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EDITORIAL STAFF

Ali Fujino  
Scott Skinner  
Elizabeth Snodgrass

CONTRIBUTORS

Ben Ruhe  
Scott Skinner  
Ali Fujino  
Elizabeth Snodgrass

GRAPHICS

Verna Yee

PRINTING

Color Printing Systems

*The kite is an intermediary between heaven  
and earth. It's the physical counterpart of  
prayer.*

\*\*\*\*\*

*A kite-  
in the same place  
in yesterday's sky*

-Buson



# The Wright Experience

## Rediscovering a Lost Aeronautical Heritage

By Ben Ruhe

The role of kites in the development of the first manned, powered aircraft, the Wright Flyer of 1903, has become clearer through the work of Ken Hyde and Rick Young. The Virginia pair and their dedicated team—known collectively as the Wright Experience—are busy constructing every one of the development flying machines made by the Wrights over the years so they can celebrate the centennial of flight in the year 2003 in real style. Where else to fly this squadron than the Outer Banks of North Carolina, where the epochal first four powered flights were carried out? It will be a state and national celebration, a rediscovery of a lost aeronautical heritage. Put it on your calendar: December 17, 2003.

All told, Hyde-Young are building:

- \* A five-foot biplane kite from 1899, made on the basis of notes and sketches filed by Wilbur and Orville Wright in a patent suit. The kite had attachments permitting wing-warping, which was the key to flight control, in the view of the inventors. Earlier Wright kites are unknown, although there were undoubtedly some, including models flown in childhood. There was also a 17-foot 1900 kite, usually flown tethered. For gliding tests, it was too small to carry a man, although it did tote ballast and several times a small boy.

- \* Three gliders (they can be considered untethered kites) dated 1901 and 1902 and 1911. The '01 had severe stability problems. The '02 model, complete with vertical rudder, and with perfected wing-warping techniques, proved to be the answer the Wrights sought. (The 1911 kite was a Wright experiment in stability, as in the flight of a bird, rather than controlled instability, the case with their previous aircraft designs. Orville Wright flew it at Kitty Hawk with such success he once kept it hovering more than nine minutes, covering just 40 yards of distance).

- \* Five development airplanes. December 17, 1903 was the epochal day. After extensive glide and engine testing that season, the Wright Flyer lifted off from a level rail

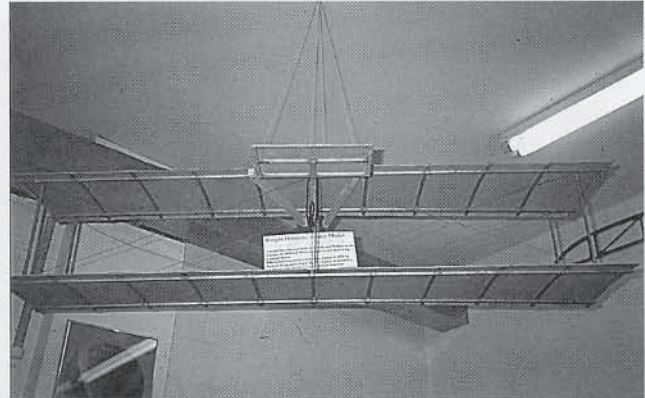


photo: A. Fujino

*A reproduction of the 1899 Wright kite*

and made four powered, manned flights in a row, each longer than the last. The first reached just 120 feet but the fourth and final flight, ending with damage, attained a convincing 852 feet—almost three football fields in length. By the end of that cold morning, it was clear that the age-old dream of mankind had been fulfilled: man would henceforth be able to fly like a bird and the world would radically shrink in size.

So, the Hyde-Young goal is clear: 10 flying machines to build, test and fly in the next four years—2 kites, 3 gliders and 5 manned aircraft.

Although this whole panoply will not be on public view until the centennial, fans of flying will get an advance look at the Wright Experience extravaganza next October when the television series *Nova*, from WGBH, Boston, debuts a one-hour work-in-progress special. Weeks of filming have been done at Kill Devil Hills and Nags Head on the Outer Banks of North Carolina, at Rick Young's restaurant, and in the workshops of both Hyde, in the horse country of Warrenton, Virginia, and Young, who lives near Richmond.

Viewers will not only get to see the kite and gliders being built and in action, they'll also view Hyde flying a replica of the Wright B aircraft, commercially built between 1910 and 1914. Hyde in fact is constructing two models of this aircraft—one static, one flyable.



## The Wright Experience

Hyde, 60, will have to learn to pilot the plane, but he's hardly worried. As a recently retired American Airlines captain with 33 years of flying and 34,000 air hours under his belt, he figures it will take him only six hours or so to do so. "I'm not worried about the danger. I'm a cautious pilot; that's what I got paid for all those years."

This will be the first time since 1934 a Wright airplane has been flown and Hyde, for one, eagerly looks forward to the experience. "It will be a new sound for contemporary ears," he comments, "a combination of popping, clattering, flapping. There will be a new combination of smells—glue, varnish, leather, gas, oil and corduroy; corduroy was used to keep the seat from becoming slippery."

It may well be a startling experience for viewers, used to loud, fast, high-flying jet aircraft. As Hyde says, "The Wright aircraft will fly very low and very slowly, only about 30 to 50 miles an hour, just skimming the ground. The prop turns very slowly. The plane can roll right into a 45-degree bank, do figure eights, fly very close to a crowd. It's quite controllable. It's going to be dramatic for spectators to see, hear and smell."

Power will be furnished by a so-called "vertical four" cylinder engine built in 1909, which Hyde discovered and purchased. Incomplete when found, it is being rebuilt by Hyde and his wizard technical group.

All 10 flying machines will be just as authentic as possible. Although the Wrights were secretive by nature and also highly cautious in protecting their patents and although they tended to abandon their prototypes (dresses were made by North Carolina ladies from the salvaged sails of one of the early gliders), Young and Hyde discovered massive Wright documentation at the Library of Congress, Wright State University in Ohio and across Europe. They have the Wright diaries, measurements of hill slopes, all kinds of technical information. "Regarding these prototypes," Hyde says, "we're doing it right, not just nearly right. If originals are not available, we're happy to reproduce them."

A reproduction of that first Wright kite known, made with pine frame, horizontal stabilizer and varnished muslin sails, hangs from the ceiling of Hyde's Virginia Aviation Co.'s

hangar in Warrenton. The kite was designed specifically by the Wrights to test wing-warping theories—controlled instability, is what they sought. As designed, the warping controlled roll (side to side motion) and yaw (slewing back and forth) but not pitch (up and down forward motion). "The horizontal elevator did control pitch somewhat, but not nearly enough," says Hyde. "The gliders later had vertical tails and the design was complete; all that was needed then was an engine," says Hyde.

It's noteworthy that the Wrights patented their 1902 glider and not the 1903 Flyer, which hangs in the place of honor at the Smithsonian's National Air and Space Museum in Washington. The glider had all the elements needed for manned flight.

What with all its aircraft and parts, machinery and aeronautical art on the walls, the Warrenton hangar is a veritable museum. It has its own adjacent tree-lined grass runway, but testing of the Wright B will occur elsewhere—at a grass farm near Fredericksburg. "We don't want a single hindrance," says Hyde, ever the perfectionist.

Young, 49, sees his role in the Wright Experience partnership as historian, administrator, fund-raiser, public relations contact. He'll also build the two kites and the three gliders in his shop at Richmond.

Hyde on the other hand will handle the powered aircraft and knotty technical problems that will inevitably arise. Filled with expensive specialist tools and skilled craftsmen to rebuild historic aircraft and recreate reproductions commissioned over the years, his Virginia Aviation Company facility "is evidence of a hobby gone mad," admits Hyde. "Are you the one who runs this complicated operation?" a bemused observer asks. "I hope so," says Hyde dryly. ♦



### 'Their Passion Was Discovery'

**Ken Hyde:** "I had a preconceived notion about them. I thought they were just bicycle mechanics who fell into things. What I discovered was their powerful focus, careful research, how they thought everything out. I've read their letters, diaries, notebooks, seen the photographs.

"I learned how ingenious they were at saving weight, saving time and effort. For example, they designed an oil pump and fuel pump to be interchangeable; this was a great efficiency. Another example: they put their wing-warping controls in the center, so when two flew both people could use the one set of controls.

"They built the first simulator to teach others to fly. Their school was gruelling. Trainees had to study for hours. They also had to work in the Wrights' shop to learn about airplanes. This was a kind of tuition. The Wrights also did pre-flight checking; we do that today.

"The more I've studied them, the more amazed I am at how thorough they were. They built a wind tunnel to check out design features. The propeller they built had a 66 percent efficiency—pretty good for a first try. I don't know when they slept.

"Their's was not a story of success, but a study of failures. After every failure, they got up and tried again. They made 2,000 plus glider flights leading up to their successful powered flight. Their passion was discovery, not concern about money. They just solved a problem at a time."



photo: A. Fujino

*Ken Hyde in his workshop*

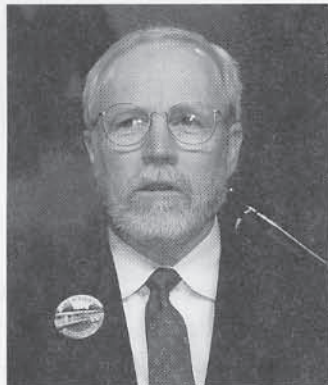


photo courtesy of Rick Young

*Rick Young*

**Rick Young:** "It was remarkable the way they approached a problem. They had no preconceived notions. They had total integrity. They were always completely accurate, had rigid scruples, never exaggerated, never told lies. There was never dishonesty of any kind.

"It was easy to see the benefits their partnership gave them. It's one of the reasons Ken Hyde and I paired up—we complement one another, just as the Wright brothers did.

"Discovering the Wrights fundamentally changed my life. Because of the Vietnam war in the 1960s when I was growing up, I had lost respect for institutions, even for my own government. What I learned from studying the Wrights—I must have read 30,000 pages on them—restored my sense of integrity, gave me patience, gave me the ability to work with other people, ultimately enabled me to harmoniously work out my own personal relationships. The Wright brothers were my mentors; I am forever in their debt."



### How They Got So Involved

Partners in the Wright Experience for the last half decade, Rick Young and Ken Hyde came at their historical project from similar backgrounds.

Rick's father was a Marine pilot during World War II, took up the study of physics and spent his career working for aircraft companies all over the United States. Rick learned aeronautical technology at his father's knee, as it were. Although interested in them earlier, Young developed his passion for the Wrights on a visit to the U.S. government monument to them at Kill Devil Hills, North Carolina, in the early 1970s. There he saw a model of the 1902 glider—the aircraft design that, when provided with an engine in 1903, became the first manned, powered airplane. “I resolved then and there to build and fly my own 1902 model glider,” he recalls.

“I thought the project would be simple, I'd get plans from the U.S. Park Service and build my own. It turned out there were none. I did obtain original photographs, and then discovered by studying digitized computer images made from them that the reproduction on view was not a very accurate one.

“I realized I had to do my own research and make my own precision drawings, and obtained help from the U.S. Park Service by agreeing to turn over a set of the blueprints to the government when I completed the project. That was the beginning for me. Soon I was actually working part-time for the Park Service on the project.

