K I T E
THE DRACHEN FOUNDATION
J O U R N A L

Peter Lynn, Man With a Mission

Eric Brackenbury

He's Promoting New Sailing Sport ——Kiteboating

Engineer and kitemaker Peter Lynn established a kitemaking business in Ashburton, New Zealand, in l971 and within a decade was exporting kites around the world. From l987, Peter concentrated his research and development on kite traction----using kites as sails to propel water skiers, snow skiers, ice skaters, kite buggiers, and kite boarders. His development of the first practical kite buggy in l990 started a new sport and an industry that is now worldwide. By 2004, the British Buggy Club had 4,000 members. He was also a significant contributor to the development of kiteboarding and has patents pending on several arc-shaped ram air inflated kiteboarding kites.

For many years now Peter has starred at kite festivals around the world flying a range of outsize, showy kites. His Octopus, Ray, Gecko, Cat, and Fish are well known. In 1995, his ram air inflated MegaBite soft kite in the shape of a giant trilobite became the world's largest kite, with 635 square meters of lifting area. It was formally ratified as a Guinness record holder. Last year, his even larger single line kite in the shape of the Kuwaiti flag, built for a Kuwait family, was flown successfully. At 1,000 square meters it is expected to claim the Guinness mark.

For the last few years, Peter focused on something new, kite boating----big kites pulling small boats. He envisions it as the next premier extreme sport. Important commercial applications might well follow. His catamaran named the Kite Cat is one of numerous boats he has built and sailed. An innovator who tests things theoretically and then reinforces that knowledge with hands on experience, Peter understands that great success by one person only means something if it is complemented by others. Thus he has issued a call for traction kite researchers and developers around the world to join forces with him. "Kiteboating is the next big sport, and it's just around the corner," predicts Peter Lynn. More about the inventor and his world starting on Page 3.

Down Under Issue

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The Journal Staff


Ben Ruhe

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 director of Drachen. A museum specialist since age 19 when she began work at the Smithsonian Institution, she has long been fascinated with anything that could become airborne. Fujino is a member of the prestigious Explorers Club of New York City in recognition of her 25 years of cultural work in Third World countries.


Ben Ruhe


Malcolm Goodman

Editor of 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.

Note to readers: Articles in this issue of the Drachen Foundation Journal not bylined were written or compile by editor Ben Ruhe.

Born and raised in Japan, **Kiyomi Okawa** came to the U.S. as a student and has stayed on to become Drachen's graphic artist. Among other duties, Kiyomi lays out this Journal. She's been flying kites since elementary school.


Mikio Ioki

How to Find This Journal

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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.

Study Center Location
1905 Queen Anne Avenue North / 200
Seattle, Washington 98109-2500 U.S.A.

Office Hours
Monday–Friday 9 a.m.–5 p.m.

Research Library
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A Reverse Engineering Challenge

What If the Kite Was Only Invented Once?

Editor's note: The following essay should be considered a "heads up" for scholars and theoreticians in the field of kites and kiting, says Scott Skinner, president of the Drachen Foundation, who hopes it will provoke a suitable response from interested parties.

By Peter Lynn

The reason traction kites have taken so long to develop to the state of useability we now expect is because there are so many performance factors that all have to work at the same time. Yes, we need good upwind performance; but we also have to have luff resistance, crash resistance, launchability, packability, buildability, etc., and now, power control----the list is endless. So much complexity, so many possible ways to do things, at least we can be sure that traction kites will continue to improve in the foreseeable future.

But kite traction design and development is comparatively easy because the aerodynamic principles underlying steerable kites are relatively well understood, even while being difficult to apply in practice. Counter-intuitively, single line kite design is much more difficult, I would say, to a first level-approximation, that it is still not possible to design a new style of single line kite from scratch with any real hope of success, even though the first single line kite probably flew as long as 10,000 years ago. What we can do is make a guess, play around endlessly with minor changes, and sometimes succeed, but not often.

After 35 years of working full time in this field, I still have no useful understanding of why kites fly, or rather, why they don't fly, their overwhelming preference. Sure there's one underlying principle that's certain, that kites are pendulums, but what is it that makes any particular design stable is a mystery to me, and everyone else too as far as I can see.

Sure we have favorite things to try and endless half-baked theories that work fine until they really need to, but there's no coherent understanding.

It's no mystery as to why it's all a mystery, though; the stability of single line kites is an interplay between the discontinuous aerodynamic effects of turbulent flow and the weight force, creating a complex feedback dynamic which is stable for only a few of its zillions of possible manifestations.

The real mystery is how kites ever came to be invented at all.

The best aid to invention is to know something is possible, and for kites there is no equivalent natural example. Birds inform the airplane, but nothing that I can think of heralds the kite. Invention is also assisted by the existence of an incremental pathway rather like the way that evolutionary mechanisms eventually created the eye.

For things like boomerangs, a development path exists. Over many thousands of years it could be noticed that a bent stick throws more easily than a straight one, even better if it's flat in the plane of the kink. Then, if it's warped a bit, as some bent and flat sticks are sure to be, then sometimes it flies in a curve; and so on to the returning boomerang, examples of which have now been found from more than 10,000 years ago.

Similar paths can be postulated for other complex human artifacts: spears, knapped flints, throwing sticks, bows, needles, fishhooks, etc. I can think of just one likely path to a kite. In Southeast Asia, Indonesia in particular, a

small percentage of one particular type of leaf, when dry and correctly bridled, will fly as a kite. Is it possible that there was a reason for tying fishing line to these leaves? Like that the wind action on such a leaf thrown onto the water would pull the line out? Maybe then, of all the possible points that this line could be attached at, at least once, the line attachment was within the few millimeter range that allowed the leaf to function as a kite. And that this happened with one of the few leaves out of many that was symmetrical enough and correctly formed to fly as a kite, and that it did fly, and that it was recognized as a kite, and replicated!

Yes, it stretches credibility, but what other explanation can there be? Which gets me to the point of all this.

What if the kite was only invented once, ever, and that all the kites we know are derivatives from this incremental development, spread by migrations and technology transfer to all the corners of the world that have a history of kiteflying?

The only more likely hypothesis is that they were never invented at all, and we know this is not true.

This single origin premise rests on two premises: One, that from a probability perspective, kites are unlikely, to say the least, and are even more unlikely to have been discovered when it wasn't known they are possible. Two, that no one familiar with the field that I've talked to so far can come up with an obvious challenge based on known kite history.

Both of these premises can be tested further. If the single origin concept survives this testing, then reverse engineering may well provide information about migratory and trade contacts, and their timing, that is not currently known.

As an especially valued frequent flier of a U.S. airline and its affiliates, Peter Lynn takes advantage of his generous weight allowance to ship heavy gear overseas. Here he assembles kites and buggy wheels for final packing. Lynn has made 134 trips to the northern hemisphere from New Zealand and calculates he has flown in excess of three million miles. He ordinarily flies economy, saying it is better for thinking and dreaming.

Ben Ruhe

The Peaceable Kingdom

Smack in the middle of a farming and pastoral area of New Zealand's South Island, the service town of Ashburton, population 15,000, is the unlikely home of perhaps the leading figure in kites and kiting worldwide. Peter Lynn's town is in the Canterbury Plains, bordered on the east by the Pacific Ocean and on the west by the New Zealand Alps. Just to the north is Christchurch, a port and jumping off point for Antarctic expeditions. Ashburton is on the same latitude as Boston, but with a few more sheep and marsupials and, of course, with seasons reversed.

Lynn and extended family and close friends occupy a section of central Ashburton embracing houses, workshops, outbuildings, fields, and an industrial park owned by the family. The Peter Lynn household is the center of action. Visitors, a stream of them from morning to night, walk into the house without knocking. Some head directly to the refrigerator to pour themselves a drink or grab a snack. It's that kind of place.

