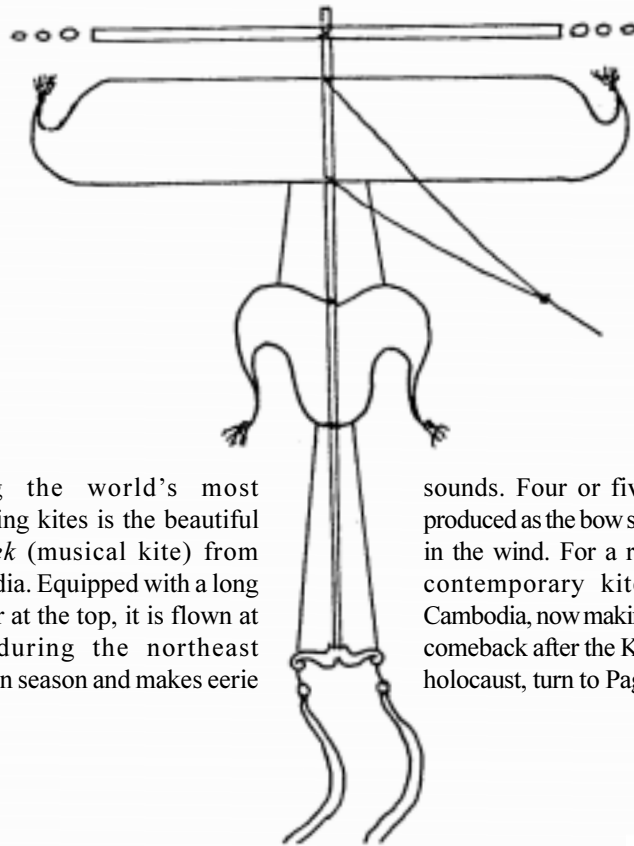


K I T E

THE DRACHEN FOUNDATION

J O U R N A L



Among the world's most interesting kites is the beautiful *kleng ek* (musical kite) from Cambodia. Equipped with a long hummer at the top, it is flown at night during the northeast monsoon season and makes eerie

sounds. Four or five tones are produced as the bow string vibrates in the wind. For a report on the contemporary kite scene in Cambodia, now making a dramatic comeback after the Khmer Rouge holocaust, turn to Page 5.

ABOUT OUR CONTRIBUTORS

At age 94 (95 on September 30), **Ed Grauel**, of Rochester, New York, remains a wonder—a living national treasure of kiting. The world’s leading authority on kite patents (Page 18), he remains busy designing, making, flying and writing about kites. Grauel for many years conducted scientific experiments with kites and the research papers that resulted are being systematically published for the first time in this journal (Page 22).



Inventor **Peter Lynn** of Ashburton, New Zealand, is a roving global ambassador for “extreme” kite traction sports. He first spread the gospel on land buggying, then took kites to the water for kite sailing. Two of his most recent pungent essays on the kite world appear on Page 28.



Following in his father’s tradition of colorful prose, **Peter Lynn Jr.**, also of Ashburton, New Zealand, prompted by questions from Drachen Foundation President Scott Skinner, tells about his early days as chief test pilot for waterborne craft powered by kites. He tells about the thrills and spills and discusses breakthrough developments (Page 26).



Tal Streeter, of Verbank, New York, has written two of the best books in English ever published on kites, *The Art of the Japanese Kite* and *A Kite Journey Through India*. He is working on volumes on Indonesian kites and kite pioneer Domina Jalbert, inventor of the parafoil. A professor of art at the State University of New York at Purchase, he is the designer and maker of large scale sculptures and kites and for decades has been collecting kites, with a heavy concentration on Asia. He



hopes to open his own museum in the next decade. He tells about falling in love with kites in a reminiscence on the following page.

Author of the best-selling *The Magnificent Book of Kites*, **Eden Maxwell**, of Fair Lawn, New Jersey, publishes widely and on a wide variety of subjects. He is also a painter of some note. A computer wizard, he is art and culture conference moderator of the New York Macusers Group. His review of the book *The Genesis of Flight* appears on Page 20.



Nirmal Man Tuladhar teaches linguistics at Tribhuvan University in Kathmandu, Nepal, for a living and flies kites as a hobby. His article on Nepalese kites (Page 16) is an outgrowth of his scholarly studies at the Center for Nepal and Asian Studies at the university. Tuladhar, 47, is married and has two sons who he is teaching the sport of kite-flying.



The Drachen Foundation: Kite Archives, Science and Culture

The Drachen Foundation is devoted to the increase and diffusion of knowledge about kites worldwide. A 501(c)(3) private nonprofit corporation, Drachen views kites from the standpoint of art, culture, science and history. It uses an integrated program of exhibitions, education, research, collections management, and publications to promote learning about kites. The archive it maintains is freely open to the public for research.

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The Child of Ten

Recalling Two Magical Moments

By Tal Streeter

In the summer of my tenth birthday, my father sawed thin, narrow sticks out of a pine board for me. I scissored a diamond shape out of a sturdy brown grocery bag and used rice paste made over the oven burner to glue it to the sticks. It was my first kite, the first kite I made, and it possessed a kind of magic as I felt it lift out of my finger's grasp, run upward higher and higher, then come to rest flying smoothly in the clouds high above. It was also the first kite I had ever flown, and the experience, perhaps enhanced by my having made the kite myself, somehow or other in my mind at least, was something that forever set me apart from my school mates and friends who had never flown a kite.

Our daughter Lissa celebrated her tenth birthday during the period when our family lived in Japan and the three of us—Lissa, her mother and I—made our first visit to India. She was still dependent on us, but a wonderful facility for languages—she spoke and understood Japanese—had given her an aura of self-assurance unusual for a ten-year old. Within a surprisingly short time, she had become an adroit traveler.

I wished I could enter her mind, wondering what I might learn from her perceptions of these countries we traveled in, so different from our own. Early on in India, one of her acquisitions made with her own money was a little Indian mirror she had picked out from among a variety of items on the table at a street vendor's stall. Though she was not at all vain, far from it, the novelty of having her own mirror attracted her and she pulled it out often. When I carried her on my shoulders, for example, she reached down to put it in front of my face so I could see both of us reflected in the mirror's glass.

Riding there on my shoulders or standing close-by at my side, Lissa at ten making up her own games with her mirror reminded me of the game of kite flying I had enjoyed at ten. The view of both of us and our surroundings in her mirror seemed to me to meld youth and innocence, age and wisdom, not unlike a kite and the kite smile which seems so independent of one's age, our reflected smiles and the kite smile dispelling the mischief I associated with the disparity of our years, her mirror play allowing me to relive with her the pleasures I associated with childhood.

We were staying at Indian government guest quarters (now there is a modern, four-star hotel) several miles from the temples of Khajuraho, in the state of Madhya Pradesh. Madhya Pradesh is often referred to as the heartland of India.

Khajuraho is located almost the exact mid-point in a straight line between Ahmedabad, a relatively new city of commerce, and Varanasi, one of the most ancient of holy places.

Lissa and I had come back late in the day to experience the temples at twilight while Dorothy Ann, rested at the guesthouse, nursing an upset stomach. The two of us stood side by side in on the temple buildings lengthening shadows, the sun low on the horizon. There were few visitors. Our attention was drawn to a group of laborers, men and women, working on the repair of a low wall in one of the temple's rear courtyards. I had caught glimpses of them throughout the day working without pause. The women walked one behind the other in single file. Their movements seemed synchronized, almost choreographed. One arm swung freely, the other, crooked at the elbow, held building supplies balanced on top of the head: variously a bucket of small stones scooped up from a mound at the courtyard's border or a shovelful of sand on a board, or a bag of mortar. The women followed a circular path, hardly breaking the rhythm of their steps to load materials and drop them off where the men worked mixing mortar and laying stones. The workers were from the poorest Indian caste, the Sudra, most often employed in manual labor. Though doing obviously physically exhausting work, the women had an extraordinary bearing, their backs straight, lithe bodies set off by bracelets and anklets of gold and silver (family treasure, dowries for the women) and saris, draped layers of thin dyed cotton. Each was unique, variously a foundation layer of slightly grayed oranges and bright greens; over this, more diaphanous cloth, patterned, tie-dyed tangy spice and fruit hues, shades of orange-yellow and vibrant reds.

They moved with a kind of languorous, sinuous grace we associate with dancers. Their dance was a poignant one honoring the gift of life: your body is a temple as great as these edifices towering over you. Treat it and yourself wisely. Finally, align yourself with your day. The day is hot and long, tomorrow and tomorrow, and all the tomorrows into the future will be hot and long as well. It is written. Karma. Reality. And though employed as common laborers, give up not a whit of the gift of your femininity. Their graceful, willowy posture and slow, measured movements cast a kind of hypnotic spell over Lissa and I watching quietly.

The feeling of Lissa, leaning in, pressing against my leg, holding my hand is still, 25 years later, vivid in my memory. It must have crossed Lissa's mind, I thought, as it crossed mine, that the deepest parts of her being were a common

Magical Moments

bond, shared between herself and these young women.

We both took in the scene in the courtyard, neither of us speaking.

We had been there perhaps ten minutes, when one of the lovely young women—could she have been 16 or 17, or younger—broke from the line and walked slowly directly toward us. She had extraordinary bearing, walking toward us, all the while a trace of a lovely Mona Lisa smile on her face. She stopped, standing directly in front of Lissa. Bending at the waist, she took a small gold necklace from around her neck and with one graceful movement of her hand placed the necklace over my daughter's head. I couldn't imagine what Lissa felt at that moment, but my heart stopped. Just as the young Indian woman turned to regain her place in the work line, without a word, Lissa took her arm with one hand, holding it gently but firmly. With her other hand she pulled a barrette out of her hair braid and placed it carefully into the young Sudra woman's hand.

With only a brief look between them, meeting each other's eyes, something beyond description passed between them, something wise beyond understanding, then, the young Sudra woman returned to her place in the work procession.

There was a time when it was difficult for me to let go of my daughter's childhood, to take heed of the fact she was no

longer that same child of ten my wife and I dearly loved. I admit this with a pang of guilt for this recognition was overdue, the time for memories of Lissa's childhood to have been into perspective, replaced by the precious years in her life that marked her emergence as a young woman.

Later, when Lissa had left to lead her own life, having finally accepted her as an adult I viewed this time in India as an expression of the inexplicable wisdom, coupled with a kind of magic, which graced my daughter, a special magic and wisdom in her childhood that had combined with the magic and inexplicable wisdom and character of India.

The closest I might have come to something similarly memorable for me in my own youth was the something I came to hope could be a part of me throughout my life, the feeling I experienced, seeing my kite flying for the first time at the age of ten. I find myself wanting to combine and repeat these two events over and over until the date of my death: the first kite in my youth flying up there in the clouds coupled with the event in Khajuraho. I imagine it hovering quietly in the sky above and my older self sharing something precious there in the magical kingdom of India, something precious, beyond telling, something which had the power to enter into our being. From that moment changing forever our character, who we are. ✨

Thoughts on Kite Flying in Japan

I came to see kite-flying today for the first time.

I now understand that there is etiquette involved.

The father is flying his child's kite.

His face is glowing.

The kite that his father made for him

Is flying far away.

The child is wondering:

"How far will it go?"

Many kites in the sky

Making a noise.

As the noise enters my ears, I think: "What a wonderful

sound!"

What is flying a kite? What is it from an adult's perspective?

An adult becomes a child.

What is it from a child's perspective?

A child's outlook becomes more expansive.

Busy making the kite,

Busy flying the kite,

Though I'm old, I've no time to die.

Compiled by Mrs. Takuko Sato

Fujisaki, Aomori, Japan

An Expanding Asian Kite Scene

Editor's note: On a recent visit to Southeast Asia, the author of the following articles took in kite doings in Cambodia and the Philippines. There is more flying there than might have been expected. Herewith are reports from that trip.

Bringing Kites Back to Life in Cambodia

By Ben Ruhe

The Khmer Rouge holocaust of the late 1970s not only wiped out an estimated third of Cambodia's population, but because it was aimed at the intelligencia—anyone wearing glasses, for example—it obliterated much of the country's culture. All but a handful of the royal dance company, which had performed worldwide, perished.

Just as these few survivors have reestablished classic dance in Cambodia, others in the country have worked to bring back other folk arts. Among them is Sim Sarak, director general of administration and finance in the Ministry of Culture and Fine Arts. Sim (his surname or last name) has focused, among other areas, on restoring kitemaking and kiteflying to Cambodia. The tradition goes back more than 2,000 years.

Starting in 1994, he has organized kite festivals, written a book about kites and taken the beautiful *kleng ek* (or musical) Cambodian kite on the road to international kite celebrations in Dieppe, France, and Cervia, Italy, as well as Asian festivals in

Hong Kong, Indonesia and elsewhere. His ministry is now refurbishing a large new exhibition hall of folk crafts in the capital, Phnom Penh. The very first craft honored was kites. Large *kleng ek* and other style kites grace the walls and hang from the ceiling in a stunning installation—tribute to a Cambodian cultural tradition Sarak and disciples refused to let die.

With his vivacious, stylish wife Tcheang Yarin, mother of his three children, helping his English along, Sim recalls he became interested in kites as a boy in his village in Kompong Chan Province, 70 miles northeast of Phnom Penh. "There was no radio, no TV then," he says. "Kites were fun. It was our recreation. We had competitions and I particularly liked to fly kites with hummers attached. Since the northeast monsoon wind from November though March blew right through the night, one could put kites up and fly them for days at a time. When there were a dozen or more up at one time, each equipped with a hummer, the sound was beautiful. We made hummers from rattan, bamboo or palm leaf. Palm made the most beautiful



Krong Ngoun Ly prepares to launch his traditional musical kite in Phnom Penh, Cambodia. Note the long hummer at the top of the kite which creates the music as flowing air vibrates a thin, stretched membrane.

Asian Kite Scene

sound, but was the most fragile. Rattan was the toughest.”

“I was born in 1950, so now I’m 52,” says Sim. Eldest of three children of a carpenter, he was already grown when the Khmer Rouge took over in 1975 and proceeded to decimate the population in a bloody, inexplicable agrarian reform movement that lasted four years. “I was a teacher of literature from 1970 to 1975, then I was able to hide my background during the holocaust. I lost my mother in 1977 but otherwise the family survived.”

After the Khmer Rouge was ousted, Sim found a job with the Ministry of Culture and Fine Arts in 1980 and has been there ever since, rising through the ranks to his current position of eminence. Promoted last year from director to director general by King Norodom Sihanouk himself, Sim now has a staff of 70 and oversees the national library among many other responsibilities. He is currently drafting a copyright law for his country and has important financial responsibilities in addition to his cultural ones.

Tcheang Yarin, his wife, several times makes the point: “Sim Sarak is recognized as the person who brought back the ancient tradition of kitemaking and kiteflying in Cambodia.” She and a lots of others think it’s a wonderful achievement.

Sim, Tcheang and entourage from the ministry make a visitor very welcome with dinners and expeditions. Two of these visits are to skilled kitemakers, one in the city and one in the country.

