



Drop Down Fins

Higher volume hull forms used to create ultra modern yacht designs are not always conducive to fitting stabilizer fin areas required for stabilizing ships at rest. To make matters worse, most of these super-sized yachts are designed to achieve speeds in excess of 20 knots, which dictates the need to minimize appendage drag. Quantum Stabilizers have found a way around the problem and have introduced a refinement to their Zero Speed stabilizer system. Their new, patented XT fin series are designed to reduce the fin footprint by having extending foils that are only deployed for stabilizing the vessel when at anchor. When underway, the foils are retracted to reduce the drag while retaining sufficient fin area to deliver optimal roll stabilization at sea. When deployed, the drop down fins have a more efficient geometry due to the fact that the area of the foil is aft of the shaft and in the best position to deliver the force required for roll damping at anchor. For larger yachts, an additional benefit of the newly-introduced fin is the ability, in some cases, to fit just two fins – instead of the usual four – based on the total area requirements. Since the new fins are said to be between 30% and 45% more expensive to fit than traditional units, major savings in fuel reduction costs can be achieved.

Most designers want to maximize the volume they can achieve in any hull length, and this can lead to an underwater hull design that is notoriously difficult to keep steady in an anchorage. In the past, designers of stabilizer systems have not always seen eye-to-eye with designers who draw box-like hulls because of this and because of the relatively higher power draws these systems need to feed on to be

effective. Mike Perkins, based at the company headquarters in Florida, explains that the bigger the yacht is, the bigger the power draw will be, yet he remains convinced that these new extendable fins offer a better utilization of onboard hydraulic power. Typically each pair of fins of the more traditional design would have an area of 65 square feet on each side, which, at cruising speed, are likely to consume up to 20kW of electrical power and up to half as much again when the vessel seeks to reduce her roll in an anchorage. With large boats using two fins per side, that's an at-anchor power consumption 60kW just to stop the gin and tonic from sliding off the table. The new XT fins will add a 30% to 35% increase to the underwater surface area of the fin, but with half the number of units fitted, and even with the 97sqft area, will still only consume a maximum of 60kW. Perkins attributes this to the fin's special design, which is extended by means of a closed loop hydraulic oil system that takes biodegradable oil into the stabilizer shaft through specially drilled holes. Quantum supplies all original equipment to yards for both new build and refit projects, and can upgrade existing stabilizer systems. They provide a range of stabilizers from at-anchor to up to 60 knots, along with custom hydraulic equipment. – MH

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