



FOILING & FLYING

Two guys, two hulls and one badass brand —
that's Californian design duo Morrelli & Melvin

BY ZUZANA PROCHAZKA

A quartet of Morrelli & Melvin-designed Gunboats hits the racecourse in Antigua



PHOTO BY BILLY BLACK



Dennis Connor's *Stars & Stripes* catamaran squares off against the giant monohull *New Zealand* during the 1988 America's Cup

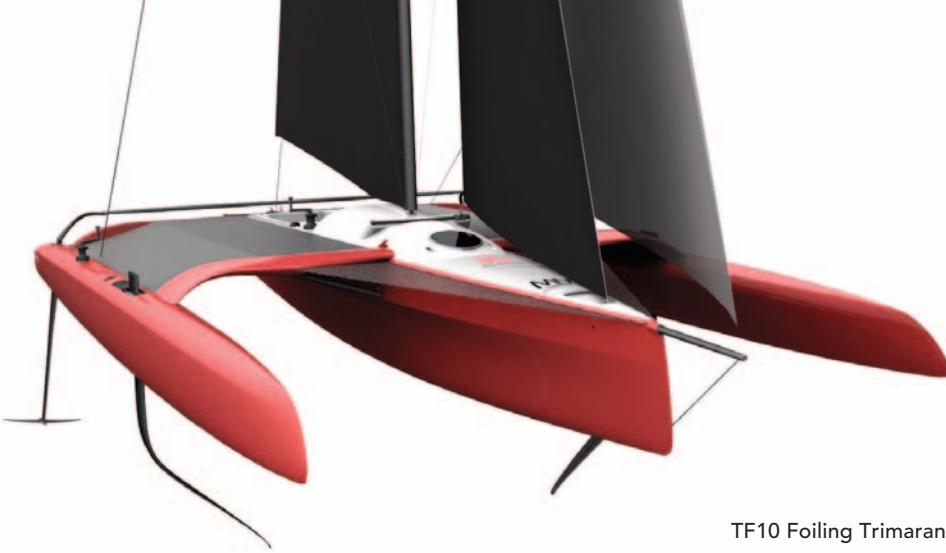
With the right mix of bleeding-edge technology and cheeky attitude, Gino Morrelli and Pete Melvin have spent more than two decades creating a cult of personality. Starting with the premise that a monohull is only half a boat, these two multihull designers have developed lots of cool stuff, often captured in dramatic photos of hair-raising speed and foam-flying exhilaration. It's no surprise then, that they have built a seductive brand, with an Apple-like following. They're as legendary as the Wright brothers, only a century later—and wetter.

Today, the M&M office is abuzz with thoughts of silver. Not a second-place racing trophy, but the silver of a 25th anniversary. A quarter century ago, Morrelli and Melvin joined forces and their collaboration has lasted longer than many marriages. Through hundreds of projects, both sexy and not, the team has persevered, thrived and grown. It wasn't always smooth sailing, but as their silver anniversary approaches, it hammers home the point that more than any other force, this duo helped shape the world of boating on two (and three) hulls—and they're not done yet.

ON CAPSIZING AND GIANT CATS

Morrelli and I have met for chats on several occasions, usually in a Starbucks somewhere around the globe. He's a laid-back Southern California boy through and through. Long hair swoops down over one eye, and he's quick with a joke about anything, including the crazy traffic in China where he spends much of his time shepherding designs through the build process. "In Xiamen, road traffic has rights of tonnage, and ocean racing rules apply," he says as we watch the mayhem outside. "You just call room at the mark and barge in."

Morrelli shuffles through projects on his laptop, stopping to comment on a few notable ones, like the NACRA 17 cat that was raced in the 2016 Rio Olympics and an unmanned catamaran designed for the Hawaiian Depart-



TF10 Foiling Trimaran

ment of Fish and Game to monitor illegal fishing in outer waters. *PlayStation* pops up briefly, but then disappears among other legendary designs. He describes his involvement in various aspects of the America's Cup as if he's talking about a trip to the grocery store.

Born in El Paso, Texas, Morrelli spent his youth working in the pits supporting his father's weekend racecar habit. When dad was transferred to Southern California, the family looked for a new hobby and settled on sailing. Morrelli decided that if the family could build a fast car, they could build a fast boat, so he bought plans for a 33ft Australian trimaran. Eighteen months and a lot of plywood and epoxy later, the family had a boat that would start Morrelli's racing career.