The Phnom Penh craftsman is Krong Ngoun Ly, 45, an auto mechanic, who in his spare time creates the classic Cambodian musical kite. Using a temporarily unoccupied slatted bed as his workbench. Krong mixes a classic material, bamboo, for

the frame with a modern one, Tyvek wrapping paper from Japanese imports, for the sail. Because the musical kite is traditionally large (up to 15 feet high and 12 feet wide), fragile, and made in one piece, it is hardly ideal for collecting. Krong is one of the few Cambodian kitemakers Sim has been able to convince to scale down his kites so he, Sim, can take them to festivals to fly and display and so buyers can cope with transporting them.

Krong shows off his kites and kitemaking tools—axe, big knives for cutting and splitting bamboo, awl, plane—then leads his visitors to a nearby field. The kite he brings is far too big to fit in a van. No problem. Krong takes a back seat on a motorcycle, holds the kite high, and the ‘cycle roars away. It is an unforgettable visual image.

Out in the field with officials and dozens of boys watching, Krong launches the kite and it zooms up until it squats in the sky. Although a flat kite, it is as stable as a delta with a keel. Everyone smiles. Point about flyability proved.

The Sarak caravan on another day visits Pol Stem, 43, who lives with his wife and seven children in a woven mat house along a deeply pitted, muddy country road. Some of the children have never before seen a *farang* (Westerner) and



Striking decorations on various types of Cambodian kites on display in a new folk art museum in Phnom Penh.

stare open-mouthed at the author of this article. Pol shows off his big kites and is particularly proud of their hummers. Taking a hummer outside, he explains he can get four tones—sometimes five—from it, and whirls it around his body to demonstrate. As he changes speeds and angles, the tones change. The whirring sounds are arresting, a bit eerie.

Pol has been making kites since he learned how from his father and he uses a kite pattern handed down through the generations. He says it takes him a week of labor to make one kite, which he sells for \$25—that's less than \$1 an hour for his labor. Pol uses bamboo for the frame but unlike his city brother uses brown book cover paper for the sail. Kitemaking is only a part-time job for him. His main work is climbing 100-foot palm trees to harvest the sap from which he makes sugar and palm wine. It is a highly dangerous job and Pol does not intend to teach it to any of his sons, although he is teaching them about kites. The kite tradition will continue. Sim is pleased.

As the author of this article prepares to leave Phnom Penh to return to his base in Thailand, a Sim deputy delivers an eight-by-eight-foot cardboard box into which are packed kites, tools and other kite gear destined for the Drachen Foundation. Because the box is so large, it fails to fit into the hotel van. It is suggested the box go on top. "Police fine us for this," says a hotel staffer, refusing to help. "I'll pay the fine," says the visitor. Off the van goes, with boys leaning out windows on either side to hold down the box.

Needless to say the driver goes as fast as possible in an attempt to see if the box atop the truck will actually take off and fly as he hopes. Luckily the traffic is heavy and he is thwarted in his endeavor. The container quivers, lifts slightly, but never does quite fly. We see plenty of police but they never give us a second look.

At the airport, the box is too large to go through the electronic scanner. Because it would be a lot of work to open the container, the idle security staff, after reading a letter from

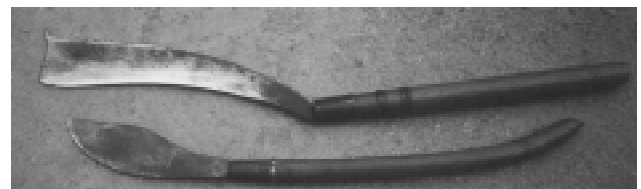


Sim Sarak (center) and wife Tcheang Yarin pose with expert kitemaker Krong Ngoun Ly (second from right) in front of Krong's kites. Cambodian government cultural officials are at either side.

Sim about the kites written on fancy government stationery and after hemming and hawing, decide to forgo a visual inspection and to okay the shipment. The container goes unexamined into a 777 bound for Thailand. So much for aerial safety out of third world Cambodia.

At Bangkok airport, the container causes multiple problems involving transport within the building, storage between flights, and the fact it is way oversize as passenger luggage. At departure, it is at last opened and inspected by security, all of whom quickly fade away after granting clearance, leaving the job of re-closing the box to the author and a sweating porter.

There is more of the same in Seattle, settled only when the chief of customs himself arrives and pronounces the cargo drug-free and safe to enter the United States. Luckily it is dawn and the resident U.S. Department of Agriculture official has apparently slept in. What in the world would he have thought of all that untreated bamboo?



Bamboo cutting tools used by Krong Ngoun Ly.

What's Doing in the Philippines

Orlando T.D. Ongkingco of Manila is “Mr. Kites” in the Philippines. Organizer and leader of the Kite Association of the Philippines, “Orly,” age 45, energetically promotes the sport, has written a book about kites, spreads the word internationally by attending kite festivals.

To deal with the name immediately. Ongkingco—a conglomerate of last, first, middle names—was the full name of a distant relative so revered his family adopted the whole name instead of using only the Chinese surname “Ong.” It’s a big clan. There are several dozen Ongkingcos listed in the Manila phone book. Like lots of other Filipinos, Orly has a mainly Chinese bloodline. Certainly he has the smarts associated with the Chinese.

Born in the extreme south in Davao, Mindanao, Orly has been fascinated by kites since childhood. He recalls as a child flying a kite with his grandfather and thinking: “This is fun. I’m happy. I’m looking up toward heaven.” Orly says he made kites off and on through boyhood but only accidentally succeeded in getting them to fly well, because he did not grasp the aerodynamics. When he finally achieved knowledge and success, he was “exhilarated.”

Marrying young, Orly saw a potential career in medicine sidelined into work in pharmaceuticals, which job he dropped in the late 1980s. Ever since he has free lanced. Being a mountain climber in particular and outdoorsman in general, he made a living manufacturing camping equipment such as stoves, sleeping bags, tents. Now kites are a primary focus.

Orly and his well bred, elegant wife Yolanda have three children as well as three grandchildren, all of whom live with them. They reside in a elderly mansion with courtyard, high walls and dogs. Security is a big issue in Manila. Guarded by security men, banks have a sign at locked entrance doors saying: “No Guns Allowed.”

Manila airport being disorganized, Orly knows he will be unable to meet a visitor with his van, so he has no less than three Tourism Authority employees greet the guest at the exit gate and escort him to the curb where a cell phone call produces Orly and vehicle. This is cited as the way he operates: With intelligence, energy, connections.

Orlando puts his visitor up at a hotel near his home and every day comes by to take him on kite trips. Most are in pursuit of kitemakers he knows or has heard of, but two are to high-ranked government officials Orly is frankly wooing for kite funds. Having an American visiting him to study Philippine kites is seen by Ongkingco as a way to impress bureaucrats. One of them, Engineer Dion Diaz, who oversees the indigenous games association of the Philippines, is enthusiastic. He recalls flying fern leaf kites when he was 4 years old. “We flew in the summer when the leaves were dry. They had a natural dihedral and all they needed was a bridle of banana fiber and tail of coconut leaves without the midrift. And they flew well.”

Because Manila sprawls, tends toward gridlock traffic and has smog comparable to Bangkok, expeditions to visit kitemakers can be long and exhausting. One renowned kitemaker whose house is tracked down only after extensive effort has departed the city just three days before, because of ill health. Mixing Tagalog with English, Orly interviews wife and son and gets the man’s phone number for future use. He intends to have him recreate, or at least draw a careful plan of, his famous 20-foot Samson kite which did yearly battle with another giant kite from a village across a narrow river. Formerly rice paddies, the area is now nothing but small houses and shacks overtopped by a maze of power lines. The kite tradition has died. There is simply no place to fly now.

Another master kitemaker tracked down has, as it turns out, died. His family has discarded whatever kites he left behind, as well as his kitemaking tools.

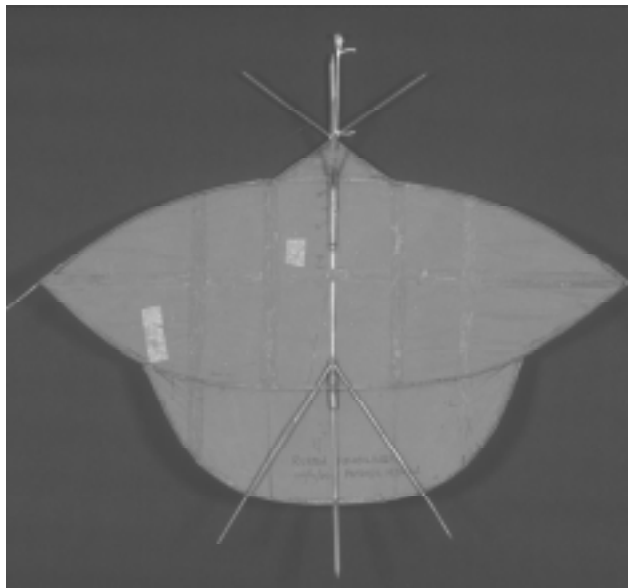


Orlando Ongkingco is the founding president of the Kite Association of the Philippines and has single-handedly devoted himself to restoring and promoting the rich, varied Philippine kite culture.

There is a notable success with a visit to Ruben Pangilinan who Orly knows well. Pangilinan has completed a praying mantis kite Orly ordered for the Drachen Foundation and it is a beauty. He estimates the bright green, three-dimensional kite with realistic face and waving legs took him almost two weeks to make. The charge is a low \$100—still probably high for the Philippines where the peso is going 50 to one U.S. dollar because of continuing political upheaval over rampant corruption, a weak economy and annoyances like a left-wing insurgency in the north and a Moslem rebellion in the south. Pangilinan produces other beautiful kites, including an elliptical-winged *gurion*, which is the Filipino cousin of the Malaysian *wau* and Indian *tukkal*. How the



Master craftsman Ruben Pangilinan of Manila shows off his praying mantis kite. It took him two weeks to construct.



Unlike kite fighting in some Asian countries where razor-sharp kite lines are used to slice opponents out of the sky, Philippine fighters use a more direct approach. The kites are constructed with jutting pointed spars at tops, sides and bottom and the kites attack each other in mid-air, slashing until the opponent is unable to continue flying and tumbles to earth as a victim.

signature *gurion* evolved in the Philippines is a puzzle Ongkingco is attempting to sort out for the next edition of his excellent book on kites of the Philippines. It is apparently the first one ever written on the subject.

Pangilinan then shows something special—a small fighter kite that instead having cutting line to cut opponents out of the sky as in India uses projecting barbs to directly attack another kite in the sky, literally ripping it apart. It's an evil object. A mechanic by trade, Pangilinan shows the tools he uses to make his kites. One is a knife from a tough hacksaw blade, complete with carved wooden sheath, and another a small hammer with oddly curved wooden handle, very comfortable to the hand. Both were handmade by Pangilinan.

Orly Ongkingco tends to himself seek out and recruit key kite association members. And a selection of these highly distinguished, friendly members takes it in turn to throw dinner for Orly and his foreign guest. One of these is Anselmo Pripon, a dentist. When the talk turns to the Smithsonian's United States Air and Space Museum facility under construction at Dulles Airport outside Washington, D.C., the visitor finds himself telling about the now buried building near the airport which had housed two sets of ebola-carrying apes. (Long story in the New Yorker magazine.) Pripon says,

Asian Kite Scene

“Oh, I know all about that.” Guest is amazed. “The guy who exported the monkeys to the U.S. is my patient,” Pripon says.

Another night the host is a mild-mannered banker, Jerry Leonardo, who used to make loans for his institution. Now he has become the bank’s chief collections officer—for loans he himself made. He notes with ironic smile this why he needs to alleviate stress by going out and flying his comforting *rokkaku*.

On another night the host is Robert Mamonluk, the noodles king of Manila and fluent speaker of several languages. Of indeterminate age in the Chinese tradition, Mamonluk has a daughter who is a physician in New York City and another who does manufacturing in China. He travels the world and counts Robert Loera of Honolulu kite fame as a pal, as he does collector Masaaki Modegi of Tokyo. Mamonluk makes it a point to introduce his guest to Philippine ways, including the eating of *balut*—a chick embryo cooked in the egg, feathers and all—and No. 5 soup, a kind of oxtail soup concoction that is revealed, after the eating and amid laughter, to include meat from “those parts in front of the tail.”

A star member of the menage is Ernesto “Buddy” Lopa Jr., 34, a well known TV newscaster who is also a radio-controlled helicopter, parachuting, bungee jumping, magic, and pistol shooting freak, to mention a few of his passions. Buddy is the perfect media type—friendly, bright, attractive, funny, non-stop talker. Orly says he comes from a politically powerful family and may be the only male in his whole clan who works for a living. “He must have something to prove,” says Ongkingco.

Orly’s right hand man is Jimmy Menina, a restaurant supplier. Menina tells about a client nightclub dominated by corrupt police. When a second group of policemen attempted a raid, there was a wild shootout. “The club was pocked with bullet holes, cars outside were riddled, there was blood everywhere,” says Jimmy. “But within minutes there was not a soul anywhere in the area, wounded and dead having been carted off. The investigation that followed predictably came to nothing.” Jimmy tells the story deadpan.

After a few days, the Orly gang moves en masse to Clark Air Base about two hours away from Manila. Clark had been the largest U.S. military installation outside America until nearby Mount Pinutubo erupted in 1991 and covered the field with several feet of volcanic ash. Pressured by Philippine nationalists claiming colonialism and without further need of such an immense facility, the U.S. responded by closing the base. Handy excuse, Pinutubo.

Now run by the Philippines as an economic zone, Clark limps along. Once green lawns are brown, bathrooms teem with insects. Orly’s group takes over several grandiose houses

which formerly housed U.S. Air Force generals. The occasion for the four-day visit is an international air show featuring balloons, jet fighters, helicopters, private planes in wide variety including ultralights, parachuting, hang gliding and just about everything else in the aerial line one can think of. The Philippine military is very much in evidence. Radio-controlled aircraft and kites are at the bottom of the heap, although high in popularity. As anyone who has gone to an air show knows, the moments of action tend to be few and far between, so something to fill in the chinks is welcome.

Orly’s workaholic wife Yolanda—“Yolly”—manufactures kites as a sideline to her other activities and she takes the occasion of the air show to set up a booth which does a land office business in small, inexpensive nylon and taffeta kites of the sled, Conyne, delta varieties. At various times there are 500 kites flying in the sky at one time. It is a beautiful sight. Orly Ongkingco makes it a point to note he keeps his nonprofit research and educational Kite Association of the Philippines quite separate from his wife’s endeavor.

Unlike kite flying elsewhere and just as predicted, the four days at Clark produce uniformly perfect hot, sunny weather. The *amihan* or northeast monsoon winds blows unfailingly day and night.

Kite competitions on various days bring out experts from the region and many of the kites flown are elaborate and beautiful, some with a religious theme. There are modern notes: multi-line stunters, buggies, even a Martin Lester Legs. One of the fliers is Jing Torno, who says he is apparently the only person to have climbed steep Mount Pinutubo and flown a kite from its rim. Since Jing was alone, the perilous feat was unfortunately not documented. When hit by a gust, his foil once almost jerked him into the crater. But a greater danger, Jing guessed, was the crater edge collapsing under him. Anyway, he survived. Maybe unique to this air show, men and women just out of the Stone Age turn out in abundance. They are negritos, short, black, frizzy-haired, affable, from the nearby mountains and are there to peddle crude souvenir weapons they have crafted such as blowguns, spears and bows and arrows. There were few takers.

