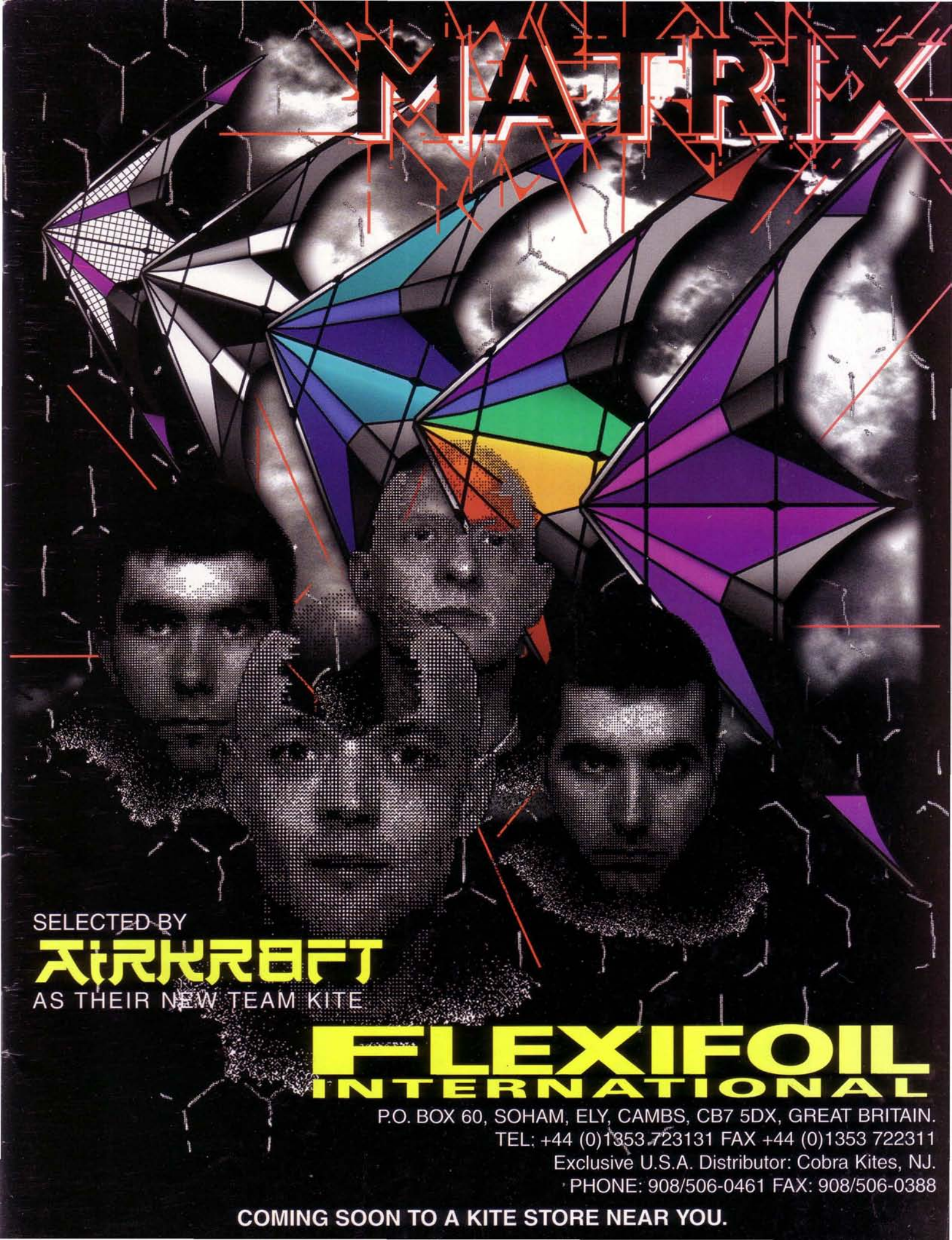
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FEATURES

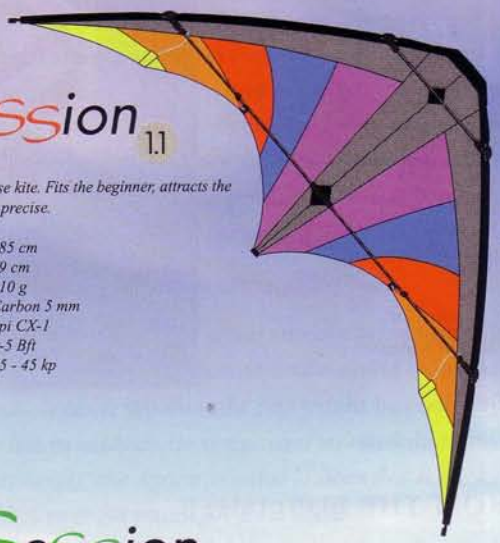
DEPARTMENTS

COVER: *A Tosa dako rises into the sky on Shikoku island in Japan. Photograph by Pierre Fabre. (See story on page 34.)*

READER SERVICES

The session series:

Session 1.1



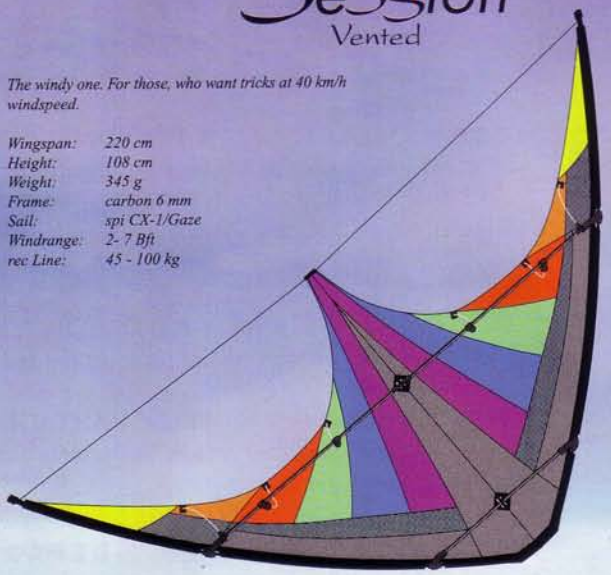
The multi-purpose kite. Fits the beginner, attracts the expert. Absolute precise.

Wingspan:	*185 cm*
Height:	*89 cm*
Weight:	*210 g*
Frame:	*Carbon 5 mm*
Sail:	*Spi CX-1*
Windrange:	*1-5 Bft*
rec Line:	*25 - 45 kp*

Jam Session Vented

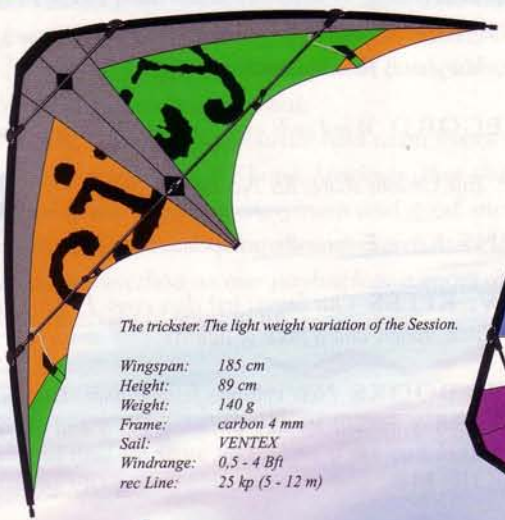
The windy one. For those, who want tricks at 40 km/h windspeed.

Wingspan:	*220 cm*
Height:	*108 cm*
Weight:	*345 g*
Frame:	*carbon 6 mm*
Sail:	*spi CX-1/Gaze*
Windrange:	*2- 7 Bft*
rec Line:	*45 - 100 kg*



citySession

COMING SOON



The trickster. The light weight variation of the Session.

Wingspan:	*185 cm*
Height:	*89 cm*
Weight:	*140 g*
Frame:	*carbon 4 mm*
Sail:	*VENTEX*
Windrange:	*0,5 - 4 Bft*
rec Line:	*25 kp (5 - 12 m)*

VENTEX

Jam Session

created by
Dodd Gross · Christoph Fokken

The "state-of-the-art" in ballett and tricks

Wingspan:	*220 cm*
Height:	*108 cm*
Weight:	*295 g*
Frame:	*carbon 6mm*
Sail:	*VENTEX o. CX 1*
Windrange:	*1 - 5 Bft*
rec Line:	*70 - 100 kg*

Jam Session Ultra Light

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Height:	*108 cm*
Weight:	*220 g*
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After 20 Years It's Still New

We receive certain Frequently Asked Questions about *Kite Lines* and—after 20 years of publishing—maybe it's time to answer them in print.

1. *How do you find enough material to keep putting out a magazine just about kites?*

I hate to say this, but you've asked a really dumb question. Actually, your thought did cross my mind when I put the first *Kite Lines* together. But ever since, finding "material" has never been the problem. Having enough time to assimilate it, study it and shape it into a final publication that would be worth your time to read is the challenge. Kites and kite people make up a rich little world that seems to expand the more you touch it. Maybe this is partly because we perceive so many aspects to the subject.

2. *How do you find readers for* Kite Lines?

We don't find them. They find us. We mostly just do this magazine and trust that it will resonate out there.

3. *What perspective do you have on kiting after 20 years of being involved?*

It never fails to change and fascinate. It has grown—but it is still small. The characters in the play shift in and out—but they are still characters. New kites and techniques keep popping up, especially in stunt kites, but the "old" stuff keeps being rediscovered. The potpourri continues. I have faith that it will continue forever.

4. *Do you do the magazine part-time?*

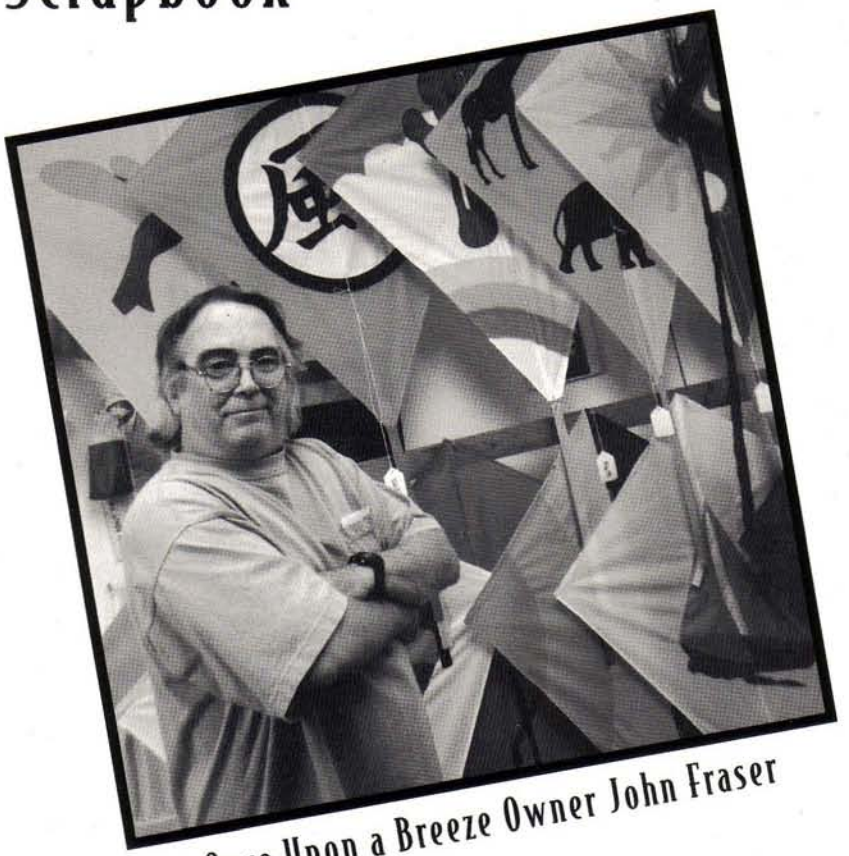
Are you kidding? Best 60-hours-a-week job I ever had.

5. *What are you doing to celebrate the 20th anniversary of* Kite Lines?

We've redesigned the magazine! We've aimed to make it more effective, readable and enjoyable. Change can be hard, but there comes a time when the comfortable old clothes are out of date. Although our balance of contents is much the same, the change of dress makes us feel that kites are a brand-new idea. How do you like the change? Let us know!

Valerie

Our Retail Family Scrapbook



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AGE: 54
FAVORITE FOOD: Lisa's pasta with scallops & clam sauce
LAST BOOK READ: *Getting Hits* by Don Sellers
LAST KITE BOOK READ: *Penguin Book of Kites* by David Pelham (worn out two copies)
FAVORITE FLYING SPOT: Seawall in downtown Cannon Beach—great updrafts!
LATEST PROMOTIONAL EFFORT: Our web site: http://www.webcom.com/mr/kites/
MOST IMPORTANT ADVICE EVER RECEIVED: "Never forget to have fun" (D.K. Smith)
STORE SPECIALTY: Ground Zero kites from Australia
NICEST SALE EVER MADE: I love to sell big single-line kites, such as Prof. Waldofs.
BEST FRINGE BENEFIT OF THE STORE: Being able to buy kites that I couldn't afford on my salary
FAVORITE ISSUE OF KITE LINES: The current issue—until I get the next one
COMMENTS: I got into the kite business in the best possible way. I was first a collector and flier, then the former owner hired me to put on beach shows with stunt and other new kites.... He then moved out of town and I ran the store.... My parents loaned me the down payment for the store when it came up for sale and I have expanded it to one person and four employees.

Of tests, bats & colors

SET SOME TEST STANDARDS

In kite reviews, please include some basic references or "yardsticks" for objective comparison for us folks out in the fields. How is "fast" defined for turning [for example]...

You should decide on a standard reference kite, then measure the time it takes to make 10 turns. When you describe a particular stunt kite you can label it as F(ast), M(edium) or S(low), with a table defining Fast as the speed of a [standard kite] making 10 turns in X seconds.

Every other product reviewed elsewhere, from cars to computers, uses certain standards or guidelines—otherwise your reviews don't mean anything. I don't even care if the reviewers compare the kites to a rock, as long as they do a comparison that I can grasp a morsel of meaning from.

—Paul L. Taylor and family
Albany, New York.

EDITOR: You have raised a point often discussed at *Kite Lines.* Finding the right balance in kite reviews to reflect the interests of all our readers is a continuing challenge. Unfortunately, measuring kite performance depends upon a synthesis of subjective factors—the greatest being the ever changing nature of the wind. Lacking the laboratory resources of *Consumer Reports* and like magazines, our goals are correspondingly limited. (See a statement of our purposes and procedures on page 24.)

THE BAT GOES ON

I've actually made a kite from an Australian flying fox, modeled along the lines of some fabric bat kites I have from Indonesia.

I haven't tried to fly it, but I'm sure weight would not be a limiting factor—it weighs only a few hundred grams because it's basically only the skin of the animal, plus some bamboo struts. Wing span is 1.2 metres [47 inches]. It means you can eat the bat and fly it as well!

I don't suppose you'd like some [bat] recipes? "Kalong rendang" from Indonesia is very tasty, as is "Rousette au vin" from Vanuatu. Bat meat is reckoned to have magical and aphrodisiacal properties in some places.

—Dr. Chris Tidemann
Canberra, Australia

EDITOR: Dr. Tidemann's search for documentation of kites made from "flying fox" bats was reported in *Kite Lines,* Fall-Winter 1996.

A FRENCH LEAGUE OF KITES

I'm writing to [inform] you of the French League of Kites. We represent over 30 clubs all over France with wide activities, from aerial photography to team flying, buggies on sand to altitude flight, not to mention rokkaku and fighter kite amateurs.

The Managing Committee is composed of different branches dealing with all the aspects of kiteflying. I am in charge of International Relations and try to provide information to the clubs about what's going on worldwide.

I've been reading *Kite Lines* for seven years and what I most appreciate are the high level of writing and the special attention given to arguing clearly, explaining precisely and crediting whoever was at the origin of the kite, idea or tip given.

—J-M Boehm
Cachan, France

CORRECTIONS & CLARIFICATIONS

Relating to the Fall-Winter 1996 *Kite Lines:*

John Loy finds an oversight in his article, "Why Do Kites Fly?" One kite book in his collection does, in fact, cite movement of the center of pressure with attitude. It is: *Kites. The Science and the Wonder* by Ito and Komura. John apologizes to the authors for the omission.

In his review of the Mosquito traction kite, Jim Welsh had some problems with the supplied handles, but did not mean to suggest buyers should purchase their own.

With our review of the Mini Spirit by Omega Kites, an unlikely price was given. This kite should sell for about $350.

WRITE US A LETTER! *We love hearing from you. Just remember: Anything you write to Kite Lines may be considered for publication, so please mark it "not for publication" if you want to forestall any doubt.*

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it will come out straight and fast, spinning itself around its out-haul bridle

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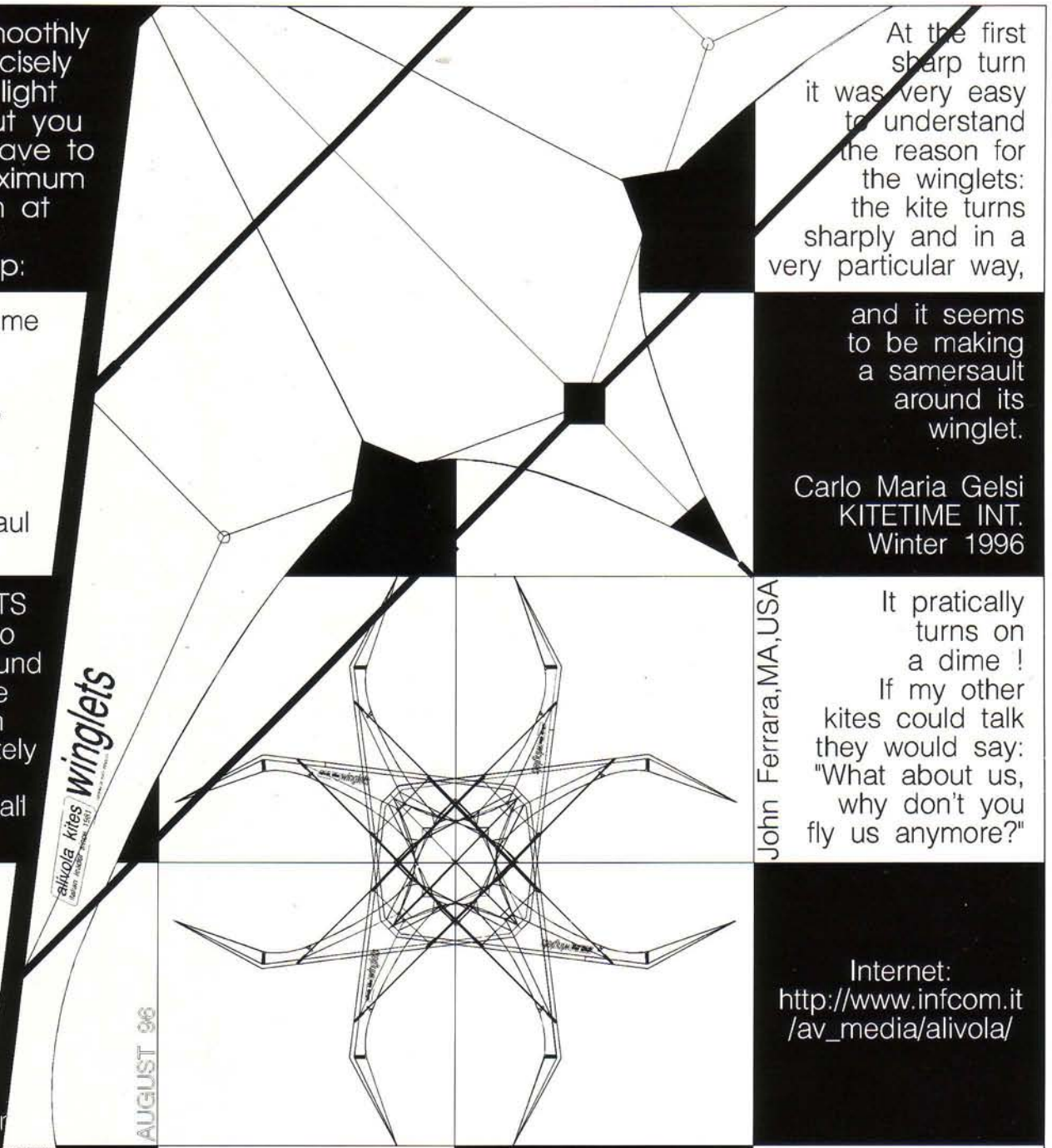
Guido Accascina, through its WINGLETS, has introduced a new concept both in kite manufacturing and kite design.

Some of the WINGLETS responses are completely unexpected, sure leading all kiteflyers to creative flying.

Paul Kappel, DRACHEN MAGAZIN, AUGUST 96



At the first sharp turn it was very easy to understand the reason for the winglets: the kite turns sharply and in a very particular way,

and it seems to be making a samersault around its winglet.

Carlo Maria Gelsi
KITETIME INT.
Winter 1996

John Ferrara, MA, USA

It pratically turns on a dime ! If my other kites could talk they would say: "What about us, why don't you fly us anymore?"

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Kites abroad and at home: A TOUGH TOUR OF COLOMBIA,

A KITE-CAM IN THE FRENCH SKY & A TOUCHING FLIGHT IN RHODE ISLAND

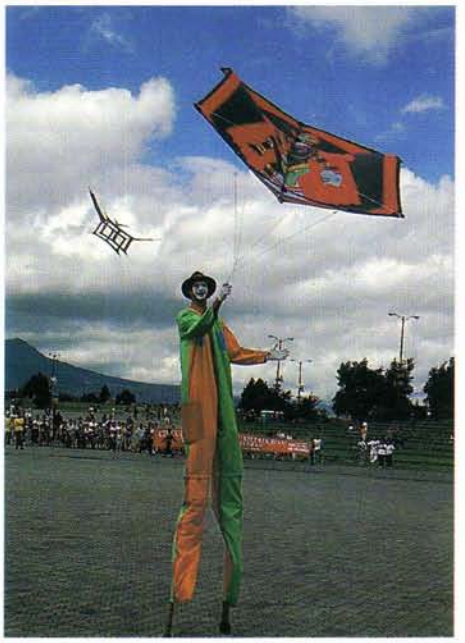
Colombia: The good, the bad...

Months after leaving Colombia, the 1996 kite tour has come into sharper focus. I have met most of my fellow travelers once or twice since, and it is always like a reunion of war veterans—or disaster survivors.

But, do you know? Each time gets better with the telling, and the hardships fade away to insignificance.

I love mountains, so I love Colombia. This country of nearly 28 million people in the northwest corner of South America holds some of the most beautiful mountains in the world. The invitation to fly kites in this rarified air last August offered me a third opportunity to visit Colombia, and I signed up eagerly.

Three things make a great kite tour: beautiful surroundings, good company and careful planning. Two out of three isn't bad. But this 1996 Colombia tour—sponsored by the provincial governments of Antioquia and Boyaca, as well as local towns and kite organizations—suffered from planning that appeared at times to be taking place as we watched.



Above, a visiting Venezuelan manages to keep his balance walking on tall stilts while flying a rokkaku made by Carmela Pallotta of New Jersey, at a kite tour stop in Bogotá.

THE GOOD. . . Have you ever dreamed of performing for thousands? At Simon Bolivar Park in Bogotá we flew in a stadium that might have been made for kites! Soft sod steps behind stone edges afforded a comfortable view for 6,000-plus spectators—who had come just to see kites! Onlookers were not just incidental audiences at the beach or in parks.

We guests became a traveling circus. At each site—Medellin, Bogotá, Tunja, Villa de Leyva and Bello—the fliers were on show. In 11 days, my notes say, we were either performing or en route 36 percent of the time —a heavy schedule even for a rock band.

We were mostly fliers of maneuverable kites—one-line fighters, dual-line, quad-line—with a few fliers of stable kites to provide aerial attraction to the sites.

From the United States came: Peter Betancourt, Jon Trennepohl, Scott Spencer, Jim Low, Carmela Pallotta, Kobi Eshun, Miguel Rodriguez, Brian Champie, Jeff Howard, Norman Vincent Awill, Peter Lee, Joe Perron and Jason Robbins. From England were: Don Eccleston, Derek Kuhn and Stafford Wallace.

THE BAD. . . Organizers of kite tours must remember the fliers they lure to their countries are human beings who have needs: basic dietary and sanitary requirements, plus a few free moments each day and the chance of some interaction with local kitefliers.

I'm the last person to complain about a busy schedule. People ask you to come, you come. But this trip ranks with other international tours of particular rigor, such as Indonesia last year, Satun, Thailand in 1992 and Weifang, China in any year.

At least we had little rain.

Planning? I can only hope everything wasn't planned. Some of our group were hardly over jet lag before we were on the flying field on display. And on the final day, we worried about making it to the Bogotá airport on time to get home.

Mostly low-landers, from New Jersey and the Midlands of England, many fliers were constantly short of breath. In 12 days we were never below a mile high, and at times, such as at Tunja, we were two miles above sea level. Whew!

On most kite tours, lodging tends to be on the order of youth hostels—but that's too nice a description in this case. At each stop, it was luck-of-the-draw between good, marginal or poor accommodations.

Generally, the food in hostels is not up to the usual standards of a country, and this was true in Colombia. The street grills offered the best food: skewered beef, pork or chicken with onions and a potato. And the ubiquitous hard corn cakes were not as hard from the vendors.

Regrettably, we had only limited opportunity to fly with local kitefliers, but we came to admire them for flying on difficult terrain. Try lofting kites on 30-degree slopes at 10,000 feet, with hundreds of kids underfoot! And maybe the hardest part was getting back uphill to the bus. The bus rides were pleasant enough (though a few riders found them precariously thrilling), but they were always too long and often in vehicles too small.

THE BOTTOM LINE. . . I had a ball! The surroundings were beautiful, the wind was good and I don't think I have ever been with a more game and responsive group of kiters.

Best of all, perhaps, Colombian audiences everywhere applauded our every move

Above, a large Conyne-style kite built by Colombian Federico Martinez sits on display at Villa de Leyva.

PHOTOGRAPHY BY MEL GOVIG

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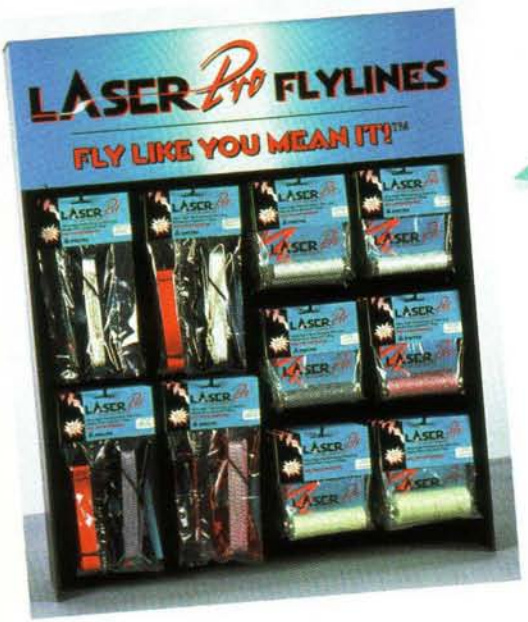

"I can't believe it - I was still able to snap an Axel with 66 turns in the line. Amazing!"

-Patrick "Speedy" Guggenheim, 3 time Swiss National Champion

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on the flying fields, hollering happily at the kites over their heads. And how can you regret that? —*Mel Govig*

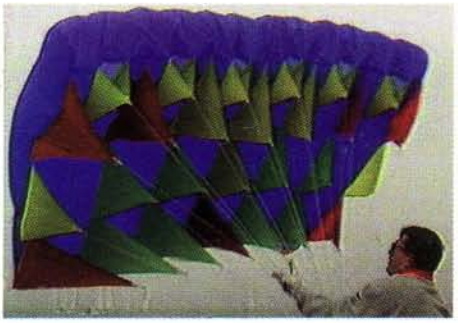
Keeping a high eye on sailors

Kitefliers have been sending cameras aloft to take bird's-eye photographs of the world for more than 100 years. And sailboat racers have long gained speed with the aid of billowing spinnaker sails, affectionately known as "kites."

The two activities recently came together in France.

In preparation for the 1996 Olympic Summer Games in Atlanta, the French National Olympic Sailing Team trained under the watchful eye of a video camera suspended from a parafoil kite. The overhead view offered the perfect perspective for analyzing tactics after races.

American sailors have achieved the same end with helium-filled balloons. But a kiteflying member of the French team suggested that a kite made a more practical alternative. Checking the Internet, sailing coaches found nothing on kite aerial photography they could adapt directly to their seafaring needs. So they developed their own system, financed by L'École Nationale de Voile (the ENV, National School of Sailing) and the Federation Française de Voile (French Sailing Federation). The system was first used to record the 1996 European Laser Championships at Quiberon, France, preceding the Olympics.



Above, a member of the aerial photography crew prepares the video camera rig, which will be sent aloft under the Stratoscoop parafoil being launched at top right. The equipment includes a camera, camcorder and transmitter, all stabilized by the double wind vane. Right, the resulting kite's-eye view of critical sailing maneuvers at a turning mark.

Paul Lachkine, director of the system for the ENV, says those experienced in aerial photography might find the innovation a little strange, but he contends it is right for their constraints.

The video surveillance system is operated by two people in a small motor boat. During a race, the boat takes up a position safely clear of the course and the crew precariously launches a Greens of Burnley Stratoscoop parafoil with drogue.