The next 10 years saw Morrelli launching and closing his first company, Climax Catamarans, and racing big cats in Europe. In 1984, for example, he found himself in France racing the 60ft *Region de Picardie* multi, which was successfully campaigned in several races, including the Round Europe

series from Toulon to Sardinia. The last leg of this race brought 45-knot mistral winds and 12ft seas, and in one gust, *Region* buried her hulls to the mast and pitchpoled. Morrelli was at the helm and momentarily got caught in the running backstay before falling 30 feet into the reefed main. There were lots of injuries, and floating in the cold water was rough going. One crewmember had a fractured hip, and the skipper twisted both ankles. Morrelli suffered a compression fracture to his 12th

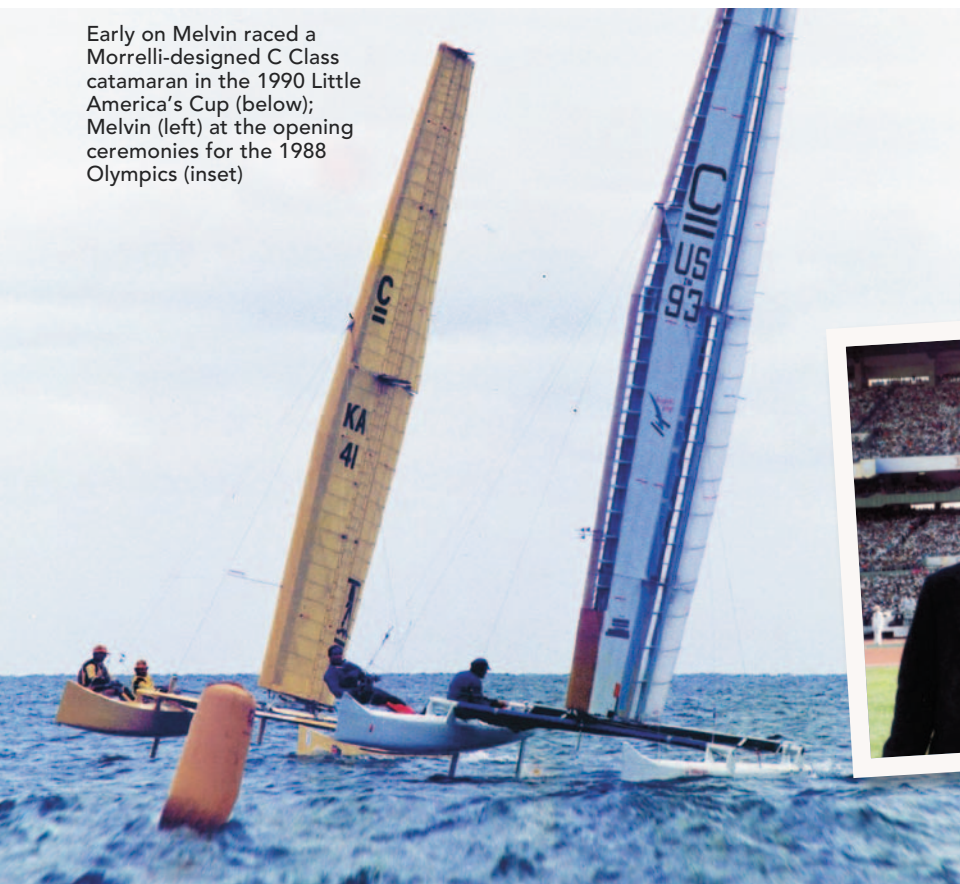
vertebra and spent six months in a body cast in France. He's quick to add that he hasn't capsized since.

In 1988, Morrelli joined the *Stars & Stripes* campaign for the 27th America's Cup, which became one of the most controversial in the race's history when New Zealander Michael Fay challenged the Americans with his 120ft sloop, *New Zealand*. The boat was a beast and had there been any design rules in America's Cup racing, New Zealand's "Big Boat" would have broken them. (It certainly broke with the tradition of racing in 12 Meter monohulls!) So Dennis Conner decided to break a few rules himself and commissioned a 60ft catamaran for the race that almost wasn't.

Stars & Stripes won, and after much courtroom drama, the results were allowed to stand. Not surprisingly, that's when America's Cup racing rules underwent a serious overhaul as well. Although Morrelli did not race in the Cup itself, he worked with the team to design Connor's two boats. The boat *H-1* with a rigid wing and conventional headsails was used in the race.

In 1998, M&M hit the jackpot with its design of the maxi-cat *PlayStation*. The 125ft cat with over 7,000ft² of sail was campaigned by multi-millionaire adventurer Steve Fossett and captured various speed records as well as the imaginations of sailors around the world. At one point *PlayStation* sailed from Miami to New

Early on Melvin raced a Morrelli-designed C Class catamaran in the 1990 Little America's Cup (below); Melvin (left) at the opening ceremonies for the 1988 Olympics (inset)



York in just 4 days, 17 hours and 28 minutes at an average speed of 25.78 knots. The boat's 24-hour record came in at 687.17 nautical miles and thereafter, she was forever cemented in racing lore.

"It was a handful," Morrelli says of *PlayStation*. "The boat had to be designed to allow one hull to flex up to 12ft above the other, but be stiff enough to keep the 147ft mast upright at the same time." The design won the *Prix de L'Architecture Navale*.

Although seemingly tame by comparison, numerous sail and power cats subsequently came to life on the M&M drawing boards. It's likely you've sailed one in an exotic locale if you've chartered with The Moorings or any other name-brand vacation company. These are the kinds of designs that don't make headlines on racing websites, but they do create residuals that pay for a growing staff of young talent that will one day have some big shoes to fill.