“Over the years, I ended up researching and building the five-foot 1899 and 17-foot 1900 kites and the 1901 and 1902 gliders.” He and his wife and daughter (now a Marine Corps lawyer) did the flying, often for television specials. It was a way of defraying costs. Young, living near Richmond, is a restaurateur by profession. Young had to drop 40 pounds to manage his flying role. Counting the three Youngs and the two Wright brothers, only five people have ever flown Wright gliders, a point Rick Young makes with great pride.

Because of his obsession with the brothers, Young spent a small fortune acquiring Wright artifacts and printed

material, including original objects. The whole lot burned in a fire in 1985. It would be worth millions of dollars now. Undeterred, Young has resumed collecting, although pickings are slim.

Ken Hyde came at the Wrights from a slightly skeptical angle. Also the son of an aviation-mad father who soloed in a World War I Curtiss Jenny and hand-built a Heath Parasol single-seater in his basement, Ken earned a good living by first working as aircraft mechanic and then commercial pilot for 33 years, flying all kinds of aircraft all over the world. “A genius,” is how his partner Rick Young characterizes him, “a man who can keep 15 complicated projects in his head at one time.” Hyde kept himself busy between flying assignments by rebuilding old aircraft or constructing replicas of them. Included was a battered Curtiss Jenny, the famous barnstorming plane of the 1920s, which Hyde flies in air shows and for filming. He has 285 hours in it by now and worries the fabric is wearing out.

When his hobby turned obsessive, Hyde built himself an 82 thousand square foot hangar with adjoining 2,100 foot grass landing strip in the posh horse country outside Warrenton, Virginia, and has equipped it with arcane, expensive tools capable of rebuilding or recreating antique aircraft. He has assembled a team of specialists in wood and metalworking, fabrics and other recondite skills whose dedication is obvious. There is even a resident archivist.

His earlier projects led Hyde back in time to the Wrights, who after all started it all. In 1994 Ken constructed a Wright Model B replica for the military to display at an Alabama museum, but by terms of the contract he was not allowed to attempt even a single flight with it. The thought of this lost opportunity still seems to rankle a bit. “Do you realize, no one has seen a Wright plane flown since 1934?” he asks.

Hyde's wife, a former stewardess, seems to detect a trend that worries Ken. She tells him, he's going backward—from really fast (jets), to fast (earlier aircraft), to gliders, and to kites. “Next it will be balloons,” she predicts. Hyde doesn't rule this out.

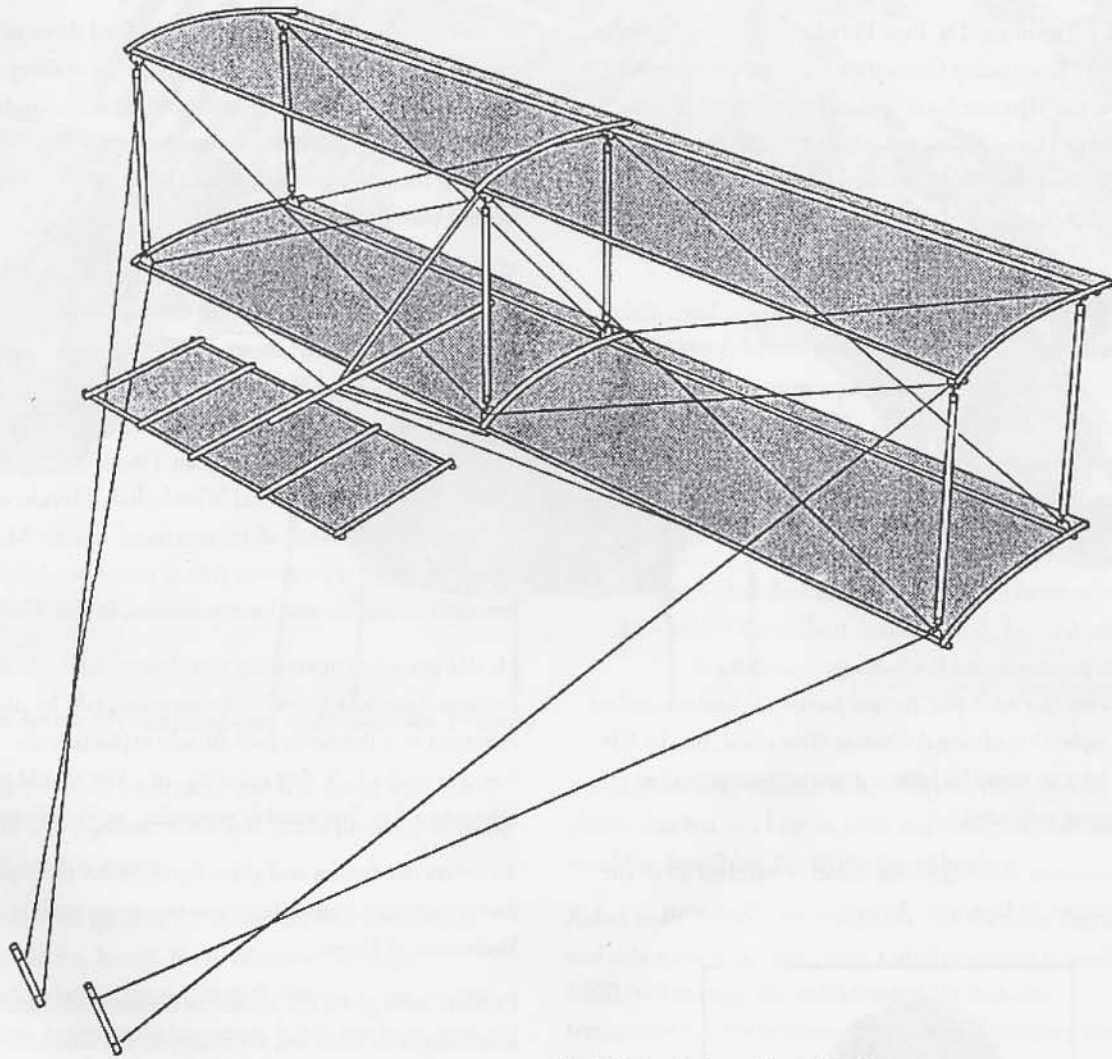


Illustration courtesy of Scientific American Magazine

*The Wright biplane kite of 1899*



## 'Pictures for the Sky' One Man's Inspired Vision

By Ben Ruhe

A lawyer by training, Dr. Paul Eubel changed his career in mid-stream from being Germany's leading contemporary expert on the Japanese legal system to a cultural affairs officer representing his country in Japan. He got himself posted to Osaka to head the Goethe Institute there, Germany's equivalent of the United States Information Agency.

Having collected some small, choice Japanese kites, Eubel was struck by the superimposition of one of those traditional kites on a pane of glass framing a painting by Antonio Tapies, the noted Spanish artist. This suggested to him a collaboration between contemporary Oriental and Western art and traditional Japanese kite-making. The idea for the monumental exhibition "Pictures for the Sky" was born.

Eubel, who speaks fluent Japanese as well as five other languages, learned to use Osaka's traditional rivalry with Tokyo to promote—and fund—his various cultural brainstorm (for example, he had Japanese children update and "complete" traditional Grimm fairy tales), but he felt the kite idea so novel he kept it a secret from superiors in fear of being ridiculed.

With Germanic thoroughness, Eubel researched all of the biggest names in Japanese, American and European

contemporary painting circles and invited them to participate in his grandiose project—artists making images on traditional Japanese kite frames covered with handmade washi paper. He offered no recompense for their work but pledged that the paintings would eventually be sold to benefit worldwide disaster relief.

To his amazement and pleasure, Eubel's proposal was widely accepted and soon he had contributions from such as Karel Appel, Arman, Daniel Buren, Barry Flanagan, Sam Francis, Lichtenstein, David Nash, Mimmo Paladino, Otto Piene, Robert Rauschenberg, Gerhard Richter, Kenny Scharf and Frank Stella, Not to mention Jean Tinguely, Nikki de Saint Phalle, Victor Vasarely, Paul Wunderlich, Hundertwasser and Tom Wesselmann—all international names. Many of the Japanese who accepted were just as renowned in the Orient, but their names do not have resonance in the West.

He did get some interesting turndowns. Jasper Johns, perhaps America's foremost living artist, said he didn't want to return to a theme he had already exploited, the American flag. He said a U.S. flag painting on a kite would turn the kite into a flag. Impeccable reasoning, as Eubel concedes.

To create the frames and skins for the kites to be painted, Eubel recruited master Japanese craftsmen such as Nobuhiko Yoshizumi of Kyoto.

Painters were given the choice of several traditional Japanese kite designs to work on, for example, the classic six-sided rokkaku, the square Hamamatsu, the fan-shaped Keroni, and the round wan wan kites.

Next came the question: How to do the exhibit? How would artists cope with the traditional washi paper? Would the glue, bamboo and paper kites travel well—bamboo is notable for harboring insects unwelcome in other countries. In other words, what were the conservation problems and how could they be solved?

The entire collection was debuted April 1, 1988 in a "Vernissage in the Sky." The collection was then valued at