The video rig is attached to the 3 mm-diameter flying line, and the kite climbs to an approximate altitude of 75 meters, with the camera stabilized at about 30 meters. This provides an angle of vision to cover both turning buoys, clearly showing tactical details of the critical race maneuvers that take place at these spots.

The system comprises a modified camcorder encased in a waterproof box little bigger than a shoebox, a high-frequency transmitter and a stabilizing device that looks like a weather vane.

Experimentation determined that the most stable video view was achieved with the weight centralized near the line, and the vane—a rod with twin fins—provides balance.

On the boat below, a video receiver relays the camera view to a color monitor and the camera operator directs the shots with a remote control. Three perspectives are possible: one vertical and two horizontal rotations, and each permits zoom capability, too.

Back on dry land, the footage is processed through a Macintosh computer, edited and transferred to VHS tape. Sailors and their coaches can then repeatedly view and critique the performance of each boat and crew. —*Zoë Harris*

SMITHSONIAN PRIDE
"The Seven Gods of Good Fortune" smile on Pete Rondeau of New Oxford, Pennsylvania at this year's event in Washington, DC. Winning for "Beauty in the Air," is his sewn nylon rendition of a classically elaborate Japanese Edo.

SMITHSONIAN PHOTO: VALERIE GOVIG

Maryland transformed

Most of the time, Ocean City, Maryland is just another beach town. But on April 26, 1997 it became something else: Like a homely woman with style, it transformed itself into a blinding beauty—using kites.

That morning the shore turned dazzling with the works of featured guests Steve Brockett of Wales, Michel Gressier of France, Robert Trépanier of Canada and U.S. kiters Jon Burkhardt, Tony Reiser, Sr., José Sainz, Scott Skinner, Scott Spencer and Randy Tom. Many notable visitors, such as Eric Curtis of Canada, joined in, too. The kites they flew were indisputably the grandest collection ever brought together to fly in the small state of Maryland.

"Little" things made the weekend go right: good organization, smooth announcing and music, a large preseason crowd and ideal weather, with balmy temps, bright sunshine and steady wind.

There was also one extra ingredient. You can have a good big beach and misuse it, but Bill Ochse and crew of the Kite Loft made artful use of their space. The guests were grouped in just the right amount of area (not too little and not too much) and from any angle the spectacle of kites flying together was stunning. Everyone seemed to be pulling out all the stops, all the kites, assembling and flying as many as they could while the sun and the wind blessed them. It

was a jam session of extemporized parts that fused and re-fused as if planned.

In any kite festival, you control only the controllable elements, and luck takes over on the uncontrollables. If you have both in your favor, you have greatness.

My colleagues tell me the concurrent Mid-Atlantic Stunt Kite Competition (MASKC), just down the beach, was smoothly run, too. It was held for seven years before and is a continuing part of the Maryland International.

Left, Steve Brockett birds at the Maryland International: large one in nylon and smaller one (in foreground) using new Brockett technique, paper bonded to fabric for richer color.

Financial backing came from Ocean City, the Chamber of Commerce and many others; all the local kite clubs helped staff the show, including the tent with free kitemaking for children.

If a festival is big enough, everyone will find something new to be amazed about. For example, we had never seen anything like a framed quad-line kite that looked like a pink banana, made by Wally Michael of Rockville, Maryland. Flying some blocks away from the main action, the kitemaker demonstrated its unusual flight characteristics. "We always call it a pair of lips," he said. And indeed, hovering over the beach, the prototype *did* seem to be smiling!

I always say you should go to small festivals as well as large ones, and I still believe that. But the Maryland International was a big event worth saving up to visit.

—*Valerie Govig*

THE MIAMI INTERNATIONAL was "five times bigger and better" this April than last, said Randy Tom of San Diego, California. He was part of the spectacle, with four arch ribbons. At one point he hooked all four together to make one giant arch. "It takes a little more wind but it seems to pull less," he says.

MARYLAND PHOTO: VALERIE GOVIG; MIAMI PHOTO: DEAN JORDAN

Smiling at a miracle

Many words come to mind when I think of kiteflying: fun, family, friends, and wide open places, to name a few. I recently added a new entry to my kiting vocabulary: miracle.

The July day started out like many others, as we headed for Brenton Point, Rhode

Island for a kite teaching workshop. Our group included John and Lorraine Martins (Dad and Mom), myself and Marion Botch, part of the team of Dyna-Kite family fliers who have been together forever (or at least 15 or so flying years).

At Brenton Point, we joined Steve Santos, Susan Moskowitz and Rick Rondinone from High Flyers Kite Co. in Newport, and greeted our pupils for the day. The students—Jennifer Sheehy, Cyndi Whitmore, Jay Daunan, Steve Lee, Tim Flynn, Tim Sherman, Duane Kuhl and Curtis Davis—came from the group Shake-A-Leg, also in Newport, which provides services to people with physical disabilities.

The sunny day provided a perfect wind as we ran around to provide enough kites and line for everyone. Within 10 minutes of taking the lines, our wheelchair students seemed to be flying as if they had been doing so all their lives!

Each guest had one teacher and one "victim," er, I mean, ground crew. ("Duck Lorraine! Oops! Sorry.") There were crashes and tangles, but mainly there was determination, fighting for air space—and smiles.

A mouth "bow" allows Curtis Davis to maneuver a stunt kite with head movements. Rubber tubing attached to rear of chair adds resistance to the kite's pull. Davis was able to fly a full three hours in this way.

We had a few experienced fliers, such as Kuhl, who quickly went from a single kite to flying a stack. And then there was Lee, who pushed his chair all the way across the field to grab onto the 22 stack and proceeded to fly solo. Way to go, Steve! All the students did fabulous jobs, and were reluctant to give up their lines to someone else.

The most amazing part of my day came with Davis. Unable to use his arms, hands or legs, he needed a special apparatus to fly.

The device looked something like an athlete's mouth guard, but with a curved piece of white plastic attached. We affixed dual flying lines to this mouth bow and anchored a pair of yellow rubber lines to the top of the chair behind Davis' head, to provide some line resistance.

With the equipment in his mouth and Santos assisting from behind, Davis took control of the kite as the ground crew launched. He was flying!

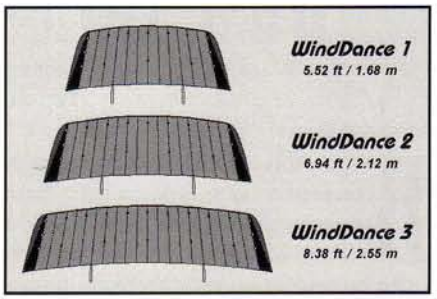
His head movements maneuvered the kite, and during a break he said there was a strong pull on his mouth. Yet he proceeded to fly for the next three hours with hardly a rest.

Later, Santos told me Davis had never been able to participate in such a physical activity.

I have been to many kite teaching workshops, but I will never forget my day at Brenton Point with the Shake-A-Leg fliers. Every time I launch my kite and feel the thrill of the wind I will think about Davis, who not only touched the sky but touched my heart! —*Claudia Messier*

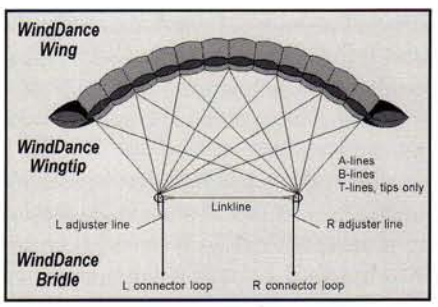
WindDance™ DUAL-LINE PARAFOIL STUNT KITES

The SOFT kites that out-fly DELTAS!

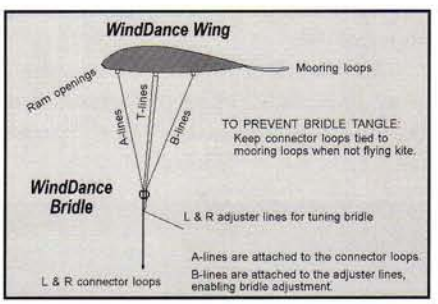


✓ ***No spars! 100% soft!*** Crashing at 60 mph is OK! Safe! No assembly needed! Compact & packable!

✓ ***WindDances out-fly deltas in nearly all FLYING-performance categories!*** Overall, the difference in speed, steering & turning *performance* and *feel*, aerobatic agility, edge to power-zone acceleration, responsiveness to the wind, pull liveliness, wind range, and ability to *FLY* with high performance in wildly fluctuating winds — in short, the difference in *FLYING* excitement — is often astounding! Parafoils are not supposed to fly better than deltas! How did we do it? Skillful aeronautical engineering. Our credentials? See our web site. We surpassed the parafoil state-of-the-art in 1992, the *FLYING* performance of most deltas in 1996. Most deltas are optimized for hot trick performance (to un-fly well to start a trick, and to perform well when not flying during a trick) which compromises *FLYING* performance. During tricks there's ***little*** flying-line tension, speed & pull, or *FLYING*. To the public and most fliers, kite *FLYING* is the main point of kite flying! So we optimized for hot *FLYING* performance: ***lots*** of speed & pull, and fast, tight, powerful turning — what *most* fliers want! **Deltas excel at *tricks*. WindDances excel at *FLYING*!** All you have to do is **1)** break it in by *FLYING* and *crashing* it hard, **2)** tune it for *top speed & fastest turning*, **3)** use basic *FLYING* skills! WindDances also do tricks such as stalls, tail-down spin landings, and relaunches in light winds, as well as outrageous bounce-'n'-fly tricks in stronger winds when crashing loudly is the only way to make them *un*-fly!



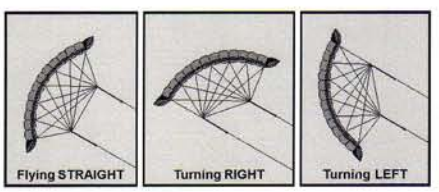
✓ ***EASY to fly! NOVICES sometimes fly WindDances better than EXPERTS!*** WindDances respond to *basic FLYING skills* with *hot FLYING performance!* From the books: stunt kites require flying-line *tension* to *FLY*; **no *tension*, no *FLYING***. Basic *FLYING* skills *generate & maintain* that *tension*. Strong *tension* in both lines makes a WindDance **go** fast! Strong *tension* in one line, the other can be slack, makes it **turn** fast! It's that simple! Beginners *generate* "pull-turn" *tension*, and *maintain* "keep-it-airborne" *tension*, instinctively! Why? These innate dual-line skills stem from the *tension-generating-&-maintaining* skills that children use with single-line kites! A WindDance's carefully engineered response to that skill enables novices to fly WindDances well! But sometimes advanced delta fliers can't turn a WindDance as fast & powerfully or keep it airborne as well as novices can, and can't *FLY* one to its full potential. Why? Hot fliers tend to use punch-turning and trick-flying ***tension-eliminating*** skills — no *tension*, no *FLYING* — rather than the ***tension-generating-&-maintaining*** skills needed to ***FLY*** a kite! The cure? ***FLY*** more!



✓ ***Hot FLYING performance!*** High speed! Quick & tight turns! Fast spins! Delightfully agile & aerobatic! Strong pull in the power zone, as the wind rises, *and while turning!* Dramatic speed & pull changes as you fly across the flight envelope! Highly responsive to the wind, *with exciting speed & pull bursts!*

✓ ***They fly well in ALL winds!*** Each model has hot *FLYING* performance over an ultra-wide wind range! Light winds! Strong winds! Unlike deltas, there's no need to reset the bridle — or switch to different-size kites — to maintain top performance when the wind changes! *Also unlike deltas, performance remains high in wildly fluctuating winds!*

✓ ***Superb handling! Exciting feel!*** Positive & accurate steering and turning! Instead of delta-kite understeer/oversteer and skidding during turns, WindDances turn & track like they're on rails! Highly responsive to control input! And you *feel* every correction and turn you make! Why? Rather than the usual "decreasing-resistance" steering & turning — pull ***drops*** when you turn — which degrades speed & power while turning and feels unnatural and makes learning difficult, "increasing-resistance" steering & turning — pull ***rises*** when you turn — is carefully engineered into WindDances! As you change power levels on the flight envelope, encounter gusts, and tightly maneuver, the pull fluctuations can be rapid and intense! And you feel every bump in the wind! This *pull liveliness* adds an exciting new dimension to dual-line kiting, especially to power flying! A WindDance feels *alive* through your flying lines!



✓ ***Precision-tune for peak performance!*** Using the two bridle adjusters, tune in 1.0 mm intervals until you're there! ***One optimum bridle setting*** provides *top speed & fastest turning for all winds!* What could be simpler!

✓ ***Too fast & agile? Too powerful?*** *Yes, this happens!* Quickly *subdue* speed & pull — for first-time fliers, for slow leisurely flying, or to be able to fly in very strong wind — by attaching a pair of long & colorful tails!

✓ ***Forgiving!*** Suddenly yank on one flying line — or let go of a flying line — and typically it keeps on flying!

✓ ***Virtually indestructible!*** High-speed crashes? They bounce! Loudly! What are normal landings? *Bounceless* crashes! *They hold up, and last!* Why? Good engineering and strong materials!

✓ ***Relaunchable!*** What if it *doesn't* bounce and keep flying when you crash? With a little help from the wind, jiggle it into shape with your flying lines and self-relaunch immediately, with nearly 100% success in stronger winds!

✓ ***Want EXTREME fun?*** Fly side-by-side with a partner, *two* high-speed tight-turning WindDances zipping around close together in the same airspace! Play a variety of exciting air games! The aerobatics can get pretty lively! No snagging during midair touches! No damage during midair collisions! After most encounters, quickly recover and keep on flying! *No other kites provide this much excitement!* ***Side-by-side WindDancing is a whole new world of fun!***

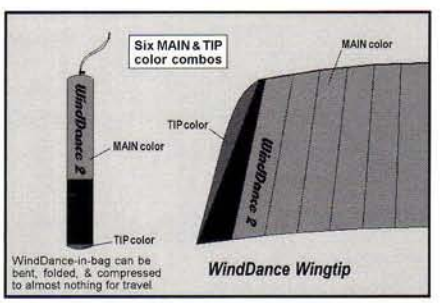
✓ ***Quiet*** except for ripping-through-the-air hiss and shriek that rises sharply with wind and speed! And the crashes and collisions! WindDances *look, feel,* and ***sound*** exciting!

✓ ***Great exercise!*** A WindDance feels more like an exercise machine than a typical kite due to its "increasing-resistance" steering & turning and its lively pull! Get a full-body workout — *a much better workout than with other kites of the same wing area!* WindDancing is an *exciting* way to exercise! Do it side-by-side with a friend!

✓ ***Simple & trouble-free bridle!*** Only *one* attachment loop per cell, only *two* rows of lines, fewer than other parafoil kites! Two simple bridle adjusters, that you seldom have to use! Tangling? Simply not a problem! Strong bridle lines! What if some *do* break? You get new ones *free!*

✓ ***Versatile!*** Each model flies well in *all* winds, including winds that rapidly strengthen and weaken as you fly! Each model is a light-wind kite ***AND*** a strong-wind power kite! *One* WindDance covers the same wide wind range that takes *several* specialized delta kites to span with decent performance! Speed & pull can be tuned to taste! For novices & experts! For relaxation & excitement! Fly solo & side-by-side with friends! Take one with you wherever you go!

Model	Flat Span	Flat Area	Weight	Winds (mph)	Suggested Retail USA
WindDance 1	5'6"	8.8 sq.ft	5.5 oz	5-30	$99.95
WindDance 2	6'11"	11.4 sq.ft	7.0 oz	4-30	$124.95
WindDance 3	8'4"	14.1 sq.ft	8.5 oz	3-30	$149.95



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How far? How big? A NORWEGIAN CROSSES ANTARCTICA & THE MEGABITE GETS SIZED UP

Børge Ousland, the Norwegian adventurer who became in January the first person to cross Antarctica alone, also posted in the process an important achievement in traction kiting:

Using a soft, wing-style kite, he harnessed the powerful winds that blow at the bottom of the planet. Attached to his sled burdened with 400 pounds of supplies, the low-flying wing enabled Ousland to cover up to 140 miles a day.

Two other competing Antarctic trekkers over the past winter also used wings in a race to accomplish the long-pursued Antarctic crossing. In the South Pole's summer, such as it is, temperatures still run to minus 50 degrees Fahrenheit, with wind chills down to minus 84.

Sir Ranulph Fiennes of Britain was forced to halt his effort in December with painful kidney stones, and Marek Kaminsky of Poland discontinued his journey in January for undisclosed reasons, after reaching the South Pole. At the time he was well behind Ousland, who reached the Scott Base research outpost at McMurdo Sound on January 18, completing the 1,800-mile crossing in just 64 days.

"All of them are rather extraordinary people," says Mike Johnston, in extreme understatement. He is partner with Mick Parsons in Spider Traction and Power Kites of Wales. The company knows that a number of expeditioners have used Modulus kites by Spider in recent years, but could not confirm that Ousland flew one of theirs.

News reports said that for most of the journey Ousland, 34, saw little but white fields of packed snow, interrupted by blizzard conditions that often blinded him.

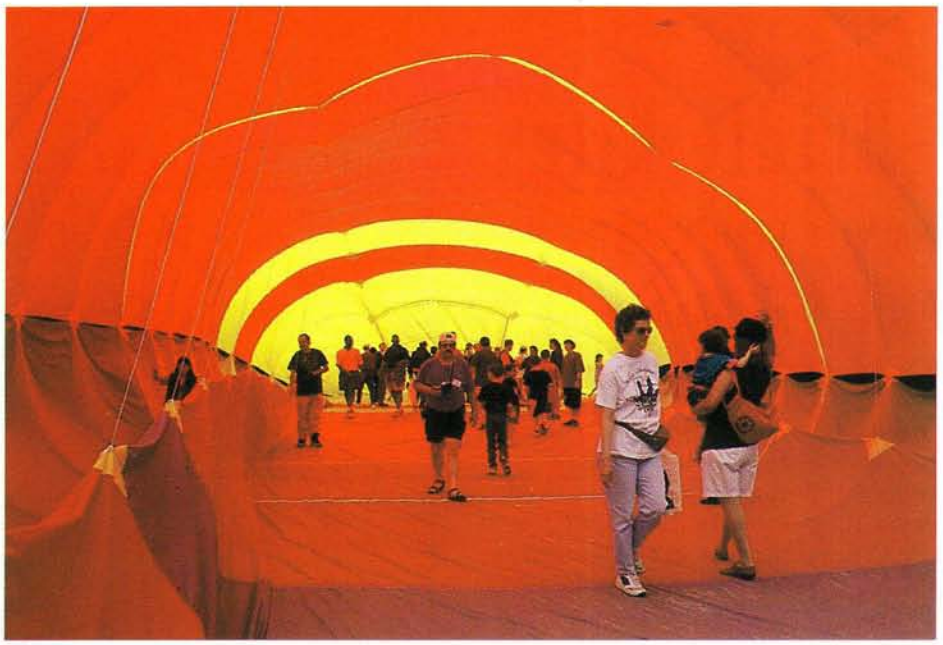
The wind sails used in polar expeditioning are generally a bright red color, for a practical rather than aesthetic reason: They provide a focal point for the eyes under challenging visual conditions.

Upon reaching the research base, Ousland ate a hot meal of pasta, meat and vegetables and went to sleep.

A year earlier, the Norwegian was unsuccessful in a first attempt at the crossing, which he undertook in competition with Briton Roger Mear, also unsuccessful. Both used kites, and Mear's, at least, was a Modulus.

Early in his unsuccessful effort last winter, Kaminski, 32, demonstrated the perils of traction kiting in extreme conditions, according to a report in *Expedition News,* a Connecticut-based publication that keeps track of remarkable journeys around the world.

Three days into his trek, Kaminski was packing his "chute" when a gust of wind partially reinflated it. Knocked unconscious,



A Jonah-like experience inside the Megabite pulls crowds from the beach at the Wildwood International Kite Festival in New Jersey in May. Step right up, folks, line forms at the mouth.

he was dragged along the ice for an estimated two kilometers (1¼ miles)! After coming to and freeing himself he radioed for rescue. But when he began to feel better during a 24-hour delay before a rescue plane could reach him, he decided to continue the journey—though he did not complete it.

Johnston says Antarctica is theoretically the best location in the world for traction kiting—nothing but open space and lots of wind. But in the extreme cold, trekkers must consume 6,000 calories a day to survive. Their brain function slows down, meaning the simple task of preparing and eating breakfast might take two hours. Further, deep crevasses in the ice surface pose obstacles that must be carefully skirted or crossed via snow bridges.

Nonetheless, kites are being used increasingly in Antarctic expeditions, as well as treks in other snowy areas, such as Greenland.

"*Expedition News* has made many references to expeditions that relied heavily upon the use of kites," confirms Jeff Blumenfeld, editor and publisher of the monthly periodical—although he notes that explorers tend to call their rigs "sails, rather than what I would consider kites flying in the sky."

Beyond their power potential, kites offer another advantage: You don't have to feed them. Johnston notes explorers in the past had to use dog teams or ponies to transport their gear.

On the other hand, if conditions turn dire you can't get much nourishment from a ripstop kite! —*Steve McKerrow*

How big is it? Very big! The Megabite by Peter Lynn is big. Is it big enough to be *biggest?* Although not yet formally accepted by the *Guinness Book of Records*, the kite has now been measured by *Kite Lines* and found to be well exceeding the existing world record.

In the days of large flat kites or box kites, determining the question of record size was fairly straightforward. You set up a candidate and measured. Even differences over "effective lifting area" and "projected area" could be settled fairly easily.

But now, as inflatable soft kites dominate the pursuit of greatness, how do we determine actual size?

We can take the maker's drawings for the planned kite and simply measure the actual pre-inflated flat surface—excluding the portions that are just along for the ride, such as the whiskers, legs and tails.

That is the method used with the large Dutch kite which, in 1981, set the reigning record of 553 sq m (5,952 sq ft).

At the Rendez-Vous Mondial du Cerf-Volant at Verdun, Canada in June, we set out to confirm/adjust the dimensions of the drawings of the Megabite as constructed. We were as accurate as possible, and in general we confirmed the total effective flat area claimed by Peter Lynn Ltd. of 680 sq m (6,885.9 sq ft). Our calculations discounted the arms and whiskers entirely and included only the first meter of the tails.

We took our measurements with a length of 200-pound Kevlar line, and then measured that line with a tape measure.

It proved difficult to measure the Megabite on the ground, for we had to choose a time between rains and its flights. The kite was soaking wet.

In measuring the stripes of fabric, we came up with a width of 60 inches (152.5 cm) each, against the factory's stated 144.04 cm (53.2 inches). For our calculations we used 150 cm (58.5 inches).

Thus, when the Megabite is flown in all its glory, we calculate it should have a flat lifting area slightly greater than claimed: 711 sq m (7,558 sq ft). The kite is made up of zippered increments for transport in sections; by unzipping panels, one can shorten it to accommodate smaller fields and could fly it under varying assemblies to as small as 400 sq m (4,305 sq ft). From a festival view, the whiskers and tails make the Megabite an impressive monster at any size.

We used this flat-area calculation because it was the method used by prior record holders. Lynn has suggested, and we agree, that a group of independent judges be impaneled to devise a dynamic system of measures that would use prescribed photographic techniques to calculate the area of lift and overall dimensions of future contenders.

Kite Lines will soon survey its advisory panel and we invite comments from all kiters. —*Mel Govig (with assistance from Michael Graves and Eric Curtis)*

EDITOR'S NOTE

Peter Lynn has told *Kite Lines* that he and his company have built a second "Largest Kite," exactly the same size as the first, to be in the form of a Manta Ray ("MegaRay"). The original Megabite is now owned by Vlieger Op, the kite store in The Netherlands. One or more additional "Largest Kites" may be built by Lynn to meet the demands of kite festivals around the world. The MantaRay made its first flight in mid-June prior to the Netherlands National Kite Festival in Scheveningen.

The Indoor Dual-Line, Single-Flier Record has been broken in Seattle, Washington, at the Sand Point Naval Base, Hangar #2, by David Minzel, 43, using a Prism 3D kite. He flew with no breaks or touch-downs and received drink about once an hour from fellow flier Mickey Nichols. He stopped flying after 6 hours 8 minutes 23 seconds because of blisters and back pain.

The event was sponsored and organized by Goodwind's Kites of Seattle, who plans to make this a premier indoor event. The new effort exceeded the previous record of 3 hours 0 minutes 0 seconds, set by Greg Eynon on March 24, 1996 in England. ♦

Ohashi's No-Bridle Kites

NOTED FLIER OF TRAINS

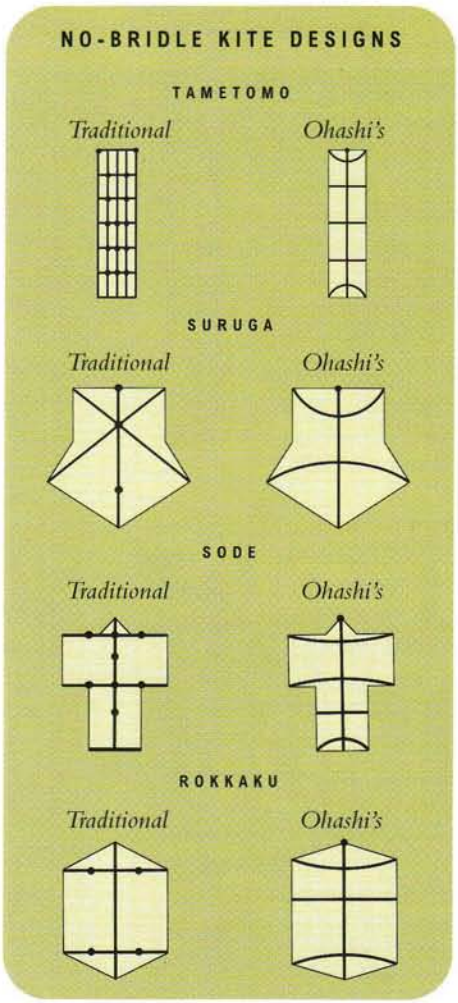
MAKES DO WITH LESS BY STEVE McKERROW

When is a bridle not a bridle? When it is a single line attached to a single point on a kite.

Eiji Ohashi of Japan, known around the world for his kite trains, originally called this design system the "one-bridle kite." But he reports that kitemaker Reza Ragheb challenged the terminology.

"Seeing my kites he said a one-bridle kite was a no-bridle kite. So I will call a one-bridle-on-the-nose kite: No-Bridle Kite," Ohashi says.

The no-bridle style makes it easy to add kites in his "Washing Line System" of trains. He has adapted kites of many traditional shapes and forms to fly from a single line; at the 1996 Berlin Kite Festival, he put them all up in a single train: a tametomo, suruga, sode rokkaku, and the Edo pictured here.



Design applied in building

The key design feature is applied in the building process. Traditional spars are replaced by a pair of spars (carbon fiber) at top and bottom, curved in toward the center to provide shape and lift. The sode kite requires three such bowed spars.

All cross spars, whether curved or straight, are also bowed across the back. The result: an aerodynamic kite not dependent upon a lower bridle leg to provide opposition to the wind.

Ohashi says, "The pulling power of my new kite is less than the one with the Magic Balancer" (*Kite Lines,* Summer-Fall 1993). He provides these comparative measurements of pulling power:

Traditional Edo = 1
No-Bridle with balancer = ⅛
No-Bridle without balancer = 1/10–1/15

Such dramatic reductions in force obviously make it easier to fly long trains of big kites.

Ohashi adapts traditional symbolism to create his Yin Yang birds, which are cut from cloth and appliqued to the kite cover, sometimes with stylistic waves beneath.

"You know, Yin Yang is a thought in ancient China. It says, 'Everything in the universe is made up of Yin (negative) and Yang (positive).' Water-fire, cold-warm, shadow-light, female-male, etc.," Ohashi explains.

At first glance, some kitefliers might imagine the single bridle point to be ineffective in high winds. But Ohashi says the rear of the kite merely blows almost to the horizontal and the kite remains stable.

In the lightest of winds, he moves the towing point aft along the spine, about one-third its length.

Another variation for high winds makes the kite a bridled kite, but still in an unconventional way: Three bridle legs are all attached to the top spar, at the ends and center.

The no-bridle Edo

Ohashi says the No-Bridle Kite is the best kite for the flier who says:

Above, Ohashi prepares to launch a pair of his large Yin Yang bird kites, each with a single line attached at top of spine. Curved spars at top and bottom create the shape usually provided through bridle tension.