Presiding when he's not on one of his frequent forays to the Northern Hemisphere is Peter Lynn, closing in on 60, inventor and premier showman in the world of kiting.

Wife Elwyn is the anchor, a charming hostess who keeps things calm and casual. There are five handsome children----two sons, both engineers, and three daughters, two of them lawyers and the third an economist. All five are living away pursuing careers.

Family includes Peter Lynn's father Bob, the patriarch, now 91, and his mother who live across the driveway; Elwyn's mother; Peter's elder sister and brother-in-law, Elizabeth and Lindsay Holland; close friends Jennie and Clyde Cook who share vacations and holidays with Peter and Elwyn; an aunt; cousins; and adoptees. Interns and apprentices from around the world hang out for weeks on end, drinking in Peter's wisdom. And of course there are the fat cats, Tory and Cia. Plus carefully nurtured Monarch butterflies on a bush outside the door.

Altogether, it's a peaceable kingdom.

James White

The Lynn family (clockwise from top left): Robert, Kirrilee, Pete, Katrina, Elwyn, Sarah (in jeans), and Peter. The photograph was made on Peter and Elwyn's 25th wedding anniversary.

Eric Brackenbury

Beside the Lynn house is a Swan bush, a variety of Milkweed, which is home to a substantial number of Monarch butterflies in various stages of development. The Monarchs lay eggs which hatch into gorgeous four-inch caterpillars which then produce cocoons from which emerge the adults. The Lynn family's inspiration to raise its very own beautiful butterflies has caught on and the town of Ashburton is now dotted with Swan bushes and Monarchs.

Eric Brackenbury

Bob Lynn poses with an old lathe and an example of an ornamentally turned wood bowl. He founded and curates on a daily basis, at age 91, the Museum of Woodwork, Tools and Ornamental Turning which is located outside Ashburton. It has one of the world's greatest collections of turning lathes, including seven signature Holtzpffels. There is also a Bower Rose Engine Lathe, dated from 1824. This is the only machine capable of reproducing itself. The museum has 3,000 named species of wood, 4,500 woodworking tools, and 1,000 examples of the ancient art of ornamental turning and woodcarving.

Eric Brackenbury

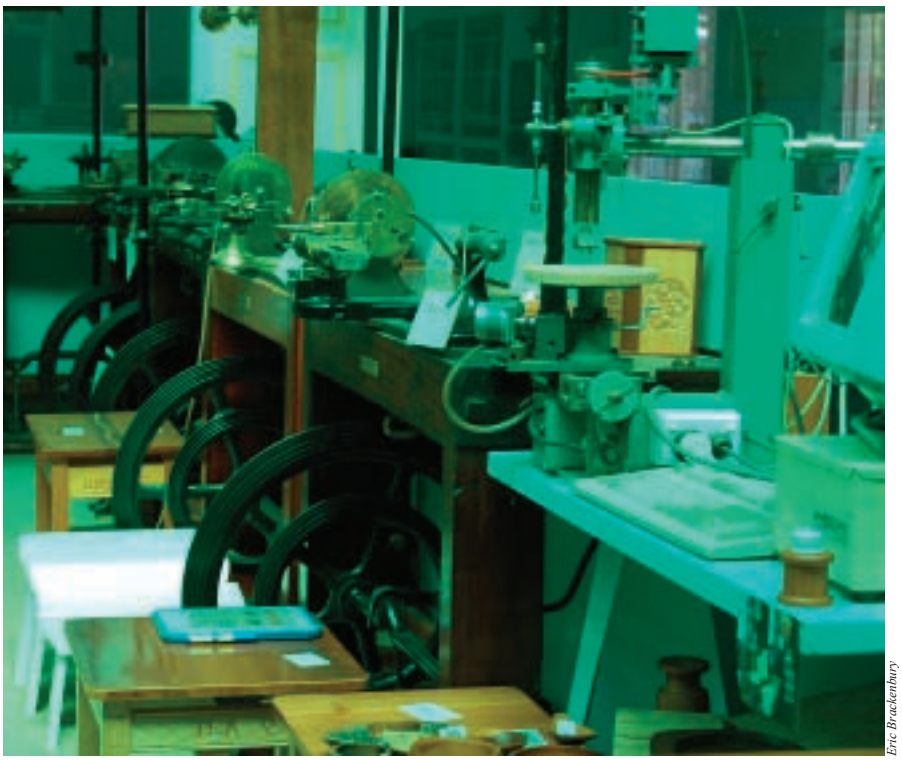
Cats get favored treatment in the Lynn household. The autocrats are two elderly Burmese named Tory and Cia. Here Cia descends from a sleeping nook via narrow stairs specially constructed for her. Overly plump, bullying Tory doesn't fit on them.

Ben Ruhe

Stacked against fences and lying in the tall grass out back of his house are some of the innumerable prototype kiteboards and boats Peter Lynn has created in his almost two decades of full time traction kiting development work. It's a kind of outdoor museum in the making and, in future, may just inspire pilgrimages from the devoted.

Eric Brackenbury

As a significant innovator himself, Peter Lynn admires notable inventions. A replica of the first-ever automobile, the Benz, built by Carl Benz in Manheim, Germany in 1886 receives an outing from Peter. The three-wheeler with its pioneering internal combustion engine moves along at a 10 mph clip. "You don't want to turn too fast, or you'll turn over," cautions Peter.



Eric Brackenbury

A natural collector like his father, Peter Lynn owns the beginnings of a museum of stationary engines. All 10 of them work. There is a Bach portable steam engine, a Rover gas turbine, and a Bradley hot air engine. The Bach dates to 1853 and is believed to be the only example of Richard Bach's work to have survived. Apparently shipped to New Zealand from Birmingham, England, for an exhibition, the discarded engine was found 30 feet down a well by locals at Totara Flat, New Zealand, who almost pushed it back in, having expected to find "an engine, not a boiler." The engine's power output is very low and Peter Lynn asks: "Could there ever have been many economically viable applications for such a low power output, except if muscles were the only alternative?"

Ben Ruhe

The Lynn kite workshop in the industrial park operated by the family grapples with the world's largest kite----a 1,000 square meter monster. This second of three Guinness record flag kites was being made for an American, as the Stars and Stripes colors convey.

Ben Ruhe

Home of the Peter Lynn family. It's a friendly establishment. Friends enter without knocking. Note cite catamaran atop vehicle. The Kite Cat is easily loaded and unloaded by one strong person. Garage at left houses Lynn's unusual stationary engine collection.

Ben Ruhe

Close friend of the family Jennie Cook is also the business partner of Elwyn Lynn. Together they run a kitemaking factory.

Ben Ruhe

Peter Lynn's large fan club worldwide includes Jackie Penney, of Lowestoft, England, who with her husband spends half of the year vacationing in New Zealand, where they fly kites, attend festivals, and hang out with the Lynns. Calling herself Miss Moneypenny, queen of the pawnshops, she here shows off her collection of diamond rings. "I want to be buried with my diamonds to light the way to heaven," she says. Another sally: "We're spending our children's inheritance. We calculate that we'll have just enough left to pay for our funerals."


Ben Ruhe

Bob Lynn has his own large two-story workshop in the family compound. Although deaf, Bob retains his excellent memory and acute brain. He formerly had an engineering firm that did interior house fittings and joinery. At its peak, it had a staff of 200. "Half the builders in Ashburton apprenticed with Bob," says his son-in-law Lindsay Holland.

Ben Ruhe

Ben Ruhe

Ben Ruhe

Postings around the Lynn property reflect the family's brand of humor.


Eric Brackenbury

Peter Lynn's powerful, clever hands. Surprising to observe them engaged in two-finger typing.


Ben Ruhe

Elizabeth Holland, Peter Lynn's elder sister, exercises her Lynn family creative genes by running a small wooden puzzle business and making quilts as a hobby. "Kites are just quilts that fly," she says.

