

THE EVEN KEEL

Volume 8 Cover Story

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MARSKEEL TECHNOLOGY: A Story about Diversity in Constructing a Wide Range of Modern Keels.

The new J/145 is another winner right of designer Rod Johnstone's drafting table. The number 1 hull, Saturn, led the way at the Detroit NOOD regatta, just out of the box from T.P.I.'s manufacturing facility. With Bob Johnstone at the helm, the new J/145 was the class of the regatta, in both strong and light winds.

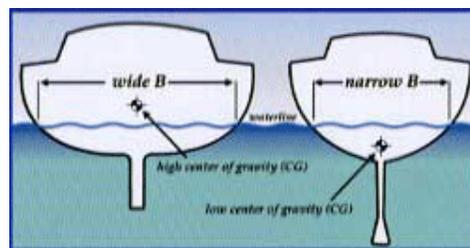
J/Boats from the very beginning have been known to sailors for innovation in boat building. The **MARSKEEL**, nickel, aluminum, bronze fin, with its integrally cast lead bulb, is designed to withstand the rigors of performance racing. The Kevlar wrapped joint provides an interface between the different coefficients of expansion of the diverse metals used in the keel construction.

The J/145 is a very luxurious sailboat, with every comfort imaginable, including air conditioning. Our passion, in **The Even Keel**, is to speak to the technical aspects that makes our customers' sailboats superior.

Stability & Seaworthiness of the J/145

There are great benefits from using the best technology available. You wouldn't buy a 5 year-old computer, would you? One noticeable difference is the enhanced sense of solidity and power when sailing the J/145. This is explained by the design's exceptionally low center of gravity with a Limit of Positive Stability in excess of 135 degrees. This is not just a matter of weight and length, because this is a 48 foot sloop with a 45% ballast ratio. So, the boat itself (less the lead ballast) weighs less than a traditional 40 footer. The vertical center of gravity is more that 2 feet below the waterline. In addition, the carbon fiber boom, bow sprit, rudder and hull/deck laminates all contribute. Nearly 75% of the keel's weight is contained in a lead bulb integrally cast to a nickel, aluminum, & bronze alloy strut having a flange to connect with the hull with four times the interface area of a typical fin keel for greater structural strength in the event of groundings.

Further multiplying the benefits, this greater stability is combined with a balanced jull-form with proper amounts of reserve buoyancy forward, capable of safer & controllable higher-speed planing offshore in large waver and providing a wider steering groove upwind for sustained peak



performance by average helmspersons. No IMS rule inspired hull form can match the high length to beam ratio of this sea-kindly yacht nor the reserve buoyancy designed into her bow sections. High length-to-beam ratio insures straight tracking in large or confused seas with minimum steering loads on autopilot or helmsperson. Sailboats with fine bows and full mid-ship sections are more difficult to balance and more likely to spin out of control in rough offshore conditions. Buoyancy in the bow sections keeps green water off the foredeck and lifts the bow up and over the wave ahead when charging down the slope of large, ocean waves.

All in all, it's not surprising that the speed and luxury of the new J/145 exceeds expectations.

- Illustrations and tech notes courtesy of J/Boats

NEW TARTAN 3700 *PRODUCTION KEELS*

The Tim Jackett designed new Tartan 3700 calls on the design lineage of the "Blackwatch", the Tartan 37, and the 372, to once again offer the discriminating yachtsperson a modern classic. The 3700's contemporary hull shape utilizes the performance advantages of current yacht design while providing voluminous interior space.



The Tartan 3700 may be fitted with a choice of three different MARSKEELS: Deep fin (7'3" draft), Beavertail Bulb (4'11" draft), or a Keel Centerboard (4'0" draft) all providing excellent stability, tracking and ability and optimum upwind capabilities for their given drafts. Cruising World named the Tartan 3700, Mid-size Cruiser of the Year (2000), a well earned distinction.

The VALIANT returns to 12M Trim

The Valiant, designed by Olin Stephens and built at Derecktor's yard in 1970, for the America's Cup races needed a new retrofit keel. After she left competitive racing, like most athletes, she gained some weight, mostly due to outfitting for cruising.



The Valiant was the heaviest 12 meter ever built. Her current owner, Gary Gregory, will race Valiant at Jubilee 2001, celebrating the 150th anniversary of the Isle of Wright race in 1851. To meet the 12 M rules at the Jubilee, Olin Stephens and Jim Taylor Design, concluded that she would need to lose 5,000 to 6,000 lbs.,

mostly from balast reduction. The Valiant's keel is an unusual shape, being over 5feet wide at the top with a pronounced 'crown'. The plan was to replace several inches of lead from the top of the keel with mahogany, then cast a thinner **MARSKEEL** with a larger forefoot. The original keel weighed 54,000 lbs. The new **MARSKEEL** weighs 47,100 lbs, with a forwardkeel bolts molded into the casting and the aft bolts extending through the keel. The Marblehead Trading Company's refit of the Valiant has been very successful getting her to within 1000 lbs. of her original launch displacement.