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By Pierre Fabre

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Thank you very much!

AVIA Sport sincerely thanks customers and supporters for a new record setting 1997 season. We like to think that we earned our success and good reputation through uncompromising quality, good service, innovative or trend-setting ideas and love for the sport—"the old-fashioned way." However, without your loyal support nothing could happen. We appreciate this very much and renew our pledge of total effort and support for the 1998 season.



and then came Ken McNeill!

Nearly one year ago Ken McNeill, kite designer par excellence and former owner of Aerie Kiteworks, joined the AVIA Sport team, adding renewed enthusiasm for quality, kite expertise, creativity and lots of muscle.

Kenny deserves our praise and appreciation for making AVIA Sport an ever more reliable supplier for kite frame needs to manufacturers, retailers and our sponsored flyers. At AVIA Sport, his "Labor of Love" is the vital liaison between production and sales. Raw, unfinished carbon or fiberglass spars fresh off the pultruders have to be cut to length, printed, counted, bundled, packed and finally shipped. He is in charge of finishing those shiny AVIA Sport spars, G-Force or Micro Rods that are so highly regarded in the industry.

About his job, he reports: Printing sticks is an OK thing. Ditto for packing, bagging, and counting sticks (1.4 million sticks in 1997, believe it or not). Helping Reggie on the pultruders is fun (sometimes) ...but cutting those many hundreds of kite sets—his words: ZX@*Y#!

When I do the cutting on our nice, new, semi-automated, well-exhausted saw, it always seems OK to me. After all, for the first two years in business I would be locked in my unheated garage, cutting sticks, one at a time, with a little arrow saw, emerging like a coal miner after a 12-hour shift. Black dust stuck to my face, in my nose, ears, lungs, on clothing and, worst, on my new car. Our President Ingrid would take the cut sticks into the shower with her and give them a bath. Oh well, that is now a long time ago, yet I personally feel that Kenny should not use such language.

Joking aside, we are happy and lucky to have Kenny participate in our trend-setting service and "no-muss-no-fuss-just-stick-'em" kite sets. Excellent quality and service always have been his trademark when he built his beautiful Aerie Kites which made many of you happy. We know that the same will continue with AVIA Sport. We sincerely thank you, Ken.

WE LOVE KITES AND IT REALLY SHOWS



AVIA Sport Composites, Inc.
P.O. Box 1408
Hickory, NC 28603
704-345-6070
FAX: 704-345-6071

Kitelines

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Editor: **VALERIE GOVIG**

Associate Editor: **LEONARD M. CONOVER**

Assistant Editor: **STEVE MCKERROW**

Design and Production: **KAREN ASHLEY**

SHARON B. FISHER

JAN GILBERT HURST

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Contributing Editor: **DAN EISAMAN**

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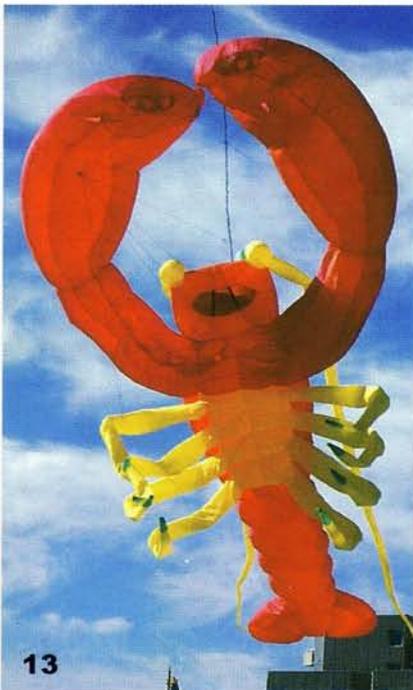
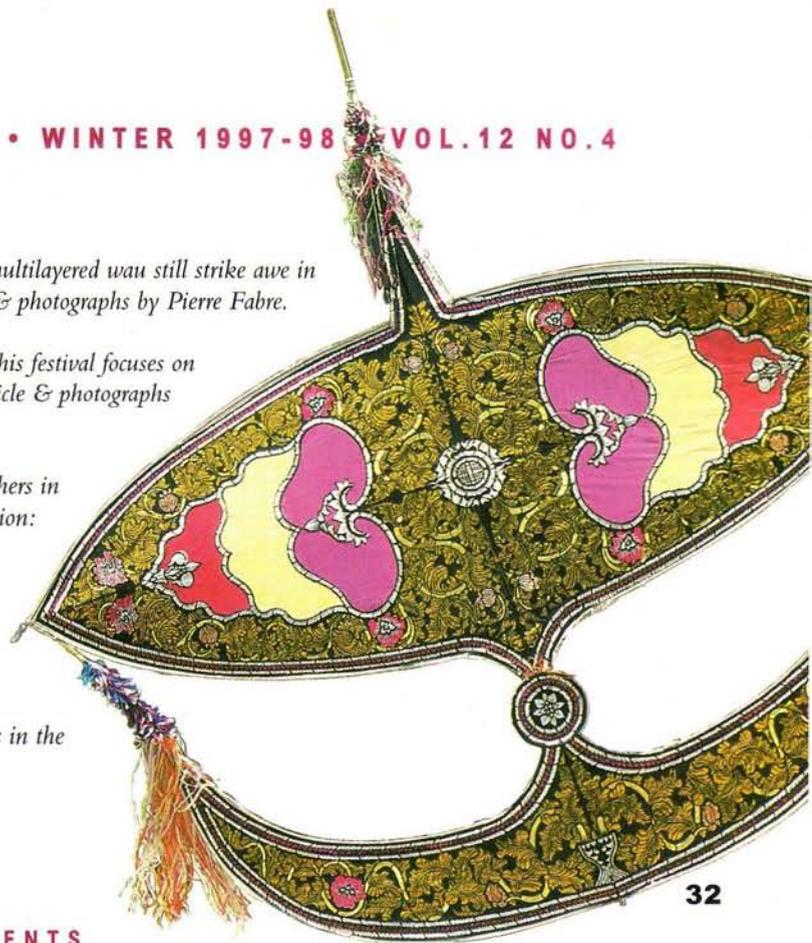
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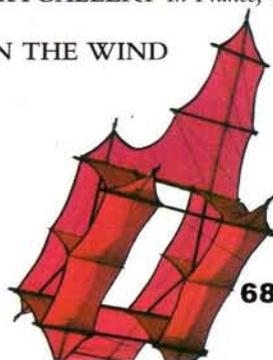


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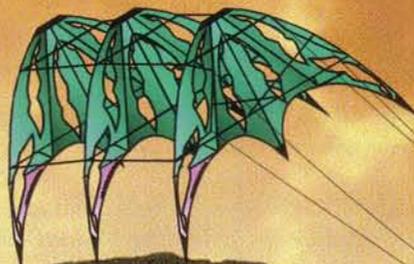


COVER: Marzukhi Jamaludin, of Alor Setar, Kedah in Malaysia, displays his wau jalabudi. Photograph by Pierre Fabre. (See story on page 32.)

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Memories of Malaysia AND ITS

KITES BOTH PROUD AND HUMBLE

Since 1989 I've been going crazy. My friend Betty Street paid me the thoughtful favor that year of enabling me to visit three kite festivals in the Malaysian region—in Singapore, Kedah and Johor. A group of kites, shepherded by Shakib Gunn, was going there, including Simon Freidin from Australia, international correspondent for *Kite Lines*.

It was a marvelous trip. Simon and I enjoyed superb guidance from Shakib, took many notes and began writing an article on our experiences. But because of unfortunate camera problems we weren't able to illustrate our writing. Also we learned that to deeply appreciate the Malaysian *wau* (kite)



Your editor wowed in Alor Setar in 1989.

we needed to visit the northeastern part of the country—which time did not permit.

Thus our half-finished article had to be filed away, awaiting photographs and more study—and I had to go crazy whenever I thought about it.

Then Pierre Fabre visited Malaysia in 1993 and 1997. At last, our desires for a more complete and better illustrated story on Malaysia had a chance of fulfillment. In fact, Pierre went beyond the level of competent description to bring us his relishing perceptions. You'll find his story and photographs in the center of this issue.

Pierre is entirely responsible for the article, but in editing we had much pleasure revisiting scenes, noting subtle changes since 1989 and comparing observations. It gave me a reason to dig up my old notes—and revive my old memories.

If it is not too late, for their help in bringing me some understanding of Malaysia, I now thank Ramli Hanafiah, Lee Poi Long, Mansor Saad and the many others involved in making those days outstanding in my kite memories. Special thanks are due to Shakib Gunn, who has been fascinated with Malaysian kites and their history for 30 years.

Even with Pierre's work we wonder if we have done justice to Malaysia's incredible kites—but we hope to convey, at least, how we are awed by them.

Valerie

On the road to Alor Setar—

Early evening. A hazy smoke hangs over the harvested stubble of rice paddies as our bus lumbers along. I am anticipating tomorrow's grand competition of elaborate *wau*, but I watch the skies of the countryside. (Shakib said: "The rural areas support kites. Urban people are too busy with their jobs and their radio and TV.")

Suddenly along the highway's edge I see kites—simple white fighters, classic Malay kites! Perhaps 20 or 25 people, young men, are flying them, fighting with them, cutting one another down and obviously having fun.

...later, in Alor Setar—

The Minister of Culture and Tourism tells me proudly how much effort is going toward promotion of the great *wau*. I ask about the little Malay fighter kites I saw on the road. "Oh, those are children's kites," he said. "They are everywhere, we hardly notice them."

(I think: How rich in kites is a country that can discount the value of this famous, original kite, the Malay.)

PHOTOGRAPH: SIMON FREIDIN



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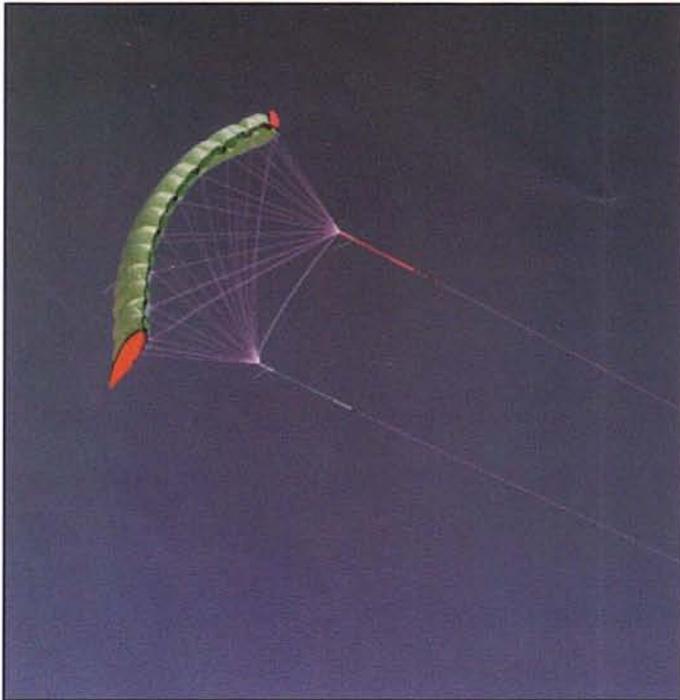
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 Phone 0049 - 91 85 - 54 45
 Fax 0049 - 91 85 - 56 31
 e-mail: post@wings-flugsysteme.de
<http://www.wings-flugsysteme.de>

North America:
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WindDance 2 shown. *WindDance 1, 2, & 3* available in six color combinations.

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The WindDance flight envelope

You stand at **F** and fly and maneuver your WindDance — represented by **K** — all over its flight envelope by moving your two control handles. Pull on the right one to turn or loop to the right. Pull on the left one to turn or loop to the left. Hold them even to end a turn or loop, and to go straight. Your WindDance turns and loops as sharply as you wish, or flies straight, depending on how far and how fast you pull them.

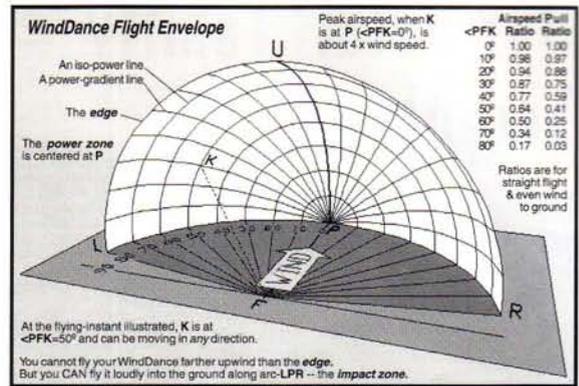
Required skill? Basic, natural "PULL-on-your-kite-line" skill: ★★ Pull on **both** lines to keep it airborne and make it go fast. Pull on **one** line, the other can go slack, to make it *turn* & *spin* tightly & fast.

Your WindDance flies at a wide range of **speed**. You experience a wide range of **pull**. The closer **K** is to **P**, the stronger the wind, and the *harder you turn*, the *faster it flies* and the *stronger the pull*.

The flight envelope — besides describing *where* it flies — also describes a kite's *speed* & *pull* characteristics which vary widely from kite to kite. **The WindDance flight envelope is different from those of other kites.** Although the quarter-sphere shape is the same, the speed & pull changes as you fly from the "edge" to the "power zone" are greater than with other kites. So are the speed & pull changes when the wind speed changes. "Power zone" speeds are higher. *Speed & pull while turning are higher, too.*

Most kites *lose* power when they turn. When you turn a WindDance, you feel the force *rise* — just like when you ski or bike or fly an airplane. *This is an exciting new Maneuvering Feel for dual-line kites!*

Speed is more dynamic! Pull is more dynamic! Peak speeds are higher! Responsiveness to the wind is greater! Turning speed is higher! And the power rises when you turn! This makes the WindDance flight envelope a MUCH more fun and exciting place to fly!



Whenever your WindDance is on an iso-power line — which represents a power level — its airspeed & pull are the same no matter where it is on the line and no matter what direction it is flying. When you fly along a power-gradient line, crossing iso-power lines in the process, airspeed & pull change the fastest. See how PULL changes a lot more than AIRSPEED? Groundspeed, the speed YOU see, is very different from airspeed, the speed your KITE sees. To learn more, visit our web site or read the WindDance user's manual.

★★ **Easy for beginners. But difficult for experienced delta-kite flyers who use "PUSH-on-your-kite-line" skill, or do nothing, when basic "PULL-on-your-kite-line" skill is needed. PULLING creates speed, fast & powerful turning, and the aerodynamic state called "kite FLYING." PUSHING — to punch-turn, un-fly, and do tricks — does the opposite.**

Why these SOFT kites work so well

During launch, the parafoil wing self-inflates as air flows into the cells through leading-edge ram openings. Once the cells fill, that airflow stops. In flight, air ramming against the ram openings pressurizes the cells. That internal pressure — and the external aerodynamic forces — tension the ribs, upper and lower skins, and the WindDance Wingtips into a flying wing. The WindDance Wing is held into its precisely-engineered shape by the WindDance Bridle system during straight flight and during sharp turns and tight spins.

WindDances are developed entirely by Seattle AirGear. Why do they FLY and handle so well? And feel so nice? Our fresh approach: we began from scratch. Our innovative and careful aeronautical, structural, & quality engineering. High levels of refinement since 1991. Accurate, consistent, high-quality manufacturing abroad. And final quality checking by Seattle AirGear.

Along the way we solved a major dual-line kite problem: Unlike other kites, WindDances deform only negligibly under the forces of flight. **While FLYING, 100%-soft WindDance parafoils are far more rigid than deltas** (deltas are more rigid while *not* flying). This does wonderful things! Aerodynamic efficiency (in the form of superb acceleration & speed) remains high, and handling qualities barely change, as they fly from the edge to the power zone and as they encounter stronger wind. This rigidity is also why one single bridle setting (two simple adjusters) provides high performance over a broad wind range, why they fly so well in unsteady winds, and why each WindDance model is a good light-wind kite and a good strong-wind power kite.

Powerfully-yanked one-line pull-turns: Many kites respond poorly to this basic skill, or are damaged by it. WindDances do tight, powerful, high-speed turns & spins. *As a 9-ft ultra-light delta and a WindDance 3 fly in 4 mph wind, the wind suddenly gusts to 25 mph:* The delta self-destructs in midair. The WindDance becomes an *intense* high-speed tight-turning power kite. **Quickness & accuracy:** During a two-second edge-to-edge pass in strong wind using 75-ft lines, the WindDance 1 can do a 10-ft square in less than a half-second. Can any 7-ft delta? **Edge handling:** From a side-edge hover in light wind you can sharply hairpin-turn downward into a pass with all WindDance models. Difficult for most kites. **Other superior qualities:** Inquire.

Specifications

Model	Flat Span	Rib Length	Flat Area	Span of a DELTA kite with same in-flight wing area	Cells	Weight	Rated Pull Strength	Recommended Spectra® Flying Lines	Lightest Winds	Strongest Winds	Suggested Retail USA
WindDance 1	5'6"	22.4"	8.8 sq.ft	7 feet	14	5.5 oz	100 lb pull ²	75-100 ft, 100 lb	5 mph ³	15-30 mph ⁴	Remarkably low! Call your kite retailer or Seattle AirGear!
WindDance 2	6'11"	22.4"	11.4 sq.ft	8 feet	18	7.0 oz	133 lb pull ²	75-100 ft, 150 lb	4 mph ³	15-30 mph ⁴	
WindDance 3	8'4"	22.4"	14.1 sq.ft	9 feet	22	8.5 oz	167 lb pull ²	75-100 ft, 200 lb	3 mph ³	15-30 mph ⁴	

Wind Speed: 5 mph 10 mph 15 mph 20 mph 25 mph 30 mph
Pull Ratio:¹ 0.25 1.00 2.25 4.00 6.25 9.00

¹ When the wind rises a little, pull goes up a lot! See how the small WindDance 1 can become a strong-pulling power kite?

² In strong winds, don't let pull exceed Rated Pull Strength. How? Quickly add a pair of tails or reduce the bridle setting.

³ After break-in, when precision-tuned for peak speed, in smooth and steady wind.

⁴ Use good judgement based on flyer's strength & skill, kite's Rated Pull Strength, and on the pull-reduction measures you take. For example, a WindDance 1 tuned for maximum pull may overwhelm a 50 lb child in 15 mph wind, whereas a WindDance 3 with big tails and reduced bridle setting could be safe for a 250 lb flyer — and for the WindDance — in 30 mph wind.

C-CR = CALCULATED Comparison Ratio
S-CR = SUBJECTIVE Comparison Ratio

Model	Pull C-CR	Speed C-CR	Turning Performance	Control Movement C-CR	Self-Relaunch S-CR	Bounce-'N'-Fly S-CR	Flying Ease & Forgiveness	Tendency to Collapse & Tangle	Minimum Skill Level
WindDance 1	1.0	1.00	Extremely fast & tight	1.0	1.0	1.0	Extremely good	Extremely low	Beginner
WindDance 2	1.5	1.05	Very fast & tight	1.3	0.8	0.8	Very good	Very low	Beginner
WindDance 3	2.0	1.10	Fast & tight	1.6	0.4	0.4	Good	Low	Beginner

What is C-CR and S-CR? An example: compared to the WindDance 1, the WindDance 3 pulls twice as hard, flies 10% faster, requires 60% more control-handle movement, and seems to self-relaunch and bounce-'n'-fly 40% as well.

Model	Best suited for:
WindDance 1	Medium-light to strong winds. Gusting winds. Ultra-tight turning. Self-relaunching after crashes. Bounce-'n'-fly tricks. Side-by-side flying. Smaller less-strong fliers.
WindDance 2	Superb all-around flying in all kinds of winds. Side-by-side flying.
WindDance 3	Ultra-light to medium winds. Steady winds (in gusts, pull may become excessive). Higher speed. Dynamic power flying. Larger, stronger fliers. Working out. ⁵

⁵ More force + more movement = more exercise.

The three models are distinctly different. Each has its own delightful feel and special strengths. All are great fun! Some flyers must have them all — the WindDance 3-Pack!

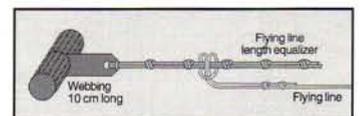
Wing materials: Heavy-duty 1.5 oz/sq.yd coated ripstop nylon that's 1.5 to 3.0 times stronger than the lightweight 1.0 to 0.5 oz/sq.yd fabrics used in most kites. Even after many crashes and landings they continue to look good. Sewn with heavy-duty polyester thread.

Bridle materials: Polyester A-lines, B-lines, T-lines, 58 and 32 lb-test. Polyester-sheathed dyneema connector loops, adjuster lines, linkline, and mooring loops.

Total WindDance product: Fully-assembled kite. Kite bag. User's manual. No-hassle one-year guarantee: each WindDance is guaranteed to be free of material & workmanship defects, to fly as advertised, and to be reasonably strong & durable. Crashing is OK as long as the impacts are under 60 mph or so and onto kite-friendly ground. If there's a problem during the guarantee period, Seattle AirGear will quickly repair or replace it. In the event of accidental bridle damage, you get free bridle-repair replacement materials & parts from Seattle AirGear, with instructions, for the life of your kite. In-depth information about WindDances and the sport, tips, and the latest user's manuals from the fast and content-rich Seattle AirGear web site.

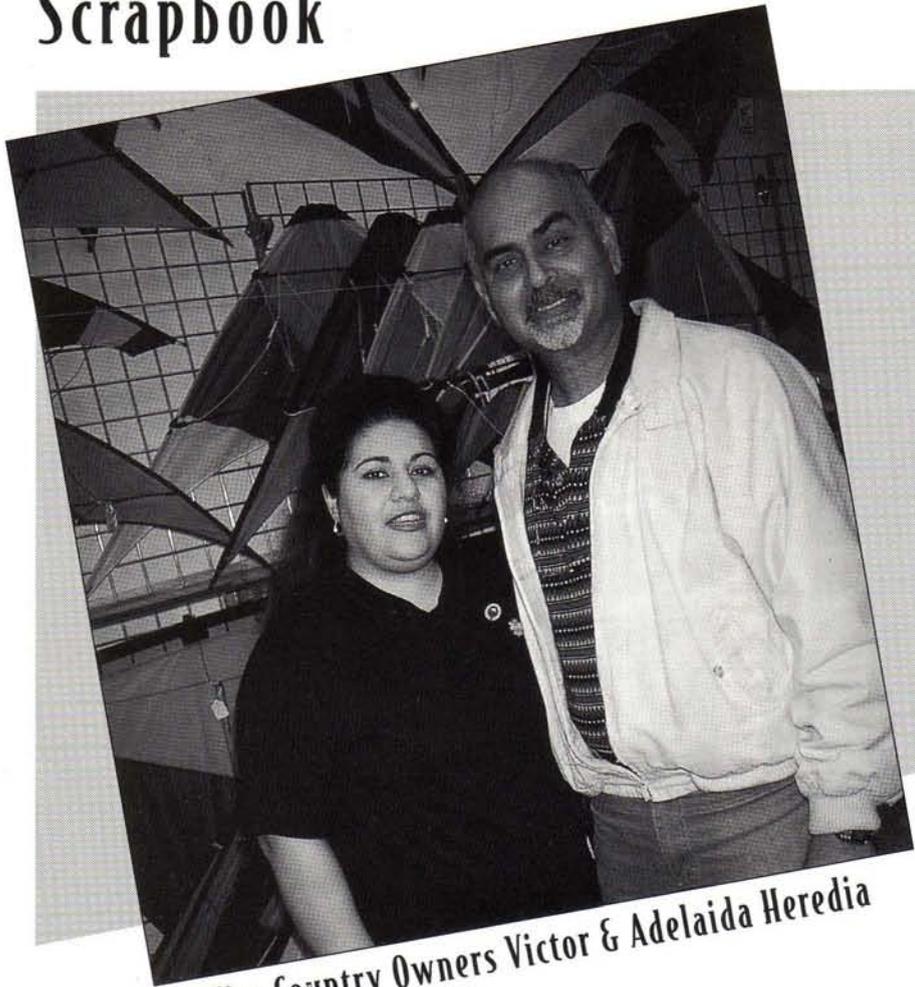
Additional gear needed

Lines, winder, handles. The handles shown are kindest to your hands, and provide the best feel & control for FLYING dual-line kites. Avoid all strap-loop handles, even 'comfortable' ones: they pull on the backs and sides of your hands, where they lack toughness and can't feel a kite sensitively, and squeeze — causing discomfort, pain, and control loss to flyers of ALL kinds of kites. The human hand is designed to hold and feel things from the palm side, not the back side. **Short ruler** for measuring bridle setting. **Groundstake/windwand**, with a bright yarn streamer tied to the blunt end, for staking handles to ground, for telling wind direction, and for marking your flying spot for safety. **Pair of tails** to reduce speed & pull whenever necessary, which quickly attach to-and-from the two mooring loops.



The sport needs a good FLYING handle. Until someone starts producing user-friendly high-performance handles similar to these, our user's manual and web site describe how to easily make them.

Our Retail Family Scrapbook



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YEARS IN BUSINESS: 13

YEARS CARRIED KITE LINES: 13

YEARS PROFITABLE: 13

OWNER: Victor and Adelaida Heredia

AGE: 55

FAVORITE FOOD: Chinese

LAST BOOK READ: *The Firm* by John Grisham

LAST KITE BOOK READ: *Flying the Rev and How to Do It* by Bill and Kim Taylor

FAVORITE FLYING SPOT: South of the Hilton

Hotel in Mission Bay, San Diego

LATEST PROMOTIONAL EFFORT: Gave a Vic's fighting kite seminar

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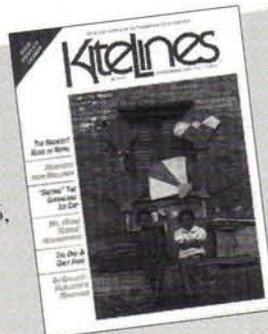
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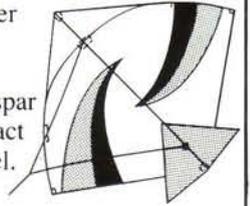
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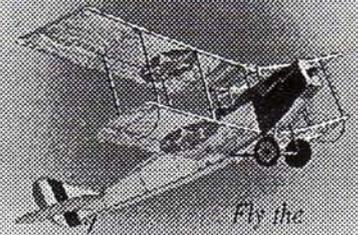
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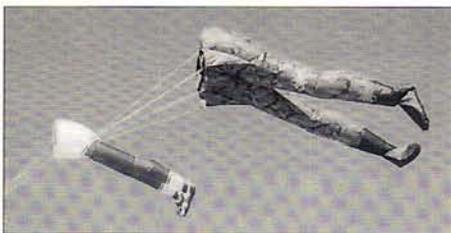
Dear Kite Lines... MORE LEGS, STOUT HEARTS, A CONTROVERSY

OVER CERVIA'S FESTIVAL & BUBBLES ALL OVER

HER LEGS, HIS LEGS

Your sharing of Martin Lester's "Top Half" is greatly appreciated (*Kite Lines*, Fall-Winter 1996). I made the "Legs" some years ago, from one of Wolfgang Schimmelpfennig's books (in German, had to translate).

In the photo, the pair with white shorts is "Flo Jo," named for America's Olympic runner. [Florence Griffith Joyner.] The camouflage legs with paintball splats are made of



ripstop outdoor wear; still, they fly as well as the ones made of spinnaker nylon—better in heavy winds.

Our son plays paintball games, which gave me the idea. But he also flies kites, so I can't disown him. Anyway, my plan is to make a camouflage with paint splats "Top Half" and fly them together. Should be an interesting effect.

—Vi Weeks
West Richland, Washington

STOUT HEART

I read well your letter seeking "a few stout hearts," urging readers to pass on simple kiting to kids (*Kite Lines*, Winter-Spring 1996). I am one of them at age 67, with my grandson, Emaus Santiago. I have been making and flying kites myself since childhood and I pass it on to the young ones.

The materials used in this kite [pictured] are wooden spars for the frame, tissue paper for the cover and starch for glue. The design is a standard six-sided shape, and



is flown with a long tail—about 25 feet. This type of kite is highly maneuverable and fast on a windy day, and can change left and right and dive.

—Ken Martinez
Valley Stream, New York

CONTROVERSY IN ITALY

The Italian Kite Centre "Cervia Volante" is a nonprofit association composed of passionate kitefliers. Under the direction of its president, Claudio Capelli, the association has organized the International Kite Festival in Cervia for 17 years.

After this year's event, the association encountered a deeply regrettable situation: Seeing the success of the show and an opportunity to increase their business, some sponsors, connected with local tourism, began to seek power over the Cervia Volante association, in order to manage the kite festival themselves. Now persons who have nothing to do with kiteflying are limiting the activity, "clipping the wings" of the association. These sponsors copyrighted the kite festival that Claudio Capelli invented 17 years ago.

The survival of the kite association—which lacks economic power to oppose this "piracy"—is seriously compromised. This is why the association wants to inform all kitefliers about the situation, asking you to be suspicious of any communication about kite events in Cervia, without the signature of Claudio Capelli and "Cervia Volante."

—Claudio Capelli
Cervia, Italy

Seeking further information and another viewpoint, Kite Lines received the following response:

In 1995 and in 1997 the Riviera dei Pini association (that organizes the tourist promotion for this resort), in collaboration with Cervia Volante Association, tried to organize the biggest Italian kite festival. Considering the great number of kitefliers and visitors that participated, I can affirm that this result has been reached.

Both events were called Festival Mondiale dell'Aquilone (World Kite Festival) and Claudio [Capelli] asked to add to those editions the Cervia Volante meeting. My association had charge of all details regarding accommodation of guests, finding sponsors and publicizing events, leaving

Cervia Volante the art direction of the festival and the choice of participants.

I have proposed to cooperate again for the next edition in 1999, but unfortunately now Capelli is not interested in it, from his fear that I will substitute him. Believe me, it is not my intention.

The next World Kite Festival will be organized in springtime, 1999 by Kite Enterprise, of which I am president, and will communicate soon the place and date of the event, as well as which kite association will be our partner next time.

—Mauro Andreucci
Cervia, Italy

BUBBLES, BUBBLES, BUBBLES!

The response to the Bubble Machine article (*Kite Lines* Spring-Summer 1997) has been very good. According to The Kite Studio, dozens of orders for the bubble wand hubs have been placed, with some people ordering as many as four each.

I had one caller from Atlanta, Georgia tell me he had built two machines and that he was happy to learn he was not the only adult who played with bubbles.

The most surprising call was from Melbourne, Australia...the gentleman wanted to talk about the history of bubbles. We compared notes and I sent him some articles.

I would ask anyone who has built a bubble machine to send a picture of it and some short commentary to *Kite Lines*.

If you happen to be at the 1998 Smithsonian Kite Festival, join me on The Mall with your bubble machine—I'll have mine!