Inventor Is Assessed

'So Many Facets to This Diamond'

"Talking about Peter Lynn poses a problem," says Scott Skinner, president of the Drachen Foundation and a longtime, knowledgeable observer of Lynn and his work. "There are so many facets to this diamond, everyone of them an integral part of the whole."

"First and foremost, he is the world's expert on kite aerodynamics. No one is even close to him because of his aeronautical training, experience, and his hands-on willingness to test and quantify the results.

"In the area of kite traction, I see him as a world leader both on the theoretical and forward-thinking sides. And yet in kiteboarding, or kitesurfing as it is also known, he's a small part of the market. But in my opinion his kites are always a step above others. He has always come from the performance side of things. The sport right now is looking for brute force. He's trying, however, for boat-sailing type performance with his kites. I think that's his next world to conquer: kiteboating. He's looking for true kite-sailing, where virtually anyone with a sailboat can take one of his kites and use it as a sail, to have the ability to get higher where the wind is stronger. The downside is always taking the kite up and back. Problems are solving themselves. The market for kiteboating is huge. It is now the biggest market in the world for anything kite-related.

"Personally, he's very competitive. He grew up in the New Zealand sailing world where competition has meant success. He is completely open to ideas and innovations. He sees that great success by one person only means something if it is complemented by others. I think he's more open than most. He's very innovative. He tests things theoretically. Then he reinforces that knowledge with hands-on experience.

"He's been dumped off a boat, dragged off a cliff by kites. He has had many accidents. He has the strongest hands of any person I've ever met with the exception of one ropemaker in Shirone, Japan, who makes his rope by hand.

"Personally, he's incredibly well read, politically astute, worldly. He knows world politics. He's wildly entertaining because he knows so much, has read so much."

What Others Had to Say

He has a very sharp focus. In that regard he is very similar to our father. Peter is always pushing boundaries, climbing too high, exploring dangerous caves. When he was young he was a wild motorbike rider. He did mad things. He's very competitive, very physical. Our bloodline is a mix: half Protestant Northern Irish, half Highland Scots. We're tough people. We don't flaunt anything. No bragging.----Elizabeth Lynn Holland, sister.

Simply watching him is the way to learn from Peter. Give him his space, but be close enough to learn when he does something that interests you, improves your skill.----Eric Brackenbury, kite dealer.

People originally thought he was crazy, they admire him now. He's a very hard worker, he's very hard on himself. When he sets himself a task, he works until it's done. He has so many achievements, such a range.----Clyde Cook, friend.

I've known him since he was 8 years old. Even then, he was always experimenting. Like his father Peter has a great ability with people. He gets them enthused about his projects and they stay loyal to him. He's very objective about taking physical risks. He knows how to manage them. He's strong, has quick reflexes. He's mildly eccentric, a genius in his own way. He doesn't do research in the normal way. He moves so quickly he can't get a team going. He does it himself.----Lindsay Holland, brother-in-law.

Portrait of earth mother Elwyn Lynn.

His Better Half Speaks Up

Peter Lynn's undoubted success in life is owed in part to his support staff, particularly wife Elwyn. Both with Highland Scot and Protestant Northern Irish bloodlines, they met at Canterbury University in Christchurch, he a student of engineering, she a speech therapist. It was love at first sight. They wed six weeks after meeting. He was 21, she 19.

Initially Peter joined his father's large woodworking business. He had learned the business as a boy. Elwyn taught.

Their five children are Kirri, a lawyer; Robert, a 6 foot 5 engineer who worked for Team New Zealand in recent America's Cup yacht racing; Pete, another engineer who designed the most recent Peter Lynn traction kite; Sarah, a London lawyer; and Katrina, a lawyer-economist. All are single except Pete, whose wife is taking a doctorate in sociology.

"We've got five good-looking, brainy kids, and we don't know how we did it," says Elwyn.

Is she disappointed there are no grandchildren as yet to nurture? "I figure they've got their own lives to lead," she says.

Like others, Elwyn is in awe of her husband's skills. "He's incredibly clever. He's multi-dimensional, reads widely, is broadly educated," she says. "And he has a good sense of humor."

"At the beginning of our marriage, he did motorcross riding," she recalls "Once he broke his nose. Another time he had a concussion and refused an ambulance ride to the hospital but I pushed him in. 'This isn't working, is it?'" she presently asked him about his bike riding. He turned to yachting, where he suffered hypothermia at one point ("I had to rescue him," Elwyn says), broke his leg, broke his nose several more times, damaged his neck. Then he took up kite buggying, where he was thrown and knocked cold.

"He has abused his body over the years," says his wife, "but he's very determined. He's very strong, has very strong hands. Traction kiting has made him so muscular he can't fit into his good suit made in Singapore. A lot of what he does looks foolhardy, but he knows what he's doing. He understands he's putting on a show and people always like to think something is dangerous when it may not be so dangerous."

"The kids were wild when they were growing up. Once they tied up a babysitter with strapping tape, all except her face, and left her calling for help in the driveway. It wasn't malicious, it was just a game. But I knew the girl's parents and I never did have the courage to ask her to babysit again."

As a mother of five also busy doing paperwork for her husband's extensive, complicated business, Elwyn said she early on faced a problem regarding hospitality in her house. "It came down to sanity," she says. "I decided to keep things casual. We have a lot of good friends and we've been hosts to a lot of interesting people from around the world. There's always room for extra guests. I enjoy it. This is my life too."

Among the guests are accolytes who hang out for weeks and months at a time to learn kiting skills at the feet of the master. "Having these interns from around the world was good for our kids. Our town, Ashburton, has a population of only 15,000 and is miles from anywhere, but our lifestyle was a good one for children growing up. It made our kids open to politics, to education. And certainly, none of us was ever bored."

Facetious Answers

Ask him a stupid question, and get a facetious answer.

Drachen Foundation: How do you define success?
Peter Lynn: Genghis Khan hasn't done so badly. He's still widely known and has 12 million or so descendents.

DF: What is your advice to young people?
PL: Choose your parents very carefully.

DF: How do you want to be remembered?
PL: For various changes to the world I don't have the talents to bring about, so just having been a chronic malcontent will have to do.

Four Tales Told by Peter Lynn

Peter Lynn is flying kites at a German beach resort festival. His giant Octopus kite soars over a rooftop restaurant for an hour with barely a twitch, the wind is so steady. A man approaches Peter and asks if the kite is for sale. "Yes." "How much?" Bargaining. Okay. Guy reaches into wallet and hands over $4,000 cash. Peter: "You are now the owner of the kite." Both smile in agreement. Minutes later, the kite does an unexpected loop and sweeps the rooftop, toppling umbrellas, tables, chairs, food, glassware, cutlery, and people. Peter's last view of the disaster scene: The German gentleman with his checkbook out, settling up with the restaurant owner.

Carbon fiber sticks in his kites being manufactured in China inexplicably break. Peter Lynn does detective work and learns brass ferrules joining sticks together are moving and putting sticks under sufficient stress so as to fracture. Ferrules have been glued but are moving anyway. Glue is tested and proves very weak. The answer to the riddle? Kites are being made in a prison and the officials have limited the strength of the binder used, to forestall possible glue-sniffing by inmates.

In his early days of kiteboarding, Peter collides with a windsurfer who fails to see him. Peter's flying line wraps around the top of the surfer's sail and lifts his board way up into the air. Peter himself is thrown into the water, comes to the surface dazed, swims to shore. He sees the surfer has attained land too. Filled with remorse, Peter heads over to apologize. As he nears, he hears the surfer bragging to pals about the tremendous jump he just pulled off. Leaving well enough along, Peter smiles to himself and leaves. He wonders what the surfer will think when he discovers Peter's kite line has slashed through the top of his sail.