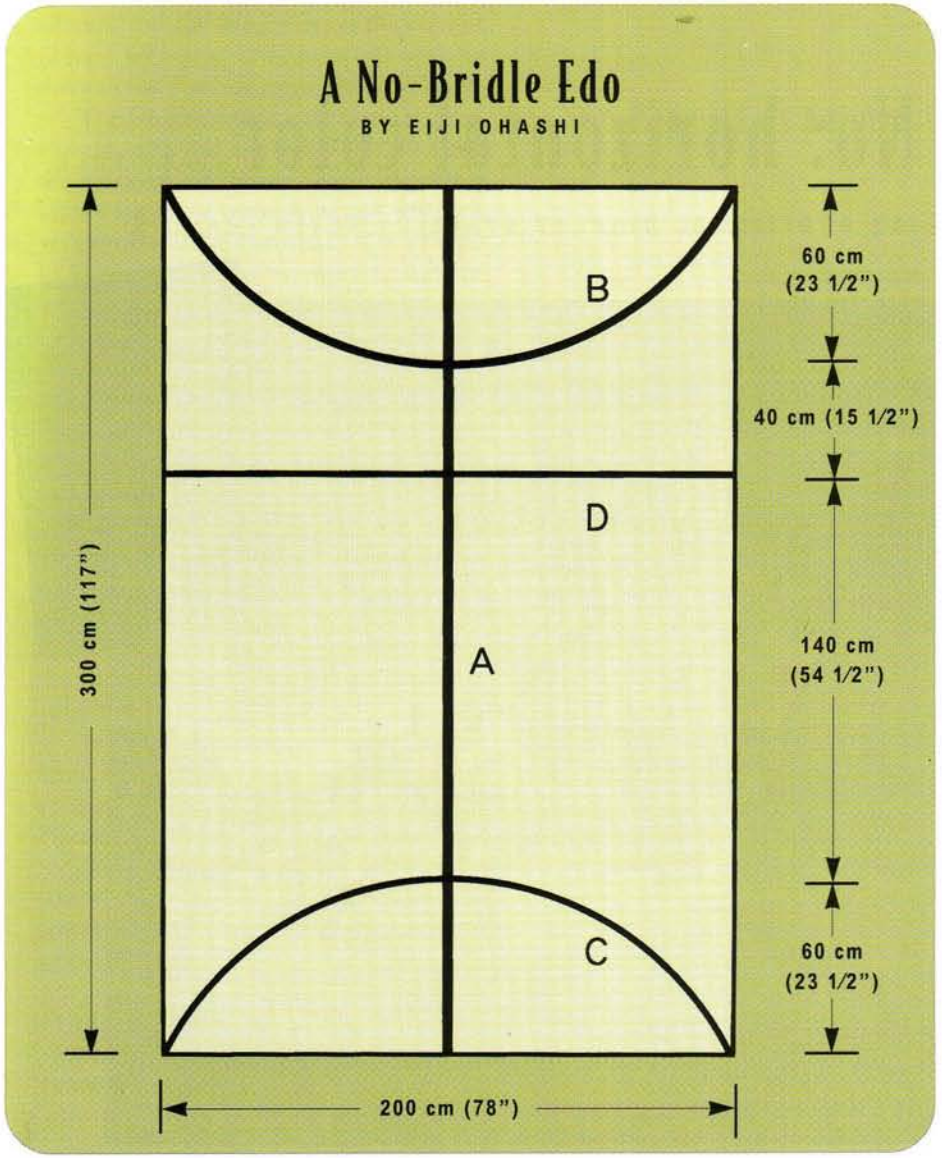
- "I want to make a bigger kite using fewer spars."
- "I want to fly a bigger kite using less power."

MATERIALS

- The fabric is 0.7-oz ripstop polyester (Teijin Power Rip Code T-6016). Total quantity, approximately 6 sq m (±7 sq yd).
- The spars are of carbon tubing:
  - Spar A = 10 mm outside diameter, 299 cm (117 inches) long.
  - Spars B and C = 8 mm outside diameter, 270 cm (105 inches) long. (In strong winds, for reinforcement, Ohashi inserts a 6 mm spar inside the thicker spar.)
  - Spar D = same material as B and C, 199 cm (78 inches) long. (In normal to strong winds, this spar is not needed. It should be inserted only when flying in light winds.)

A No-Bridle Edo

BY EIJI OHASHI



CONSTRUCTION DETAILS

A hem of 18 mm (0.7 inches) is folded and double-stitched at the kite edges.

Spar pockets are of nylon webbing, 3 cm (1.2 inches) wide. A triangular reinforcing patch of ripstop is sewn at the corner, and the webbing folded over and stitched together to form the pocket.

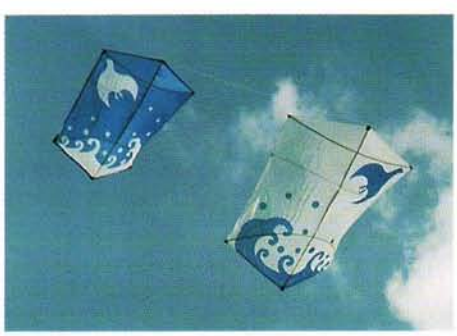
The kite line is attached to a spring metal clip, tied on with string led through a hole punched in the end of the spar pocket.

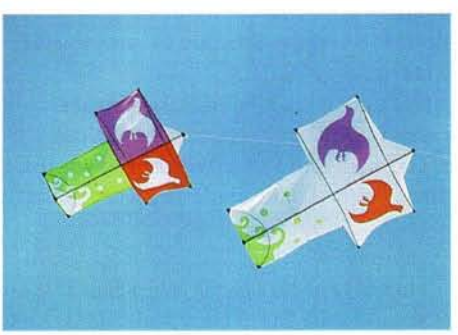
For flying in train, a double loop of line is tied onto the flyline at intervals, to permit easy attachment by the metal clip.

Lines for bowing the spars across the back are tied through holes in the end of each spar pocket.

EIJI OHASHI *is famous for his kite trains, books and innovations.*

Below, Ohashi rokkaku (left) and sode kites fly gently from single lines. In light winds, he moves the towing point about one-third of the way aft.





Line laundry? No: horizontal color TAKE FULL

ADVANTAGE OF YOUR LINE—AS ADDITIONAL DISPLAY SPACE BY KEVIN FRANCIS

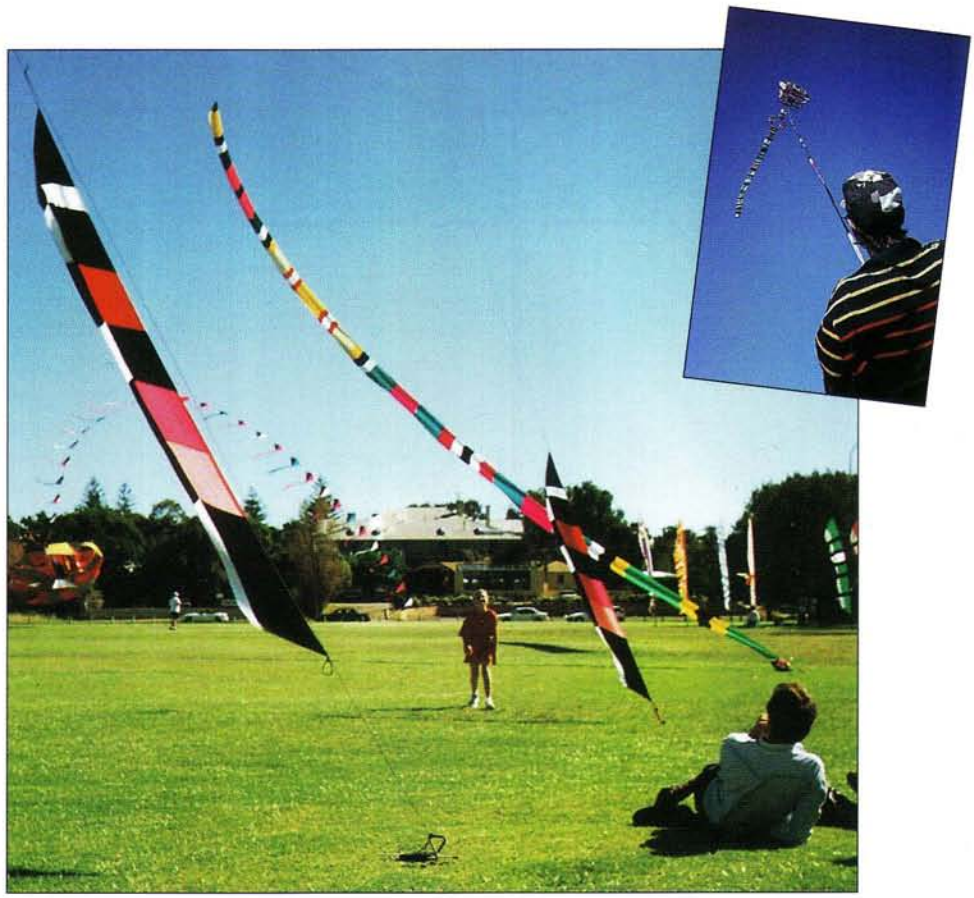
I find it amazing that the power of the kite line is not used to its fullest, especially at kite festivals. The following ideas may encourage more use of this power and bring a little more "horizontal" color to kiting.

A lot of potential public attention is lost in "line laundry"—it's too high. Low-level line decorations attract people driving past (they can't look up) and make for better photos; most snapshots are taken horizontally and something in the foreground provides scale and interest.

Normal line laundry, however, utilizes just one fixed point along the kite string. A purist could say such additions are not uniquely kite-oriented, having no theoretical difference from a flag or banner flown from a rigid structure, such as a boat mast or flagpole.

I am attempting to create something unique to kites, to utilize the vertical pull of kite lines. The concept presents less wind drag than the usual laundry, and somehow makes it easier to see the power of the kite, emphasizing the vertical nature of kiting.

And buggiers and other kitefliers will never say they couldn't see your line!



Above, two "Poor Man's Banners" flank the original "Finger to Heaven" design. As seen in inset photo, the latter line ornament reaches all the way to a Francis "Multiflare" kite. Both devices create what their designer calls a touch of "horizontal color," and also leave no doubt among passersby where kites are tethered.

Poor Man's Banner

I first drew this idea as a series of 3 m (10 ft) nylon banners that needed no rod to hold them up. They were about 35 cm (14 in) wide and had a strong line sewn into the hem on one side.

One line is tied to the ground and the other end is tied to your fly line, which will now hold your banner up. No rod needed = cheaper = Poor Man's Banner.

The idea is simple, but has several advantages. It clearly marks the anchor point of a kite for the safety of passersby (especially, for example, buggiers), draws attention to the kite and is cheaper than a normal feather banner.

After making these 3 m banners, I tried one 27 m (90 ft) long, but it had too much drag. I now use Poor Man's Banners of either 7 m (23 ft) or 10 m (32 ft) on my kites.

As you increase length, make the banner narrower to reduce flapping and drag. At one foot wide, however, I wouldn't go much over 10 m long.

Finger to Heaven

This is the ultimate expression of the Poor Man's Banner: a thin banner extending all the way from the ground to the kite.

I hot-cut the fingers on both sides, join multiple strips of fabric in pleasing combinations and sew the kite line to one edge of the fabric.

Because it is so long the Finger to Heaven is very narrow, just 4 cm (1½ in).

The idea came in a roundabout sort of fashion, after I had made the very long, unsuccessful Poor Man's Banner. To reduce drag, I started cutting strips from it. (This helped, but never very effectively.) Soon I had these very long strips of colorful fabric which I had cut away.

About the same time, I made a mistake with the width of a kite tail. It was 4 cm (1½ in) too wide, so I trimmed it using a large rule as a straightedge. The rule was also 4 cm wide (very handy, it turns out).

This cut-off material matched the original tail and kite, so I didn't want to throw it away. I had the idea to sew it onto the bottom of the kite line and it looked very nice—the string matching the kite and emphasizing the line.

Returning to those long strips I had cut from the banner, I sewed them together and then sewed the long strip onto a fly line. It required time and patience, but the effect was worth it.

Now I have three Fingers to Heaven, of 80 m (260 ft), 90 m (290 ft) and 100 m (325 ft) lengths. Two are on normal fly line

PHOTOS: AUGUSTO CIANCOTTI, KEVIN FRANCIS

(2 mm) and the longest is on thicker line (3 mm) for bigger kites. I can't fly without them now—the line alone seems so bare!

The length of your decoration is theoretically unlimited, but 100 m (330 ft) seems the practical maximum to me. Anything longer is a lot of work, your kite will look very small and the lower part of the Finger to Heaven tends to be more horizontal because of the drag.

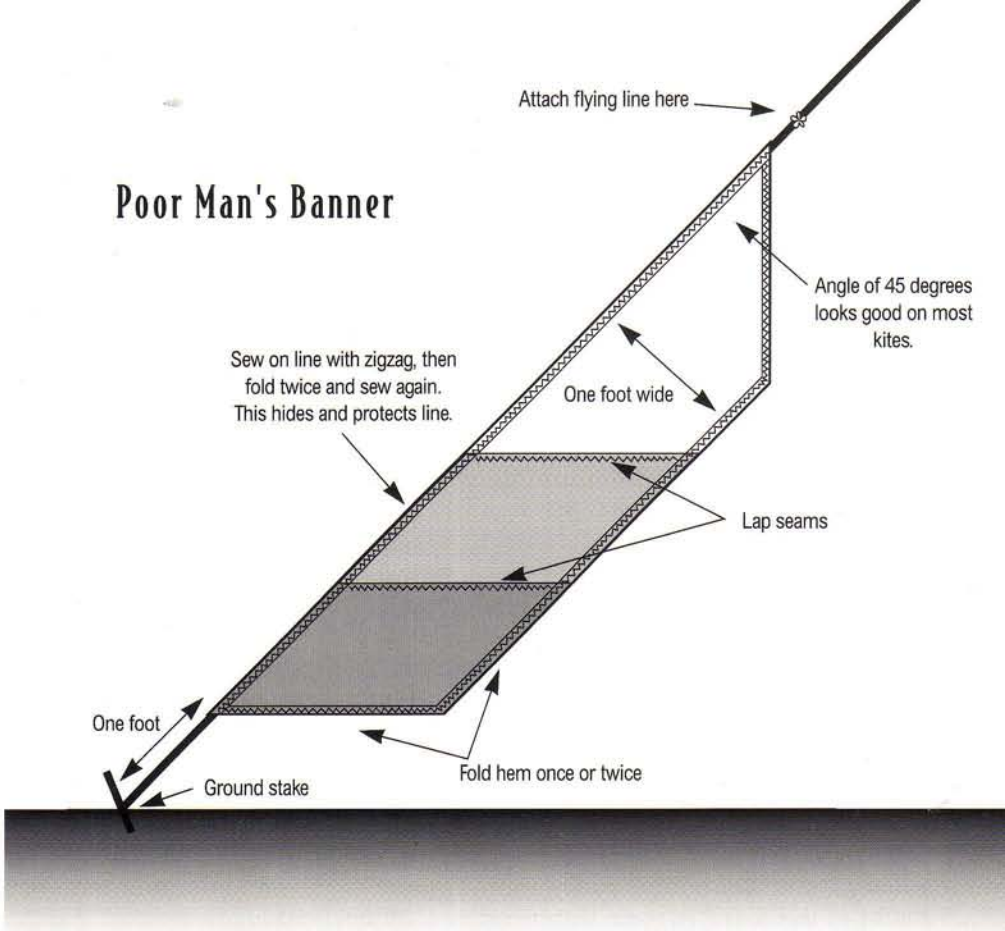
There are some disadvantages to this line device. It won't roll onto a line winder efficiently, it takes a long time to make and it drags out packing time. (I sew the bottom of the Finger through the bottom of a small bag, and merely stuff the line back into the bag after flying.)

The Finger to Heaven looks fantastic, saves the line from UV exposure, decreases line burn on your fingers and is difficult to tangle. Cameras love to follow the color up the line and fewer people will get tangled in your line.

This line decoration also provides far less drag than windsocks, taking no more than one or two knots off your wind range. Flying the Finger to Heaven emphasizes the flier-to-kite relationship. The fly line stands as a symbol for the link between ground and sky, heaven and earth, man and God. ♦

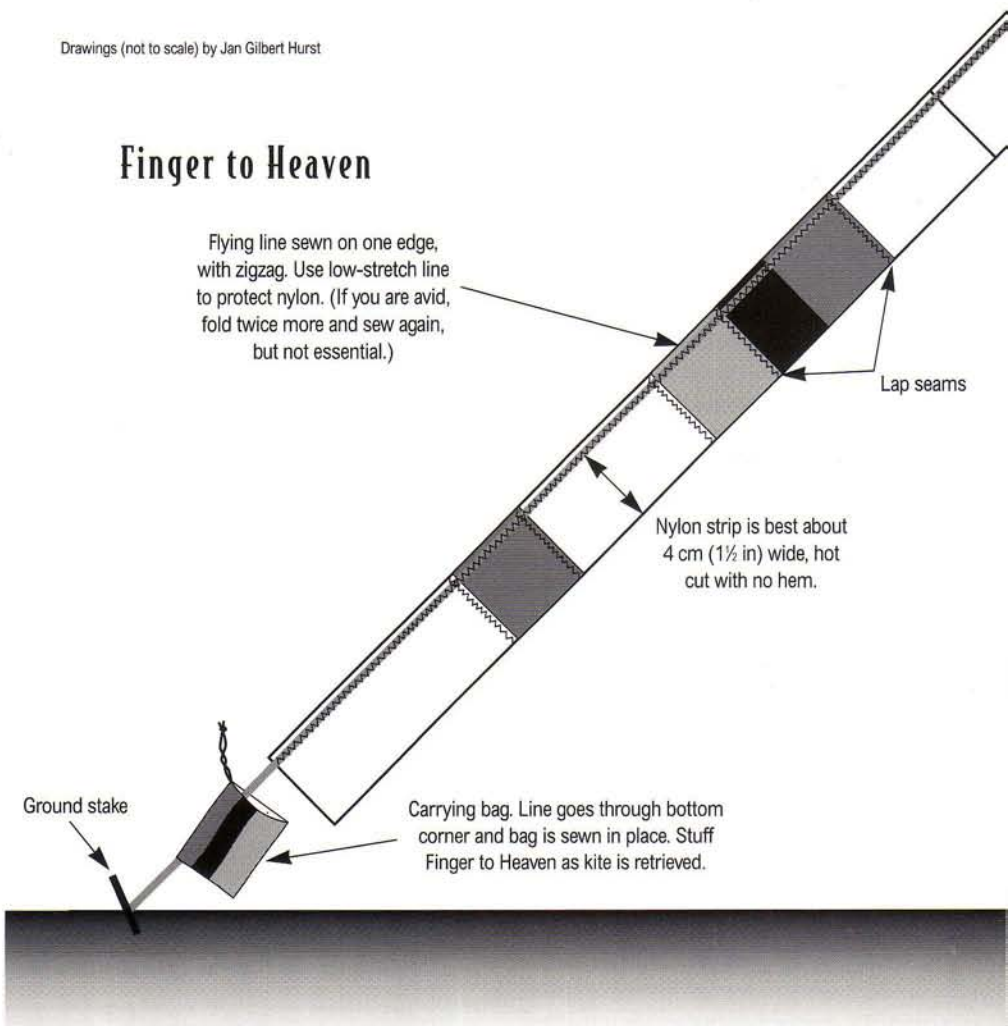
KEVIN FRANCIS *is a kitemaker in Western Australia, also known for his series of low-hovering Flying Saucer kites.*

Poor Man's Banner



Drawings (not to scale) by Jan Gilbert Hurst

Finger to Heaven

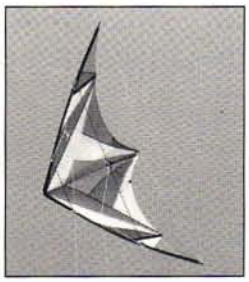


Kites For All

THREE DUAL-LINERS, TWO SOARING ROLLERS, ONE POWER QUAD AND A BURST OF FANCY FIGHTERS

TANGO BY EOLO-GAYLA

A versatile six-footer



The Tango from Eolo-Gayla is a mid-sized (six-foot span) dual-line delta that beginners should find well-behaved, yet capable of the latest and greatest moves as their flying skills increase.

The 16-panel, three-color sail is light ripstop polyester, with a very appealing asymmetrical graphic design. The cut induces a three-dimensional pocket effect similar to that found in some higher-end kites.

The frame features quad stand-offs, creating a taut, silent trailing edge, plus a cheater line across the wingtips to reduce tangles. The kite is well built overall, using top grade materials—particularly in the high-quality fittings.

Our flight tests were conducted using 100-ft/75-lb Spectra lines, in winds varying from 2–10 mph.

In the light breezes of our first few outings, we were pleasantly surprised with the Tango. By no means an ultralight, it nonetheless made good use of what wind was blowing. We found the kite great fun for trick flying in as little as 3–4 mph, although with a somewhat restricted wind window.

The Tango tracked well for its size and maintained moderate forward speed in light winds. It also turned around a point a few inches inside the wingtip, with very little oversteer.

Although not inherently radical, the Tango is capable of a wide range of tricks. We had no trouble with stalls, axels, cascades, flat spins, slides, etc. The kite did every move we tried with equal aplomb.

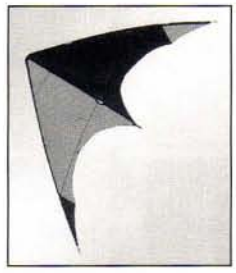
As the wind freshened, the Tango became much quicker, a real test for the reflexes. This is when we began to appreciate the stout nature of the frame. Ground play and aggressive tip stabs did not stress the kite excessively. We were also comfortable allowing beginners to try the kite, even in strong winds.

The Tango is a very versatile kite, ideal for novice fliers. It's tough enough to take a beating but capable of just about any trick an advanced flier can throw at it.

—Michael Graves

NIK NAK BY SKYBURNER

A trickable lightweight



Fliers looking for their first ultralight will find a good performer in Nik Nak, an affordable medium wingspan delta from Skyburner.

Where many large wingspan ultralight and indoor kites employ expensive wrapped carbon frames, the Nik Nak combines inexpensive pultruded carbon and a slightly smaller wingspan. The result: a kite that doesn't feel overly small, yet flies well in light breezes and is tough enough to take some abuse. Best of all, it won't take a big bite out of your pocketbook.

Skyburner kites have long been respected for high-quality construction, and the Nik Nak is not compromised in this area. The sail is cleanly finished and reinforcements, while minimal, are appropriate. Tough yet light Superthane connections secure the frame, which is also supported by a four-point bridle, extending the kite's upper wind range. The two-color, four-panel graphics are simple yet attractive.

We tested the Nik Nak outdoors on 75-ft/75-lb Spectra lines, in winds from near-zero to a gusty 6–10 mph. Skyburner claims the kite is also capable indoors. We did not have the facility to try this ourselves, but based on the weight-to-sail ratio we have no reason to doubt the assertion.

In light winds the Nik Nak was a lot of fun. It tracked well and cornered sharply, with spins centered slightly inside the wingtip. Forward speed was quick but not exceptional, given its size. For a lightweight, the Nik Nak was precise with only the slightest oversteer.

Yet the kite was still very trickable. Sharp control movements caused some flexing in the frame, but this added to the kite's character, making sharp moves very dramatic.

We put the kite through a variety of tricks both in the air and on the ground. The only difficulty we found was recovering in mid-air from a "feather," where the kite floats on its back. In that position the kite just floated gently to the ground.

Relaunches from many positions on the ground were no problem, including "pop-ups" and tumbles.

At the top end of its wind range, the Nik Nak is quick and challenging to fly. The frame flexed but never complained aloud, even during tip stabs—a testament to its durability. Even after a couple of hard crashes into dry lakebed, the kite remained unharmed.

We'll be keeping a Nik Nak in our bag, especially for teaching people to take advantage of light wind days and empty hockey arenas.

—Michael Graves

OUR OBJECTIVE — TO BE OBJECTIVE

Our purpose in publishing kite reviews is to offer you, our reader, full and objective information about new kites, along with a touch of vicarious flying experience. To that end, here's what we live by in our reviews:

- *Kite Lines* and its writers have no interest, financial or otherwise, direct or indirect, in any business of manufacturing or distributing kites or kite accessories of any kind, anywhere.
- No advertising or business agreements with *Kite Lines* are part of any editorial considerations.
- Kite manufacturers are never shown reviews in advance and we review only production models, not prototypes.
- All *Kite Lines* reviews are signed, denoting the authors' willingness to stand behind their writing. However, the opinions expressed are composite views of at least two experienced kitefliers, often several.

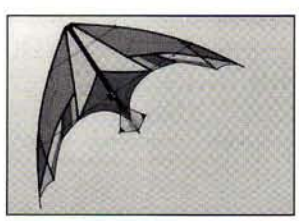
We think our readers want enough facts to form their own opinion—but enough opinion to give perspective to the facts.

	STUNTERS				ONE-LINERS		FIGHTERS				
	QUAD-LINE	DUAL-LINE									
Name of Kite	**JoJo**	**Tango**	**Nik Nak**	**El Pronto**	**Roller**	**Roller**	**Patang**	**Lil Miss Take**	**Lazer**	**First Fighter**	**Gem**
Manufacturer	Skyline Wings	Eolo Gayla	Skyburner	Azur	Carlisle	Omega	La Tête	R.Kites	Mile High	AirWares	Merlin
Retail Price	$420	$110	$129	$200	$100	$69	$49	$89 (pr)	$13	$20	$27
Sail Material	RN	RP	RP	RP	RN	RN	RN	RN	PRF	RN	RN
Leading Edge Material	n/a	Dt	RN	RN	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Framing Materials	n/a	CFr	CFr	CFr	CFt	CFt	WD/GRr	GRr	WD/FGr	HD/FGr	B/GRr
Fittings	n/a	MP	V	M	Vt/MP	MP	n/a	n/a	n/a	n/a	n/a.
Dimensions (in.)	154 x 41	76 x 36	77 x 38	78 x 44	48 x 48	50 x 48	27 x 22.5	21 x 18	19.75 x 16	27.5 x 19.5	22.5 x 18
Sail Depth at stand-offs (in.)	n/a	8	7.75	9	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Sail Area (sq.in.)	5,472	857	935	936	1,160	1,162	304	189	158	268	203
Weight (oz.)	n/a	8.5	4.5	12 ⅛	5.5	7.5	0.9	0.5	0.6	0.7	0.8
Sail Loading (oz./sq.ft.)	n/a	1.43	0.69	1.98	0.6873	0.929	n/a	n/a	n/a	n/a	n/a
Suggested Wind Range	4-24	4-20	0-8	4-18	3-25	3-25	3-20	2-15	4-20	3-20	3-20
Suggested Line (lbs.)	300/200	80-150	50-80	80-140	100	100	8	8	8	8	8
Skill Level Required	SK	B	B-I	I	N	N	I/SK	I/SK	I/SK	N	N/I
Assembly Time (minutes)	5	1	1	1-2	2.5	2.5	<1	<1	<1	<1	<1
Ease Launch/Relaunch	G	E	G	VG	VG	VG	G	G	G	VG	VG
Ease Landing/Ground Work	G	VG	VG	VG	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Responsiveness	n/a	n/a	n/a	n/a	n/a	n/a	E	E	VG	VG	VG
Ability to dwell	n/a	n/a	n/a	n/a	n/a	n/a	P/F	P/F	P/F	E	G
Straight Speed	F	M-F	M-F	M	n/a	n/a	F	M	F	M	M/F
Speed in Turns	M-F	M-F	F	M-F	n/a	na	M	F	F	M	F
Precision/Tracking	EI	VG	G	E	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Amount of Pull	H	M	L	M	M	M	L	L	L	L	L
Amount of Noise	SI	SI	SI	SI	n/a	n/a	SI	SI	SI	SI	SI
Visual Appeal/Graphics	VG	VG	G	E	VG	VG	E	E	E	G	VG
Workmanship	E	VG	E	E	E	EG*	E	E	VG	VG	VG
Portability	E	G	G	VG	VG	VG	VG	E	G	E	E
Durability	E	VG	VG	E	E	VG	VG	VG	VG	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, PRF-Prizmafilm, 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.

EL PRONTO BY AZUR

A pleasing package



Cerfs-Volants d'Azur has made innovative designs its hallmark, kites such as the Tandem, one of the finest team precision kites ever made. After some time without a significant new design, the firm joins the continuing craze for trick kites with El Pronto.

Combining the breeding of a team kite and the soul of a trickster, this is one of the prettiest new sport kites we've seen in some time.

We were immediately struck by the exemplary quality of construction. The sail is sewn from light ripstop polyester in combination with rugged Mylar laminates. The trailing edge is cut high and Mylar-reinforced for long life. Colored panels (20) are graphically separated by black lines, producing a dramatic stained glass look.

The design borrows lessons from earlier brethren, most notably in the use of a small set of winglets at the base of the spine. These face forward, creating a unique V-tail ("stabilizer" in Azur parlance) intended to improve tracking and hold stalls in position. Two battens place a great deal of surface near the wingtip. High quality fittings and a substantial carbon frame round out the design.

We flew El Pronto on 100-ft Spectra lines of 80-lb and 140-lb strengths, in winds from a smooth 3 mph breeze to a pre-storm peak of 15 gusting to 18 mph.

Considering its team kite heritage, we first tried some precision figures with El Pronto. Forward speed was moderate, but it turned a little quicker than average. We were very impressed with the turning radius, centered fully one foot inside the wingtip.

We had expected the kite to be fast and with significant oversteer, but it showed neither characteristic—although it slightly bobbled coming out of snap turns. It tracked well and held a stall in position, demonstrating that the stabilizer idea works.

When we moved to trick flying, however, we were initially very frustrated by consistently fouling the flying lines on the stabilizer. But given more experience, we learned the rewarding ways of this kite.

Stalls and slides became remarkably sta-

ble, and axels, cascades and flat spins were easily accomplished—as long as we threw the kite enough slack line to clear the stabilizer fins. Soon this became second nature.

Ground-based tumbling was possible, as were many forms of relaunch and landing. However, the stabilizer inhibited relaunch from a face-down position when the spine was perpendicular to the flier.