Dr. Paul Eubel

Photo: Ben Ruhe



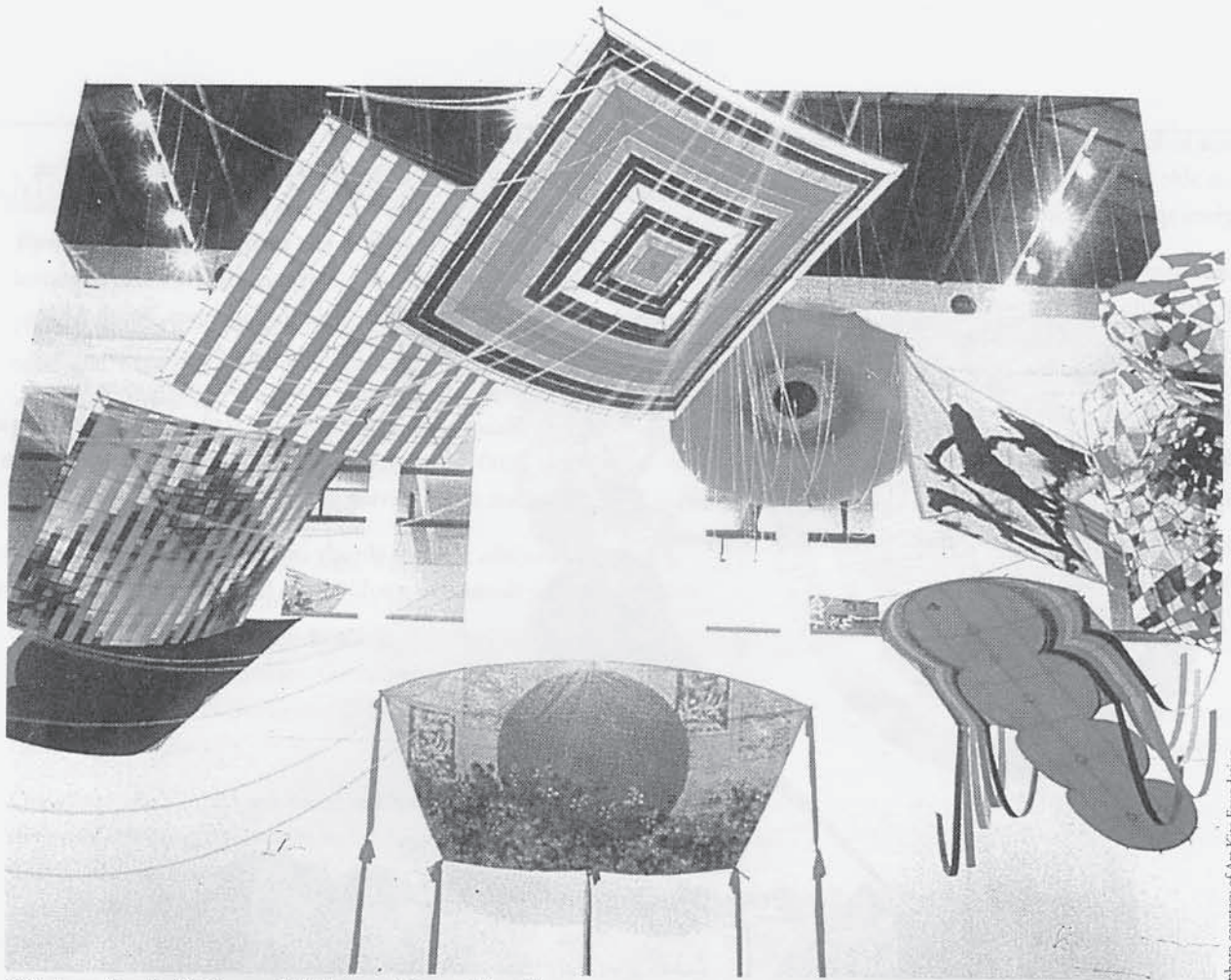


photo courtesy of Art Kite Foundation

*"Pictures for the Sky" on exhibition at Montevideo, Uruguay*

\$20 million (without insurance) and was flown with the assistance of 200 Japanese fliers and in the presence of many of the participating artists.

The collection has gone to 27 venues on four continents: Hiroshima, Berlin, Rome, Paris, Moscow, Santiago, Montevideo (where it drew 200,000 viewers in two weeks), Buenos Aires, Sydney and Montreal. It has not been seen in the U.S. however, because a booking problem caused a cancellation of the exhibit at the Guggenheim museum in New York.

The fat color catalogue for the show has appeared in no less than 10 languages. When the exhibit goes to a new part of the world, such as Australia, Eubel adds national work to the exhibit. In Australia, he added paintings by Aborigines and these tribal contributions by such as Clifford Possum Tjapaltjarri are seen as some of the finest, most vital work in the show. The Aboriginal works constitute a premiere in world culture. They are in fact the first kites ever created in

this earth-bound culture, which may be the only one on this planet that has not known kites and does not even have a word for describing the flying paper birds.

Aided from the start by Lufthansa, the German flag airliner, and other corporate sponsors, Eubel estimates it costs \$200,000 to stage the exhibition. This includes transportation, installation, conservation, holding kite workshops by visiting Japanese experts, importation of Japanese kitefliers to give demonstrations, musicians playing Japanese music. Host institutions are encouraged to raise funds by selling authentic Japanese kites in their shops. The tour has been wonderful for museums around the world, some drawing the greatest number of admissions ever for a single exhibit. Eubel estimates 3.2 million people have viewed the show so far.

Eubel sees the exhibition as "an excellent introduction to modern art for many, under the guise of viewing friendly old kites, something associated with their childhood."



## 'Pictures for the Sky'

Since he has many more kites than he can show at any time, he is able to edit and present the best possible collection for a given space and circumstance.

Eubel comments that when he started the project, "the Japanese kite tradition was dying; it was an old man's business." Now Japan's interest in attracting tourists, a worldwide mania for collecting kites, and other cultural factors have reversed the trend. "Kiting is booming in Japan," says Eubel.

"Putting good art with traditional kite shapes is like putting two electrical force fields together," notes Eubel. "It produces a lot of wonderful creativity."

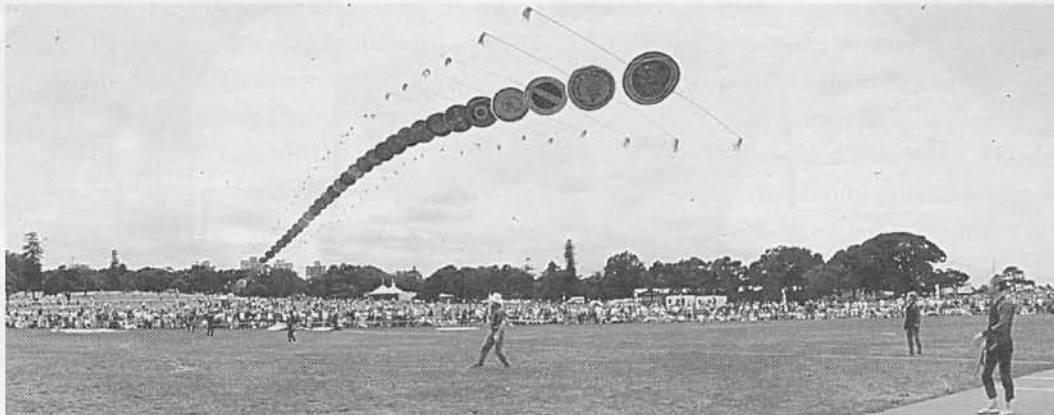


photo courtesy of Art Kite Foundation

*The Great Rainbow Snake*

"Everybody likes the project. There have been no negatives. Artists, notoriously prima donnas, have been proud of the success of the project. There has been no friction. It's been a triumph for the art world."

There have been near disasters, though. At one site, a control malfunction caused the temperature to soar and the humidity to drop drastically, drying out the bamboo, and causing it to start cracking loudly. Eubel solved the problem by dumping buckets of water on the floor. At another venue, a storm caused the air-conditioning to overcompensate and for water to drip on the kites, threatening their quick ruin. The error was caught and corrected in the nick of time.

Although the original plan was to auction the art for worldwide disaster relief, so much pressure was brought to bear on Eubel to keep the collection intact he went back to the donating artists and proposed that the collection, estimated to be worth \$26 million, be kept together and go

instead to an institution for permanent display; the foundation in charge would then hold periodic major art festivals with the proceeds going to worldwide disaster relief. All of the artists agreed to this change of plan and festivals have already been staged in Himeji, Japan; Paris; Montreal and Sydney. One will be held in Capetown, South Africa, the final stop for the exhibition before it goes to a now empty airport hangar at Detmold, Germany, as its final home. Near Duesseldorf, Detmold is planning its opening as a Year 2000 celebration. Eubel is supervising the renovation work there and is serving as director of the collection.

Meanwhile, Eubel is already conceiving imaginative ventures for the future. He would like to further exploit the two facets

of man that "Pictures for the Sky" highlights: *homo ludens*, or play as a major source of creativity, and *homo faber*, or technology as a source of creativity.

Although he organized the big kite show pretty much in secret, fearing his bosses in Munich would laugh at the project and kill it, Eubel has now had the last laugh. The German government has rewarded him with its highest civilian decoration.

Now in his late 40s, Eubel thanks "Pictures for the Sky" for a personal bonus. When the exhibit was being mounted in Santiago, he went next door to an art gallery to borrow installation material. There he saw paintings of a young Chilean woman, met and married her and is now the proud father of an infant son. It's a nice ending to a delightful art success story. ♦



## Modern Art and Kites: A Successful Mix

By Scott Skinner

Having studied the "Pictures for the Sky" catalogue, I found the reality of the large exhibition surprising. What you don't get from looking at the book is scale. The kites in the exhibit are generally quite big. You don't get to see kites as big in Japan very often.

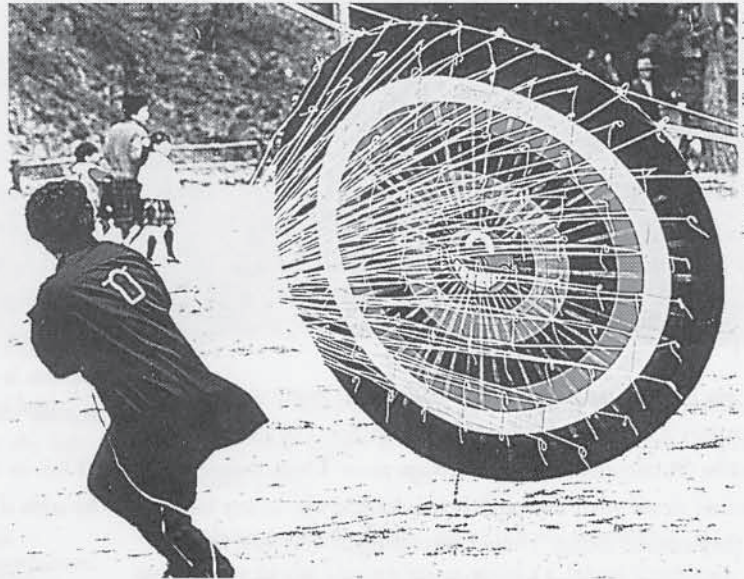
Longing to see the exhibit for years, I caught up with it finally in Luxembourg last year, where the organizer, Dr. Paul Eubel, is directing the Goethe Institute—Germany's cultural equivalent of the United States Information Agency.

Organized when Eubel was based in Osaka, the giant collection has now been exhibited on four continents and has finally found a permanent home in a former aircraft hangar in Detmold, Germany, near Dusseldorf. It will debut there as part of Germany's Year 2000 celebration.

It's obvious when you see the kites that some of the artists got into the spirit of the project, others did not. Some of the abstractions are fabulous. Many of the geometric kites are spectacular at a distance.

The installation splits into natural groups, with themes like love, money, the history of modern art over the past five decades, and so on. Drop paper screens hanging from the ceiling—actually fiberglass made to look like handmade paper—complement the kites and split them into metaphor groups. If you saw the kites all at once, you would see nothing. Space is carefully left between the screens so the viewing effect is not claustrophobic.

The problem with a traveling exhibition is that it outlives its usefulness, and the fact that this magnificent collection now has a permanent home is very exciting. Because Detmold was a former airfield, there will be lots of room for the exhibit in a massive hangar. A city show might constitute a beautiful display, but it would not



*A Japanese expert test flies Kenny Scharf's "Starring...The Kite"*

have the reality of Detmold, where one can go right outside and fly a kite.

The exhibition is unique in the world of kiting for the high profile of the artists. Paul Eubel made a distinct effort to get the very best Eastern and Western contemporary artists, who then collaborated with the finest Japanese kite makers. My first impression of Paul Eubel is one of amazement and awe that he could organize such a huge enterprise. Over and above that, he's expert at flying kites and wonderful in talking about them. He hasn't removed himself from the pleasures of kiting.

I'd sum up this way: the collection has now been exhibited almost a full decade and the workshops that go with the showing constitute a great introduction to both modern art and to kites. The show places successful designs into people's heads. The viewers become part of the equation.



## Stooping to Conquer

### Kites Train Falcons to Fly High

The sport of falconry—using falcons, hawks or eagles to catch game—has been in existence for several thousand years. Its traditions and techniques were established early on and have continued virtually unaltered over the centuries.