Faris al Farsi, whose family has purchased from Peter the world's largest kite, a 1,000 square meter creation in the shape of a Kuwaiti flag, comes to Ashburton to learn how to fly the monster. Lynn household hospitality is delightful and young Faris announces he will cook an Arabic meal as token repayment. He arrives home from shopping with a vast amount of food and starts in cooking. Saying he needs to confer with his mum, he rings her up in Kuwait on a cellphone, places the open phone on the kitchen counter. He talks back and forth with her for the next two and a half hours. The meal is delectable. The Lynns in due course receive a phone bill for Faris' call for $1,200 U.S. A man with a lot of Scots blood in his body, Peter does not hesitate to obtain payment from Faris.

Ben Kuhe

Peter Lynn's home area is largely rural and often pastoral, as this mob of sheep on a nearby highway suggests. As a sheepdog dutifully keeps track, a shepherd uses a modern conveyance to restore slowpokes to the flock.

A Tantalizing Goal

Why Kiteboating? Because It's Fun

Editor's note: The following was compiled from three essays on kiteboating by Peter Lynn. Material in quotes reflects the inventor's own vernacular voice.

"I confess. The kite activity I really like, the only one I consistently do just for myself even when there is no commercial or showoff element, is kiteboating," says Peter Lynn. "Just leaning back there in perfect wind sliding down one swell and up the other, sometimes on one tack just about forever (or so it seems), is the most enjoyable sensation."

Continuing on the theme of developing the sport: "After 18 years and more effort than I've ever applied to any other project in my life, there still aren't many members of the true faith. I remain committed to fighting the good fight, through scorn, calms, storms, ice-encrusted shorelines, and no matter how many holes there are in my wet suit nor times the lines wrap inextricably around the rudders while far from safe haven."

What's kiteboating? "I define it as yachting using a kite as a sail. I believe utterly that kites will be used in place of conventional sails for offshore yachts. There are, though, considerable technical challenges to overcome before it can become a reality."

Lynn notes that newcomers to the field focus on launch and water relaunch ability as a key problem, but he says there are now many different practical relaunch systems----self assisted, mast assisted, pilot kite assisted, and motor assisted. A helium inflation option, however, has numerous problems, such as high cost and problems of gas retention, overflying, and uncontrollability.

The best traction kites available now attain a lift to drag ratio which hinders their upwind going and this is an impediment. On the other hand, kite powered craft prevail against almost anything heading downwind, often by a 2 to 1 margin of time.

Another obvious problem is that the kite has to continue to fly. Not only light winds but overflying are issues here, as is gusty wind. A distressing aspect of light wind kiteboating is that conventional sailboats can drift along making progress long after those sailing under kite power are retrieving their dripping kite and lines from the water, or from the underwater appendages of some other boat.

All of the above are considered by Lynn to be minor enough problems.

The big challenge is that the maximum pull of a kite for any given wind is *5 to 25 times* that of a similar sized conventional sail in the same conditions. Large kites require long flying lines to keep the kite clear of turbulence, give room for maneuver, keep the kite far enough above the waves to preclude accidental immersion. These long lines add greatly to the kite's power. The kite will develop a maximum apparent wind speed that is almost totally independent of boat speed. It is quite possible for the kite to develop such a vicious pull as to make kiteboating dangerous and difficult. Under real stress, the boat might well break. In turbulent conditions, a boat accelerating to its maximum speed and under maximum pull may suffer structural failure of the kite, line, rigging, or boat itself, with considerable risk to the crew. "Or the boat itself may be catapulted into the air, with no certainty of coming down in one piece or necessarily the right way up," says Lynn. "I myself have experienced leaps of 10 meters and have heard of 50 meters."

Eric Brackenbury

Peter Lynn takes his swift catamaran for a spin.

Apart from perfect kite control, there are ways to mitigate this "maximum-minimum" problem. One is to build an automatic de-powering, or gust response, system into the kite. "Sheeting" by the flier, also known as volitional pull mitigation, and an automatic area reduction system are other useful, but not yet fully effective, systems.

The overpull problem can be solved with an automatic or manual release system that either releases the kite completely (not so safe for anyone downwind) or a half release system that collapses the kite on the water. The idea, however, is not to use them too often since one obviously doesn't want to spend lots of sailing time doing water retrievals and relaunchings.

Not a comprehensive or rigorous explanation of kiteboating practicalities, the above at least introduces some of the relationships.

From the start, the goal of kiteboating proponents has been to make it a recognized branch of sailing in general, a goal that has hovered tantalizing out of reach for many years now. "It's going to happen soon, I think," says Lynn. "The general level of interest worldwide has been increasing exponentially and is now rather similar to the feeling that surrounded kiteboarding around l996, just as that sport became extremely popular."

"Kiteboating is a wonderful, open-ended research project at this point in time," says Lynn. "My own commitment is motivated by curiosity. There is progress. Sometimes now I can go out kiteboating and not scare myself to death, nor even get wet!"

When Peter Lynn was just starting out in kiting, he test flew his creations in a small park in his home town of Ashburton. He tied off to saplings and the kites, when a gust struck, sometimes pulled the young trees right out of the ground. In self defense, the town installed sturdy fencing Peter could tie off to and not damage.

Bert Rulw

Helen Bushell Looks Back on 40 Years

Australia's First Lady of Kiting

At age 83, Helen Bushell, of Melbourne, likes nothing better than to recall her 40 plus years of involvement with kiting, a sport she loves.

She took up kiteflying when she and husband and five children, plus friends, went to the beach. The men and boys sailed, the women and girls were relegated to the sand. Buying a little Delta that had just come on the market, Helen adopted kites as an amusement for herself and the kids. When she saw two seemingly identical kites perform very differently, she became fascinated by the aerodynamics involved.

This got her making her own kites and soon when an Australian kite association was formed she became a principal official, dealing with the public, organizing festivals, writing publications. Among them was a volume *Make Mine Fly* which was a kind of extended bulletin. She kept expanding and reissusing it. There are a total of seven editions, each larger than the last. Helen also wrote and circulated a newsletter. This led to extensive correspondence with top kite people globally, all of which she carefully archived in her usual orderly fashion.

From l974 on, she sold kites from her comfortable art-filled house with outbuilding for large kites in the Melbourne suburb of Kew. The property is complete with backyard swing she herself loves to use. "Boys who flew hang gliders came to my door in a steady stream," she recalls. "I never advertised. People of all sorts just kept coming. I sold more than $5,000 worth of kites a year for 20 years, until l994 when the market changed. Stunt kites took over. No one wanted to fly single line kites anymore."

Helen was well known for the large, flashy Hewitt Flexform kites (see page 19) she developed and flew. Her efficient Trefoil Delta with its unusual keel was original enough for her to take out a patent.

"I think single line kites will come back," says Helen. "It's a matter of people getting over a technological phase in our culture. They need to be poorer, then they'll go back to hopscotch and billygoat carts."

After her children were reared Helen went back to the work she had done before marriage and during World War ll: pattern drawing. Her lighting engineer husband having died in l981, Helen has since presided over a family of 4 daughters, 1 son, 11 grandchildren, and 6 great grandchildren. Her daughters are a building designer, school teacher, architect, and lawyer turned herb grower, her son an earth moving contractor.

Of the children, Glenda Shomaly, the architect, is the one most interested in kites and in carrying on her mother's legacy. She serves as chauffeur to kite festivals and then gets out in the field and skillfully flies her own kites. "Mom's creativity was good for everyone in the family," she says. "I myself got so interested in kites I had my own squadron of them. I'd even fill in for her if she couldn't go to a festival."

Denied an extended formal education as a young woman, Helen in the '60s decided to match her children in this area. She went on to take degrees in industrial design and anthropology. "So then I had a bundle of bits of knowledge," she says. She typically speaks ironically, with a smile to leaven the bite.