Orly takes the occasion of the festival to take his visitor to visit kitemakers in the area, such as Ceferino Gueco, who worked 25 years at Clark. Gueco supplements his small U.S. government pension by making realistic, steady flying bird kites. Another kitemaker is Eulogio Catahan of nearby Angeles City, who is such an important find he is immediately --and perhaps presumptuously--bestowed living national treasure status by this writer. As befits his stature, Catahan is the subject of a separate story on these pages.

Continued on Page 32

Discovered: A Living National Treasure



The elfin Eulogio Catahan, aged 74.



Catahan shows off the Christ Is Risen kite he flies on All Souls Day to honor the memory of his first wife Martha, buried in the tomb behind him he himself carved. The head, hands and feet of the kite are fashioned of papier mache. The three-dimensional kite has wings as well, not shown.

Think of a living national treasure kitemaker and one thinks of Japan, Right? But these wonderful people can be found elsewhere around the globe, sometimes in surprising places.

One clear candidate for the honorary title is Eulogio Catahan, 74, of Angeles City, the Philippines. Angeles City adjoins Clark Air Base, formerly the largest U.S. military installation outside the country, but now operated by the Philippines.

A stonecutter and carpenter by trade, Catahan served for years as the caretaker of the cemetery right across the street from his little streetside shop and house. Monuments in the cemetery are grandiose compared to the modest habitations nearby.

Carved by Eulogio himself, a devout Catholic, a huge gravestone honors his first wife, Martha. It is surmounted by the word “Catahan” and below that is an oversize figure of Jesus Christ and the dates of his wife’s birth and death, Oct. 13, 1926-March 17, 1983. Flanking are marble decorations and burial boxes for other members of the family.

Kites enter the picture when Catahan and his second wife produce and assemble a 14-foot Christ figure kite he constructed in honor of Martha and which he flies November 1 on All Souls’ Day. “I believe in the Mysteries,” says Catahan. “Flying a kite is an expression of this honor we pay to the deceased. It’s a form of communication with them. Everyone rises from the dead. There is hope for the future.”

The Christ kite has painted, attachable papier mache head, hands and feet. The body is a three-dimensional bamboo framework covered with white cloth. Large wings are attached at the back so the figure can fly.

A walk into the series of small rooms and garage that constitute the outer area of the Catahan property reveal kites and parts of kites everywhere, some quite aged. They lean on shelves, reside in corners, hang from nails. Many of the kites are extremely elaborate and many have a religious theme, although there are a few commercial bird and bat kites among them which Catahan sells or gives away to children. Most of the big kites are completely original—Catahan had a concept and created the kite. No international kite magazines for him. His work is authentic folk art, original, arresting. The craftsmanship is superb.

Although the father of nine sons, Catahan has not had a single one of them take an interest in kitemaking or stonemaking. They prefer more modern pursuits. Of his seven

Asian Kite Scene



Hands of a stonecarver, carpenter and kitemaker.

daughters, he says, some have helped him decorate kites but their interest does not extend to design or construction.

Still Catahan has his acolytes, young men from the area who come to his shop and receive instruction in kitemaking. One of these students, Jing Torno, leader of an area kiteflying gang, says Catahan has been generous in sharing his knowledge of how to shape and bend bamboo and other important kite building techniques with the group. Beyond technique, though, their interest in kites runs to two-line stunters and other modern day manifestations of the sport. Catahan's expressionist, religiously oriented kites are no inspiration to them at all, he says. The group holds its meetings with Catahan right in the cemetery, where there is lots of room, and then afterward members fly their kites there, over the tombstones. No power lines to snag kites on, Jing

points out, smilingly.

Small and elfin looking with the roughened but delicate hands of a sculptor, Catahan has been making kites since he was a boy. He makes them only as the spirit moves him. Over the years, his work has caught the attention of many and in addition to admirers locally and in nearby Manila his work has been collected internationally. But most of his masterpieces simply hang on pegs in his garage and slowly deteriorate. He's sanguine. He built them because he wanted to do so, their fate is now out of his hands.

Vegetarian and nondrinker but admittedly a cigarette smoker, Catahan speaks Tagalog and some English, but is not given to conversation about his art. A discussion by visitors as to whether his kites are important creations and should be purchased and conserved for future generations leaves him bemused. He is just as gracious in greeting visitors, showing off his kites on a moment's notice and posing for photographs with them as he is in saying farewell to his guests.

Admittedly not beautiful like, say, a sleek, gorgeous Nagasaki fighter, Catahan's kites pose a difficult issue in kite collecting. As unique works of folk art, probably never to be repeated again and right now doomed to rot away in the tropic climate of the Philippines, should the world kite community attempt to preserve them, and if so how should this effort be mounted? If no one in the Philippines—public institution or private collector—seems to have funds or sufficient interest, who then? The issue is unresolved. ♠

—Ben Ruhe



Masterpiece kites by Catahan hang from pegs in his garage.



Asian Religious Rite as Viewed From a Kite

For the first time in 144 years the stars were correctly aligned, so the six-week Kumbha Mela festival at Allahabad, India, early this year was quite special. Millions of Indians turned out to honor a spot where the god Krishna spilled a drop of holy water on his flight away from demons. By bathing in the water at this confluence of the Ganges and Yamuna Rivers, Hindus washed away their sins and received great spiritual sustenance. The photograph was made from a kite by Nico Chorier of Montpellier, France. It is a perfect example of the value of such photography, since, unlike helicopters and airplanes, a kite is not intrusive and can record such a scene without creating the slightest disturbance. In fact, the flight of the kite might itself be seen as a kind of religious gesture—a symbolic meeting of heaven and earth.

Japanese Treasure: A Kato Painting Portfolio

By Scott Skinner

It always starts with the most innocent of messages, and this was not an exception. The fax read: “An interesting rarity coming up at auction. See if you have it already or if you are interested?” My interest piqued, I read on:

“Tatsusaburo Kato. *Kites of Japan, A Vanishing Art*. Tokyo 1971. One color-woodcut and 13 colored original drawings on Japan-paper by Tatsusaburo Kato, each with a seal and in an envelope of Japan-cardboard together with a pattern-drawing in two colors and a paper kite. Original folder in cassette. One of only 100 produced copies.”

It was an auction description sent by a German print dealer. I was confused and thought this must be a description of the soft-cover, self-published *Japanese Kites: A Vanishing Art*, by David Kung. I knew Kung’s book was published earlier—in 1962, in fact—but thought this might be another edition of the same material. Kung’s book opens with a modern woodblock print and has 14 color kite paintings included. It just seemed strange that this description sounded so similar. Perhaps something was lacking in the German-to-English translation, but I was confused.

I should note that the David Kung book was one of my first kite-auction purchases. At the 1984 AKA convention in Nashville, my first, during the frenzy of bidding on Hyperkites, Actionkites, Goodwind Stars and the like, this brown-paper-wrapped book was circulated through the gallery. As it passed, I didn’t see much, but I did see that there were color paintings inside and knew that I had to go to the mat for it. I’m really glad not many people saw the inside of this treasure, because I only had to spend \$100 for what is still one of my most cherished possessions. I’m pretty sure there was a second Kung book auctioned that night and I wonder who has it now?

Back to my confusion. I faxed my friend for details and clarification and, without really adding much to the original description, he urged me to obtain this portfolio without fail (he did say that this was number 10 of the 100 originals). I’ve learned to trust this particular friend and his judgment, so, from long distance, I told him: “Get that Kato portfolio!”

I arrived home from vacation and the package had arrived. Inside the cardboard box, made especially for it, was the lush, raw-silk covered portfolio. About 15-by-20-inches in size, it opens to a cover sheet with just a bold Kanji Tako kite image. Then another sheet, with the legend *Kites of Japan, A Vanishing Art*, Edition Unida, Tokyo. Finally, two more sheets, in English, stating, “Original kite painting by Tatsusaburo Kato and colophon: All the paintings are



A classic rendering of a Suruga kite.



A devil figure guzzles sake

executed by Master Kato Tatsusaburo, who has been painting and making kites for more than 60 years. This is an edition of exactly 100 copies. All kites were painted by hand by the master. This is number 10.”

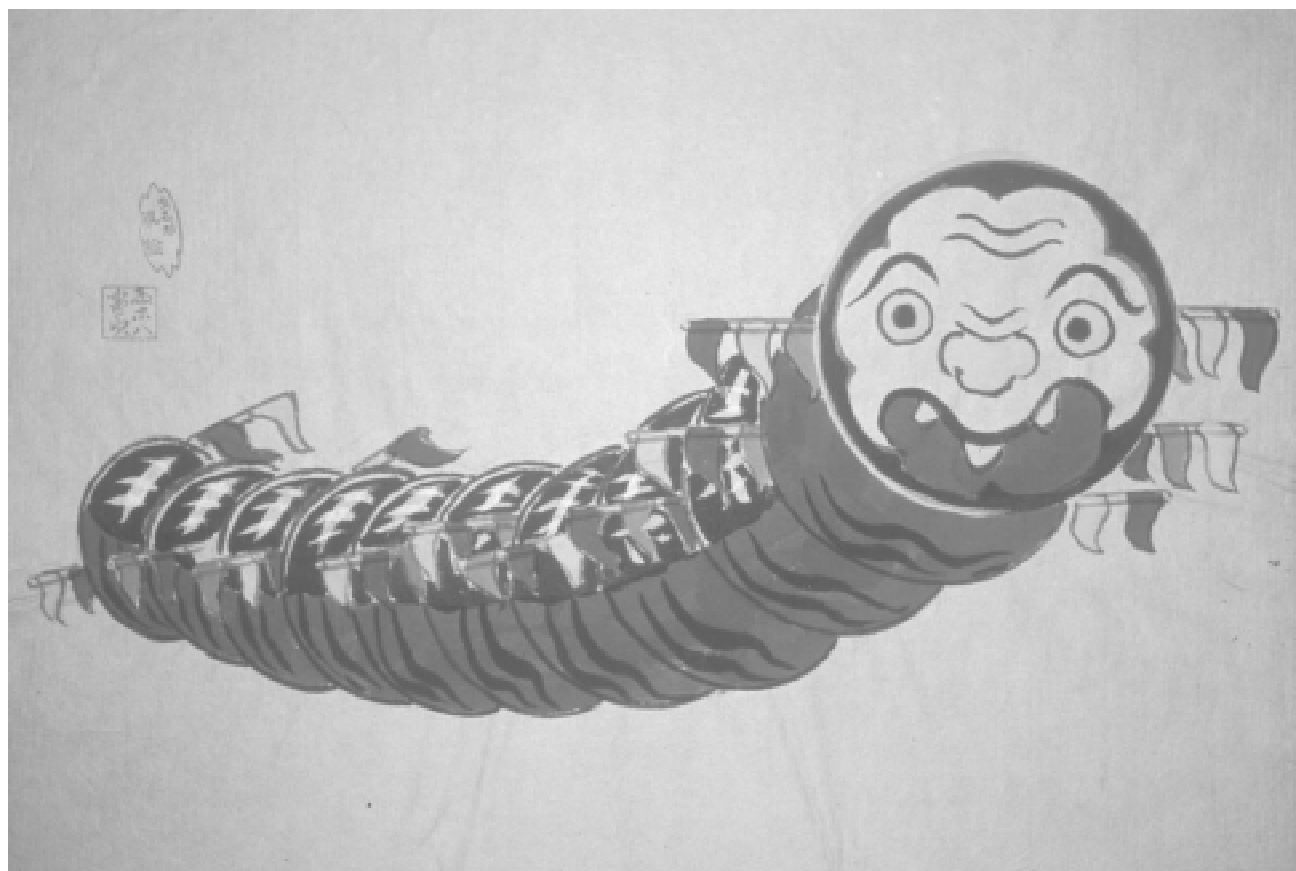
My hands still tremble a little when I reopen this “moment in time” portfolio, made only three decades ago, but at a period when so many of the Japanese master kite makers were passing or finding that no one could continue their tradition. I knew at least one famous kite making family with the Kato name: Suruga kite makers from Shizuoka Prefecture. One look at the portfolio convinced me that I was looking at work from this family, as five of the 18 paintings included are Suruga kites. (I met the granddaughter of this man Kato Tatsusaburo in Daimon, Japan, two years ago.)

Kato-san chose to paint kites from most of the regions of Japan: the Aomori Hiroshi, Kyushu Tobata-dako, Tokyo Semi-dako, Chiba Sode-dako, Tsugaru Rokkaku, and Hamamatsu Tonbi-dako. Interestingly, he also painted the

Kyushu Mukade-dako—the centipede-style kite that was extensively imported at about the time the portfolio was produced. Kato-san’s paintings are at their finest on the kites he professionally made, the Suruga. His versions of the Magoji-dako and Aomori Hiroshi are especially pleasing, as they are renditions seldom seen today.

There is a bonus to the wonderful paintings by Kato-san. A modern reproduction of Hokusai’s famous view of Fuji—the one with the Tonbi-dako flying above clouds—is included along with an actual kite, a Kaku-dako. It is unbridled but stuck and ready to go.

Altogether, this is a wonderful collection of one man’s work, but it is also a time capsule of a period when there was a real danger that this art might be swallowed whole by the rapidly changing Japanese economy and lifestyle. Thankfully, due to the popularity of Japanese kite festivals, the wild popularity of Japanese kites worldwide, and particularly due to the strength of their kite clubs, traditional Japanese kite art continues and in my opinion is very strong today. ♦



An elaborate rendering by Tatsusaburo Kato of a segmented centipede kite.

Kite Flying in Nepal

By Nirmal Man Tuladhar

Kite flying in Nepal is seasonal and associated with one of the biggest festivals, Desain, a harvest celebration dedicated to the goddess Durga. The most joyous time of the year in Nepal, Desain is celebrated all over the country, by all castes and creeds, both Buddhist and Hindu. The festival takes place during the bright lunar fortnight ending on the day of the full moon in late September or early October. By this time, the monsoon rains are normally over and the rice harvest completed. The weather is pleasant, neither hot nor cold. The sky is clear and blue. A cool wind blows. It is very favorable weather for kites.

Nepali kites are of the Malay type—a two-sticker without a tail. The sticks are of equal length and are crossed and tied with the center of one at a spot one-seventh the distance from the top of the other. A bridle attached to the kite has two legs, one from the top of the diamond and the other from the lowest point, meeting a little below the crossing of the sticks. A string pulled tight across the back of the crossstick bows the surface, making the kite self-balancing. A handmade paper known as *lokta* is used for the skin of the kite.

In Nepal, kites are flown from roofs and porches of houses, in the Indian style. A big reel for line with two spools on either side is used. The reel has a round, smooth stick coming out from each center of the spools. Either end of the stick snuggles between thumbs and index fingers. Kite string is reeled in by turning the two spools clockwise.

The reel is equipped with a phenomenal 6,000 meters of line. Launching is effected when an aide takes the kite and walks some distance away. Line from the reel is kept fairly taut. The moment the assistant tosses the kite into the air, the flier pulls the string firmly and the kite shoots skyward where the wind catches it. Once airborne, it is maneuvered by reeling string in or out.

