WING MASTS

These fast, efficient performers represent a cost-effective alternative worth considering

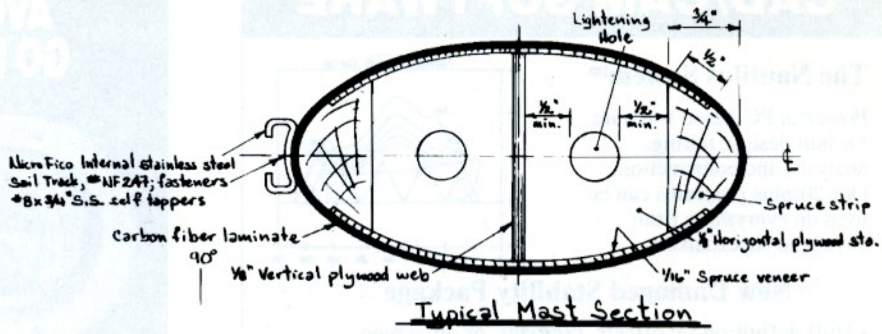
Many sailboat builders, amateur and professional alike, are turning to composite wing masts where high strength, minimal overhead weight, and much-reduced drag are prerequisites.

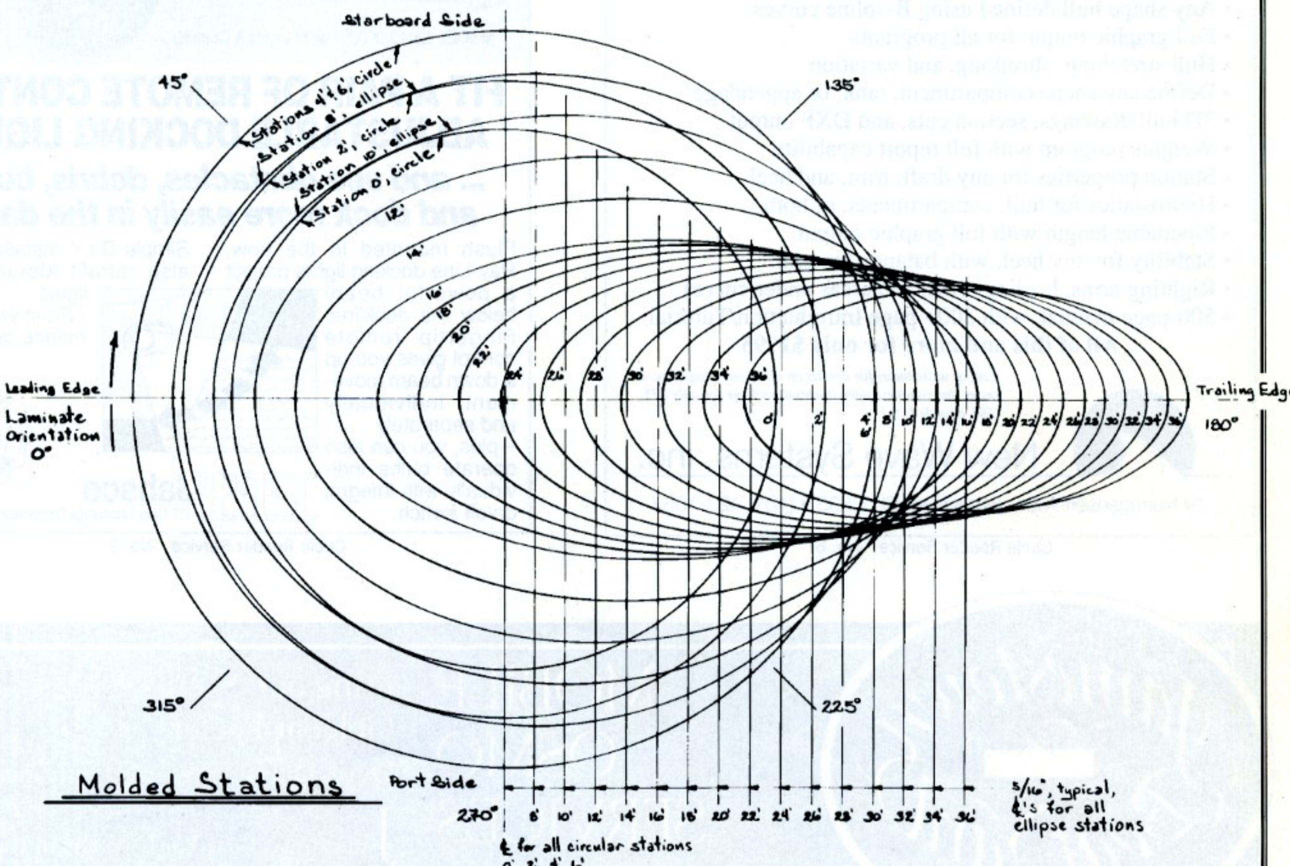
Wing spars can be effectively fabricated in lengths as short as 25′ and can be as tall as the 104′ mast built for the 80′ French catamaran *Royale II*. They have been rigged as free-standing prototypes on Gary Hoyt's Freedom 25 and as aftermarket additions on Hinterhoeller's Nonsuch 30. Multihull designer Dick Newick has used wing masts on many of his boats, including the *Creative* and *Native* series.