Admitting to being opinionated and outspoken, Helen tries out some of the theories she is famous for on a visitor. Aerodynamic and anthropology ideas spill forth, and if she is not always completely convincing she is never uninteresting. She sets forth her theories with a "trust me if you dare to" smile. It's a game she plays.

Ben Ruhe

Helen Bushell, grand dame of the Australian kite world, poses at a kite festival.

Her best known anthropology theory posits that Stone Age Australian Aboriginals, rather than only being receptors, somehow managed to export their Rainbow Serpent fertility images to more advanced Pacific Rim cultures. She believes these images may have influenced early Chinese calligraphy and that kites may have been the vehicles for the diffusion of these symbols. Her evidence relies on decorations on kites and other objects. Considering the ambiguities involved, it's a theory as hard to prove as it is to disprove.

Well spoken, with a nice voice and clear diction, Helen has clarity of thought and keen intelligence. Her thinking is often offbeat. Because of her long correspondence with kite figures around the world, she is surprisingly aware of current developments and politics.

Her contribution to Australian kiting is a major one. Peter Bachelor, ex-chairman of the national association, says: "For a long time she kept the association going on her own. She's highly energetic, always willing to share ideas, she wants to know why things work, she shares with others."

Current association chairman Don Matthews notes: "She's the primer. There is always someone needing basic information, and she's ready and willing to supply it. She's always been strong willed, gotten things done."

Kitemaker Bob Brasington, of Tasmania, calls her "unquestionably, the first lady of kiting in Austeralia. She's a dymamo. As an author of kite books and a breakaway rebel in her own right, she is fascinating to talk to. She broke many molds in Australia with her lateral thinking on design, such as the Trefoil Delta."

With Helen now suffering the ailments of age, a tableau in her sitting room makes a silent comment. There are sacks of choice kites stacked against the fireplace, ready to go to her five children in due course.

Helen sums up: "Kiting is simply the best thing to do," she says. "I hope my little books will survive. And I have enjoyed giving people great pleasure."

Ben Ruhe

Bushell tried out her ideas for decorating kites by doing oil paintings.

Ben Ruhe

Ben Ruhe

Throughout her kiting career Bushell crafted and flew large and flashy Hewitt Flexforms (above). At left, stacked against a cabinet in her home are bags of choice Bushell kites to be given to each of her five children.

Museum Official as Catalyst

Bringing Maori Kites Back to Life

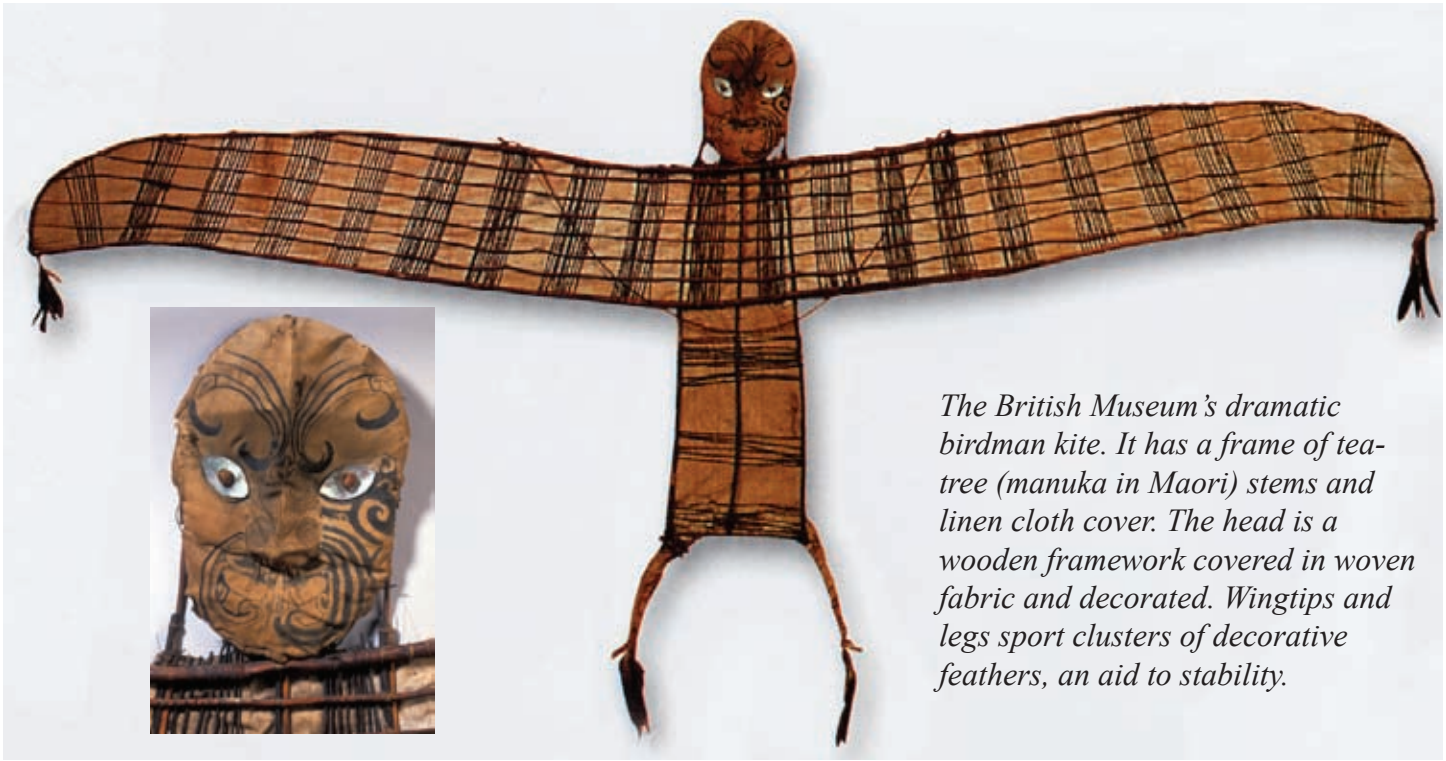
Having become interested in kites because of an exhibition, workshop and festival organized by the lively museum he directed in a town near Wellington, New Zealander Bob Maysmor found himself organizing a national kite association in the mid-80s.

Rather he co-founded it. Peter Lynn, the renowned kitemaker, was a guest at the fly. "Peter and I lay on our backs flying, as gentlemen do," recalls Maysmor, and the talk turned to setting up a national organization. "Peter handed me a $100 bill as a gesture of support. He appeared on television that night and told viewers, if they were interested, to write a given address. It was mine of course. Outmaneuvered! Two hundred and eighty letters arrived and this led to 35 paying members of the proposed new association. We were launched."

Maysmor was invited with other New Zealanders to an early kite festival in Weifang, China. He made a 45-foot serpent kite and instructed a Chinese acquaintance to put a friendship message on the kite, writing in Mandarin. The Chinese man obliged with, as Bob later learned, these words: "New Zealand-China, 2 nations, 10,000 years of friendship and happiness." The startling rewriting of history as to the Down Under country's age proved a winner when Bob was given the honor of flying his kite first in a large stadium. "There was a massive roar from the enormous crowd, TV coverage was huge."

Kiting was not all fun and games. Bob did the association's donkey work, serving as secretary and editor of the newsletter. He traveled to festivals all over the country.

Meanwhile, realizing that nothing comprehensive had ever been written on Maori kites, starting in l986 he spent three years extensively researched everything to be found on the arcane subject. He visited Maori sites, found



The British Museum's dramatic birdman kite. It has a frame of tea-tree (manuka in Maori) stems and linen cloth cover. The head is a wooden framework covered in woven fabric and decorated. Wingtips and legs sport clusters of decorative feathers, an aid to stability.

Bob Maysmor

every reference to Maori kites available, contacted museums around the world for information.

With New Zealand celebrating its 150th anniversary of independence in 1990, he received a subsidy to publish the volume he had prepared and it was duly issued with the title *Te Manu Tukutuku: The Maori Kite*. The elegant small book, with many line drawings by Maysmor, a talented artist, quickly sold out.