—Felix Cartagena
Newark, Delaware

WRITE US A LETTER! *We love hearing from you. But please remember: Anything you write to Kite Lines may be considered for publication. If you do not wish it to appear in print, please mark "not for publication" to remove any doubt. Write: Kite Lines, PO Box 466, Randallstown, MD 21133-0466, USA. Fax: 410-922-4262. E-mail: kitelines@compuserve.com*

CREDIT LINES: *Thanks to George Peters for designing the new Kite Lines department headings.*

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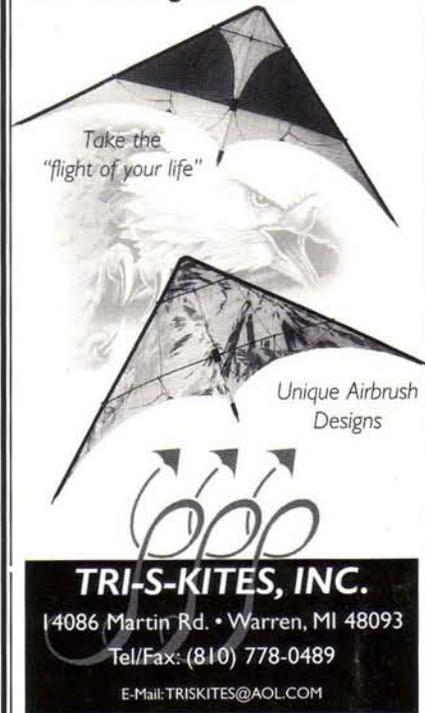
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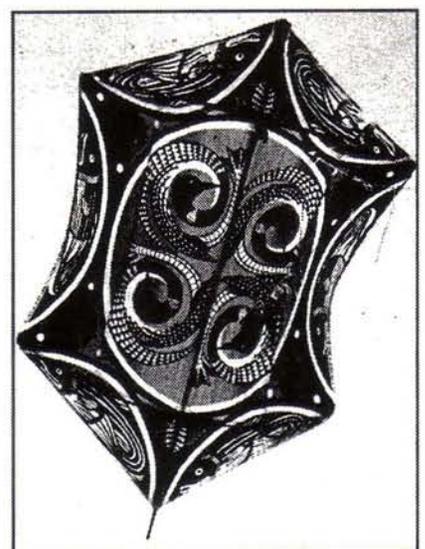
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COUNT THE WAYS THEY LOVE THEIR KITES

Viva Italia!

Kites flew both day and night in the skies over Italy—although requiring creative assistance in one case!—to highlight festivals that bracketed the flying season.

CERVIA VOLANTE

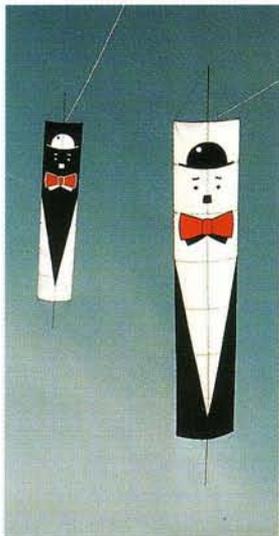
In late April, the 17th Cervia Volante international kite festival, on the Riviera dei Pini on the Adriatic Sea, weathered much rain and drew participants from 37 countries. But Claudio Capelli, founder of the every-other-year event, said he doesn't want it to get any bigger.

"I'm more concerned about the quality at the festival than the quantity," said Capelli, who noted that the period after Easter was the peak kiteflying season in Italy when he was young, because the cellophane wrapping paper of Easter eggs made the best kite paper.

"The bigger egg you got, the bigger kite you could make," he recalled.

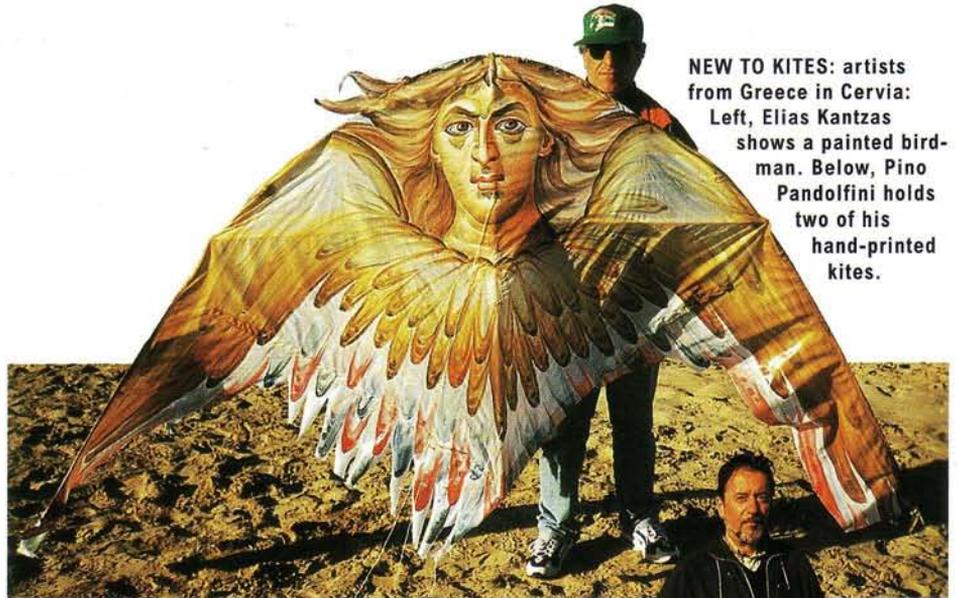
This year three new countries were represented at Cervia: Thailand, Cuba and Greece. Unusually, the delegates from Greece had never been to a kite festival

PAIRED UP, PARED-DOWN: Peter Knupp of Switzerland flies two Tametomo-style charmers in Cervia.



before—in fact, they had never made kites before! The four representatives were all artists who adapted their work for the first time to kites; for example, Pino Pandolfini used hand-printing techniques to produce some beautifully decorated kites.

Cervia 1997 hosted



NEW TO KITES: artists from Greece in Cervia: Left, Elias Kantzas shows a painted birdman. Below, Pino Pandolfini holds two of his hand-printed kites.

the European Air Gallery, too. Since 1994, this exhibit has traveled with its one-dozen-plus collection of Edo-style kites made by kitemakers and painted by artists.

Some participants projected a less serious view of kites. Norway, for example, was represented by a delegation whose members tried to fly a giant delta made of fur!

At the night fly on the festival's final evening, kites lifted off accompanied by Italian opera music. Each of the kiteflying delegations had been adopted by one of the restaurants that line the Riviera dei Pini, which moved their tables to the beach for the night fly. You could sip a sangria and listen to the sounds of the sea as the kites filled the air.

—Gunilla Gudmunds

ARTE IN VOLO & LA NOTTE DEGLI AQUILONI

In August, European and American artist/kitemakers were invited to Palermo, on the island of Sicily, to take part in a night flying performance as an end to a summer-long arts festival—and faced a difficult problem.

Daytime winds allowed for some informal flying by the participants, but the night was forecasted to be calm. How was an audience expected to be in the thousands going to see kites on high?

Helium weather balloons to the rescue! In a series of daytime experiments, fliers played with attaching tethered balloons to



kites, and at nightfall managed to lift the lighter kites into the spotlights. The rest of the kites were run up by fliers (especially the group from Ferrara) in front of the crowds.

The event told a tale: the story attributed to Michelangelo Antonioni and Tonino Guerra, of how a small child helped form all the regions of Italy by linking them with pieces of string. A balloon-lofted fireworks show, music, voices and kites all came together in sequence, as if all the participants had become a professional theater company.

Palermo also demonstrated a kite/art connection, as the event celebrated the birth of the Italian Air Gallery & Orchestra. The group formed several weeks before the festival, when Marina Accascina, of the Italian kitemaking firm Aquiloni Alivola, held a

FLYING AROUND

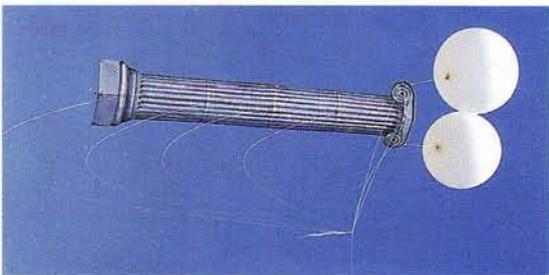
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painting workshop in Palermo with instructor Sandro Beltramo and nine boys and girls. One day, she gave Sandro a white Edo kite, 1.5 x 1.8 meters (about 5 x 6 ft), and asked him to paint it. He adorned the kite with a beautiful "Antigravity Flying Man" and all the young artists went to the beach to fly it. They had so much fun they all decided to work on kites. Arriving 25 days later at Palermo for the night fly, the fledgling Italian Air Gallery brought and flew 13 Edo kites the group had made.

Since the event, more artists in other regions have asked Aquiloni Alivola for materials to make and paint their own kites. One of the group's principles is that every kite must be flown by its painter.

—George Peters / Guido Accascina

PALERMO, scene of unconventional kites: Below, an Ionic Greek column (accompanied by helium-filled weather balloons) is one of several architecture-inspired kites made and flown by Ged McCormack of England. Bottom, an artist kitemaker fits horns to his kite in hopes it will play music!



A bush/kite pilot

Like most kite shop owners, Hans Jensen leaps at a chance to go flying. But the aero object he chooses to pilot most often is his two-seater Beechcraft light plane.

Jensen often delivers kites from his Northwinds Kites shop in Anchorage by flying out to remote landing strips in the Alaska bush.

"You look at a map of Alaska and see there aren't that many roads. These are our taxis," says Hans, showing off the airplane he acquired about two years ago, after gaining his flying license. Alaska has the highest concentration of private pilots anywhere in the world, with more aircraft than automobiles.

For nearly 10 years, Hans and Pat Jensen have worked to spread kiteflying around the largest of the United States, whose vast land area is one-fifth the size of the 48 contiguous states put together, yet contains a population of one medium-sized American city.

Last June, Northwinds Kites presented the 17th Annual Family Kite Day, which drew 4,000 to 5,000 participants to the Sixth Street pedestrian mall in downtown Anchorage. (The event was originally created as a radio station promotion, but re-kindled by the Jensens in 1991.)

At the peak of Alaska's short summer, festival fliers literally may keep their kites aloft all night, for this is the Land of the Midnight Sun—the darkest it gets in June is a sort of bright dusk. The sight of kites against the jagged, ice-girdled Chugach Mountains to the east has to be among the most dramatic in all of kitedom. A color photograph of Hans flying a big parafoil made the front page of the *Anchorage Times* last summer.

Hans is also sure he was the first to run a kite buggy anywhere in the 49th state, along the gravel beach of The Spit in Homer, at the southernmost tip of the Kenai Peninsula. (A sailor putting out from here due south would next make landfall at Antarctica!)

The Jensens also introduced kiteflying and buggying to the five-year-old Shore Bird Festival in Homer. Now The Spit accommodates a handful of neophyte buggy enthusiasts.

Hans was surprised, however, by sever-



EXPRESS DELIVERY: Above, Hans Jensen steps up to the airplane he uses to deliver kites to Alaska's bush country.

al recent buggy buyers who are not kitefliers at all. Rather, they compete in the famous Iditarod race, a grueling sled-dog run from Anchorage to Nome. They found a kite buggy makes the ideal device for training young huskies.

Hans flew kites as a boy on his family's potato farm in Moses Lake, Washington. He renewed his interest after coming to Alaska in 1976, as he sought ways to relieve the boredom of long trips into the back country.

An electrical engineer for the Alaska Power Authority, he helped bring electricity to native villages. But the construction trips left a lot of down time in remote places. When someone loaned him an Aerobat, an early stunt kite, he found a perfect diversion.

"After that, an Aerobat or Skynasaur was just one of the things you packed," he says.

Pat flew kites as a family activity in her native Fayetteville, North Carolina, and on summer trips to Myrtle Beach, South Carolina. She met Hans in Alaska in the spring of 1982, and they introduced stunt kiting to their blended family—five kids!—on a camping trip several years later.

Curiously, however, a vacation proved the true inspiration for their kite business.

"Being Alaskans, we recreate in Hawaii," says Pat. On one such trip they encountered a kite festival, "and we said we can do this at home."

They began flying kites at outdoor events, such as the Alaska State Fair, and soon found themselves selling kites on a small scale from their home, to people fascinated by their demonstrations. In 1990, they decided to expand.

"We knew nothing about retail and malls, we just had a love of kites. We flipped a quarter to see which one of us had to quit our job," recalls Hans. Pat won/lost

the toss and left her job with the federal court system in Anchorage to get the store up and running. A year later, Hans left his state job, too.

With just a six-week summer as prime kite time, the shop also sells many diversions for those long, dim Alaska winters, such as juggling implements, yo-yos, games and other novelties.

Customers have also been known to fly light wind kites in the mall area outside the store.

In addition to store traffic, they have found regular kite customers in the operators of back-country hunting, fishing and tourist lodges.

"They fly kites when the fish aren't biting," says Hans.

In fact, the Jensens are working toward becoming a full-service Alaska tourism industry all by themselves. They have plans to open an in-town bed and breakfast and to own at least a piece of a back-country lodge. Hans would pick guests up at the airport, take them to the B & B overnight and then ferry them out to the bush in his trusty Piper.

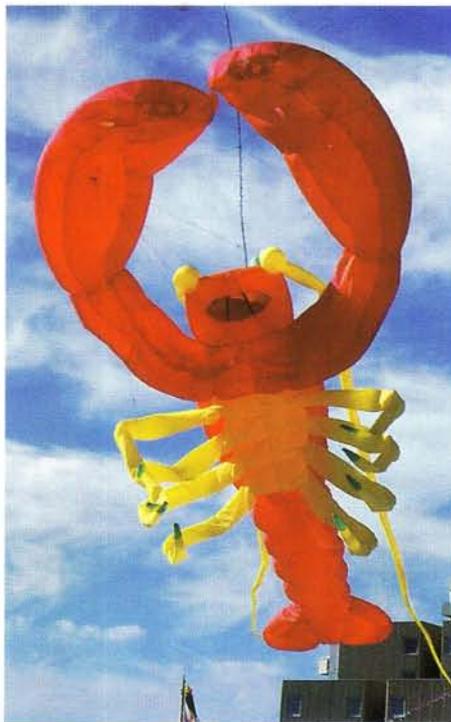
Somewhere in there he might have a chance to fly some kites, too!

—Steve McKerrow

Festival Nirvana in Germany

Damp, Germany is a place on the Baltic Sea known for its raging winds—and the late September dates did not bode well. Then again, according to the contradictory laws of kite festivals, shouldn't a place named Damp rightfully be the opposite: warm, sunny and blessed with perfect wind? And it was!

This was the International Drachen Fest



having its 11th annual celebration by a city that has adopted a kite as its logo. And it had all the ingredients of a perfect event: plenty of enthusiastic international participants, good organization by Karin Gurezka and Hans-Dieter Schaeffer and an estimated audience of 150,000 through the weekend.

The beach fields were tightly packed with fliers, but steady offshore winds presented the opportunity to fly in close formation over the crowds passing along the boardwalk. Filling the sky throughout the weekend were kites by many notables, such as Pierre Fabre of France, Jørgen Møller Hansen of Denmark, Michael Alvares of Australia and Peter Lynn of New Zealand. The latter was represented not only by his massive Megabite, but by the team "No



HAVING A ROMP AT DAMP:

Left, a real grabber: Rolf Zimmerman's huge and wiggly lobster foil.

Above, a counter-rotating wheel kite by Rüdiger Groening.

Bottom left, inflatable Sesame Street characters flying as kites.

Limit," from Cuxhaven, Germany, flying a set of five very large Peel kites.

The German team also bounced on the beach a delightful group of inflatable kites they made as "Sesame Street" characters. From Düsseldorf, countrymen Rolf Sturm, Peter Rieleit and Jürgen Ebbinghaus added to the cartoon character sky parade.

One of my favorite kites was a series of counter-spinning optical designs by Rüdiger Groening, a University professor from Münster. The intricate cellular kites of Robert and Tracey Brasington from Tasmania were visually compelling and beautifully created, and Rolf Zimmerman flew a wonderfully wiggly lobster, as well as a stellar giant inflatable starfish with a peculiar grin—and a magnetic appeal for tangling in my group of flying men, bugs and birds.

In all, 120 invited kitefliers from Germany and around the world attended this year's event.

The biggest hit was an unusual group of fliers, a sort of flying circus from Switzerland called "Carpe Diem" (*see following*).

For the informal night fly, a pair of powerful spotlights illuminated the kites from the beach. As usual with night performances, there was no wind, so a running relay lofted the kites into the lights, accompanied by music and the cheers of spectators.

During the weekend I noticed an unusual number of spectators at the festival on crutches or maneuvering through the crowd in high-tech wheelchairs. Damp is the location of a rehabilitation hospital for post-operative patients. The grounds surrounding the beach contain swimming pools, spas, walking parks, skateboard parks and tennis courts.

Germans flock here for a healthy, active



FLYING AROUND

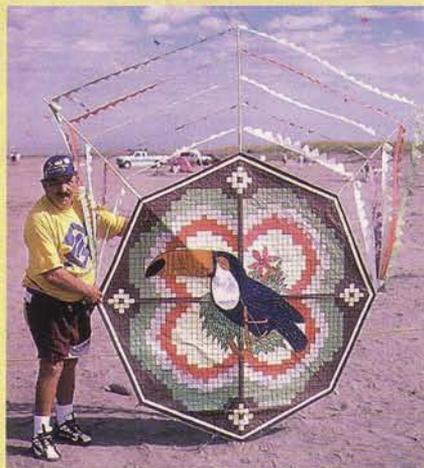
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holiday. Many spectators carried bundles of rolled-up kites for romping in the wind.

Despite the dire warnings from fliers at

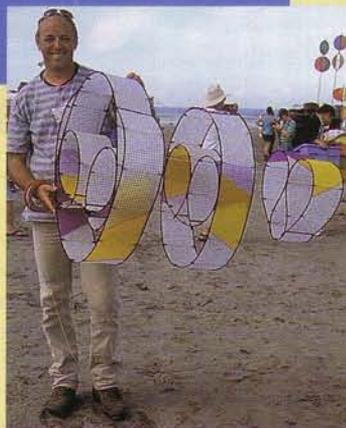
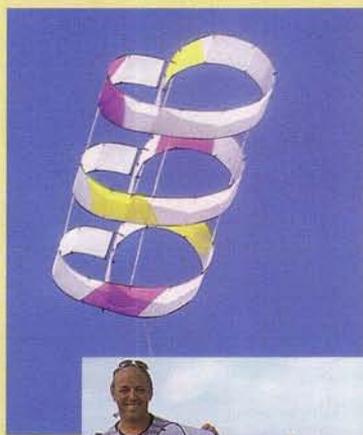
last year's event in Damp, the 1997 Drachen Fest proved that a festival can bring out the best in kiting and leave a happy memory in the skies of the mind. Color the Damp festival with a rainbow of good luck!

—George Peters



SHOWING OFF AT LONG BEACH:

Above, from Brazil, Jose Teixeira Fraga, better known as Zeca das Pipas, with his elaborately pieced paper kite. Right above, one of many box variant configurations made with the Multiple Kite System by Wolfgang Grimsel of Germany. Right, Grimsel displays another possibility.



Find your motel room now!

If you love kites—if you even just like kites—the Washington State International Kite Festival is for you. Held the third weekend of August in Long Beach, the festival saw its 16th year in 1997. Here's what you can expect if you go there:

- giant inflatables and miniature-kite workshops,
- big band sport kite ballet for seniors and kitemaking classes for kids,
- fighter kite forays, rokkaku rumbles and monster bashes,
- international guests,
- a museum of kites, kite club pot-lucks, fireworks, parades and night-flies,
- kite competitions, sport kite demos, world records, kite auctions and people in funny kite clothes,
- three full-service kite stores, on-field parking, 25 food vendors, a beer garden and 50 portable toilets,
- indoor flying, outdoor exhibits—and even a few barn-door kites.

The only thing Long Beach doesn't have? A motel vacancy, if you happen to show up without a reservation.

Called "Wisk-If" by regulars, the event proceeds in a well-rehearsed routine. Hundreds of volunteers take their turn organizing such daily themes as Terrific Tuesday, Handcrafted Day and Showtime Saturday.

Sometimes, in fact, this highly successful kite festival seems almost over-organized. Old-fashioned fun flying is limited to spaces between displays. There are so many designated fields and scheduled events you need to wander off into the dunes to find a piece of open sky.

But did too extensive a menu ever keep you from a fine restaurant? Heck no!

The WSIKF is wonderful and you need to come at least once in your kiting career. Pick the year now and go to the phone to start finding a motel room.

—David Gomberg

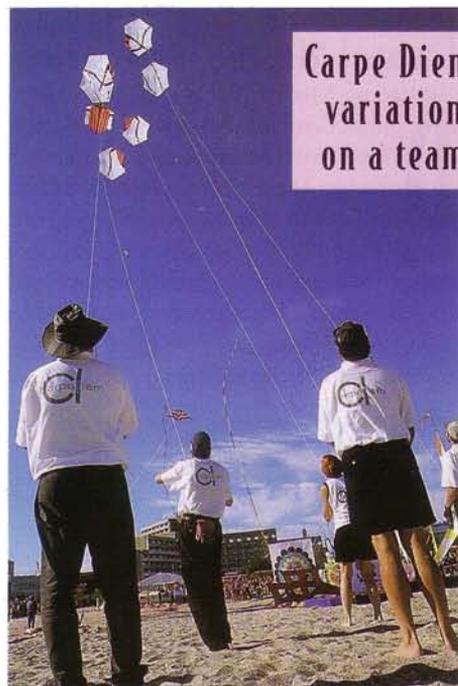
CARPE DIEM ("seize the day"), a kite/art group from Switzerland, demonstrated at the Damp Drachen Fest a signatory style of design with kites that come together in the sky.

Seven friends—Stefan Kunz, Urs Fricker, Niggi (Micky) Steger, Ursula Fricker, Astrid Pfenniger, Niggi Seiler and Isabella Sorg—performed as a single-line kite team. In their concept, one member designs a kite and the others then makes a variation. The result? Seven versions of one kite, with striking visual impact when flown together.

Each member has chosen a color of the rainbow as his or her individual hue. An unusual seven-sided tepee with triangles of color on each side reinforced the team image. Upon raising their tent and on a count of three, the members ritually spiked poles with banners of their color into the ground around their festival home.

Most impressive in the sky were the group's seven butterflies, each with true-to-life markings, and a set of scarab beetles, striking winged rectangles, each in a different color. A set of rokkakus finished the Carpe Diem performance, as the seven kites were maneuvered together like puzzle pieces, amazingly making up an overall design of a beetle.

—Zoë Harris



Carpe Diem:
variation
on a team



HERDING:
The team
at Damp
works to
fit seven
rokkakus
into one
image.
Left, styl-
ish tent.

PHOTOGRAPHS: LONG BEACH—FRANK WENARD; CARPE DIEM—PIERRE FABRE

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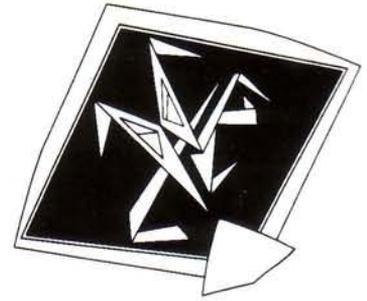
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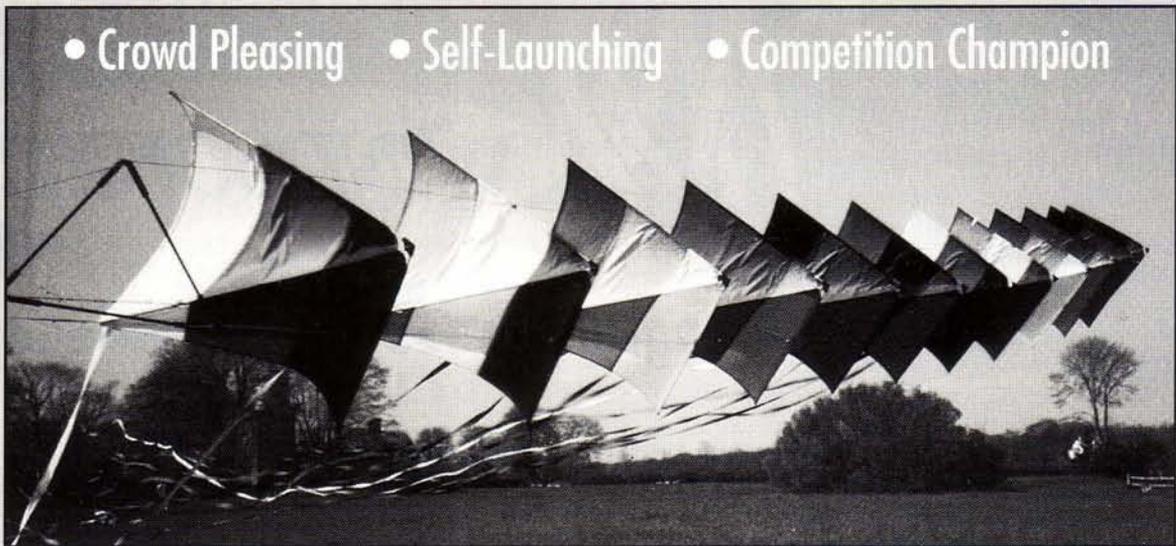
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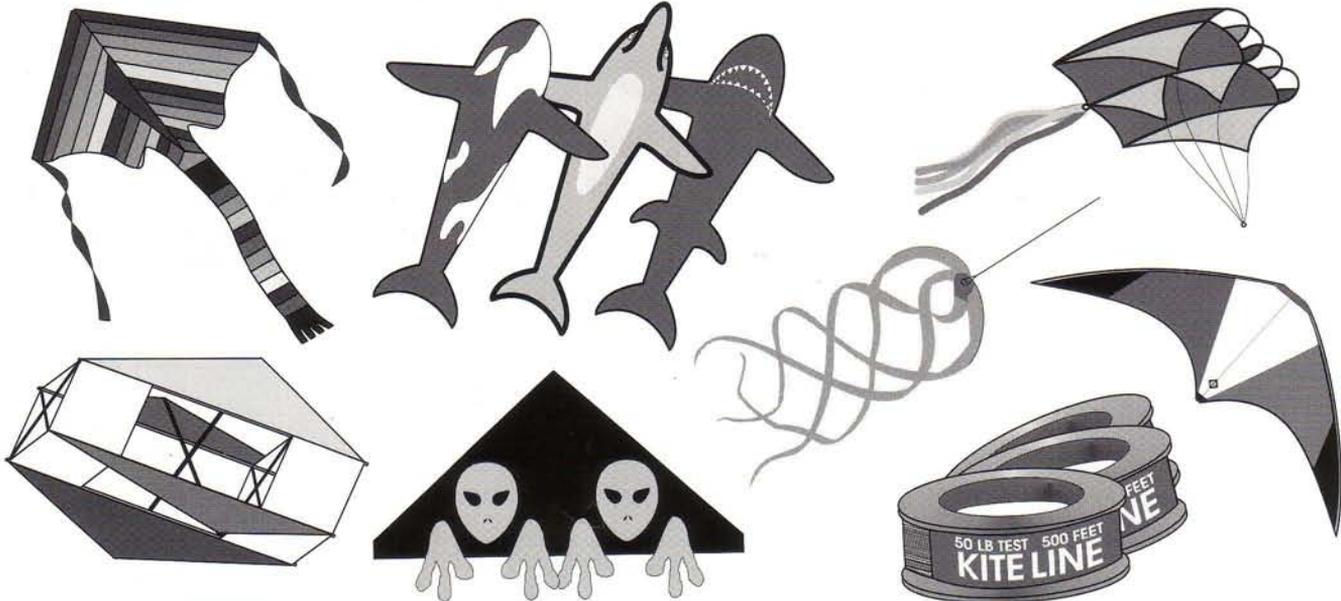
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How many boxes?

A TRAIN OF 131 FLYING AT LONG BEACH

MARKS THE LATEST IN A SUCCESSION OF FEATS

Note: No official category exists for most box kites flown in train. If there were such a category, the following flights could be disallowed because a "lifter" kite was used at the top. Nevertheless, we salute this achievement as noteworthy. —Editor

In the summer of 1995, I was watching Mike Decker, owner of the Buffalo Kite Company, fly 50 of his box kites in train and our minds started to click.

He was trying to think of ways to get world recognition for his kites and I happened to be going to the buggy event associated with World Cup VI stunt kite championships in Australia, in November, 1995.

"Hey, Mike. Why don't we put together a string of box kites and break the record?" I asked.

My first task was to discover what the record was. It never occurred to me that this record did not exist, but it didn't. Our only option? We would set the very first record.

My next task was to get in touch with the World Cup organizers and interest them in this attempt. Once they realized I was not asking for any sponsorship, they warmed up to the idea, for their event involved special attention to the box kite.

The box kite was invented by Lawrence Hargrave in Australia. He lifted himself using a train of box kites with a curved wing surface at Stanwell Park in New South Wales in November 1894. World Cup was to feature a Hargrave exhibit, and with his closest living relation in attendance, Dick Hargrave, his great, great nephew.

My record attempt was to be a stack of 101 two-foot Buffalo Box Kites, and the significance of this number was not lost on the organizers: 1995 minus 1894 equals 101.

My most important task was to figure out how to do it. After some experimentation, it became evident that 101 kites tied by a single bridle point would not work. With each kite free to move around the flying string independently, in flight the stack resembled a drunken serpent. The prospect of a 300-foot stack of box kites out of control was not one I thought the organizers of any festival would appreciate.

As a solution, I devised a double-point bridling system, anchored at left and right



FIRST RECORD ATTEMPT:

After a no-wind delay, 101 two-foot box kites finally climb into the sky at Lakes Entrance, Australia, in November 1995. A six-foot Cody is flown at the top for stability on this occasion and for the two following efforts in Wildwood, New Jersey and Hermanus, Cape Town, South Africa. In the author's most recent effort last fall at Long Beach, Washington, the train grew to 131 kites and was topped by a six-foot box kite.

corners of each kite, designed to make the stack more stable as more tension is put on the flying line. The system was tested only three days before leaving to go to Australia, with 40 kites. Thank goodness it worked! The anchor system prevented the kites from pivoting, and people are amazed at how rock-solid the stack flies.

Initially, however, our November 8 attempt in Australia looked like a washout. With the green and yellow silk-screened kites assembled by members of the local kiting community and interested townspeople, we waited in a shopping mall of the town of Lakes Entrance for the rain to stop.

The sun eventually appeared, so we marched the kites down the main street onto the flying field and launched.

It was a spectacular sight! The stack flew for 20 minutes, and I walked away with an overwhelming sense of relief and accomplishment—and, of course, abundant motivation to do it again.

We also discovered by accident that the train will fly another way. As we were moving the kites from the beach they just popped up into a beautiful arch, which we subsequently flew with 40 kites.

The second record of 111 kites was set at Wildwood, New Jersey on May 25, 1996, with eager passersby on the boardwalk recruited to help organize the train.

A third record flight with 120 kites occurred when I traveled to Hermanus, near Cape Town, South Africa, in September, 1996, for the Capri-Sonne/Kodak Hermanus International Kite Festival.

We had anticipated flying 121 kites. But on Sunday, September 28, after waiting in vain for wind the previous day, a strong wind blew as about 100 excited children and a smattering of supervisory adults helped us march the kites out. By the time we were ready to launch, the wind was really strong.

We decided to give it a try and the kites snapped into the air. But a four-year-old boy was caught by surprise and did not let go of the kite he was holding. It pulled from the line, so this record stood at 120, not 121.

Our fourth flight for the most box kites flown on a single line, the current record, lifted 131 kites on both September 25 and 27, 1997 at World Cup VIII at Long Beach, Washington.

Here, we were assisted by members of the local kiting community who had heard about my previous box kite train flights and just wanted to part of it all.

Every time we try to break the box kite record, I am not the only one who walks away from this breathtaking performance with a sense of relief and accomplishment. So do all my helpers.

Success results in a sensational display of color stepping its way into heaven—and requires people working together to put it there.

—Richard T.B. Dutton

The author, who lives in West Falls, New York, is a computer analyst at the University of Buffalo.

Lining up for control

QUAD POWER KITES, A THREE-LINE

STUNTER, & A HYBRID (TWO LINES OR FOUR); PLUS, A KITE OF MANY SHAPES

Q2000 SERIES BY ACTIVE PEOPLE

All-around power

We felt like kids in a candy store! The package contained not one, but three quad-line traction kites from Active People's new Q2000 series.