The object—and fun—of Nepalese kite flying is to cut the string of another kite. Line is treated to make it sharp and abrasive. This is accomplished by making a paste of ground glass with an adhesive substance such as glue. Cutting is accomplished when one kite flies across the line of another and one line saws the other in two. When the lines touch, the trick is to let out line at high speed to increase abrasion. Nepali

flying is aggressive. Fliers like to fly high, but more than that to down other kites.

During Dasain, the roofs of Kathmandu, the capital, are full of fliers who jump and shout “Chet!” (cut) when they slice an opposing kite out of the sky. Big audio speakers are mounted on the rooftops and kites fly to hits by Guns and Roses, Metallica, Michael Jackson and other favorites. Hindi and Nepali film and pop songs contest with Western import music. Some fliers take time out from flying to dance on the rooftops.

Kites have been flown in Asia from time immemorial. Many Nepalese believe kites send messages to the gods to remind them not to send any more rain, now that the harvest is complete. Elderly people believe kite flying brings prosperity to the family and that it is a means of contacting and honoring dead ancestors, and of guiding recently released souls to the heavens.

Bringing Nepalese flying up to the present, kites are now being used to promote national friendships and even commercial interests. For almost two decades now, the

embassy of Japan has helped the Nepal-Japan Friendship and Cultural Association organize a competition during the festival of Dasain. The competitions include not only aerial fighting but design contests reflecting the Nepali cultural heritage. The full Buddhist and Hindu pantheons appear as decorations on the kites. These competitions have encouraged the younger generation to participate.

In 1998, Image Channel in Kathmandu, a private agency for electronic media, promoted a kite fighting competition by distributing kites with the channel’s image on them. When a kite with the logo was cut out of the sky, boys vied to grab them as they fluttered down because each kite could be turned in for free FM radio. This was the first time kites were ever used to promote business in Nepal.

Japan promoted itself in that same year by staging a large exhibition of various kites from its country. This was a first opportunity for many Nepalese to see the rich kite culture of another nation.

Finally, although Nepal has yet to hold an international fly, it has sent teams to compete in such events in Bangkok and Dieppe, France. A workshop in the making and flying of Nepalese kites at Dieppe was a first step in exporting a proud Himalayan cultural tradition to the Western world.



The ubiquitous religious image of Nepal, painted on temples and elsewhere.

AN UNEXPECTED UNDERWATER KITE

The use of kites in scientific research is a recurring theme, so it came as no surprise that a 1909 Scientific American article on sounding apparatus included a box kite in its description. But a look at the title of the article provided a surprise. “Deep Sea Sounding Apparatus : Some Recent Improvements,” it read.

The sounding apparatus, very useful in approaching land, when it is desirable to know the depth of water at every point of the course, is described as follows: “It consists of a water kite towed by a small line to which it is attached obliquely, so that the pressure of the water on its front forces it downward, as the air pressure forces an aerial kite upward.” Isn’t it interesting that the country, Germany, that so aggressively used the kite for scientific investigation on both land and sea would also use the kite in this unique way?

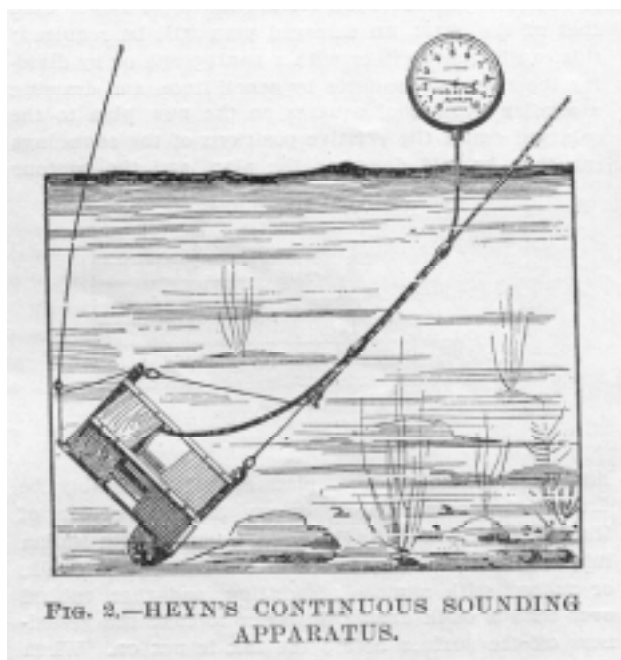
The diagram shows the system clearly—underwater box kite, line, sounding line.

The description of the device continues: “The depth attained by the kite can be deduced from the length of the line, and the apparatus can be set for any desired depth by regulating the amount of line paid out. At the bottom of the kite is a pin which, on striking the sea bottom, detaches from the tow line the lower part of the bridle, causing the kite to trail and rise to the surface of the water. At the moment of release the line slackens and causes a bell to ring on the ship.”

The Heyn indicator shown in the diagram also could be fitted with a metal chamber connected to a shipboard manometer. The air in the chamber was compressed proportional to the depth of immersion, making it possible to receive a direct depth indication. The apparatus could thus be towed at a constant depth and would then instantly indicate the moment it struck the sea bottom. It could then be dragged along the bottom, showing the depth at every point.

I came upon this article completely by accident, and was stunned to find another kite-related story on the same page. It was a report of the Sixth Conference of the International Commission of Meteorology, with such luminaries as Rotch, Assman, de Bort, Hergesell, and Prince Albert of Monaco in attendance. The final thought that crossed my mind as I read both pieces: Could the German navy have been flying kites both above and below the water at the same time? I’ll leave it to someone else to find a record of that. 🌧️

—Scott Skinner



The Kite We Made Together

Bright simple leaf with strong thin bones
Of bamboo tied perpendicular to each other
To hold the string and tail of yellow paper;

When our kite flew high up in the air,
I could hear it wiggle and giggle and hum
Like a little boy laughing, flapping his arms,
Sitting high on his father’s shoulders.

R. Romea Luminairas

Written in Hong Kong 1991, revised in Seattle 2000

(translated from the Chinese by R. Wing Keung)

Commentary on French Kite Patents

With the Drachen Foundation providing funds for translation, all French kite patents from the first one ever granted up to Oct. 22, 1999—a period of two centuries—have now been investigated by a renowned Rochester, N.Y., expert on world kite patents. He has made brief summaries of each of the patents, available individually or in total from Drachen, and his intriguing comments on the importance of these French inventions follow here.

By Ed Grauel

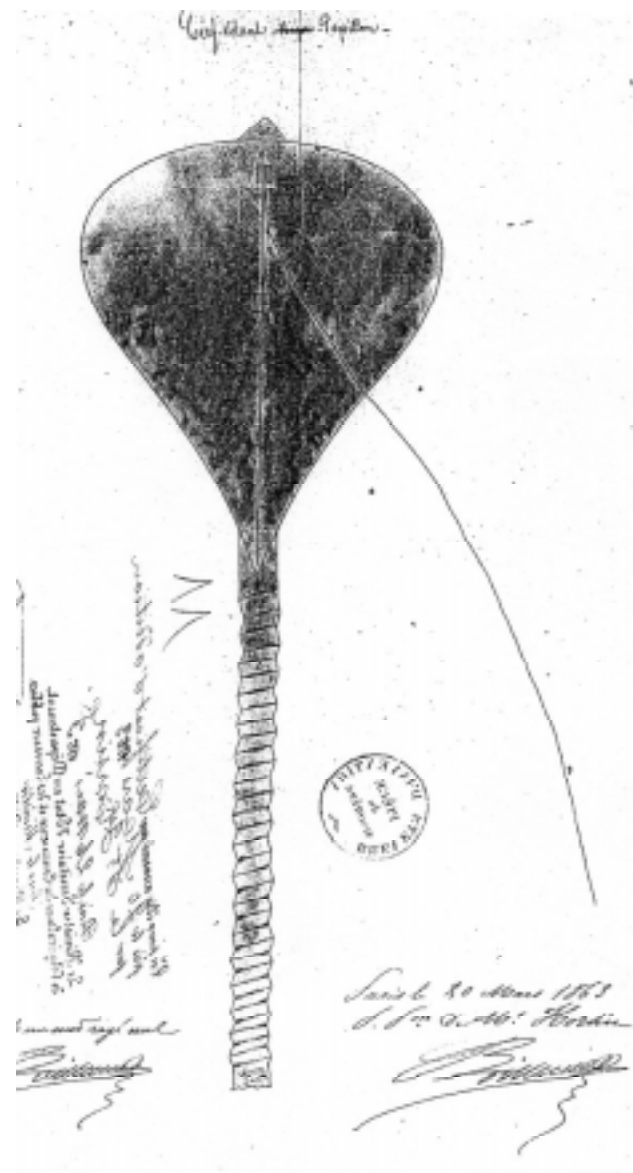
The first-ever patent for a kite was issued in France on Sept. 27, 1800 to the Englishman George (Georges in French patent use) Pocock for one or more diamond-shaped kites designed to pull a carriage with four people. It was the 3,116th patent issued in France and was 66 years before the first American kite patent was issued, 82 years in Germany and 55 years in England. Also, it was 54 years before the next patent for a kite was issued in France. Kites were heavily constructed and took a substantial amount of wind to lift in the 1800s and Pocock's invention was never a commercial success.

Through 1999, the French Patent Office issued 169 patents for kites or accessories. Twenty-five of these patents cover lighter-than-air or other objects which do not meet the definition of a kite and are excluded from the listings.

The remaining 144 French patents can properly be considered patents covering kites or accessories. Thirteen of these patents were also covered by U. S. patents, so the subject matter of the patents was known in this country.

French	U.S.A.	Patent
296,560	642,451	Box kite with weight on bridle.
314,842	713,381	Rectangular keel on center mast.
374, 885	691,875	Five-sided kite with hummer.
381,018	919, 436	Keel which changes shape.
448,320	984,295	Wings move forward and backward.
639,995	1,620,882	Airplane-type with movable rudder.
825,089	2,181,477	Autogyro kite.
1,406,485	3,295.793	Parasail to tow water skier.
1,455,541	3,335,984	Curved spreader as a stabilizer.
1,526,922	3,295,546	Non-rigid multicell parafoil.
2,296,449	3,107,888	Rotary kite with two rotors.
2,318,070	4,076, 189	Two-line kite with circular sleeve.
2,416,664	4,129,272	Parafoil with rigid leading edge.

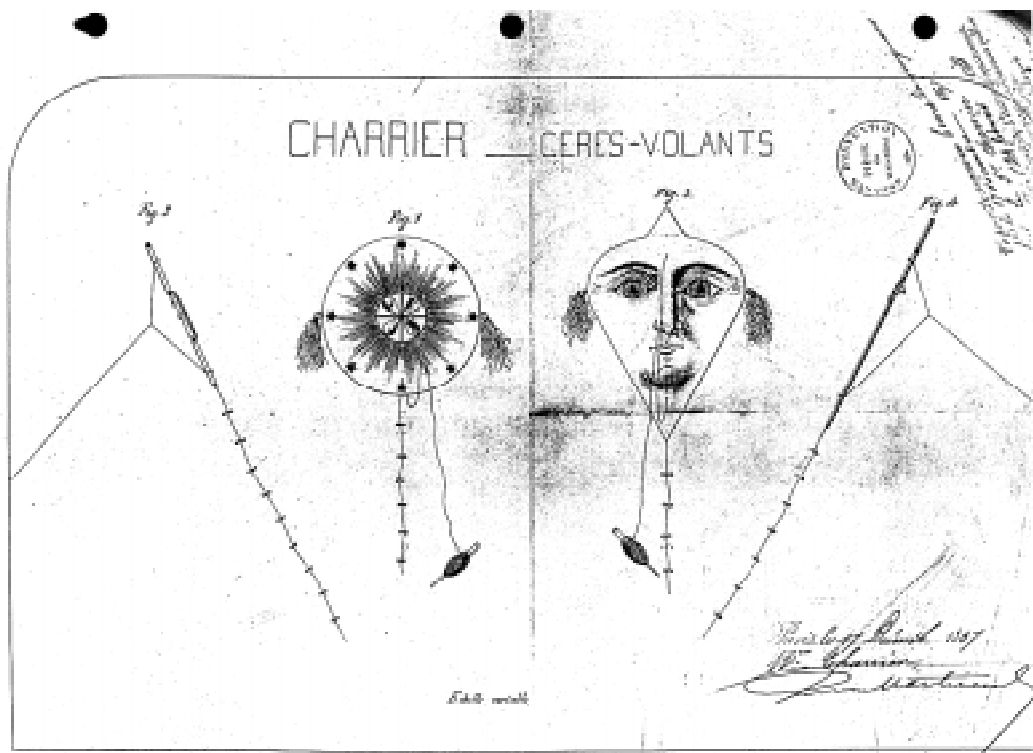
Ten of the French patents cover airplane-like kites, 10 two-line control kites, nine kites to carry people into the air, eight to tow objects, eight for line-travelers, seven to produce noise, four for rescuing people from ships, four for box-type



Patent drawing for a miniature butterfly kite with elaborate tail, dated 1863.

kites, four for autogyros, three for rotary kites and two for kite reels.

The patents for airplane-type kites are conventional except for No. 416,676 which provides for flapping wings and No. 446,800 with a gyroscope to act as a stabilizer. For two-line control kites No. 121,034 permits automatic folding as an umbrella, No. 2,775,655 provides for a double surface to permit inflation and No. 2,775,656 includes a shutter which allows air in but not out.



Charming patent drawings from 1867.

For kites intended to carry people, in No. 106,403 the kite is flown from the mast of a ship, Nos. 267,689 and 300,646 are pulled into the air by a motorized device on the ground and Nos. 2,492,263 and 2,695,619 are towed by a ship. For kites producing sound, No. 391,205 uses hammers and Nos. 430,690 and 446,022 have propellers instead of taut cords to produce noise. For autogyro kites, No. 825,089 is towed by a ship, rather than flying independently. There is nothing particularly new or novel for patents covering towing kites, line travelers, saving people from ships, rotary kites, or kite reels.

Among the remaining French kite patents, those of more than passing interest are:

- Nos. 78,881 and 543,130 for eyes revolving or opening and closing on faces drawn on kites;
- No. 288,425 for an inside-out box kite with an open-ended pocket on the front for additional stability and lift;
- No. 381,018 for a pear-shaped kite with a keel which changes in shape with varying wind tension;
- No. 448,320 for a bird-like kite with two box keels and wings which move forward and backward;
- No. 872,271 for an inflatable blimp with two rear stabilizers;
- No. 958,172 for a square kite to carry a camera with a shutter

controlled by a timer-wick arrangement;

No. 2,041,046 for a fan-shaped kite with pockets as inflatable air channels;

No. 2,384,672 for a pear-shaped kite with upper and lower surface and vents for inflation, plus a tube-like tail section;

And No. 2,758,526 for a two-line swallowtail kite with tension rod on the face of kite which can be changed by amount of air pressure on each wing.

In summary, 22 or 15 percent of the French kite patents have to do with the improbable use of kites to carry people, for ship rescue or to tow objects. While most of these patents date prior to 1910, No. 2,775,655 issued Sept. 10, 1999 covers towing objects over land or water.

