Reverse Bows and the Morrelli Melvin 62 MALA CONDUCTA

by Gregor Tarjan

photos by Billy Black

Just before the mast mounted speedo of the Morrelli Melvin 62 hit 23 knots we all could hear a tearing noise - a screech and groan coming from a wounded animal. Seconds later we realized that the tack line of the huge Code-0 had slipped through the forward jammer and simultaneously the sheet I was controlling did the same thing. The sudden shock load tore the cover of the sheet through the jammer and left the spectra braid exposed. Such incidences happen on powerful multihulls especially - as in our case, the maiden voyage of the stunningly well built and designed Morrelli Melvin 62 catamaran.

The Lyman Morse yard in Maine was chosen as builder because of their experience in creating custom masterpieces. From 100' plus luxury sailing boats to traditional power yachts, Cabot Lyman and his capable yard manager JB Turner have seen it all. This large catamaran however was their first venture into the multihull scene and by successfully building "Mala Conducta" they proved their flexibility in tackling a one-off high tech yacht while showing off their Maine boatbuilding savvy.

The Morrelli & Melvin 62 has its roots in the Chris White Atlantic and Peter Johnston's Gunboat series. The bloodline of the boat becomes clearer when one considers that Pete Melvin who designed the Gunboats put all of his multihull racing knowledge into this boat and created one of the most luxurious high-performance catamarans. sailing today. It is refreshing to see such a boat being designed and crafted in the US and not in places that have been building high-tech multihulls such as France or New Zealand.

The Morrelli Melvin 62 seems to hit the right note and is developing into a semi-custom production boat - at least that is what the customer feedback lends me to think. There are few boats out on the market today that can sail at consistent double digit speeds, yet have all the amenities of a luxury home. 2 more 62's of the same designed are presently being built at Westerly Marine in California - a yard which was founded in 1970. They have built very fast racing monohulls and more comfortable ones still able to achieve high performance so they seem to understand the critical aspect of a light, strong yacht.

The first thing one notices about "Mala Conducta" are her bows. They are reversed and are designed to cut through waves. Pete Melvin explains:" "There are several reasons to consider designing a boat with reverse rake or "wave piercing" bows. The primary reason we consider this hull shape is to reduce pitching motion caused by waves of certain amplitude and frequency. I think an easy way to explain it is this: assume you are sailing along in smooth water with no pitching motion. Along comes a single wave. As your bow starts to penetrate into the wave, you pick up buoyancy in the bow region. The boat reacts to this increase in buoyancy by pitching bow-up. As the wave passes under the boat, the bow then must fall back to equilibrium"

Pete is right-on target with his thinking. The more reserve buoyancy the wave sees as the bow penetrates through the wave, the more pitching moment is imparted onto the boat by the wave and the

greater the potential for pitching motion. So if your bow has a lot of flare (vertical angle of the hull sides), then you naturally have a lot of reserve buoyancy high up in the bow region and this may result in excessive pitching motion. Of course the downside to a reverse -wave piercing bow might be a slightly wetter ride on a small multihull such as a beach cat, but on a 62' cat this is hardly an issue.

Why do we care if the boat pitches? Because pitching increases hull resistance, reduces the efficiency of the rig and underwater foils due to unsteady flow, and causes motion discomfort for the people on the boat. In order to keep the boat from pitch poling, you need a certain amount of buoyancy forward. On a wave-piercing type bow, this buoyancy and lift are achieved by making the hull fuller down low. On some wave piercing designs, the hull is wider at the waterline than at the deck, especially near the bow. The wider, flatter underwater shape provides lift at high velocities and dampens pitching at all speeds. Other benefits of wave piercing bows are reduced weight and windage. You can really feel this difference on light weight multihulls like the A-Class catamarans. The older designs with tall bows got really pushed around in higher wind and sea states whereas the newer designs are easier to steer and maneuver in waves.

Pete Melvin has taken this concept to the next level. His design office has developed several very successful racing catamarans with wave piercing bows including the A3 series, A-Class catamaran and the NACRA Infusion F18. Variations of these shapes are now making their way into some larger racing and cruising designs - such as the Morrelli Melvin 62 and our own giant Aeroyacht 110' catamaran. The faster and longer your boat, then more sense reverse bows make. Today even Team Oracle's monster trimaran and Alinghi 100' America's Cup challenger sport these bow shapes.

"Mala Conducta" has been set up for family cruising, but she is also awesomely fast! Lyman Morse kept her as light and nimble as possible. The builder conducted extensive testing to determine whether to build the hull with pre-preg or SCRIMP infusion methods. Cabot Lyman ultimately decided to go with the pre-preg and utilized advanced composites such as carbon fiber, Kevlar and E-glass. The owners were very involved in the mock-up review process in which many changes were made, which once again proves what an important tool the mockup is in building a custom boat. "Mala Conducta" has have a modern interior and straight engine drives. We wish her and her owners safe voyages and wonderful adventures with her and I hope to see more of these 62' marvels sailing.

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