The company's goal was to produce a user-friendly family of traction kites with enough power for all but extreme activities. That's a tough balancing act, but the Q2000s, designed by Alain Hoffer, have done it. They perform in between the race-proven Competition and the venerable Quadrifoil Classic.

We received a 16-sq-ft Q2002, a 31-sq-ft Q2003, and a 41-sq-ft Q2004. The Q2000 series will be completed soon by a 58-sq-ft Q2005, and a 72-sq-ft Q2007.

Why was the complete set not released at the same time? The kites vary sufficiently in shape and bridling that each must be tweaked to obtain the desired performance, and that takes time.

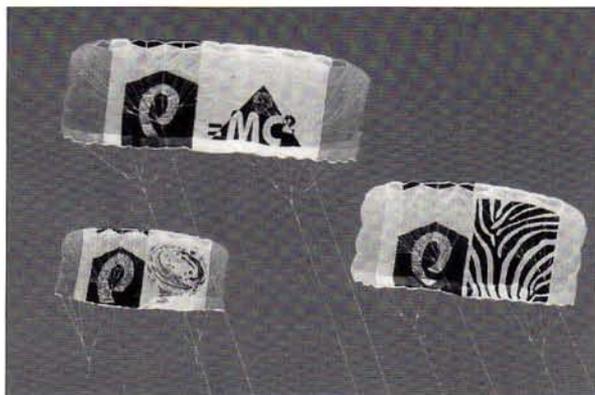
Q2000 kites come in bags that convert into windsocks. Fabrication is excellent, the graphics are attractive and each kite comes with a Flight Manual that is helpful to new traction kiters.

Setting up the Q2000s was a breeze. These are plug-and-play kites: Attach four lines of equal length and enjoy.

We found the Q2000s exceptionally easy to fly, controlled by wrist rotations and/or arm movements throughout their recommended wind ranges. Despite their quick response, the foils' motions were telegraphed to our hands so well that we had to spend little time with our eyes to the sky, checking the kites' flight.

Medium to short arm movements coupled with assertive wrist rotations caused the Q2000s to rotate very quickly on their centers. Small-framed flyers will appreciate that. Long arm movements, an advantage with some kites, caused the Q2000s to accordion, significantly reducing their performance.

When aft (brake) lines were left completely slack, the kites remained stable and could be controlled through dual-line tech-



Q SERIES: Clockwise from top, the Q2004, Q2003 and Q2002, the first three in a series of five power kites just entering the market from Active People of Canada/Switzerland/Portugal.

niques. Thus, traction neophytes who have some stunt kite experience can quickly succeed by using what they know. They can learn to control brake lines when they are ready.

All Q2000s behaved well in all parts of the wind window. Acceleration was smooth and steady—at no time did we fear for our shoulder sockets. Speed and power met our needs. Upwind motion was very good and luffing was never a problem. So how do the three kites differ?

Q2002: This 16-sq-ft kite was great fun. In light winds it was quite civilized, and may be the ideal size of kite for teaching someone to fly. But try it in big winds and you will have your hands full, for it gets very quick and generates surprising power. Buggy in high winds was a blast! (If you fly a Revolution, you will love the Q2002, which is capable of spins, reverse flight and even tip stands.)

Q2003: At 31 sq ft, this is the model Active People recommends to folks new to traction kiting. Its aspect ratio is lower than those of the other Q2000s. This results in a kite that beginners can control in moderate winds, and that more seasoned fliers will enjoy in stronger breezes.

Q2004: With 41 sq ft of area, this kite is about the ideal size for most traction activities. It is at once eminently controllable, but

powerful enough to meet the needs of all but extreme fliers. Those who get competitive will find the Q2004's nimbleness in turns an asset. As is usual at the edge of the wind window, maximum power was generated by pulling in the brake lines a bit, to draw the Q2004 slightly back into the wind window. (A bit of caution here: There is a fine line between the pressure on the brake lines needed to draw a kite into the power zone and the pressure that causes it to back up and lose

power. When gusts generated more energy than we wanted, a sharp tug on the brake lines dumped it.)

We encountered two minor difficulties in testing these Q2000s:

With cold hands, it was a struggle to stuff the folded Q2004 into its cone-shaped bag; when one side was pushed in the other tried to squirt out. A slightly larger bag, or one with a larger diameter in the center, would have been easier to use. The bags for the other kites were not a problem.

The Q2000s' bridles twisted and tangled when we switched from regular Spectra lines to sheathed Spectra lines and wound them around their handles. The stiffer sheathed lines did not absorb all the twists as they were wound up, and instead transferred some to the bridles. When they were unwound, the shake that normally takes care of twists was not enough to untangle the bridles. Care reduced the problem, but with sheathed lines, the best answer may be to use a winder.

Our test kites reminded us of the fabled three bears. Baby bear, the Q2002, is full of mischief and fun. Momma bear, the Q2003, is the responsible one and a bit reserved. And Papa bear, the Q2004, is to be respected.

We were delighted by the user-friendly Q2000s. Indeed, they may be the best handling traction kites we have tested: attractive, well made, with reasonable power and a moderate price. —James C. Welsh

Three lines = offbeat fun

The maker of the Joystick says this three-line kite provides the chance to fly two at once—from separate control handles in each hand! But learning to fly just *one* Joystick presents the first challenge, because instincts honed through dual-line and quad-line techniques do not necessarily translate.

Tackling this unusual kite, we suffered some of the frustrations of learning quad-line flying: lift-off, spin, crash. But just as with a quad, a moment arrived when—surprise!—the Joystick proved to be in our control rather than the other way around.

Are three lines better than one, two or four? Unfair question.

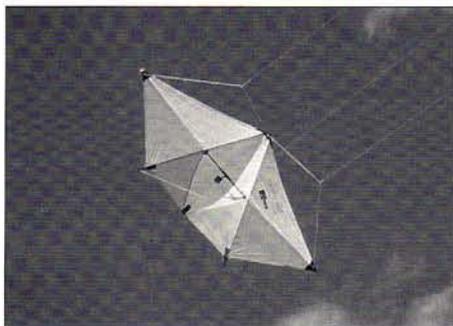
The ripstop Joystick doesn't offer the feathery dancing maneuvers of a fighter kite. It won't quite generate the swooping speed and "trick" maneuvers of a dual-line, nor the spins and pinpoint positioning of a quad.

But it is fun to fly and grew on us as we gained familiarity. We came to feel something like a symphony maestro, "conducting" the kite's behavior with single-arm movements.

The Joystick's design and flight performance are more conventional than the first three-line kite on the market, the Synergy 333. The two kites seem like entirely different animals. (See *Kite Lines*, Summer 1996, for our review of the 333.)

The Joystick's wings are spread by pocket-secured spars that join at a central T fitting (plastic). The wing spars pass through twin triangles that form a concave body, whose shape is maintained by diagonal spars and a thin curved spine.

The two-part plastic control handle looks, indeed, something like an airplane joystick. A horizontal top plate, 10 inches wide, connects to the top lines, which are bridled from the wingtips and nose. The



JOYSTICK: The offbeat kite has three control lines to permit reverse flight maneuvers.

lower line is bridled to the feet of the diagonal spars, and attaches to the bottom of a handle 10 inches long that slides neatly into a channel on the top plate.

The kite comes with preset 50-lb Dacron polyester lines, 65 feet long. We found that separating the handle pieces and winding the top lines together onto the top plate, and the bottom line separately onto the handle best prevented tangle problems.

Our test kite's

colors were contrasting panels of white on top and bright pink on the bottom. Black nylon spar pockets emphasized the shape. (Other color combinations are available.)

Our model was the Ultralight, made with 31-gram polyester and carbon spars, but we found it needed more than a little wind to fly reliably—at least 5 mph, we estimated. When the winds picked up, however, the kite stood up to them better than other ultralights. We never feared for its survival.

In flight, the Joystick made reasonably sharp rotations in a radius perhaps twice its wingspan. It would rise, hover and drop like an elevator, allowing gentle landings at any quadrant of the wind window. Similarly, it was

DATA CHART

Name of Kite	POWER KITES			STUNTERS		SINGLE
	Q2002	Q2003	Q2004	Joystick	Ubanero	MKS
Manufacturer	Active People	Active People	Active People	Eolo-Sport	TC Ultra	HQ Kites
Suggested Retail Price	\$225	\$290	\$400	\$86	\$264	\$68
Sail Material	RN	RN	RN	RN	RP	RN
Leading Edge Material	n/a	n/a	n/a	n/a	n/a	n/a
Framing Materials	n/a	n/a	n/a	CFr	CFt/CFr	FG
Fittings	n/a	n/a	n/a	MP	MP	MP
Dimensions	5' 10" x 2' 10"	8' 5" x 4'	11' x 4' 2"	49 in x 22 in	75 in x 38 in	n/a
Sail Depth at stand-offs	n/a	n/a	n/a	n/a	11	n/a
Sail Area	16 sq ft	31 sq ft	41 sq ft	680 sq in	680 sq in	728 sq in
Weight (oz.)	n/a	n/a	n/a	4.1	6.5	5.0
Sail Loading (oz./sq.ft.)	n/a	n/a	n/a	0.8	1.3	n/a
Suggested Wind Range (mph)	3+	3-30	3-25	5-15	0-12	5-20
Suggested Line (lbs)	165/88	287/165	287/165	50	50	30
Skill Level Required	N	N	N	I	I	N
Assembly Time (minutes)	5	5	5	5	3	15
Ease Launch/Relaunch	VG	VG	VG	VG	E	VG
Ease Landing/Ground Work	VG	VG	VG	VG	E	n/a
Responsiveness	E	E	E	n/a	E	n/a
Ability to dwell	n/a	n/a	n/a	n/a	n/a	n/a
Straight Speed	M-F	M	M	M	M	n/a
Speed in Turns	F	M	F	M	M	n/a
Precision/Tracking	VG	VG	VG	G	E	n/a
Amount of Pull	M	M	M-H	M	M	L
Amount of Noise	SI	SI	SI	M	SI	SI
Visual Appeal/Graphics	G	F	F	G	VG	VG
Workmanship	E	E	E	A	E	E
Portability	E	E	E	G	G	A
Durability	E	E	E	P	VG	VG

NOTES: Retail price is in US dollars as "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.



WHAT'S NEW: KITES

[Continued]

easy to take off from a nose down position. But construction quality of our test model was disappointing. After no more than a half-dozen flights, one of the diagonal spars poked through the seam of its top pocket during flight—causing a wild gyration. Upon inspection, the second spar was about to go through its pocket, too. We restitched both seams to fly again, but next time out a wing spar pocket gave way in the same manner—and the other wing spar pocket gave way a few flights later.

Another problem developed along the sleeve holding the curved spine, resulting from one of the Joystick's nicer characteristics. We found that when the kite lay on its back, we could drag it toward us and it would soon tip upright and take off, as the diagonal spars dug into the ground and pressure on the top lines pulled the kite to a standing position.

But after several repetitions on our favorite dirt-surface flying field, the thin fabric sleeve for the spine began to show holes and the seam stitches seemed about to give way. We applied filament tape along the spine before flying again. (We've seen the same problem on an ultralight stunter after too many leading-edge takeoffs.)

The instruction sheet that comes with the Joystick helped very little. It provides instruction in four languages—Italian, French, English and German—but mangles the English.

I'm told *Kite Lines* doesn't review kite instructions because they are almost universally bad, and critiques of them could divert us critiquing the kite. But I have to mention two examples of language: When determining flying line length, the sheet advises the user to measure by sticking two stakes (provided) into the "floor," not the ground. And in the introduction, it says you can "make formations, persecutions and figures at the same time." Persecutions? Worse than the language problem, the booklet devotes too much space to adjusting line length and tying knots and too little to actually flying the kite. Not a word is said about assembling the Joystick, either, although common sense made this fairly easy.

In sum, the Joystick is an offbeat little kite that could offer the challenges of flying two at once, and is fun in its own right. But three lines do add to the complexity of pre-flight preparation, and do not provide quite the thrills of either a dual- or quad-line.

—Steve McKerrow



UBANERO: The radical TC Ultra kite flies here in quad-line mode, which affords pinpoint positioning anywhere in the wind window.

UBANERO BY T C ULTRA

Two lines or four?

Spectators and judges at sport kite competitions in recent years have adjusted to the odd sight of a high-aspect delta doing the helicopter spins and reverse flight maneuvers previously reserved to the Revolution and other quad-line kites.

The delta was the TC Ultra, designed for flying on *either* dual or quad lines.

A new addition to the Ultra line, the radical Ubanero (a word play on the hot, hot habañero chili pepper) boasts a 20 percent reduction of the standard Ultra architecture and vented sail panels, aiming at light air and indoor flying enthusiasts.

We found the kite a dream date, a near-perfect match for the light winds that tend to prevail over our flying fields in Maryland.

The kite sail is ½-oz polyester, spread across a chassis of carbon fiber tubes, with carbon rods for the spreaders and standoffs. The 6-plus-foot span "Ube" weighs in at just 6.2 ounces!

A striking kite, with curved leading edges and deep standoffs, our test model was turquoise and black, and featured Ultra's familiar entwined "Flame" pattern in white and purple.

Construction was of high quality throughout. We particularly liked the way the standoff rods attach to the sail: female clothing snaps on the trailing edge mate with male snaps affixed to one end of the rod. The bridle of 80-lb Spectra line includes preset loop attachments for either dual or quad lines. (The manufacturer encourages experimentation with the settings and provides detailed instructions.)

On the field, we found we could switch line sets from quad to dual and back with no need to adjust any settings. As a dual-line kite, the Ultra was a standout performer. As a quad, it was a star!

Flown in that mode on 50-ft, 50-lb-

test Spectra lines, the kite responded precisely to control movements. We could place it anywhere in the window. It accomplished spins, stalls and sweeping loops with ease, and we became more adept at tip stands, side slides inches above the turf and other ground play moves than with other quads in our experience.

We also found the kite would take off from its back or, in quad-line mode, from a face-down, nose-forward position—the latter thanks to the curved upper spreader that keeps the nose off the ground. With a gentle tug on the lower lines, the nose lifted just enough to catch the wind and the kite stood up for liftoff.

We did our test flying outdoors in winds ranging from almost nothing to perhaps 15 mph. At low velocities, we judged the Ultra flew best on quad lines. (We did not shorten up the lines to try indoor flying, but could foresee success in that mode, too.)

In stronger wind the thin, tapered tubes tended to become overpowered—and in one sudden gust during a photo session the main spreader tubes split on both sides of the T-fitting.

Designer T.C. Powers says the lower spreaders of early production models, such as our test kite, proved too weak. They were replaced with non-tapered spars, raising the wind range of the kite up to 15 mph.

The manufacturer says fliers can change the kite's balance by reversing the installation of its tapered spine, noting that nose-heavy kites perform some tricks best and vice versa.

Can any kite be truly the ultimate? No, but under light wind conditions, the Ultra Ubanero leaves little to be desired.

—Steve McKerrow

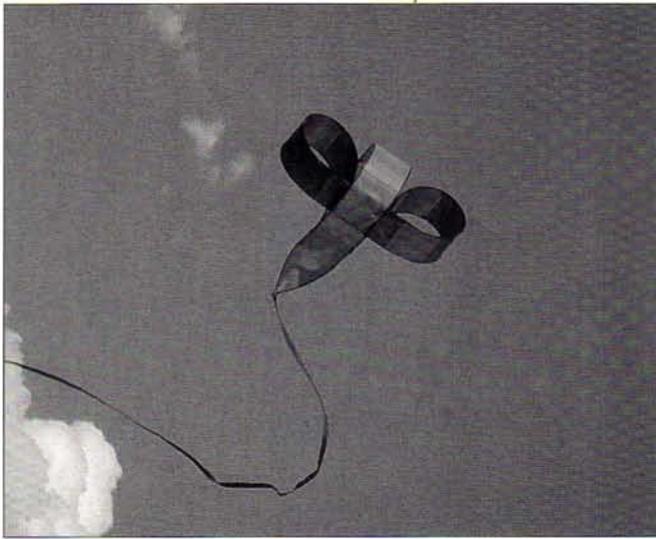
MULTIPLE KITE SYSTEM BY HQ KITES

Many kites in one

A few years ago German kitemaker Wolfgang Grimsel had an idea for a single kite: an unusual box shape made from a taut, wide ribbon of ripstop overlapped upon itself. The surprising result? A kite system, which permits construction of many symmetrical and asymmetrical shapes that fly.

Grimsel has demonstrated his Multiple Kite System invention at numerous festivals, including the American Kitefliers Association convention in Wildwood, New Jersey in October.

There, he explained to a workshop audience that he first conceived a ribbon 6½ inches wide, bordered with extremely flex-



MULTIPLE KITE SYSTEM: Above is the scorpion, the second best flier in our tests from among the variations in the MKS.

ible fiberglass rods in sleeves and tensioned by rods at 6-inch intervals.

This shape, in a length of about 56 inches, could be easily formed into a curve and overlapped at the ends. It produced the ribbon kite he wanted, which flew successfully and is one of the shapes suggested in the kit that is now the Multiple Kite System.

However, Grimsel soon began to wonder what other shapes might be made with the sail and rods, and that speculation was soon followed by thoughts of connecting a second ribbon kite to the first.

"I tell you, I did not sleep at all that night thinking of ideas," said the kitemaker, who has long been fascinated with the historic box kites of Lawrence Hargrave.

The Multiple Kite System (also patented as a glider) may remind one of Tinker Toys or an Erector set. In addition to the thin, roughly-surfaced fiberglass rods (adapted from industrial uses such as optical cables), the system depends on unique plastic end caps designed by Grimsel.

Departing from conventional arrow-nock-style fittings, his are slotted at both ends, with an offset hole in each end to snugly receive the rods.

The sail strips feature precut slots for the nock ends, alternating at 6-inch intervals with prepunched holes for the spar rods or bridle lines to pass through. Rubber cords on the main spars anchor the fittings, and the kit also includes a few rubber bands for help in joining certain shapes.

Once we figured out the ingenious system, we found the directions easy to follow. They include accurate drawings that show the location of spars and spreaders. The instructions for bridling and tailing the kites

are also exceptionally clear.

The directions are in English and German, on separate sides of a fold-out booklet. They supply plans for making five kite shapes, including a ribbon circle kite. But they also urge fliers to "test your experience, try the impossible," by contriving new forms and combinations.

Assembly time for the first kite—best described as a four-circular-cell box variant—was about one hour, with careful attention

to the instructions. Subsequent variations went together much more quickly.

On its first flight, our initial assembly—with a three-point bridle and no tail—flew splendidly in an estimated 10 mph of wind, climbing powerfully and "dwelling" at a high angle.

Tethered to a ground stake, the blue and red kite looked striking in the sky and never gave any sign of instability. When the wind dropped below about 5 mph, however, the kite slipped gently back downward. (Most often, the landing tipped the kite over and we had to walk to relaunch. But once, it sat down upright and lifted again unattended on the next rising of the wind.)

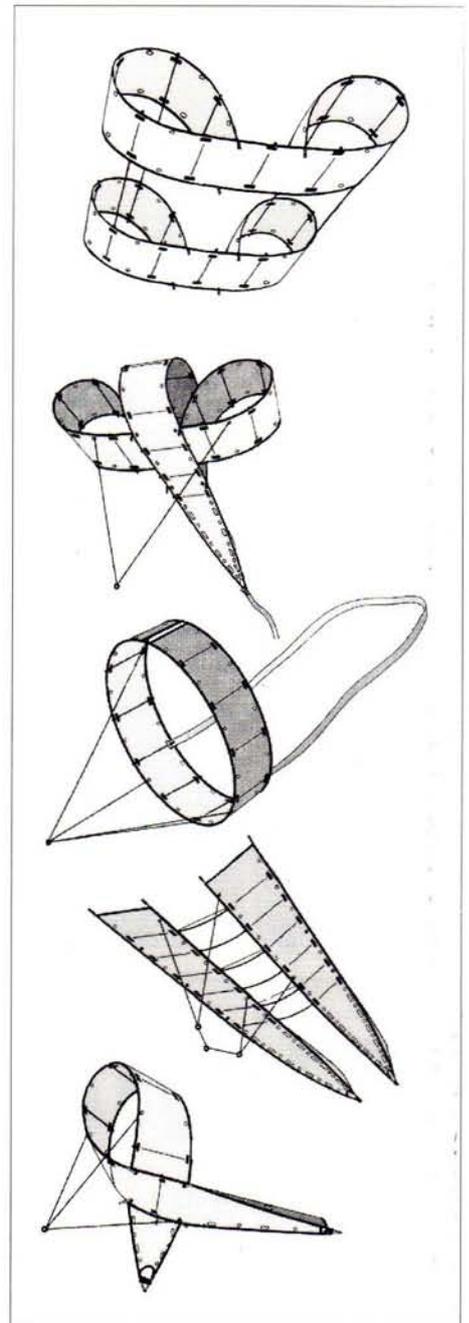
A second suggested shape, the scorpion, also flew well, a little more actively. It looked alive in the sky, sweeping back and forth with an undulating "body" shaped by removing the spreader rods from its rear half.

Our attempts at flying two other shapes—a single sail box in the twin-cylinder configuration and the ring shape made from one sail—did not fare so well. In each case, the suggested bridle arrangements seemed insufficient for stability, at least in the uncertain winds prevailing during our tests.

We also found that the flying field is not the best place to change shapes—we nearly lost end nocks and a tension spar in the grass as we reconstructed the kite.

The kite instructions suggest additional bridle lines or reinforcement lines may be necessary with some kite shapes. And Grimsel says such experiments teach a great deal about the aerodynamics of kites.

Demonstrating at his workshop in Wildwood, he reminded one of a performer who makes animal shapes from balloons, as



Above, some of the delightful shapes possible in the Multiple Kite System. From top: the basic box that is the suggested first shape; the scorpion; the circle; the catamaran and the ribbon. The last is the first kite Wolfgang Grimsel made, inspiring him to explore the sculpture of the MKS.

he twisted the kite sails into several shapes, showing that they can also fly as gliders.

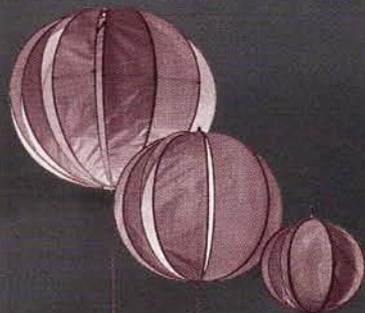
Could a neophyte make and fly these kites? Yes! In fact, we suspect bright kids could come up with flying shapes no one has seen before.

And even if you don't want to fly them, they can make decorative lamps. The inventor says you can hang them on the wall, with light bulbs illuminating various shapes, like Chinese lanterns.

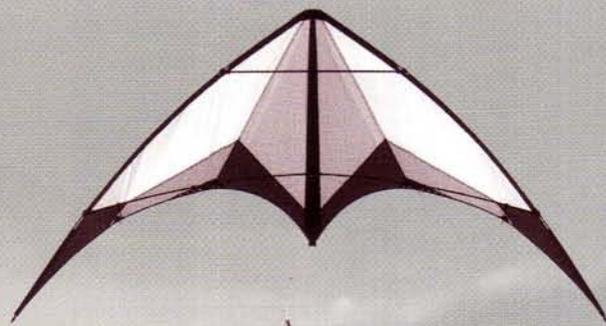
—Steve McKerrow

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POCKET FIELD GUIDE

Trick Flight School

By Dodd Gross & Paul Kappel (Germany: Drachenverlag, 1997), in German and English, softcover, 80 pages, \$9.95



Dodd Gross brought out the first video in his "Flight School" series of stunt kite instruction tapes in 1993. That relatively crude production has been followed by four more tapes with progressively more difficult tricks—and improved production.

In 1996, Gross, who runs a kite business in Pennsylvania and is a former United States Masters champion in ballet and precision flying, wrote a series of articles in the German periodical *DrachenMagazin*, which attempted to convey the tricks covered by the videos. The magazine has now published the material in this pocket-sized book.

In the forward, the publishers say the book is intended for experienced fliers and beginners. But a first-time stunt kiter will not gain all he or she needs to know from reading just this book.

For one thing, a kite book with no photographs and very few graphic representations of kites (other than the color cover) seems strange indeed. It's a visual sport!

The book also pays scant attention to such rudimentary things as kite assembly, line setup and management and the nuances of bridle adjustment. (Gross does cover these in his introductory video, however.)

The book may find its principal audience among serious trick fliers, and as intended, used best in conjunction with the videos and much on-the-field experience. It can be a good resource to consult before trying new tricks—or after, when things have gone awry

and you want to know what happened!

But it takes some serious homework to learn *how* to use the book, which attempts to convey tricks in graphic form.

The book could also have used better editing and proofreading and the English appears to have been translated from the German—which presumably was *first* translated from English. Thus we have German punctuations—as in "Flight School"—and odd phrases—"the flight of tricks" instead of "trick flying."

The two-language format—German in the first half and English second—also tends to make quick reference difficult. (Suggestion: tape closed the section with the language you don't read.)

Gross calls his instructional method the Six Step System, and uses a unique chart designed to illustrate the complex control movements for each trick. Arrows show not only the direction of arm movement, but the relative vigor required, through three degrees of shading (white for slow, gray for normal and black for quick).

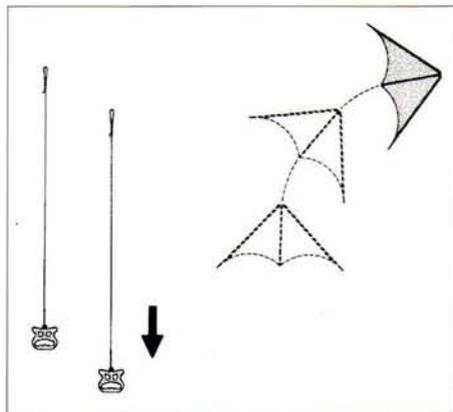
As the tricks progress in difficulty, however, so do the charts. Left/right designations become "O" for outside and "I" for inside, then "I" for initiating hand and "Ex" for executing hand. Instructions are added for walking movements, too.

Compared to this, rocket science seems easy!

Dodd's authoritative text, at least, is a good teacher and much easier to follow. In fact, we were able to visualize the tricks from the text alone, without needing to consult the charts. —Steve McKerrow

Trick		2. Pull Turn right		
Push	extended			
	normal			
Pull	neutral	⊗	↓	⊗
	normal		↓	↑
	extended			
	Hand	L	R	release
	Comment	x		

ONE MANEUVER, TWO ILLUSTRATIONS: Above, charts in *Trick Flight School* attempt to convey complex control moves, but make the reading harder than the flying. Right, a simple drawing from *Put the Wind In Your Hands* shows the same right turn.



DUAL-LINE PRIMER

Put the Wind In Your Hands

By Bill and Kim Taylor (Keiser, Oregon: Taylor's, 1997) softcover, 48 pages, \$4.95



The Taylors do things backward. In 1996 they published *Flying the Rev and How To Do It*, after themselves having discovered the fun of flying the quad-line Revolution kite.

Usually, fliers discover quads only after flying dual-line stunters, which sometimes follows discovering kites through single-liners. Now the Oregon fliers have gone "back" to the two-line kite and written a primer for beginning fliers. Can a one-line kite book be far behind?

Like the Rev book, *Put the Wind In Your Hands* suffers from self-publication, with myriad misspellings, grammatical errors and a run-on writing style that would not pass muster with editors at a larger publishing operation.

But the book also conveys the Taylors' enthusiasm and presents in great detail some of the most basic things about dual-line kites—things that other stunt kite books may neglect or treat too briefly.

A kiteflier of even modest exposure to dual-liners may have a, "Duh, I knew that!" reaction to this book. But the absolute novice will gain a good grounding in choosing line, adjusting bridles, staking the kite out and making that first flight.

Drawings show the control movements of the hands and the effects of flying in different parts of the wind window.

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WHAT'S NEW: BOOKS

[Continued]

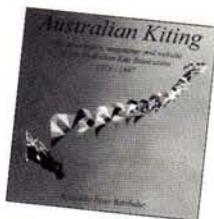
advanced tricks. It barely gets you started. A reader will quickly need to move on to more advanced instruction.

—Steve McKerrow

AMBITION, THY NAME IS CD

Australian Kiting

Edited by Peter Batchelor (Australia: Australian Kite Association, 1997), Hybrid Internet CD-ROM for PC or Macintosh, \$19.95



If you have a PC or Macintosh computer with a browser (Microsoft version 3 or above; Netscape version 2 or above), you can now gain access to the collected newsletters and other materials of the Australian Kite Association—as well as its website, if you are Internet-connected.

What does that bring you? A passel of kite goodies—plans, tips, classroom applications of kitemaking, pictures of Australian kites and kites—along with a fair bit of frustration.

Back issues of the organization's newsletter—from June 1978 to August 1997—comprise the largest volume of material on the CD. That is a rich lode of kite lore, to be sure, but getting at it through the CD is a painstaking, slow process.

To produce the CD, each page of each issue appears to have been individually scanned as a separate file. "Leafing" through an entire issue, therefore, requires several steps to call each page to the screen.

You start at the CD's opening screen. First, you must click on the "magazines" option to see an array of dates, each a link. Click on 1985, for example, and the next screen gives the dates of each issue that year and the individual page numbers.

Click on December's page one, and the screen fills with an image of the first page of that issue: a holiday greeting/news update from president Helen Bushell and sketches of a squadron of David Lynch kites. This is obviously an untouched image of the original mimeographed page, complete with smudges and other imperfections. (Some newsletter pages were obviously not even put on the scanner straight.)

So far so good—because we aren't too critical of anyone bravely making a CD before the format is popular for kiting. But

now we look at the menu of choices for 1985 and it says there is a page two in December. You cannot just "turn" the page by scrolling past page one or even clicking a command on the bottom to call up the next page. Instead, you must first go back to the 1985 screen and click on page two. Up comes a nice Sail Kite delta design.

Setting out to see more than a few pages proved a daunting task, requiring a succession of computer commands followed by the inevitable short waits while the next screen loaded.

The CD also suffers from having no table of contents index to permit you to know at one glance what's in what issue. The closest thing is a list of menu choices for plans—more than 50, from an "Ankle Biter Wine-cask kite" to the "Wind-shot dual control kite"—and profiles of AKA members (note: of the Australian AKA) and others that have appeared in the newsletters over the years. In each case, the screen that offers the list of choices includes links to the appropriate issue.

But here again, if the item you select originally appeared in more than one page—such as plans for the Indian fighter of Peter Batchelor, which took five—calling up each page requires the same back-forward-back-forward succession of computer steps.

The exception to this tedious rule, and the best part of the CD, is the Kites in the Classroom section. Here, clicking on the option brings some choices that are more computer friendly—such as "Kites. A Guide for Students." You can scroll through this helpful article, and the others in this section, without that constant return to the original menu screen. They're computer-created documents, not reproductions of old pages, and feature nice sketches and other graphics.

A most curious part of the CD is its collection of color photographs—more than 150, each accessed by the old back-forward-back procedure. Unfortunately, the only thing approaching caption material is the minimal identification provided on the menu screen—so unless you've been an Aussie kiteflier, you'll see a lot of nice people and kites in pretty pictures without knowing very much about them.

If you do not have Internet access, this CD also includes access to a static version of the AKA's web page. If you are online, a link will bring the website to you (<<http://net-space.net.au/~peterbat>>.)