As previously suspected, the French kite patents do not produce any new generic or basic kite ideas. Rather, they tend to offer improvements on previously existing ideas in an attempt to improve flyability, stability or lift for kites.

The so-called “French military kite,” a three-sided box kite with half-diamond wings and a loose, tapering keel, was actually patented in America by Silas J. Conyne on Oct. 17, 1911. It was used in the Franco-Prussian war to signal troop movements and thus received its name. In this country it is properly called the Conyne kite.

Book Review

Man's 5,000-Year Vision of Human Flight

The Genesis of Flight: The Aeronautical History Collection of Colonel Richard Gimbel

By Tom D. Crouch, Clive Hart, et al

University of Washington Press

By Eden Maxwell

Here is a meticulously produced large format volume that will be treasured by anyone interested in the magic of flight and the pioneer aeronauts who believed in their dreams. The aeronautical related items of art and artifacts—balloons, zeppelins, fanciful and practical airships, mainly—are drawn from more than 20,000 objects that reflect humanity's vision of human flight as well as its fulfillment—from antiquity dating back 5,000 years to powered flight at the beginning of the 20th century.

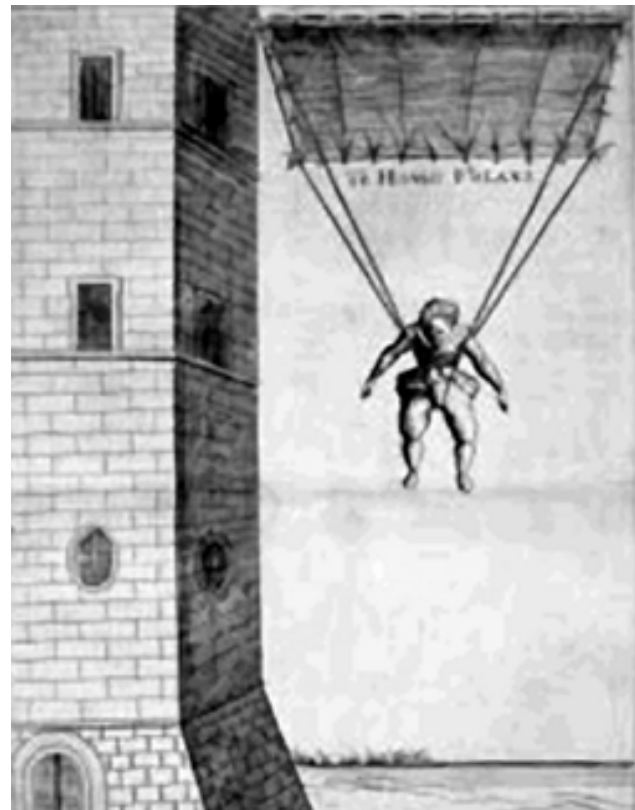
Engravings, prints, portraits, etchings, woodcuts, lithographs, coins, ancient seals, medallions, important letters, priceless volumes, and even advertisements that capitalized on heady flights of fancy, put together, portray an intriguing and unique pictorial history of aeronautics. In the book category, for instance, Robert Hooke's *Philosophical Collections* (1682) is a serious scientific study of the possibility of flight. Other books are about imaginary voyages into space and other worlds, including Ludovico Aristo's *Orlando Furioso* (1547), Cyrano de Bergerac's account of a voyage to the moon (1650), and the 19th century fantastic classics of Jules Verne and H.G. Wells—forefathers of the genre we now call science fiction.

No comprehensive collection about humanity's yearning to fly would be complete without kites, the oldest flying objects created by human beings. Among rare books in the collection, the *Magiae naturalis libri viginti* (1558) by Giovanni Battista della Porta describes how to make a *draco volans*, a flying dragon: the Latin term for paper kite. Della Porta's kite-building description was influential in spreading knowledge in how to build and fly a diamond-shaped type kite that returning sailors had recently introduced into Europe from the East Indies. Another important book, *Les Cerf-Volants* by Joseph LeCornu (1902) discusses the theory of kite design, kite history, man-lifting kites, kite photography, meteorological kites and the use of kites for scientific research. Experimenters extensively used kites to perfect wing surfaces in the development of the airplane. Colorful 19th century woodcuts that involve kites by master Japanese

printmakers Hiroshige and Hokusai are also featured.

The book's companion CD-Rom offers an interactive guided tour of the more than 300 items in the book, including a video introduction to the collection by Dr. Tom Crouch, senior curator of aeronautics at the Smithsonian Institution's National Air and Space Museum in Washington, D.C. Professor Clive Hart, author of numerous books, including *Kites: An Historical Survey*, selected and annotated the books, prints, letters, and manuscripts for the catalog.

The force behind the collection was Richard Gimbel (1898-1970) who began acquiring his aeronautical treasures while serving in the 8th U.S. Army Air Force in England during World War II. Gimbel, a brilliant and eccentric character, was the son of one of the founders of the Gimbel department store chain. The collection was donated to the United States Air Force Academy upon his death. Fortunately for us, Gimbel's passion is a bequest we can now all enjoy. ♦



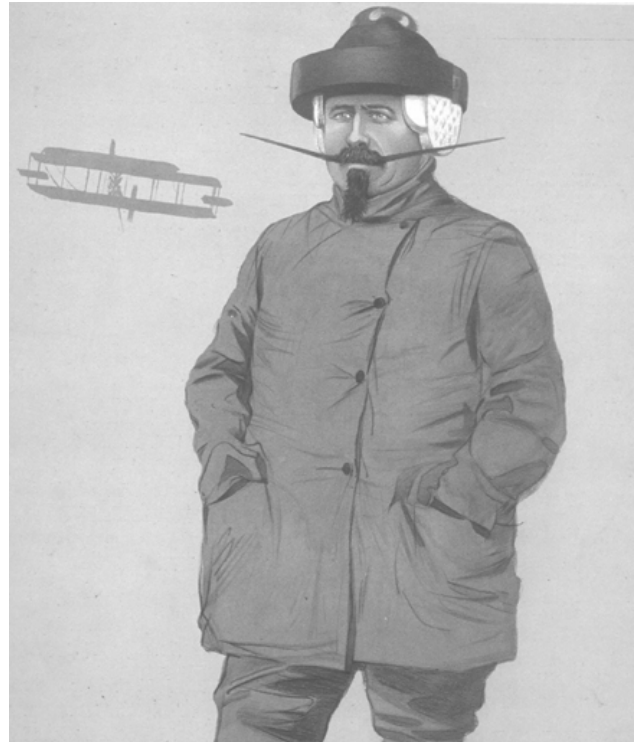
The earliest Western drawings of a parachute date back to about 1480 and include Leonardo's famous design. This late 16th century drawing of a man descending (presumably off the tower) quite slowly by Fausto Vernizio (1551-1617) has the distinction of being the first parachute concept to appear in a printed book. Although the rigid frame and nearly flat canopy would have made this device highly unstable, there is no denying its rudimentary resemblance to the parafoil kite, modern day precision parafoil parachutes, and traction kites.

Interesting Web Site on Samuel F. Cody

Interest in the strange, wonderful life of aerial pioneer Samuel F. Cody has never waned since his death almost a century ago. Evidence for this can be found on the Internet where Jean Roberts, a foremost expert on Cody, has mounted an interesting and well illustrated web site: <http://www.sfcody.org.uk/>.

The British site spans Cody's early theatrical career; his work with kites embracing mainly man-lifting systems; his study of gliders, motorized kites and airships; and finally his invention of the first airplane in England and subsequent triumph as barnstorming pilot and martyred national hero. The site has a useful bibliography and excellent links section, including the address of a French group that offers free plans for the ever popular Cody winged box kite, as well as the address for the quirky Cody Society, in rural Surrey.

New to many will be the information on the Cody motor kite of 1907, the direct connection between Cody's kites and his first flyable manned aircraft. A 35-foot pilotless biplane with horizontal tail plane, this motor kite was tested on the ground and suspended from a cable but was never permitted free flight. Showing a photograph of it at an illustrated lecture, Cody commented: "This is a kite; I am just starting the engine and I am trying to get out of the way to let it run. It was supposed to be let loose but the authorities were afraid I might do some damage by letting it go up in the sky."



A Vanity Fair magazine feature on Samuel F. Cody renders him in hero's costume. "The British public's chief and best-beloved showman of flight," says the article. A Cody biplane, descendant of the man-lifting kites Cody built as he taught himself aeronautics, serves as backdrop.

Cody Book Is Reviewed

Editor's note: Because the Drachen Foundation is the major repository in the world of Samuel Cody kite materials, writing on Cody is of continuing interest to the foundation. Following is a book review from the New York Times on Garry Jenkins' Colonel Cody and the Flying Cathedral: The Adventures of the Cowboy Who Conquered the Sky (Picador: New York), issued in spring 2000.

By Roberta Bernstein

Samuel Franklin Cody (no kin to Buffalo Bill) was a brash cowboy and Wild West showman whose outrageous feats on horseback paled next to his triumphs of self-promotion. That he went on to become a British aviation pioneer, buried at the age of 46 with pomp and circumstance in a British military cemetery, is a largely forgotten story carefully reconstructed in no-frills prose by Garry Jenkins, a London journalist. He does justice to a man whose 'determination and dauntless courage' were noted by no less than King George V.

Cody began as a cowboy on the Texas-to-Montana cattle drives of the mid-1880s, heading east in 1888 to perform as a cowboy and pistol shot in a Wild West vaudeville show. Fed up with the lack of respect those shows garnered, he headed for Europe,

where his eccentric frontier swagger stuck out.

Settling in London, he turned his inventiveness, resourcefulness and sense of adventure to experiments in flight, first with balloons, then with man-lifting kites and finally with planes he designed, built and flew, and with which he went on to set British aviation records.

Cody lived large and fast—he died in a plane crash in 1913—and the far-reaching trajectory of his life gives Jenkins the chance to touch on subjects like the troubled American cattle industry, the history of kites and Britain's otherwise lackluster showing in the race to fly. His meticulous reportage can be dry and clunky, but he sensibly keeps the narrative free of pat character analysis.

Studying Center Mast Weighting

By Ed Grauel

Does the diameter and weight of a center mast influence the way a kite flies and, if so, what weight and diameter should be used?

To determine the validity of these questions, four dowels for use as masts were cut 30 1/4 inches long, in diameters of 1/8 inch, 3/16, 1/4 and 5/16, for use on a standard 64 inch wide delta wing Valkerie. Three measurements for each of the four masts were taken when the kite was in the air: 1. minimum wind speed required to lift the kite, 2. maximum wind tolerance and 3. normal angle of elevation—to determine the lift to drag ratio.

The quarter inch mast turned out to be significantly better than the other diameters for maximum wind tolerance—25 miles per hour, as compared to 12mph for the 1/8th inch mast, 18mph for the 3/16th and 20mph for the 5/16 dowel. However, minimum wind requirements and lift-drag ratios varied only slightly within limits of error for each of the other diameters. Thus, for an on-the-wind type of kite with a keel, such as the Valkerie, the selection of a right-weight dowel for use as a center mast can make a substantial difference in the maximum wind a kite will take before it loops, dives or become erratic.

To determine whether the same thing happens with an against-the-wind type of kite, a 33 1/2 inch deep sled kite was flown with 1/8th inch, 3/16, 1/4 and 5/16 center masts and finally without a center mast.

With the 1/8th inch dowel, and also without a center mast, the kite would take a maximum wind of only 12 mph. However, the remaining three weights performed about the same—between 16 and 18 mph. Here again, minimum wind requirements varied only slightly and within limits of error for each of the diameters. Therefore, a center mast of a suitable weight improves the maximum-wind performance of a sled-type kite, and also increases the angle of elevation and lift-drag ratio.

When no center mast was used, the normal angle of elevation was a low 50 degrees. The lightest weight dowel (1/8th inch) produced a good 64 degrees, then dropped off to 58 for the 3/16th dowel, 55 for the 1/4th and 50 for the 5/16th diameter.

On the basis of these findings, an against-the-wind type of kite, such as the sled, appears to have an ideal weight for use as a center mast, but it can be a relatively small diameter—in this case 1/8th or 3/16 inches. Additional weight doesn't add anything to maximum wind tolerance and reduces the lift-drag ration substantially.

For an on-the-wind type of kite with a keel, such as the Valkerie,

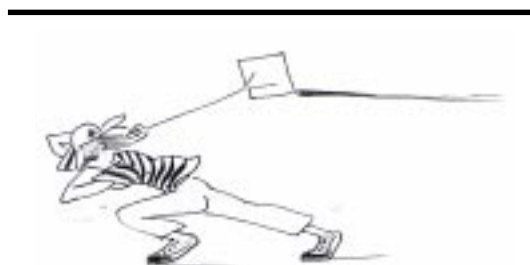
the center mast apparently should be heavy enough to prevent any substantial bending when in the air. But for an against-the-wind type of kite, such as a sled, some bending of the center mast doesn't appear to effect the flight performance to any degree.

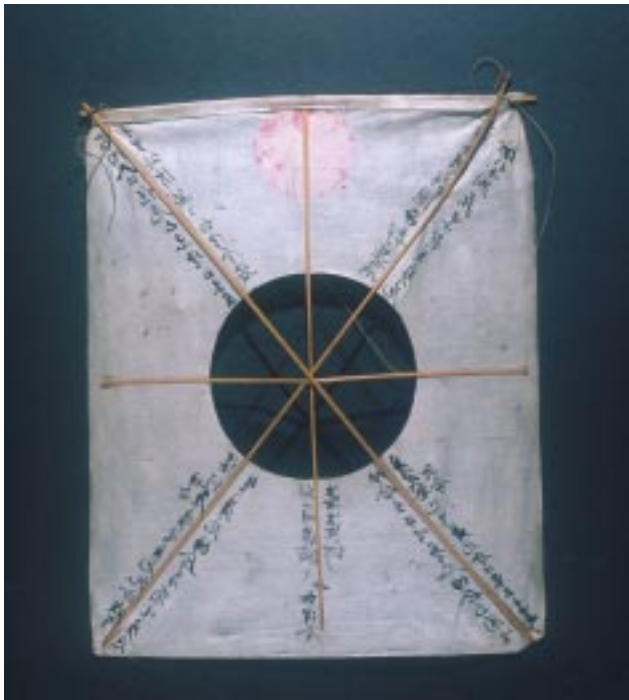
This suggests that bending of the center mast backward in the direction of the wind movement for a sled may be acceptable, but bending of the mast forward against the wind movement in a delta wing is detrimental. This was particularly confirmed by pre-bending two quarter inch dowels, one with a one inch curvature and the second with a two inch curvature. These were inserted into pockets provided for the center masts in both kites. In the air the curvatures adjusted themselves backward by force of the wind, and forward by restraint of the bridle.

Minimum and maximum winds, as well as angle of elevation and lift-drag ratios, remained about the same for the sled kite, because air pressure bent the dowel backward—whether the straight or pre-curved dowel was used as center masts. When the pre-curved masts were used in the Valkerie, however, the maximum-wind tolerance dropped about 20 percent and the lift-drag ratio dropped about 10 percent—suggesting the possibility that forward bending of a mast against the direction of the wind is detrimental, and that the diameter and weight used for the mast should be light, yet rigid enough to prevent this kind of bending.