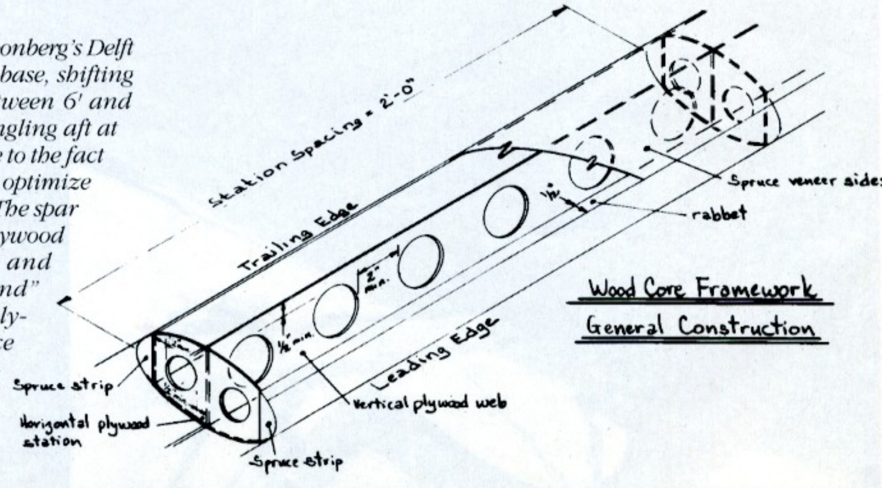
Further testifying to the effectiveness of these spars, a long line of trimaran designs such as Crowther Buccaneer 28s, 33s, and Twiggies; Southern Cross 34s; and Kantolas sail with wing masts. So do many popular production catamarans, including MacGregor 36s and Stiletto 27s. Gougeon Brothers put Stresform wing spars on three of its best-known trimarans: the speed-sailing record contender *Slingshot* and the cruiser/racers *Ollie* and *Adagio*. Eric Taberly's big ocean-racing tri *Pen Duick IV* was fitted out as a ketch, with two wing masts.

A non-rigid wing spar (the type we'll discuss here) looks rather like an airplane wing set vertically on a rotating joint fastened to the boat's deck. The mainsail is bent to the trailing edge of the spar, which is teardrop-shaped in section and becomes an integral part of the "plan form," or profile, of the rig. Typically, the mast portion of the rig represents between 5% and 15% of the total mainsail area.

by Ted Hugger







This 36' mast, for designer Eric Sponberg's Delft 25, is cylindrical in shape at its base, shifting to a conservative 2:1 ellipse between 6' and 16'. Note that the spar begins angling aft at the 6' height. Both features relate to the fact that this mast can be rotated to optimize performance while underway. The spar is built over a framework of 1/8" plywood "bulkheads," spaced every 2' and linked by 3/4" spruce "half-round" longitudinals and a vertical plywood web. Sheathing is 1/16" spruce veneer, overlaid with a carbon-fiber laminate.

SPONBERG YACHT DESIGN