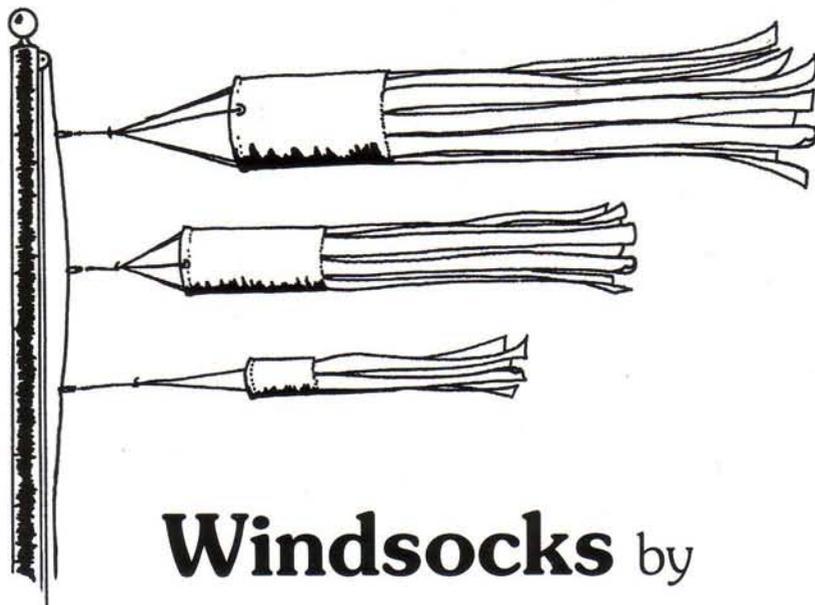
The AKA should be applauded for this attempt to bring its archives to a wider, computer-connected audience. Computers really can make the world seem like a village.

But appreciating the CD requires purging yourself of any tendency toward impatience. You'll be at that keyboard a long time.

—Steve McKerrow

Book News & Forecasts

Speaking of CDs, the Aussies may have produced kiting's "first," but it won't be alone for long. Already we have an audio CD, "Where the Wind Blows," by the kite jazz band that since 1992 has played at the festival by the same name at Ostia (Rome's beach), Italy. This very professional product of Aquilandia, the kite store in Rome, pleased our ears and suggested images of the kites that inspired it. Kite festival organizers seeking appropriate background music would have a winner here. Retail price is about \$14 US, or in other currencies at the kite shops that carry it, such as: Vlieger Op, Netherlands; Wolkenstürmer, Germany; Der Spieler, Switzerland; and of course Aquilandia. ♦♦ Meantime, we are still awaiting the CD-ROM from France, *Kites: Passion for the Air*, by Pierre Fabre and two others. The disk, said to cover 40 countries with an "encyclopedic point of view," is due any day as we go to press. ♦♦ High-decibel enthusiast Corey Jensen managed to bring out his *Colors of the Wind: A Guide to Modern Kiting* in August. It contains 32 full-color pages, magazine-size, with ads, but is not newsy as a magazine would be. Instead, it's a collection of articles intended for the novice, by Jensen and six contributors. (We liked the Steve Eisenhauer and David Gomberg pieces.) Photos are almost 100% uncaptioned, layout is scattershot, editing is minimal and printing is less than stellar, but it's friendly and cheap. Retailers are told they may sell the pamphlet for its \$6 cover price, or less, or give it away as promotion. (See if you can beg one off your local kite store.) ♦♦ We just picked up six new Gomberg Guides, hot off the press. Each fan-folded six-panel (12-page) pocket guide covers a segment of kiteflying how-to's, from basic to precision, advanced, trick and quad-line flying. They are well-illustrated and -designed, full-color and laminated to shed sand and dirt on the field. But they suffer from proofreading and typesetting errors. The writing, though a bit patronizing in tone, is clear, readable and well-organized. Suggested retail price is \$5 each. Here again, kite retailers may sell the guides or give them away with purchases. We liked these folders and wanted them all, but for \$30, what kind of book could we have had? One with proofreading? —Valerie Govig



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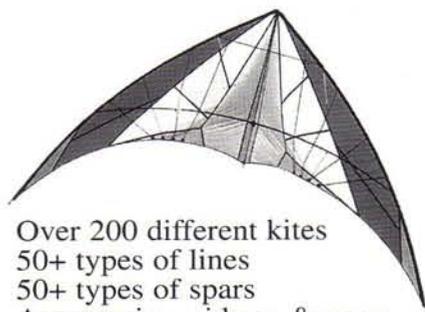
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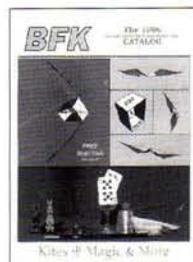
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The Gi² cambered stunter

YOU CAN BUILD THIS ONE,

A GOOD KITE FOR LEARNING PRECISION BY BILL GASTON

If you're looking for a turn-inside-the-wingtip, fast, noisy kite, then look elsewhere. This is a quiet, slower kite with just a bit of oversteer. It is not the kite to use for ground maneuvers, but is a good one for learning to fly precision patterns.

This is the best behaved of several sport kite designs I have built, although it's not for the rank beginner. Getting used to the oversteer takes a few minutes.

If you have sewn a few one-line kites and want to explore the dual-line arena, don't hesitate—you can build this kite. I like it as well as some \$150 retail kites, but spent about \$40 to make it.

- It can be built by the novice sewer.
- It flies slower than the average stunt kite, lending more margin for error to a novice stunt kite pilot.
- It will fly in light wind—if flags are moving, it will fly.
- It requires only five pieces of ripstop to be cut for the sail.
- Standard construction techniques are used throughout.
- The design and construction of the camber is easier to fabricate than to explain.

(Note: The method of camber* design is adapted from *Stunt Kites II*, by Nop Velthuizen and Servaas van der Horst [pp 18-21]. The increased-area wingtips draw from an article by David Lord in *The Kite Builder's International Journal* [Vol. 2 No. 2], published by The Kite Studio.)

Materials

- 5 pieces of large (24" x 28") poster board for making templates
- 3½ yards of ¼-oz ripstop for body and wings (The prototype for *Kite Lines* testing used just three colors: white for the body, fuchsia for the wings and dark blue on the leading edges. The kite's separate pieces of nylon—one body, two wings,

* **Camber:** the convexity of the curve of an airfoil from the leading edge to the trailing edge (*Merriam Webster's Collegiate Dictionary, Tenth Edition*). On a stunt kite, camber increases the lift of the airfoil, but also decreases its speed.



two wingtips, two leading edges—allow for much color experimentation.)

- 135 inches of 2-inch wide, 3.9-oz Dacron polyester, for leading edges of wings and standoff pockets
- 4 inches of nylon webbing for nose
- 3 Avia Sport .210 graphite tubes, for wing spars, with appropriate ferrules for two joints (Tubes come in 40-inch lengths, requiring ferrules to make 60-inch wing spars; use short piece toward nose.)
- 1 Avia Sport .210 graphite tube for spine
- 2 Avia Sport .230 graphite tubes for lower spreaders
- 1 Avia Sport .230 tube, 23" long, for top spreader
- 1 A-20 epoxy tube ferrule to join lower spreaders
- 1 appropriate T-fitting & ferrule and 4 leading edge angle fittings to fit .230 spine and spreaders
- 3 arrow nocks to fit wing spars and spine
- 18 inches of ⅜-inch shock (bungee) cord
- 30 inches of ½-inch fiberglass rod for standoffs
- 12 inches of reinforced vinyl tubing for two main spreader standoff fittings (or your favorite ready-made fitting) and two spreader fittings for wingtip standoffs

- 170 inches of 80-pound-test polyester kite line for bridle (Waxed is best for holding knots.)

Making templates

BODY

Use a good long straightedge to draw the outlines of the sail pieces; I use a 48-inch aluminum rule.

Start with the center section:

1. Tape together two pieces of large (24" x 28") poster board.
2. On the poster board draw a diamond 35 inches high and 26 inches wide. Measure the width 27 inches down from point A. Put point C 9 inches down the side from A. At C, measure out ⅜ inch and establish D. This is the maximum camber width for one piece.
3. Using a fiberglass rod, form the desired camber curve from A to B through D—with the deepest section nearest the leading edge—and draw a line along the rod. (It helps to have two more helping hands, or strategically placed weights, to hold the rod in place for the proper curve.)
4. Repeat on the other side, and carefully cut out the template. →

WORKSHOP

[Continued]

WINGS

5. Now use the body template to make a template for the wings. First tape together two more pieces of poster board and, referring to illustration for dimensions, sketch lines for wing template to a close approximation.

6. Punch out with nail or compass needle points A, and B on body. Place body template on top of wing template, aligning point A of body with A on wing. Secure alignment by making hole through both.

7. Repeat, punching alignment hole at point B. Now draw the camber curve of body template onto the wing template, assuring the line between A and B on both templates is equal.

The other dimensions of the wing are not so critical. They can vary an inch

without noticeable effect in flight.

This method of creating camber is a good one, but don't overdo it—this is enough curve. You cannot duplicate a particular airfoil. Just be happy to get a curve much like a sailboat sail, with the high point near the leading edge.

This may not be the best method, but it works for the home builder. The kite flies just fine, too.

Cutting fabric

8. Draw the body template outline on the ripstop. Cut $\frac{1}{4}$ -inch outside the line A,D,B and A,D,N. Also cut 1-inch outside of the bottom part, B,M,N, leaving a margin for the hem.

9. Trace wing template onto fabric, with nylon grain aligned 90 degrees to leading edge. Cut out, leaving 1-inch for hem on trailing edge. Repeat for other wing.

(Make sure grain alignment is the same on each wing, to balance stretch.)

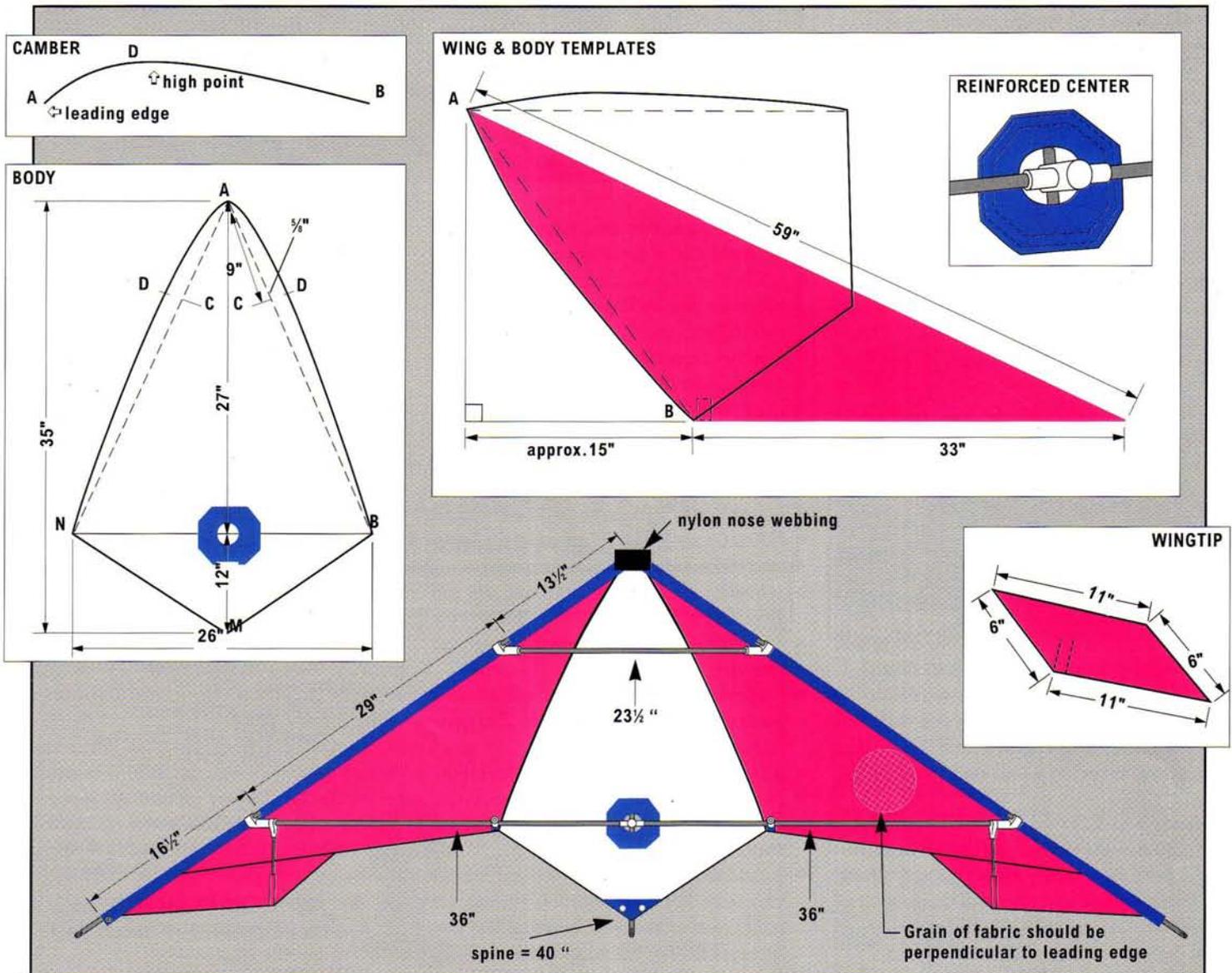
10. For extended wingtips, leave $\frac{1}{2}$ -inch margin for hem. Sew wingtip hem.

11. Add pockets to wingtips for $\frac{3}{32}$ -inch rod standoffs. Cut 3-oz nylon 2 inches long and 1 inch wide and turn edges under $\frac{1}{4}$ inch.

Assembling pieces

12. Before joining, mark location for T-fitting and use $\frac{3}{4}$ -oz nylon to reinforce the area, front and back. Hot-cut centered hole. (See detail below.) Use 3.9-oz polyester to form $1\frac{1}{2}$ -inch long, $\frac{1}{2}$ -inch wide pockets for main standoffs. Use $\frac{3}{4}$ -oz nylon to reinforce tail, punching grommets on either side of center line for elastic to tension spine. (See illustration of tail detail.)

13. Place right wing and center section face to face, carefully aligning the camber



curve line. Glue body and wing together along camber curve, using rubber cement on both pieces of ripstop, and allow to dry. (You will have drawn the camber line distinctly enough to easily see when held up to a window.) Line up points A and B with nail in hole.

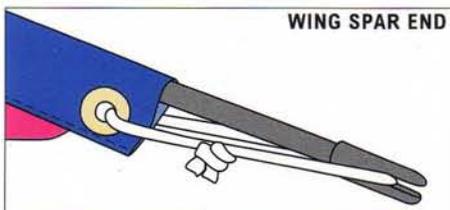
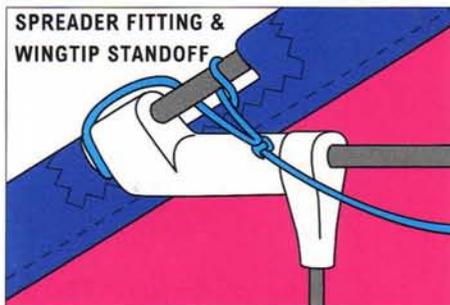
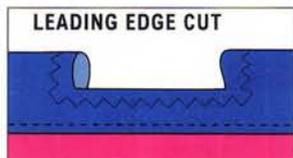
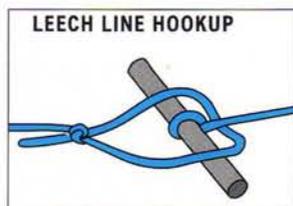
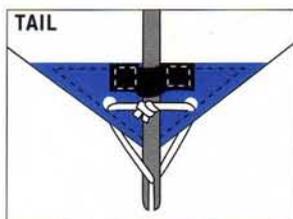
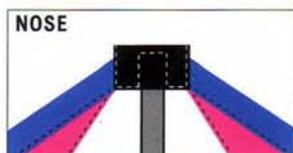
14. Sew cambered seam with a straight stitch. Fold extending edge on backside over onto darker fabric, and sew again. Trim.

15. To form each leading edge, fold 60-inch length (2 inches wide) of 3.9-oz polyester in half lengthwise and iron flat. Referring to illustration for placement, hot cut 1/4-inch cutouts for leading edge fittings. Unfold and reinforce fabric around holes with stitching. Then refold, insert wing edge flush into fold and stitch along edge, forming sleeve for spars.

16. At the nose, hot-cut overlapping pieces of leading edge 1 inch down, then fold over and stitch nylon webbing to form nose piece and spine pocket. (See illustration of nose detail.)

17. At wing spar tips, insert grommet to accommodate elastic or bungee cord loop for end nock. (See illustration.)

18. (Optional) On trailing edge of each wing, sew 50-lb-test polyester kite line into



The name game: You may see the name of this kite and scan your brain for some physics formula you should have learned in college. "Gi?"—what could it mean? Nothing that relates to kite specifications and design, says Bill Gaston. "The name came from Gee-Gee or Gi-gi," he writes in a note with his kite plans. So what does that mean? "One of my sons is named Gregory, and his brother as a small child called him Gee-Gee. $Gi^2 = Gi \times Gi$," relates Gaston, adding, "Greg is an adult working on a Ph.D. at Texas A & M University, and flies stunt kites. I made the first Gi^2 for him."

the hem, emerging through a hole punched into back edge of hem, 9 1/2 inches down trailing edge of body from points B and N. To quiet noise and increase lift a bit, tension this line across back of body with a simple loop-and-dowel fastener, as on many Asian kites. (See illustration.)

19. Sew wingtips onto trailing edge at ends of sail, overlapping a bit on leading edge.

Making the chassis

20. Make sure joined wing spars extend 1/2 inches beyond sail edging to provide good tension on leading edge.

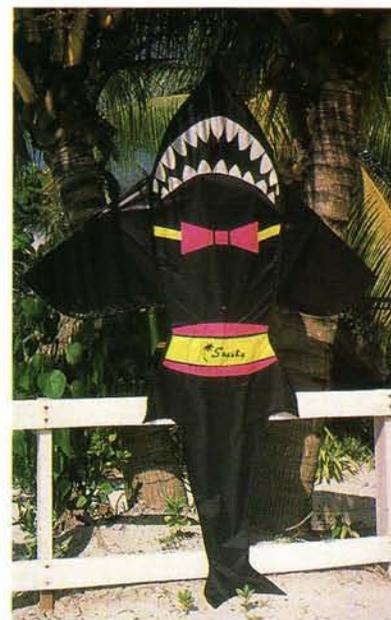
21. For main standoffs, cut two 6 1/4-inch lengths of 3/32-inch epoxy rod. Wrap one end with filament strapping tape to fit reinforced vinyl tubing, 1 1/4 inches long, on spreaders. The other end inserts into pocket on trailing edge, whose outward thrust does not affect flight.

22. For wingtip standoffs, cut 7 1/2-inch lengths of 3/32-inch epoxy rod. On spreader, use rubber fitting (or vinyl tube) adjacent to spreader fitting; cap other end with vinyl end cap and slip into sleeve on wingtip.

23. For the bridle, make top legs 16 inches, outside lower legs 26 inches and inside lower legs 21 inches. (This setting is optimum for 5-to-10 mph winds. In higher winds, top legs should be shortened by 1/2-inch intervals until best control is found.)

Now give yourself a pat on the back—you did a good job!

BILL GASTON is a retired physics and chemistry teacher in McAllen, Texas. You may phone him about this design at: 956-686-1205. Thanks to Jeff Burka and A. Pete Ianuzzi for reviewing these plans.



Sharky Dressed to Kill

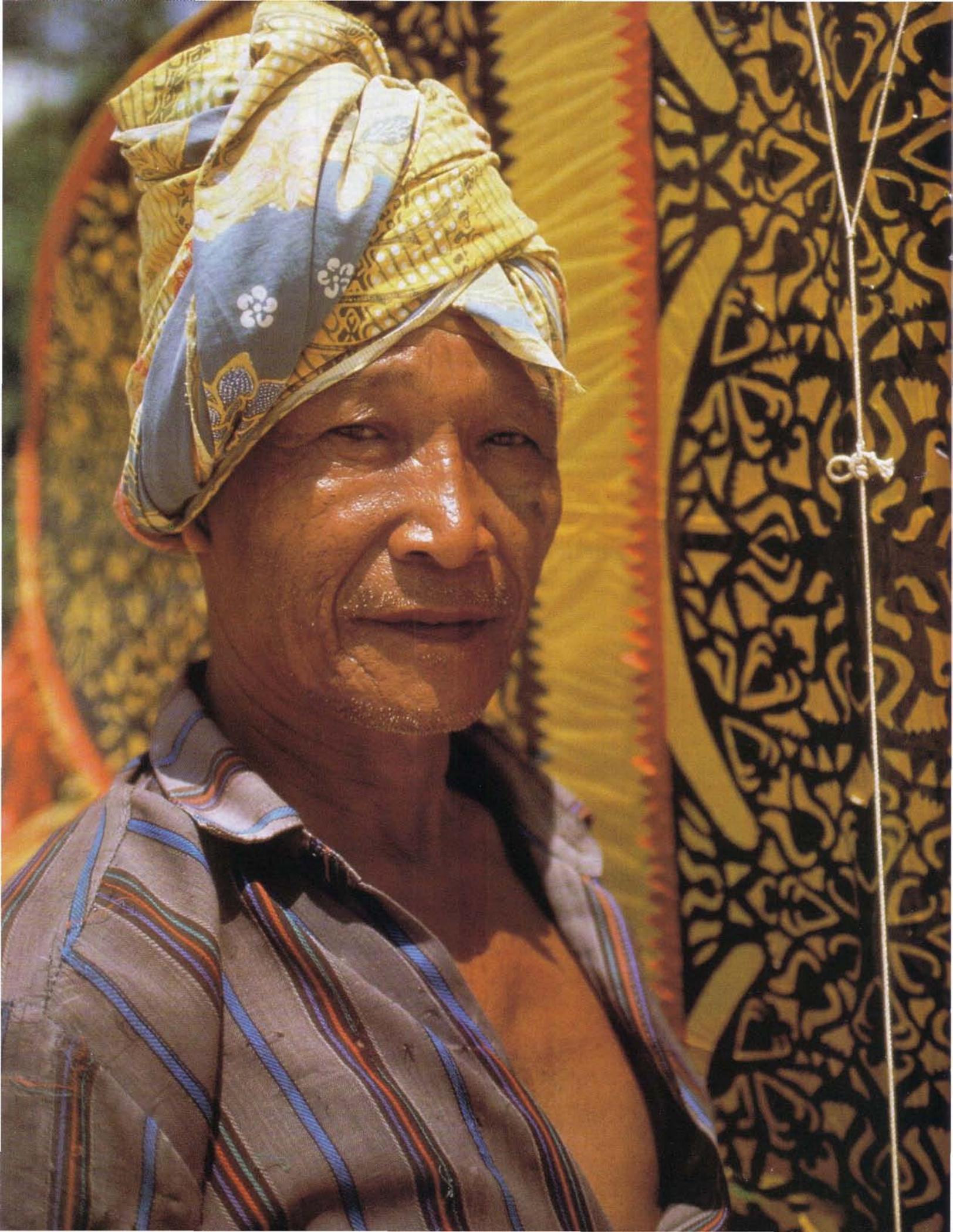
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Shining Kites of Malaysia

LAYER BY LAYER,
THE WAU'S HUMBLE MATERIALS YIELD A
MAGNIFICENT TRADITION

ARTICLE & PHOTOGRAPHS BY PIERRE FABRE

Malaysia's kites are magic. Though made of most humble materials—paper and bamboo—they glisten like precious jewels. Their sophisticated design and workmanship elevate them to the category of renowned traditional artwork.

I was enchanted by these creations on trips to Malaysia in 1993 and 1997, when I visited the states of Johor, Kedah, Terengganu and Kelantan and attended the traditional Malaysian kite festivals in Desaru, Alor Setar and Pasir Gudang.

Malaysia is a vibrant tropical country. Jungle still covers most of eastern Malaysia while immense plantations of palm and rubber trees seem to have replaced most of it in peninsular Malaysia. Seen from the sky, the grid of regularly spaced palm trees looks like an endless carpet of artificial turf.

The capital, Kuala Lumpur, is a striving ultramodern city with towering skyscrapers. But as the frantic building goes on here and in all the country's main cities, the countryside doesn't seem to have been altered much. Along the coastal plains, fishermen and farmers, among whom are found the genuine experts in Malaysian kites, still lead their lives at the same pace as their ancestors did. In rural areas, the rhythms of work and life are dictated by the dry and rainy seasons of the rice plantations. After the last rice is harvested comes the peak of the kite season and the dry paddies are turned into ideal flying grounds.

AN ANCIENT TRADITION

Some believe Malay kites are as old as the kite itself. Kite promoter Alifiah Alihasan of Malacca claims the kites of Malaysia go back 1500 years; it is a very reasonable assumption. The Malay people have always been excellent fishermen and sailors, voyaging as far as Madagascar. From early years they knew how to make fishing line from vegetable fibers and how to exploit the wind—

two skills logically adaptable to kites flying.

A simple kite made from the dry leaf of an epiphytic fern (*polypodium quercifolium*) has been known for centuries in the Malay archipelago. Children in peninsular Malaysia used to fly these kites when they couldn't find paper for more sophisticated designs.

Until the beginning of this century, some fishermen of Singapore used this leaf kite for fishing—specifically to catch garfish—using a technique introduced there from Java and still practiced in Indonesia (see *Kite Lines* Fall 1977 and Summer 1996).

It is reasonable to hypothesize, though impossible to prove, that a primitive form of leaf kite existed before the first kites were documented in China (200 B.C.). Regardless, the bowed Malay lozenge or diamond kite, which originated somewhere in the many islands of southeast Asia, might well be the true ancestor of all diamond-shaped kites around the world.

ROUTE TO THE WEST

There can be no doubt that Malaysia and Indonesia have been at the crossroads of the kite's migrations toward India, Japan and Europe. The city of Malacca (Melaka), on the



Opposite, Syed Alwi bin Embong, a kiteflier from Kuala Terengganu. This page, from top: *wau bulan* of recent fashion, with multicolors in the middle of each wing; *wau jalabudi*; and *wau kucing* from Alor Setar museum showing fluorescent colors that are still popular for tourist kites, but today's most beautiful competition kites show much more subtle hues.



Left, Haji Ayob Haji Ibrahim, a famous kite-maker of Tualang in Kedah state, shows blank kites in three traditional shapes which have not yet received their decorative papercuts.

east coast of peninsular Malaysia, was an important early commerce station because the narrow straits of Malacca were the safest maritime route between India and China.

The Portuguese took Malacca in 1511 to gain control of the spice trade. About a century later, the Dutch took over, only to give way to the British from the 18th century onward. Throughout these years, European and other navigators brought kites back home.

The first lozenge or diamond kites which became known in The Netherlands and England from the early 17th century derived from Malay models. In Japan, the Nagasaki

hata ("flag" in Japanese) is a legacy of the Malay kite married to the colors of the Dutch flag. And in 1893 bowed Javanese kites inspired the American William A. Eddy when he was designing tailless kites for lifting cameras and other equipment.

The oldest written record of kites in Malaysia dates from the 15th century. From ancient annals we learn how the sultan's son flew a large and powerful kite with strong bark twine—until it was defeated by a small, agile fighter with glass-coated line. Fighter kites are rare today in peninsular Malaysia, although they are flown by the millions in Indonesia.

ORIGIN OF THE WORD "WAU"

The Malay ethnic group spreads far beyond the borders of today's Malaysia, which is a federation of 13 states in peninsular Malaysia and part of Borneo. All kites found in the islands including Indonesia (Sumatra, Java, Sulawesi, et al.) and up to the Philippines (formerly referred to as the Malay archipelago) could properly be classified as Malay.

However, the highly decorated kites called *wau* (meaning "kite" and pronounced "wow"), are definitely a specialty of northern peninsular Malaysia. The states of Kelantan, Terengganu, Perlis and Kedah, close to the border with Thailand, have earned the highest reputation for beautiful kites.

The generic Malay name for kite is *layang-layang* (sparrow), as in Indonesia. However, even in the south of peninsular Malaysia, "wau" has now been adopted to designate the large ornamented kites while "layang-layang" is for the small children's kites or fighter kites.

What is the origin of the name "wau"? Several fanciful explanations exist, but the word is of Thai origin. Kelantan was actually part of Thailand before the British colonization. From a book published in 1693, *Historical Relation of the Kingdom of Siam*, by S. de La Loubère, we know that kites were called *wau* (*vào*) in the ancient capital of Thailand, Ayutthaya, in 1687! In the Thai language, "wau" names the kite as well as the winter north wind. A word of Sanskrit origin, it could derive from the older name *ngao*, which was given to kites flown by Brahmin priests during the klang ceremonies in the early Thai kingdom, at Sukhothai.



VARIATIONS OF THE WAU

Most Malaysian *wau* kites have a common and distinguishing elliptic main wing and are differentiated by the shape of the aft wings. Principal types include:

- *Wau bulan*: moon kite (aft wing in shape of a crescent moon)
- *Wau kucing*: cat kite (aft wing in shape of a cat's head upside down). The *wau kucing* in slanted form is the logo of the Malaysia Airlines System.
- *Wau jalabudi*: not readily translated into English, meaning something like "fish-

ing net in the shape of a heart." To satisfy foreigners asking for an English name it is called lady kite, because the aft wing is shaped like a woman's curves.

■ *Wau daun*: leaf kite (aft wing in shape of a leaf); also called *wau barat* (western kite) because it was introduced west of Kelantan, from southern Thailand.

Other traditional kites based on the elliptic wing include, among others, the *wau kapal*: boat kite (aft in the shape of a boat's hull), the *wau burung* (bird kite), the *wau merak* (peacock kite, from Johor) and the *wau puyoh* (quail kite, of Kelantan).

Some large kites are made without the elliptic wing but take the name and shape of animals, such as the *wau ikan* (fish kite), the *wau ular* (snake), the *wau peyun* (sea turtle), the *wau sotong* (squid), the *wau rama-rama* (butterfly), the *wau katak* (frog) and others.

SYMBOLIC MEANINGS

In former times, Malay kites were flown during religious ceremonies and by farmers to predict weather or ask the gods for rain or a good harvest.

Today the *wau bulan* (moon kite) of Malaysia has become a national emblem. It is even shown on one side the 50-cent Malaysian coin.

The crescent moon is a most important symbol of Islam. The sultan of Malacca embraced this new religion in the beginning of the 15th century, and Islam gradually overtook Hinduism and Buddhism in Malaysia. Wherever the *wau bulan* was flown one could immediately see this was Muslim land.

The floral motifs of these kites, as in the wood carvings, metal engravings and batik designs that inspired them, comply with the Muslim prohibition against any representation of living creatures, human or animal. Some also suggest the way the pattern of the central *ibu bunga* (mother flower) runs all around the wings represents the spreading of Islam through Malaysia. In this interpretation, the blank areas in the middle of the wings represent lands not yet conquered by Islam.

THE IMPORTANCE OF SOUND

Almost all Malaysian *wau* flown in the northern states carry a hummer, called a *dengung*, or more often *busur*. A bamboo bow attached on the back of the kite's head tensions a strip of rattan or

dry palm leaf, which vibrates in the wind. The leaf is boiled and dried before being steamed and cut into strips. Competition regulations impose the use of natural materials, while hummers on tourist kites are usually fitted with a simple gift-wrap ribbon.

Traditionally, farmers let their kites fly all night long. The buzz of the hummers lulls them to sleep or warns of an arriving rain-storm, as shifting winds cause a sudden change in pitch. The normal sound undulates in response to the kite's characteristic figure-of-eight flight pattern, a sweeping motion that may have been produced originally to encourage rain. These days it gives the *wau* an added measure of enchantment.

Even today, when the noise of traffic stops around country villages, one can often hear the humming melody produced by a kite high above the rice paddies. Some kite experts claim they can distinguish these invisible night fliers just by sound. The *wau kucing's* hummer is supposed to imitate the meowing of a cat, for example, while the *wau merak* (peacock kite) of Johor state is fitted with a special revolving hummer that produces several notes, a kind of random melody.