The volume was not only well received generally, but unexpectedly evoked particularly strong reactions from young Maoris. Maori culture was having a resurgence, and a number of Maori students doing polytechnical studies made a native kite as a project. "It is very rewarding to me that I had brought this passion for their culture back to them," he says.

At the same time as the Maori work, Maysmor switched jobs, becoming director of a large museum near Wellington. "The job proved all consuming and I eventually had to bow out of kiting," says Maysmor.

Nine years later, Maysmor quit this museum job because of irksome staffing and political problems, received a nice settlement, and promptly went traveling with his wife Alison to the "stan" countries of Central Asia----Uzbekistan, Tajikistan, Kyrgyzstan, and so forth. He kept notes and took many photographs and soon found a secondary vocation in travel writing for magazines. He is widely published. "In fact," he says, "I've never written an article that *hasn't* been published." Writing now pays for his and his wife's wanderings. In addition to Central Asia, they have ranged Central Africa, South America, the Antarctic, Mongolia, Tibet. His all-time favorites? Burma, Yemen, Cuba, and Hanoi.

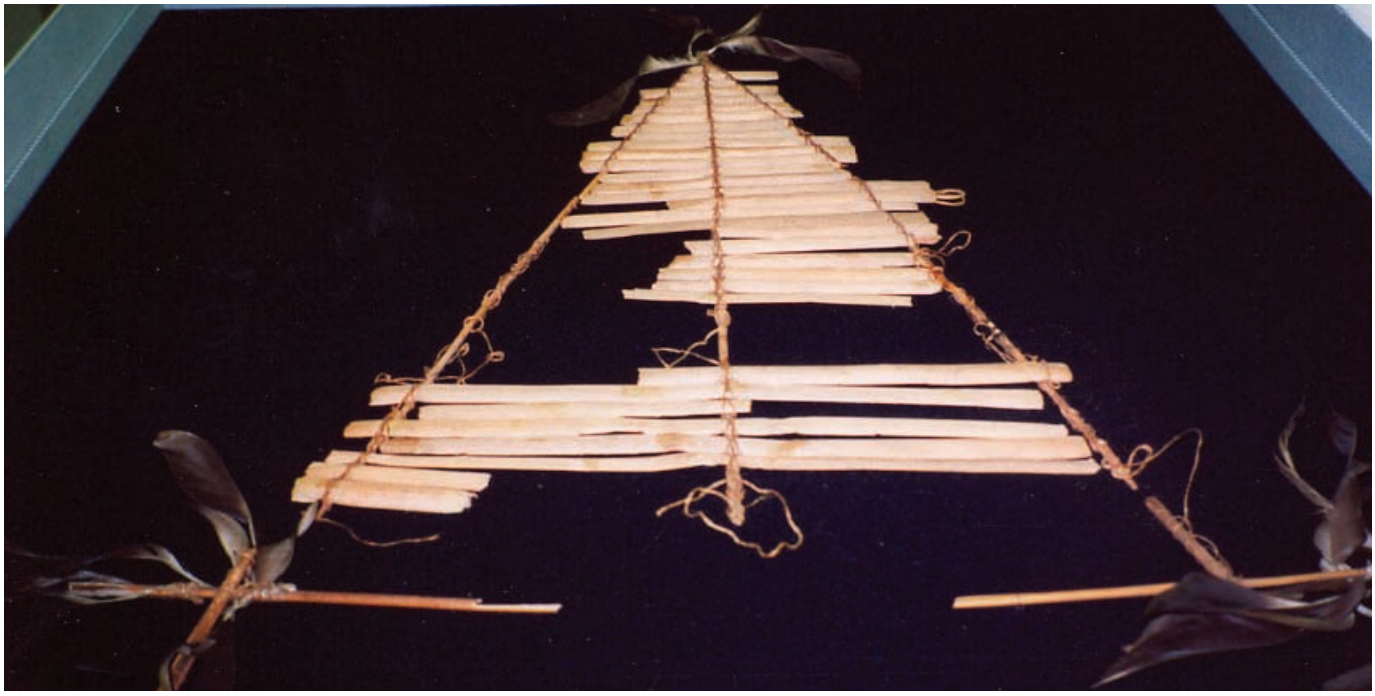
Ben Ruhe

While researching his book on Maori kites, Bob Maysmor found in the Wellington area all of the raw materials used by the tribesmen to construct their kites hundreds of years ago. One of them was bulrush (raupo in Maori) leaves to cover the frame. Maysmor made a number of replicas of Maori kites for New Zealand museums.

Bob is such a travel sophisticate by now that when Alison was knocked down by a motorbike in Hanoi, rather than go to her aid immediately Maysmor raced over and confiscated the key to the bike. Only then did he turn to his wife. This move proved wise. Instead of driving off as is often done in Southeast Asia, the offending driver offered useful help. Alison was shaken and bruised, and soon recovered.

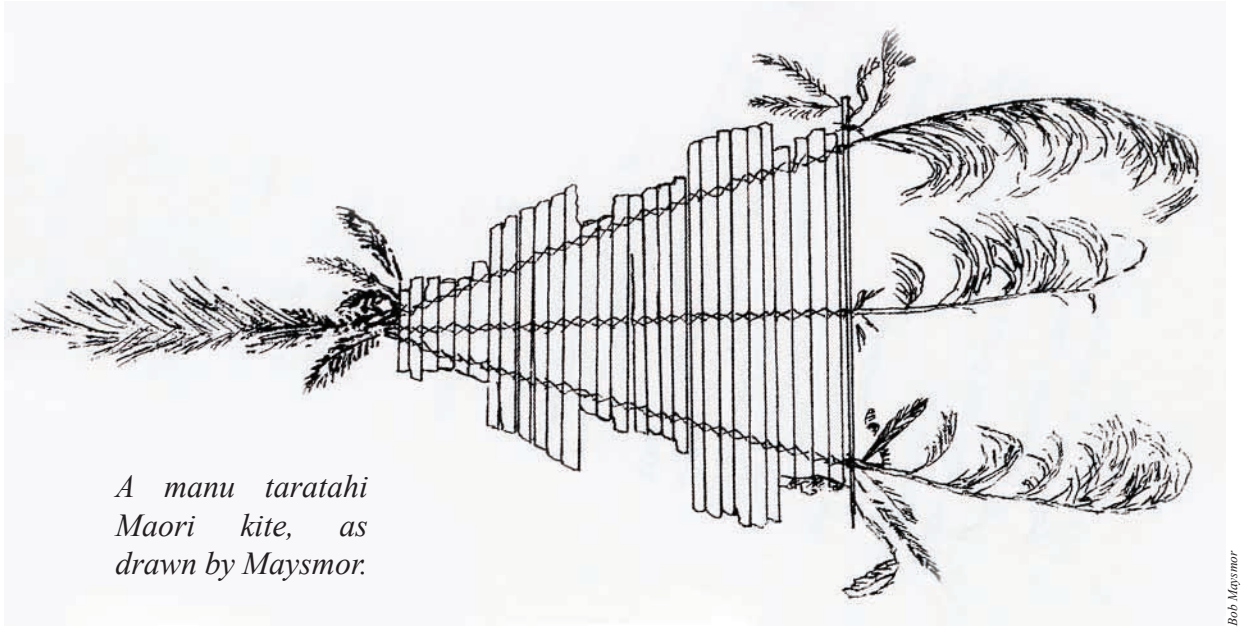
After a long sabbatical, Maysmor returned to museum work. He became curator of exhibitions at the Pataka museum in Porirua, near Wellington, where he remains today. He took the job with the agreement he could take two months off per year to go traveling and this he has done religiously.