To summarize these results: sled type kites give a better performance with a lightweight center mast, even if it bends somewhat under wind pressure. Delta wing type of kites, on the other hand, should have a center mast sufficiently heavy to prevent bending either forward or backward when under wind pressure.

Other experiments have suggested a good way to determine the proper weight of spars to be used in nearly every type of kite: 1. select a weight for a center mast which will bend little or not at all for its length, 2. the same weight or diameter can be used for the spreader and 3. somewhat lighter weights can be used for other shorter spars in the kite.





An elaborately annotated Korean fighter kite.



More of the kites included in the gift to the Drachen Foundation.

Korean Kite Gift

By Scott Skinner

The Drachen Foundation was the recipient of an exciting gift in late 2000. Fifteen Korean kites, all over 100 years old, made a circuitous journey into the Drachen collection. The kites were originally bought by or given to Georges Lefevre, French consul to the Orient in the 1890s. They passed within his family to his grandchildren, one of whom gave them to Dr. Françoise Forrière, former president of the French kite club, *Le Doit Du Vent* (The Wind Club?). Françoise was unsure of what to do with these fragile, airborne time capsules and was encouraged by members of the Zoone Collective to gift them to the Foundation. Ramlel Tien and Christophe Charet helped make the exchange complete at the Art Kite Festival in Detmold, Germany, where the kites were presented for transport home to Seattle.

The journey of these kites reminded me of my first acquisition of Korean kites almost 20 years ago. While still in the Air Force, friends were reassigned to duty in Korea. Knowing, at least, that a Korean kite tradition existed, but little else, I sent a few dollars with my friends and asked that they search out good examples. Upon their return to the States almost three years later, I received a package containing two beautiful Korean fighters. My friends explained that they had looked several times – with no luck – and it was not until just before their departure that, at a local craft fair, they found Mr. Roe quietly sitting making kites.

I didn't meet Mr. Roe until 2000, where I watched him conduct Korean kite making classes with Japanese children and adults in Nagasaki, Japan. I could picture him in that community center, skillfully making the fine examples that I had owned for almost 20 years. Now over 80, Mr. Roe continues the tradition that is little changed from that shown in the antique kites now in the Foundation's collection.

The 15 antique kites are in remarkable condition – bamboo frames are largely intact and paper sails are still flexible and strong. Most of the kites demonstrate the bold color schemes necessary to maneuverable kites flown at high altitude. The colors are faded to almost pastel tones, but one can imagine how vibrant and beautiful these once were. The kites have been carefully photographed and have become an important addition to the Drachen Foundation study center.

It's difficult to express the overwhelming gratitude we feel toward Dr. Forrière and the members of *Colectif Zoone*. Thank you for these living examples of kites from a time gone by. 🌧

People Living in Glass Houses Should Fly Kites

Historical Kite Weekend at Haltern, Germany

By Ali Fujino and Scott Skinner

Thirty five kite enthusiasts, many with years of kite flying and kite making behind them, were carried back in time by the historical kite experts at The Drachen Foundation's first historical kite gathering in Haltern, Germany. Organized on site by Achim and Sabine Kinter from nearby Gelsenkirchen, the participants were promised a look at historical documents, antique kites, and kite building techniques from 100 years ago. After a quiet evening of introductions and housekeeping, a slide presentation of Alexander Graham Bell and his kites (courtesy of the Bell Museum and the Foundation), and general excitement over books, documents, and artifacts, the seminars began in earnest on Saturday morning.

Hans Snoek of the *Drachenarchiv* presented interesting facts and figures about Germany's famous Steiff Roloplan. Interestingly, the subject changed to preservation of collections and a spirited discussion ensued centered around the question, "How do we make sure this historical information is not lost?" Not an easy question to answer, by any means, but the consensus seemed to be that the most valuable thing we can do as caretakers of historical information is to make sure the kite community knows where those pockets of information exist. It will always be a personal decision for collectors to plan the disposition of their collections upon death, but if family and



A display of historical kite replicas at Haltern, Germany.

friends know the worth of these materials to the kite community at large, then, chances are, the archives can be passed on to caring members of the kite community.

Two non-German presenters, Frits Sauve of the Netherlands, and Jan Desimpeleare of Belgium presented a wealth of historical kite information – both with an emphasis on using found information to build replica kites. The sophisticated kites and specific kite making techniques of Lucien Frantzen are a specialty of Frits and he brought at least four examples for hands-on examination. Jan started with a slide show tour of his kite sanctuary and didn't manage to discuss his specialty of military manlifting. He expertly discussed the decent cellular kites of Marc Pujo and Roch Donzella, and his quest for Russian kite information from a variety of sources, including Sergei Ul'janin's granddaughter, who coincidentally lives within 20 km of Jan.

Achim Kinter guided many of the participants through the first steps of making an original Silas Conyne, "Aeroplane

German Werner Schmidt, clad in turn of the 19th century costume, lectures on the important work done over the decades at the weather facility at Lindenber, Germany.



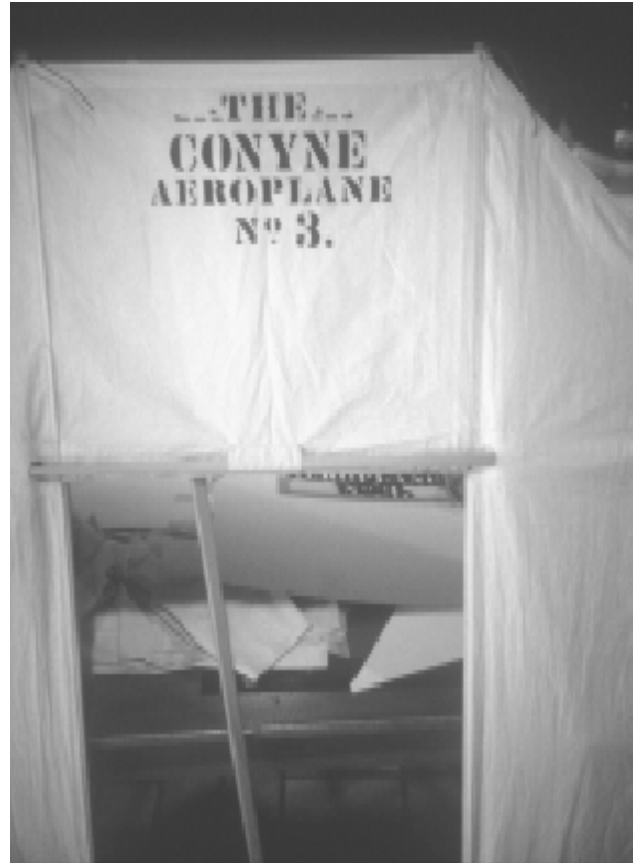


Jan Desimpeleare of Wevelgem, Belgium, talks about the Steiff family's famous Roloplan kite.

Number 3" made famous at the St. Louis World's Fair of 1904. Within days of the completion of the weekend gathering, Achim received calls from excited participants coming close to completion of their Conynes.

It's hard to imagine 35 veteran kite makers and enthusiasts held in the palm of a presenter's hand. Through hours with Hans Snoek, Frits Sauve, and Jan Desimpeleare, this group remained interested, excited, and motivated to explore this heretofore unexplored aspect of kite making. But Claudia and Werner Schmidt, dressed in period costume, brought everyone to new heights in the final presentation of the weekend. Werner, very simply, read the words of Lindenberg Observatory's Dr. Assmann, describing kite operations at this most notable location (home of the world altitude record of almost six miles) while showing pictures of the reel house, the kite-retrieval car, and the magnificent Grund kites. Additionally, Werner showed actual wire line, connection devices, kite spars, and kite sails from the observatory. For the predominately German audience, this was the perfect climax to a seminal weekend.

The Foundation wishes to thank all the presenters and, especially, Sabine and Achim Kinter for showing us all the template for a weekend gathering like this one. We look forward to seeing results from all of these participants and expect to do many similar gatherings in the future.



An original Silas Conyne kite, known as Aeroplane No. 3. It was exhibited at the St. Louis World's Fair in 1904. Conference participants made replicas of this original, owned by Scott Skinner, president of the Drachen Foundation.



Hans Snoek of the Drachen kite archive in Bremen relaxes after leading a conference discussion on preserving vital historical kite information.

Kite Sailing in the Early Days

Editor's note: A short discussion at a picnic table during a lull in the kite festival at Cervia, Italy, last year so interested Scott Skinner, president of the Drachen Foundation, he asked Peter Lynn Jr. to recreate the exchange for this journal. Lynn is of course the son of Peter Lynn, the New Zealand kite inventor and showman.

Scott Skinner: What were some of your early adventures as chief test pilot for water-borne craft? What were breakthrough developments? The Wright brothers were convinced flying an airplane would be mainly a muscle and memory exercise and that time in the air would solve a lot of theoretical problems other inventors were wasting time on, that flying would become “like riding a bike.” Is that your view? Is kite sailing mainly a muscle and memory exercise? By extension, could you use yesterday’s kites with today’s acquired skills? I’d love to hear your opinions on any of the above and anything else you think would be of interest to readers who are not kite-savvy.

Peter Lynn Jr.: Let’s see. This will be a little bit of a trip back down memory lane. The first kite sailing we did involved an old sky diving parachute called Adam and water skis. I was very fortunate at this stage to still be too young to be volunteered as test pilot; this was around 1987 when I was only 13 years old.

By the late ’80s, we were using stunt kite stacks and large two-line deltas which were a vast improvement, having performance not too far short of current traction kites. However, their ease of handling still left a lot to be desired.

At this time, about the age of 15, I learned to water ski behind kites. Actually, I found this far easier than skiing behind a boat. If we had started using wakeboards, or even surfboards, at this time, kite surfing would have for us been born then and there.

As we were later to learn, our favorite testing lake was particularly unpleasant; even now we still have difficulty with it. It was not until 10 years later, when we shifted to a better location with a constant sea breeze, that we really learned how to do it.

During the interim my father was persevering with various kite and boat creations. There were many more than a hundred different designs. Only some of these boats attempted to kill Peter, land in trees, or get up to like mischief. These were dangerous years and I did my utmost to keep my distance from the more extreme creations. Still, out of this development came the various trimaran and catamaran boats which are now quite functional. A precursor of one of these boats, which used water skis instead of hulls, was adapted to use wheels in that hope that this might speed up the learning process, and so bugging was born, and the water traction field was neglected for a great many years.



Peter Lynn Jr. does some dry land practicing with a kite sailing rig.

While we had been wobbling around on various boards for almost 10 years, the commercial potential of kite surfing only really became apparent to us in about 1996. At this time I tried out my latest board design—sort of a large wakeboard with big fins. I went out with too big a kite and proceeded to cross the lake at about 30 miles an hour in a relatively uncontrolled yet impressive fashion. On nearing the far shore, I was hit by an almighty gust and experienced my first serious kite jump. Lacking experience in such things, I chose not to try to land it, and proceeded to apply my groin, stomach and face to the water surface at high speed. After narrowly resisting simultaneously throwing up and fainting, I chose to resist any further urges to entertain the crowd gathering on the shore and body dragged myself home. The reason this episode was of such significance was that it was the first time that we had demonstrated serious upwind performance on a board: we finally knew we could sail back to where we came from.

At this time Kane Hartill became obsessed with kite surfing and we shifted to a new location where the wind was smooth. My father’s C Quad kite also came along at this time and suddenly kite surfing became very easy, only requiring time on the water and the refinement of details.

Looking back, we had the kites, the boards and the skill 10



Propelled by a kite, Lynn negotiates a dramatic stunt leap.

years ago; what we lacked were the ideal conditions in which to bring these components together. We did it the hard way but also learned a lot of valuable lessons in doing so. An interesting thing that we learned was that the board was in many ways quite irrelevant. Many of us now could quite easily kite surf upwind on a simple plank of wood. The limiting constraint for kite surfing has always been, and I think always will be, the kite. Our capacity to handle bigger and more powerful kites has definitely advanced the cause.

It has also been the small things, the details, which make things easy and that has made kite surfing possible. Strangely, it is necessary to be able to use both the kite and board while not looking at either; this was not particularly difficult. Getting these small things right has taken the sport from being marginally possible for amazing athletes in ideal circumstances, to a sport which anyone can do, anytime, and with which amazing athletes can do truly amazing things. Improvement has come from extending the envelope and increasing the capacity to get away with doing stupid things.

Kite Song

Thus soaring, thus flying along,
 Ethereal pleasures we find,
 May kind Heav'n accept of our song,
 Who lends us the wings of the wind.

The pious lark sings as it flies,
 And we who thus follow its flight
 May hope—when our strength breaks—to rise
 And soar midst the seraphs of light.

—inventor George Pocock
 (sung at his funeral 1846)

Peter Lynn Tells It Like It Is

Editor's note: The following two articles are excerpted from the monthly newsletter of a noted kite designer and flier. The author is headquartered in Ashburton, New Zealand.

'A New Benchmark in Customer Abuse'

By Peter Lynn

I have (with a bit of help) just established an absolutely definitive new benchmark in customer abuse. This is how it happened:

There I was sitting, obsessively watching the evening news as per most evenings between 6 and 7 (yes, inflexible habits) when the telephone front line defenses failed momentarily and I found myself, without warning, plunged into dealing with a Customer. An unhappy one at that. Right now I should say that this lady was polite, reasonable and not trying to pull any of the usual swifities that consumers think are perfectly moral for them while being international war crimes if attempted by your average multi-national.

She said she had bought one of our kites and it wouldn't fly and she wanted something done about it.

I said: "What sort of kite?"

She said it was just a kite.

I asked: "One line, two lines, or four lines?"

She said it was a \$40 sort of kite and had two lines which fairly much defined it as a small fabric diamond stunter of the Peter Powell type provided that her description of it as a triangle shape was disregarded, which it was.

Their problem was that, even though she was sure she and her partner were "good kite fliers," they found it almost impossible to coordinate well enough to keep the kite flying—that is, when holding one line each! This is about when things starting going off the rails because, to inform others in the room at my end (who had been keeping half an ear on the conversation so far) of this revelation, I replied: "You mean you were trying to fly this stunt kite with one person on each line?"

I understand it's called contagious giggling. Anyway, once it gets under way it's an unstoppable pandemic that infects everyone within range. About five minutes later and by exerting superhuman self control (with only partial success), I further elicited that as a backup check on the kite they had tried holding the handles firmly together without moving but that although the kite did then stay up longer, it eventually dived over to one side and crashed, proving that the kite was "unbalanced" and therefore "bad."

Even if I had been able to control myself, which I couldn't, the canned laughter from the wider audience was getting through every time I unmuffled the handpiece to attempt further conversation.

She put up with my continually interrupted explanations for a surprisingly long time before hanging up.

At best we've lost a customer, at worst the world has just lost a family of kitefliers. Whoops!

6 Aerodynamic Myths of Kite Traction

Waiting time for me! So there's time to catch up with the aerodynamic sermonizing I've been meaning to get to for a year, specifically:

Myth 1. That the upward performance (that is, the lift to drag ratio) of kites is primarily a function of profile and aspect ratio.