In a modern twist, a local kiteflier at the Pasir Gudang festival had attached a tiny



Haji Ayob lifts his high aspect-ratio *wau daun* (leaf kite) with colorful batik-style painting.



Ismail bin Jusoh demonstrates kitemaking to visitors and tourists in an open bamboo shelter near his house in Kota Bharu, Kelantan state. Thanks to its long wooden handle, the *pisau raut* knife can be firmly held between leg and forearm for shaving the bamboo struts.



Above left, knives used by Ismail bin Jusoh include large ones for cutting and shaving bamboo and a small, custom-made one for fine papercutting.

Above center, translucent paper sails seen from the back show a different aspect from the face: every single little patch which colors the face's floral design is clearly visible.

Above right, detail of a flying wau's mother flower (*ibu bunga*) located in the middle of the elliptic wings.

wireless microphone to his kite, close to the hummer. Over the din of the festival's public address system he could still listen to his kite hovering a hundred meters above, on the FM band of his portable radio!

Making the Malaysian wau

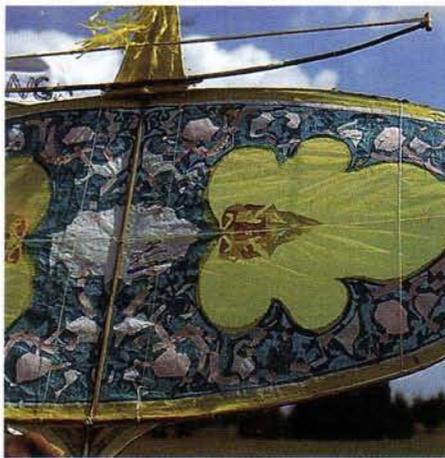
THE BAMBOO FRAME

Two kinds of knives are used for working the bamboo: the *parang*, for cutting and splitting the poles, and the *pisau raut*, for shaving and tapering the spars. The latter's long handle is held firmly between the forearm and leg while the bamboo stick is moved across the blade. The hand of the free arm slides the bamboo while the other hand guides and presses it on the blade.

Various types of bamboo are used depending on the required flexibility: very stiff for spines and thin and supple for the wings, which must flex in the wind. Great care is taken to produce perfect balance and symmetrical flexibility.

In constructing the frame, the spars are first tied together and the lashings are then coated with glue. Strong nylon threads—sometimes taken from old car tires—are tied across the bamboo frame and cotton threads are stretched across the wings to help adjust and maintain their symmetry until the sail is glued on. They also help to hold and reinforce the sail.

The sail is made of thin but sturdy hand-



made Chinese paper (such as used on the *chula* and *pakpao* kites of Thailand), or colored glassine paper. It is blank at this stage, when the balance of the kite is carefully checked.

When held by the wingtips, the kite must stay close to horizontal, with the nose slightly upward. If the bottom is too heavy, a small metal weight is wrapped around the nose, concealed under the paper tassels, to bring the center of gravity forward and increase the kite's stability.

The kite is bridled at this time, with the towing point very low and the two legs (fore and aft) almost equal. A test flight is made before decoration begins.

AERODYNAMIC WINGS

All the wau used in flight competitions, whether in Thailand or Malaysia, show remarkable aerodynamic characteristics.

At rest the wau is often absolutely flat. But in flight wind pressure bends the wings backward, making the kite stable without a tail. The curved wings generate a lifting force like that of an airplane's wing and some kites actually overfly the vertical.

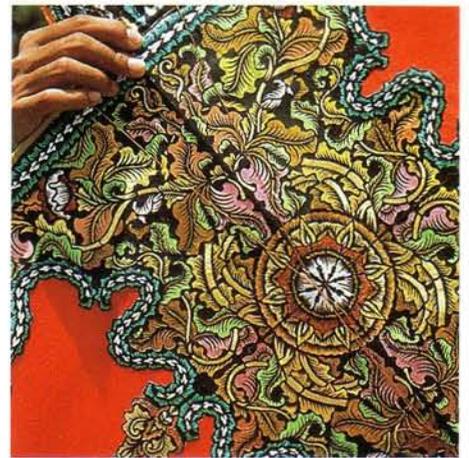
Because the base paper sail is glued behind the wing sticks, with decorative sail layers glued in front of the sticks, the spar thickness slightly increases the curvature effect of the wing.

PAPER CUTTING

The traditional kites of Malaysian farmers are usually quite roughly decorated, comprising only a few symmetrical patterns, often of floral inspiration. The designs are cut with scissors from a sheet of colored paper and glued on the sail.

Kites of this rougher style eventually led to much more intricate papercut patterns covering almost the entire kite surface, which occurred at least 30 years ago.

In recent years, competitions organized by the Malaysian Kite Association have stim-



ulated the most skilled kitemakers to refine the papercut technique in patterns of unprecedented complexity and detail.

All kinds of thin papers are used, including colored opaque paper, glassine paper, crepe paper, shiny metallics and others.

An opaque paper, usually dark, forms the base layer. But it always has a white back onto which the floral and leaf pattern is traced freehand with a pencil.

Three separate pieces are needed to cover the entire kite: one for the head, one for the

How do they get that perfect bamboo?

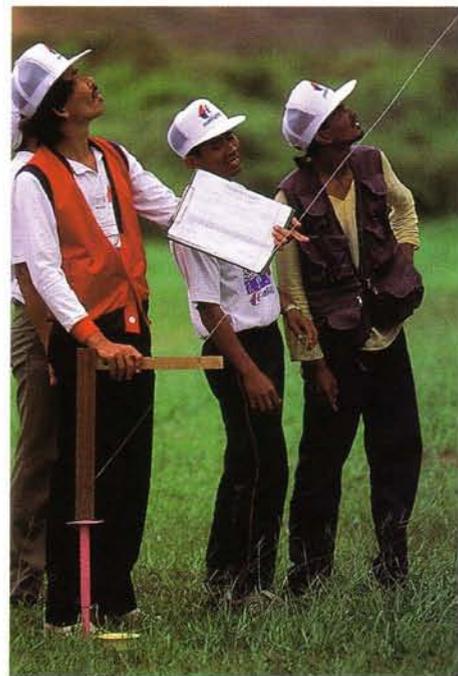
Thorny bamboo is considered the strongest material to create the distinct frame of the wau. The half- to three-quarter-inch wall thickness when fully grown is ideal. Many farmers now cultivate tracts of this bamboo at the edges of their rice paddies for use in their kitemaking. It is usually of sufficient thickness after four years, when it has grown to a diameter of 4 to 6 inches.

After harvesting, the bamboo is dried for two days, then drowned in water for 10 days to destroy the insects which live in the bark, and then once again dried for another two days.

Now the outer bark can be shaved off and the bamboo split for kitemaking. Each piece of the frame is hand-carved, in a messy and sometimes painful process (given the tendency of the slivers of bamboo to penetrate the skin). The bamboo is not soaked or heated for shaping, but is simply bent and tied. The thickest piece is the spine, a piece of split bamboo carved into a rod about 3/8-inch in diameter, tapering slightly in the fore and aft thirds.

The secrets of making the wau are handed down verbally from generation to generation. In visiting one of the old masters, I discovered that wau of even a few years ago were much simpler in their decoration, having only two colors and less detail in the paper carving. The underlying construction, however, was as exacting as today's.

—Simon Freidin



The *belalai* (trunk) is a long flexible rattan rod covered with paper fringe which freely floats like a long feather from the nose over and down the back of the kite.

According to Syed Alwi bin Embong, the *belalai* is not only decorative. It acts as a kind of swinging device to enhance the kite's natural rocking flight and obtain greater variations in the hummer's sound as it constantly changes its angle in the wind.

The *belalai* also helps the kite to come down quickly if its line is accidentally cut by another one; this reduces the chances of losing a kite carried away by the wind. The *belalai* is not seen in every region of Malaysia and is not judged in contests.



wings and one for the tail. Each piece is folded along symmetrical lines (in half for the head and tail and in quarters for the wings). The design is traced on one side only and all the layers are cut together with a sharp scalpel or craft knife, following the pencil lines.

When unfolded, the pieces are perfectly symmetrical and so thin and detailed they look like lace. They are then glued flat on another sheet of colored, silver or golden paper, which will appear only through the cut areas.

Glue made from the starch of the palm tree stem is applied with a brush or a piece of cloth on the entire surface of that second sheet. The delicate papercut is then laid onto it and the excess glue removed by gently tapping with a small damp towel.

This decorative kite skin is left to dry overnight under a clean carpet, or is sometimes dried and flattened by ironing.

When a third color is wanted, as to make a colored flower, the second layer of paper has to be cut out carefully, following the base layer's patterns, and a third piece of paper slightly wider than the flower's surface is glued onto the back. (From this stage, as the paper is no longer folded, each additional cut on one side must be matched on the other to maintain symmetry.)

Repeating this process, some of the most detailed and colorful kites are made of six, seven or eight overlapping layers of paper!

Final touches include edge binding

Above left, for children, empty cans make just as good line winders as the proper plastic fisherman's hoops that all expert kitefliers use in Malaysia.

Above, only main judges, wearing red jackets, are qualified to score for angle of flight in national contests. Once the kite has achieved enough height, its line is attached to a point on the upright of an angle measure. (The horizontal is established prior to judging with a spirit level.) The kite's angle (the more vertical the better!) is obtained by reading its line's position on the upper, horizontal part of the ruled right angle.

and tassels. Outer frame members are often finished with colored metallic paper glued over the length. Most wau noses and some wau wingtips carry tassels or fringes of colored paper. Except for the wau merak, streamer tails are never used.

THE FLYING LINE

These days, all Malaysian wau are flown from monofilament nylon, a cheap, available lightweight line whose elasticity perfectly suits the kites' flying behavior, allowing them to smoothly ride and bounce on thermals. Formerly, line was made from pineapple leaf or tree bark fibers, similar to those used for fishing line and nets. Line often is wound on hoops and no special reeling techniques are used.

Malaysian kites are far more than impressive artwork to illustrate catalogs or be sold to tourists to hang on walls. They seem to possess the independent will to fly! During competitions, kitefliers often shout at their kites to climb to a higher and higher angle, as if they were alive and listening!

Where competition rules

Kite contests have always been a very serious matter in Malaysia. Westerners may believe their international stunt kite competitions are state-of-the-art, but traditional kite competitions run by the Malaysian Kite Association remain an unequalled model of organization.

Farmers and fishermen have competed with kites since time immemorial. A game originating in northern Malaysia was the angle-of-flight competition, whose winner was the flier whose kite line would get nearest to the vertical. Each heat would last the time it took a coconut shell with a hole in it to sink in a bucket of water. I never saw such a drowning coconut myself, but it may still be used by farmers in local contests.

Height attained in flight and the sound of the kites were also sometimes judged in village contests. There was no standard organization nor prizes, but bets would be won by the best kite's owner. With no judge, competitions often led to disputes.



Left, back view of kite showing contest markings. Each kite entering the competition is stamped, numbered and signed by the judges. A flier is allowed to participate in several tournaments with the same kite but a winning kite will be downgraded by the judges after its third or fourth entry.

MODERN GAMES

Today's competitions are held along traditional lines, but the system has been standardized. Kites enter in divisions, namely:

- Traditional kites, judged according to their angle of flight, beauty, flight consistency and the sound of the hummer.

- *Wau cantik*, which are especially beautiful kites and enter a separate category because their incredibly complex

MALAYSIAN KITE ASSOCIATIONS & FESTIVAL ORGANIZERS

Two principal organizations promote and regulate kite activity:

- Pelayang Malaysia, which organizes and controls the nationwide competitions. Its full name is Persekutuan Layang-Layang/Wau Malaysia, but it is generally known as the Malaysian Kite Association. Current secretary and chairman of the board of judges is Hamid Bin Darus. Office address: Kompleks Geraktani MADA A1, Guar Sanji, Arau, 02600 Arau, Perlis, Malaysia. Tel: +60-4-986-1109.

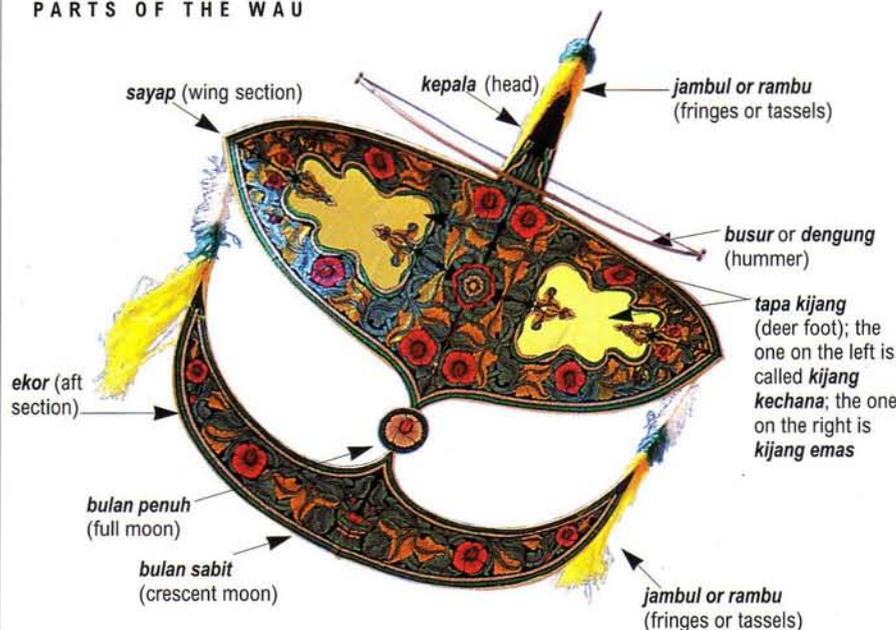
- Pelayang Johor (Johor Kite Association) and Johor Corporation, which is the sponsor of the main kite event in the country, Pasir Gudang kite festival. (In the past, Malaysian Airlines System has been a major sponsor.)

Many local kite associations also are active. Each state has its own group in charge of organizing local competitions that select the best members sent to five annual government-supported national contests. Interstate competitions were first organized in 1974. Kedah, Perlis, Kelantan, Terengganu and now Johor compete.

International festivals also show the Malays have embraced modern kiting activities. The Pasir Gudang event will be held March 3 to 8, 1998. Contact the Pasir Gudang International Kite Festival c/o the secretary, Ismail Mat Taib, address: Pihak Berkuasa Tempatan Pasir Gudang, L3-06, Kompleks Pusat Bandar Pasir Gudang, Jalan Bandar, 81700 Pasir Gudang, Johor, Malaysia. Fax: +60-7-251-5260.

—P.F.

PARTS OF THE WAU



papercuts make them too heavy to fly. These are what Westerners might call wall kites.

■ Creative and/or western kites, for nearly everything else, including large cloth birds, butterflies, airplanes, etc. This category(ies) varies with different competitions, local preferences and the number of entries. Relatively few participants enter because materials are often difficult to obtain. Ripstop nylon, for example, is not readily available in Malaysia.

Not all kitefliers are kitemakers. More than half the competitors enter contests with kites ordered from good makers. They hope an investment of 300 to 600 Malaysian ringgits (about \$90–\$180 US) will be recouped by a cash prize. The first place award in the traditional category may range from 300 to 500 ringgits. (Annual incomes in Malaysia are about \$5,000 US.)

JUDGING THE BEAUTY

The beauty of a kite is determined by evaluating three aspects: shape, color and the complexity and precision of detailing.

The color harmony and balance of the floral and leaf composition must follow specific rules. For example, from the mother flower located in the middle of the wing, the stems must flow toward the wingtips.

A kite with more detailed and colorful papercut work covering a wide surface of the sail is likely to win a top artistic grade, but may become too heavy to perform well in flight. Thus the best kites achieve a balance between art and flight.

Judges receive special training for three days, including a theory test followed by a practical exam during a local competition. The top 15 or so qualified national judges

This giant parrot entered in the creative division shows how big paper kites in Malaysia can be. Kasmin Jabar of Baling, Kedah, has made delta-type paper butterflies more than 30 feet in wingspan.



earn the honor of wearing red jackets, and a handful specialize in giving the beauty marks. Often, these arbiters are actually art teachers.

Kites receive four different grades which total to a maximum of 100 points:

- Angle of flight, 40 points, as measured on a 40-cm (16-in) graduated square, set perfectly horizontal by a spirit level.
- Beauty, 30 points, judged equally by elegance of shape and quality of floral pattern.
- Flight consistency, 20 points, with 2 points subtracted each time the kite touches the ground.
- Hummer sound, 10 points, with any synthetic ribbon earning zero points.

Competitors entering the wau cantik beauty contest must make these kites themselves and the intricate paper work could

require more than two weeks of work. Thus a single competitor rarely enters more than one or two examples in a contest.

The winning wau cantik of a competition, one of each distinct style, are always offered as gifts to the head organizers. In this way judges are certain the kites won't show up again in another contest!

Prizes in the wau cantik category range from 300 to 700 Malaysian ringgits.

COMPULSORY KITE SHAPES

At national events, participants in the kite-flying competition must enter a single set of four compulsory kites, each with a different traditional shape: wau bulan, wau kucing, wau jalabudi and wau daun. The latter was introduced in competitions only a few years ago. It must be hand painted rather than paper-cut and the materials and designs are not stipulated, while the other kites must use traditional designs and materials. (It is sometimes allowed to replace this kite by another local one, such as the wau merak in Johor state.)

SIZE REGULATIONS

Current competitions require only a minimum size: four feet wide and four feet high, with the length and width always equal.

Judges have to work late into the night to give beauty scores to all the kites before they enter flying contests the next day. The judges are quick to spot any fault in a kite that eyes of a Westerner would never notice. Judges often mark as many as several hundred kites!



Pasir Gudang International Kite Festival

JOHOR, MALAYSIA, MARCH 1997

Malaysians love kites—and not just the way that they have refined to such a high standard. Since stunt kites have been available to them, many Malaysians have practiced both types of kiteflying avidly. Thus the 3rd Pasir Gudang International Kite Festival last March integrated traditional and modern elements.

The rolling terrain of Bukit Layang-Layang (Kite Hill), in the town park, provided an interesting arena. The wau were flown from one side of the hill and their modern counterparts, flown by international guests, on the other side. But the wau were launched from higher up the slope, to attain superior heights.

The festival paid expenses for guests from 12 countries. Regional teams attended from most of Malaysia's states. Younger team members were keen to have their elementary stunt kite skills judged by the experienced eyes of top display teams, the Bay Area Sundowners of California and Kéops of France.

The festival is organized by Pasir Gudang's local authority, overseen by the Johor Corporation. Norlida Hassan, a festival official, explained, "Pasir Gudang is an industrial town and the festival gives the workers and their families the opportunity to do something together after work and at the weekend."

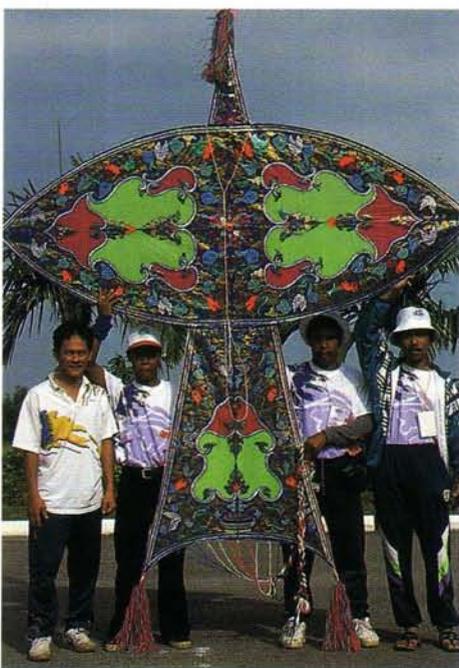
The high point of the festival was the arrival of the Sultan of Johor. Unfortunately, lulls in the wind, then and at the night fly, prompted kites to resort to leg power to tow their kites around.

If this festival is any indication, kitefliers in Malaysia should be able to retain their traditions while continuing their fascination with the kite's modern descendants.

—Zoë Harris

Because competitors often travel long distances to national festivals, they prefer to make kites that are easy to transport in a car or van. In practice, that means most kites are near the minimum size, although in earlier times large kites were more common.

Judges check the size during registration and confirm that prohibited non-traditional materials have not been used, such as graphite spars. Each kite is stamped and numbered so the contestant cannot cheat by replacing it.



Top, the soft giant Megabite by Peter Lynn of New Zealand flies behind the stunt kite Team Kéops of France.

Above, fliers show the large wau merak (peacock kite), typical of Johor, made for the opening ceremonies of the Pasir Gudang kite festival.

COMPETITION VS. TRADITION

The success of nationwide competitions over the past 20 years in Malaysia has had both positive and negative effects.

Some people say the quality of kites has never been higher, as generous cash prizes and strict regulations spur kitemakers toward excellence.

Further, youngsters have been drawn into kitemaking. Many expert amateur makers now produce better kites than those made by professionals, who work mainly

for the tourist market. (Most kites for tourists, made small enough to fit inside a suitcase, are poor fliers and never reach the best level of sail decoration.)

However, kites in national competition have lost the nice raw and simple aspect of authentic traditional kites, those made and flown by Malay farmers for their own pleasure.

In addition, the giants that once were flown—up to 25-foot span and made of woven palm leaves or thin linen—are rarely seen now. (In some areas of northern Malaysia, people still make kites of 12 to 15 foot span, not necessarily for contests but just to hear the melody of the hummer.)

National competitions also tend to restrict the variety of kites. Decorative variations on compulsory shapes are rarely seen, for they reduce flight performance.

At least one can see larger and variant kites at local competitions, which do not always follow the same constraints as the national meetings.

Kite competitions remain the best place for kite travelers to meet Malaysian kitemakers. But one should be curious enough to also visit their villages, to discover the daily life of kites in the hands of happy children and the magical night song of the hummers.

This is the only way to understand the true spirit of Malaysia's kites. You will have many reasons to say *terima kasih*: "thank you" in Malay.

Many thanks to Shakib Gunn, Kasmin Jabar, Marzukhi Jamaludin, Abdul Halim Samad, Mukhtar Bin Yusof and all the Malaysian kitemakers, competition organizers and judges who provided information for this article.

FOR FURTHER READING:

- Hosking, Wayne, *Kites of Malaysia: Kites to Make and Fly* (Malaysia: Malaysian Airline Systems, 1990), 39 pages. Now out of print, this book presents beautiful photographs and fairly extensive research on Malaysian kites, including drawings of 10 varieties.

- Prior articles in *Kite Lines*, including: "Discovering Buriram in Pattaya," by Valerie Govig, Summer-Fall 1987. The Song Hong kite of northeastern Thailand and of wau lineage is described.

- "In Praise of Low Tech," Letter from the Publisher, Fall 1994. Marzukhi Jamaludin talks about his unique Malaysian kite worldview.

- "Worldwide-Worldclass, the Biennial Summit in Thailand," by Mel Govig, Spring-Summer 1992. A page is given to the 13th annual Satun International Kite Festival in southern Thailand, featuring the *wau kwai*, one of many regional wau variants.



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EN FEST FOR BØRN

(a festival for children)

COPENHAGEN'S DRAGEDYST EMPHASIZES SIMPLE KITE PLEASURES

ARTICLE & PHOTOGRAPHS BY MEL GOVIG

Kiteflying is too important to leave to adults, I've always believed. So I was thrilled to be invited by Thorsten Schacht and Marianne Nielsen, his wife and co-conspirator, to the annual Dragedyst (kite tournament), in mid-October in Copenhagen, Denmark.

This is a festival that embodies the essence of the kite as a child at the end of a string.

Thorsten is one of the triumvirate of authors known by the singular pen name Dr. Hvirvelvind (Dr. Whirlwind)—and a crazy in his own right. I had encountered him, and sometimes Marianne, on kite fields from Europe and Asia to Miami, Florida. A natural kinship arose.

Sponsored by the newspaper *Ekstra Bladet* and directed by Thorsten, the kite festival usually also includes Herman Wolsgaard-Iversen and Hans Færch-Jensen, the other members of the Dr. Hvirvelvind moniker. (Their book, *Drager der Flyver (Kites that Fly)* is an excellent introduction to kitemaking.)

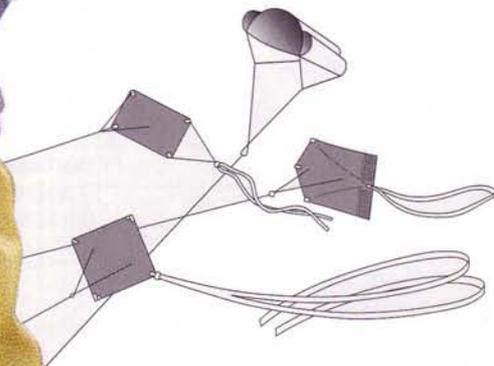
"Minimal"—a wonderful word in kiting—describes many things about this festival. Most of the organizing effort is directed at getting families and children to have fun putting kites into the air. Rather than sponsoring international guests or offering big



Above, Dragedyst's on-the-field kitemaking involved many festival volunteers, with the aim of producing success on the first flight—as, this young boy is clearly achieving!



Dr. Hvirvelvind himself, from left: Herman Wolsgaard-Iversen, Hans Færch-Jensen, and Thorsten Schacht



COPENHAGEN

[Continued]

prizes, the largest expenditure this year was for buses that carried participants to the festival site, an expanse of woods and open space north of the city.

Everyone in Copenhagen knows the Dyrehaven (Royal Deer Park). It is open to the public for recreation—and closed to hunters, of course. The locals all know, as well, that there are no sanitary facilities there. So my hosts warned me as they would a 5-year-old to wear warm clothes and take care of that before we left for seven hours in the open air.

For 14 years, the same group of kitefliers and journalists has conspired to make the grounds of this scenic park come to life with families, couples, grandparents and children of all ages, all flying kites or helping to fly kites. Several hundred acres of rolling, grass-covered hills provide room for each family or group to spread a ground cover and launch their kites.

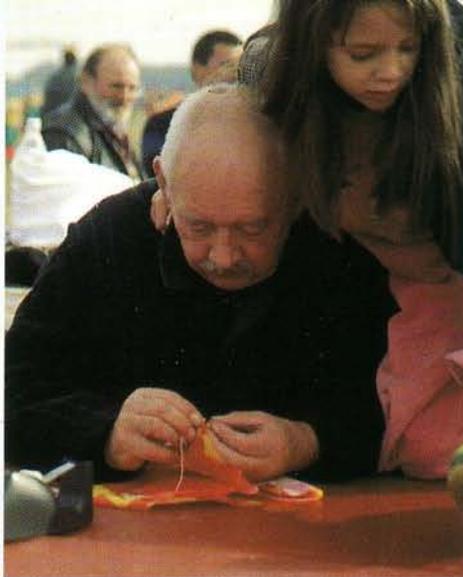
In the weeks preceding the annual festival, Thorsten and others are busy at kite clinics in the area. Kite displays and other promotions for the festival are seen in the offices of *Ekstra Bladet*, museums, libraries and two major department stores.

Other newspapers and media support the festival, too. Not enough can be said of them. They give their financial support. They give their editorial support. They furnish kite plans and kite kits. And finally, on the day of the Dragedyst, they give their enthusiastic personal participation.

The festival competition and organization are minimal. Of the 19 volunteers, nine are assigned as roving judges in teams of three. The others make kites with kids all day long. Criteria for winning are somewhat vague, leaving



The Copenhagen Kite Center is a small but busy annex to the Schacht-Neilsen home.



Many family groups includes grandparents, too, and the festival site provides plenty of room for each group to spread a ground cover and launch kites.

much discretion to the judges. But the results are never in doubt. Winners are handed a certificate on the field, signifying they have won a prize, unspecified, and should stay for the presentations.

All prizes are of equal value (except perhaps for bragging rights) and awarded with equal pomp by a well-known local journalist-father. (His child was too young to win). The result? Minimal jealousies (as a hard-earned lesson from prior years, I was told).

This year, first place went to an especially homely two-meter green plastic sled kite, because the judges were won over by the builder's enthusiasm and his family's joy of accomplishment. (I was warned the decisions might be unorthodox and was removed

as a judge at the last minute, for the stated reason of giving me *freedom* to cover the event. I suspect they did not trust me to be open-minded enough for their style of justice. Another time, perhaps.)

Most of the kites flown were of a simple nature, many of them made from plans in *Drager der Flyver* and an excellent small festival booklet distributed in quantities of 20,000. Hundreds of kites bloomed from plastic-bag kits and from paper and bamboo. The majority of kites, several thousand, were flown by children—or their parents.

"Our aim," Thorsten said, "is that the first kite a child makes should fly with no difficulties, straightaway... It should be a success... And then if you get your hopes up, it's nice if there's a little failure now and then... You can live with failures, of course, that's part of life. But it's damned important that you start with success..."

Herman recalled his own frustrating experiences with kites when he was young.



Above, one of the few "professional" kites at Dragedyst: Claus Brandt Pedersen of Copenhagen. In background, the festival's only "imports": trains of Dyna-Kites flown by Jimmy and Gioia Segré from Milan—looping above the Royal Hunting Lodge.

"It never flew when I was a child. ...It was a traditional Danish kite [but] this was made as a plow, I was plowing fields," he said, explaining, "We ran along and then at last we turned around to see the kite flying. But it didn't fly, it made a beautiful [rut] in the fields."

He said he has always been fascinated by the very simple kites, such as the little kiskeedee.

"Flying a big kite is fun, but only for a short time. I think the small ones that you can build from materials that you have around in your household—plastic bags and a piece of string and a little piece of tape—and seeing the happiness when these little things fly, I think that is absolutely the top of it," he said.

It has not always been so. Other years, Dragedyst has sponsored kitefliers from around the world, sometimes at the expense of time and space for the children in the park. At times, there have been larger prizes, once including a trip to Stockholm. (The result of that prize, however, was the frantic protest of one loser's wife that her husband should certainly have

won since his was clearly the best kite.)

Now the organizers know that children flying have more fun than children watching.

"It is a precious moment when the kids lose themselves and just jump up and down holding the string with the kite flying, and seeing the happiness that this works," said Herman. He said school teachers particularly appreciate the emphasis on simple kites that fly.

He added that teachers have recounted that children doing poorly in mathematics or in English improve after their kite experience. "The teacher phones back and says, 'The little kid is good in mathematics.'"

No description of this event can pass over the natural beauty of the festival site's surroundings. Deer graze right among the fliers early in the day, although the numbers and enthusiasm of the participants soon drive the wildlife to the edges of the park.

Unusual hillocks of raw soil are explained by the presence of stoat, hundreds of stoat, in the park. The fur-buying public knows these creatures as ermine (white in winter and brown in summer),

but they are as numerous in the Deer Park as prairie dogs in Kansas. Thorsten told of kitefliers amid the stoats in early spring, each group ignoring the other in their seasonal madness.

The park also teems with hares. (Herman explained these are not rabbits, who live in warrens and bear helpless young. Rather, hare offspring are independent after two or three days.) Regardless, one poor bunny got loose

on the field and scurried from blanket to blanket, seeking to escape from all these thousands of children. No tortoise could have outraced this hare this day!

With a clear concept of what has to happen, just enough organization to make it work and the enthusiastic backing of their sponsors, Dr. Hvirvelvind achieves the near perfect kite day. I don't doubt that the apparent minimal organization on the field comes from tireless organization in the days and weeks before.

If you really want to know how to have fun with kites and kids, I suggest you ask Dr. Hvirvelvind. After all, he wrote the book. ♦



The Dragedyst 8-page booklet, given away in the thousands, shows how to make three easy kites, how to fly them—and how to catch the free bus to the field.