Something innovative has recently changed the sport for the better—the use of high-flying kites for training purposes. And the inventor of the technique, Dr. David Scarbrough, of Fairfax, Missouri, remembers the very moment of his inspiration.

“I was parasailing—something I had always wanted to do—on Martha’s Vineyard in Massachusetts on July 10, 1994,” he recalls. “A falconer since my teenage years, I had always wanted to see what the earth below looked like to my birds as they cruised along. There I was flying at 400 feet, finally getting to see and feel just what my falcons saw and felt. Then I looked up at the shroud lines and I realized the parasail was just a kite—a big, fancy kite. I made a mental note. ‘When I get home,’ I said to myself, ‘I’m going to investigate kites as a training device for my birds.’”

The point is that falconers want their birds to fly at a high “pitch” or cruising altitude, up to 1,000 feet. When they “stoop,” or dive, from heights, they attain speeds up to 200 miles an hour. This is the fastest any creature on earth achieves. And the sight and sound is thrilling.

“The bird descends on its quarry like an arrow shot from the sky, its passage through the air making a ripping, tearing sound, particularly when the bird starts braking with its wings,” says Scarbrough. “You watch and listen and marvel. They move almost too fast for the eye to follow. They’ll hit a target—a pheasant maybe—so fast they won’t grab for it, realizing they’d tear their legs off, they’re going so fast. They’ll just give it a smack. That’s often enough to kill or stun. There’ll just be a puff of feathers. The whole sequence is absolutely spectacular.”

But why kites? Well, the problem is many birds, most of them in fact, naturally cruise at a low altitude. They have to

be trained to fly high. How to get them to do this has constituted an age-old problem.

A logical solution presented itself some decades ago: suspend a training bait from a tethered helium balloon. This technique was used by biologists working in the Arctic seeking to attract falcons from great distances away so they could be captured, banded and released for later study. The problems with balloons, however, are manifold. They are expensive to buy, easily damaged, costly to fly because helium is expensive, unwieldy to transport and store, and mainly they get blown flat when a wind comes up.

“I live in the Midwest,” notes Scarbrough. “It’s windy here,” he adds dryly.

Scarbrough, a dentist by profession, tried balloons himself and met with all the problems and frustrations. Returning from his New England vacation and not knowing anything about kites, he called around seeking experts who could



*Scarbrough and Cosmo, a gyr-peregrine falcon hybrid*

photo: Eric Keith



advise him and soon discovered people like the proprietors of the Into the Wind shop in Boulder, Colorado. He began experimenting with various types of recommended kites.

It soon became clear these age-old devices were the answer. Relatively inexpensive, kites could be used for years, packed way down for easy transportation, and mainly flew high and well in wind conditions from calm to well above gale force.

After a lot of experimenting, Scarbrough hit on the delta model kite as ideal. The delta has a triangular sail for lift and triangular keel for stability. He soon acquired low, medium and high wind models, with accessories, such as tails, to tailor the kite to the exact conditions prevailing on a given day.

The falconry cult around the world is relatively small in number, but intense in interest, and word of Scarbrough's highly successful experiments soon got around the globe, aided by the internet. Kitemakers such as Dan Leigh, of Gwent, Wales, designed high fliers specifically for falconry and a modest business boom in these ensued, and has continued.

Asked how he became interested in the first place, Scarbrough cites a book he read as a 9-year-old in which a boy uses a falcon to hunt food so he can survive in the wild. Some years later, Scarbrough had a classmate who knew about hawking and taught him the basics. Scarbrough was soon a dedicated falconer. "Since then, I've never been without at least one bird a flying season," he says, "even while going to graduate school in Kansas City."

For falconry, a generic word, four different types of birds can actually be used—falcons (longwings), the two different types of hawks (short-tails and broadtails), and eagles. "Eagles are not practical," says Scarbrough. "They are just too powerful, too dangerous."

Scarbrough has flown hawks—Goshawks and Cooper's—but finds falcons more interesting. "They are more highly evolved, more specialized. They have more stamina and



photo: Eric Keith

*Scarbrough with a training kite*

speed, they act differently than hawks. They think more like humans. Hawks kill by ambush and surprise, falcons simply outfly their prey."

While there are some 40 species of falcons worldwide, there are just five in the United States, six if a Central American species that sometimes drifts north is counted. The gyrfalcon (pronounced "jer"), with a four-foot wingspan, is the largest, the peregrine next in size; the smallest is the one-foot kestrel, known to all as the fierce little raptor that hovers over highways searching for mice or other small prey stirred into action by passing automobiles.

If one wants to be a falconer in the United States, one needs to get state and federal permits. (A few states, such as Hawaii, do not permit hawking for biological or other reasons.) Since there are only 4,000 people who have the necessary permits, conservation officials permit unlimited hunting by the birds, partly because the kill is minuscule, and mainly because birds must be flown several times a week to remain in condition. Falconry is practiced from fall to spring, then the birds moult and breed and are left to their own devices.

How does one obtain a hawk or falcon to join the sport? There are three ways—taking a chick from a nest and raising it, the country boy's method; trapping a self-sufficient wild bird; or buying a hatchery-raised chick, even a hybrid at up to \$4,000 each. Gyrfalcon crosses are particularly



popular since they combine the larger size, power, and intelligence of the gyrfalcon with a tendency to fly higher and adapt to training more readily by the more patient peregrine.

Training consists of suspending a bait from the kite line. When seized by the bird, it releases from the line and is then eaten by the falcon. A piece of hatchery-raised quail, ordered through the mail and kept frozen in the refrigerator, is the usual lure. Training starts at low altitude and advances higher and higher day by day. A bird may get up to 1,000 feet within a week or so. "Higher than that is pointless," says Scarbrough. "You can't see the falcon, and what fun is that?"

Living in a part of the country where 98 percent of the land is devoted to agriculture, Scarbrough can more or less fly his birds where and when he wants. He says he is completely

accepted by area farmers as harmless, if eccentric. Father of three, he reports only his 5-year-old son seems taken with the sport. Otherwise he goes out alone, with the occasional spectator to observe and marvel.

"In 27 years of training and hunting with falcons, I have seen many innovations," he says. "Few techniques have been as enthusiastically received as the use of kites for training. I expect them to be an important tool for falconers for a long time to come."

Five years after that insight while parasailing, Dr. Scarbrough can look back with pleasure and great pride, realizing he has made an authentically profound impact on a sport he loves.

—Ben Ruhe

### **Information About Falconry**

**Information is available from Dr. David Scarbrough at:**

Route 2, Box 217

Fairfax, MO 64446

telephone: 660-686-3514

e-mail: hawkman@msc.net

**The Into the Wind Shop**  
in Boulder, Colorado, U.S.A.

can be contacted at

e-mail: kites@intothewind.com

**Dan Leigh's address is:**

54 Osborne Road, Pontypool, Gwent,

Wales NP4 6LX

Great Britain

e-mail: danleigh@deltas.freeserve.co.uk.



## English, Australian Kite Patents Interpreted

A student of American kite patents, Ed Grauel of Rochester, N.Y., has expanded his research into kite creativity elsewhere in the Western world.

On behalf of the Drachen Foundation, he has now:

- \* prepared a definitive listing of all Australian kite patents from the first one issued in 1900 through 1997;

- \* read and summarized the 59 English kite patents issued from 1911 through 1965 (it would be very difficult to check the 800,000 patents issued prior to 1911 to determine which, if any, covered kites);

- \* digested most of the German kite patents made available to him and is seeking to obtain 4 missing ones plus any filed since 1994, if any were in fact even issued;

- \* anticipates reading, studying and summarizing copies or abstracts of all similar French material when it becomes available to him shortly.

A major task? Yes, certainly, and achievable only by Grauel, with his orderly mind, vast knowledge of the field, and unflagging energy at the age of 92. "I feel like 50," he says. "It's amazing!"

With his labor, Grauel is single-handedly opening up to English-language readers a formerly closed and tempting world. Have there been some really wonderful ideas contained in kite patents over the years which were lost to time, that can now be resuscitated? That has always been a matter of conjecture to kite scholars.

The short answer, so far, seems to be in the negative, although much of the detail is invaluable, but Grauel is far from finished and who knows what major find he may turn up in the future? Some of the German patent drawings have

definitely piqued his interest. He awaits text translations so he can then do his interpretive work.

**Australia.** With the help of Bob Peirson of New South Wales, Australia, a kite patent buff, Grauel feels he has been able to prepare a definitive listing of the 64 patents issued so far. Peirson will send updates on any new patents granted. In Grauel's view, none of the Australian patents add significantly to the world knowledge of kites.

**Britain.** Grauel's compilation lists numbers for all 59 British kite patents from 1911 to 1965, dates of application and approval, inventors' names, and brief descriptions of the basic ideas covered. Analysis of these patents provided some surprises. Twenty of them, that is, one-third, cover such subjects as towed aerial targets, wireless aerials, and rockets, none relevant to kiting. Four cover a toy, metalized covering, a blimp and an electric cable and are not relevant either. Of the 35 remaining patents, two should not have been issued because of the priority of U.S. patent issuances (for example an English patent given in 1944 is preempted by an American patent issued in 1902 to Silas J. Conyne for his famed Conyne, or French military, kite. Likewise an English patent of 1965 is preempted by William Eddy's even more renowned Eddy or Malay bowed kite patented in the U.S. in 1900).

British patents covering the rotor and autogyro kites were issued almost simultaneously with similar U.S. patents. There are likewise some duplications with American material.

Except for one patent, the remaining British patents cover minor changes for a wide variety of kites and accessories—airplane-type, fighter-type, glider-type, parachute, inflatable, fan-type propellor, line travelers, kite releases. The exception is English patent No. 471,599 issued in 1937 which appears to be a new and novel way to change the center of gravity when a kite is in flight by releasing lengths of line by jerks on the flying line. "This idea," says Grauel, "is not included



## Kite Patents Interpreted

in any U.S. patent and, to the best of my knowledge, hasn't been tried or reported on in American kite literature."

As previously noted, for Grauel to check British kite patents before 1911 would involve searching 800,000 unclassified patents for those dealing with kites, a task unlikely to yield results consequent to the effort involved. And Grauel doubts that patents issued from 1965 on will be of much interest because he notes British inventors, believing they had marketable items, normally patented them both in Britain and the U.S., so they are already known here. Others have appeared in American literature.

**Germany.** Grauel has summarized most of the German kite patents supplied to the Drachen Foundation by Walter Diem of Hamburg, Germany, but awaits assistance from a translator to deal with the remaining ones he has in possession. Meanwhile he awaits arrival of a few more whose numbers are known but have not yet been located.

**France.** As a hotbed of kite and aeronautical enthusiasm in general from the turn of the century on, France can be expected to have many kite patents. Drachen is working on obtaining these so Grauel can work his wizardry on them.



*Ed Grauel at work*

What's next after that? Grauel feels the American, British, German and French kite patents pretty well cover the field. In his experience, Spanish, Italian, Russian and Japanese patents go over much of the ground already covered.