He and his wife, parents of three daughters now grown, live on a nosebleed hillside in nearby Paremata with a panoramic view of water and mountains. Designed by the couple, the house is a small museum of tasteful travel mementoes----embroidered hats from central Asia, rugs, sculptures, ceramics, photographs.



Ben Ruhe

There are only seven early Maori kites remaining and this is one of them, a seriously deteriorated manu taratahi in the Te Papa national museum in Wellington. The kite has a frame of toetoe tree culms, with now vanished plumes at the end. A covering of bulrush leaves is laced horizontally onto the frame with a fine-twisted flax cord. Small clusters of hawk feathers decorate the three points of the triangular frame.



A manu taratahi Maori kite, as drawn by Maysmor.

Bob Maysmor

Although he had long since dropped out of kiting, except to make the occasional Maori reproduction for the national museum in Wellington and to consult on Maori kites to anyone needing help, Maysmor got together with a new publisher and in 2001 reissued his book in an expanded version----more color and instructions on making a simple Maori kite. There is meticulous attention to detail. “It was not a commercial project,” says Maysmor. “The publisher and I wanted only to recoup costs.” This edition remains in print.

What of the future in his unusual corner of scholarship? “I remain out on a limb regarding Maori kites,” he says. “I feel I have done my bit. It is now up to Maori scholars to take the next step. My book was a catalyst. Now it’s up to young Maoris to interview elderly Maoris in their twilight years, who have kites as part of their oral tradition. These researchers could also gain wider access to Maori manuscripts.” There the matter rests.

Old Maori Kites Researched

When he researched his book on Maori kites in the late 1980s, Bob Maysmor discovered there were only seven pre-1910 Maori kites remaining in the world. All are held in museums, three in Auckland, two in Wellington, single specimens in London and Honolulu.

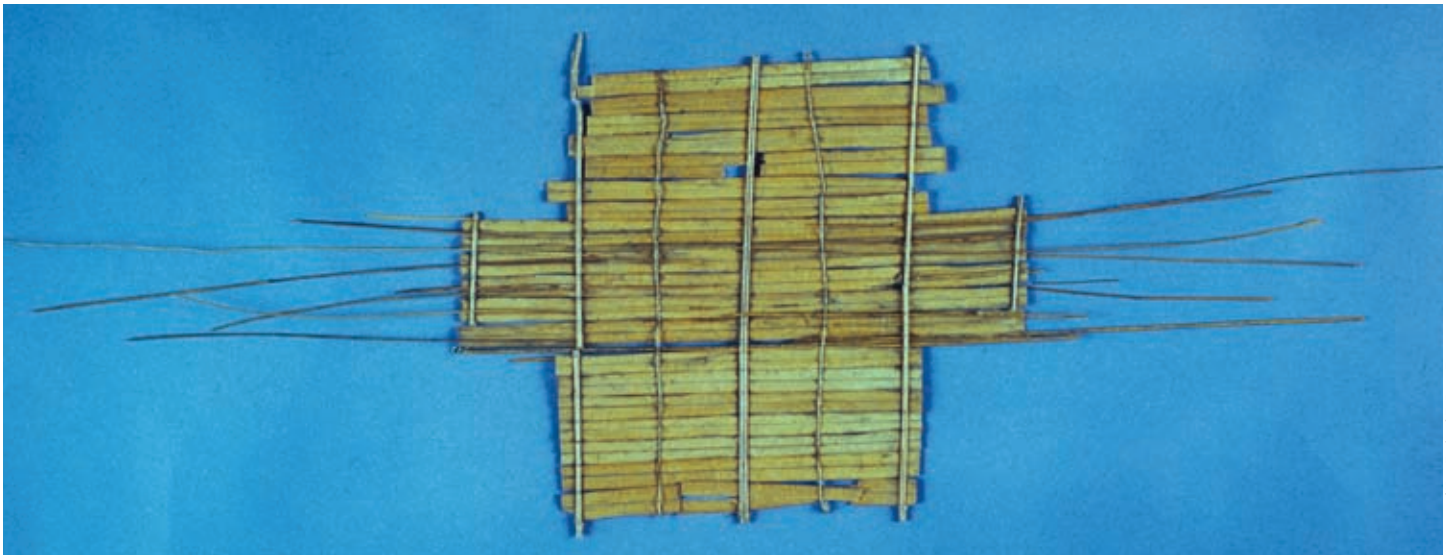
Of 17 known named types of Maori kite, the huge birdmen in the British Museum in London and in Auckland are the standouts. The former dates to 1843. It has a wingspan of 2.83 meters (9 plus feet).

Although the origin of the kite remains unknown, Maysmor senses it evolved in a number of places, Polynesia and Indonesia among them, over a wide period of time. He thinks kites are much older than writing and points out that in Oceania there are plants growing with large leaves that, when dry, are widely flown as tail-less single bridle point kites, often for kite fishing.

In New Zealand, as throughout the Pacific, kite flying was practiced as a ritual of the cult of the sky, with its origins firmly attributed to the gods. Kites were closely associated with religion. The reason the Maori made many of their kites in the shape of a bird was the belief that birds were the communicators between human beings and the gods, or even that these manu, as they were known, represented the gods themselves. For reasons unknown, these various sky cults had virtually died out by the time the Europeans arrived in the region. Kites were still flown, though, for purposes of divination and recreation.

Maysmor discovered the frames of the larger kites were made from selected lengths of teatree and split lengths of supplejack. Smaller children's kites used the culms of the toetoe, bracken stalks, and rush stems. The coverings were of bark cloth made from paper mulberry bark, or from bulrush or cutty grass leaves. Flying lines were made of twisted flax fiber.

Kites were decorated with feathers, shells, and carved faces. They were painted with black and red patterns using charcoal or clay pigments mixed with shark oil. Long feather tails were often attached to wingtips and the lower part of the kite's body. In addition to being decorative, these aided flight stability. Other kites were decorated with horns and some had shells held within a hollow mask that rattled during flight.

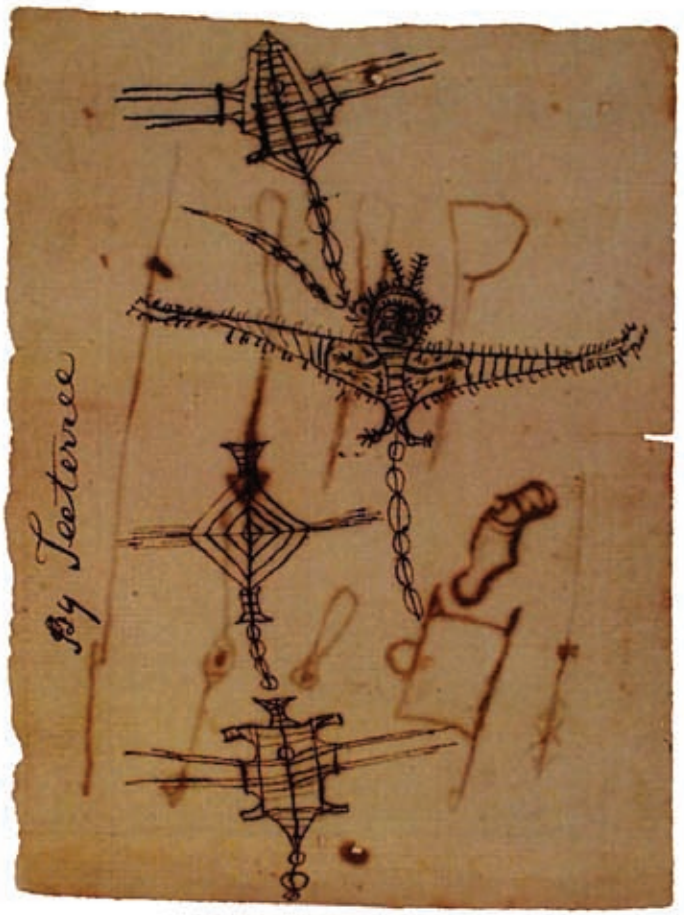


Museum of New Zealand Te Papa Tongarewa

One of the seven surviving old Maori kites, a upoko tangata, in the Te Papa museum, Wellington.