In heavy winds, El Pronto was still great fun to fly. It remained trickable, using its mass to best advantage. Snap stalls directly downwind stayed well in place. (We noted the stabilizer shifts the center of pressure aft, which results in pitching movements that must be further explored in competition.) The kite can be thrown into a feather position and recovered with ease. In fact, the nose pitches back so aggressively we believe a full line wrap and recovery may be possible with more practice.

Ever the innovator, Azur has presented another intriguing new kite in El Pronto.

—Michael Graves

JOJO BY SKYLINE WINGS

Not for beginners

Manufactured in Czechoslovakia and distributed in North America by Skyline Wings, the JoJo 3500 is a quad-line traction kite targeted at experienced, high-performance users. Unique in structure, it also requires special flying techniques.

Constructed of Skytex Porcher nylon, the JoJo has 28 cells. The outer two cells at each wingtip are closed at the leading edge, inflated by cross-cell venting. Intake vents are triangular and reinforced at the leading edges to stabilize their shape and reduce deflation problems.

Canopy lines are Dyneema and Kevlar, sewn rather than tied. We found the fabrication first-rate, although an unused tab near the bottom center of the kite appeared to be a construction error.

The JoJo's control system is unlike any we have seen in a kite, patterned after the system found in some high performance paragliders.

The bottom brake lines lead out to the center of the round wingtips, with bridle lines fanned across the trailing edge. Conventional bridle designs locate the power of the brake lines well inside the wingtips. JoJo says its system distorts the center of the kite less during turns, allowing higher speeds and improved performance.

The provided handles are black anodized aluminum capped at both ends, and with foam grips at the top section. At 16 inches, they are a bit longer than the norm. Connecting cords for the power lines pass through thin-walled tubes mounted flush with the outer surfaces of the foam grips.

However, one of these thin tubes split in our test handles. In addition, the openings of both tubes were sharp enough to quickly fray the cords passing through them. Unless you enjoy changing connecting lines, supply your own handles, for this is a design flaw.

Our first flights with the JoJo were a bit hair-raising. The kite's great power and speed were exhilarating but frightening. In medium and heavy winds, the usual wrist rotations that generate landings, turns and stalls in quad-line kites were simply not possible.

Eventually, we adopted push-pull dual-line techniques for turning and landing. Only later did we learn this is the recommended flying strategy. The maker also recommends that long lines be used for maximum speed and that brake lines be left slack. The kite should be kept in constant motion rather than hung out at the edge.

Thus used as a dual-line kite, the JoJo is stable, very fast and turns with about average speed and radius.

We discovered the missing control, however, when using a waist harness. With the added mechanical advantage of body weight, we could now manipulate the brake lines, making turns faster and tighter. The kite could be backed down to the ground smoothly and steadily, and could be held in any position in the wind window. Quick simultaneous tugs on the brake lines stalled it, dumping power on command. The JoJo tracked well enough to invite one-handed flying. Harnessing the JoJo uncovered a manageable thoroughbred!

In light wind, the JoJo felt listless and the wingtips had a habit of turning in at the edge of the wind window. As the Beaufort wind force rose so did the kite's stability, power and responsiveness. It was most at home in high wind, with excellent upwind performance.

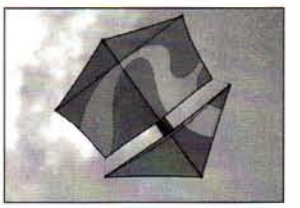
The JoJo 3500 requires a skilled pilot who must take the time to learn to fly it—and who accepts the risks that come with using a harness. But at $420, the kite offers an exceptional price/performance ratio.

—James C. Welsh

BY CARLISLE & OMEGA

Rollers on a roll

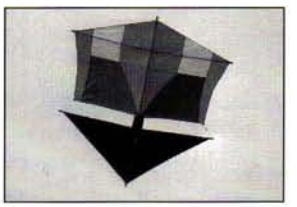
A favorite low-wind kite for the past 20 years—at least—the roller is enjoying a revival these days. These two examples may be part of the reason.



Carlisle Roller

The great thing today is that we can enjoy these classics for not much more than the retail price of the materials to make them. And we can rely on their flying efficiency.

Rollers fly like rokkakus, but without the pull. Their bridling makes them soar in a variety of wind conditions.



Omega Roller

Save for the graphics, there is not much to choose from between these two models, from Carlisle Kiteworks and Omega Kites. They are so nearly the same in construction of the sail that one could probably swap frames and fly them. But they show some variances.

The Omega roller is made with carbon fiber tube and molded nylon fittings, which set the dihedral. The Carlisle roller uses a Bobby Stanfield–type cross-spar with Radio Shack fittings to set the dihedral. The weight advantage goes to Carlisle, but not significantly.

In fact, for the record, neither kite is lighter by much than the Vertical Visuals model of 15+ years ago, made with ramin dowels, aluminum fittings and those humble cloth tie-downs typical in English kites.

(Side comment: Synthetic replacements for the dowel have been overrated. Consider that you can find a replacement dowel easier—and cheaper—than a comparable carbon fiber tube.)

Both of these kitemakers have deserved reputations for craftsmanship, which are not let down by these models. They fly in a wide wind range and have a stability that some find boring and others (like us) find elegant.

—Mel Govig

Good news: A fine flock of fledgling fighters

Aficionados of fighter kites, rejoice! A burst of new models is upon us.

All the kites have in common the following: relatively small size, quality construction of ripstop or other durable synthetic covers (most in striking color

combinations), synthetic cross-spars (graphite or fiberglass) and spines of wood or bamboo (with one exception).

Their physical differences lie in design details: shape, bridles, interchangeable or doubled cross-spars, flying behavior and even, in one case, a style of flying.

But our longtime adage still applies: We have yet to meet a fighter kite we don't like!

PATANG BY LA TÊTE DANS LES NUAGES

This Canadian company (in English: Head in the Clouds) is run by Richard Gareau, whose kites pay homage to the classics of India. The Patang notably exaggerates the tail, which is spread by thin graphite spars. The spine is wood and the cross-spar graphite. The kite comes in two models, the Patang and the Patang Extreme, for higher or lower winds.

The kite comes already fitted with a three-point bridle. Gareau recommends flat transport.

Our test models were crisply appliquéd in bright colors using a circle-within-a-circle design, said to recall the traditional moon kites of India.

Flying characteristics seemed remarkably like those of the large paper Indian fighters imported to the U.S. On a slack line, the Patang rotated almost on its own axis with little loss of altitude—a big edge in duels.

On a tight line, it carved the air at good speed, capable of wide-diameter loops, more like a stunter than a fighter. It also recovered quickly from a dive. It's not a kite that dwells, however. We had to pay constant attention.

The Patang has gathered a growing circle of admiring kiters after being flown at several festivals from Maryland to Québec.

MY FIRST FIGHTER BY AIRWARES

Beginners will have difficulty finding a more affable entry-model than the My First Fighter, from AirWares. Yet even experienced kiters will make it a frequent flier.

Significantly wider than tall, our solid orange test kite was pretty basic: nylon sail, round dowel spine with a moderate curve at the top and a graphite bow.

But it gave a flight hard to fault, dwelling comfortably at a high angle, yet able to dive and recover right on the ground or make completely predictable turns and spins.

LIL MISS TAKE BY R.KITES

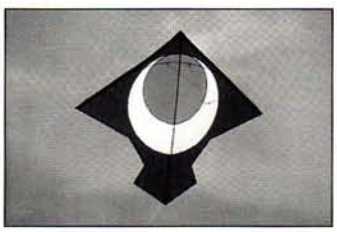
So you can't find anybody with whom to duel? Stage your own combat with the Lil Miss Take 2-Pack from R.Kites (from the Into the Wind catalog and a few shops).

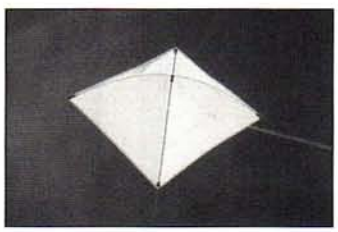
A small, almost square nylon fighter—in a colorful arrowhead design and with light graphite spars—this one is designed to fly in pairs, or even swarms!

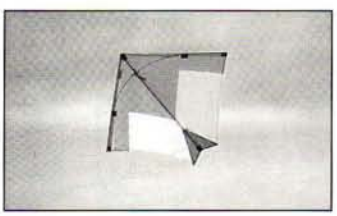
You can buy, fly and enjoy just one of these fighters, but for *real* fun, go for two. You attach the second kite to a 36-foot line, then affix that to the main line, 39 feet below the lead kite.

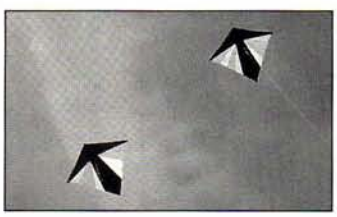
In our tests, the second kite literally flew rings around the line, sometimes hitting it, but the offset line lengths meant the kites could never touch.

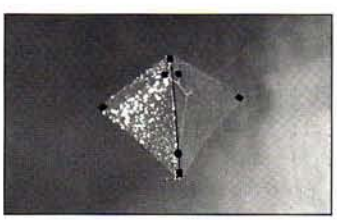
The idea is to fly the kite that seems most in trouble. With practice, we began to learn how to send the kites wide apart or bring them back together to dwell almost in tandem...until one kite would spin off and a wild dance would begin again. The designer says you can fly up to six kites this way! No mistake!











Fighters clockwise from top left: Patang, My First Fighter, Lil Miss Take pair, Lazer (a challenge to photograph) and Gem. All feature durable synthetic sails and quality construction.

LAZER BY MILE HIGH

Cool! Everybody has a variation of this response to the new fighters by Stan Swanson of Mile High Kites. He uses Prizmafilm, a new refracting plastic material (also being used in some stunters and other kites).

We flew two kites: the Dazzle, with the film bonded to a sailcloth border, and the Lazer, a smaller kite made wholly of the somewhat stiff film.

At first glance, the film seems transparent. But in the air, sunlight refracts through the material, making shimmering, colorful objects in the sky, like crystals dangling in a window.

Both kites have a wood spine and fiberglass cross-spars, with a three-legged bridle. The larger kite also has a second cross-spar that inserts into plastic tubes on the main spar, for heavier winds.

We had flown an early model of the larger kite, with a conventional double bridle, and found it to be barely flyable. The company's switch to a three-leg system tamed the kite nicely.

But we liked the Lazer made solely of Prizmafilm best. Although a challenging darter to fly, like most small fighters, the kite was a literal *flash* in the sky. At times barely visible, except for its sticks and tape spar pockets, the kite would suddenly wink brilliant spectral colors in dives and turns.

GEM BY MERLIN KITES

Four fighters now comprise the family of Merlin Kites, by Martyn Lawrence of Wales: the Gem, Comet, Ace and Tyke.

All have similar basic construction: nylon sail, bamboo spine and fiberglass cross spars. A double-spar system includes one full-span and a second added into pockets about a third of the way in from each wingtip. Two thicknesses of these second spars (1.5 mm and 2 mm) thus offer *four* choices in fine-tuning: no second spar for light air, either one as the wind picks up or, conceivably, both in a blow.

On all kites, a ribbon affixed to the spine and snugged around the cross-spar tensions the sail. Relaxing the tension allows for stress-free flat transportation and storage, and also provides an additional way to tune response.

The kites are loosely graded for the flyer's ability: the Gem and Comet are said to be suitable for beginners and the Ace and Tyke require some experience.

We liked the Gem best, regardless. Although hardly docile, it seemed most ready to submit to control in a variety of winds, climbing easily to a high angle and requiring only minimal line adjustment.

—Steve McKerrow, Mel Govig

The kite landscape: THREE NEW TOP-DRAWER VOLUMES, ONE NEAR-MISS, AND A TEST FROM CHINA; ALAS, PELHAM GONE AGAIN

LIGHT AND LOVELY

Kites: Paper Wings Over Japan

By Tal Streeter, Scott Skinner, Masaaki Modegi and Tsutomu Hiroi (New York: Thames & Hudson, 1997), softcover, 95 pages, $18.95.

Sighs were heard when Tal Streeter's classic *The Art of the Japanese Kite* went out of print a couple of years ago. No book ever replaces another, but *Kites: Paper Wings Over Japan* is at least a good book about Japanese kites, and that is some consolation for our loss.

It has a once-over-lightly feeling that leaves us wanting more. But this may be inevitable, for Japanese kites make a big subject, fit for an encyclopedia. In fact, more books have been written about Japan's kites than about those of any other country (although most writing was in Japanese). To be fair, this book was intended to serve mainly as a catalog for an exhibit of Japanese kites, curated by the Drachen Foundation and shown earlier this year at the Davis Center, Davis, California, and planned for 1998 at the Museum of Flight, Seattle, Washington. (Book collectors beware: The print run is not expected to outlast the exhibits.)

A tough challenge for this work was making a coherent whole of contributions from four authors. The editors, Scott Skinner and Ali Fujino, and the publishers have smoothly knitted the sections together and avoided overlapping material. The quality does vary a bit, from the depth and flavor of the Streeter section to the earnest "begats" from Modegi.

It surprised me that Streeter, rather than Modegi, covers the most history of Japanese kites. But he does it well, bringing it into contemporary times, and Hiroi contributes new detail to the subject of postwar kiting in Japan. Did you know that after World War II, model airplanes were prohibited there as suggestive of war, but kites were acceptable? This was a large factor in the increased popularity of kites.

Skinner provides some good material. His section on bamboo, while by no means exhaustive, manages to summarize the subject with grace and economy. And the chapter on kite folklore is a real service because it identifies many of the legendary images we see so often on Japan's traditional kites. Skinner's chapter "A Kite Flyer's Notebook" is a compendium of names and faces of some of Japan's leading kiters. (The missing include Shuhei Goto of the realistic bird kites, Takaji Kuroda of the convertible cubic kites, and others, some of whom were profiled by Pierre Fabre in his article in *Kite Lines,* Summer-Fall 1991. Of course, no "who's who" list is ever complete.)

Tsurigane-ika kite of the Daruma figure (or Bodhidharma), a Buddhist sage who meditated sitting and facing a wall for nine years. The kite, from Marugame, Kagama prefecture (Shikoku island) and by an unknown maker, is in the Shirone Kite Museum.

Readers of this book will turn at regular intervals to the map that locates regional Japanese kite forms. This type of map has been done before, but not in recent English-language sources. It is helpful and beautifully tidy, but not quite complete and consistent; some kites are missing entirely (bekkaku, kerori).

It's the mark of a good book to have appendixes—if they are annotated and current. These list Japanese kite festivals (only the larger ones), museums, Japan Kite Association branches, a glossary and a short bibliography. (There is no index).

The glossary could be better. It doesn't mention or explain what "Golden Week" is (the week inclusive of May 5, Children's Day), and it fails to say how the words dako and tako and o-dako are related. (Dako and tako are the same sound/word to a Japanese; o- is the honorific for any Japanese word and applies especially to large dako—o-dako—which in Japanese is plural and singular for the same word.)

Other errors in the book? I spotted only a few misspellings, but was puzzled that the great rokkaku capital of the world, Sanjo, is nowhere mentioned.

Not to quibble. This is a pleasing book. Its study value is matched to its graphic appeal, well printed with many color pictures. A handsome design makes the reading a fully pleasurable experience.

—*Valerie Govig*

AESTHETICS & PRACTICALITY

Les Cerfs-Volants, les connaître, les piloter, les construire

By Yan Williams (Paris: Hachette Livre, Éditions du Chêne, 1996), softcover, 96 pages, $19.95.

This small book sets out to cover a lot of territory and manages to do it surprisingly well. The title lays out the scope of the book: to know and understand kites, how to fly them and how to make them.

The first half of the book is solidly packed with color photos. Brief, informative captions and the accompanying text fill in general history and background for the types of kites shown.

The second half focuses in greater detail on the practical aspects of kitemaking and flying. It covers kite styles, materials and construction techniques, offers some flying tips and flight patterns and provides instructions for three simple kites (sled, lozenge and delta).

The illustrations by Rachel Janin are particularly good, rendered to show the bridling and framing in a very exact manner.

The author's love of kites and her flying experience show clearly throughout the book. Williams combines an appreciation for the aesthetic and emotional pleasures of kiteflying

with nicely practical information. Her suggestion that a sport kite need not sound like a B-52 flying overhead, for example, is coupled with drawings and instructions for tensioning the fabric to eliminate rattle. Rather than curse the noise, she comes up with a simple way to eliminate it.

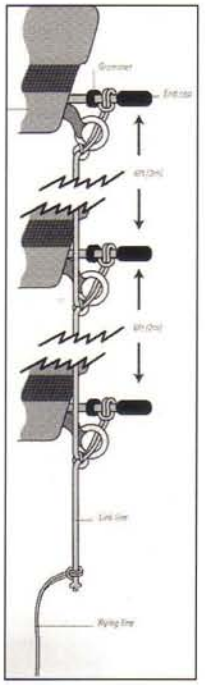
The experienced flier might not find a great deal of new information here (in fact, the echoes from unmentioned sources are a bit disturbing), and certainly no one topic is covered in great detail. But as an introduction to kiteflying, this is an extremely inviting and satisfying book. —*Anne Sloboda*

AN EXCELLENT FIRST BOOK

The Creative Book of Kites

By Sarah Kent (New York, Smithmark, 1997), hardcover, 124 pages, $12.95.

A newcomer to kiting will find nothing but support in this handsome new volume. As a broad survey of kiting, the book offers quality information, including a pretty good history, a survey of kite types and a handful of doable kite plans. Even seasoned fliers and kitemakers may find nuggets of information, such as how to make a basic hummer or an unusual tail of chain-link rings.



Right, detailed drawing shows how to stack Flexifoils—one of the clear illustrations in Sarah Kent's *Creative Book of Kites*.

Further, the almost 10-inches-square hardcover boasts very effective typography and color design.

Subtracting a few flaws, this could be a beginner's first book about kites, as well as a new standard volume in the committed enthusiast's library. And that is why *Kite Lines* is distressed to understand the publisher plans to sell the book for only one season, before dispatching it to the out-of-print wastelands.

London-based author Sarah Kent trained as an artist, worked for The Kite Store in London, has been flying kites since 1985 and has flown with several stunt kite teams. Her straightforward writing conveys a broad understanding of the wide world of kites.

The history chapter scrupulously gives credit to the originators of designs—especially modern kite types. However, sources of this information are not well credited. A small-print bibliography in front suggests only two references: David Pelham's *The Penguin Book of Kites* and Will Yolen's *The Complete Book of Kites and Kite Flying*—a limited, dated list for research or reading.

The history chapter offers an amusing demonstration that, across the pond, Americans are still viewed as cheeky upstarts: The familiar diamond kite we call an Eddy, after the American William A. Eddy, is called a Malay throughout the book. This chapter includes some infrequently seen kites: a Maori bird from New Zealand, a feather-covered bird from Bali and the Brazilian pipa. Martin Lester's Legs are here, too.

The chapter "Learning to fly" gives basic advice on choosing a flying field and accessories. But it tailors specific instructions to specific types of kites: a delta, Morgan Star,

parafoil, swept-wing stunter (including basic aerobatic patterns), Flexifoil and Revolution.

The "Make your own kites" chapter gives well-illustrated plans for making nine types of kites, from easy (sled) to difficult (soft stunter). The book ends with the inevitably out-of-date guide to kite retailers around the world. This otherwise refreshing book deserves a longer shelf life.

—*Steve McKerrow*

OFFBEAT PLANS, OFFBEAT BOOK

The Great Kite Book

By Norman Schmidt (New York, Sterling Publishing Co., 1997), 96 pages, softcover, $12.95; hardcover, $19.95; or as a kit consisting of the softcover book plus materials for two kites, $19.95.

Book titles that proclaim greatness face a high standard—one not entirely met by this volume.

In fact, this book seems really two books of different intent, oddly spliced into an unusual whole: a collection of colorful kite plans for moderately experienced kitemakers and a history and survey of kites in general.

The former could stand alone as a fine addition to a kitemaker's resource library. The latter, however, seems an afterthought that produces a confusing package.

The colorful hardcover also negatively demonstrates what should be every publisher's mantra: Because a computer lets you do something typographically does not mean you should do it. The book bursts with graphic variations such as skewed typefaces, multiple type colors and boxes of text and illustrations, but few seem to add to clarity.

Most annoyingly, the pages of instructions are divided vertically into two colors: a salmon tone on the left half and a light violet on the right. Text runs from side to side, however, requiring the eye to constantly adjust to a new color for every line—a wearying effect.

Adding to suspicion that general material about kites was added well after the kitemaking section was prepared, the history/survey writing does not begin to appear until page 23. The primary text is printed in white type on a dark blue background on right-hand pages, with boxes of additional material and generally simplistic drawings of kite types. But mystifyingly, this text appears only on every other such page, alternating with full-page photos of the kites being diagrammed in plans.

Thus, reading the book requires much page flipping. If you are working through the kite plans, the text comes as a persistent interruption.

When you have figured out how to follow it, the history/survey offers generally authoritative and well-written information, whose sources are carefully cited in a bibliography of a dozen other titles.

The 18 kite plans offer readers interesting, attractive designs—although beginners likely would have some trouble following them. For example, the "grid method" for scaling up the plans, using a 2-inch transfer grid, is never explained. But the advice gets down to good specifics by recommending appropriate brand names of coloring acrylics or felt markers. (The book packaged as a kit with four patterns and materials to make two kites did not arrive in time for review by *Kite Lines*.)

All of Schmidt's kites are in the forms of bugs, bats or birds. All are made of Tyvek, with hardwood dowel spars joined by polyethylene tubing, and all feature dowel-reinforced folded keels. Essentially, each kite is a variation on a single basic design.

The multi-spar "flex-frames" that are said

to adjust to the wind seem to offer the greatest challenge. The author also notes makers may easily experiment with their own decorations and alterations to the designs.

In sum, *The Great Kite Book* may hold appeal primarily for kitemakers interested in an unusual family of kites. —*Steve McKerrow*

GREAT PLANS, ODD WORDS

Chinese Kites: Their Arts and Crafts

By Wang Xiaoyu (Weifang, China: Shandong Friendship Publishing House, 1996), in English, hardcover, 300 pages, $29.95.

A year ago we reviewed the book *China Kites* by Liu Zhen, also an English-language volume from Shandong province. That one and this one have many traits in common, such as ethnocentricity and painfully poor language and typography.

At least this book has only seven translators instead of 13. (By the standard of Greg Jones of China Books: "The more translators a book from China has, the worse the translation seems to be.")

It would be great fun to tell you the wonderment of all the word choices, and to give you a glossary. (For example, "base strings" are bridles, "stringed pieces" are trains, and so on.) But in reading the book, you may eventually grow forgiving of the imprecise parlance.

As for its information, I wish I could say this work lives up to its first sentence: "This book is by far the most comprehensive, systematic and original work on kites as it deals with all the aspects of kites—their theory, materials, construction, covering and painting as well as their flying."

Who was this book written for, and why? Surely not to impress Westerners... not when Kitty Hawk is placed in California, not when Benjamin Franklin is said to have experimented *many times* with kites in lightning (and survived, presumably), not when Lawrence Hargrave is credited with setting up the U.S. Weather Bureau kites (commuting from Australia?). I found barely a word in the opening history section to which I could fully agree, so I couldn't help but start doubting everything else!

The Chinese history seems better. It is ample and includes three theories for the origin of kites and a detailed tracking of kite popularity in different dynasties.

The lists of kite classifications are dense and made more difficult because they lack illustrations. (Just what *is* the "buttocks curtain" kite anyway?)

The chapter on theory says: "A kite is a man-made object flown in the air, pulled and controlled at the end of a string, with the aid of wind power." Neither complete nor elegant, but not bad. Also in this section, the writer actually gets hot under the collar as he debunks the story of the kite's invention by one Han Xin—who lived before paper was made.

Getting through these parts is a test. But if you pass, you will arrive at things you can really use in making and flying Asian-style kites. The reading isn't easy, and you will have to find suitable tools and materials. But this section is actually about kite details and provides some real instruction. Proportions of wing length to body length for different kites are worked out in detail, a chapter is given to "Techniques of Fastening and Binding Strips and Small Accessaries (sic.)" and three ways are shown to make rotary eyeballs.

The chapter on covering materials is engrossing. Fine silk should be drenched

in water before cutting to prevent deforming on the kite in flight. The sequence of attaching small pieces of silk to a three-dimensional eagle head is illustrated well. Perfection and "quality control" are emphasized.

Finally, at the end of the book (pages 115 to 300) you will find very detailed drawings and instructions for building approximately 25 Chinese kites. A self-confident kiter might try, for example, the elaborate Chain of Nine Links kite, or the simple Paired Swallows, or the realistic Eagle. These are stunning traditional designs. You should probably avoid the "Soft-body Air-sac kite, alternately known as umbrella-wing or sail-block air-sac kite"—which is a dubious parafoil, unattributed to its inventor, Domina Jalbert.

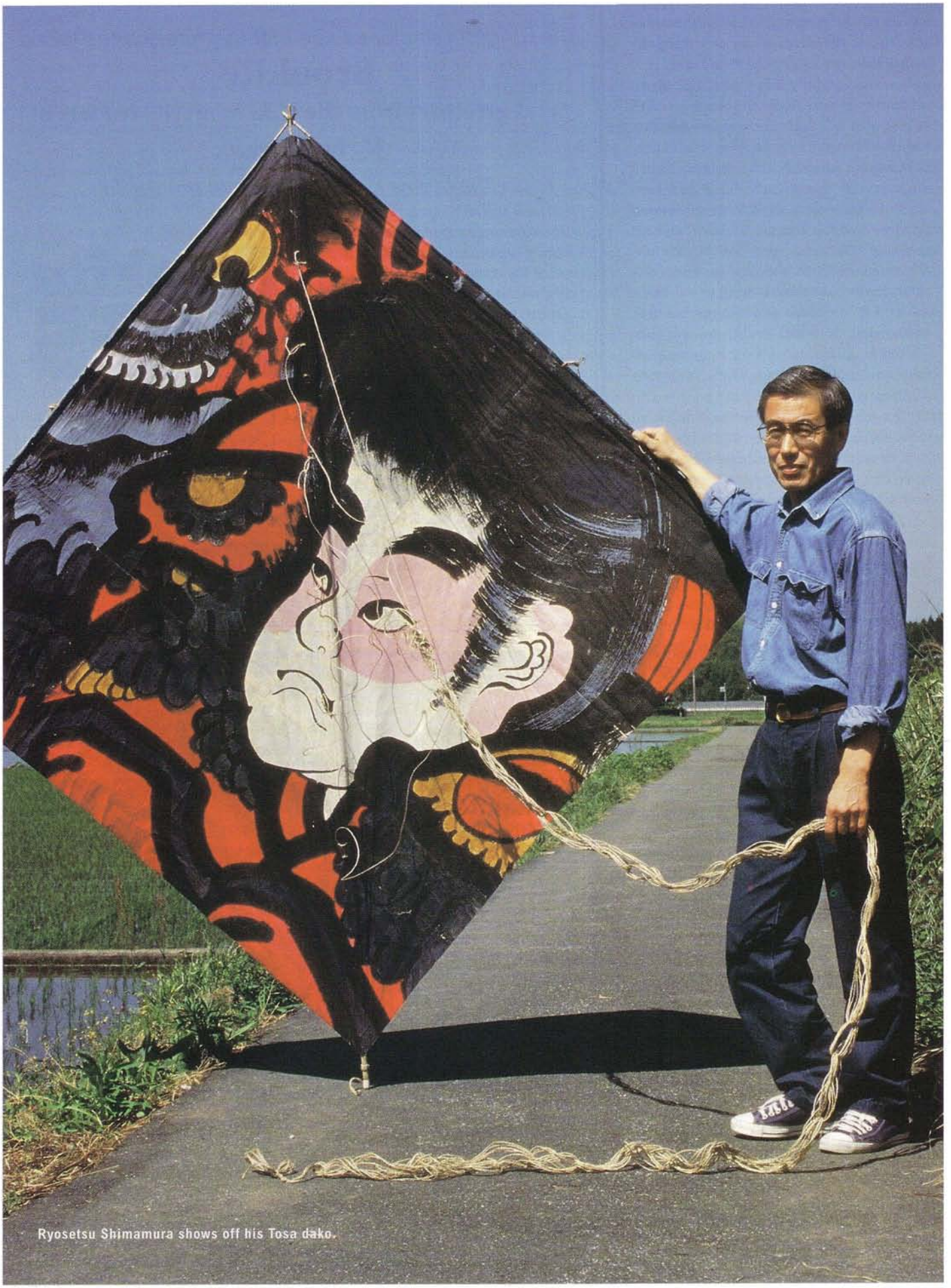
Color illustrations for the kites are confined to a six-page section at the front; this is not quite a coffee table item.

Yet we are lucky to have anything at all in English on Chinese kites, so this book will have to do. It will be welcomed by enthusiasts who want a better appreciation of kites from China, the probable birthplace of kites.