Wrong. The strongest determinant of L/D is angle of attack. Low angles of attack yield high L/D in an inverse relationship; profile and aspect ratio have comparatively little effect.

Myth 2. That the lift coefficient (power for size) of a kite is primarily determined by its profile and aspect ratio.

Wrong. Angle of attack is again by far the strongest determinant of pull for area, and by close to a direct linear relationship in the range that matters for kites.

Myth 3. That high aspect ratio equates to high performance.

Correct in theory for kites but misleading in practice. Aspect ratio (defined as span squared divided by area) is a strong determinant of induced drag, the dominant form of drag at low speeds for efficient airfoils. But kites are not efficient airfoils by any definition, so aspect ratio-determined drag is not the major drag component for kites. It would be possible to make a square wing (aspect ratio equals 1.0) that is more efficient than the highest aspect ratio high performance kite currently available. (But making it usable as a kite would be another matter.)

Myth 4. That thin sections are "better" than fat sections.

Wrong. Unless your kite is to fly at something approaching

the speed of sound anyway. Sections as fat as 16% (maximum thickness as a proportion of chord) lose nothing by lift-drag or lift coefficient to thinner sections up to 300km/hr or so, and are less prone to stalling and luffing.

Myth 5. That double skin wings (i.e., three-dimensional airfoils) are more powerful than cambered single skin wings.

Wrong. Cambered single skin wings will generally have higher lift coefficients than fully shaped three-dimensional wings because they can work at higher angles of attack without stalling. Three-dimensional forms will be more luff resistant and can have high lift/drag, but they won't be more powerful.

Tanstafl. (There ain't no such thing as a free lunch.) The fundamental design conflict is between one and two above. Traction kites require a high angle of attack to have desirable power for size characteristics but a low angle of attack for good upwind performance.

Postscript. The sixth myth, just in case anyone noticed one missing: That I know anything about any of this anyway. I don't, I'm just another lost traveller blundering around in the swamp looking for some high ground.



Peter Lynn's pixie look belies the brainpower behind it.

Building a 'Flying Dragon' in the Year 1558

Editor's note: First published when Giovanni Battista della Porta was in his early 20s, the volume Natural Magick contained information on kite building. The 1558 book became one of the best known and most frequently quoted collections of natural wonders of its time. Following from Chapter 10 on mechanical experiments is Della Porta's instruction on how to make a "flying dragon."

The dragon is made thus: Make a quadrangle of the small pieces of reeds, that the length may be to the breadth, one and half in proportion. Put in two diameters on the opposite parts or angles, where they cut on the other. Bind it with a small cord, and of the same bigness. Let it be joined with two others that proceed from the heads of the engine. Then, cover it with paper or thin linen, that there be no burden to weigh upon it.

Then from the top of a tower or some high place, send it out where the wind is equal and uniform, not into great winds, lest they break the workmanship, nor yet to small, for if the wind be still, it will not carry it up, and the weak wind makes it less labor.

Let it not fly right forth, but obliquely, which is effected by a cord that comes from one end to the other, and by the long tail which you shall make of cords of equal distance, and papers tied onto them.

So being gently let forth, it is to be guided by the artificer's hand, who must not move it idly or sluggishly, but forcibly. So this flying sail flies into the air. When it is raised a little (for here the wind is broken by the windings of the houses) you can hardly guide it, or hold it in your hands.

Some place a lantern in it that it may show like a comet. Others put a cracker of paper, wherein gunpowder is rolled, and when it is in the air, by the cord there is sent a light(ed) match, by a ring or something that will abide. This presently flies to the sail, and gives fire to the mouth of it, and the engine with a thundering noise, flies into many parts, and falls to the ground. Others bind a cat or whelp (puppy), and so they hear cries in the air.

Hence may an ingenious man take occasion to consider how to make a man fly, by huge wings bound to his elbows and breast. But he must from his childhood, by degrees, use to move them, always in a higher place.

Smithsonian Plans Lease on Life for Old Collection

Trove of Chinese Kites Is a Little Known National Treasure

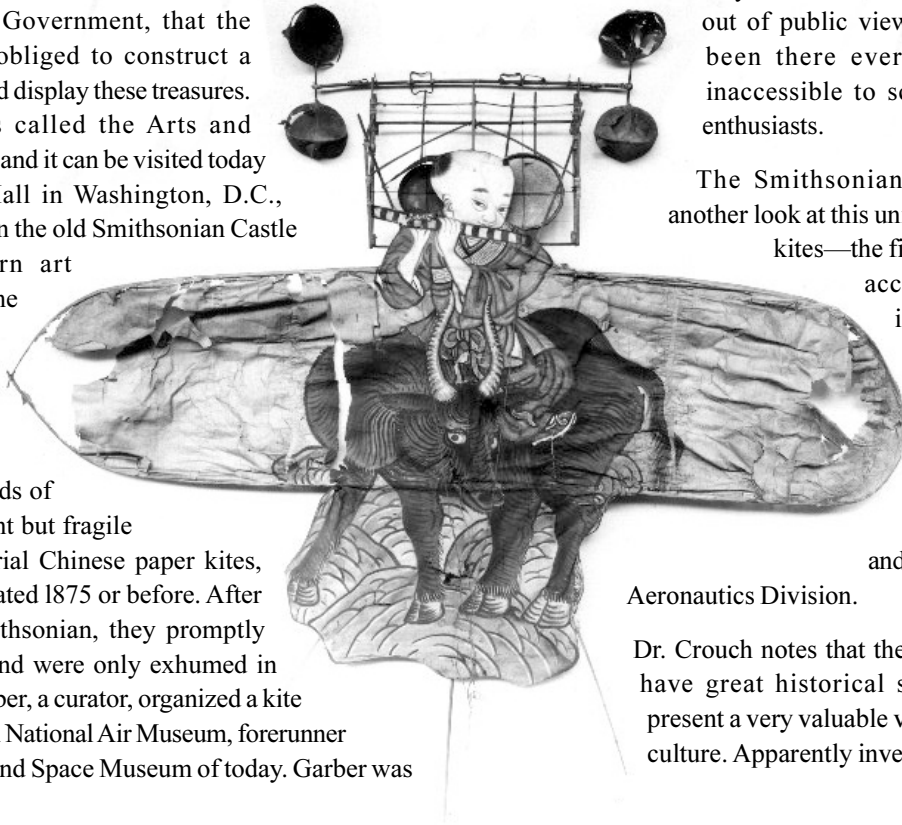
After the Philadelphia Centennial Exposition of 1876, so many countries gave the contents of their national exhibits to the Smithsonian Institution, as the museum arm of the United States Government, that the Smithsonian was obliged to construct a building to house and display these treasures. The museum was called the Arts and Industries Building, and it can be visited today on the National Mall in Washington, D.C., sandwiched between the old Smithsonian Castle and the Hirshhorn art museum. Some of the Centennial objects remain on exhibition to this day.

Among the thousands of gifts were 42 elegant but fragile hand-painted Imperial Chinese paper kites, from Canton, and dated 1875 or before. After transfer to the Smithsonian, they promptly went into storage and were only exhumed in 1932 when Paul Garber, a curator, organized a kite exhibition at the then National Air Museum, forerunner to the National Air and Space Museum of today. Garber was

the Smithsonian's aeronautics expert and a great kite enthusiast (the soon to be inventor of the World War II U.S. military target kite). Back into the warehouse went the large, showy Chinese kites after that showing, out of public view again. They've been there ever since, largely inaccessible to scholars and kite enthusiasts.

The Smithsonian is now taking another look at this unique collection of kites—the first flight artifacts accessioned by the institution. Impetus for the reexamination comes from Tom Crouch, chairman of the National Air and Space Museum's Aeronautics Division.

Dr. Crouch notes that these kites not only have great historical significance but present a very valuable view of Asian folk culture. Apparently invented thousands



The Kite

By Lekhnath Poudyal (1884-1965)

Translated from the Nepali by Abhi Subedi

As I look deeply at the kite's marvelous flight

I get lost in the limitless sky

At times the kite looks like a wandering fish in a blue pond

Frolicking in the sky, making circles of myriad kinds

Sometimes it soars up in the breeze of love

And sometimes takes round turns and swerves low

Sometimes it bends and glides like a snake

By chance it gets entangled with others on the way

And sometimes it soars high up, floating slowly in grace

And stops still like a bird on its passage.

The million movements of seafaring animals and sky birds

We can see in this kite, like our life

If it goes too high up the kite might get lost

Down below, if it swerves it might get all wet

It soars and dances to its full rhythm in amazing ways

When in the middle of the sky, it gets a clean and cool breeze

When did it start to fly and how long more does it fly?

It's after all a kite that knows how short is its life

It will continue to soar up non-stop as long as it can take a flight

But why can't one see the strange moody flier behind his kite.

Oh goods! I saw the luminous world, the selfsame light

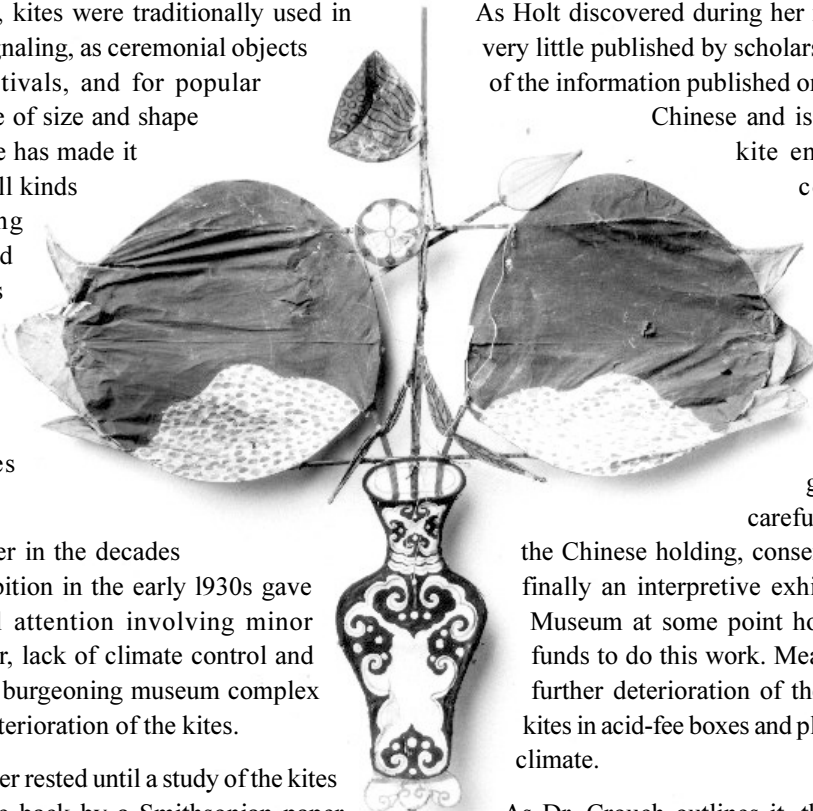
Your abode is a small place, the wheels of the kite

of years ago in Asia, kites were traditionally used in China for military signaling, as ceremonial objects during religious festivals, and for popular recreation. The range of size and shape possible with the kite has made it an ideal canvas for all kinds of images depicting vivid folktales and legends. Kitemakers added noisemakers and moving parts to their kites to create music, sound and motion as the kites flew.

Although Paul Garber in the decades following their exhibition in the early 1930s gave the kites additional attention involving minor restoration and repair, lack of climate control and the space needs of a burgeoning museum complex resulted in further deterioration of the kites.

That's where the matter rested until a study of the kites was made some time back by a Smithsonian paper conservator, Jayne Girod Holt. She determined that the collection of kites, divided almost evenly among the National Air and Space Museum and the Smithsonian's National History Museum, ranges in condition from fair to poor. This reflected the differing modes of storage afforded the artifacts.

Kites still in their original display cases, complete with original labels and catalogue numbers, fared the best. Those encased in folders and stacked one on top of another deteriorated badly. The heaviest damage occurred to the paper sails, which tore, cracked, or in some cases dropped off. Earlier repair efforts with pressure-sensitive tape endangers the remaining paper covers because this tape ages poorly, darkening and staining paper and becoming difficult to remove even with solvents.

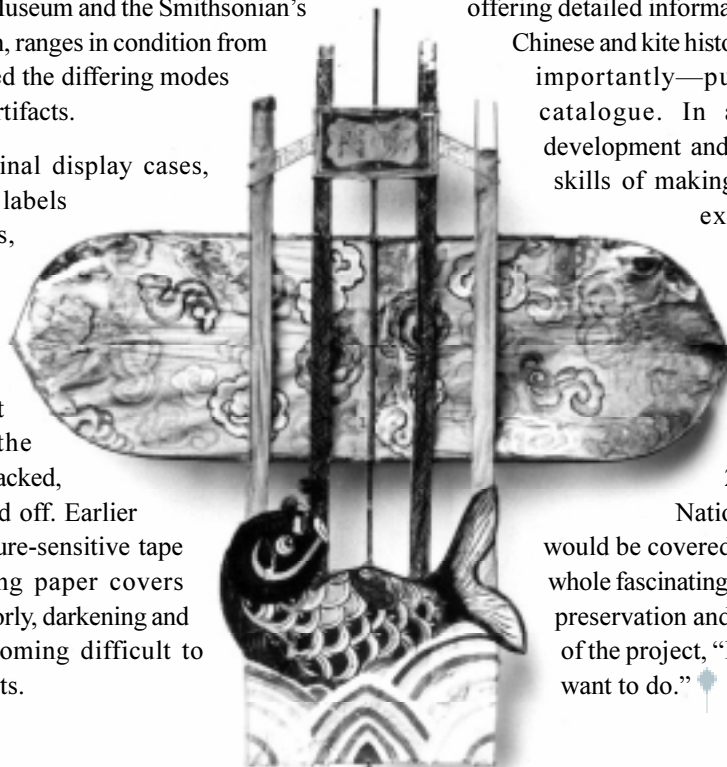


As Holt discovered during her research, there has been very little published by scholars on Chinese kites. Most of the information published on these kites is written in Chinese and is unavailable to Western kite enthusiasts. Under these conditions, most Westerners are unaware of the important role kites have played in Chinese culture.

The situation, she concluded, would be greatly alleviated by careful curatorial research into the Chinese holding, conservation of the kites, and finally an interpretive exhibit. The Air and Space Museum at some point hopes to allocate or raise funds to do this work. Meanwhile, to impede even further deterioration of the kites, it re-housed the kites in acid-free boxes and placed them in a controlled climate.

As Dr. Crouch outlines it, the exhibit to follow the proposed research and conservation work would include a self-tour pamphlet for visitors, computer stations offering detailed information about various aspects of Chinese and kite history, hands-on activities, and—importantly—publication of a definitive catalogue. In addition to the origins, development and functions of kites, the four skills of making and using them would be extensively covered. These skills are binding, pasting, painting, flying.

Their original role in our country's Centennial celebration and Paul Garber's work in acquiring 20 of the 42 kites for the National Air and Space Museum would be covered in the exhibit, as well as the whole fascinating process of their conservation, preservation and storage. As Dr. Crouch says of the project, "It is something we very much want to do."