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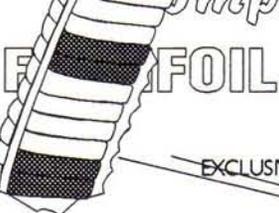
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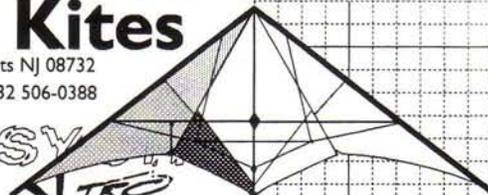
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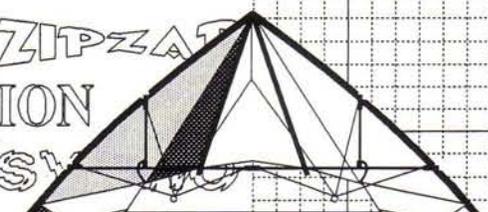
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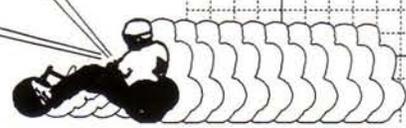
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Still flying!

'KEEN KITISTS' LAUNCHED A LEGENDARY LINE

BY PAUL CHAPMAN

Since 1906, kites have been flying out of the English company, Brookite Ltd, which is believed to be the oldest continuously operated kite concern in the West. The author had the opportunity to visit the firm and review its archives—and to share with Kite Lines readers some fascinating photos and documents.

—Editor

Oskehampton is a quiet market town located in a snug valley on the edge of Dartmoor, in the far southwest of England. Newly housed in the gray granite stones of Brightly Mill resides the family firm of Brookite.

Director Nick Harrison apologized that “there is not much to see, and I am afraid the old kites were thrown away long ago.”

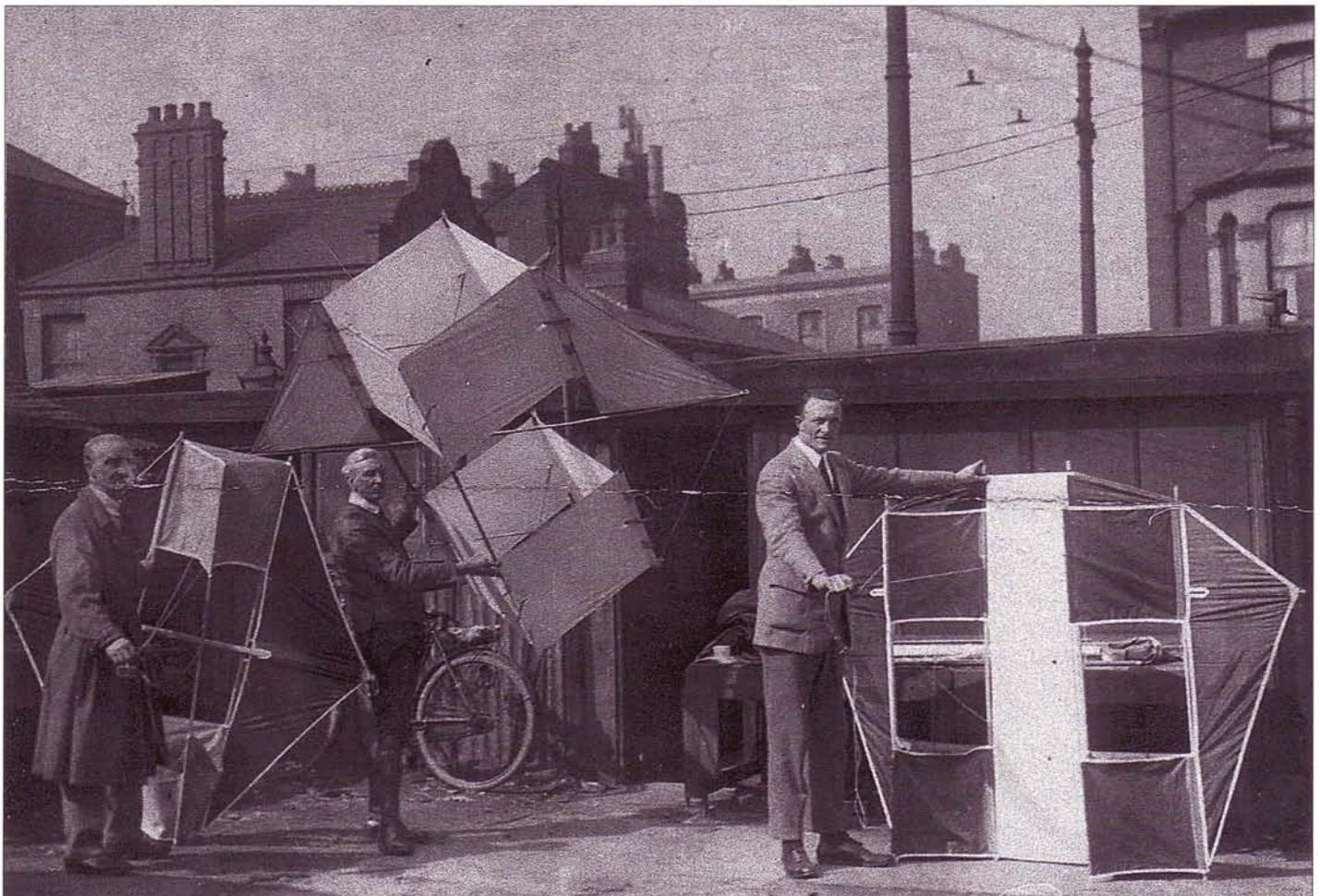
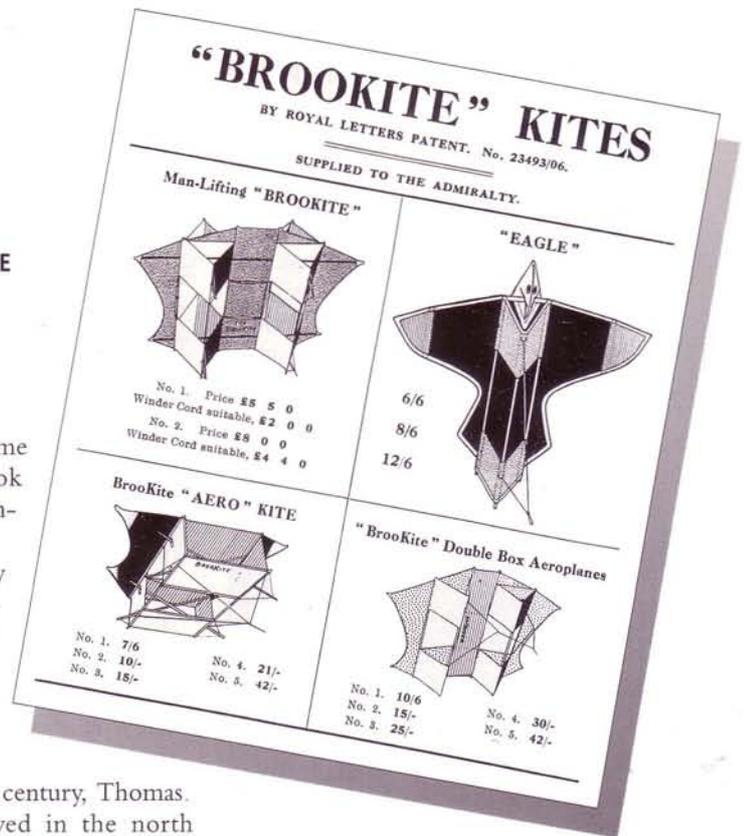
But he kindly offered me an invitation to look through the box of company archives.

Not much to see? My eyes widened as old photographs and papers spilled across the table.

Beginnings

At the start of the 20th century, Thomas and Walter Brooke lived in the north London district of Acton. In the terminology of the time, they were “keen kitists.” The brothers began their business as Brooke & Gillman, formally registered in 1906, by

touring the beaches of holiday towns, flying their kites to attract tourists. They then called on local shops to take orders.



PHOTOGRAPHS COURTESY OF BROOKITE

Kite competitions were frequently held around the open spaces of London, and in July, 1909 the Brooke brothers took part in an event held by the Kite Flying Association of Great Britain, on Wimbledon Common. The winner was a Mr. W. Barton, but second place was taken by a 58-sq-ft box kite manufactured by the Brookes. *Flight* magazine illustrated the Brookite and reported it showed great stability.

The kite was a winged double Conyne-style box, with detachable wings using "studs analogous to the well-known form of glove fastener," according to its patent, No. 23493, registered in 1906 in the name of Bennet Mark Gillman, its designer, who called himself a "Scientific Kite Flier" in the application. The big kite had a forward projecting surface that acted as a pitch stabilizer in a way similar to the earlier Cody "Top Knot" topsail.

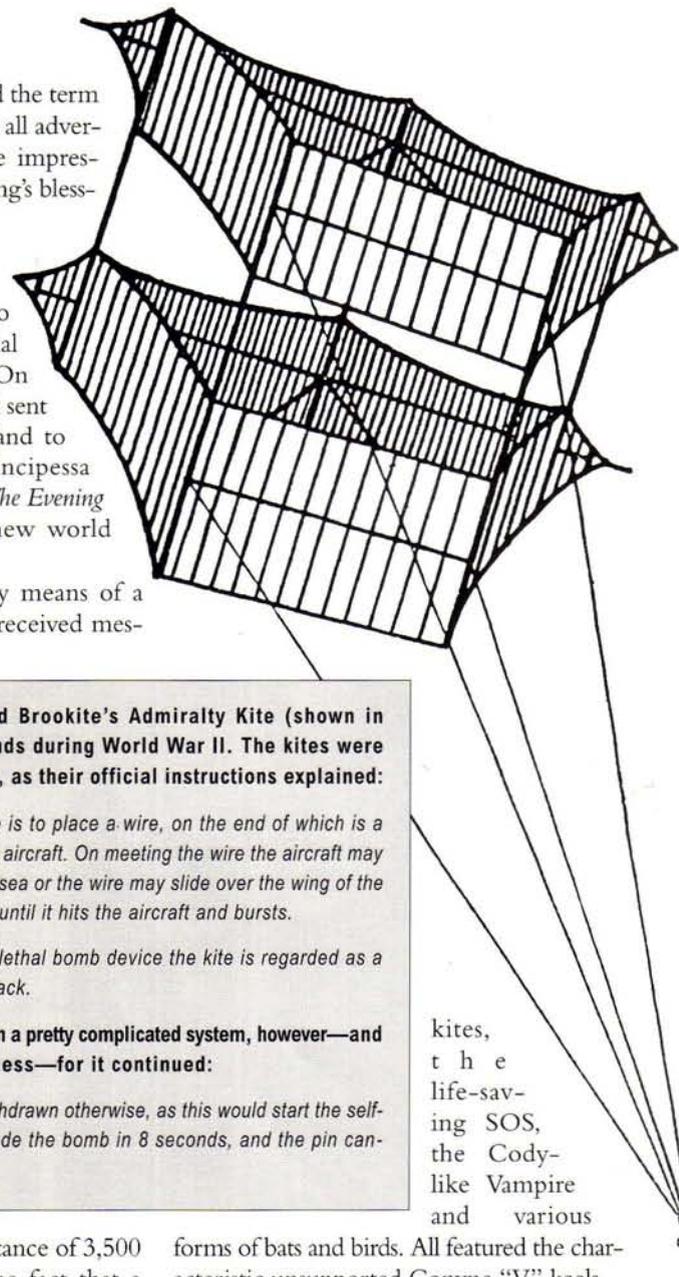
The kite was described as being useful for carrying a life-saving line to or from a ship in distress, lifting telephone and telegraph wires across difficult places, taking scientific observations, serving war purposes such as signaling and even offering space for advertising.

The brothers Brooke actively marketed

this kite and in later years used the term "by Royal Letters Patent" on all advertising brochures—giving the impression they had received the King's blessing.

This Brookite box was clearly a good flier because it was selected by Guglielmo Marconi as the wireless aerial support for his experiments. On September 24, 1910, Marconi sent a message from Newfoundland to the Lloyd steamship *Principessa Mafalda* at Clifton, Ireland. *The Evening Standard* reported on the new world record:

"The Kite was flown by means of a long wire, and the inventor received mes-



The British military ordered Brookite's Admiralty Kite (shown in sketch above) by the thousands during World War II. The kites were flown as anti-aircraft devices, as their official instructions explained:

1. *The general object of the kite is to place a wire, on the end of which is a bomb, in the path of an attacking aircraft. On meeting the wire the aircraft may either be caused to dive into the sea or the wire may slide over the wing of the machine and draw the bomb up until it hits the aircraft and bursts.*

2. *Even when flown without the lethal bomb device the kite is regarded as a valuable deterrent to aircraft attack.*

The assembly seems to have been a pretty complicated system, however—and likely caused some nervousness—for it continued:

"...the [bomb] pin must not be withdrawn otherwise, as this would start the self-destruction fuze (sic.) and explode the bomb in 8 seconds, and the pin cannot be re-inserted."

kites,
t h e
life-sav-
ing SOS,
the Cody-
like Vampire
and various

sages by this means from a distance of 3,500 miles in daytime. But for the fact that a storm arose and made the flying of the kite impossible, messages could have been received at an even greater distance."

With the success of their early kites, Thomas and Walter Brooke established a north London factory, in Mill Lane, Acton, which soon produced kites for a market that included, in 1910, the major London store, Gamages, and possibly the British Admiralty.

As W. Brooke & Co. flourished, the variety of kites increased steadily. One early brochure describes 29 different kites, each one offering several sizes, two types of tail, the "Brookite parachute releaser for kites" and nine varieties of winder.

The range included the well-known "Kite Shaped Kite," the Diamond Tail, the Keel Kite, the Cutter Kite and the Sail Kite. It also included standard and winged box kites, but most numerous were Conyne-type kites, including the Plane and Monoplane

forms of bats and birds. All featured the characteristic unsupported Conyne "V" keels.

Later on came a "Mistri-plane," a small model airplane that would run continuously up and down the kite line.

Not all the business was "toy business." Many kites were marketed for scientific purposes, including man-lifting and aerial photography. Sometime in the late 1920s or early 1930s, the Oriental Institute used Brookites for aerial photography at the excavations carried out at Baghdad, Iraq.

The archives include a tantalizing letter written in 1932, requesting a supply of Pilot Kites for the submarines of the 6th Submarine Flotilla of the Royal Navy. The letter notes, somewhat enviously, that the 5th Flotilla had already been issued such kites.

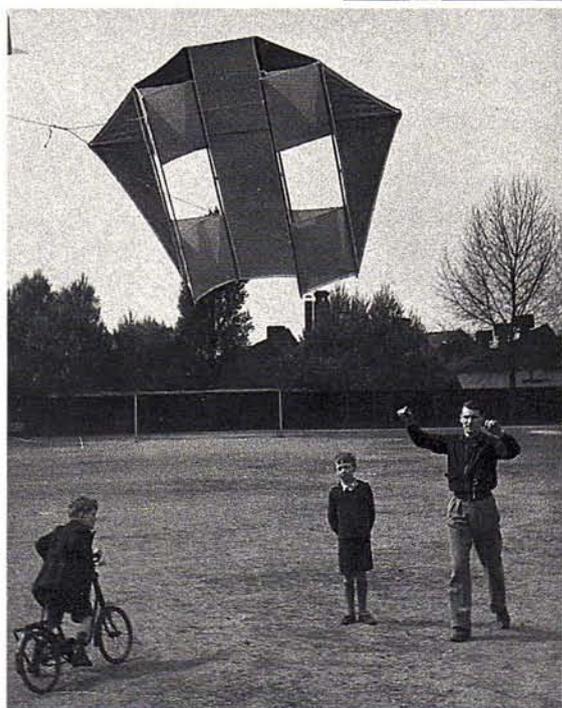
And by 1936, W. Brooke & Co Ltd. was asked to respond to an Air Ministry Invitation to Tender for "Kites, Aerial." The kites were to be 67 inches tall with a spread of 65 inches, and made from first quality fine woven cotton. The spreaders

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No. 4. 1/-	No. 9. 5/-
No. 5. 1/6	No. 10. 7/6

Opposite, top, a page copied from an old Brookite catalog shows just a few of the many styles made. Opposite, bottom, a photo (circa 1938-40) from the company archives shows the brothers Brooke—"keen kitists" Thomas, right, and Walter, center—with several of their large box kites. An employee, perhaps the foreman George Pilgrim, stands with them in the yard of their factory in North London. Above, the Cutter keeled diamond, flown by generations of British youngsters on beach holidays.

Right, Thomas Brooke adjusts the bridle of the company's very large Double Box Kite, preparing for a test flight and carefully observed by fascinated children—who also were on hand for its launch, below.



At about this time, Thomas Brooke demonstrated various models in a film about kites. Unfortunately, only the stills remain, showing a fascinating range of birds and boxes.

Wartime kites

World War II brought new military kite business. A January 1940 note from the Admiralty lists the quantities on order: 1,116 Storm kites at 30 shillings and sixpence each (about \$6.00 U.S. at 1940 prices); 1,258 Light kites at 32/6; and 644 Target kites at 14/6. (The Target kite is the jibbed box Walter Brooke is holding in the picture on page 46.)

The kites were used not only for lofting wireless aerials from submarines but also for anti-aircraft protection for shipping.

It appears Brooke & Co. Ltd may also have made the Paloma or Navy Dove kite, which was used in conjunction with a bomb to deter enemy aircraft. A plan drawing of this kite appears in *Kites: A Practical Handbook* by Ron Moulton.)

Postwar Brookite

W. Brooke & Co. Ltd remained at their north London base at Francis Terrace throughout the war.

In the late 1940s, Ernest Sewell, foreman of the London Magical Company—and the grandfather of current Brookite director Harrison—began to learn kitemaking skills

and in a few years took over operation of the firm.

Brookite continued to make the famous cloth kites right through the 1950s and 1960s. Every English child went to the beach with a Brookite Cutter in those days—as many still do today.

The firm relocated to Okehampton in 1979 and now employs some 40 workers who manufacture more than 750,000 kites a year, in more than 40 models. They are available in England at Selfridges, Harrods, Hamleys and other major toy, gift and kite stores. In the U.S. they may be found at the Smithsonian's National Air & Space Museum gift shop in Washington, DC. They are distributed worldwide through agents in 12 counties.

"Kiteflying has come a long way since my grandfather [Ernest Sewell], took over Brookite all those years ago, but the introduction of new materials and new designs has not changed the fundamental principles that have remained since ancient history," says Harrison.

Yet he concedes such modern materials as carbon fiber frames and spinnaker nylon have produced new models—including stunt kites—with "aerodynamic characteristics, speed and maneuverability that would have been unbelievable at the turn of the century." ♦

Paul Chapman is an aeronautical engineer living in the southwest of England. He is a student of early kites and his proudest possession is a Samuel Franklin Cody Topknot, the topsail of the early War Kite.

were ash and the uprights whitewood. The specification noted "this kite can be assembled by one man in a very confined space"—a closet kiteflier or a submariner?

Thomas Brooke took part in undersea adventures on several occasions.

"I enjoyed it very much," he recounted. "I have seen one of my kites sent up and a message being transmitted within three minutes of it being taken through the conning tower. One of the models used will fly in practically no wind, while another will remain up in a 70 mph gale."

Fire!

In April 1938, a fire gutted the Mill Hill Grove factory, resulting in catastrophic losses, estimated at =£1200 (about \$4,800US, at 1938 values). The firm established new manufacturing facilities with the London Magical Company in Francis Terrace in north London, but continued to trade as W. Brooke & Co. Ltd. "Brookite."

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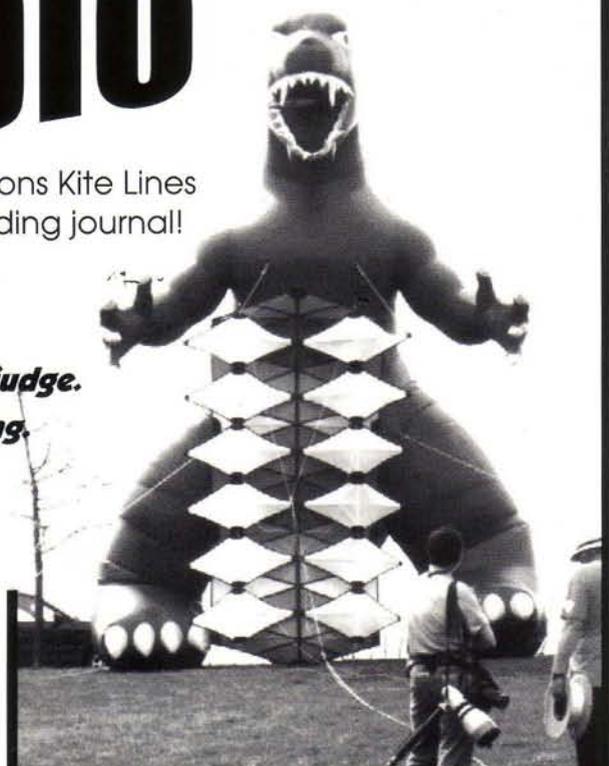


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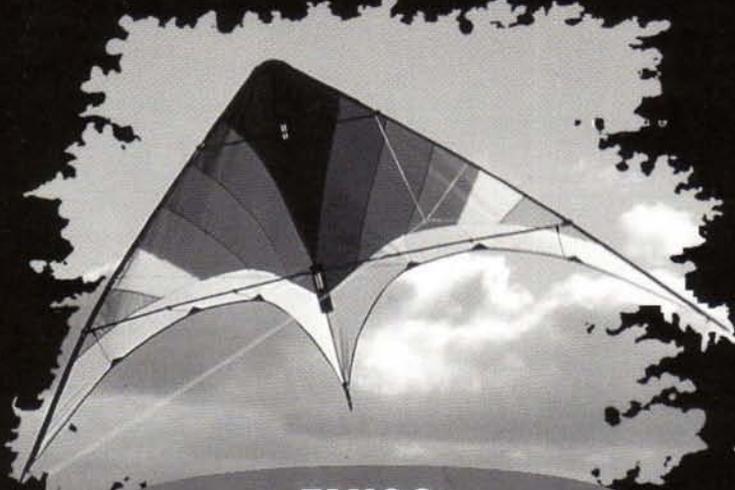
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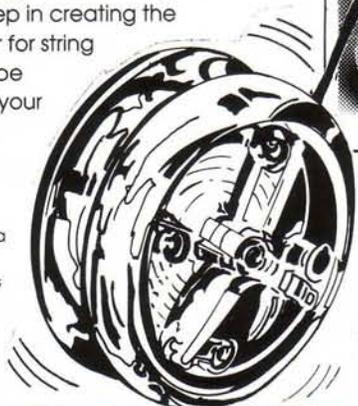
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The importance of being grounded

CAREFUL FOOTING ON FESTIVAL FIELDS

ARTICLE & ILLUSTRATIONS BY GEORGE PETERS

I've always seen kitefliers as anchors for kites, handy weights that keep their flying creatures from lifting off into the beyond. They may focus their attention toward the skies, but need to keep two feet planted firmly on the ground.

Kitefliers are an optimistic breed, with their kite smiles pointing toward the blue. They are pulled this way and that by their kites, backing up into ravines, colliding with trees and falling over racks of spotlights set up for night flies. I have seen horrible stumbles and bloodied limbs—mine included—and watched my friends carried away on stretchers.

Often, we fliers stand amid the general flotsam of festivals: crumpled wax Coke cups, paper napkins blowing along, plastic water bottles, bits of questionable food from the concessions and criss-crossed lines from down kites. It's easy to see why we are always looking up.

My first flying field was at grassy, palm-shaded Kapiolani Park in Hawaii. In years since, I've flown from the world's most beautiful beaches, from the tops of mountains, in deserts, in blinding snowstorms and drenching downpours. I've been in mud up to my chin and sand storms so fierce that my grounded kites were buried in minutes.

Some of the grounds from which I've flown have been especially fraught with danger.

I remember holes in the festival grounds in Thailand, near Pattaya, that were quickly filled after the field was mowed for the event. We were instructed not to go near any that were left uncovered. Cobra holes! We learned there are two kinds of snakes in Thailand: the "one-step snake" and the "two-step snake." That's how far you get before you die after being bitten.

A few years later in Thailand, we flew on a dried-up rice paddy with cracks that

could swallow a leg up to the calf. Keeping ourselves upright took as much effort as keeping the kites aloft.

In Israel's Golan Heights a couple years ago, a festival was held in the middle of a tank training ground. We were warned not to venture beyond the festival fence because of the unexploded artillery shells and land mines. One of my favorite kites was cut by another line and drifted off into the tank run, but no one would risk retrieving it. I tiptoed most carefully while muttering to myself, "Do I really love kites this much?"

The elements play havoc on kite fields, too. In Oostende, Belgium I put up every kite I had brought and anchored them to sand bags. The kites flew gently in a perfect sea breeze, so at dinnertime I decided to leave them to their winds. An hour later, the wind had died, rain began and the tide came up, swallowing the lifeless, wet, sandy kites and delivering them to the outgoing waves. It was a night that almost cured me of kiteflying forever.

In Fanø, Denmark, it took me all day to assemble my kites and get about 15 of them flying marvelously together. The rest of the fliers went to dinner and bed, but I decided to fly all night. Passing teenagers warned me that it was illegal to camp on the beach. Dodging the sweeping spotlight of a police cruiser, I returned to my kite camp and wrapped myself in my Playsail for a beach blanket. By morning light my bed was a very wet nylon sponge, covered with hopping, biting sand fleas.

Recently, at an art/kite event in Palermo, Sicily, we were shown the flying field across from the hotel, a beachfront park developed on reclaimed land. Choosing my particular patch and emptying my kite bags, I noticed a large brown rock in the middle of the field.

Good kite anchor? No, a large, very dead dog. Park attendants argued for several minutes over who would shovel the smelly carcass into a plastic bag.

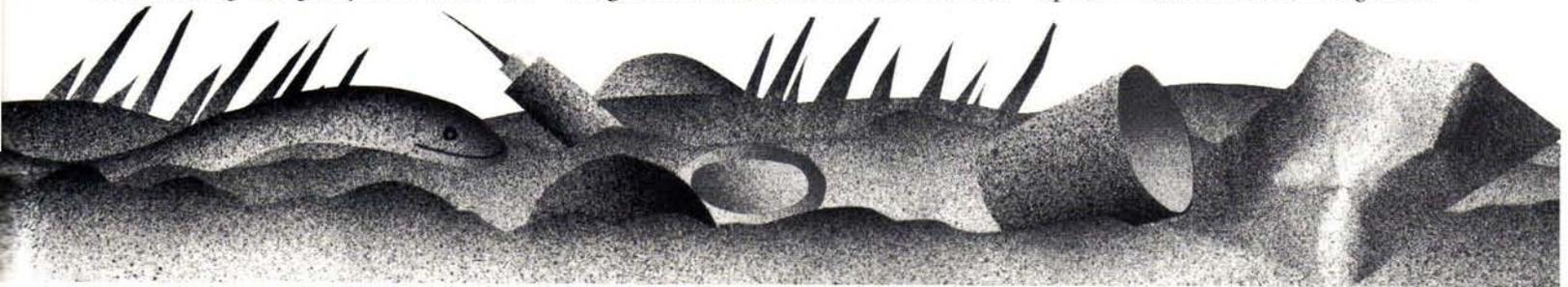
Later, with kites flying in a good breeze, we had time to relax. Only then did I notice hundreds, perhaps thousands, of small, round rubber bands littering the parkways and planters. But they were not rubber bands. We learned the flying field was a sex park by night. Fancy ladies surrounded the hotel and a continual stream of young men in small cars passed by for closer inspection.

I learned a sober grounding lesson when flying kites on Bondi Beach in Australia. Barefoot beach flying has always been one of the finer pleasures for me, but I noticed all the locals were wearing shoes. "A word of advice," said one Aussie flier. "This beach is where the druggies shoot up at night. I'd put my shoes on if I were you."

Then there was the time in the Utah desert when I was lifted up, along with my partner, Spencer Chun of Hawaii, by an out-of-control Wind Bow Arch and deposited into a thorn tree. With a sprained ankle and multiple scratches, I looked like a lion tamer trainee.

Monmouth, England staged a kite festival in a cow pasture. Fliers backing up to loft a kite squished into the dung dangers. Later, when a lightning storm blew through, the ground became charged enough to make some hair stand on end. We pulled the kites down pretty quick that day!

I could also mention mud pits, hot dust bowls, sizzling asphalt, barbed wire and fire ants that not only bite the feet but nibble on fallen lines. My kite optimism still looks upward—but I also watch the ground. ♦



The high-arching Skybow IS IT A ROTOR KITE?

AN ARCH RIBBON? NEITHER? BOTH? BY STEVE McKERROW & VALERIE GOVIG

The National Parks ranger wanted to know what the heck we were doing draping a long, pink ribbon in the trees and all over the lawn at Fort McHenry National Monument in Baltimore, Maryland.

"That's a kite? No kidding?" he responded to the improbable explanation: We were test-flying and photographing a new kind of flying object, the Skybow.

What is it?

"A new kind of rotor-kite," claimed a mid-November posting on the Internet (through the rec.kites newsgroup), by Jim Mallos and Tony Frame. They explained:

"The rotor is a long, narrow tape held in tension between ball-bearing swivels at each end. The wind causes the tape to spin, producing a Magnus-effect lift force that bends the tape up into an arch."

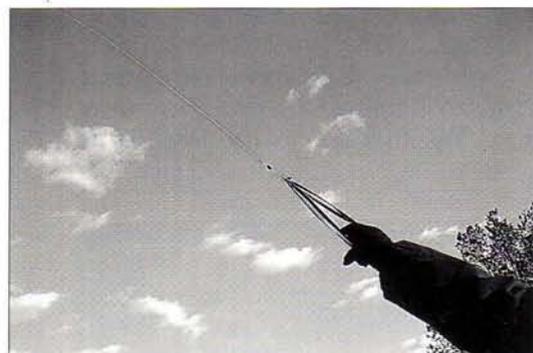
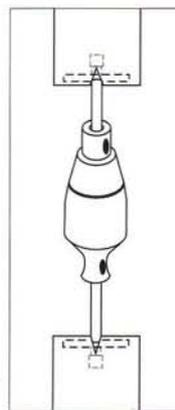
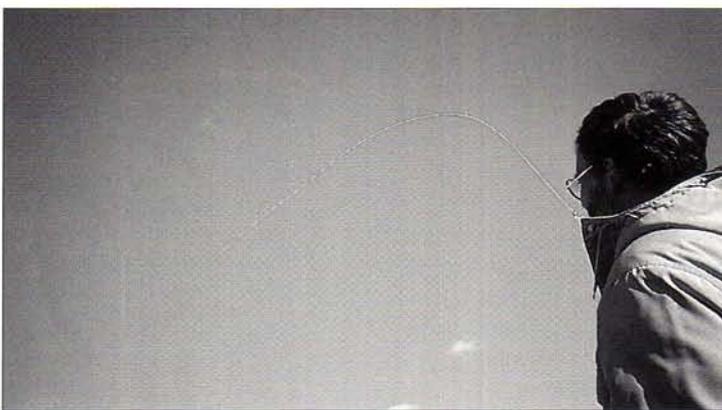
Kite Lines invited the pair from the Washington, DC area to demonstrate the invention, which they have been testing since last February. Conditions were challenging—winds gusting to at least 25 miles an hour and temperatures hovering in the low 40s F. But Mallos and Frame managed to fly in succession two of their Skybows over the grounds of the old fort, whose bombardment in the war of 1812 was the inspiration for Francis Scott Key's "Star Spangled Banner."

Both Skybows eventually broke in the too-strong wind. But we saw them fly long enough to be amazed by the creation, which has been refined through experiences such as we saw.