—*Valerie Govig*

Book News & Forecasts

➧ The new edition of *Kites: A Practical Handbook* by Ron Moulton and Pat Lloyd is here at last with many improvements, notably eight new color pages and eight well-selected new plans. The appendixes are pared to the useful ones and the cover is dramatically better. ➧ *Genius at Work: Images of Alexander Graham Bell* by Dorothy Eber is back again, in softcover, a keepsake book of early kite lore. ➧ *Flight Patterns* by Leland Toy has been reprinted by the Toy family. It has an expanded tribute to the late author, and a higher price (a portion goes to the Leland Toy fund). ➧ Gone to the out-of-print world are Silvio Voce's books on the Brazilian *pipas*, the Ha family's *Chinese Artistic Kites,* Philippe Gallot's *Fighter Kites* and—finally even in England—the unequalled *Penguin Book of Kites* by David Pelham. ➧ Now "under construction" are books by Richard Synergy (more on altitude!), George Peters and W.O. (Stormy) Weathers. Pierre Fabre, having dropped his book project for now, is making a CD-ROM—contents unknown. ➧ Beware the children's book *Kites: Twelve Easy-to-Make High Fliers* by Norma Dixon. Although already sold to many libraries, it contains drawings with bridles on the *backs* of all the kites! ➧ Newly discovered, although not a new book, is Ron Kremer's *From Crystals to Kites.* It's a science teacher's workbook and devotes many pages to kites, giving a fresh perspective to our craft (tetrahedrals especially). —*V.G.*



Ryosetsu Shimamura shows off his Tosa dako.

The Tosa Dako of Japan

IS THIS KITE THE TRUE ANCESTOR OF THE DELTA? ARTICLE &

PHOTOGRAPHS BY PIERRE FABRE

Relatively few travelers to Japan include Shikoku in their plans. The smallest of the nation's four main islands, this mountainous land is served only by secondary railway lines that run through steep valleys.

However, kite devotees will discover in Shikoku a great diversity of traditional kites, such as the famous wan-wan, the fighting kite of Ikazaki—and the Tosa dako, a little-known design that seems a clear antecedent of the delta kite.

The Tosa's homeland

The kite takes its name from the vast bay of Tosa on the south side of the island, within the Kochi prefecture. Dark green mountains descend to a plain of virulent green paddy fields on the Pacific Ocean. Tea plantations spread across the base of hills, and houses built in the traditional style, with gleaming, gray-tiled roofs, add the final touch to this peaceful Japanese countryside.

This area is known best for its washi, the handmade paper widely used in Asian kitemaking. The Tosa dako is made from this material and bamboo spars.

On a splendid day in late May, I took a train to Tosa Yamada, admiring from the window dozens of koinobori floating in the morning breeze. These colorful carp windsocks are hoisted on tall poles to celebrate the holiday known as Children's Day, and remain displayed for several weeks, along with tall, painted banners typical of this area.

Ryosetsu Shimamura, an expert maker of the Tosa kite, met me at the station and provided a guided tour of the nearby town of Kagami, birthplace of this kite.

Delta-like features

The square-sailed Tosa is a remarkable flier that performs like a delta. Even in light breezes, it climbs to a high altitude and flies at a steep angle.

Its structure is also that of a delta: a spine, two leading edge spars and from one to three wing-spreaders across the back, the number depending on the size of the kite. The largest I saw was about 20 feet wide, but seven feet is considered the regular size.

The kite is bridled and has no keel. A standard size Tosa has five to six long bridles measuring at least 1.5 times the length of the spine. The longer the bridles, the better the kite will fly in strong winds. The kite can be flown without a tail in light winds.

The spars are made of carefully selected unsplit bamboo, except on the smallest kites, for which split bamboo is shaved into triangular sections. The thinner end of each wing spar is toward the nose of the kite, and the nose end of the spine is bent backwards to create fore-and-aft dihedral, as often used in fighter kites. This prevents the kite from diving when going for a glide.

Shimamura explained that the best sticks are obtained from 10-year-old bamboo that has been dried for at least one year. Because the wings must be symmetrically flexible, the leading edge spars should be "twin" sticks of bamboo—cut from the same root and matching in diameter. The length between the bamboo nodes must match, too.

The kite sail is always made from traditional washi. Several small sheets are glued together and the overlaps between them act as natural reinforcement grids.

Before being glued to the sail, all sticks except the spreaders are wrapped in paper tape, to provide a better grip when glued onto the washi.

Traditionally, as I learned, flying a Tosa celebrated the birth of a newborn son in a rich farmer's family. For these styles (known as mon-dako), the child's family crest is painted onto the sail in black ink and red dye. These designs are strikingly elegant in the sky, and can be read *[Continued on page 44]*

Above, preparing two Tosa dako for flight. Like rokkaku or Sode kites, the Tosa is made to be rolled up for storage or transport. Assembling even a large example takes only a short time. The sail, which has been rolled around the spine, is laid out face down and wing spreaders are attached across the back. The number of spreaders varies from one to three according to the kite's size. When only two spreaders are used, they are sometimes crossed.

EXCLUSIVE AND PERSONAL

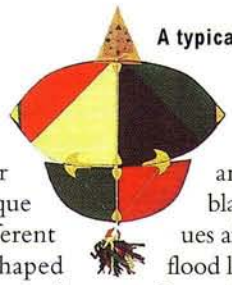
INDIA:
A Tour with Tal Streeter

DO YOU KNOW THE THREE MUST-SEE KITE LOCATIONS IN INDIA? • AHMEDABAD IN GUJARAT • JAIPUR AND JODHPUR IN RAJASTHAN • LUCKNOW IN UTTAR PRADESH. BUT ADVENTUROUS TRAVELERS WILL FIND KITES AND KITEFLYING ALMOST EVERYWHERE THROUGHOUT THE SUBCONTINENT . . . INCLUDING INTRIGUING DEVIATIONS FROM OUR UNDERSTANDINGS OF THE INDIAN NORM. HERE IS A STATE-BY-STATE ITINERARY LACED WITH OBSERVATIONS OF KITES, KITEMAKERS, KITE SELLERS AND KITEFLIERS, BY THE NOTED KITE ARTIST AND AUTHOR OF THE FASCINATING RECENT BOOK, A KITE JOURNEY THROUGH INDIA.

TEXT & PHOTOGRAPHS BY TAL STREETER

The Kalupur district of Ahmedabad provides a rooftop scene typical of Indian kite fighting in mid-January in cities all over India.

In the north: the Punjab & Pakistan



A typical tukkal.

Kitemakers and sellers in Amritsar, India and across the river in Lahore, Pakistan boast a unique kite, the tukkal. Markedly different from the standard diamond-shaped Indian patang, to my eye it bears a striking resemblance to the Malaysian wau bulan, or crescent moon kite.

The Malaysian wau is no longer flown as a fighter. But fliers here enthusiastically fly tukkals with Indian manjha (glass-coated cutting line) and hotly proclaim the superiority of their kites. (There are two types of tukkal, slightly different in appearance; the "male" has a larger trailing section.)

"Tukkal fliers are India's best fliers. If you can fly a tukkal well, you can fly anything!" proclaims Jaswant Singh, a highly opinionated Punjab flier, who exemplifies the intense regional pride and loyalty of kitefliers throughout India.

To a Western eye the tukkal and patang do not seem evenly matched. The patang is lithe and fast, while the tukkal seems heavier and slower footed. The relative merits of the two would be hard to determine, however, for in India it is an unwritten rule that tukkal and patang kites do not cross strings.

In this region some combatants fly kites from softball size balls of manjha, which spin crazily on the ground as line is paid out. Flying with these balls, instead of spools, can be seen on occasion throughout India, as can (rarely) flying directly from loops of manjha three-to-four feet in diameter.

Typically, manjha is found only at the top of the flying line. But when manjha balls are used the entire line is coated with glass. (In Madras, where this is the practice, laws restrict flying to defined areas. Overzealous police have been known to enter kitemakers' homes to confiscate manjha.)

January is the height of the kiteflying season in Amritsar, whose name derives from the words amrit (nectar) and sar (pool)—hence, "The Pool of Nectar." Kites begin to appear in December, peak in mid-January through early February and ebb in March. Champion fliers never give up flying, however, and the Qila Kite Club in Amritsar holds meets every Sunday afternoon year-round, in Bakpal Park.

Although Lahore shares many kite traditions with Amritsar, kiteflying is pursued on Friday, a day of prayer and relaxation. Kite matches build to a fever pitch by early February, the season of Basant (also spelled Vasant) Panchami, which marks the end of winter. The sky over Lahore fills with dueling kites, and victories are announced by blasts from trumpets. Flying continues after sunset with the aid of rooftop flood lights, and the last evening includes fireworks and hot-air tissue-paper balloons lifting off into the darkening sky.

Also in Lahore, saffron yellow shawls and saris draw special notice to women fliers, who wear the color in honor of the mustard plants that blossom this time of year.

The number of young girls and women kitefliers here, as throughout India, is minuscule in comparison to the avid young boys and men attracted to the sport. But I would venture a guess that an Indian woman who has not flown or helped fly kites at one time or another would be a rarity.

Two professional kite clubs exist in Lahore, both said to be 150 years old: the Cobblers and the Oil Grinders. Professionals will be found flying year-round in Iqbal Park.

A special permit may be required for travel in the Indian Punjab. Travelers should check with the Indian Consulate before finalizing plans. Visas for travel to Pakistan and its capital, Lahore, are readily obtainable.

To the south: Haryana

It is said that no single item of political importance is decided outside of India's capital city, Delhi. I admit to being uncomfortable in the environs of politicians and political bureaucracies, but I must say that the government and business district referred to as New Delhi is decidedly uninteresting and coldly unattractive. Old Delhi is another matter.

Here is the original heart of the city, once called Shahjahanabad. I am enthralled by its Red Fort and the Jama Masjid, twin Mughal marvels built under the loving eyes of Shah Jahan, who also commissioned the Red Fort and the Taj Mahal in Agra.

Both old and new districts of Delhi are filled with serious, well-organized kiteflying. Kite sellers are found at Turkaman Gate and Chawri Bazaar, just west of Jama Masjid. And members of more than 30 clubs—keen and excellent competitors—fly at weekly meets. One of the most enjoyable flying areas for spectators is behind the Red Fort, where kites are flown more or less daily. While companionship, pride and fun are the main focus of Delhi kiting, money prizes awarded collectively to clubs can be substantial, up to $2,000—a princely sum in India.

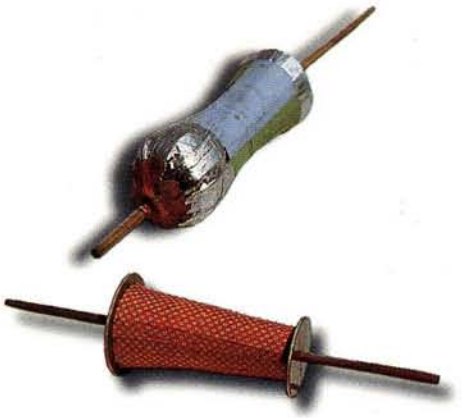
Maximum display in minimum space is the principle for street sellers such as these, who rent stalls for the kite season, from mid-December until after January 14.

Do not miss the Crafts Museum on Mathura Road, one of India's finest. Its eight acres of buildings and exhibits sometimes include kite artists, and the museum shop often offers unusual kites for sale at reasonable prices.

Three hours due south from Delhi (by car, bus or train) lies the architectural marvel known to every school boy and girl throughout the world: the Taj Mahal. Go to Agra, of course, to see Shah Jahan's white marble memorial to his beloved wife—but look for kites, too. Several kitemakers live in the small village behind the Clark's Hotel on the outskirts of Agra, although their kites are a little crude, primarily supplying local needs. Serious kiteflying takes place in Agra every Sunday.

Kitemakers may also be found in Mathura, near Agra on the road from Delhi. This is one of the seven sacred Indian cities and among the nation's oldest, the birthplace of the god Krishna.

Manjha (glass-coated cutting line) packaged in ball form is uncommon but sometimes used in place of a spool, and generally flown directly from the ball, spinning on the ground. Typically, manjha is found only at the top of the flying line and uncoated line constitutes the flying end, but when manjha balls are used the entire line is coated with glass. In Madras, where the entire length of line is coated, laws have been passed restricting flying to defined areas. Madras police have been known to enter kitemakers' homes to confiscate manjha.



Kite spools with conical cores, from an earlier period in history, may still be found in various regions across India.

A typical Indian kite spool of wood, inlaid with decorative brass work.

Kite shopping in India

During the flying season beginning in January (but with local exceptions here and there), it is very difficult to miss kite markets. Look for stalls rented for the kite season at or near the heart of Indian cities.

Kitemakers' districts or single kitemaker's homes and/or shops are also within reach of the average taxicab or pedicab driver, who will ask directions until he can deposit you right on the kitemaker's doorstep.

Do you bargain? I wouldn't, but let me explain: During the kiteflying season, kites are sold at relatively standard, competitive prices from market stalls. The bargaining we associate with India is primarily for transactions with strolling vendors. I have never been asked inflated prices for kites. Stock kites cost pocket change (15 to 30 cents), while more elaborate "show kites," which require a great deal more time to make, will cost around $2.00.

As anywhere in the world, kite gifts are often forthcoming in India (although seldom from those whose income depends on selling kites). The gift-giver's payment is generally nothing more than the pleasure received from a heartfelt expression of gratitude for the giver's generosity. —*T.S.*

To the east: Uttar Pradesh

Uttar Pradesh, on India's eastern border, is the country's largest and most populous state, yet often lies outside the usual lanes of tourist travel. For kite enthusiasts, however, it includes one of the three must-see kite locations in India: Lucknow.

Due east of Delhi, a dedicated kiteflying culture is found in the town of Moradabad, and turning southeast you find a major kite corridor, including the towns of Rampur, Bareilly and Lucknow.

Rampur is home to a number of kitemakers and merchants whose wares have spread overseas. Bareilly is a major source of commercial, prepackaged manjha.

One might reasonably proclaim Ahmedabad, Bombay (now called Mumbai) or Lucknow (or all three!) as India's paramount kite centers. But if I were able to visit only one, I would be inclined to choose Lucknow. Kitemakers and fliers have lived here since the 18th century and hundreds, perhaps close to 1,000, kitemakers now work year-round in the city's old Muslim Chowk district.

Seekers of fine eating may also experience in Lucknow the exact opposite of Western fast food. The city's cuisine is acclaimed the most refined in India, and dum pukht, or "slow cooking," is a Mughal specialty: meats, vegetables and spices cooked ever so slowly over hot charcoal in a clay pot, the lid sealed with bread dough.

From December through the third week of January, kitemakers and merchants depart from Lucknow, and elsewhere in Uttar Pradesh, to sell their wares in rented stalls in Delhi, Bombay/Mumbai, Ahmedabad, Baroda and other cities large and small across India. Only with the close of the kite season do these traders return home to enjoy flying for themselves. Thus kites set the stage for the Lucknow Arts Festival in February, where some of India's best fliers compete in carefully supervised matches, which are open to locals as well as countrywide competitors.

Saloono, the first day of summer, marks the beginning of another kite season for the Uttar Pradesh region.

To the west: Rajasthan

Due west from Delhi, the "Pink City" of Jaipur is well known as one of India's most glamorous jewels, famous for its "Palace of the Wind."

Kites are prominent among Jaipur's colorful and renowned arts and crafts, such as

One of two types of Indian kite candle lanterns, sent up at dusk on a doubled flying line and a slightly larger kite. The spherical lantern is an example of "recycled" materials: old cardboard carton and tin can.

puppets, jewelry, paper making. The city's kitemakers, often cited as among India's finest, await you in the charming old lanes just inside Sanganer Gate. You will also find crafters of ornate, brass-inlaid spools.

Jaipur's kiteflying season centers on the week of January 14, although kites are sold and fly at festivals throughout the year.

Jodhpur, a lovely sister city further west, is also esteemed for its kitemakers, who are busy year-round at Sojati Gate. Kites are flown here in May and June, during the Akhar Teej Festival, and club flying continues throughout the year. A major regional kite event is sponsored by the Maharajah Singh of Jodhpur, currently on or around February 16. Also an international festival is staged in Jodhpur immediately following the Ahmedabad International Festival on January 14, to attract and accommodate visitors coming to India for that event.

Bikaner, on India's western border, is another hot spot of Rajasthan kite fighting—as well as the home of the renowned Thar Desert Bikaner Indian Camel Corps.

South again: to Gujarat

Most Westerners might imagine Ahmedabad, in the westernmost state of Gujarat, to be India's kite capital, because its annual explosion of kite activity has been well documented in recent years. One can safely guarantee a kite enthusiast visiting Ahmedabad in January will find stalls brimming with kites, shoppers carrying bulging bundles of kites, trees and power lines festooned with kites and a sky dancing with kites—surely more than anyone has ever seen at one time anywhere else in the world.

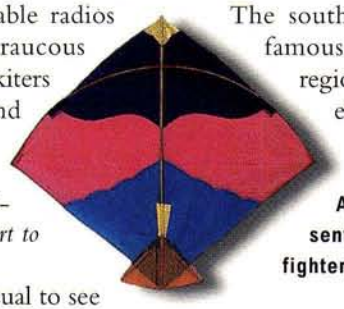
Sellers and kitemakers from across India begin converging on Ahmedabad in December. Kite hysteria builds through the first two weeks of January and erupts on January 14, Makar Sankranti, in an enormous kite explosion from sunup into the night.

Also here is the municipally sponsored Ahmedabad Kite Museum, opened in the summer of 1985, home to a superlative collection of Indian kites, whose status is uncer-

tain at this writing with the recent death of the museum's creator, Bhanu Shah. *(See Empty Spaces in the Sky, page 59.)* It is hoped the questions will be resolved and the kites will go back on display, for this is an outstanding collection of Indian kites, unmatched anywhere.

Just south of Ahmedabad is Baroda, Gujarat's capital, a treasure trove of art and gardens. It shares its sister city's enthusiasm for kites, and kitemakers and sellers are plentiful around January 14. A step further south, the port city of Surat is also known for kitemaking and flying.

Rajkot, on the road to Porbender southwest of Ahmedabad, is off the tourist routes but offers a very satisfying kind of mini-Ahmedabad experience. On the days around January 14, it seems everyone in Rajkot is up all day on the rooftops, sending up the distinctive cries, "haw, catta catta, haawww," while portable radios blare pop singers at gritty, raucous full volume and thousands of kiters babble in a riot of color and sound—a cacophonous kite opera. If for any reason the Ahmedabad Festival were cancelled, I would *make every effort to get to Rajkot!*



A kite from Madras is representative of the typical Indian fighter, a raptor of the sky.

Surprisingly, it is not unusual to see tails on the kites flown in this coastal area—a sight I have seen nowhere else. Generally white, they are wide, about nine inches, and up to nine feet long. They compensate for high, gusty winds and are also used as "training wheels" for less experienced young kiters.

Tail-cutting with manjha, rather than line cutting, is also a popular sport in Rajkot. A beginner's game, it nonetheless requires a reasonable degree of skill—and the short pieces of tail curling snake-like, drifting down out of the sky, are a very attractive sight for the eye. Still, for a purist, Indian fighter kites with tails are roughly equivalent to Indianapolis race cars dragging heavy trailers around the track.

On south to Maharashtra

Just north of Bombay/Mumbai, the resort area of Juhu Beach on the Arabian Sea is a popular place for holiday kiteflying, although professionals do not generally fly here. You might want to enjoy the relative calm and the orange sunsets as a pleasant background for your own kites.

Be forewarned, however: any kite flying here—as anywhere in India's skies—is almost certain to be cut by a patang, either accidentally in the melee and excitement of the game or by a player no longer able to resist the tantalizing moment of the hunter bringing exotic game crashing to the ground. Be cautious flying expensive kites.

Downtown Bombay/Mumbai, just under an hour's taxi ride from Juhu Beach, is an international mercantile city, the modern commercial heart of India. The world's largest film industry can be found here—and so can one of the world's largest kite manufacturers and distributors: the Bombay Umbrella Mart, Kite Division, owned by the Khan family.

In addition to several Khan family retail stalls, visitors may also find a number of kitemakers in Bombay/Mumbai's Muslim district.

And on to Andhra Pradesh

The south of India is deservedly famous for its temples. The region's unusual kites, however, are less well known than other Indian styles.

Madras offers the kite traveler a healing, quieter pace than elsewhere. Yet a very active colony of kitemaking families and master kitemakers in the old town district has built a large following of eager apprentices.

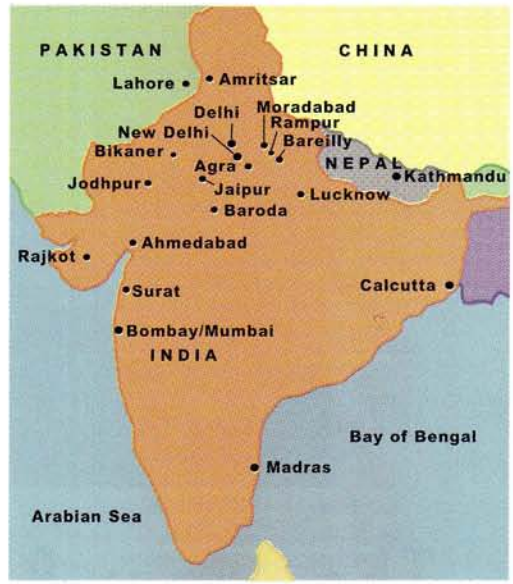
The kiteflying season here is in November, and coincides with the city's Diwali (Festival of Lights) celebration. Year-round flying by clubs occurs at sites throughout the city and over the sands of the Marina beach, at the Bay of Bengal.

Distinctive adaptations of the standard Indian kite shapes are evolving in Madras to accommodate the area's strong bay winds, such as kites with considerably less surface area—even holes in the sails.

The form of competition is changing, too, toward less drawn-out encounters, which seem to better suit the erratic and gusting qualities of the wind.

Make your own tour

My Indian acquaintances in other cities not mentioned here—such as Calcutta, Bhopal, West Bengal and Hyderabad—all proclaim, "You must come to my city to see the best kiteflying and kitemakers!" A definitive roll call of locales where kites appear would doubtless list every village and hamlet in the nation.



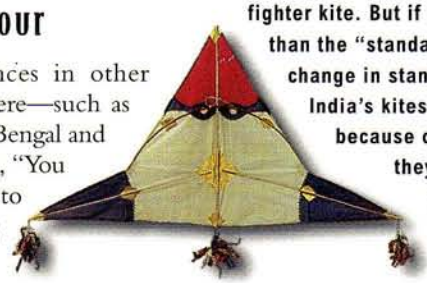
Yet the great centers might be hard pressed to match the charm of discovering a little village of three or four clay houses somewhere in the countryside or desert, where you may fly kites with a newly-made friend from a roof or porch or courtyard, or maybe over the backs of cows and sheep.

And chancing upon an inhospitable, less than generous Indian is as likely as finding the proverbial hen's tooth.

But remember that kiteflying in India (as anywhere) is an activity decidedly not written in stone. Kitefliers are still dependent on the wind, and activities scheduled with the best of intentions are only as predictable as the breeze.

Try to confirm events before traveling. Look through all the travel guides before choosing one useful to your needs and budget. Be flexible and open to serendipitous opportunities. But take frequent breathers in a quiet place—India is intense!

Finally, be ever alert to kites glimpsed unexpectedly, flying on the horizon. These tiny beacons will draw you into very special kite pleasures and, very likely, lasting friendships. ♦



A kite of very unusual shape, not a patang, may be an ongoing attempt to improve the fighter kite. But if this design flew better than the "standard" fighter, an overnight change in standard would occur. India's kites are what they are not because of tradition, but because they are the proven vehicle for the sport of flying and fighting.

The Buggy Breed: Berrow beach is home to annual migration

BY ZOË HARRIS

A new breed of fauna has been observed in numerous locations worldwide: the Parakartus Pilotae.

Commonly known as the buggy rider, the species has for some years been venturing onto beaches and spreading inland to salt lakes, frozen lagoons, grassy fields and snowy mountains. Individuals keep multiplying, and a coastal spot in Britain offers the ideal location to study them.

Since 1992, English buggy riders have undertaken an annual migration, like the turtles that come ashore to lay their eggs. The beach at Gwithian, Cornwall accommodated the first three successful gatherings, organized by Mick Parsons (who in 1994 would help found the Parakart Association).

But the Gwithian shore was deteriorating and Parsons gave up organizing the event. Mike Shaw, a founder of the British Buggy Club, and Piers Day took up the challenge of maintaining an opportunity for buggiers to come together.

"We structured a fun week, incorporating the racing side... but including fun and games alongside," Shaw explained.

Their first event was in 1995 at Berrow, on the Somerset coast in southwest England.

The pair relocated the gathering because Berrow is much more accessible to cities in England than Gwithian, and is also one of the attractions of a popular tourist area. The 1996 event, September 21–29, drew 122 buggiers, 15 over 1995. Most participants rented caravans—mobile homes—that are situated permanently in parks adjacent to the beach.

The buggy event itself was free for participants and spectators alike, with sponsorship and in-kind support from Flexifoil, Kites Up mobile retail business, kite designer Dave Maddocks, the Sedgemoor District Council and the Embelle Holiday Park.

Busy Berrow '96

Early morning high tides wiped the beach clean of buggy tire tracks, but retreated to display a wide ribbon of beach.

Racing formed the major organized activity each day, as competitors vied for the Flexifoil Cup. The trophy was awarded to winners in three categories: dual-line, quad-line and novices flying either style kite. (Winners in the respective categories? Chris Lamb, Jason Furness and Giles Smith.)

Shaw explained that dual- and quad-liners were separated to increase the competition.

"There are lots of disadvantages to people flying only one or the other, and it gives people twice as many races. There's no clause that says you couldn't race in both," he explained.

One-off events included the Pursuit Challenge, a one-on-one knockout game of tag (won by Peter Van den Bussche) and the Enduro, whose winner (Chris Croft) made the most laps around a point-to-point course in the designated 1¼-hours time limit.

Although clocked speed trials took place, no records were set in 1996. Neither Furness nor Shaw could equal speeds they had clocked in 1995 at Berrow, when Furness hit 48 mph and Shaw 51 mph. This time, Furness managed 44 mph while Shaw, buggying against doctor's (and his girlfriend's) orders with a damaged spinal disc, recorded the fastest speed: 46 mph.

Two hybrid buggies from two guys named Chris—Croft and Sands—were also seen whizzing through the speed gate. The first, custom-built for Croft from stainless steel, was named the "Long-Prong" because of its extended length. Its minimalist chassis hung low under large and canted spoked wheels, and looked fast even when parked.

Sands piloted a similar extended model, "Daddy Longlegs"—painted a shocking yellow—which he built on a budget, using a mild-steel frame with BMX wheels.

Off the beach

After the daily beach frolics, buggiers faced a choice of location for nocturnal antics: the Flexifoil-sponsored marquee (pavilion), set up in one of the parks, or the local nightlife.

The marquee housed a bar run by the caravan park owners. The entertainment here was self-generated, with Ian Meredith assuming the role of organizer. Famed for wearing shorts nine months of the year, Meredith's idea of entertainment is to per-

suade people to wear traffic cones on their heads and munch a menu of chilis, kippers, pickles, rabbit food and "rollmop" herrings (filets pickled in vinegar). This cuisine was tame, however, compared to the pickled lizard at a previous UK event.

The next day, in addition to competing with buggies, fliers demonstrated their sport kite skills in impromptu battles. Smith achieved 19 axels in a minute, for example, but the can-clobbering event produced a sad result. Kiters making diving attacks on cans set atop traffic cones soon destroyed the single kite being used, with repeated rude encounters with the ground.

The most successful and impressive event at Berrow 1996 took place on the final day: a huge race.

"Our ideal was ... wouldn't it be good to get everyone on the beach just to start a race," said Shaw. "We were running around, organizing it, then suddenly I looked up and said, 'Piers, have a look at the sky.' I had never seen that many kites in such a small area. One person did actually comment on how much money was in the air!"

To minimize tangles, Shaw and Day set the buggiers off in two waves: dual- and quad-liners first, followed by novices. Surprisingly few upsets occurred as 67 buggies wheeled around the course. All finished at least one circuit, although the complete race was five laps for novices, 10 for others. (Winners were Mark Kingshoff in the dual- and quad-line group and Andy Jenkin in the novice category.)

In the end, Day was thrilled by the atmosphere of the entire event, contending, "Every single person was just walking four feet off the ground. They were just so ... pumped up."

Left, scofflaws abound during the week at Berrow—top clocked speed for a buggy: Mike Shaw's 46 mph—but no one is actually fined for violating this sign's speed limit.

Buggies around the world

The buggy event at Berrow will take place again this year, September 13–21. Co-sponsor Mike Shaw is also involved in planning an earlier buggy gathering in England, August 2–3 at Middle Wallop. For information on both events, call Shaw: 44-1-468-765887.

A SAMPLING OF BUGGY MEETS IN THE COMING MONTHS:

■ **OCTOBER 6–11: Unofficial European Championship** of the International Parakart Association Class 8, at Fanø, Denmark. Organized by the German Parakart Association. Contact: Jens Baxmeier: (phone or fax) 49-40-677-09-67.

■ **OCTOBER 11–12: Wildwood Buggy Blast,** at Wildwood, New Jersey, USA. And on **OCTOBER 16: AKA North American Buggy Championships,** also at Wildwood during the AKA annual convention (October 15–19). Contact for both events: Fran Gramkowski, 609-429-6260.

■ **OCTOBER 25–26: Buggy Cup del Tartufo,** 3rd annual, at Monte Petrano, Cagli, Italy. Contact: Roberto Magi: 39-722-329930; fax, 39-722-329335.