Record Kite Flight Seen as a 'Job Well Done'

Almost a year ago, Richard Synergy of Toronto flew a kite 14,509 feet into the air to set a single kite altitude record. It was the culmination of 10 years of effort.

With the mark now headed for the *Guinness Book of World Records*, Synergy looks back and says the whole thing was well worth the effort. Unable to get commercial sponsorship, he basically pulled it off alone, backed by a loyal volunteer crew, and he estimates he spent \$70,000 on the project out of his own pocket during the decade.

"I received enormous personal satisfaction and it was a wonderful personal growth lesson," he says. "It was money well spent. I learned discipline, planning, stick-to-it-ness. This all should serve me well in my future life."

Apart from his 15 minutes of fame, Synergy says the flight has provoked some contract work from scientific projects—nothing major—but he hopes for more. Beyond that, the effort opened up many avenues for research to Synergy, some of which he is pursuing. Safe production of electrostatic power using a high flying kite is one of these. "There are tons of potential spinoffs," he muses.

For those unacquainted with the epic flight, the facts are straightforward. Synergy flew a 30-foot span, 18-foot high delta with sail area of 270 square feet. It had a ripstop sail and the line was 3/32 inch-thick woven Kevlar (of bullet proof vest fame). The peak altitude, reached at 7:44 p.m. Aug. 12, 2000, over Kincardine, Ontario, was calculated by two on-board altimeters. (Adjustments were made for temperature and humidity and the pressure altitude had to be converted to geometric altitude. The altitude record claimed is from "above the feet of the flier," viz. sea level was not considered in the calculation.) Synergy and team of engineers, recreational aircraft pilots and ham radio operators, had a perfect day for flying—clear and sunny skies, low winds up to 4,000 feet and thus low drag on the line, higher wind above that and thus good lift for the kite. The operator of a nearby airport spent the day warning off passing aircraft.

Glitches during the 11-hour flight included a problem with the angle of attack adjustment device, troubles with the shock absorber on the line to cope with wind gusts and, mainly, a misbehaving winch as the line flew for 40 minutes at altitude. Five members of the crew—Gordon Moogk, David Little, Gary Janssen, Michael Hartwick and Michael Cannell—exhausted themselves bucking 100 pounds of pull on the line as they took on the burden of flying the kite as repairs were made.

"For me, this was the scariest time," Synergy says. Having promised Navigation Canada (the Canadian equivalent of America's Federal Aviation Administration) he'd have the kite back on the ground by 10 p.m., Synergy feared the glitch would force him to fly the kite through the night until the

wind dropped enough to bring it in. As it happened, the team figured out how to upgrade the winch's capacity and brought the giant kite down to a gentle landing only 100 yards from the launch site in a cutover wheat field. "It was an epic of teamwork," says Synergy. "We have years worth of stories."

There is conflict over what the previous single kite high altitude record was, but whatever it might have been Synergy clearly topped it and now reigns.

"Job well done," messaged distinguished kite writer Tal Streeter. That seems to sum up the reaction of the international kite community.

Continued from page 10

Air show over, departure from Clark is at 5:30 a.m. and it's back to Manila through early clogged morning traffic. A beautiful crate made—crafted, really—by "Ben" Pangilinan for his kites and other Drachen items, including an eight-foot banner showing the Drachen logohead and costing all of \$10, is stowed by Orly and it is off to the airport for the visitor's mid-afternoon flight. Despite the short distance involved, it has taken some five hours to accomplish this trip from Clark to the Manila airport.

In farewell, Orly says he plans to continue his research into the relationship of Philippine kites to kites from adjacent countries such as Indonesia, Malaysia, Thailand, Korea and China. He also plans to study the fern leaf kites still used in the southern part of the country with a view to supplementing research on kite origins now being conducted by a number of scholars. All this will go into his revised book. Meanwhile, he thinks big organizationally. He hopes to organize a kite federation with five other Southeast Asian nations to really put this region on the kite map.

No one would ever accuse Orlando Ongkingco of not thinking big.

— Ben Ruhe

Addendum

Issue No. 6 of the Drachen Journal dealt with utilitarian and sports uses of traction kites. For those seeking additional information on the sports aspect of the subject, Kite Boarding magazine, an American publication, may be helpful. Contact the editorial director on e-mail as follows: tom.james@worldpub.net.

The Magic Rule of Three

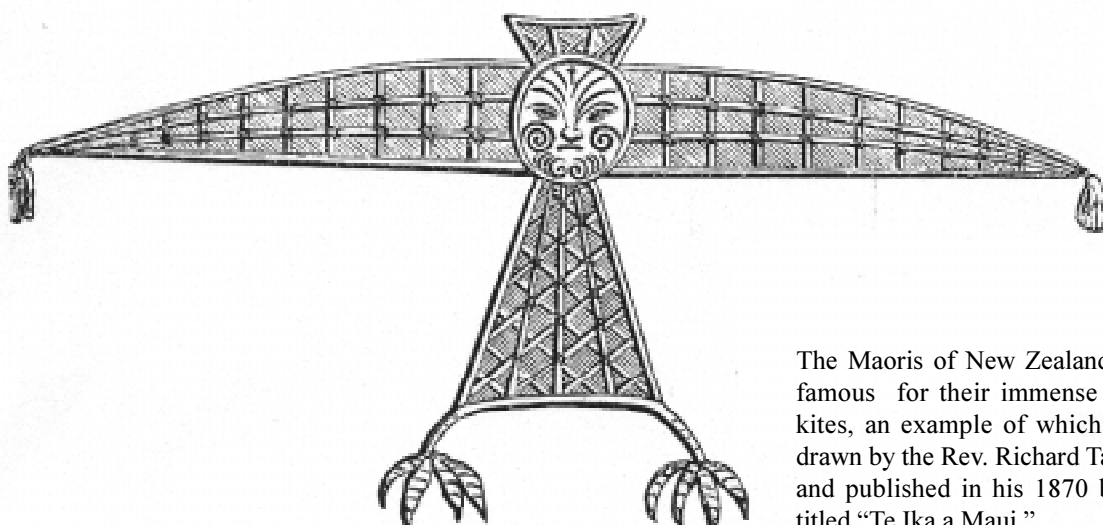
I'm not at all sure about it, but the more kites I observe and the more of them I construct, the more I am beginning to suspect that kite aerodynamics may be ruled by the number three.

Observe: The crosspiece on the two-stick flat kite is ideally one-third of the way down the main mast. The sled kite is in three parts—two keels and one flat section, and the vent, if any, is one-third of the way up the trailing edge. The parawings have three sets of bridles while the parafoil has three ribs separating each air chamber, as well as three keels. The depth of the kite is two-thirds of the width.

Consider: The usual point of connection for the flying line is one-third of the way down the length of the vertical bridle. It is well known to aficionados the flying line should have a breaking strength equal to three times the frontal surface area of the kite in square feet. There are three types of winds—light, medium and heavy—and probably the best winds of the day come at 3 o'clock in the afternoon.

Conclude: When kiteflying is over the day, three drinks are better than two—and greatly assist in raising the three sheets to the wind!

---Ed Grauel



The Maoris of New Zealand are famous for their immense bird kites, an example of which was drawn by the Rev. Richard Tayler and published in his 1870 book titled "Te Ika a Maui."

One Day the String Broke

One day the string broke.

The kite fled over the shoulder of the world

But reluctantly, reaching back in great lunges

As lost kites do, or as a girl running

In a reversed movie, as at each arched step, the earth

Set free, leaps forward, catching

Her further back;

The treadmill doubly betraying,

Remote and more remote.

Now I lie on a west-facing hill in October.

The dragging string having circled the world, the universe

Crosses my hand in the grass. I do no grasp it.

It brushes my closed eyes, I do not open.

That world is no longer mine, but for remembrance.

Space ended then, and time began.

—Eugene McCarthy

Letters to the Editor

Praise for New Book

Dear Drachen Foundation,

Wayne Hosking's volume *Kites of Japan* is an outstanding job of research and reportage. It will be invaluable to everyone who loves Japanese kites. In Japan, kite books are excellent but, all too frequently, because of small editions, out of print. Of course for Western kite lovers, the Japanese language is very nearly an impenetrable barrier. I wonder, even for Japanese kite authorities and enthusiasts, if *Kites of Japan* might not be the last word as a Japanese kite resource!

Self-published under his own imprint (Skytec Arts, \$45), Wayne's new 145-page book with 500 color photographs features more than 340 kites with histories, anecdotal comments and precise information covering kite makers, festivals, Japanese kite museums—and all their locations. This information is truly invaluable for those fortunate enough to travel to Japan.

In my own *The Art of the Japanese Kite*, I tried to dispel the prevalent thought at the time that traditional Japanese kitemaking was soon to be a lost art, a thing of the past. In my heart, however, I wondered if this would, in fact, prove to be true. What a great pleasure it has been to see community kitemaking and very talented amateur kite artists coming to the fore all over Japan—not to mention Japan's extraordinary kite museums and supremely healthy kite festivals—all of this so richly documented in *Kites of Japan*. Truly, the Japanese must be counted today, among the world's first ranks as kite superstars.

Kites of Japan has already given me hours of pleasure. It is a book I will repeatedly turn to as a valued reference. It is surely a must book for gracing a kite-lover's book shelf. Congratulations and thank you, Wayne Hosking, and your kite enthusiast editor Makota Ohashi.

Tal Streeter

Verbank, New York

Editor's note: Wayne Hosking can be contacted via his web site: www.hosking.kitelife.com.

Update on U.S. Kite Patents

Dear Drachen,

Just to keep the record up to date, here's a brief update on American kite inventions:

During the year 2000, eight patents were issued for kites or kite accessories by the United States. This compares with a

total of nine patents in 1999 and an average of 10 patents issued during the previous 10 years.

Two of the new patent ideas reflect a recent trend toward collapsible kites which fold automatically. There is also evidence of this same trend in recent patents issued in France and Germany.

Kites above all,

Ed Grauel

Rochester, N.Y.

International Festival at Taipei

To Drachen,

Kites and the beach, a winning combination, 23rd and 24th of September, year 2000. Weekend-holiday, glorious blue sea, white sand and a lovely clear blue sky filled with kites: splashes of color, vibrant in all shapes and designs, constituted the 1st Taipei County International Kite Festival in Sheman, the northernmost tip of Taiwan. New festival, new place, new faces and best of all, meeting up with old friends; sometimes life can be near perfect!

People make festivals and here was the most delightful mix of Aussies, Americans, Europeans, Indians, Indonesians, teams from Hong Kong, Korea, Japan, Malaysia, Singapore and the local Taipei team. Once again the common bonding factor, kites!

People from all over the world spoke a common language. Kite news, kite stories, technical skills were exchanged, but everywhere—in the hotel lobby, in the lifts, in the rooms which looked like kite fields—kites were admired, kite reels studied, the strength of the manjha cutting line noted. Anticipation and excitement carried everyone in its flow and greeted every new arrival.

“Whether on our own doorstep or at the other end of the world, the birth of a new festival always deserves our attention,” so rightly written by Jean Philippe about the first Jodhpur festival. The Taipei festival certainly deserved everybody's attention, superbly organized by Angela Wu of the Taipei County Association and Alfred Lee of the Hong Kong Kite Flyers Association. The opening ceremony, so colorfully oriental, was complete with the dragon dance and drum beat, and then the great dragon kite took to the air. The young enthusiastic sports minister promised an yearly festival amidst much cheering and the cheering grew louder as each team was introduced with their respective flags.

The lasting impression of the Taipei festival were the crowds and their enthusiasm for kite flying. The crowds were totally participatory; they had come not merely to watch but determined to fly; a separate ring was created for children

and everybody flew. I had to ask many local people if this was indeed the first kite festival: the crowds looked totally professional! And what a crowd: Grave old plodders, gay young friskars. Fathers, mothers, uncles, cousins. Families by tens and dozens. Brothers, sisters, husbands, wives. And all of them were flying kites.

(A little variation on the Pied Piper of Hamelin!)

And kites flew in great profusion—Martin Lester’s evergreen legs, altogether six of them, so popular with the kids, Werner Steinmetzer’s bats looking dramatic against the blue sky, and Guy van Acker’s ‘Cats’ kite all found good breezes to fly in. Beautiful birds, bees, dragons, Revolutions, deltas and other stunt kites and colorful fluttering banners transformed the beach to a mythical fairyland.

The local Taipei team did a superb show of synchronized kite-flying. The other action, however, was taking place in the farthest corner as the fighter kite champions were getting ready with their *foung-cheng*, which is Chinese for kites.

All the teams invited took part in the fighter kite competition. Nobody could keep away and the competition was fierce and exciting. As an Indian, it is gratifying to see this form of the sport gain such tremendous popularity in all parts of the world. Our Western counterparts are getting just as adept in mastering and unraveling the mysteries of the tangle or mid-air battling. The Manjha Club was well represented with Ludo Petit and Philippe Revel leading their team. The Hong Kong team dominated all the way through; it seemed totally invincible. It’s a wonder what a little rolling pin will do in the wrong hands! Finally Mr. So Chi Chiu of Hong Kong defeated Mr. Dodi of Indonesia to win the championship. Not having had enough, a free-for-all was set up for everybody which proved just as tense and exciting. (Of course, the Hong Kong fliers made a clean sweep again.) The sun had long set and they could have tangled all night through but for the fading light. The look of smug satisfaction on everybody’s face said it all, we were thoroughly satiated, winning or losing did not matter in the least.

The banquet laid out the first night was fit for a king and the closing ceremony was just as much fun with champagne and the giving away of awards.

White paper hot air balloons were launched by each team and allowed to soar away but only after making a wish and writing it on the balloon just to make sure that it would come true.

And what do you think everybody wished for? To come back again of course!

Rashmi Prakash
Bombay, India

THE DRACHEN JOURNAL

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If you have questions or comments about the Kite Journal or kites in general, please submit them to the Foundation.

Now you can visit the Drachen Foundation online at www.drachen.org. Our new website is up and running, and we invite all our readers to visit us.

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ABOUT THE JOURNAL STAFF

Editor and major contributor to the Drachen Journal, well traveled **Ben Ruhe** regularly contributes articles to special interest publications on subjects as diverse as boomerangs, tribal art and flint-knapping.

Scott Skinner, president of the Drachen Foundation, is a former pilot instructor at the U.S. Air Force Academy. He has been a kite enthusiast for two decades—designing, making, flying, collecting and teaching about kites.

Ali Fujino is the administrator of Drachen. A museum specialist since age 19 when she began work at the Smithsonian Institution, she has long been fascinated with anything that can become airborne.

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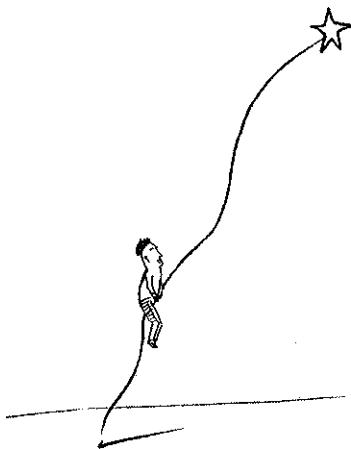
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