"We probably have more fun, and learn more, when something breaks," said Mallos. He got the idea for the Skybow from seeing pictures of rotor kites—though he has never flown one—and remembering experiences in the Cub Scouts making a "bull-roarer" noisemaker. Once a popular toy, this is a wooden slat on the end of a string that makes noise when whirled around one's head. (The bull-roarer effect was discussed in *Kite Lines* Winter 1979-80.)

"When we fly it, we both scratch our heads over what to do next," added Frame.

In fact, the 3/8-inch-wide Skybow tape,



THE SKYBOW SYSTEM:

Can you see it? Clockwise from top: Jim Mallos flies the narrow, rotating ribbon—challenging to photograph—arching up from his hand; the rotation depends upon a modified fisherman's swivel (sketched); the swivel connects the kite to a fabric loop handle (in Tony Frame's gloved grasp); the ribbon rolls up around homemade reels, allowing the fliers to walk apart and extend the Skybow for flight.

or ribbon, is a sandwich. The core is colored flagging or surveyor's tape, available from a hardware store—theirs is bright pink, for visibility—pressed between two lengths of clear package tape, stuck together. Mallos, an

engineer by profession with only modest kiteflying experience, devised a special jig to unroll the three elements and press them together easily.

When fully deployed the longest Skybow they have flown, "Mr. Big," is 1,000 feet long, comprising six separate sections of tape joined by ball-bearing swivels designed for use on fishing lines (500-pound breaking load). To assure straight-line symmetry, Mallos removes the snaps and rings of the stock model swivels and drills a 1/16-inch hole in each end, through which he runs a length—1 or 2 inches—of 65-mil weed cutter cord (nylon monofilament). He crimps a band of copper tubing on the end to hold it in the swivel. (This was one of the breaking points in our testing.) At the other end, he forms a "T" by threading the cord through a 1/2-inch length of thicker weed cut-

“WITH THE SKYBOW YOU HAVE THE OPPORTUNITY TO GET CAUGHT IN MORE THAN ONE TREE AT THE SAME TIME.”

ter cord (105-mil) and crimping the end.

This "T" is attached to the ribbon through a slit in an "eyelet" formed by folding over the end of the ribbon and reinforcing the fitting with filament tape.

The pair launched the Skybow after unreeling two sections from makeshift reels, one variety made from cardboard and PVC pipe and the other a plastic reel made for electrical cord. The whole assembly fit into a nylon backpack.

Holding the ribbon perpendicular to the wind, they tweaked the swivels to assure rotation in the correct direction—the top edge must turn downwind or the ribbon will flop to the ground—and the ribbon arched upward. As they unreeled line, the arch grew, rising and falling in a snake-like ballet and emitting a loud and eerie noise, something between a shriek and a moan.

We were reminded of the strips of fiber or tape that make the noisy hummers of a variety of kites in Asia.

"The noise is loudest when you're standing right under the arch," said Mallos, and we found that to be true.

Theoretically, said Frame, the ribbon could be extended to phenomenal lengths, with the fliers at each end out of sight of one another. But their aim is more modest: to produce a Skybow that one person could fly.

"I imagine holding each end in one hand, and having this great shape flying out above you," said Mallos. But so far, they have found there is a limit to how close together the fliers can get before the Skybow collapses. One end can be staked down as a single person walks away unreeling the ribbon until it lofts itself, he said.

"With the Skybow you have the opportunity to get caught in more than one tree at the same time," joked Frame, after the big arch collapsed and did exactly that. The fliers theorized the strong wind was causing the swivels to bind, interrupting its smooth flight.

An advantage to the Skybow when it does get tangled, however, is that one end can simply be detached from its reel, and the whole length can be pulled free.

Mallos said the "sweet spot" for the Skybow seems to be about a 10 mph wind. It needs 6 or 7 mph to take off, and 20 mph and higher seems to be too much.

The innovators have done much of their Skybow testing on The Mall in Washington, sending the arch up against the backdrop of the Washington Monument and other governmental edifices.

"Historical kites go well with this kite, for some reason," said Frame.

Questions, questions...

Anticipating curiosity, Mallos and Frame have included on the Skybow website <<http://www.wizard.net/~jmallos/skybow>>, the answers to some Frequently Asked Questions, such as these:

■ HOW DOES IT WORK?

Have you ever noticed that a dropped card or ticket stub can start spinning and glide away from you as it falls? The Skybow swivels allow it to spin the same way.

■ WHY DOES SPINNING MAKE IT GO UP?

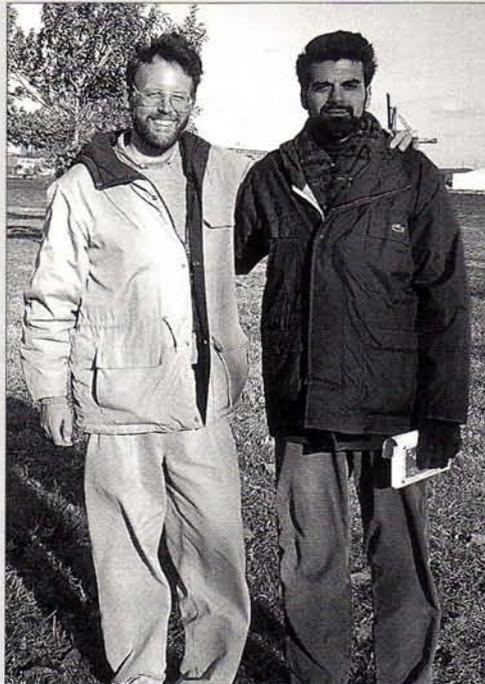
That's a subtle question, but it's basically the same reason a spinning ping-pong ball takes a curved flight. It's called the Magnus Effect. [Named for German scientist H.G. Magnus, it describes the generation of a sidewise force on a spinning cylindrical or spherical solid immersed in a fluid (liquid or gas) when there is relative motion between the spinning body and the fluid, according to the *Encyclopedia Britannica*. It also affects such things as the trajectory of artillery shells.—Editor]

■ WHY DOES IT MAKE THAT EERIE SOUND?

The aerodynamic forces always act nearly at right angles to the ribbon face, but the ribbon is constantly turning. This produces a rapidly varying reaction against the air and sound is the natural result. Since the ribbon has two faces, the frequency of the sound is twice the spin rate.

■ HOW CAN I GET ONE?

Right now you'll have to make your own. We hope to have a commercial version available soon.



KINDRED SPIRITS: Skybow fliers Jim Mallos, left, and Tony Frame met at church and now meet for kite experiments on the flying field.

But is it a KITE?

Looking at the Skybow for the first time, we at *Kite Lines* immediately recognized it as a kite. No question. But other people might not see that.

We all think we "know" what a "kite" is. But can we put it in words? Many have tried. We went shopping to find the perfect published definition, and had some trouble. Here is what we found:

ONE. Paul Siemsen wrote in *Kite Lines* (Summer-Fall 1995) a definition that created as much controversy as satisfaction:

A kite is a device which attains position in the relative flow of a fluid medium by being connected nonrigidly to a relative anchor(s), and by constantly presenting an

upwind face(s) which deflects the medium's flow. The device must be capable of attaining a position which is off gravity's ground.

Our opinion? Complete but too laborious.

TWO. Our friend A. Pete Ianuzzi, responding to the Siemsen definition, wrote a much more compact one:

A kite is a device which flies in a relative wind, in opposition to gravity, on a tether.

Our opinion? Compact, but not quite complete.

THREE. *The World Book Encyclopedia* gives a definition (contributed by Valerie Govig to the standards of the book):

A kite is an object that is flown in

INNOVATIONS

[Continued]

the air at the end of a line.

Our opinion? Too baby-simple.

FOUR. The *Encyclopedia Britannica* contributes an unsigned definition:

Kite, heavier-than-air soaring contrivance, used for sport or recreation, made of a light frame of varying shape covered with paper, plastic or cloth and attached to a long cord held in the hand or wound on a reel or drum, to be sent up into the air by means of its resistance to the wind.

Our opinion? Whew! And it's still not up to date. (What about frameless soft kites?)

FIVE. The *Encyclopedia Americana* includes a definition by Will Yolen and Caleb Crowell:

Kite, a heavier-than-air flying device that gets its lift from the action of the wind and is controlled from the ground by one or more lines.

Our opinion? A good middle ground, but still incomplete.

SIX. From the revered *O.E.D. (Oxford English Dictionary)* comes the following:

Kite [From its hovering in the air like the bird.] A toy consisting of a light frame, usually of wood, with paper or other light thin material stretched upon it; mostly in the form of an isosceles triangle with a circular arc as base, or a quadrilateral symmetrical about the longer diagonal; constructed (usually with a tail of some kind for the purpose of balancing it) to be flown in a strong wind by means of a long string attached.

Our opinion? Dictionaries provide some of the worst definitions.

SEVEN. We looked at several other dictionaries, all with very similar definitions of kite. For example, here's the version in our office copy of the respected *Merriam-Webster's Collegiate*:

Kite: a light frame covered usu. with paper or cloth, often provided with a balancing tail, and designed to be flown in the air at the end of a long string.

Our opinion? Way out of date.

So what to do?

Shall we try our own *Kite Lines* definition? Here's one slimmer than Siemsen's but fuller than Ianuzzi's:

A kite is a heavier-than-air device which flies or attains position above its anchor(s) in a relative wind by means of its tether(s) and its design. The kite deflects the flow of air and constantly presents its face(s) to the air.

REMEMBER THE SKYRO-PLANE?

The Skybow reminded us of the frequent reinvention of the rotor kite, which has inspired more than 20 patents since 1913.

Perhaps the best known were Jesse Donaldson's rotor of the '50s, Stanley Albertson's Rotoki from the '60s and Sam DaVinci's "UFO," still around since the '70s. All use the same Magnus forces as the Skybow.

Imagine our delight when, during preparation of this article, we happened to find in an antiques store a fascinating toy from the 1950s. Made by Marxman and produced beginning in 1951, the Skyro-plane is an airplane of thin, light metallized plastic, whose 18-inch-span wings rotate in the wind around a thin wire. A snap swivel on the underside of the body accommodates a string from a 15-inch-long wood rod and reel. Instructions claim a potential altitude of 1,000 feet, and even suggest flying several in train. We found this one still flies, noisily and well!

We also found the Skyro-plane in our archive of kite patents, as the "Tethered Toy Airplane," patented April 22, 1952, #2,593,979 by Jack Calhoun of Long Beach, California. It also seems a clear predecessor to the Flying Dutchman, a rotor kite we reviewed in *Kite Lines*, Fall 1994. Less obviously, it is one of many predecessors to the Skybow.

The verdict

By our own definition, we declare the Skybow to be a kite.

The most obvious qualification is that it rises above its anchors. And although the face it presents to the air is constantly (and rapidly!) changing, a face is nevertheless constantly presented.

Face and back take turns deflecting the airflow, but they are switching roles at such a high speed that one cannot identify a front or back with the human eye, which sees only a blur. (A camera with a fast shutter speed is needed to "stop the action.") The whirling is, of course, normal behavior for any rotor kite using the Magnus-effect design.

We describe the Skybow as a combination of a rotor kite and an arch ribbon, both of which have been established as kites. The Skybow is a faster-turning than average rotor and a thinner and longer than average arch ribbon—all in one kite.

A fanciful argument could be made that the Skybow is the world's longest rotor kite. Perhaps by area it could be the largest rotor kite, too. But we leave that for another discussion. It's enough that this is a real innovation in kites.

And it seems so simple! ♦

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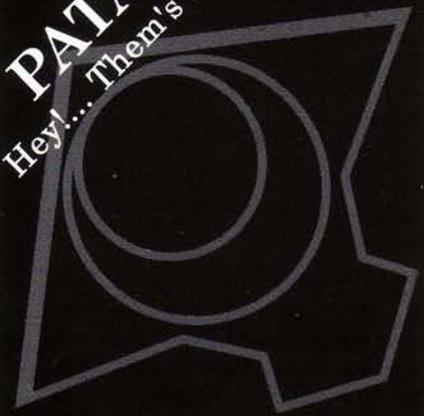
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IT WORKS FOR ME



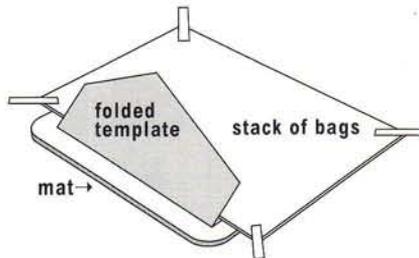
Smooth sledding, slick winding

ONE MEASURE ONCE, CUT MANY

From Carolyn Robbins, Pylesville, Maryland:
For a kite camp where we made sled kites for up to 100 participants, I found ways to speed the process.

Make a template from poster board, in two equal halves. Tape them together so you can put a folded plastic bag in the center, close the template and confine the bag in place while you cut.

For multiple skins, tape a closed plastic bag to a table at all four corners. Tape additional bags *exactly* over the first. (I was able to make a sandwich of eight bags.) Slip cutting mat and half of template under the

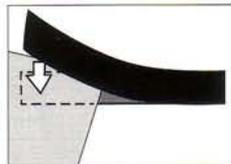


bags, fold template closed and cut through all thicknesses with a rotary cutter.

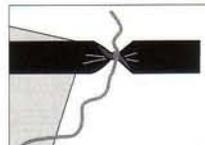
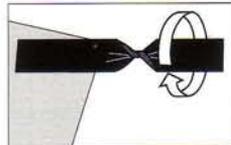
With large bags, you might be able to use a second template in a similar manner on opposite side of stacked bags, to produce 16 sails at one cut!

TWO MAKE A BRIDLE POINT

From "Dr. Hvirvelvind," Copenhagen, Denmark:
Strips of 1-inch-wide tape make bridle attachment simple. Use a 6-inch (or longer) length of tape, fold it in half over corners of the sled, make a crimp in the tape by twisting with

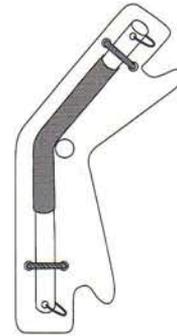


your fingers and attach the bridle line at the crimp with a secure knot.



THREE STORE LINE WITH HANDLES

From N.J. Ferkin, Gloucester, England:
Do you have problems unwinding and storing quad lines? I did, until I made my own winder-and-handle system.



I thought, why not store right and left line pairs separately, on a winder that also accommodates attachment of the handles?

Drill four holes as shown in plastic quad winder and tie in short lengths of bungee cord,

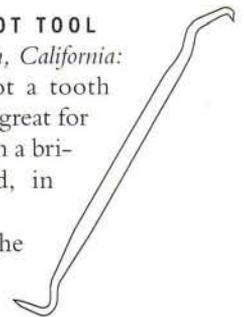
to anchor the ends of the handle. My method is to wind each pair of lines from the kite back to the handle, then insert handle under the elastic.

From time to time I change ends of the handle to prevent any wear in any one particular place on the lines.

FOUR CARRY A KNOT TOOL

From Tom Davis, Auburn, California:
From my dentist I got a tooth cleaning tool. It works great for untying knots, such as in a bridle or, heaven forbid, in tangled kite lines.

I have several, but the one shown here works best for me.



FIVE LAY IN A WAX SUPPLY

From Jerry Sibley, Sacramento, California:
I use a lot of beeswax on my kite lines and bridles.

I went to a plumbing supply house and got a wax ring used to install toilets. A lifetime supply for \$1.00!

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Bhanu Shah, alive!

To borrow the often-quoted line from Mark Twain: The reports of the death of Bhanu Shah have been greatly exaggerated.



Kite Lines is chagrined—but delighted—to report that in our last issue the obituary of the Indian kitemaker who founded the Ahmedabad Kite Museum was in error.

Correspondent Tal Streeter, who had reported the sad news, writes:

The flurry of telephone calls and faxes advising me that Bhanu was indeed still alive caused a great rush of emotions: joy that he was still walking the earth, followed immediately by the embarrassment of having falsely reported his death.

The news of Bhanu's "death" was a subject of conversation for kitefliers attending the January, 1997 Jodhpur kite festival. Indian journalists attending picked up this account and reported it in their newspapers.

My friend, Asghar Baylim called his kite customers in Ahmedabad and the report was confirmed, whereupon he had written me.

In his latest letter, Asghar wrote he was very distressed by his part in this, but "absolutely happy" to have talked recently with Bhanu by telephone. "The news of his death, it turned out, was gossip reported as truth," Asghar said.

After several days attempting to contact him, I was successful in hearing Bhanu's voice on the telephone, recognizing it and knowing it was truly my old friend. He told me he had been terribly ill for almost six months, presumably the reason for the mistaken rumors of his passing.

As a modest compensation for my error, I proposed to Bhanu that he take up his pen and write *my* obituary for Indian journals, explaining that I had died from the shame of this. Both of us could then have our subsequent obituaries catch people up to date on the intervening years, with the statement, "...for previous life accomplishments, please see earlier obituary..."

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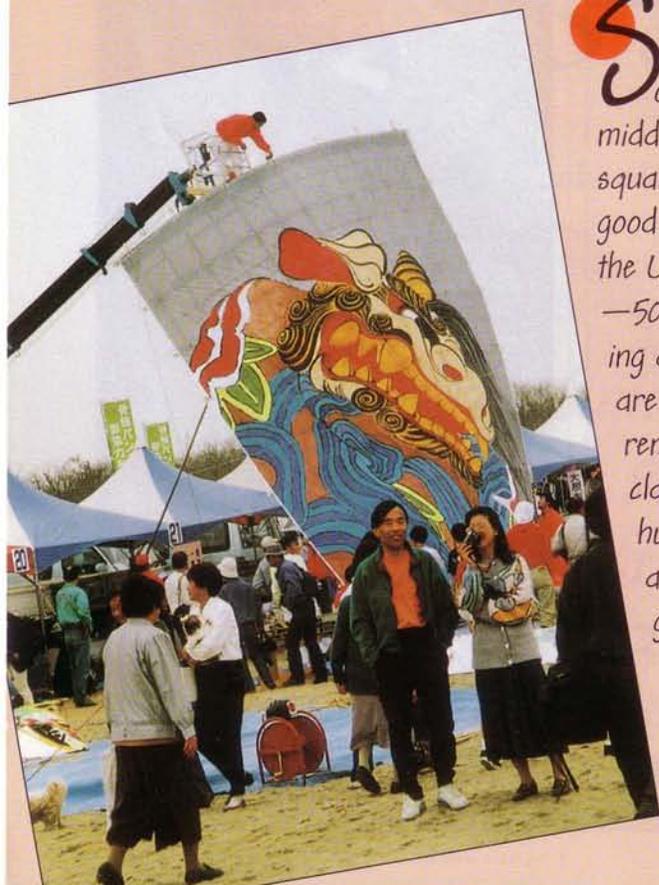
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POSTCARDS



A performance on traditional taiko drums highlights the formal party opening the festival. When flying begins, "the ultimate kite accessory," a cherry picker, raises the largest kites for launching.



So here I am, standing in the middle of the field with a 50-square-foot parafoil, feeling pretty good about nicely filling a piece of the Uchinada skyline, when whoosh! —50 Japanese are suddenly bearing down on me at a full run. They are dragging the kind of rope I remember trying to climb in gym class, and at the end, a few hundred feet back, is a bamboo and washi paper kite. It easily goes three stories tall. Everyone is straining, yelling, and laughing as they coax another breathtaking "tako" (kite) into the sky.

Me? I run, too, trying to stay out of the way!

The annual Japan Kite Association gathering at Uchinada (the first weekend in May) is a kiteflying frenzy. Most of the traditional festivals here focus on one geographical area and one type of kite. But the JKA festival draws fliers and kites from around the country.

I am overwhelmed every time I come. Hundreds of huge warriors, kabuki characters, and animals stare down from a sky positively littered with breathtaking kites. Noisy hummers make the field

FROM UCHINADA...

sound like the deck of an aircraft carrier. People everywhere are dressed in hapi coats and traditional costumes.

The Japanese are the best hosts in the world. Teams and local clubs set up tents along the edge of the beach and haul out cooking gear, food, beer and sake. Stop to say hello and you'll be offered lunch. Admire a kite too closely and it may be offered to you, as well!

Last year, someone poured me a drink. They giggled as I sipped what seemed like warm prune juice. "Fresh turtle blood. Makes you strong and sexy!" they told me.

"Great! But my wife is 5,000 miles away," I replied, and we all laughed. (Susan is with me this year.)

International guests stay in a traditional Japanese ryokan inn with several Japanese friends. The food is exquisite. We sleep on futons in communal rooms, share group baths (single-sex), and experiment with Asian squat toilets.

The festival seems unbearably short, starting with taiko drums at a formal welcome party, and ending with speeches the next afternoon. Back in Tokyo, we gather at one last Sayonara Party. But the title is a misnomer. In Japan, kitefliers don't say "goodbye." We say "mata ei mashoe"—see you again soon!

—DAVE



Susan Gomberg shares a photo op with Masaaki Sato, the premiere maker of bee kites in Japan. In her hand is his newest design, a delicate butterfly kite.



Stepping softly in stocking feet, a flight crew member stands on the back-side of a huge washi and bamboo kite, setting the bow lines.



A young flier maneuvers a hummer-fitted tahara fighter kite (as held by the flier behind), while a helper tends the flying line coiled in a woven basket.

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Saturday and Sunday, April 18 and 19
Family Fun Days ♦ 10 am to 6 pm

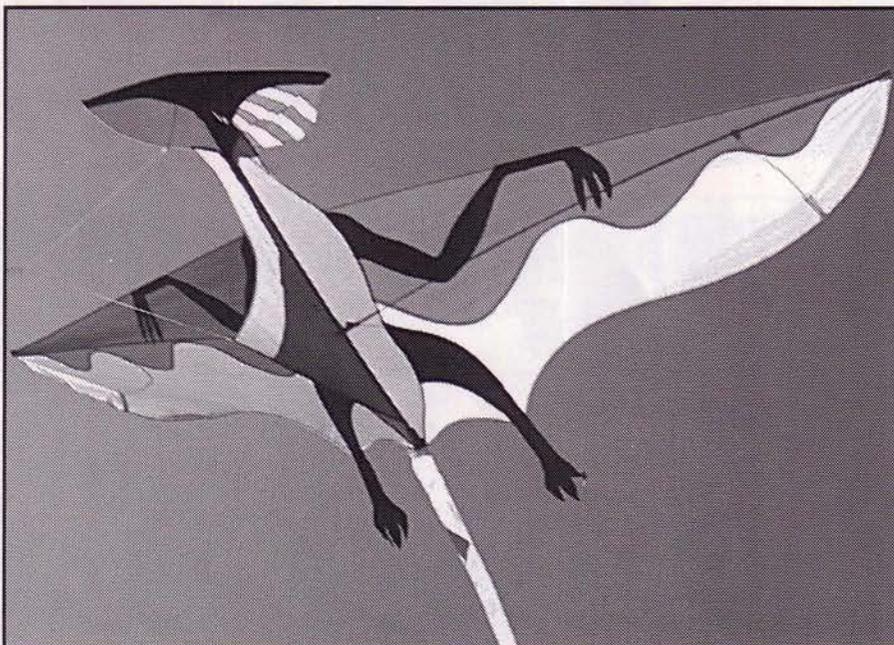
Highlights

- ♦ Show kites of many nations, some as big as a house!
- ♦ Free Kids Kite Academy and kite building classes with kite masters from Australia, Brazil, Denmark, France Germany, Japan and all across the USA.
- ♦ Hourly candy and toy drops from kite piñatas
- ♦ Handmade kite contests for kids (K-12)
- ♦ Kite buggy rides, wind and kite power on the sand
- ♦ Caribbean showcase of traditional kites from Haiti, Jamaica, Cuba, Grenada, Puerto Rico, Dominican Republic and the Bahamas
- ♦ Kite ballet and precision team flying
- ♦ "Get High on Kites, Not Drugs!" ceremony with kids and police

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Charming cartoons, excellent drawings and lovely full-color photos. Limited supplies. Softcover, 80 pp., \$29.95

OUR LOVELIEST BOOK—OF BEE KITES

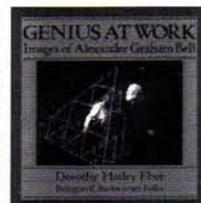
Nagoya Koryu Dako (Traditional Nagoya Kites) by Masaaki Sato, in Japanese. The author is perhaps the world's best maker of bee kites. In this elegant, understated, cloth-bound, gold-embossed volume, he presents color photos of about three dozen kites—not just bees. Black-and-white photos and drawings detail his techniques for splitting and shaping the bamboo he uses for his kites and their hummers. Hardcover, 64 pp., \$49.95



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 Hargrave kites of moderate size. Softcover, 25 pp., \$14.95
Both books as package, \$34.95

Canada . . .

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



Fishing for Angels: The Magic of Kites by David Evans. A very pretty book with color illustrations throughout.

Great kite lore, of narrative tales. The book flying tips, too—just avoid any kite plans at the back. 63 pp., \$12.95



Go Fly a Kite: The Kite Builder's Manual by John Bostel. Attractive book with plans for 12 novel kites,

such as the Sailboat, Man and Windmill. Drawings are charming but lacking in dimensions; techniques described are reliable but old-fashioned. Softcover, 80 pp., \$12.95

From England . . .



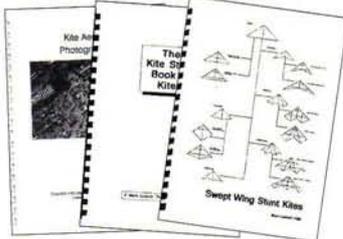
A Beginner's Guide to Flying Indian Fighter Kites by Shirley Turpin. A well-compressed compendium of good advisories, gleaned from expert Stafford Wallace. Simple but adequate black and white drawings. Softcover, 18 pp., \$4.95



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 good kite plans and building tips, best for experienced makers. Softcover, 70 pp., \$16.95



Mark Cottrell's books are self-published and homely—but at the same time they are honest, entertaining and useful: *Kite Aerial Photography*. Three kite plans and a comparison study of trade-offs in rigs, with source lists. Softcover, 44 pp., \$10.95
Swept Wing Stunt Kites. Design elements (shapes, frames, sails, weight, brides) analyzed by a knowledgeable kitemaker; 4 plans. Softcover, 43 pp., \$11.95
The Kite Store Book of Kites. 10 original Cottrell kite plans (such as the MultiJib) plus 5.25" disk for computer design. Softcover, 48 pp., \$13.95

Kite Lines Bookstore

THE BEST CATALOG OF KITE BOOKS, ANYWHERE

If it's in print about kites, chances are we have it—the common, the rare, the foreign, the domestic, the informative, the artistic. We strive to carry ALL kite titles available anywhere around the world—many that are hard to find—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. We provide prompt shipping from our well-maintained inventory. But be warned: Kite books often go out of print unexpectedly. Snap up your choices now!

OUR LOVELIEST BOOK—OF BEE KITES

Nagoya Koryu Dako (Traditional Nagoya Kites) by Masaaki Sato, in Japanese. The author is perhaps the world's best maker of bee kites. In this elegant, understated, cloth-bound, gold-embossed volume, he 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 for his kites and their hummers. Hardcover, 64 pp., **\$49.95**



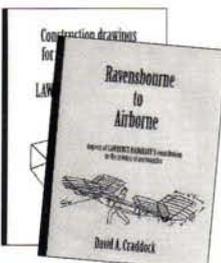
From Australia . . .



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 "Skyvelope." 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 Hargrave kites of moderate size. Softcover, 25 pp., **\$14.95**
Both books as package, **\$34.95**

From Belgium . . .

PRICE BREAK! *Aerial Photographs Taken from a Kite* by G. de Beaufort and M. Dusariez, in English. History, systems, photos from the KAPWA Foundation archives. Includes a reprint of Batu's 1890 book. Softcover, 145 pp., **\$36.95**



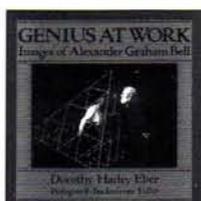
From Bermuda . . .

Bermuda Kites by Frank Watlington. Plans for five island kites, plus variations and hummers. Traditional methods (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 his huge ring kite—plus reminiscences from 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* is a detailed account of everything that can go wrong in an altitude effort. Softcover, 72 pp., **\$15.95**
Stunt Kite Basics covers safety, social aspects, equipment and maneuvers

(32 in all) in detail. Reads like an instructor talking at your elbow. Competition emphasis. Softcover, 142 pp., **\$15.95**



A very popular video + companion book:
Kite Crazy (the book) by Carol Thomas. Plans for fighters, dual- and quad-liners. Trustworthy text, black-and-white drawings. Softcover, 176 pp., **\$32.95**
Kite Crazy (the video) by SOMA Film & Video. Famous

fliers teach 1-, 2- and 4-line kiting. Clear, informative instructions and lovely footage, VHS format, 102 min., **\$44.95**.
Book and video as package, **\$57.95**



Fishing for Angels: The Magic of Kites by David Evans. A very pretty book with color illustrations throughout.

Great kite lore, in the form of narrative tales. The book offers good flying tips, too—just avoid the three easy kite plans at the back. Softcover, 63 pp., **\$12.95**



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From China . . .

NEW! *Chinese Kites: Their Arts and Crafts* by Wang Xiaoyu, in English. Although 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** (Note: Temporarily out-of-stock; new shipment expected in May.)



From Denmark . . .

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, excellent drawings and lovely full-color photos. *Limited supplies*. Softcover, 80 pp., **\$29.95**

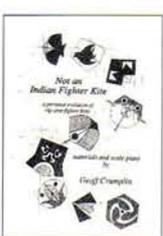


From England . . .

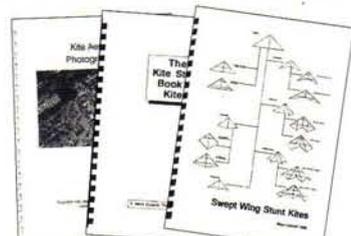
A Beginner's Guide to Flying Indian Fighter Kites by Shirley Turpin. A well-compressed compendium of good advisories, gleaned from expert Stafford Wallace. Simple but adequate black and white drawings. Softcover, 18 pp., **\$4.95**



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 good kite plans and building tips, best for experienced makers. Softcover, 70 pp., **\$16.95**



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Kite Aerial Photography. Three kite plans and a comparison study of trade-offs in rigs, with source lists. Softcover, 44 pp., **\$10.95**
Swept Wing Stunt Kites. Design elements (shapes, frames, sails, weight, bridles) analyzed by a knowledgeable kitemaker; 4 plans. Softcover, 43 pp., **\$11.95**
The Kite Store Book of Kites. 10 original Cottrell kite plans (such as the MultiJib) plus 5.25" disk for computer design. Softcover, 48 pp., **\$13.95**

England continued . . .

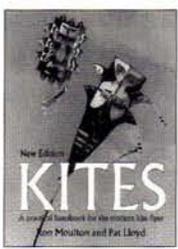


Box Kites Making and Flying by Dr. Bill Cochrane. Plans for 17 types: Hargrave, Conyne, tetrahedral plus three Cody styles. A little history and aerodynamics; building methods out of date. Color photos, attractive layout. Hardcover, 96 pp., **\$34.95**



Kite Cookery by Don Dunford (of the Dunford Flying Machine). Has plans for four kites; building methods; how to design; plus Dunford's idiosyncratic aerodynamics ("the wind is like...giant sausages"). Softcover, 47 pp., **\$5.95**

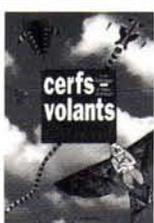
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NEW EDITION! Kites: A Practical Handbook by Ron Moulton and Pat Lloyd. First published in 1992, this extensively improved edition aims to keep pace with the changing technology of kiting. It offers 8 new kite designs, including 2 Cody kites, the Circoflex and the Brogden; also has the Hewitt Flexkite, Pearson Roller and several stunt kites. The drawings are excellent; pages of color photographs have been increased. Good sections on knots, flying techniques and parachuting teddy bears. Updated appendixes. Softcover, 240 pp., **\$31.95**

From France . . .