■ **NOVEMBER 27–30: Turkey Day Buggy** (named for the U.S. holiday of Thanksgiving), at Roach Dry Lake in Jean, Nevada, USA. Contact: Scott Dyer, 702-220-4340.

■ **JANUARY 11–14, 1998: Buggy Boogie Thang III,** at El Mirage Dry Lake, California, USA (following Kite Trade Association convention in San Diego). No racing. Contact: Corey Jensen, 408-372-7922.

■ **MARCH 11–17, 1998: Spring Break Buggy Blast,** 4th annual, at Ivanpah Dry Lake, California, USA; racing events—including 100-kilometer event—held March 13–15. Contact: Fran Gramkowski, 609-429-6260.

The bare facts

The last challenge after the big race was left to those intrepid few in search of that rare pin, available only to those willing to shed some inhibitions.

Peeling off their European regulation waterproof shells, a handful of buggiers became little pink blobs tearing "starkers" around the shoreline as the light diminished.

The final evening provided an excellent hog roast, at which the buggiers welcomed their biggest fans: two very special 80-something ladies affectionately known as Aunt Maude and Aunt Mavis. They discovered buggying in 1995 while holidaying at Berrow, and booked in for the same time in 1996 to continue their study of these Parakartus Pilotae.

The traditional auction which followed the dinner was filled with endless toys—and a few good kite bargains.

A final show of wackiness came from Belgian National Buggy Champion Van den Bussche: He gave up his hair for a good cause, becoming bald as a baby, raising over £100 ($165) toward the next event.

What will the buggiers shave off in 1997? Only one thing's for sure: Like the turtles, they will be back to broach the shores at Berrow. ◆

Dear Diary ... BY ANDREW BEATTIE

We have intercepted a short account of the week at Berrow, penned by a participant. —Editor

It would be easy to assume the essentials for a successful buggy event are a good location and a good wind. These are useful, but the most important ingredient is people—Piers Day and Mike Shaw, for example.

These guys made Berrow happen. There were no controversies, rows or difficulties. They kept everything on the boil and were flexible to change race organization, venues, entertainment and food in light of past experience or anticipated weather.

Then there was "Team Lobotomy," the rabble who were my companions for the week in Van 39, the oldest, most rundown caravan on the site: Paul Chandler, Andrew Hawken, Matthew Hurrell, Robert Pudlo, Andy Wardley and Gavin Wittick.

The van managed to accommodate all of us plus my load of gear, which included:

- ✔ sewing machine
- ✔ numerous types of line
- ✔ eight wheels and tires (in various states of repair)
- ✔ spare nuts and bolts
- ✔ a hot knife
- ✔ a four-gang extension lead
- ✔ my laptop computer
- ✔ hammer and nails, for building bridle rigs
- ✔ and an angle grinder for removing bent bolts from wheels...
- ✔ not to mention toilet paper rolls and the only dishcloth in the van.

The one thing I didn't bring was equipment for welding stainless steel. Predictably, *[continued]*

BERROW *[continued]*

I broke the threaded insert free from my axle on the first day and had to go find a friendly stainless welding shop in Weston super Mare.

Tandem is my favorite form of buggying and Mike and Piers one day asked me to give an enthusiastic bunch of kids some rides. I took them on a tack out toward the sea and we got a small amount of spray as we powered out over the damp sand. But they were completely unprepared when I came across a series of holes dug earlier by people looking for worm-bait. The deep puddles were all in a row, and by the end of our run, passenger and pilot were completely drenched!

Once, a group decided to take a night-buggy but couldn't persuade me to go. I missed a total eclipse of the moon that completely enchanted Andy Wardley, who remarked, "It's so cool you could keep beers in it!"

I did go on a solo safari one day. The beach at Berrow is huge, bounded by a headland several miles to the north and by Burnham on Sea, several miles to the south. We were all instructed we could not buggy to the north of a beach groin, because a private holiday camp resides there. But I was not aware we could not go past another groin on the south.

So early in the week, I went south. I went down past the groin, down past the wreck, down past the bend in the beach and out of sight. I went past the lighthouse and the pier beyond, where I encountered some donkeys on the beach. I slowed down to walking pace to explain to the donkey-keeper I was just passing through.

Eventually, encountering slimy mud, I had to dump my kite to avoid being dragged onto some rocks. I ended up walking back to the lighthouse. There I resumed buggying until I met Chris Lamb, who had come in search of me. He correctly assumed I would be desperate for water and had buggied down to bring me some. What a hero!

The bad news came in the evening, however, when I was told I had violated the southerly limit of our area. Reportedly, I had been careering through crowded areas at speed without a care for the safety of anyone else, scaring the donkeys and winding up involved in a horrendous crash! Sigh.

All the excitement was not on the beach, however. We hit gold one night at the Seagull bar, a huge pub with a stage providing live entertainment. The place had engaged a pair of Vikings to encourage the audience to be as loud and rowdy as possible, with free beer for the loudest table and other such prizes.

We hardly needed encouraging. We roared and screamed and danced and yelled. I don't think they'd had a night like it all summer. Local patrons even came up afterwards to thank us for making it such a fun evening.

But can we make the event next year encompass just one weekend? I don't know if my body can withstand having this much fun for a whole week again! ♦

The DELTA: Definition & History

The fourth letter of the Greek alphabet is delta and the word refers to anything shaped like it: Δ

Delta is often used to describe swept-wing aircraft having this shape. It has also been applied to kites at least since the 1960s—originally because of shape. But it has come to mean a structural concept, as well.

DEFINITION A delta kite has:

- Swept back wings whose leading edges are stiffened, along all or part of their length, with spars, inflation or by other means.
- A sail formed into two conic sections by a spine, bridle lines and/or a keel along the center line. The wing sections billow (deeply or slightly).
- A nose angle spread typically from 60 degrees to 120 degrees (although theoretically from 0 to 180 degrees).
- One or more spreader spars, usually attached between the wing spars (loosely or firmly) but rarely attached to the spine.
- No tail as a rule, although optional or decorative tails are sometimes used.

The completed form of the kite may be a delta (triangle), but it may also be extended to a square or cut into curved or angular shapes.

HISTORY The origin of the delta kite has long been debated. Many assume—and some reference books state—that the kite was a development from hang gliders, which in turn evolved from the sparless flying wings of revered aerodynamicist Francis Rogallo.

However, Wilbur E. "Bill" Green and Raymond "Chris" Cristiansen, founders of the Gayla kite company, were making plastic deltas in the early 1950s, before hang gliders were developed. Rather than citing Rogallo, Green has said a Chinese bird kite he saw illustrated in Life magazine inspired his design. (See *Kite Lines*, Winter 1989-90, for an interview with the Gayla founders).

Even further back, the U.S. Patent Office issued a patent in 1903 to one Ferdinand Lischtiak, of Austria-Hungary, for a birdlike kite whose design is cited by kite patent researcher Ed Grauel as the first delta-type kite in this country, although the patent did not use the word delta.

Thus the history of Western kites offers no single, clear-cut moment that marks the birth-hour of this great generic kite—if, in fact, the West has any real claim on the delta.

—The Editors of Kite Lines

[Continued from page 35] even from great distances.

Nowadays, kites are just as often decorated with calligraphy (ji-dako) or colorful figurative paintings (e-dako). Shimamura, who went to art college, paints his kites in a variety of styles: some inspired by traditional designs derived from ukiyo-e art and others influenced by modern comic strip images.

An aerial game

The most unusual aspect of the Tosa lies in a game played with it during a festival held annually in Kagami, on a Sunday in the second half of January. (Here, January is the kite season and kites are rarely flown at other times.)

Large Tosas are launched carrying a bundle (yakidashi) tied at the bottom of long rice straw tails (waranawa). Once they have reached a high altitude (approximately 1,000 feet), a long white paper ribbon (the jaara) drops from the bundle attached to the tail. As it flutters toward the ground many smaller kites attack it, trying to snag a piece of the ribbon and keep it caught on the flying line as the kite is pulled down to the ground.

A dozen numbered pieces of paper, like raffle tickets, are glued at regular intervals along the length of the ribbon, and these can be redeemed for prizes, such as a bottle of sake or a snack of dried squid (delicious together!). Thus, capturing the longest piece of ribbon offers the best chance for prizes.

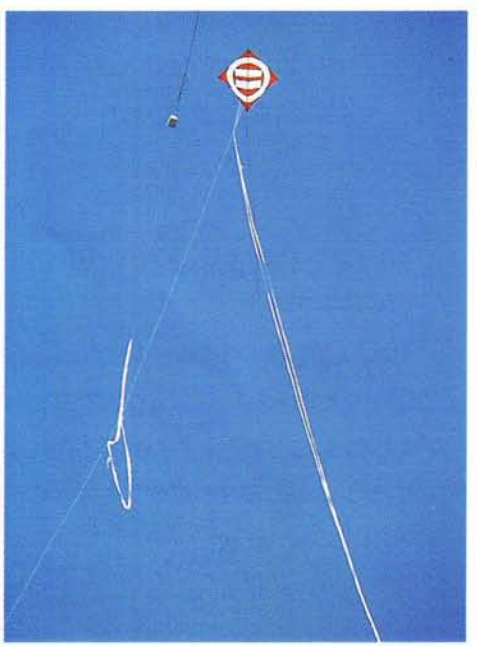
The unlucky few who fail to catch a ribbon or bring back a piece of ribbon with no number win nothing.

Yakidashi is the name given to the bundle containing the paper ribbon. A bamboo basket coated with paper, it is attached to the kite's tail and hangs upside down like a bell. The ribbon, measuring about 100 m (330 ft) long and 10 cm (3 in) wide, is held in the basket by a thin fuse line, threaded through a small cone of dried leaf and cotton. A fresh green leaf protects the paper ribbon from being burned. When lit, the fuse line slowly burns for about five minutes before burning through and releasing the ribbon.

The bundle flown by the large kites also contains about 50 small stamped cards, which drift to the ground when the bundle opens. Children run to collect these, which may be exchanged for a cup of hot noodles.

To snare a piece of ribbon, the smaller attacking kite is maneuvered so its line first crosses the ribbon, then is drawn upwind to make the cut and leave the severed section draped on the attacking kite's line. No cutting line is involved in the game; all the kites are flown using traditional flax (linen)

Below left, a Tosa kite bearing one of the thousands of Japanese family crests captures a length of paper ribbon. Right, the tail of a kite flying above the Tosa can be seen with its now-empty device for releasing the paper prizes.



REFERENCES TO and illustrations of the Tosa kite exist in at least three books: *High Fliers, Colorful Kites of Japan* by Tadao Saito (Japan Publications, 1969), *The Art of the Japanese Kite* by Tal Streeter (Weatherhill, 1974) and *Pictures for the Sky* (Goethe-Institut, 1992). In the latter, the Tosa was among the traditional Japanese kite shapes which some 100 artists from around the world were asked to adorn with original works, in the "Art Kites" project.

line. The paper ribbon is reinforced by a very thin line taped along it and made slightly harder to cut by slight wrinkling.

The attack is made more difficult by the numbers of small competing kites floating around the tail. A total of 30 large kites are flown during the festival, but no more than three at a time.

The Tosa dako saved

Fifteen years ago, the Tosa dako was gradually fading from view, but an association was formed to revive it. Now, some 50 local kitefliers attend the festival, which is held in fields from which one can see a European-style castle on top of a nearby hill. (Now a museum, I was told, the structure was brought here stone by stone from Austria in the 1970s!)

Nobody knows exactly when the Tosa was invented, but Shimamura said it is at least 200 years old, and probably derived from kites imported from Kyushu as early as the 17th century, such as the Nagasaki hata.

Although it has no keel, the Tosa dako obviously should be classified in the same family as the delta, which is often said to have been developed in the late 1940s and early 1950s in the United States.

Just as Baden-Powell developed hexagon-shaped kites with no knowledge of the Japanese rokkaku, it is likely most Western kitemakers developed delta variations having never encountered the Tosa dako.

Once again we find evidence that the East is the true birthplace of kites. Anonymous Malaysian, Chinese, Indonesian and Japanese kitemakers should be acknowledged as the first creators of many "inventions" later claimed and patented by Westerners. ◆

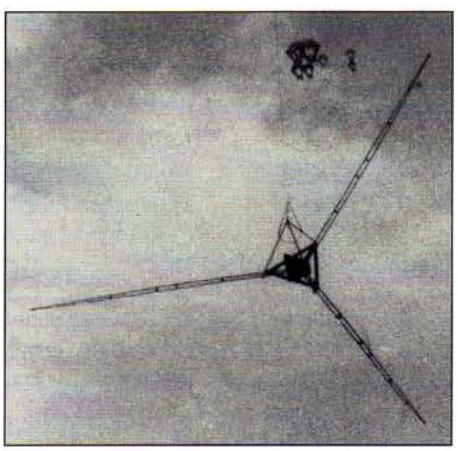
PIERRE FABRE *is a French artist and kitemaker of international prominence, but perhaps he is even more appreciated in the kite community as a photographer, observer and aesthetician of kites.*

Controversy:

Was It Kites...

...or a Balloon?

BY SIMON BAKER



Above, 1905 U.S. Navy photograph, from the National Archives, shows Lawrence's Captive Airship hanging below a train of Conyne lifting kites. Note the 15-foot–long booms, whose tips spread in a 120-degree arc. Thus the wide-angle camera's 130-degree view captured the boom ends faintly on film.

In the Fall, 1994 Kite Lines, *an article by Simon Baker about pioneering aerial photographer George R. Lawrence told how his famous view of the aftermath of the 1906 San Francisco earthquake was taken from a camera rig suspended below a train of kites.*

However, that assertion was sharply challenged in the 1995 book, Aerial Photographs Taken From A Kite, *by Geoffroy de Beauffort and Michel Dusariez (KAPWA Foundation Publishing, Belgium). De Beauffort wrote, in part: "...several American kiting enthusiasts, supported by Mr. Simon Baker, are trying to twist history by claiming against all evidence that this famous photograph was taken by a kite...." No further evidence appeared in the book.*

We at Kite Lines *then asked both Baker and De Beauffort to provide evidence for their positions. Baker's reply was a complete article, restating the original work but in more pointed detail. It follows.*

De Beauffort's reply (in French, translated by Janene Evard) supported his view by merely citing the captions on the original Lawrence photographs. He writes, in part:

"These captions, authored by Lawrence himself, state very clearly that these images were obtained by means of a 'captive airship.'...I have verified it in several technical references of the time, that it is what we call in French, a 'captive balloon'..."

No one disputes that the photos were captioned "captive airship," but only what Lawrence meant by the term. So the argument has returned to our pages, where readers are invited to decide for themselves. Kite Lines *remains open to any further evidence that may be brought forth.*

—Editors

Some of the most remarkable photographs ever taken by kite-borne cameras were made by George R. Lawrence at the turn of this century. His best known image, "San Francisco in Ruins," was taken on May 28, 1906, a few weeks after the earthquake. He and his crew rushed to the devastated city from Chicago after hearing the news, intending to photograph the destruction and sell huge contact prints made with a panoramic camera of his own design and construction. He used a kite-lifting rig he called the "Captive Airship."

In brief, this was a train of up to 17 Conyne kites on a piano wire cable, suspending a camera with a specially designed stabilizing mechanism. The spring-operated shutter was released from the ground by a current from a battery that activated a solenoid in the camera. Eleven photographs made with this assembly were identified with the words "Captive Airship."

A 1960 exhibition of Lawrence's ground and aerial photographs at the Chicago Historical Society displayed a view from the ground of the kites, camera and stabilizing mechanism. The caption read: "'Captive Airship' was the designation Mr.

Above, 1906 George R. Lawrence photo in the Library of Congress bears the caption: "Bird's-eye-view of ruins of San Francisco from Captive Airship 600 feet above Folsom between Fifth and Sixth Sts." Arrows show blurred images of tips of stabilizing booms of camera rig.

Below, a 1908 Lawrence photo of San Francisco, taken to document reconstruction work after the 1906 earthquake and fire, also shows booms. But the photographer had modified his equipment so they were now mounted above the camera, as arrows show.

Another Expert Speaks

Some months after completing the accompanying article, Simon Baker received correspondence supporting his view from Thomas Yanul of Oak Lawn, Illinois, a biographer of George R. Lawrence. Relevant portions of the letter are excerpted here. —*Editors*

I'm surprised at the problems with your article on Lawrence's Captive Airship system. I suppose I thought that everyone knew his system was kites and not balloons. Although he did on rare occasions use a small hydrogen balloon to hoist the panoramic camera, it was apparently very seldom done. The kite system was simply too easy and inexpensive to warrant using hydrogen balloons.

Although there is no known photograph showing the system in use in S.F. [San Francisco], the fact is well known. George Drucker, who worked for Lawrence from 1903 to some time in 1907, told me in many interviews that the outriggers appeared in every pan photo from kites and that they were always retouched out for a final print if it was to be for display. For reproduction it was often just cropped out by the printer…

There is documentation and letters that surfaced in the 1910 bankruptcy proceedings that discuss the fact that Lawrence left his kites and camera in S.F. after the earthquake and leased them to local photographer Harry Waters. Waters used the system for several years, producing panoramas which are known to exist, some in a private collection in Europe…

And as you may recall, in 1912–13 Lawrence spent about six months in England trying to interest the government in his aviation ideas but they became more interested in his aerial kite system, which he had shipped over to England and apparently demonstrated to members of the science commission or board…

—*Thomas Yanul*
1-22-97

Lawrence gave this harness of tandem kites, with its ingeniously suspended and triggered camera."

The Chicago Tribune of August 5, 1960 reported that George Lee Lawrence, son of the photographer, had assisted the Chicago Historical Society by providing authoritative information about the photographs used in the exhibit. There is no doubt about what Lawrence meant by "Captive Airship."

Photographic evidence

In researching the Prints and Photographs Collection of the Library of Congress, I came across five aerial views of San Francisco taken by Lawrence in May, 1906. "San Francisco in Ruins" was just one of four images of the devastated area of the city. The remaining three have seldom been published, but demonstrate something further about the Captive Airship. (The fifth image was of an unburned neighborhood.)

The photographs encompass an average view of 130 degrees in width. The stabilizing mechanism of the Captive Airship had three 15-foot-long booms radiating from the camera mount and spaced just 120 degrees apart. Therefore, one or both of these booms should be seen in each image, if it was indeed made from the Captive Airship. With the camera lens set at infinity we would expect the closely located booms to appear out of focus.

The famous "San Francisco in Ruins" offered so spectacular a view that extra trouble seems to have been taken to retouch the negative. But evidence of the retouching can be seen on the lower right edge of the photo.

In the photos shown with this article, I have placed black pointers on the margins to show where the booms are clearly visible. Frequently the blurred booms were left in place on the edges of the photographs if they were not particularly obtrusive.

Space does not permit showing the other pictures. However, a single boom tip can be seen in the picture titled "Ruins of San Francisco Nob Hill…." Although no visible boom or indication of retouching appears in the last image, a view from over Hyde and Green Streets, this photograph is about 10 inches shorter than the others and appears to have been severely trimmed, removing the ends of the original negative where the booms normally showed.

For further evidence of the Lawrence technique, I turn again to the photographs displayed in 1960 by the Chicago Historical Society. On one of the panoramic views the following caption appeared:

"The tips of the bamboo outrigging, always included in the arc of the rotating lens of the panoramic camera, were not removed (retouched) in the view of the Steamer Hamburg in this exhibit."

A final point about the 1906 photographs: Lawrence could not have traveled to San Francisco on such short notice with all the gear required to inflate and raise a hydrogen balloon. By necessity he traveled light and was best served by the much more portable kite rig. A report exists, for example, of a Naval officer hoisting the entire assembly by hand. The boom structure weighed perhaps 15 pounds, and the camera 49 pounds.

A return visit

In 1908, Lawrence returned to San Francisco to record the progress made in rebuilding the city. I am aware of at least two views made then from the Captive Airship. One was taken from the land looking out toward the bay. A second, reproduced here, was taken from over the bay in an attempt to duplicate the point of view of "San Francisco in Ruins" of 1906. Black pointers at the top indicate the presence of two booms in this more than 120-degree view. The boom location is different from the 1906 photographs, for at this time Lawrence was suspending the camera under the cradle beneath the booms, rather than above, as in 1906 and before.

There is no carefully lettered title in white, only a handwritten identification in the lower right-hand corner. This may indicate the photograph was not intended for sale to the public, but might have been made for private clients.

To conclude

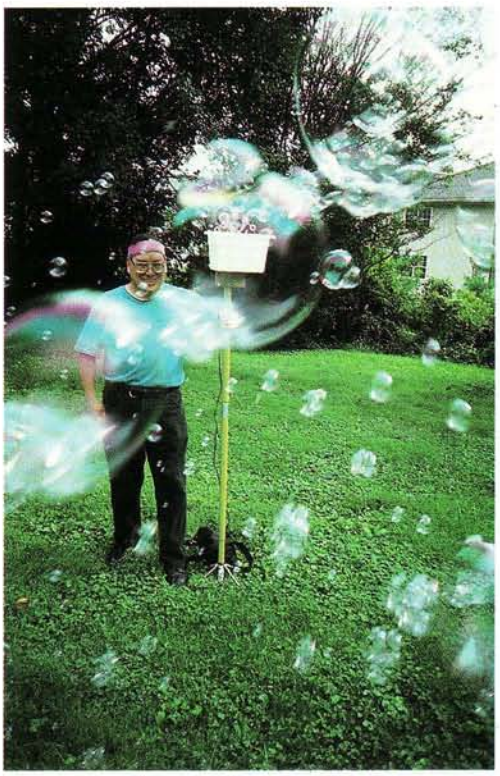
There can be no doubt about the meaning of the words "Captive Airship," appearing on the San Francisco photographs. All the 1906 and 1908 aerial views so labeled were made with a camera suspended by kites. There is no evidence that the stabilizing mechanism was ever used with balloons, which would have been easily steadied by a single tether. ◆

SIMON BAKER *is a professor, retired from teaching in the department of geography and planning at East Carolina University in Greenville. His interest in George Lawrence was piqued when he read Beaumont Newhall's book* Airborne Camera *over 15 years ago. His researches resulted in a number of articles on Lawrence, including two for* Kite Lines.

BUBBLEOSITY—make your own bubble machine

ARTICLE &

PHOTOGRAPHS BY STEVE McKERROW



I've learned more about the wind watching bubbles than by flying kites.

—Felix Cartagena

And you can, too, says The Bubble Guy of Newark, Delaware, who wears the moniker in gold embroidered letters on his black baseball cap.

Felix Cartagena, 49, has found fascination for as long as he can remember in the shimmering, floating orbs of soap we all played with as kids. He pumps out his passion at kite (and other) festivals in the Mid-Atlantic region.

"It's something to do with the prismatic colors, the liquid look and that swirly effect," he says, in vague explanation.

As a kiteflier, however, he also explains that a steady stream of bubbles blowing across a field is the surest assessment of the tricky breezes at ground level.

Cartagena takes no credit for this discovery, however. He notes he first learned of using bubbles for this purpose in 1982, from an article in the American Kitefliers Association newsletter about kiteflier Charlie Sotich, of Chicago, Illinois. Well known for his miniature kites, Sotich had motorized a children's toy bubble machine to produce a steady bubble stream for wind analysis.

Inspired, Cartagena went to work on his own design, which by now has gone through many evolutions. But he also generously points out that at least two other kitefliers were becoming simultaneously noted for making bubble machines: the late Bill Kocher of Maryland and Red Braswell. The latter, a former president of the AKA, even created a bubble machine video for the Association.

"I used to think that wind was one big wave, and it's not," Cartagena explains. "The bubbles just go all over the place, and you can really track the wind."

A bubble historian—can there be such a thing?—Cartagena talks knowledgeably about serious scientific interest in bubbles. For example, some four decades ago one Eiffel Plasterer (his real name, though as a performer he was billed "Mr. Bubble") kept a single soap bubble intact, enclosed in a bell jar, for more than 340 days.

Earlier than that, a celebrated British scientist, C.V. Boys, published in 1902 the classic "Soap Bubbles and the Forces That Mould Them." This book of experiments begins by informing readers that an ancient Etruscan vase in the Louvre in Paris shows children blowing bubbles through a pipe.

At the slightest provocation, Cartagena will slip you a bibliography of serious and not-so–serious books and articles he has compiled about bubbles (10 entries and growing).

But it seems unlikely that many people have carried bubbleosity quite to Cartagena's extremes.

He spends $300 a year on soap solution alone (longtime leading brand Mr. Bubbles is still the best, he maintains). At this year's Smithsonian Kite Festival in Washington, DC, he ran two machines and set a record for single-day consumption of soap solution: 15 gallons!

He has also mailed photocopy plans for his bubble machines to "at least 1,000" correspondents over the years.

Twice, having received inquiries from Norway and New Zealand, he assembled

Give This Machine a Home!

Do you want a bubble machine to call your own? *Kite Lines* is now accepting bids for the new, fully functioning machine that Felix Cartagena built expressly to illustrate this article. We will award it to the winning bidder at the AKA Convention, October 15-19 in Wildwood, New Jersey.

THE RULES ARE SIMPLE:

- Before the convention, send us via mail, fax or e-mail your written bid for the machine. Or...
- At the convention, come by the *Kite Lines* booth in the Fly Mart area to make bids. Bidding will close at noon Friday, October 17, and we will ship the disassembled unit (battery included) to the highest bidder. We also pay the postage. You supply the soap.

Left, seen through a soap orb darkly, Felix Cartagena, The Bubble Guy, tests out the bubble machine he built for *Kite Lines*. He says children love to run through the bubble streams, while kiters watch the drifting bubbles to assess tricky ground winds. (Note: The base of pictured machine has been replaced with a more stable tripod in the plans reproduced here.)

machines himself and shipped them to the surprised letter-writers.

"It seemed easier this way. I didn't think they'd be able to get parts," he explains.

One recipient, Alan Admore of Wellington, wrote gratefully back: "It came in the biggest box I ever got in my life. What a wonderful gift to have sent New Zealand." The Norwegian recipient, artist Trine Wester, has incorporated the machine into her sculptures and performance art.

Yet Cartagena, who works as a customer service representative for DADE International, a medical diagnostic instruments supplier, profits only by giving away joy, not earning dollars. He never sells machines or plans, nor accepts fees to make appearances at events, such as the Wednesday concerts held on summery evenings in White Clay Creek State Park in Newark, where he is well known.

Indeed, his business card, bearing a fanciful likeness of himself in a Japanese hapi coat, proclaims his interest in "Bikes, Kites, Bubbles and Bears" (the latter often lofted by kites)—and includes the disclaimer: "Not a business...just a lifestyle."

Among other reasons, confides Cartagena, not selling anything means he can better deflect the concerns of officialdom. Separate law enforcement figures—at a Smithsonian Kite Festival and an event at Fort McHenry in Baltimore—suspiciously approached Cartagena as he happily pumped out bubbles for the pleasures of passersby.

"They were sure there must be something illegal about it," Cartagena recalls. From time to time, he adds, people have expressed concern that his soap bubbles will somehow upset the balance of ecology.

He has also, however, gained much more favorable publicity, and has collected numerous newspaper clippings and television news reports in which he and his fanciful creations have been featured.

Now Cartagena, who is also official historian of the annual Maryland Kite Society Retreat, has generously agreed to offer plans for his latest version of the bubble machine to the readers of *Kite Lines*. (Take note: He plans to discontinue supplying the plans himself.)