As Grauel's interpretive material becomes available, the Drachen Foundation will make it accessible to historians and researchers. Contact the foundation for details on obtaining access. ♦

## Kite Flying in Old Tibet

*In Heinrich Harrer's "Seven Years in Tibet," published in 1953, he tells about about everyday life in that remote Himalayan realm. Here's what he had to say about one of the popular sports:*

"In autumn, Tibetans practice their age-old pastime of kite flying. When the rains are over and the clear autumn weather has set in, the bazaars are full of brightly colored kites. The sport begins punctually on the first day of the eighth month. But it not just a children's game, as with us. The opening day is a popular festival and the nobles are just as keen on the pastime as the common people.

"The first kite goes up over the Potala palace and very soon the sky is full of them. Children and grownups stand for hours on the roofs flying their kites with the intense concentration of chess or tennis champions.

"The kites are flown on lines of stout twine treated with glue and powdered glass. The chief object of the game is to cross your opponent's line and cut through it. When that happens, there are screams of joy from the roofs. The severed kite flutters slowly down and the children pounce on it. It now belongs to them."

"For a month this game is played in every hour of leisure. Then the season comes to a full stop and the kites vanish as suddenly as they appeared."



## How Kites Aided the Birth of Radio

The BBC at Broadcasting House, Portland Place, Oxford Circus in London has opened a semi-permanent installation called "The BBC Experience." It begins with the dawn of radio and covers the succeeding 75 years to the interactive present, that is to say, directing a segment of a sitcom, doing sports commentary, creating sound effects.

The first room is called the Marconi room and shows the beginnings of radio, pioneered by the Italian Guglielmo Marconi, born 1874. "What a lot of ideas I have in my head," he said at age 10, and the small exhibition devoted to him and his inventions abundantly bears this out.

Inspired by science pioneers Hertz, Henry, Faraday, Maxwell and others, Marconi was by 1895 transmitting sound more than one mile and was on the verge of something major. Not receiving attention in his native Italy, he moved to England in 1896 (his mother was Scottish) and set up in Bristol and Chelmsford. He received his first radio patent that year. By the following year, he had so impressed Queen Victoria she had him establish a wireless link between the Isle of Wight, where she summered, and the Prince of Wales' yacht off Cowes.

Marconi received the important patent, numbered 7777, in 1900 which introduced tuning, thus allowing more than one channel to operate. By the next year, he was conducting trans-Atlantic transmission tests.

This is where kites enter. It was not then understood how radio waves behave in the atmosphere. Since they travel in straight lines, it was guessed they would be radiated off into space. (In fact, it would be learned they bounce off the ionosphere, thence back to earth, and proceed in zig-zag manner to their destination). Thus Marconi erected a line of very tall aerials at Poldhu, Cornwall, to, in his view, increase transmission range. When a storm knocked the aerials askew, he substituted kites to get his transmission and receiving gear as high as possible in the air. Reception of signals was to be at St. John's, Newfoundland, 1,700 miles away.

The great day came on December 12, 1901. Transmission by an aide of the letter "S," three clicks in Morse code, was received by Marconi on Signal Hill in Newfoundland. His diary (on view in the exhibit) records that the first radio signals were received at 12.30 p.m., then again at 1:10 and 2:30. Radio was born. Marconi was 27 years old.

One of the kites used by Marconi is on view in the BBC exhibit. Of greenish-brown silk, it is unfortunately tightly wrapped up. Thus it is impossible to tell what kind of kite it is, although clearly it's a large one. Although there are tears in the fabric, it seems in generally good condition.

A photograph behind the actual kite shows a large kite being readied for flight in 1901. It's a rokkaku measuring 104 by 106 inches (275 by 269 cm.). Marconi is known to have used rokkaku-like Baden-Powell kites as well as Japanese-type rokkakus in his experiments.

A range of photos documents these first days of radio. As well there are Marconi's personal diary (cited above), written radio messages and communications about radio, news articles, patents and other archival material on view, as well as some two dozen of the scientific instruments used by Marconi in his work. Included are a telephone oscillation valve, Morse key, Morse receiver, magnetic detector, multiple tuner, "junior" crystal set, and microphone.

The final exhibit panel in the Marconi section of "The BBC Experience" deals with the use of wireless during the Titanic sinking in 1912. A caption points out that the ability of the vessel to send radio distress signals saved 700 lives.

A note in the exhibit credits the Marconi family with lending the material that is on display. ♦



# Afghan-Style Sky Fighting

By Ali Fujino

In its final manifestation last year, the annual Junction, Texas, kite weekend produced yet another surprise—a kite wizard from one of the world's more obscure countries, Afghanistan.

Basir Beria, born in 1961 in the capital, Kabul, and now resident as a refugee in Tarzana, California, after doing a prison term as a teenager for demonstrating anti-Russian sentiment in his home country, showed off the kite tradition of Afghanistan to a fascinated audience.

Traditional Afghan kites, he revealed, are simply Indian-type fighters with cutting line, but they tend to be much larger in size than their parents and, unlike the Indians, use tails. Kiteflying is a very respected sport in Afghanistan, Beria reports, and skill in making good kites commands great prestige.

The flying season is the month of March and flying can be observed anywhere across the country at that time of good winds.

Afghan fighting technique is quite the opposite of the Indian pull and cut method of downing an opponent. The Afghani flier instead cuts his opponent's line by releasing his own line. This is a more difficult technique to master and often provokes quite extended aerial duels before one or another flier succeeds in downing his opponent. "Four hour battles are not uncommon," says Beria. "Unless announced in advance, the pull and cut method is considered cheating."

Another aspect of Afghan sky dueling is the long length of line used. "Kites are often out of sight up in the sky; the battle is conducted via the sense of touch," says Beria.

Afghan kite fighting is invariably conducted by a two-man team; one person flies the kite, the other—often an apprentice—takes care of reeling in the line.

"I learned to fly when I was 8, and loved it," says Beria. "I made my first kite when I was 10 and my first cutting line—the line is coated with a cooked rice adhesive and then powdered glass applied—when 11."



photo: A. Fujino

*Basir Beria*

"Flying was wonderful fun," he says. "It was very exciting. It's what I really miss about my home town life in Kabul."

As a new resident of the U.S., along with his extended family, Beria saw stunts being flown and this provoked his interest in kites again. He made his own fighter of cheap paper and poor string, "but it flew." Soon he had spotted kite stores and bought kite magazines. He was hooked again. Attending festivals, he soon learned he had superior expertise. In a duel with the French expert Philippe Gallot at Long Beach, Washington, he came out the winner. "Philippe was not surprised," says Beria. "He had been watching me practice."

Also, at Long Beach, an American using Kevlar line told Beria he'd never be able to cut this tough line used for bulletproof vests. Between them, he and Johnny Hsiung of Pakistan cut the American 12 times, and were themselves victimized only once.

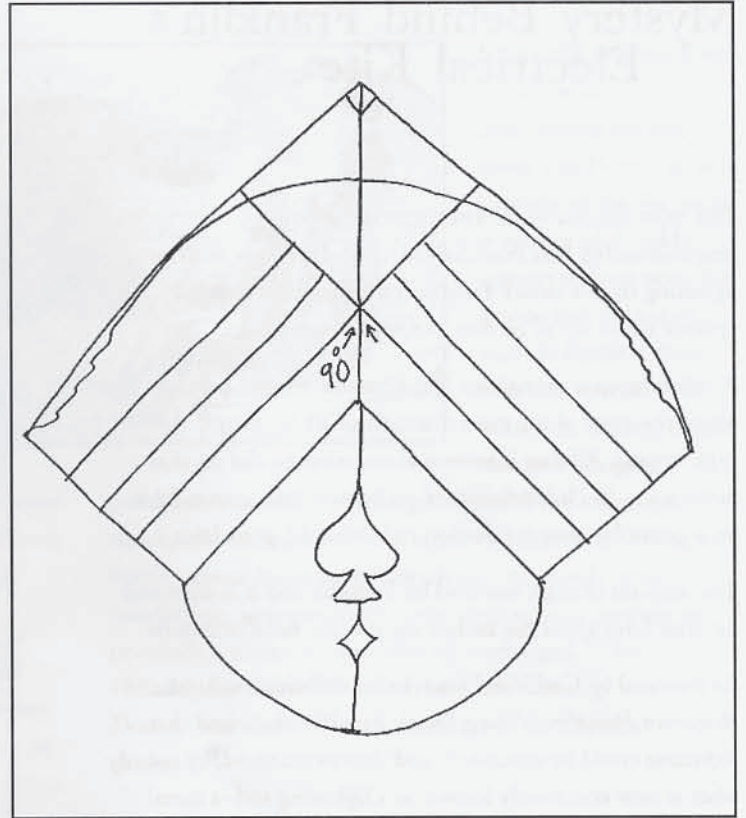


Beria and friends several years ago organized an Indian versus Afghanistan fighter kite competition in California. They were astonished when 7,000 people turned out to compete or just watch.

"I'm going to keep going to festivals and give demonstrations, and of course do as much aerial fighting as possible," he says. "Most of my Afghan friends aren't interested in festivals. They just want to fly and to 'cut.'"

Realizing the dangers posed by cutting line, Beria is careful to choose only ultra isolated sites to fly at. He says in any event, he doesn't mind getting a slash himself now and then. 'Battle scars,' he calls them proudly.

Possessor of a high intelligence, charming, unassuming, Beria speaks five languages, has a wife Homira and baby daughter Mojeda. He supports himself as a graphic designer and counts himself fortunate to be an American. With his novel approach to kite flying, he adds an interesting, exotic note to the U.S. kite scene, the world's new kite melting pot. ♦



*A typical Afghani kite design*

*Kite, follow a path  
drawn by the Keeper of the Golden String  
Dive in dolphin play  
and turn in swallowtail chase  
For the feet touch the ground  
but the mind dances with the wind.  
—unattributed*

## Mystery Behind Franklin's Electrical Kite

The most famous single kite flight in history is unquestionably Ben Franklin's successful attempt to draw lightning from a cloud. Firm and fixed in legend, the episode turns out to be dim and mystifying in fact.

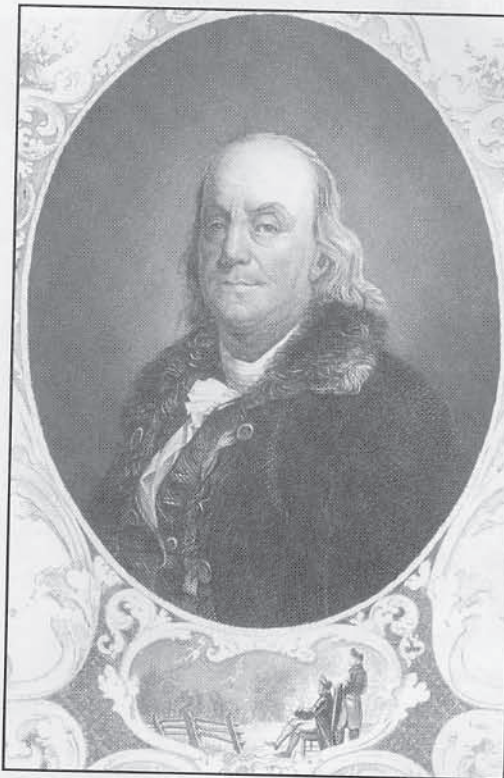
A voluminous writer all his life, Franklin himself never wrote the story of the most dramatic of all his own experiments. All that is known about what he did on that famous day in Philadelphia, of no known date, comes from an account by Joseph Priestley, published 15 years later.