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, Bodóczyk, Cottenceau, Peters and Gressier, including interviews and beautiful examples of work. Softcover, 126 pages, **\$44.95**



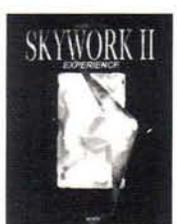
NEW! Les cerfs-volants, les connaître, les piloter, les construire (Kites, knowing them, flying them, making them) by Yan Williams, in French. Small and unpretentious, this pretty introduction covers a lot of territory in well-compressed style. Color throughout, including many photos and very clear drawings.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



Photographie Aérienne Avec Cerf-Volant: Comment S'y Prendre? (Kite Aerial Photography: How Is It Done?) by Christian Becot, in French. Some practical methods of kite aerial photography as used in real life by the author. Includes drawings of systems and details, plus a bibliography—but no kite plans and just two aerial photographs, on the 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 original plans for 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**



Neue drachen zum Nachbauen (New Kites to Replicate) by Werner Backes. Compact and reliable, packed with good ideas, instructions, color photographs and fine drawings. Plans for 20 kites (including a diamond stunter) from available materials (good for workshops). Plans for winders, windsocks and a clinometer, plus knots and kiteflying techniques. Softcover, 128 pp., **\$7.95**



Books by Hans Snoek, in German 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 for individuals and teams. Also has 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, from simple to complex, including Prof. Waldof boxes and original Accascina designs. Some color pages, many useful black-and-white drawings, full appendixes. 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 or adults working with them. Also good for newcomers to kitemaking. Plans for 13 paper and wood stick kites carry clear, accurate and colorful illustrations. Softcover, 48 pp., **\$19.95**

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



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. With some political overtones, it is kiting's only gloomy book. Includes a few drawings and plans of biodegradable ethnic kites, including a Vietnamese, a Te-Take from Palau, a fringed Dominican hexagon and others, such as basic deltas and an Eddy—plus poems and flying tips. Softcover, 125 pp., **\$42.95**

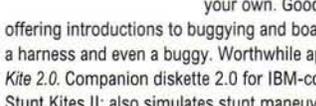


Drachen: Spiele mit dem Wind (Kites: Playing with the Wind) by Rainer Neuner, in German. A very attractive introductory book, with many color photographs. Good sections on knots and line, tools and construction materials, as well as plans for eight one-line kites—among them several genki variants, a yakko, an Edo and a swallow. It also contains instructions for five wind toys, including a basket and a banner, geared to Swiss conditions (light winds). Minimal appendixes. Hardcover, 131 pp., **\$39.95**

From The Netherlands . . .



Two popular stunt kite books by Servaas van der Horst and Nop Velthuizen, in English, cover many aspects of the sport in up-to-date high-tech style. Well organized and printed, the books contain excellent drawings and photographs, including some in color: *Stunt Kites to Make and Fly*. The first book includes clear plans for 10 stunters, including one quad-line and two soft kites. Section on basic setup and flying techniques is especially good on line selection and management, and also includes team flying. Softcover, 96 pp., **\$21.95**
Stunt Kites II: New Designs, Buggies and Boats. Plans for 8 kites, both sparred and sparless, including the unusual "Quadriphant" pink elephant—plus advice on designing your own. Good chapter on aerobatics. Emphasizes traction kites, offering introductions to buggying and boating with kite power. Includes plans for handgrips, a harness and even a buggy. Worthwhile appendix material. Softcover, 96 pp., **\$22.95**
Kite 2.0. 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**



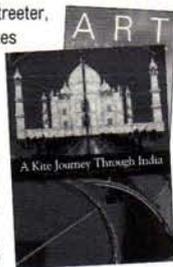
From the United States . . .

A Kite Journey Through India by Tal Streeter, in English. Absorbing kite travelogue 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**

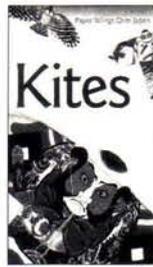
Art That Flies by Tal Streeter and Pamela Houk. Attractive anthology of kites and ideas from a 1990 Dayton (Ohio) Art Institute exhibit. No plans. *Limited supplies.*

Softcover, 139 pp., **\$15.95**



NEW! *Kites: Paper Wings Over Japan* by Tal Streeter, Scott Skinner, Masaaki Modegi and Tutomu Hiroi. This lovely, colorful survey of Japanese Kites covers a wide swath, including history, many photos and kite-maker profiles—as well as information on where to view and buy Japanese kites. With appendices.

Softcover, 96 pp., **\$18.95**



Books by Margaret Greger are clear and trustworthy, ideal for beginning or expert kites: *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 kites. Clear

writing and diagrams explain stability, scaling, the subtlety of the fighter kite and how to make two simple kites. Charming cartoons. Softcover, 56 pp., **\$12.95**



Kiteworks by Maxwell Eden. Revised edition. Hefty book with 50 kite plans (such as Yakko Stakk, Kaleidakite, Tri-D Box, Pterosaur). Drawings and writing based on material provided by leading designers. Sewing, aerodynamics, accessories and (un)related stories. Kite paintings and a few photos in color. Appendices 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, most popular Rowlands work. Plans for 11 kites, plus five windsocks, five drogues and two bags. Softcover, 104 pp., **\$14.95**

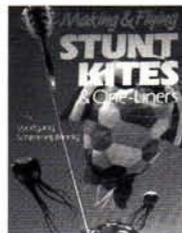
The Big Book of Kites. (British *Making and Flying Modern Kites*.) Plans and techniques for 36 kites on the simple side. Softcover, 127 pp., **\$14.95**

One-Hour Kites. (Same as *British Kites to Make and Fly*.) Includes plans for 25 kites including the Facet and three stunt kites. Softcover, 95 pp., **\$14.95**

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



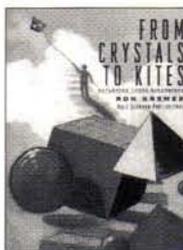
Making & Flying Stunt Kites & One-Liners by Wolfgang Schimmelpfennig, in English. Wide-ranging and up-to-date, with superb color plans for six stunts and three one-liners. Some translation oddities. Softcover, 80 pp., **\$12.95**



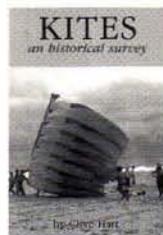
Books by David Gomberg are "homemade," lacking photos, but useful: *Sport Kite Magic!* His best yet has clear writing covering the newer tricks and indoor flying. Softcover, 126 pp., **\$13.95**

Stunt Kites! Thorough coverage of the basics plus advice from 20 top fliers. No plans. Softcover, 88 pp., **\$10.95**

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



NEW! *From Crystals to Kites* by Ron Kremer. 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, made from drinking straws, tape and paper. Softcover, 102 pp., **\$10.95**

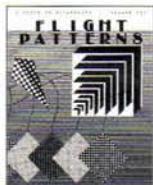


Kites: An Historical Survey by Clive Hart. Revised, second edition (1982). Valuable in-depth reference work includes many black-and-white illustrations and photographs. Has the most extensive kite bibliography in print. Good index, no plans. Now in hardcover only, 210 pp., **\$29.95**



NEW! *The Creative Book of Kites* by Sarah Kent. Kiting newcomers will find good support in this pretty book, and seasoned kites 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. A modest, accessible book from a well-remembered kiter. Solid tips and easy, well-illustrated plans for eight kites—including a rotor made from foam meat trays. 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 basic dual-line techniques plus the Revolution. Included are rudiments of team flying, choreography, music selection and three complete ballet programs. Good diagrams of maneuvers; friendly tone, touches of humor. Self-published; many low-grade photos. Softcover, 182 pp., **\$14.95**



The Usborne Book of Kites by Susan Mayes. A cute, practical collection for kids (or adults working with them). Six easy kites, with well-illustrated instructions. Nice introduction to materials and flying. Many helpful tips and lively color drawings. Softcover, 32 pp., **\$6.95**



Books by Bill and Kim Taylor suffer from self-publication flaws, but enthusiasm is high. **NEW!** *Put the Wind In Your Hands*. Good, very basic help for dual-line beginners. Clear diagrams, no advanced tricks. Softcover, 48 pages, **\$4.95**

Flying the Rev and How To Do It. Advice and reassurance for new fliers of quad-liners. Good wind window section. Softcover, 118 pp., **\$9.95**



Make Your Own Kite (new kites) by John W. Jordan. Clear plans for nine original kites made of unusual materials, such as plastic foam and computer cards. Amusing reading from a genuine enthusiast. All black-and-white, some photographs. *Now in hardcover only; limited supplies*, 90 pp., **\$14.95**



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

BARGAIN CORNER!

Two books (not shown) by Wayne Hosking, uneven in style: *Kites*. Lavish color, good research on 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, ele-

phant, 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**

Ski the Beach (not shown) by Stan Rogers. All about sand skiing with kites, the only book on this topic. Safety concerns are emphasized throughout. Loads of charts, scads of black-and-white photos. Homemade layout and drawings. Softcover, 100 pp., **\$13.95**

Multimedia kite products!

The wide-ranging system of dual-line instruction by Dodd Gross has everything but the classroom:

Flight School 1.5 "The Basics," Flight School III "Tricks" and Flight School IV "More Tricks" (the videos). These most popular tapes coach fliers from beginning setup and initial flights through such advanced tricks as the Cascade and Helicopter. Covers indoor and light air flying too. Running times: *Flight School 1.5*: 23 min.; *Flight School III*: 30 min.; *Flight School IV*: 28 min., **\$19.95 each; \$54.95 all three**



Trick Flight School (the book), by Dodd Gross & Paul Kappel, in German and English. A companion volume to the videos, this pocket-sized field book puts the progression of tricks into words and presents a unique graphic representation of the body movements required to perform them. Softcover, 80 pages, **\$9.95**

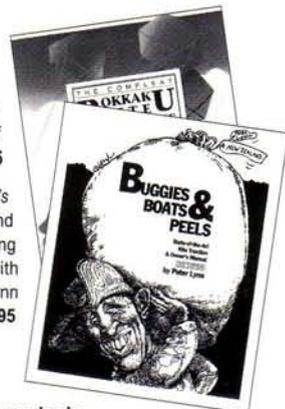
Australian Kiting, edited by Peter Batchelor, a CD-ROM for PC or Macintosh computers. Includes the collected newsletters and other archival materials of the Australian Kite Association, dating to 1978, plus AKA website. Good kite matter includes many plans, tips, classroom uses for kitemaking and more than 100 color photos of Australian kites and kites, **\$19.95**



Fun kite stuff!

The Compleat Rokkaku Kite Chronicles & Training Manual. Everything about the evolution in America of rokkaku challenges since their start in 1983. Reprinted historic material from Kite Lines, plus plans for a 7 1/2-foot rokkaku and two smaller variations, using modern materials. 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, including history, theory, basic techniques, racing tactics, kite selection, maintenance. Boat traction treated with similar thoroughness. Includes complete data on the Peter Lynn Peel. Second edition, softcover, 12 pages, **\$6.95**



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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.

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■ **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.

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■ **NOTE:** Endangered issues (in italics): \$10 each, free shipping

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■ **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 Velthuisen, 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: Jorgen Møller Hansen.

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

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

■ **WINTER 1993 (Vol. 10, No. 3)**

North Sea events (Terschelling, Fanø, Scheveningen); kite

camp caravan; Rendez-Vous Mondial, 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)**

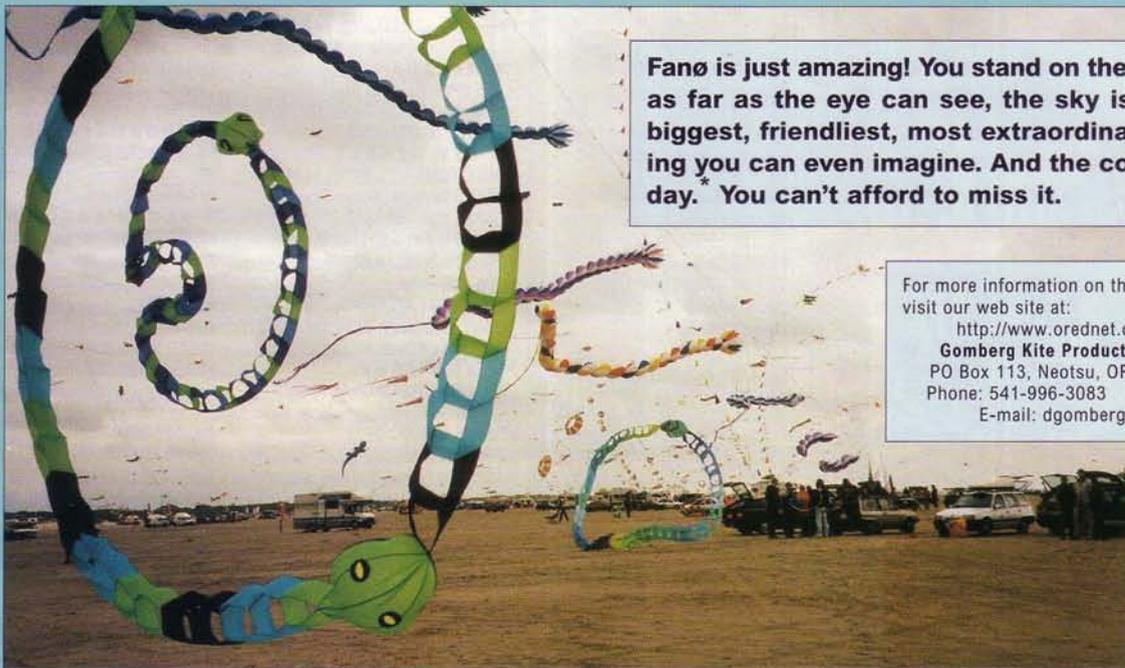
Kites in museums; Gibson Girl box rescue; a blessed Dieppe; why kites fly; the Korea International Kite Festival; fighter kites of Hong Kong; SG: Oscar & Sarah Bailey.

■ **SPRING-SUMMER 1997 (Vol. 12 No. 3)**

The Tosa Dako of Japan; touring India with Tal Streeter; the buggy breed; George Lawrence kite photography controversy; the Cartagena bubble machine; SG: Jon Burkhardt.

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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:

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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.

Have it all! **KITE LINES** and **KITE TALES** on microfiche, \$85.00 each complete set; per issue, \$3.00 each for *Kite Lines*, \$2.50 each for *Kite Tales*. The original AKA journal was *Kite Tales*, created by Bob Ingraham in 1964. All 40 issues are full of news, plans and historic material no longer available in print. The successor journal, *Kite Lines*, represents 46 issues published over the past 20 years. When copies of *Kite Lines* sell out, a microfiche version is offered, so new enthusiasts can take a crash course in kiting with this treasure chest of information. Microfiche is available from the Kite Lines Bookstore.

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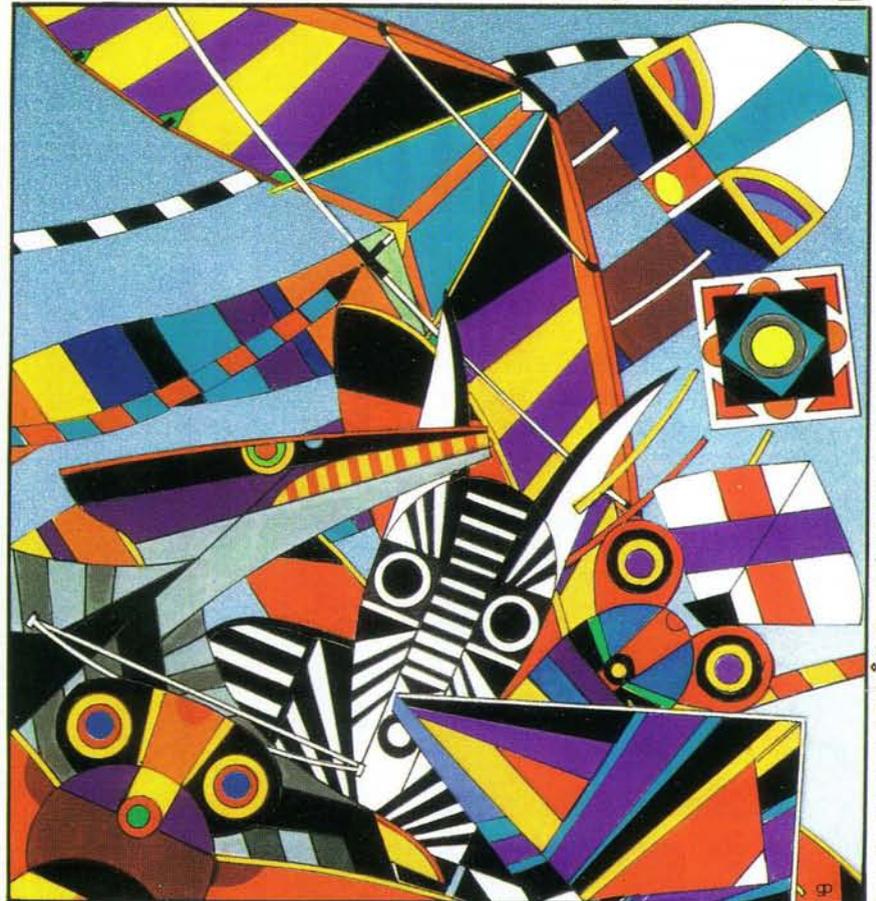
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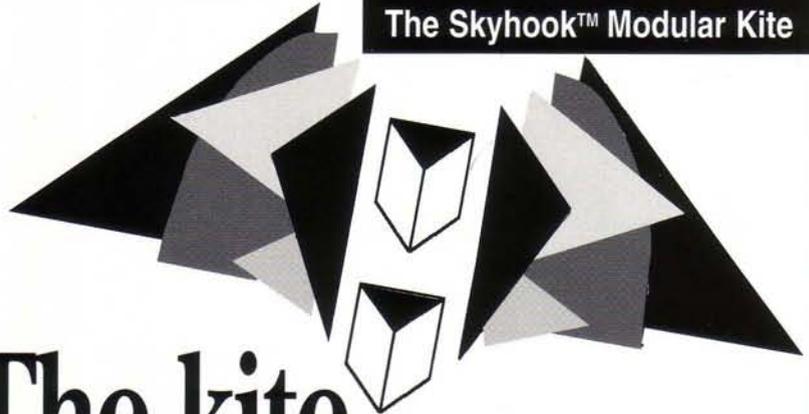
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THE TINY KITES OF GUY & CLAUDETTE GOSSELIN

KITEMAKERS: Guy & Claudette Gosselin, Aspres sur Buech, France

OCCUPATION: Now full-time kitemakers; Guy was previously a jazz and jazz-rock drummer and Claudette a secretary

KITEFLYING EXPERIENCE: Seven years of kiting

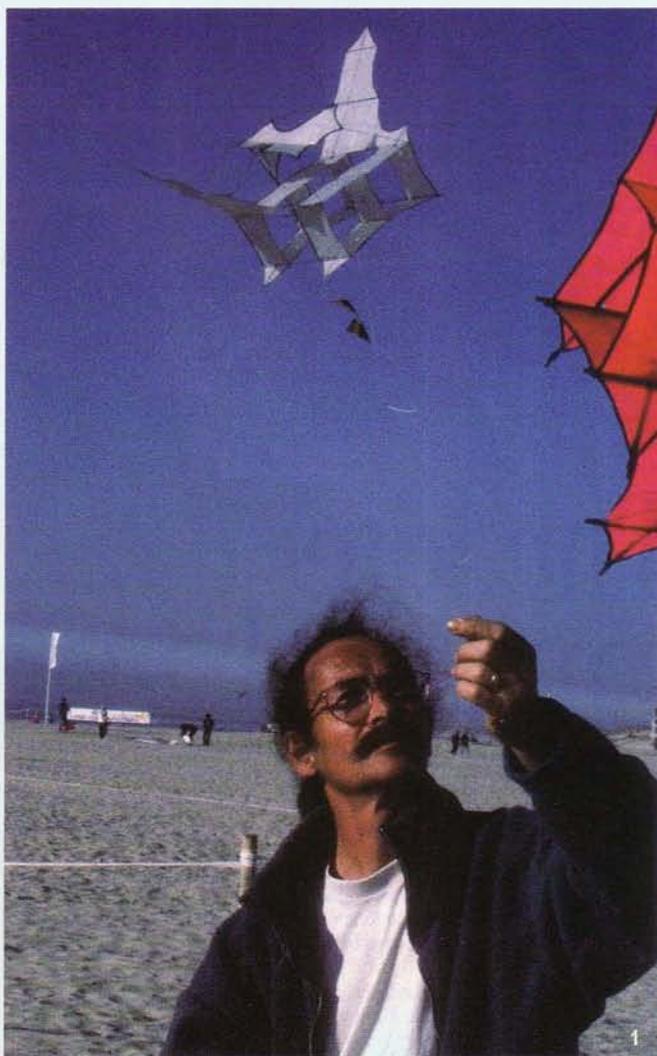
INSPIRATION: The universe, woman and beauty!

AWARDS/HONORS: Surprise and smiles from spectators—plus a first place, indoors division, in Amsterdam International Kite Festival, 1996

INTENT IN KITEMAKING: To be in harmony with the sky

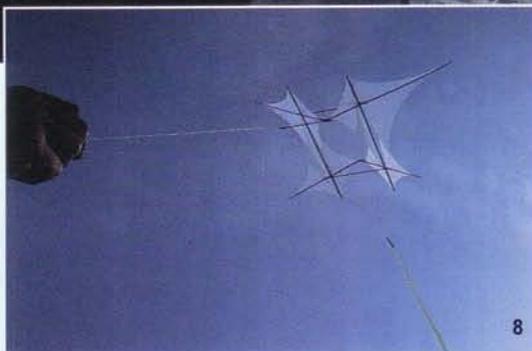
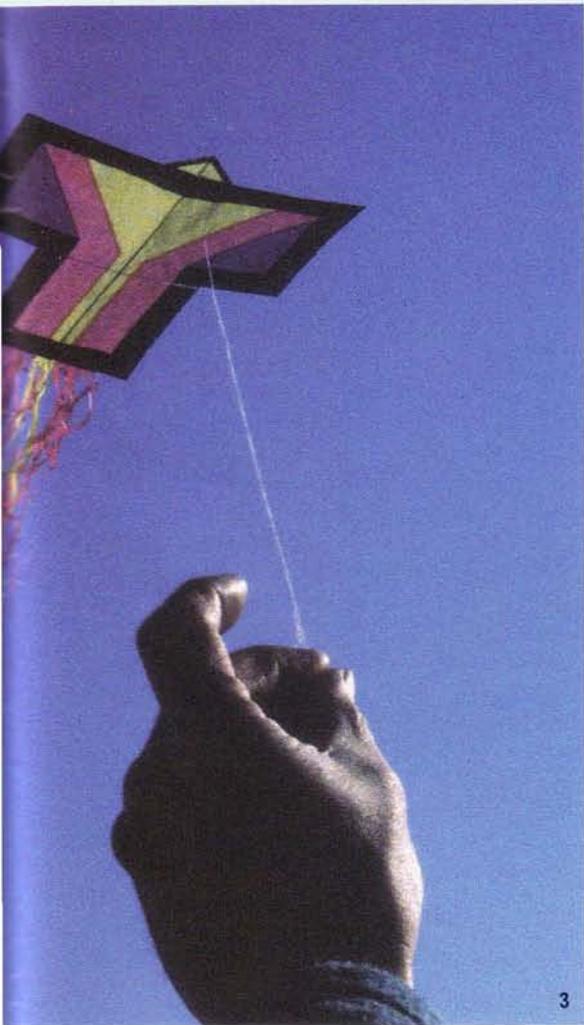
OBSERVATIONS: We make kites together always. Guy does the conception and cutting and Claudette the sewing. The kite is a great way of communication, loving, enjoyment and pleasure all around the world.

PHOTOGRAPHERS: Guy & Claudette Gosselin



KITES BY GUY & CLAUDETTE GOSSELIN

1. **EXTENDED WING CODY WITH TOP:** nylon and wood, 14 x 34 x 15 cm
2. **ANOTHER EXTENDED WING CODY:** similar materials, 17 x 34 x 12 cm
3. **KIMONO:** silk paper and carbon fiber, 15 x 15 cm
4. **MINI SNOWFLAKE:** polyester and carbon fiber, 18 x 20 x 20 cm
5. **CLAUDETTE** (with Scarab) at Berck sur Mer festival, France, 1997
6. **SCARAB:** polyester and carbon fiber, 30 x 20 cm
7. **DONDAI:** (conceived by son Tom), nylon and carbon fiber, 21 x 32 x 10 cm
8. **DONDAI:** close-up view



News, Rumors & Miscellany

BY THE KITE LINES STAFF

Did the ancient Egyptians build the pyramids by lifting huge blocks into place with kite power? Sounds crazy, but *Kite Lines* was asked exactly that question in December by a reporter for the *Los Angeles Daily News*.

David Bloom was writing a story about a California woman, Maureen Clemmons, who is seeking to prove the construction method possible. She and a group of family and friends said they had experimentally lifted weights up to 400 pounds with kites.

We contacted Clemmons, who enthusiastically detailed her experiments. In two days of testing, December 10 and 12, she and her team achieved two lifting feats in a municipal park in Northridge, California, that persuaded her to continue pursuing the theory.

Using twin 4' x 3' parafoils, flown separately, they first lifted a 4"8" redwood log off the ground to a height of about five feet.

Attempting to simulate on a small scale the task of Egyptian

builders, they then hitched the kites to a 400-pound concrete obelisk. In the most impressive effort, she said, the kites lifted the obelisk from a horizontal to an upright position—before the 200-lb-test line snapped. They repeated the experiment two days later with 400-lb line, with a Los Angeles television station videotaping, but also snapped the line.

The next step? More flights, using guide lines to control the lifted objects and a second tether on kites in case of line breakage. (One test kite went floating out over the sea.)

"If we can prove with the technology available now that this could have been done, then we can proceed with trying to replicate the materials in use in those days," she told us.

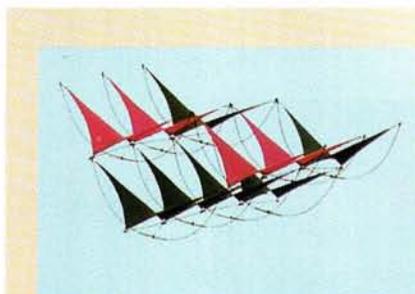
She also noted that a key part of her theory lies in a study of hieroglyphics she has found in her research, which contain the depiction of wings as the top element on many monuments. Could these imply their construction by kites?

Clemmons's website <<http://www.datasrc.com/~obelisk>> outlines her theory in detail. She also invites comments and suggestions from kites.

They call them "kite yachts," a fancy term for the kite buggies participating in *Tiansat des Sables* (Crossing the Sands), a desert stage race to be held May 27 through June 3 in the western Sahara, near Morocco, Africa.

Held for the first time last year in Mauritania, the event is seeking competitors in a variety of "sand yacht" categories, including kite buggies, to cover a course of about 600 kilometers in eight days.

Serious athletes only need apply: registration is 9,900 French francs (about \$1,600 US); other expens-



was given a Special Award, and cited "for use of tension members in framing that could be reconfigured into various shapes."

SPECIAL: Kitemaker Marc Ricketts of Beverly, Massachusetts posed a puzzle for the judges at the AKA's October convention in Wildwood, New Jersey. His kite did not seem to fit any of the usual competition categories. So it

es double the tab. Contact: Jean-Pierre Berthet, Maïenga, 24, rue Toupot, B.P. 172, 52005 Chaumont Cedex-France; phone 33-(0)325-324-317, fax 33-(0)325-322-599.

Glutton for punishment? David Gomberg, who served four terms as president of the American Kitefliers Association (1991-1994), was voted president of the Kite Trade Association International for 1998, during the organization's meeting in San Diego, California in January. His record of previous success made him an obvious choice. Besides, he can articulate the list of problems—"challenges," he calls them—and not sound discouraged.

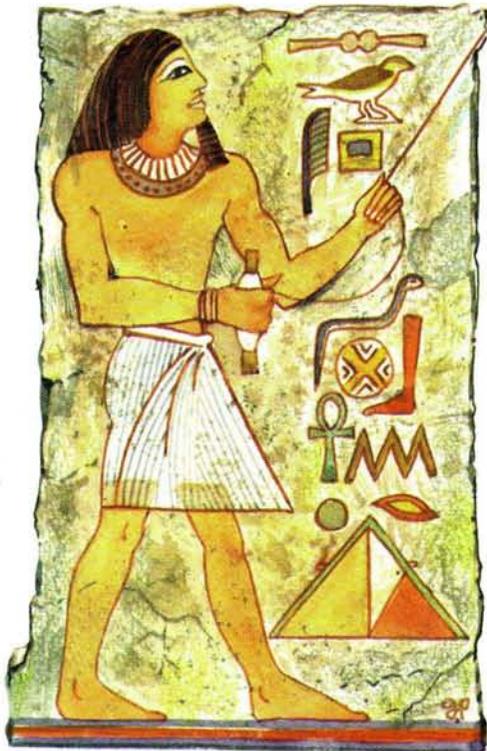
Looking for bamboo? The material many believe is unsurpassed for kite spars?

Our friend Bill Tyrrell tipped us to *The American Bamboo Society Plant Sources List*, which includes some 40 suppliers of bamboo and bamboo-related products. Most are in the continental United States but many ship worldwide and the list includes outlets in Hawaii, Australia, Canada and Italy. Write: George Shor, ABS-SoCal, 2655 Ellentown Road, La Jolla, California 92037-1147; e-mail <gshor@sio.ucsd.edu>. The list is

also on the World Wide Web: <<http://www.halcyon.com/abs/>>.

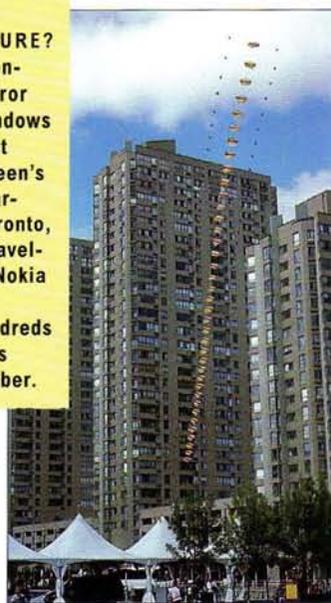
Missing from the above roster is Charles H. Demarest, Inc., another source of bamboo. Their price list includes, for example, 8-ft poles of 1-inch diameter, \$125 per bale (100 poles per bale). Contact them at PO Box 238, Bloomingdale, New Jersey 07403. Phone 973-492-1414; fax 973-838-6538.

Kites starring on Broadway! *The Lion King*, the lavish Disney-made New York show graced with a Noah's Ark of creatures, includes "birds" in kite form flown from poles. Were they made by Jackite, maker of the Olympic doves? Nooooo... but Jackite was consulted, designed the kite and then was rejected. Trouble's brewing. ♦



HIEROGLYPH with kites as conjured from the imagination of artist George Peters.

IMITATING ARCHITECTURE? Sails of a centipede kite mirror the stacked windows of an apartment building on Queen's Quay, at the Harbourfront in Toronto, Canada. The traveling exhibition Nokia Flying Colours showed off hundreds of Chinese kites here in September.



PHOTOGRAPHS: RICKETTS KITE—JON BURKHARDT; TORONTO—JOHN NORRIS



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