The Bubble Purpose

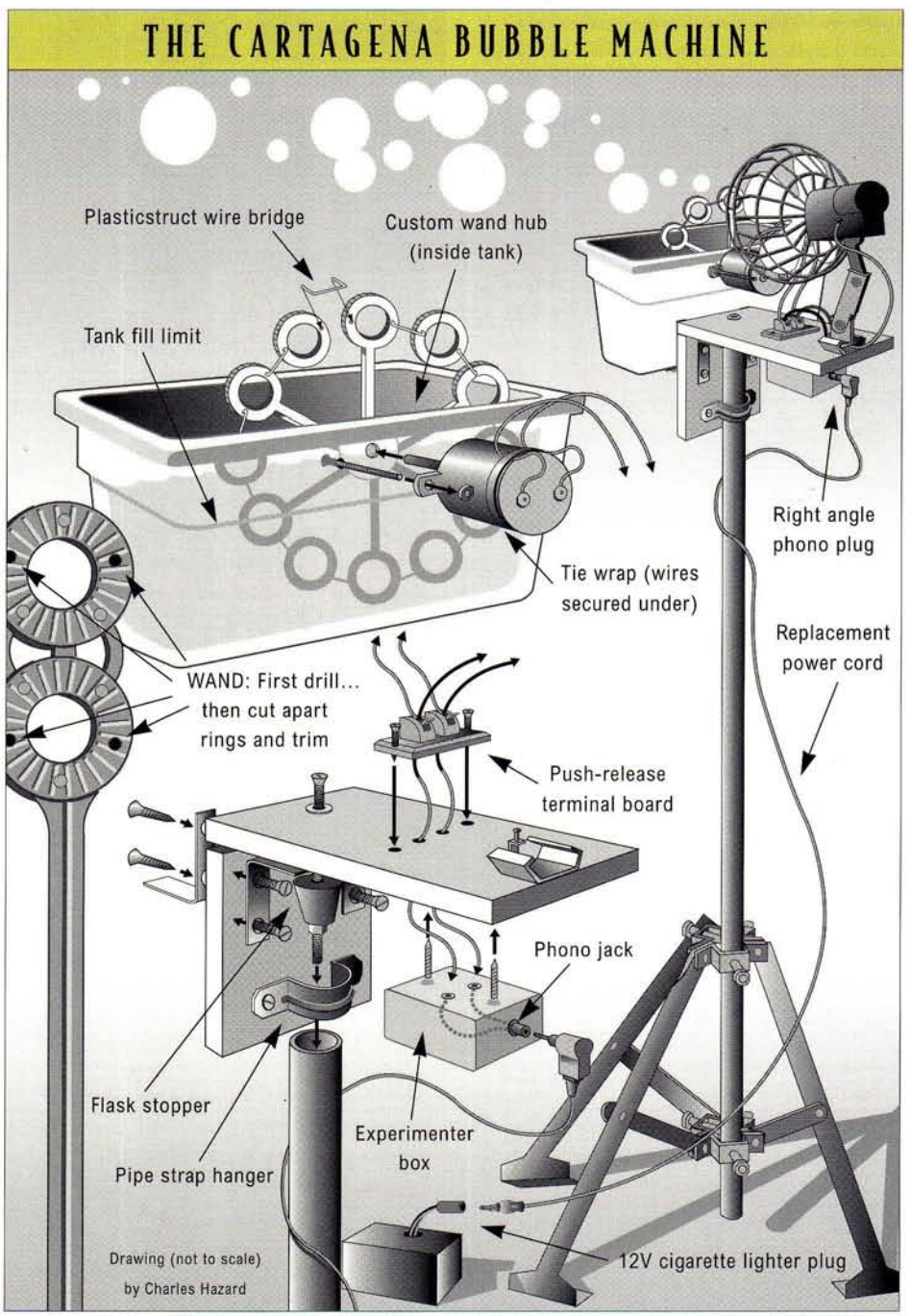
To fulfill its prime directive for kitefliers—making a steady supply of soap bubbles that stream downwind, clearly defining ground winds—Cartagena designed his bubble machine to be easily portable. Thus we break down its construction into four distinct modular units that can be separated.

Of these, the stand is perhaps the easiest to replace with whatever you may have at hand. Cartagena, for example, has bubble machines mounted on a wheeled unit, like a shopping cart, for rolling across kite fields. Do you have a sturdy camera tripod? An old Christmas tree stand? The bubble tank and fan assembly shown here can easily be adapted to fit.

Cartagena makes several styles of rotating wands: one with just six soap-holding rings, another with 12 and the illustrated model here, made from six wands with a soap ring between each. He says this creates the most bubbles of varied sizes, for a soap film is also retained in the triangle between wands, thus making larger bubbles.

Substitutions of parts may be made as creativity or raw materials allow. But we have tried, wherever possible, to provide specific catalog numbers and sources for parts that are not standard hardware items.

Ordinary hobby tools required include: a drill, soldering iron, knife, reamer, pliers,



wire cutters, saw and screwdriver.

The estimated cost for the materials? Without battery, about $75. A power source that will last for a good day of kiteflying would range from $40 upwards. (The Bubble Guy cautions to avoid batteries that are not sealed, to prevent leaking acid tragedies—such as the time battery fluid destroyed several kites in the back of his station wagon.)

Subtracting the time taken to photograph and diagram the steps, Cartagena put together the machine shown in about five hours, spread across two afternoons last fall—working on the conference table of the *Kite Lines* offices.

As with any project, Cartagena urges readers to carefully study the accompanying diagram before beginning and consult it often during construction. Space does not permit some details to be fully explored in writing—such as the orientation of the soap wand bridges and rings.

MATERIALS

PLATFORM MOUNT

- 1 piece of 6" x 1" x 4' poplar (or other soft wood), cut into 5-inch and 8-inch pieces
- 4 Stanley L-braces, 3-inch size
- 1 pipe strap hanger, 1-inch width
- 1 Radio Shack two-position, push-release terminal board (Cat. 274-621)
- 1 Radio Shack "Experimenter Box" (Cat. 270-230)
- 1 Radio Shack shielded phono jack (Cat. 274-346)
- 1 number 6 tapered rubber flask stopper with center hole
- 2 pair Archer SuperLock fasteners (available from Radio Shack, Cat. 64-2360)

BUBBLE TANK

- 6 plastic wands, from any Mr. Bubbles brand soap container, 16-oz to 100-oz sizes
- 3 lengths (each 15 inches), of "Plasticstruct" number TB1 plastic-coated steel wire
- 1 wand hub, custom-made by The Kite Studio, 555 Hamilton Blvd., Wescosville, PA 18106 (telephone 610-395-3560); specify the six-wand hub
- 1 Rubbermaid ice cube bin, with raised flange on one side
- 1 geared motor, 12 volts/16 rpm (available from Edmund Scientific, Cat. G41,865, 101 E. Gloucester Pike, Barrington, NJ 08007; phone 609-573-6250)
- 1 package Radio Shack "solderless insulated spade tongues"
- 1 package Du-Bro Natural Rubber Grommets (Cat. 115, at hobby stores, in radio control model section)

FAN SYSTEM

- 1 12-volt portable automobile fan, with 5-inch blade and hinged mounting base. (Cartagena uses a Rally brand fan, from an auto parts store. Other models are easily obtained, but look for ability to adjust tilt of fan. Bubble effects can be varied by changing the angle at which the breeze blows through the wands. And he notes that while most such fans oscillate back and forth, you will want to switch that feature off.)

STAND & POWER

- 1 Radio Shack TV Mast (Cat. 15-842)
- 1 Radio Shack Tripod Mount (3-foot size, Cat. 15-516)
- 1 12-volt rechargeable gel cell battery, minimum 5-amp hour capacity (such as Power-to-Go brand, Model CL560) placement power cord, 12-volt, for automobile cigarette lighter (supplied with some batteries; also Radio Shack Cat. 270-021B021B)
- 1 solderless right-angle phono plug (Radio Shack Cat. 274-383)

Platform Mount

A. MAKE STRUCTURE

1. Join 5-inch and 8-inch pieces of wood with L-braces and wood screws, locating 5-inch piece under edge of 8-inch. Locate outer edge of braces 15mm in from sides of wood. (Cartagena apologizes for mixing American standard and metric measurements, but explains that metric units are easier to use in some steps because they can be stated in whole numbers rather than fractions.)

2. Mount second pair of L-braces (right angle at bottom) on outer/front side of 5-inch piece of wood. Top edge of each brace should be flush with top edge of top piece of wood, and outer edge of each should be 20mm in from sides.

3. On top of platform, mark centerline from sides and drill 7/16-inch hole, 40mm back from front edge. Insert a 3-inch machine screw through washer, hole in platform, flask stopper (small end down) and another washer. Thread nut and tighten until just snug. (Do not compress stopper.)

4. Mount pipe strap hanger straddling centerline of rear side of front wood panel, about 10mm from bottom and centered under flask stopper. Use two washers between each screw and wood to provide small offset that allows pole to slide through hanger easily.

B. INSTALL ELECTRICAL CONNECTORS

1. On platform, drill two ¼-inch holes on either side of apex of centerlines, 20mm

Left, the wheel wand assembly—reminiscent of a Ferris wheel—rotates slowly through the tank of liquid soap as the fan blows the bubbles. Changing the angle of tilt of the fan, and the machine's orientation to the wind, will vary the size and number of bubbles produced, from a blizzard of tiny ones to the continuous stream of large, elongated variety shown here. Cartagena recently came up with a wand version that produces little bubbles within big bubbles.

apart (matching mounting holes of push-release terminal board).

2. Along centerline on bottom of experimenter box, drill ¼-inch holes for mounting box.

3. In one end of box, drill ¼-inch hole for phono jack battery terminal.

4. Mount box with wood screws, centered under terminal board holes on platform top. Place small washers between box and board, and make sure hole for phono jack is to rear.

5. Redrill terminal board wire holes from top, through box.

6. Cut two 12-inch pieces of insulated wire of contrasting color (to designate positive/negative). Remove insulation to expose bare ends and twist onto terminals of push-release board, and solder.

7. Insert wires of push-release board through holes in platform and box below, and mount board with wood screws.

8. Insert phono jack into end hole in box, threaded end inside, fit terminal ring tab over shaft and secure with spring washer and nut.

9. Trim wires to 4 inches, remove insulation from bare ends and twist onto terminals of phono jack inside box, making sure to match positive/negative leads, with positive at center and negative on ring. Solder in place.

10. Attach base plate of experimenter box.

Fan

MOUNT FAN

1. Locate mounting base of fan along centerline at rear of platform and mark mounting holes. Make sure retaining screw end of base is toward front and rear is flush with back edge of platform.

2. Mount base with wood screws and slide fan into place.

3. Run wires through fan base and insert into appropriate positive/negative receptacles of push/pull terminal.

Bubble Tank

A. ASSEMBLE WANDS

1. On double-ring end of wands, find circular mold marks around each ring and drill 1/16-inch holes. (See inset.)

2. Cut top ring from each wand and trim excess plastic.

3. Cut shafts below remaining ring to 80mm length and slightly taper ends. Fit each into hole in custom hub, with mold marks facing to rear.

4. With "Plasticstruct" wire, cut 12 lengths 60mm long and form each into "bridge," to link separate wand rings to rings still on shafts. Bend ends into 15mm right angle legs. (See inset.)

5. Insert bridges into holes drilled in rings, to place one separate ring between each two shafted rings. Insert ends through holes and bend tips over to secure, trimming excess. (See inset. End product should resemble Ferris wheel.)

B. MOUNT MOTOR

1. Drill ¼-inch hole for motor shaft 32mm below top lip, on centerline between sides of tank. Hole will need reaming for tight press fit.

2. Wrap cable tie around end of motor body, placing wires underneath tie and on top of body, to provide stress relief on wires. (See inset.)

3. Insert motor, wires on top, align horizontally and mark screw holes in side tabs.

4. Remove motor and drill 7/64-inch screw holes through tank wall.

5. Replace motor and anchor with 40 x 1 bolts with lock nuts, inserted from inside tank, and tighten.

6. Cut one side from each U-shaped terminal on motor wire ends, to facilitate insertion in terminal board.

7. Place grommet on end of motor shaft (for fluid seal), slide wand assembly onto shaft and tighten set screw.

C. JOIN PLATFORM AND TANK

1. Trim two Superlock fasteners to 45mm x 18mm.

2. Remove backing and stick each fastener, adhesive side down, on foot of each L-brace mounted on front of platform, flush with ends.

3. Center soap tank (motor to rear) upon the L-braces and carefully mark where inside edges of braces lie on tank.

4. Remove tank and trim remaining two Superlock fasteners to fit inside indentation of bottom of tank. Stick fasteners, adhesive side down, onto marked positions.

5. With hot glue gun, draw a bead around each Superlock fastener on bottom of tank for extra security.

6. Align Superlock fasteners of tank and L-braces on platform and press together, pushing from inside tank and underneath L-brace until you hear a snap.

Stand & Power

A. ASSEMBLE STAND

1. Follow assembly instructions that come with tripod.

2. Insert tapered end of mast in tripod mounting brackets and tighten nuts.

(Cartagena says it is best to separate tripod and mast for transport.)

B. ATTACH BATTERY

1. Attach bare wires of Radio Shack replacement power cord to right-angle phono plug. Positive terminal is at center of jack and wire screws on; negative terminal is side tab. (Cartagena suggests "tinning" wire ends first, by applying solder to join multiple strands.)

2. (Optional) Affix rotary line switch which comes with some fans (or can be purchased separately) at desired location along power cord. (The Bubble Guy says the switch is more convenient than plugging and unplugging the power cord.)

3. Carefully slide bubble tank and platform assembly onto mast, through strap hanger, and insert flask stopper into end of mast. Apply gentle pressure to secure.

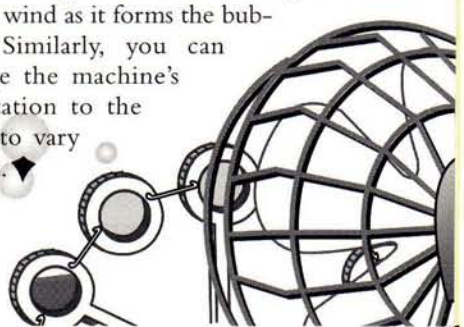
4. Fill tank with soap solution, being careful not to fill higher than flange inside tank. You don't want liquid to reach motor shaft.

5. Locate battery between tripod legs, lead power cable up mast and plug right-angle jack into socket of experimenter box on underside of platform.

6. Connect power cable and turn on the juice!

If you've done everything right, the fan will start spinning and the wand assembly will begin rotating, picking up soap film as it swishes through the tank. Presto! Hundreds of bubbles will stream downwind.

To vary the size of bubbles, you may experiment with the tilt angle of the fan, which changes the force and angle of the wind as it forms the bubbles. Similarly, you can change the machine's orientation to the wind to vary effects. ◆



Making use of non-kite items

ONE REEL WITH THE CLUB

From Randy Shannon, Flagstaff, Arizona: Try a makeshift kite pulldown device: The Club or similar anti-theft device that locks onto an automobile steering wheel.

In a pinch, the vinyl-covered hook and hand-grip handle make it ideal for muscling in a really big kite.

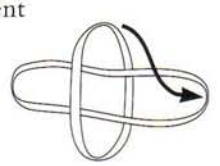
TWO HOOP TO THE RESCUE

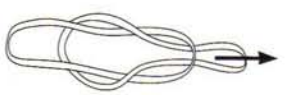
From Jerry M. Sibley, Sacramento, California: Whenever I have small holes to burn into my kite (for standoffs or bungee cord holes), I mount my sail into a small embroidery hoop. It holds the sail tight, a big advantage for nervous hands like mine.

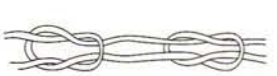
THREE HAVE BAG? MAKE TAIL

From Barbara Felker, Sterling Heights, Michigan: Bill Bigge and I recently took a "briefcase kite" to the park, but did not have a tail. So Bill cut a plastic bag widthwise into loops about an inch wide and made a super tail by larks-heading the strips together.

This arrangement was quick, effective and easily adjustable by removing or adding loops as flying conditions warranted. The knots added drag. It's the perfect tail-making system for small paper kites.







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 us at 410-922-4262.

Aydlett, Shah, Glass

GUY D. AYDLETT, VIRGINIA

The self-described "curmudgeon" of the Piney Mountain Air Force kite club in the 1980s, Guy D. Aydlett died on September 4, 1996 of cancer, at the age of 81.

Aydlett had been an engineer with the Kodak photographic company in Rochester, New York before retiring and moving to Ruckersville, Virginia in 1976, where he and his wife, Dorothy, enjoyed a "kite pad," an open space in front of their home which became a center of flying for visiting kiters, balloonists and ultralight pilots. The Aydlett home chimed with evidence of a wide range of interests, such as clocks he made himself, including their wooden movements.

Aydlett was an early AKA Life Member and a contributor to *Kite Lines* and its predecessor, *Kite Tales*. He was well known for his Green Jeanne rotor kite ("never 'rotary'!") and his Hornbeam Sled-Kite, a well-regarded sled variant.

He started the "Piney Mountain Air Force Data Letter" in November, 1979 and published it monthly through December, 1984, when his interests turned to ultralights and hot-air balloons. The newsletter's four pages of buff-colored paper ("yellow journalism," he called it) featured excellent, hand-drawn kite plans and essays on technical subjects, such as aspect ratio and Reynolds numbers. His zany wit and ornamented vocabulary were often semiconcealed behind such noms de plume as Hornbeam Thatch and Beauforce Stringfellow. His prickly, uncensored temperament and "diligent ikon-busting" occasionally left bruises, but his work made a strong and brilliant mark on kiting.

Readers avidly collected all the issues of the "PMAF Data Letter." Those who own them have much to treasure.

—*Valerie Govig*

BHANU SHAH, INDIA

Remembrances from a chronicler of India's kites:

I receive letters regularly from my Jodhpur friend, kitemaker Asghar Baylim, and had to read through tears his news of Bhanu's death early this year at age 61.

In the summer of 1985, Bhanu founded the first municipally-sponsored museum dedicated to kites, the Ahmedabad Kite Museum. With devotion, he amassed several hundred kites over 36 years of collecting, to form the heart of the museum, whose opening was a significant event for India, admired and praised throughout the country.

Bhanu Shah

Born May 1, 1935 in Kathal, a small village near Ahmedabad, Bhanu graduated from the University of Baroda in Gujarat's capital city. His training as a fine artist in painting gave him an appreciation of India's popular art, and particularly kites. He recognized that the artistry of Indian kites was slowly fading from sight, and began collecting kites shortly after his graduation.

Throughout his lifetime he had many exhibitions of his painting, and in a lifelong active partnership with all the members of his family, compiled and designed many publications featuring Indian arts and crafts. He also earned a postgraduate degree in museumology from the University of Baroda and eventually rose to become director of Sansskar Kendra, Ahmedabad's Cultural Center, location of the kite museum.

In 1993 he resigned as director to pursue plans to make the museum an international collection. In 1994 he was awarded a Senior Fellowship by India's Department of Culture to further his study of Indian kites. (At present, however, the exhibit is unfortunately closed and the future of the kite collection cannot immediately be determined.)

Although originally only an admirer and collector of kites, Bhanu became a kitemaker and flier after he attended the international kite festival in Dieppe, France in 1988. Winning or losing in the Indian game, an ecstatic smile never left his face. He was so proud of helping lead India into the international kite community. —*Tal Streeter*

JIM GLASS of INTO THE WIND

Just at press time, *Kite Lines* learned of the death from pancreatic cancer on July 9, 1997 of James M. Glass. He was co-owner with George Emmons of Into the Wind, the esteemed 17-year-old kite store and catalog company in Boulder, Colorado. He was 50 years old. ♦

Celebrating 20 Years of Kite Lines! In March of 1997, your magazine was 20 years old. To our knowledge, we have been publishing longer than any kite journal in history. We thank every reader and flier for taking part in the legacy. But certainly a special thanks is due to our Lifetime Subscribers, 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 subscription status of LIFETIME SUBSCRIBER.

After publishing the magazine for 20 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.

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 every Æolus Press publication or product (including a contributors' pin) and receive their *Kite Lines* in a lovely Tyvek envelope by air mail for the rest of their life or ours (whichever comes first). And we publish your name in every issue of *Kite Lines*.
- BIG LIFTERS: $1,000/lifetime. Big Lifters get a kite made and signed by Mel Govig, one copy of every Æolus Press publication or product (including a contributor's pin) and receive their *Kite Lines* in a lovely Tyvek envelope by air mail for the rest of their life or ours (whichever 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 issue of *Kite Lines* for a year.
- STEADY FLIERS: $100/year. Steady Fliers get a contributor's pin and receive their *Kite Lines* in a lovely Tyvek envelope by air mail for one year. And we publish your name in every issue of *Kite Lines* for that year.
- STRING BEARERS: $50/year. String Bearers get a contributor's pin and receive their *Kite Lines* in a lovely Tyvek envelope by air mail for one year. And we publish your name in one issue of *Kite Lines* as an example to the potentially generous.

DONATIONS OF ANY SIZE are welcome. You may use your VISA or MasterCard. Use our regular "All-in-One Order Form" and fill in the subscription category you have chosen.

ALL contributions will be thanked with a personal letter.

You may, of course, support us anonymously at any level if you prefer that we not publish your name.

KITE LINES

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In appreciation for our recent Lifetime Subscribers, we publish their names here in every issue or as appropriate to their subscription category.

Kite Lines Bookstore

THE BEST CATALOG OF KITE BOOKS, ANYWHERE

If it's in print and it's about kites, chances are we have it—the common, the rare, the foreign, the domestic, the informative, the artistic. We try to carry ALL kite titles available anywhere around the world—many that are hard to find—everything from basic introductory volumes to historical classics to gorgeous picture books. Think of us as your local bookstore. Pick a book. Look it over. If it's wrong for you, put it back on our shelf. No questions asked. Besides this absolute satisfaction guarantee, we offer prompt shipping from our well-maintained inventory, probably the most comprehensive stock of kite books anywhere. But be warned: Kite books often go out of print unexpectedly. We suggest you snap up your choices now!

FAMOUS BOOK—LAST CHANCE, LOWER PRICE!

SPECIAL PURCHASE *Pictures for the Sky* by Paul Eubel and Ikuko Matsumoto. This edition is little changed from the earlier (out-of-print) English-and-Japanese version. Lush, full-page color photos of original works that 100 world artists adapted to traditional Japanese kites, for the traveling exhibition. Fascinating background on the artists as well as the seven kite styles used. Only 6 copies in stock as we go to press! Softcover, 406 pp. **$49.95** (no airmail shipping)

From Australia . . .

Make Mine Fly by Helen Bushell. A classic collection of excellent, proven kite tips and techniques for beginners or experts. Contains plans for 14 original kites, including the author's Fluted Sled and famous Trefoil Delta, as well as several paper kites. Softcover, 93 pp., **$24.95**

Kite-Folds by Beth Matthews. Plans for 12 small original kites made from a single sheet of paper, plus the "Sky-velope." Clear instructions, lovely color photos and an addendum on kites in teaching. Softcover, 36 pp., **$14.95**

Lawrence Hargrave research by David A. Craddock, in USA-printed edition. *Ravensbourne to Airborne* covers the flight pioneer'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, the companion volume, includes detailed plan drawings for a dozen moderate-size Hargrave kites. Softcover, 25 pp., **$14.95**

Both books as package, **$34.95**

From Belgium . . .

Aerial Photographs Taken from a Kite by G. de Beauffort 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 Canada . . .

AVAILABLE AGAIN! *Genius at Work: Images of Alexander Graham Bell* by Dorothy Harley Eber. The inventor of the tetrahedral kite (and the telephone, of course) did much of his experimental building and flying in Nova Scotia. This book is rich with black and white photos of Bell flying kites there—including a huge ring kite—plus reminiscences from some of his neighbors. Softcover, 192 pp., **$16.95**

Canada continued . . .

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 competitions. Softcover, 142 pp., **$15.95**

Very popular video + book (not shown): *Kite Crazy* (the book) by Carol Thomas. Plans for fighters, dual- and quad-liners. Trustworthy text, black-and-white drawings. Softcover, 176 pp., **$25.95**

Kite Crazy (the video) by SOMA Film & Video. Famous kiters teach 1-, 2- and 4-line kites. Clear instructions and lovely footage, VHS format, 102 min., **$34.95**

Special book/video package **$57.95**

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**

Go Fly a Kite: The Kite Builder's Manual by John Boxtel *(not shown)*. Attractive book with plans for 12 novel kites; pleasing drawings lack dimensions and show old-fashioned techniques. Softcover, 80 pp., **$12.95**

From China . . .

NEW! *Chinese Kites: Their Arts and Crafts* by Wang Xiaoyu, in English. Though rife with typos and translation oddities, this book offers a fascinating study of painstaking Chinese techniques. Many plan drawings of 25 kites done in great detail. Some color photos. Hardcover, 300 pp., **$29.95**

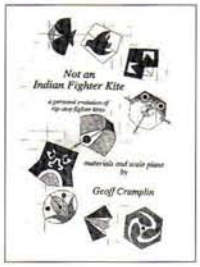
From Denmark . . .

NOW REPRINTED! *Drager der Flyver (Kites to Fly)* by Dr. Hvirvelvind, in Danish. This 1986 classic, out of print for several years, is back by popular demand. Plans for about 10 kites (including a raincoat kite), plus variations of each; materials, accessories, flying, resources. Charming cartoons and lovely full-color photos. *Limited supplies.* Softcover, 80 pp., **$29.95**

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. Simple but adequate black/white drawings. Softcover, 18 pp., **$4.95**

England continued . . .



Not an Indian Fighter Kite: a personal evolution of rip-stop fighter kites by Geoff Crumplin. Although imperfectly organized and edited, this book still contains jewels: about 20 kite plans and building tips that work. Softcover, 70 pp., **$16.95**

Mark Cottrell's books *(not shown)* are homely and self-published—but also honest, entertaining and useful:

Kite Aerial Photography. Three kite plans and comparison of trade-offs in rigs, with source lists. Softcover, 44 pp., **$10.95**

Swept Wing Stunt Kites. Design elements analyzed; 4 plans. Softcover, 43 pp., **$11.95**

The Kite Store Book of Kites. 10 original Cottrell kite plans plus 5.25" disk for computer design. Softcover, 48 pp., **$13.95**

Box Kites Making and Flying by Dr. Bill Cochrane. Plans for 17 types: Hargrave, Conyne, tetrahedral plus three Cody styles. A little history and aerodynamics; building methods out of date. Color photos, attractive layout. Hardcover, 96 pp., **$34.95**

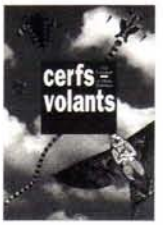
Kite Cookery by Don Dunford *(not shown)*. Plans for four kites; building methods; how to design. Includes Dunford's idiosyncratic aerodynamics ("the wind is like…giant sausages"). Softcover, 47 pp., **$5.95**

England continued . . .

NEW EDITION! *Kites: A Practical Handbook* by Ron Moulton and Pat Lloyd. Extensively improved edition has 8 new kite designs, including 2 Cody kites, the Circoflex and the Brogden; also has the Hewitt Flexkite, Pearson Roller, several stunt kites. Good sections on knots, flying techniques and parachuting teddy bears. Updated appendixes. More color pages. Softcover, 240 pp., **$31.95**

From France . . .

NEW! *Les cerfs-volants, les connaître, les piloter, les construire (Kites, knowing them, flying them, making them)* by Yan Williams, in French. Small and unpretentious, this very pretty introduction covers a lot of territory well. Many color photos and exceptionally clear color drawings. Three basic kite plans. Softcover, 96 pp., **$19.95**

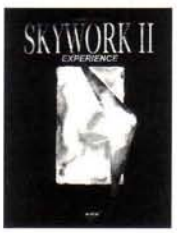


NEW! *Cerfs-volants, L'art en ciel (Kites, Art in the Sky)* by Eric Domage & Marc Domage, in French. Almost a coffee table book in size and color, this book treats kitemaking as a legitimate art form. Profiles of Streeter, Matisse, Asker, Fabre, Brockett, Bodóczky, Cottenceau, Peters and Gressier, with interviews. Softcover, 126 pages, **$44.95**

France continued . . .

Photographie Aérienne Avec Cerf-Volant: Comment S'y Prendre? (Kite Aerial Photography: How Is It Done?) by Christian Becot, in French. Some tested, practical methods of kite aerial photography. Includes drawings of systems and details, plus a bibliography—but no kite plans and just two aerial photos, on cover. *Limited supplies.* Softcover 52 pp., **$16.95**

From Germany . . .



Skywork II Experience by Christine Schertel, in German. Volume following the first *Skywork Experience*. Good plans for 12 original, tested designs: nine stunters and three cellular kites, including a Hargrave, Cody and the "Revolver." Attractive paintings instead of photographs of the kites. Softcover, 52 pp., **$19.95**

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). A stimulating, motivating, creative work. Includes fine charts plus tips on materials, sewing, knots and flying. Softcover, 96 pp., plus a full-size fold-out airfoil pattern, **$24.95**

Germany continued . . .

Books by Werner Backes, in German, are compact and reliable, and packed with good ideas, instructions, color photographs and drawings:

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 (good for workshops), plus techniques and accessories. Softcover, 128 pp., **$7.95**

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

Books by Hans Snoek, in German *(not shown)* offer fascinating early Western kite lore: . . . *und* sie *Fliegen Heute Noch —Geschichte und Geschichten um den Drachen (and They Still Fly Today—History and Tales About Kites).* Poems, songs, tales, drawings, photos, plans. Hardcover, 156 pp., **$34.95**

Band II (Vol. II). Another scrapbook of early days. Hardcover, 156 pp., **$34.95**

Both books as package, **$66.95**

From Italy . . .

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 a valuable *glossario* translating standard English terms into Italian. Softcover, 141 pp., **$19.95**

Aquiloni (Kites) by Guido Accascina, in Italian. Reliable mini encyclopedia, packed with kites in "family" groupings. Includes theory, techniques, sources, history and excellent plans for 29 kites. Some color pages. Latest edition in standard pocketbook format. Softcover, 256 pp., **$16.95**

Ali nel Vento (Wings on the Wind) by Vanny Pecchioli, in Italian. A charming basic kite book for kids, adults working with kids or newcomers to kitemaking. Plans for 13 paper and wood stick kites have clear, accurate and colorful illustrations. Softcover, 48 pp., **$19.95**

From Japan . . .

NEW! *Nagoya Koryu Dako (Traditional Nagoya Kites)* by Masaaki Sato, in Japanese. Understated and modest, the author is perhaps the world's best maker of bee kites. This elegant cloth-bound, gold-embossed volume presents color photos of about three dozen kites—not just bees. Black-and-white photos and drawings detail his techniques for splitting and shaping the bamboo he uses in building his kites and their hummers. Hardcover, 64 pp., **$47.95**

Tezukuri Omoshiro Dako Nyumon (A Primer of Interesting Handmade Kites) by Eiji Ohashi, in Japanese. Traditional Asian and modern designs are among 29 easy-to-make figure and box kites by one of Japan's most inventive designers. Includes Ohashi's famous arch train. Some color photos; fine dimensioned drawings with full details. Softcover, 100 pp., **$29.95**

From The Netherlands . . .