The account though was read by Franklin and it is surmised he must have given the author the precise, familiar details.

As recorded by Carl Van Doren in his definitive volume *Benjamin Franklin* (Viking Press), Franklin theorized that lightning could be grounded, and thus neutralized, by use of what is now commonly known as a lightning rod—a metal pole stuck high into the air to attract electricity and conduct it by wire to the earth, thus 'grounding' the lethal charge. While awaiting construction of the spire of Christ Church in Philadelphia, Franklin conceived the use of a kite in 1752 to get his metal contraption high into the air and, tapping a thunder cloud, successfully brought electricity from the sky—feeling the electrical charge with his own knuckle from a key attached to the kite line. (Had Franklin's kite or rod drawn a heavy bolt of lightning, he would have been electrocuted, as happened later to a Swedish physicist emulating the experiment).

Now the mystery.

Franklin understood immediately how startling his discovery was and had a life-long genius for making drama out of news, yet he kept the electrical kite a secret for some months. It is not known how many, since the date of the original experiment has not been pinned down, although it evidently occurred in June. Moreover in describing his epoch-making discovery in two separate publications later that year, he did not reveal he was the author of the experiment, saying only it had taken place in Philadelphia.



Courtesy of The Skinner Collection

*Franklin as depicted in an old etching*

Author Van Doren theorizes Franklin's strange modesty may have been occasioned by the knowledge the French were conducting similar experiments with electricity and with his desire to keep his own dramatic news for his own pending publications, the *Gazette* and *Poor Richard's Almanac*. In any event, his achievement in inventing a viable lightning rod was quickly recognized in Europe via correspondence and major honors were soon bestowed on him there.

As Van Doren points out, the important thing about Franklin's recollection 15 years later to Priestley is not that he flew the kite in June (or possibly later), but that he flew it before he knew of similar, successful experiments in France. After that, there was no need for Franklin to verify an experiment which he himself had already successfully verified.



Franklin made one of the most dramatic guesses in the history of science, and he was able to verify his guess with a boy's plaything—a kite. He applied his knowledge to making men's houses, barns and ships safe from an incalculable



*Detail from picture on left*

danger. With what seemed the simplest key, he had unlocked one of the darkest and most terrifying doors in the unknown universe. Franklin, said a philosopher, was a new Prometheus who had stolen fire from heaven.

Perfectly willing to have his contributions to the study of electricity absorbed in the enlarging science, Franklin never patented the lightning rod, often called the Franklin rod, or

financially profited from it. But in one discoverable respect, notes Van Doren, he still survives where electricity is spoken of. Franklin appears to have been the first to use, at least in print in English, these electrical terms: armature, battery, brush, charged, charging,

condense, conductor, discharge, electrical fire, electrical shock, electrician, electrified, electrify, electrized, Leyden bottle, minus (negative or negatively), negatively, non-conducting, non-conductor, non-electric, plus (positive or positively), stroke (electric shock), uncharged. "The Philadelphia Prometheus with his kite," sums up Van Doren, "was also an American Adam in his electrical garden." ♦

## Flying From a Balloon

Can a kite be successfully flown from a hot air balloon, since there is no wind as the balloon moves in its own pocket of air?

Stafford Wallace, one of England's premier fighter kite experts, attended a balloon festival in Northampton a while back, obtained a ride in a balloon, and just before launch got his fighter flying about 150 yards outward.

As the airship rose, Wallace found the kite dipping well below the gondola. Using skills learned while flying from house terraces in his native Bombay, Wallace, now living

in Empingham, Rutland, was able to keep his little purple kite flying by means of sharp tugs on the line. One tug proved too strong though and the bridle broke. Wallace was forced to haul in his damaged little fighter.

But he felt he proved his point about flight feasibility under difficult conditions. And he had dozens of witnesses, aboard the balloon and on the ground, who applauded his pioneering effort.



## The Drachen Building: 'Distinctive But Neighborly'

At age 79, Ibsen Nelsen's Drachen Foundation headquarters, now under construction, may well be his last architectural design. He is pleased to note it continues the creative tradition he has established in his 57 years as a practicing architect in Seattle: "It's a nice little building in a nice little neighborhood. With its courtyard in front, it is part of the continuity of the street—distinctive but fitting in nicely with the neighborhood."

Nelsen is widely credited with being a major force in maintaining Seattle as a notably livable city. He has been the architect for many major buildings over the years—renovation and expansion of the Museum of Flight, highly visible townhouses on Capitol Hill, structures and a central square at Western Washington State University, conversion of a naval training center into a park, housing and commercial development at South Lake—and as an active member of many municipal boards he has effectively fought for the best in community design.

"Nelsen has been in the forefront of the struggle for intelligent planning," is the way critic Alan Temko phrases it. Commented the late Isamu Noguchi, one of America's foremost sculptors and urban designers, "His architecture is very much a reflection of the man. The concern is for human beings, their use, and the importance of architecture as environment."

Seventh of eight children of a Danish family, Nelsen grew up in rural Nebraska during the Depression, learning construction skills from his father, who soon departed for the Pacific Northwest in search of work. Although without a university degree, Nelsen achieved the rank of infantry captain during World War II and took a degree in architecture at the University of Oregon after the war. He set up his own practice in 1952 in Seattle and has been doing some of the best architectural work in the Pacific Northwest ever since.

Now living on Vashon Island with his beloved wife Ruth of 52 years, "an angel," says Nelsen, he dotes on their two

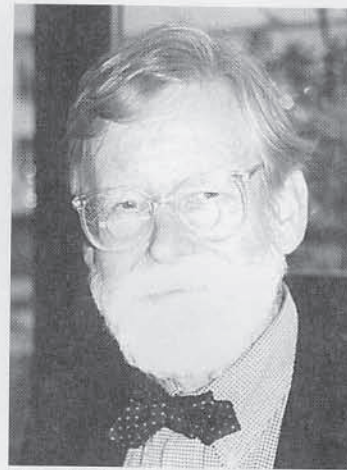


photo: Fred Bassetti

*Ibsen Nelsen*

daughters and two sons, three of them artists, the fourth a health professional, and is pleased to recall some of the more challenging architectural projects he has been involved in other the years. One of them was taking a rundown auto repair shop at 2121 5th Avenue and converting it into a headquarters for his own firm. "Absolutely charming," is how a fellow architect describes the structure. A Nelsen maxim has always been: "If you have a relatively sound building, it is always cheaper to renovate than build new."

Another pet project involved artist Morris Graves, one of the foremost artists in the Pacific Northwest. Graves saw a Nelsen building, introduced himself, and commissioned Nelsen to build him a redwood house in Northern California, near Eureka. A nonagenarian, Graves still occupies the structure—often photographed in art magazines.

Nelsen received the commission to build the three-story Drachen Foundation headquarters after getting to know Ali Fujino, administrator of the institution, when she was working at the Museum of Flight during Nelsen's expansion of that historic structure. It was a meeting of imaginative temperaments and a collaboration in the future was then and there agreed on. The visible consequence of that meeting of the minds years ago: The Drachen headquarters, now rising rapidly for an end-of-year opening. ♦



## A Researcher's Viewpoint

As the Drachen Foundation steadily adds to its kite files from around the world, it has had to find researchers to do some of its most vital work. Enter Ed Milligan—"Uncle Ed" to all—who works out of Washington, D.C., a mother lode of valuable, obscure, often difficult to unearth information.

An ex-U.S. intelligence officer who attained the rank of lieutenant colonel, Milligan, now of Alexandria, Virginia, is circumspect about his government career. He does drop the occasional name—Norman Schwartzkopft and Ignatius Acheampong, classmates at Fort Leavenworth. Schwartzkopft went on to Persian Gulf fame, Acheampong became president of Ghana and was later assassinated. Beyond that, he doesn't say much, honoring his vow of secrecy.

After a series of uninspiring jobs following retirement, Milligan got into research when a friend talked him into finding the whereabouts of surviving gold medals awarded by the U.S. government to foreigners who saved American seamen. Although many had been struck, most were subsequently melted down, so they constituted an unusual collector's item. Spending six months on the project,



photo: Ben Rubie

*Ed Milligan*

Milligan discovered names and addresses in State Department correspondence archives and elsewhere and made a name for himself as a researcher. Word of mouth soon produced other commissions and Milligan discovered he had a new vocation that he was good at and enjoyed.

Milligan has more or less specialized in genealogy, but has done work on Marine fighter aces of World War II, the checkered career of the German cruiser Prinz Eugen, Green Beret work in Vietnam, foreign-born blacks who fought in the Union Army during the U.S. Civil War and Chinese who fought either for the Confederacy or Union in that conflict, and other unusual projects. He is currently working on aspects of kite history for the Drachen Foundation.

"Archivists can be helpful or not worth a damn," he comments. "The crucial element is to have a lot of knowledge about a project so you won't present as the village idiot. You have to know the questions to ask."

"At first," he says, "there is often little information available. Then links open up. You find someone who is also interested in the subject, discover what he knows, who's doing what in the field. Fellow researchers often help out. It becomes the old boy system."

"The job takes a lot of smarts and imagination," Milligan notes, "and it suits me. The pay isn't great, but I've managed to get around a bit—England, Australia, Canada—and I like that aspect of the work. I'm going to stick with this research. My net is spreading around the world. And there's always the pleasure of a difficult job not only completed but tidily done into the bargain." ♦



## Documenting the Kites of Cambodia

What is almost certainly the first extended English-language essay on Cambodian kites ever written has recently been published by Sim Sarak, director of the Department of Cultural Development of the Ministry of Culture and Fine Arts, in Phnom Penh, Cambodia.

Sarak presented a signed copy of the unique document to the Drachen Foundation at a recent meeting with a freelance representative of the institution, Ben Ruhe, in Phnom Penh. He also presented the foundation with a prize Kleng Ek kite, the royal kite of his country associated with the ancient Khmer culture.

There are written records from the Khmer period many hundreds of years ago—an inscribed stone dated 824 A.D. citing a royal kite flying ceremony, as well as a later diary by a Portuguese visitor, Quiroga de San Antonio, which mentions kites with hummers creating “a sweet sound.”

From personal and professional commitment, Sarak in his work is attempting to keep alive ancient Cambodian

traditions threatened by both modernism and in recent decades severe internal strife partly provoked by the war in neighboring Vietnam.

Cambodia was once quite dominant in Southeast Asia and has one of the world's largest and most spectacular cultural sites, the 1,000-square-kilometer city of Angkor in the north of the country. It is a Unesco-designated esthetic treasure. Some thousand years old and comprising hundreds of buildings, including the sprawling Angkor Wat (a wat is a temple), it remains one of the globe's foremost tourist attractions—for those prepared to brave the rigors of one of the poorest countries in the world.

Sarak organized a kite festival several years ago in late December—the traditional flying season—when the rice harvest has been completed and there are cool, strong monsoon winds from the north. But a second festival he planned for late 1998 had to be canceled because of new unrest in the country. He now hopes to hold one late this year, as a favorable harbinger of the new century arriving. He hopes for a substantial foreign attendance to give it an international flavor. Because of its economic woes, Cambodia is a bargain country to visit.