Bob Maysmor

Bob Maysmor (standing at left) and group replicate a dramatic Maori birdman kite using authentic native materials and techniques. The last decade of the 20th century saw a revival of interest in the making and flying of traditional Maori kites.



Auckland Public Library Special Collections

Teeteree (also Titiri), a Maori chief of the Ngaphu tribe, visited England in 1818 and made these sketches of Maori kites. The sheet was given to a clergyman who nursed him when he became ill and eventually it found its way to New Zealand, where it was deposited in the Auckland Public Library. Note the long tail on the top kite. The short lines decorating the horns on the next kite down are believed to represent feathers. It is the only visual record of such decoration.

How One Australian Manages
Teaching Kitemaking for a Living

Tony Rice, of Brisbane, Australia, has for years been pulling off a feat. He has been able to live, and evidently thrive, largely by giving kite workshops.

He teaches all ages and spreads joy wherever he goes. “Kids----and adults----make something with their hands, decorate it, successfully fly it,” he says. “It’s tangible, fulfilling, fun. They can’t get it out of a computer. They’re enthusiastic.”

Tony’s secret seems to be his outgoing nature. He’s energetic, amiable, well spoken, somewhat theatrical. It helps that devoted friends in schools and museums arrange for him to be booked. Frequent appearances on television publicize his work and have earned him the name “The Kite Man.” The occasional museum exhibition of his work helps keep his name fresh.

Tony supplements teaching income with the sale of the odd canvas or ceramic and by doing public murals. “Give me a blank wall 20 by 50 feet and I’ll fill it up in a couple of days, without any drawings to work from. I have murals all over Brisbane.” Tony sells a few kites too, but he’d rather trade. “It’s a nice way to put together a collection.” Tony’s kites range from huge, elaborate dragons to tiny ones made in minutes from leaves plucked from nature.

An artist since he was 16, Tony studied painting and pottery in school but found that art, when it came to sales, is a tough row to hoe. He also made sculptures. “I had the experience of working on a sculpture for a long time and then seeing the shop where I consigned it selling it for $35,” he says. “This was disillusioning.”

By age 30 after a decade of hard scrabble freelancing, Tony was reduced to living in a tent and serving as a single parent to an infant son whose mother had become seriously ill and was unable to care for the child. “This is it!” said Tony to himself. “I have to retrain myself.” While surviving on a government pension, he took up kites as a performance-based art in which he could shine. “With kites, I realized that rather than selling my art I could sell my knowledge. That has proved a successful formula for me.”

His wife Mary is an artisan specializing in mosaics. She has a good reputation and more than a year of work on public art projects lined up. She brought a son Jack to the marriage, joining Tony’s son Jai, an engineer, and his second son Dylan by another relationship. Jack and Dylan are students.

For a man without a substantial income, Tony lives in some style----a small but pleasant house on a steep hill with spacious view overlooking downtown Brisbane and a cottage on a beach 65 miles north of the city, both of which he owns free and clear. He bought them when they were cheap and fixed them up himself. He estimates they have appreciated 1,000 percent in value. To complete the independence scenario, Tony drives a vintage Australian-made Holden automobile. His 1964 sedan evokes smiles wherever he goes. “Police pull me over on the highway only because they want to look at the car,” says Tony. “Driving an old Holden is true blue.”

Tony has his workshop finances down pat. He charges $5 for each person and supplies a kite kit he prepares himself. It consists of bamboo lengths culled from window blinds, clothing grade Tyvek fabric, masking tape, string for the line, a tail cut from a plastic tablecloth, and a cut up rectangle of trash cardboard for a reel. He figures each kit costs him $1.20, not counting labor.

Ben Ruhe

Tony Rice shows a bamboo flute he crafted. Made to be attached to a big kite, it serves double duty on a wind vane.

Tony can teach up to 120 people at a crack and keep them all occupied and happy, he says. What do they make? Depending on age, the students create diamond kites, swallows, rokakus, even long dragons. Then they run around a lot as they fly.

Although most of his bookings are at schools, he conducts two kite workshops on a recurring basis at special facilities. One involves teenage boys, mainly Aboriginal, at a juvenile jail. "The boys are well treated. I set an individual or combined piece, a snake, for instance. Everyone gets involved. Some of the boys dance while they paint. Then we go flying on the community field. That's where I get my reward----hugs from the kids."

Another long term project for Tony is teaching children with spinal problems at a holiday camp. "Most are in wheelchairs but okay from the waist up," he says. "They learn mobility by racing their wheelchairs. They are good kitemakers and fliers."

Tony notes that teachers help out at most his projects; in turn they often take the skills they learn to other schools in underpopulated Queensland. Some of these are quite remote.

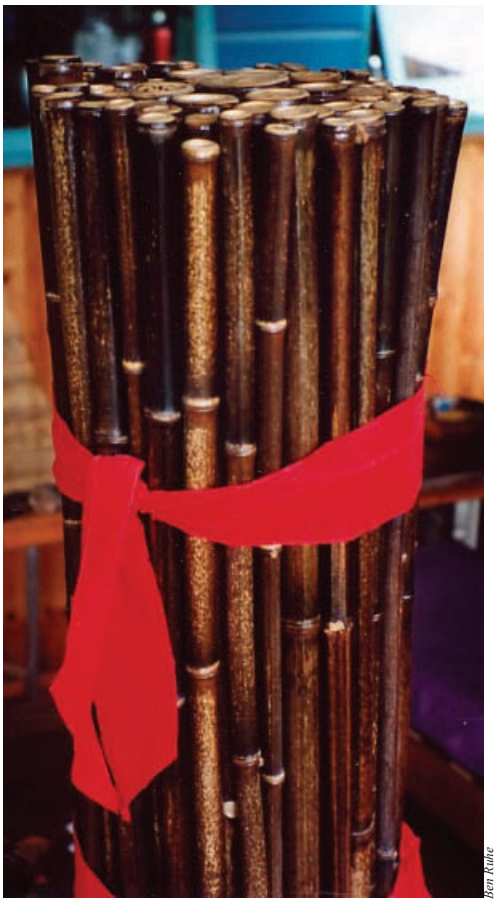
Tony says he teaches 5,000 people a year. "It's around the 75,000 mark over the last 15 years. Easy."

Now 50, he expects to continue his career for many years. "It's an act of giving," he says.

Ben Kuhe

Two pots and a lid thrown by Rice in one of his ceramics phases.

Bamboo staves neatly bundled for aging. Rice uses mostly traditional materials for his kites.



Ben Kuhe

Ever the creative artist, Rice couldn't resist decorating the opaque panel he used to seal off a window.

Ben Kuhe

Tony Rice

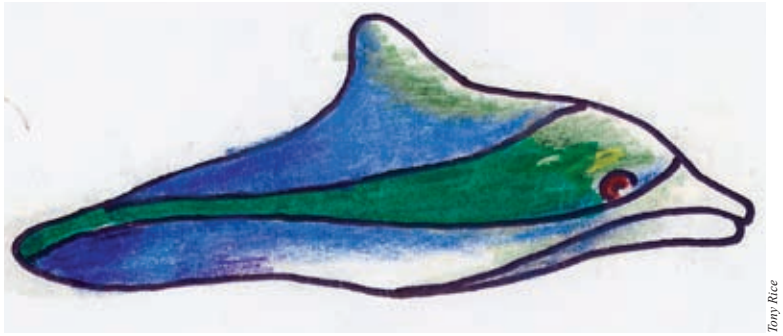
A kite class conducted by Rice in the far outback of Queensland.

Kite shapes and decorations evolve from Rice's imaginative sketches.

Tony Rice

Tony Rice

Tony Rice



Tony Rice