

Single Line High Performance Mode Needed

Solving the Kitesailing Stability Problem?

Editor's note: Following is an essay by a New Zealand inventor who is known for possessing one of the most original and penetrating minds in the kite world.

By Peter Lynn

I've recently come to a new direction from which to think of the future of kitesailing. By kitesailing, I don't mean windsurfing: I'm referring to the use of kites instead of conventional sails for boats----including large boats.

I came late to kitesailing, in 1987. Dave Culp had already been at it for years and Ian Day had set a class speed record with a stack of Flexifoils and a modified Tornado catamaran back in 1978. Of course, kites have been used for pulling boats around for hundreds of years at least in Oceania. George Pocock wrote the first treatise on sailing upwind using kites in the 1820s, and then he did it. In October of 1987, John Waters, from Lincoln City (funny that you'd think it was in Texas, because anywhere else they'd call it a town, but no, it's in Oregon) suggested kitesailing to me as a goal worth pursuing. And I have been, from then on.

But kitesailing still hasn't made it to the big board yet, it's still barely on the fringes even within the kite fraternity.



Peter Lynn

Sure, Peter Lynn Kites Ltd. now has a good start at the small end with its Kite Cat. And Kite Ship (Dave Culp and Dean Jordan) have a solid and growing market for their Outleader spinnaker replacement kites on ocean going yachts. And Don Montague (Naish Sails) successfully rigs big LEI style kites to outrigger canoes and larger catamarans. And Sky Sails from Hamburg has just announced its receipt of an eight-million Euro grant to further plans for using kites in commercial shipping. And there may be other exciting projects bubbling away. And everyone working in the field is experiencing an exponential growth in the number of enquiries from hopeful but naïve yacht owners wanting to convert to kites. But in 1987 I thought kitesailing would be an established and substantial niche within the wider world of yachting by the mid-1990s, at least. Ten years past this, and it's not making much of a showing yet. I'm too embarrassed to reprint here some things I predicted back then, specially the time scale bits.

I'm not losing faith at all, though. I can feel lift off getting closer and closer.

Continued on Page 18

But what if it's another false start? What if the culmination of all the current hypes and hopes falls over by not being economically viable for commercial uses or not fast and exciting enough for recreational sailing, or just not reliable enough for both---wind being notorious in this respect, and kites being much more susceptible to rubbish wind than sails are? At least sails don't fall off their masts into the water when there's a momentary lull! And what if failure this time leaves enough bad memories with investors, potential customers, and even, perish the thought, diehards, to set the field back for another generation.

And shsssh, keep this quiet please, but I think it is likely or at least possible, that we will fail this time: *because flying kites is too difficult.*

We're all coming at this from the wrong direction. We're highly skilled fliers and we believe in kites. Other people will buy our dreams for a while, but then they won't, especially commercial users won't, and recreational sailors won't either, once the novelty has worn off---unless kites become really easy and reliable to use or confer some spectacular performance advantage. But there may be an answer.

Put simply, it's that if the default mode for traction kites was auto stability, that is, they behaved like good single line kites unless the flier is inputting control movements, and further if they could also be persuaded to switch their minimum pull when called on to look after themselves, then kites will take over the world at last. This is not a new idea, of course, but I may have some glimmerings of success in actually finding a way to do it.

Excluding lighter than air kites as probably impractical, I can think of three ways that traction kites can be made with an auto stable default mode.

The first is to design traction kites so they are docile and inherently stable, like single line kites. That is, they depower and seek their apex, except when under personal control. The second is to develop automatic pilots that cause them to do the same. And the third is to use a small auto stable "top" kite, with either inherent stability or an auto pilot, that then controls the position of the larger "power" kite that is below it. The third is a given if either autopilots or inherent single line type stability prove feasible. This stacked kite approach will not only work, but for large boats will be the standard solution, I'm sure.

I'm almost terminally skeptical about the feasibility of autopilots, having made more than a few attempts at developing them over many years, usually for the purpose of extending our range of single line kites to forms that lack inherent stability. Most people working in traction kite and kitesailing development are more optimistic about autopilots than I am, however.

But I am rather hopeful of traction kites that default as high performance single line kites. I have one sort of working already.

Old Man's Kite

*A feather upon the wind
Knocking on heaven's door,
Fluttering, weightless as a leaf,
Crimson, gold-hued,
A stain on brilliant blue.
She roamed far and wide,
Curious as a child,
Seemed at times to want to reach the sun.*

*But all the while held firmly back
By an endless piece of twine.
And as the sun fell, so did she,
Gliding, gliding, gliding,
Coming to rest on the cool grass,
To be picked up by the maker,
Back as on every dusk to collect her
With loving eyes, that saw far more than
The bamboo and silk.*

Gisela Pineiro