Sarak's essay covers the origins of Cambodian kite flying more than 2,000 years ago, folk legends about kites, and participation in the sport by Khmer royalty. It has a section on ceremonials attendant upon flying kites involving music, dance, food offerings, the burning of incense, the use of fire lanterns, and ritual processions of devotees. It concludes with a discussion of the 14 types of Cambodian kites and instructions for building the Royal Camboge or Kleng Ek model.

While influences from neighboring Thailand, China, Laos, Vietnam and Malaysia are visible in some of the Cambodian kites (hawk shape, tubular shape, demon figures, Thai pakpao, even a boxkite with wings), the Kleng Ek is clearly the most distinctive, original and beautiful of them all. This Cambodian masterpiece resembles a human figure with very



*Sim Sarak (right) and his assistant pose with a Cambodian Ek kite*



wide, flat hat, topped by a long humming device of reed and bamboo.

Materials used in the construction of the Royal Camboge kite include bamboo, hand-made sugar palm leaf paper, or alternately silk, for sails, woven thatch for tails, hand-made plaited waxed line, and glue from the flower of the sticky rice plant. Tools include axes, knives, whetstones, planes, chisels, and so forth. There are related flying accessories such as bamboo reels.

Although Sarak is attempting to organize a kite flying association in Cambodia, flying remains pretty much the province of children these days. A visitor to Cambodia cannot fail to note little boys flying their small, white, obviously homemade tailed-kites in cut-over rice fields, capering about with the joy of children at play with the wind anywhere in the world. ♦

For those wanting to learn more about Cambodian kites, Sim Sarak invites queries. His address is:

Department of Cultural Development  
 Ministry of Culture and Fine Arts  
 Kingdom of Cambodia  
 11 Street 57, Sangkak Boeung Keng Kang, Khan Chamkar  
 Morn  
 Phnom Penh, Cambodia  
 Fax: 855-23721934  
 Telephone: 023-352-643

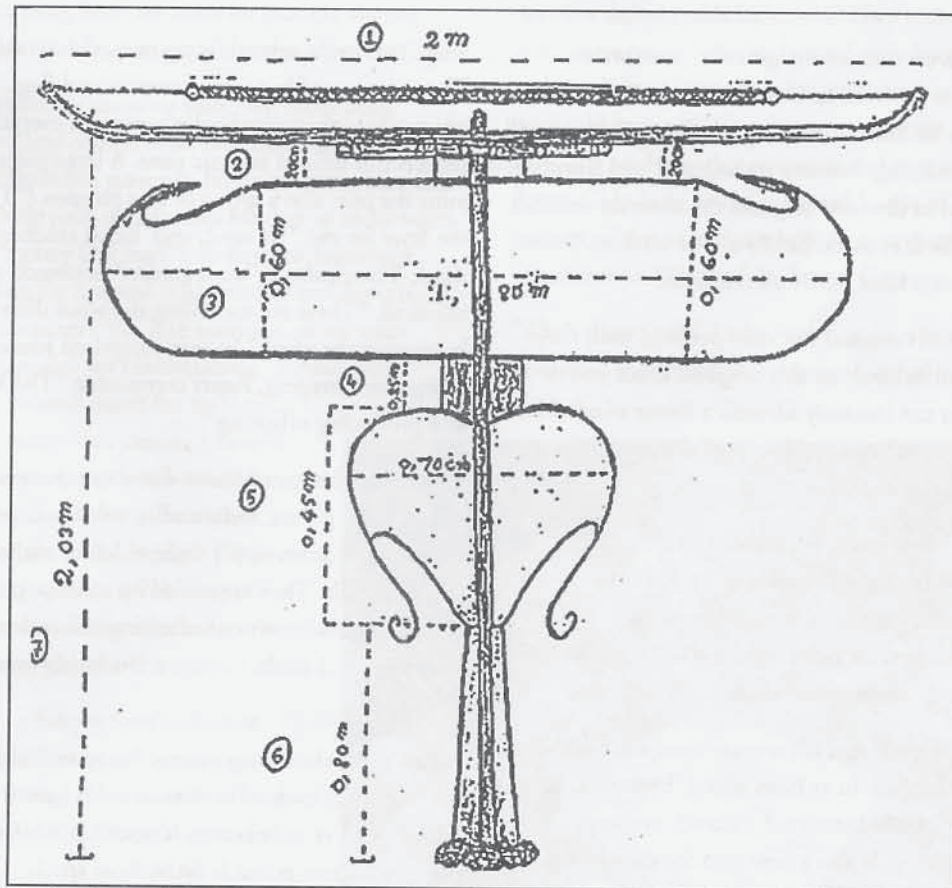


Illustration: Sim Sarak

*A plan form of the Royal Cambodian Kleng Ek kite*

# The George Peters Road Show

## *A Look Back in Time*

*As word slips down the hill from Boulder, Colorado, that kite-deity George Peters is finally receiving his due recognition as an installation artist, the Drachen Foundation thought it might be enjoyable to revisit this episode documented by Ben Rube. George and lady-friend, Melanie Walker, an accomplished artist and art educator, have proven a formidable artistic team—whimsy, creativity and professionalism all tightly wrapped in a package you can't resist. George and Melanie have competed for, and won, several large commissions (some where they were finalists against each other) and are working full time to meet various deadlines, so both are finding little time for new kite ideas. No doubt, George will continue to travel with his kites when schedules permit and I'm quite sure he will re-conquer the kite scene—or certainly win our hearts—in years to come.*

—Scott Skinner

George Peters puts on such an imaginative, memorable performance at kite festivals, he is invited to them all around the world. Within an hour of arriving at a flying field, he will have so many kites flying, banners waving and odd fabric creations mounted in the sand or grass, the observer assumes a team of six people is at work, hardly a lone kiteflier. Peters arrives early and stays later, active all the time.

His kites and related creations not only perform well, they are extremely beautiful and notably original. Once you've seen his work, you can instantly identify a Peters wind object at a distance. He is unquestionably one of the two or three best kitemakers in the world.

Not surprisingly, when Peters departs his little Boulder, Colorado, home, with its big workshop out back, he carts a lot of stuff with him. Having him spill out his bags and comment on their contents reflects an unusual mind at work—both intensely creative and charmingly eccentric.

At one impromptu show and tell session some time back in time at the big annual fly-in at Fano island, Denmark, he was so entertaining he quickly attracted a crowd, by turns laughing and admiring. It was a new turn for the George Peters International Road Show.

From his five bags, two huge and three smallish, an array of kites and related objects emerges—first kites: a centipede,

wasp, two birds, several flying men, delta, rokkaku, octopus. Then a group of banners, pennants and flags. Peters has an unusually sophisticated color sense and everything he sews reflects this refined esthetic taste. A large piecework playsail joins the pile; also a group of kite puppets (“They hold on to the lines for me,” he says), and lizard sandbags to anchor them. There's also a “wind garden” of objects to thrust into the sand. “These are for telling the wind direction and harvesting the wind,” he says. Surprised himself at how many things are emerging, Peters comments: “The kites are mating and producing offspring.”

Gear to fly the kites follows—lines, attachments, anchors, stakes, rope, gloves, reels, mallet, telescopic poles, swivels, ripstop tape, seam ripper, lightsticks for night flying, crepe paper for tails. They are trailed by scissors, glue, repair kit, pins, razor blades, threader, tubing, two rulers, miscellaneous straps, ground cloth. George starts losing interest. It's prosaic stuff.

When some electronics emerge his attention is re-engaged. A Chess Master evokes the comment: “I have it up beyond the 13th level—I've only beaten it once.” A Walkman stereo player with two portable SA30 Koss speakers and music by the Texas Tornados, cellist Yo Yo Ma and Bobby McFerrin is termed “vital” by Peters. There's a classic Nikon EM camera (“I have an Olympus with me, too.”). He shows a small, high





photo: A. Fujino

*George Peters unpacking his kite gear*

intensity light to hang from the neck for reading aboard airplanes. "It's my most important piece of equipment."

Rummaging further, he turns up film, two Swiss army knives ("In case I lose one."), mini-flashlight, umbrella, high tech sunglasses, lip balm, passport, flight itinerary, bandaids ("I used up a whole pack on Masaaki Modegi in India when he was cut by a fighter kite line."), notepaper, hammock, sunblock, clothing for hot and cold weather and for rain, water bottle, binoculars ("For kite auctions, to see what they're holding up—also for birdwatching."). Also, pen, colored pencils, colored paper for making paperfold kites, sandpaper, camera lens and flash, gifts ("Kite pins, patches, a mini kite from Charlie Sotich and stuff like that."), packet of kleenex, expandable pliers ("For working on anything from a VW Bug to a van."). Then another knife, another pair of scissors, more razor blades.

Oddities surface: a fishing float collection from Italy, Danish "buzzgum" for energy, red plastic boomerang, hibachi for beach cooking, Nintendo Game Boy ("Important, very important—you can get sand on it and it still works."), cassettes titled "Lock and Chase," "Tetris," "Phantasy Legend" ("This last one is for trading—I'm looking for

an 11-year-old boy"), set of blowdart points, shafts and blowgun, a 13-inch Aerobic disk ("Good as a blowdart target and for throwing on the beach"), a marble ("To burnish kite spars with, to strengthen them."), watercolors, brushes, board to paint on and pot for water ("My impromptu waterpot for brushing my teeth.").

There's a badminton net, German dictionary, leather pouch for lost sunglasses ("Maybe they'll come back."), kiteflier's "passport," mail order catalogues, rubber bands ("These are special—I draw on them, and the faces contort as I stretch them"—Peters illustrates, making weird noises to accompany the contortions of his face: "Cheese!" "It's Edward Munch!"), worry stone ("This is the kidney of a dinosaur."), two Miocene fossils, flint flakes, a Paleolithic projectile point, coins from many countries, a collection of feathers ("Pickups from all over."), business cards ("Mine, everybody else's—sometimes I give out other people's cards if I don't want to hear from them again.").

Another duffel yields lock ties ("They make good finger cuffs to tie people's hands behind their backs during riots."), a plastic "pirate" crossbow kit purchased in Denmark, a week-old banana ("It's getting ready to eat now—nice and soft."), a binder with newspaper and magazine articles on Peters ("My brag book."), a small bottle of airline wine plus packets of cheese and crackers, a paperback titled "Uncommon Wisdom" by Fritjof Capra.

"Then there's sand," says Peters, as he unpeels a bag and pours out a surprisingly large quantity of it. "Sand from



photo: A. Fujino

*Peters' kite bag contents*



## The George Peters Road Show

Thailand, sand from Japan, sand from India, sand from Ostend, sand from Napier, sand from Melbourne, sand from Dieppe.”

Peters explains about the three small bags. “On international flights, they only allow you one in the cabin of the plane, but there are various ways of dealing with this at the counter: You can say—‘This bag fits into this one.’...Oh okay, they don’t ask you to do it right there at the counter. Or you can sort of kick the extras out of sight below the counter.”

“Meanwhile, you’re laying the charm on the check-in agent, right?” says an observer. Peters smiles his beguiling smile.

Two large bags to go into the hold of the aircraft are permitted on overseas trips. As a stratagem, Peters used to use oversize bags prominently marked with ski logos because skis are allowed to exceed normal baggage length restrictions. “Surfboard bags are good camouflage, too,” he says.