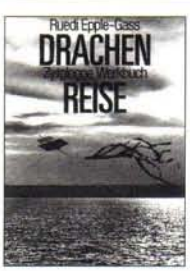
Two stunt kite books by Servaas van der Horst and Nop Velthuizen, in English, cover all aspects of the sport in up-to-date high-tech style. Well organized and printed, the books contain excellent drawings and photos, including some in color:

Stunt Kites to Make and Fly. The first book includes clear plans for 10 stunters, plus team flying techniques. Softcover, 96 pp., **$21.95**

Stunt Kites II: New Designs, Buggies and Boats. Plans for 8 kites plus advice on designing your own. Good chapter on aerobatics. Emphasizes "power" kites; offers plans for a buggy boat and a buggy. Softcover, 96 pp., **$22.95**

Companion diskette 2.0 for IBM-compatibles, prints out templates of the plans in Stunt Kites II; also simulates stunt maneuvers for visualizing your routines, **$19.95**

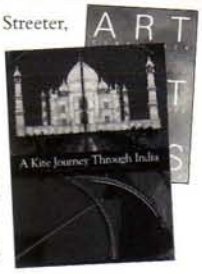
From Switzerland . . .



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 and Europe. Political overtones—kiting's only gloomy book. A few drawings of biodegradable ethnic kites, plus poems and flying tips. Softcover, 125 pp., **$42.95**

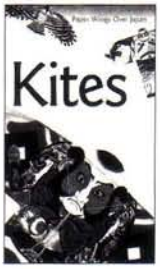
Drachen: Spiele mit dem Wind (Kites: Playing with the Wind) by Rainer Neuner, in German. A very attractive introductory book, with many color photos. Includes plans for eight kites—among them several genki variants—and five wind toys, geared to light winds. Appendixes. Hardcover, 131 pp., **$39.95**

From the United States . . .

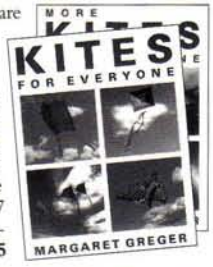


NEW! *A Kite Journey Through India* by Tal Streeter, in English. Long-awaited successor to *The Art of the Japanese Kite* mixes engaging stories about Indian life with excellent photos in color and black-and-white, showing surprising varieties of kites. Softcover, 182 pp., **$39.95**

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



NEW! *Kites: Paper Wings Over Japan* by Tal Streeter, Scott Skinner, Masaaki Modegi and Tsutomu Hiroi. This lovely, colorful survey of Japanese kites covers a wide swath, including history, many photos and kitemaker profiles—as well as information on where to view and buy Japanese kites. Softcover, 96 pp., **$18.95**



Books by Margaret Greger are clear and trustworthy, ideal for beginner or expert: *Kites for Everyone.* Over 40 well-selected plans plus accessories; straightforward style. Second edition, softcover, 136 pp.,**$12.95**

More Kites for Everyone. Some old, some new. Plans for 17 kites, from simple to complex. Softcover, 59 pp., **$9.95**

The Tao of Kiteflying: The Dynamics of Tethered Flight, by Harm van Veen, in English. Tough questions tackled by one of Holland's most respected kiters. 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**

Books by Jim Rowlands have a few color photos, much black-and-white text and line drawings:

Soft Kites and Windsocks. (Same as British *Kites and Windsocks.*) The best and most popular Rowlands work. Plans for 11 kites, including the whale, the soldier and caterpillar, plus five windsocks, five drogues and two bags. Softcover, 104 pp., **$14.95**

The Big Book of Kites. (Same as British *Making and Flying Modern Kites.*) Plans and techniques for 36 kites on the simple side. Softcover, 127 pp., **$14.95**

One-Hour Kites. (Same as British *Kites to Make and Fly.)* Plans for 25 kites including the Facet and stunters. Softcover, 95 pp., **$14.95**

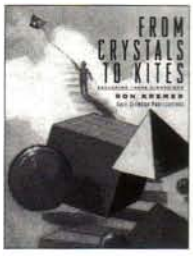
NEW! *The Great Kite Book* by Norman Schmidt. A collection of 19 unusual, attractive designs (insects and birds), in Tyvek, with clear instructions. Short history articles interspersed with the plans; color used throughout; indexed. Softcover, 96 pp., **$12.95**

Making & Flying Stunt Kites & One-Liners by Wolfgang Schimmelpfennig, in English. A wide-ranging and up-to-date book. Superb full-color drawings of plans for six stunters and three one-liners. Some translation oddities. Softcover, 80 pp., **$12.95**

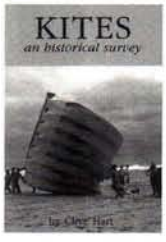
Books by David Gomberg are "homemade," lacking photos, but useful: *Sport Kite Magic!* Gomberg's best yet, clear writing covering the newer "tricks" and indoor flying. Softcover, 126 pp., **13.95**

Stunt Kites! Thorough coverage of the basics plus advice from 20 top fliers. No plans. Softcover, 88 pp., **$11.95**

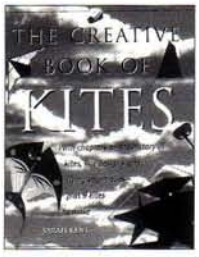
The Fighter Kite Book! Good information, plus plans for a basic fighter and rules for waging battle. Beware drawings of bridles! Softcover, 74 pp.,**$8.95**



NEW! *From Crystals to Kites* by Ron Kremer. This is actually a teacher's workbook for instruction in solid geometry, grades four to seven. Inspiring shapes, good clear terminology. Among the projects for building—and flying—are a small Bell tetrahedral and several other cellular kites, to be made from drinking straws, tape and paper. Softcover, 102 pp., **$10.95**



Kites: An Historical Survey by Clive Hart. Revised, second edition (1982). An invaluable, in-depth reference work, this book includes many black-and-white illustrations and photographs. Has the most extensive kite bibliography in print. Good index, no plans. Softcover, 210 pp., **$15.95**

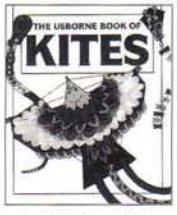


NEW! *The Creative Book of Kites* by Sarah Kent. Kiting newcomers will find good support in this pretty book, and seasoned kiters may gain nuggets of knowledge. The English author, a member of Europe's first all-female kite display team, offers a pretty good history, an unusually broad survey of world kite types, useful flying instructions for a variety of styles, clear illustrations and nine kite plans, from easy to complex. *May not be available for long.* Hardcover, 124 pp., **$12.95.**

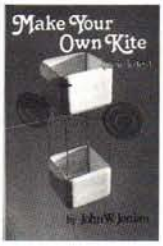
NEW EDITION! *Flight Patterns* by Leland Toy. Happily, little is changed in this useful book from a well-remembered kiter. Solid tips and easy, well-illustrated plans for eight kites—including a rotor made from foam meat trays. Modest and understandable. A portion of this book's proceeds go to the Leland Toy fund. Softcover, 36 pp., **$11.95**

Kite Precision by Ron Reich. A celebrated stunt flier teaches you the basic dual-line techniques, plus the differences posed by the Revolution and the Flexifoil. Includes the rudiments of team flying, choreography, music selection. Good maneuver diagrams. Friendly tone and touches of humor. Self-published; many low-grade photographs. Softcover, 182 pp., **$14.95**

The Usborne Book of Kites by Susan Mayes. Cute, practical collection designed for kids. Six easy kites, with clear, fully illustrated step-by-step instructions. Good introduction to materials, wind and flying. Many helpful tips, aided by animated color drawings. Softcover, 32 pp., **$5.95**



Super Kites III by Neil Thorburn. A wonderfully quirky book with many designs for delta-sled-box inventions. Tested, creative techniques use available materials (mostly plastic bags and wooden dowels) and include "kite gear." Some color photos brighten this "completely handmade" book. Softcover, 123 pp., **$8.95**



Make Your Own Kite (new kites) by John W. Jordan. Plans for nine original kites using unusual materials, such as plastic foam and computer cards. 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**

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**

BARGAIN CORNER!

Two books by Wayne Hosking *(not shown),* uneven in style:

- *Kites.* Lavish color, good research on kites of Asia. Softcover, 120 pp., **now only $11.95**
- *Kites to Touch the Sky.* "Homemade" book of 32 plans for plastic kites; good for workshops. No photos. Softcover, 96 pp., **$9.95**
- *25 Kites that Fly (not shown)* by Leslie Hunt. Reprint of 1929 original. Plans for good old-fashioned kites (shield, elephant, yacht, etc.) in paper and wood + a clinometer. Hunt was a kitemaker for the U.S. Weather Bureau. Historical data and photographs. Softcover, 110 pp., **$3.95**
- **NEW!** *Flying the Rev and How To Do It* by Bill and Kim Taylor. Published independently of the maker of Revolution kites, this home-computer–made book advises and reassures new fliers of quad-line kites. Has many black-and-white drawings. Softcover, 118 pp., **$9.95**

ARE YOU MISSING SOMETHING?

BACK ISSUES OF KITE LINES

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 20 issues available while supplies last in original paper form...

■ SUMMER 1989 (VOL. 7, NO. 3)
India's kite frenzy by George Peters and Philip Morrison; Bali by Simon Freidin; major stunt kite survey; kite capitals of the world; Sotich's flying wedge; Ohashi's arch train.

■ 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 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; 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; world class 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; Hamamatsu by George Peters; the GX-3 stunter; spray-painting nylon; SG: the Gibians.

■ SPRING 1993 (Vol. 10, No. 1)
Soul-lifting kites of Guatemala; Java festival; Ed Alden's family of fighter kites; celeb rokkakus; travel tips; Rameaux aerials; quad-line Propeller; SG: Jørgen Møller Hansen.

■ SUMMER-FALL 1993 (Vol. 10, No. 2)
Adrenaline tour of India; István Bodóczky'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, Verdun, Canada; AKA at Seaside; Sheragy's butterflies; SG: Wolfgang Schimmelpfennig.

■ *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 Baby Cicada fighter; Alex Mason; Roger Maddy; SG: Scott Skinner.

■ SUMMER-FALL 1995 (Vol. 11, No. 3)
Great festivals: New Zealand, Curaçao, Israel, Italy, Canada; 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.

■ SUMMER 1996 (Vol. 12, No. 1)
Kite fishing Indonesian style; festival at Berck-sur-Mer; St. Elmo's fire; Norway's Isegran Dragefestival; special report on power kites; is pin collecting dead?; SG: Michael Goddard.

■ FALL-WINTER 1996 (Vol. 12, No. 2)
Kites in museums; Gibson Girl box rescue; a blessed Dieppe; why kites fly; the Korea International Kite Festival; fighter kites of Hong Kong; SG: Oscar & Sarah Bailey.

- Back issues: $4.50 each + $1.00 each shipping
- 4 or more copies: $4.50 each, free shipping
- For a free booklet registering the major contents of each and every issue of *Kite Lines*, send self-addressed stamped envelope to *Kite Lines*, P.O. Box 466, Randallstown, MD 21133-0466,USA.
- **NOTE:** Endangered issues (in italics): $10 each, free shipping
- **NOW:** Extinct Issues available in bound photocopies to order, $20 each, free shipping

Have it all on microfilm!

KITE LINES
$3.00 each postpaid
$85 entire set postpaid
Here it is, the entire, coveted collection, all 45 back issues of *Kite Lines* published over the past 20 years, available in a neat, compact library on microfiche. When copies sell out, a microfiche version is offered, so new enthusiasts can take a crash course in kiting with this treasure chest of valuable information!

KITE TALES
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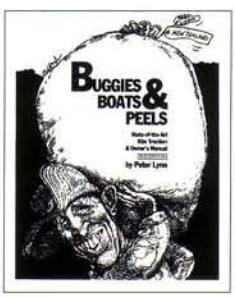
The complete set of *Kite Tales* (the original AKA journal) on microfiche, all 40 issues from Oct. 1964 to Nov. 1976. Kite plans, news, commentary by AKA founder Bob Ingraham, and historic material—a must for researchers or libraries.

New Kite Lines pins!

Handsome pins in *limited supply...* and selling fast!
Left, the newest, our classic original Eddy kite pin in a new and trendy color, sea green; 1¼", **$6.00**
Center, grand 20th Anniversary pin; gold/black; 1½", **$7.00**
Right, back by popular demand, our original Eddy kite pin in rich forest green, 1¼", **$6.00**
Super deal!—any 2 for $11.00—or all 3 for $16.00
plus $1.00 shipping per order

Kite Lines guides...to fun!

The Compleat Rokkaku Kite Chronicles & Training Manual. Kite fighting in groups—for fun and entertainment! Everything about the evolution in America of rokkaku challenges, since their start in 1983. Includes reprinted historic material from *Kite Lines*, plus plans for making a 7½-foot rokkaku (by Mel Govig) and two smaller variations (by Lincoln Chang), using modern materials. With appendix of resources. Softcover, 20 pp., **$6.95.**



Buggies, Boats & Peels: State of the Art Kite Traction and Owner's Manual by Peter Lynn. How to get started in kite buggying and kitesailing. Includes 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. Includes drawing of a buggy racing circuit and complete data on the Peter Lynn Peel. Second edition, softcover, 12 pages, **$6.95**

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FOR SALE

KITE PATENTS: Every kite-related patent issued in the U.S. is available in capsule form to those sending $50 to Ed Grauel, 799 Elmwood Terrace, Rochester, NY 14620. Included are patent numbers, filing and issuance dates, inventors' names and a brief description for each of the 836 patents.

SOFT KITES: Stratoscoop 3.5, orange/yellow, good cond., $200; Force 10, custom colors of red/blue/yellow, like new, $225. Call Rob Rasbach, 203-735-5538.

TRADE

PINS: EXCHANGE / TRADE. R. Wardall-Bannier, Altrheinweg 98, 4057 Basel, Switzerland.

WANTED

KITE CLIPPINGS and news articles are always wanted by *Kite Lines*. Small surprise rewards! Send items to *Kite Lines*, PO Box 466, Randallstown, MD 21133-0466. USA.

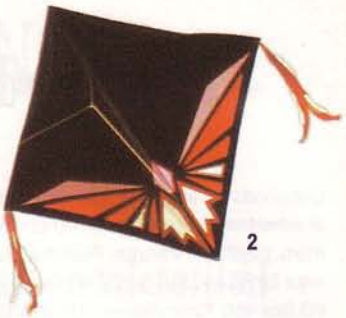
Information and/or personal stories about DOMINA JALBERT for a book I am writing about him. There's still room for contributions! Please write to: Tal Streeter, 2-38 Verbank Village Road, Verbank, NY 12585; tel: 914-677-3362.

ANY KITE-RELATED ITEMS: postcards, telecards, stamps, envelopes, prints. We collect and exchange. Jan Fischer, Teylingerweg 72, 2114 EL Vogelenzang, The Netherlands; tel/fax: 31-23-584-5627.

SkyGallery

JON BURKHARDT


1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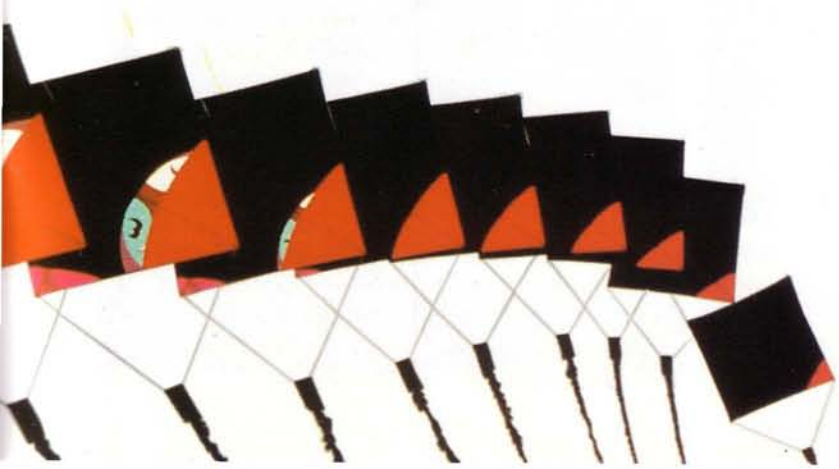
KITEMAKER: Jon Burkhardt, 54, Potomac, MD
OCCUPATION: Research in transportation planning
EDUCATION: Masters in City Planning, Massachusetts Institute of Technology
KITEFLYING EXPERIENCE: 27 years making kites
INSPIRATION: All of the world around us and all of the art of many cultures.
AVERAGE AMOUNT OF TIME SPENT ON KITES: Varies from several hours to two months.
AWARDS/HONORS: Best Handmade Kite, AKA 1984; most beautiful and most innovative awards at many festivals; Best Kite Display, International Tour of India, 1993; captain of champion rokkaku teams at Long Beach, Washington and Ocean City, Maryland in 1991 and 1992.
FAVORITE FLYING SPOT: Hadrian's Wall, Northumberland, England—the best!
PHILOSOPHY/INTENT IN KITEMAKING: Kites are a grand celebration and are meant to be shared with as many people as possible.
OBSERVATIONS: The creativity of kitemakers is marvelous, as is their willingness to appreciate the creativity of others.
PHOTOGRAPHER: Jon Burkhardt


4



KITES BY JON BURKHARDT (all nylon appliqué)

1. **BENITA:** 5' tall, from 1967 *Vogue* magazine cover by Eduardo Benito
2. **UNNAMED HATA:** 40" square, one of a series
3. **DANCERS:** 5' tall
4. **SOJI GO DARK:** 150' train of 3½' squares
5. **DEEP SPACE:** 2' square, 24' tail, one of a series
6. **SUN-SEA-SKY:** also 2' square with 24' tail
7. **BLACKFOOT'S MAGIC GOURD:** 40" square with 40' tail
8. **MAVIS:** 5' squared delta (frame design by Bob Quinlivan), based upon 1920 Mavis perfume advertisement by Fred Packer
9. **SPIRIT MASK:** Spirit Mask: 8½' x 6½' canard Marconi (structural design by Guy Aydlett)

News, Rumors & Miscellany OF VERDUN, GUADELOUPE,

STATE TROOPERS AND CONSECUTIVE DAYS OF KITEFLYING BY THE *KITE LINES* STAFF

Take it from Bruce Flora: Never, ever count your chickens when you have a big deal cooking—especially with the Disney corporation.

Remember? The World Festival of Kites that was such a success at Epcot Center in Florida in 1995 was set to repeat in 1996, then 1997, then 1998. Now it has been postponed indefinitely. Still upbeat, Flora says "It will happen another year."

Traffic ticket worries? Keep a kite in your trunk. It worked for Tom Bukur of Valparaiso, Indiana.

He was driving in a hurry to an appointment with his patent attorney in Chicago. Speeding through Gary, Indiana, he was pulled over by a state trooper and figured his chances of escaping a ticket were a million to one.

Still, he got out of his car and said, "Officer, before you write my ticket you've got to hear my story."

He opened his trunk to reveal his "UFO" kite, and explained he was on his way to seek a patent for his dream design. Within five minutes, the trooper was flying the prototype and "laughing his pants off."

"This thing's got magical powers," says Bukur, who got off with a warning.

When people can't break an established world record, they try to invent one, usually inspiring yawns all around. But when Bill Bigge (Germantown, Maryland) sets a goal it's more, well, inventive.

Bigge aims to break or match the record for most consecutive days of kiteflying—a record set by Bill Mosley of Converse, Texas in 1984: 366 days (a leap year). But Bigge has raised the bar, planning to fly a *different kite* each day!

Bigge has already begun his effort (on June 9, his birthday) and is using kites of his own making. He had many of his own light-wind models with which to start, but he plans to make major modifications as he goes along. He says, "Any two kites will be significantly different in at least one dimension".

He is flying mostly in a public park near his home and has arranged for each day's flight to be recorded by a witness-photographer, who also will assist with a photographed log.

Bigge hopes to match the 366-day record, Lord willing, on his 70th birthday in 1998.

A Maddy pencil kite flies from 12 lines (six per hand)!

VERDUN IN JUNE—THE PLACE FOR TREND-SPOTTING... Some of the most interesting kites at the 1997 Rendez-Vous Mondial du Cerf-Volant in the suburbs of Montreal, Canada were the joint efforts of couples. Roger and Janice Maddy of Olympia, Washington worked together to fly Roger's creative multiline "puppets" (a shift from multiple kites to multiple lines). George Peters and Melanie Walker of Boulder, Colorado installed delightful human figure sculptures to "fly" their kites. Jean-Marie and Marthe Simmonet of France flew their airy sails cooperatively as a duet, from two lines. And Anne and Christopher Harris of England worked together to inflate Anne's "ground toys." These were only a few of the innovations that make this event unique among North American kite festivals.

Graphic wit: seals balance whirling balls, trademark of Wolfgang Grimsel of Germany.

A ghost toes the grass and moves about to "fly" a kite; by George Peters and Melanie Walker.

David Gomberg reports from Guadeloupe, West Indies: "Eighty of the best sport kite fliers from across North America and Europe gathered in Guadeloupe from June 9 to 16 for the first Erick Rotin Intercontinental Kite Challenge.

"The concept was head-to-head competition and big prize money in Individual, Pairs, Team and Quad-line flying. Results were based on scores in both Precision and Ballet.

"I had believed that both regions had their strengths and neither was clearly dominant. The evidence of Guadeloupe clearly suggests otherwise.

"We can quibble about the different standards in the two regions, but the Americans still failed to garner even half of the top three places —and not a single first place in Ballet.

"If I were to pinpoint any one reason that the Europeans are "better," it would be that the best of them regularly fly against each other, constantly pushing and challenging each other to learn, improve and innovate.

"Meanwhile, we congratulate the European Team! They were brilliant fliers and gracious winners as well.

"Hats off, as well, to the Tourism Authority of Guadeloupe. They provided an opportunity for competition, exchange of ideas and information and trans-Atlantic friendships. The island is beautiful and the people here warm and friendly. We thank them for their exceptional hospitality, their hard work and their vision.

"The event was well organized and well administered. Total costs exceeded 1,500,000 francs, or about $250,000 US—*plus* donations which included about 100 airfares and hotel rooms. Certainly, this was the best-funded sport kite event of the decade so far. As word spreads, competition at the AKA convention for the few cherished slots will become more intense than ever." ✦

THE THIGHS HAVE IT!... Marla Miller of Tacoma, Washington likes kites so much she "wears" them (right), adding one tattoo after another to her left thigh. We're told the Rose Delta came first. Also pressing the flesh: an M diamond, a White Horse Kite Fliers diamond and the Puff Bazzers Postman Pat Edo, along with cartoon characters Wallace & Grommitt and a "go fly a kite" logo.

PHOTOS: VERDUN BY MEL GOVIG; TATTOO BY JOHN BARKER

INTRODUCING THE LATEST IN KITE LINE TECHNOLOGY

BERRY BLUE LINE™

BERRY BLUE LINE was developed through extensive research and interviews within the kite flying community. It represents a true consensus of what kite flyers really want from a quality line today.

DESIRED CHARACTERISTIC:
Exceptionally low stretch

BLUE LINE SOLUTION:

We developed a unique, tightly woven braid structure to minimize stretch. It's a difference you can see and feel right out of the package.

DESIRED CHARACTERISTIC:
Small diameter and reduced weight

BLUE LINE SOLUTION:

Berry Blue Line is braided from 100% Spectra® 2000 fiber, the thinnest and strongest fiber available. The result is a small diameter kite line with up to a 30% reduction in weight compared to other Spectra kite lines. The thin profile is more aerodynamically efficient, and the lighter weight yields better speed and reduced drag.

DESIRED CHARACTERISTIC:
Reduced friction on wrapped lines, better wear

BLUE LINE SOLUTION:

Breakthrough technology developed by Berry's R&D Department has enabled us to increase the abrasion resistance, lower the friction between wrapped lines, and permanently color Spectra braids.

DESIRED CHARACTERISTIC:
A high quality kite line at an affordable price

BLUE LINE SOLUTION:

Our state-of-the-art braiding facility is the newest and most efficient in the world. It allows us to offer the most technologically advanced kite lines woven from super strong Spectra 2000 at very competitive prices. Which not only makes Blue Line a great performing line, but a great value.

BERRY BLUE LINE IS AVAILABLE IN 6 TENSILE STRENGTHS, EACH UNIQUELY COLOR-CODED. ASK FOR BERRY BLUE LINE AT YOUR FAVORITE KITE SHOP OR DIRECT MAIL RETAILER, OR CALL US FOR A FREE SAMPLE CARD.

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A new highperformance foil by ACTIVE PEOPLE for the everyday flyer. Positioned between the QUADRiFOiL Classic and the COMPETiTiON the Q-2000 series is perfect for the flyer looking to move up to the next level of performance.

AP
ACTIVE PEOPLE PRODUCT NEWS
English Edition Nr. 1/97

They're not getting older, They're getting better!

'AP' congratulates KiteLines magazine on the celebration of their 20th anniversary and would like to wish them very many more successful years serving the international kiting community.

May 1997: The QUADRiFOiL international division of ACTIVE PEOPLE have introduced a new standard in foils for the everyday flyer. The Q-2000 series of foils combines the innovative technology developed in their COMPETiTiON series of racing foils with the easy handling characteristics. Flying almost as high upwind and with almost as high a top speed as the COMPETiTiON series of foils, the Q-2000 accelerates smoothly to cruising speed. Great handling characteristics combined with super performance and great graphics make this foil a real winner. The Q-2000 series will be available in two graphic editions. The technical **Qreate Energy** series in 3, 4, 5, and 7 sq. Meters and the new Fun graphics series:

- **Qusic** (Music in the Air)
- **Qebra** (Qebras Fly Higher)
- **Qrazy** (Ideas Fly Longer)
- **Qing** (Wings for Kings and Queens)

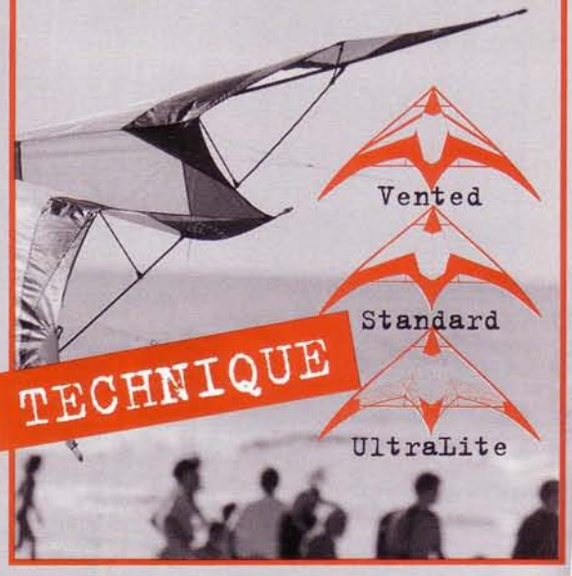
Carried by the finest Kite Stores. Visit your's today for further information.

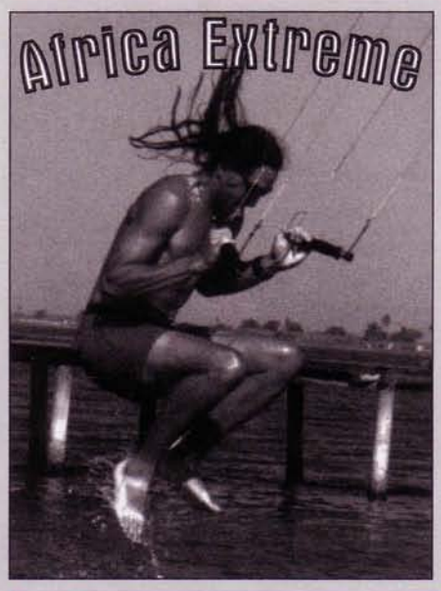
TrickTail

Pat. pend.

The premier of the TrickTail last fall introduced a new era to sportkite flying.

Utilizing innovative technology and the finest of materials the TrickTail flies like no other kite.
The TrickTail permits the flyer to develop a smooth, seamless and elegant flying style, combining sharp turns and precision with effortless transitions between seemingly impossible maneuvers. Now the availability of the new Ultra-light at 6.2 oz allows the pilot to easily compete in the 0 to 7 mph range and for those flyers who like to fly in the high winds the new Vented version has a wind range in excess of 30 mph with no change in performance or handling characteristics!





Kite Sailing: Life on the Wildside

February 97 found Jeff Howard and Eli Anderson of the ACTIVE PEOPLE Racing Team together with Eric Amsler, Brian Smith and Patrick Nassogne of Blue Iguana SA, flying QUADRiFOiLs and filming a new video in Senegal North Africa. Exciting and fast paced the video covers waterskiing, water buggying, body surfing, surf boarding, buggying in the sand dunes and out on the dry lakebeds as well as down the 900 mile long beaches. The video was directed and produced by Erick Caroen who is famous for his extreme sports videos. The filming was all done in 35 mm for the big screen and will be shown first in Belgium in the movie theaters as an intro to main features and then on the extreme sports networks. Don't miss it when it comes to a channel near you! See our ***website at QUADRiFOiL COM*** for details and photos.

SEX, CRIME AND RUMORS

The worlds best flyers flock to the **ACTIVE PEOPLE** Flying Team. First Jeff Howard, then Eli Anderson, Lee Sedgewick and Brian Vanderslice. Now Fritz Gramkowski! Who's next?

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