But now Peters has switched over to kite bags of his own making since he says ski and surfboard bags get lost too

easily. “My kite bags are bright red and blue with big blue and black spots all over them. It’s easier to describe them at the lost luggage desk. What I tell the clerk is ‘They look like they have the plague, they’ve got spots all over them and you’d better find them quick before they infect your whole airline with spots.’”

Keeping careful track of the weight of the two big bags makes good monetary sense, he points out. These sacks may weigh up to 70 pounds each; beyond that a costly penalty per pound is levied. “I pack to 68 pounds and try not to leave on a damp day,” Peters comments. “In fact,” he notes, “the two bags I brought along this trip weighed 66 and 69 pounds. I weighed them at home just before leaving.”

All this unpacking, examination of gear and commentary has taken a good half hour. A born raconteur, Peters has not lost a single member of his audience.

With everything now unpacked, he concludes sadly: “I didn’t bring my chair this trip. It didn’t fit.” ♦



photo: A. Fujino

*Scott Skinner at a Peters' campsite*



## Letters to the Editor

"Sirs,

"I received the Drachen Foundation's new Kite Journal and enjoyed it very much. I hope I'll have the chance to take part in your activities, know many kite enthusiasts and establish contacts with kite fans, clubs and companies, in order to promote kite development around the world. Best regards from China."

*Yang Huan-xing  
Space Sport Kite Club  
P.O. Box 8211  
100076 Beijing, China  
e-mail: lihua@public2.east.cn.net*

"Giddy there Scott Skinner,

"I was blundering through a great heap of papers when I came across your e-mail. Actually, I run the paperwork side of my life on somewhat the same system cats use to rid themselves of fleas; they change their sleeping places at intervals to leave their fleas behind. I move my 'office' around the house, attempting to conceal its current location from family so I can plausibly deny all responsibility for answering things they left for me at the previous (abandoned) location.

"Anyway, on the altitude record side (for a single kite), not being a kite history ferret, all I can recall reading of is Jalbert claiming 18,000 feet for a single parafoil....A couple of years ago, my son Robert and I made a numerical model for altitude flying which was very informative. It showed one thing that we knew; that bigger kites fly higher—this being the main reason I have never been keen on setting this record myself ("bigger is better" is no engineering challenge compared to attacking things that are finely balanced optimisations of a large number of variables). It also really surprised us by showing that there is both an upper and lower wind speed between which record attempts should be attempted.

"The numbers say that even for a line-kite system optimised for a particular wind speed, unless that wind speed lies between 4 and 8 meters a second, high altitude is not possible. We did numerically "fly" a practicable one-kite line system (basically a large parafoil with a lift-over-drag coefficient of no better than 5 on high-tech Spectra fiber line) up to 15,000 meters, so it is possible, given steady wind and no dead layers.

(Note: an L/D of 5 means the kite glides forward 5 feet for every foot it descends.) But to get this height requires a kite of 1,000 square meters, and weather variability is such that perhaps 100 attempts would be necessary in a good location for one success.

"We tried our model against against known historical results and found good matches; we're not surprised that Lindenberg in Germany, using a train of Grund kites, reached 31,000 plus feet only once, in more than two decades.

"One quirk of altitude flying that makes it a matter of such luck is that all variations in wind direction are beneficial, so that in the extreme, even a non-optimised system can occasionally get very high if wind is from alternating directions in successive layers to cancel line drag."

*Peter Lynn  
Ashburton, New Zealand*

"To all interested parties,

"What's billionaire retailer Len Lewis up to with his projected new Samuel F. Cody Emporia chain? Carolyn and I just visited the new Trafford Center west of Manchester, a mall with more than 200 stores. The Cody Emporium there is the first one in Britain. It has 6,200 square feet of retail area selling an eclectic mixture of goods—glass, china, electronic gadgets, greeting cards, clocks, bags, some food. An odd mix, it all appears to be of good quality. Coffee shop in rear. Cody? Well, I was disappointed: Two modern two-line delta sport kites (which they sell), and two rather poor reproduction Codys hanging from the ceiling. Around the walls and fixtures is a frieze depicting the kites, airships and aeroplanes of the great man. At the back of the coffee shop is an 8-by-20-foot print of Cody's Nulli Secundus ("Second to None") airship being prepared for flight (I guess at Farnborough) and around the store projectors display silhouettes of kites and Cody Army Aeroplane No. 1. The coffee shop is called "The Airship," only it doesn't use the Nulli Secundus but a modern airship as the logo! I was not permitted to make photographs, but kite fans elsewhere aren't missing much from this refusal."

*Jerry Swift,  
e-mail: jerry\_swift@compuserve.com*

## Letters to the Editor

"Sirs:

"For the information of the Drachen Foundation and its constituency, during 1997 only one new U.S. kite patent was issued. We have to go back more than 50 years, to 1944, to find a year with as few as one new kite patent. The average for the past half century has been 12 per year, so 1997 is certainly an aberration.

"Reasons may be the sharply increased cost of obtaining patents, the increased number of multi-line kites which do not have patentable differences, or the difficulty of protecting infringements of patents.

"Whatever the reason, I remain prepared to answer questions on the subject of kite patents from any interested person around the world."

*Kiting Time*  
*Ed Grauel*  
799 Elmwood Terrace  
Rochester, NY 14620

"Hi Drachen, here goes,

"'Woh kata hai!'—literally, 'Yeah, I've cut him,' is the dominant cry resonating through the Indian city of Jaipur during the yearly festival of Makar Sankranti. A million kites in the sky at one time, each intent on cutting everybody else down. In the middle of this kite mayhem last January 14 (dream-come-true or nightmare, depending on your kite proclivities), our mixed bag of international fliers (Martin Lester, Tal Streeter, Nicholas and Sylvain Grez, Jean-Michel Petit, Werner Steinmetzer, et al) flew with valiant trepidation. Aided by exhortations over the microphone to clear the flying field of fighters, we'd managed to stage a rather brief demonstration of Western kites, but on the edges lurked fighter kites, flown on cutting manjha lines from tiny rooftop terraces, intent on the 'kill.'

"The first to go was Jean-Michel. Amazing, how effortlessly the humble six-ply cotton manjha will slice through Kevlar. Quickly the sky was bereft of big kites (caution being the better part of valor), except for the Grez twins—now flying on radically shortened lines!

"The visitors from the U.S. and Europe soon got a chance to get their own back. We packed up the big kites and headed to a terrace in the heart of the old city. We had fighter kites and spools of manjha waiting and soon everybody was an honorary Indian. The minute you had a kite up in the air—even five meters up—you were in the fray and an attack could come from anywhere, including your companions on the terrace.

"Martin Lester got his first manjha cut—on his own finger. The

Grez discovered the thrill of cutting their first kite. Frank Coenraets cut seven and was still flying. His 'Yes, yes, yes!' challenged the 'Woh kata hai!' from nearby rooftops in intensity. Even I, the organizer of the trip, got to fly—finally. The kite madness was unchanged from the time I flew there as a kid.

"Finally worn out, we sat on the terrace with drinks and discussed the 'pench' (tangle) in front of our eyes. Martin Lester had the last word, 'If we ought to live each day as if it were our last, to die on Makar Sankranti in Jaipur is fine with me.'

"Put it on your schedule: the fourth Desert Kite Festival is scheduled Jan. 9-16 in the first year of the next millenium. See you there. 'Woh kata hai!'"

*Ajay Prakash, Mumbai, India*  
*e-mail: nomad.travels@aworld.net*



Dear Ali,

Kites are cool and I like making them  
Thanks for bringing the kites and showing  
us how to make them. I also enjoyed  
those nice crackers. Waa! watch my  
kites in the park.

Love Zach

*A note from a 1st grader in Seattle  
thanking Ali Fujino for presenting a  
kite-making program at his school.*

*Letters to the editor compiled by  
Elizabeth Snodgrass*



# THE DRACHEN JOURNAL

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**If you have questions or comments about the Kite Journal or kiting news, please submit them to:**

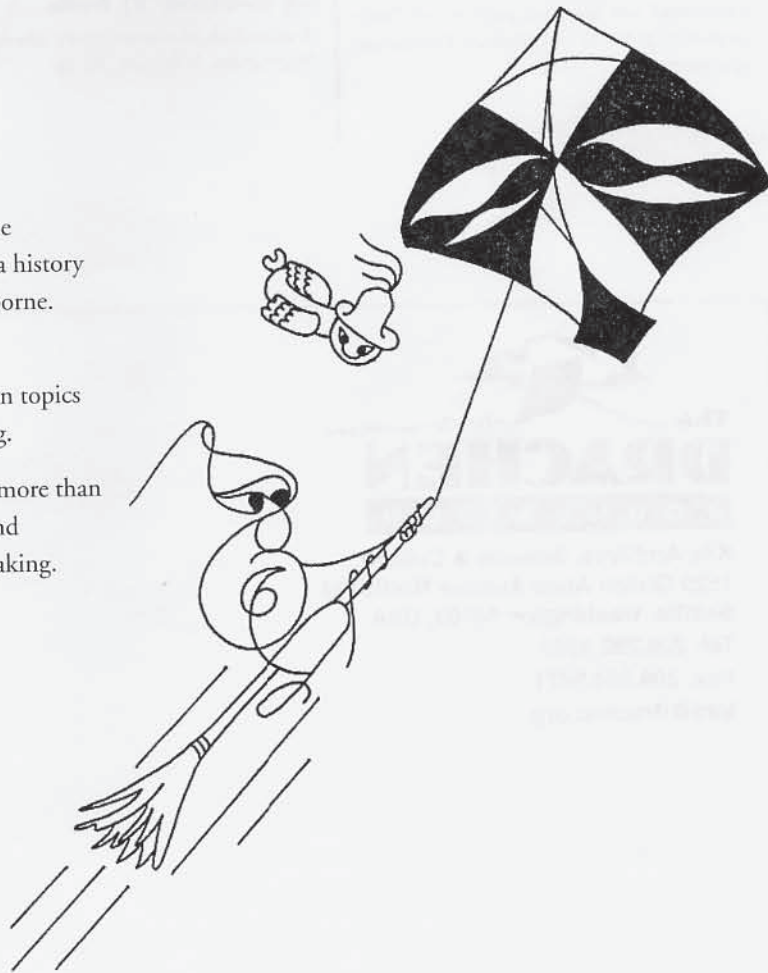
The Drachen Foundation  
1629 Queen Anne Avenue North, #104  
Seattle, Washington 98109  
telephone: (206) 282-4349  
fax: (206) 284-5471  
email: [info@drachen.org](mailto:info@drachen.org)

## ABOUT THE EDITORS

**Ali Fujino**, a museum specialist since age 19, became fascinated with the world of "fringe" flight and has a history of projects in the world of anything that can be airborne.

**Ben Ruhe** is a journalist and author who regularly contributes articles to special interest publications on topics as diverse as boomerangs, flint knapping, and kiting.

**Scott Skinner**, a kite enthusiast and kite maker for more than 20 years, is dedicated to preserving the history of and promoting interest in kites, kite makers and kite making.



Drawing by Mary Jo McKinnon  
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