YIN & YANG

By comparison, Pete Melvin is the engineer—precise, measured and seemingly turned on by all things technical. Even now, he's got the clean-cut boyish good looks of an Eagle Scout. In an interview, he remains reserved—if not reticent—until I stumble onto some technical detail of one of his passion projects, at which point he comes to life.

In a way, Melvin's background is at the other end of the spectrum from his partner's. He's a trained aerospace engineer who spent five years at McDonnell Douglas, during which he also campaigned Tornados in the Olympics. In 1988, along with his crew, Pat Muglia, Melvin won the Tornado trials and represented the United States at the Olympic Games in Korea. He also won the Tornado Nationals and the 1989 ProSail circuit on a Hobie 21. Later on, Melvin competed in the Little America's Cup on the highest technology catamaran afloat at the time, a 400lb C-Class cat designed by—no surprise—Gino Morrelli. In all, Melvin won over 25 national championships in dinghies, keelboats and multihulls of all sizes, and three world championships, including the 1997 and 2005 A-Class Catamaran Worlds. In case you think that makes him a bit of an overachiever, you should know that Melvin didn't quit his day job until the Little America's Cup in 1990—so you're right.

Twice now, Melvin has been involved with rewriting America's Cup rules: the AC72 rule used in the 2013 Cup, and the ACC rule that was released in June 2014 for the 2017 race. He even moved to New Zealand for two years to take up the position of principal naval architect developing foiling systems for the country's Cup contender. Now he's back and completely enveloped in three designs that are likely to make headlines.

The Rapido 60 trimaran, for example, was designed as an owner-operated cruiser that can reach speeds in the mid-20-knot range. With its T-foil rudder and daggerboard retracted, the boat draws just 2ft 6in, so it can sail



extremely skinny waters and is easier to manage than many a cruising catamaran. Unlike many cats and tris it can also go to weather as fast or faster than a racing monohull.

The boat's E-glass foam-core sandwich and carbon construction provides an extremely strong, rigid but light structure with expansive accommodations 6ft of headroom. When I ask who this boat is for, Melvin thinks for a while, "Well, the ex-owner of Corsair Marine is taking one—and just about any disgruntled outlier bored with the ordinary."

Also keeping M&M busy is the T10 fully flying 10-meter folding trimaran. Five guys from the New York Yacht Club, including the commodore, commissioned a trailerable gentleman's pocket flier that requires no professional crew. The boat can be dry-sailed from a parking lot



With its enormous dimensions, the catamaran *PlayStation* captured the attention of sailors and landlubbers alike



The PlayStation crew, including owner Steve Fossett (sixth from left), Melvin (second from left), and Morrelli (second from right), stands ready for its transatlantic record attempt

The Rapido 60 trimaran has hit 26 knots sailing in 20 knots of wind



and crewed by just a handful of “thrillionaires” as some may describe these kinds of wealthy owners. The 33ft carbon fiber speedster is being built by Holland Composites, and with five orders on the books, it has basically formed its own one-design class already. “Two-thirds of the energy spent on racing foilers is about getting the boards up and down for the tacks and gybes,” says Melvin. “This one saves a ton of calories.”

Finally, there’s the SuperFoiler, a blazing-fast 28-footer designed for grand prix racing in Australia. In fact, this racing weapon with J-foil daggerboards will have a professional racing circuit similar to the Australian 18ft skiffs and is expected to generate speeds of 40-plus knots downwind. Only seasoned racers at the top of their game will be able to handle this one.

As it develops these and other projects, M&M is effectively designing the next generation of multihull racing machines, a generation that continues to take the racing world by storm and is quickly winning converts. In 2018, for example, the Newport Bermuda race will include a multihull class. This, in turn, will leave the Sydney Hobart as the last monohull-only holdout.

“Multis make a lot of sense for racing,” adds Melvin. “You can buy a smaller boat and run it with half the crew at twice the speeds of a TP52.”

As for the broader sailing market, Melvin feels that the differentiator in future multis will be less about hull shape and more about the flying and foiling systems that serve to get them airborne. “It’ll be about the electrics and hydraulics. It’s also the shape of the boards and how they’re built

that will get that last knot out of a design,” he says. “It’s expensive to fly though.”

Melvin adds that he is pretty jazzed about the technical side of how these designs now come to life. Because they’re right on the edge of innovation, there are few databases of information for M&M designers to draw on. However, Computational Fluid Dynamics is allowing rapid optimization of hull, foil and aerodynamic shapes, while Finite Element Analysis is making quick work of composite design and its evolution. The computations that Melvin once snuck onto McDonnell Douglas’s computers during off-hours are now done with thousands of dollars worth of time rented on supercomputers. “It’s not cheap, but the predictions have gotten much more accurate,” he adds. “We can now produce designs that work more reliably right out of the box.”

When asked what he’s personally most excited about, Melvin lights up. He loves working on the edge and believes he and Morrelli are fortunate to live in an era with a steep learning curve. Among other things, he describes foil-assisted power cats with foils between their keels that will lift half the weight of the boat at 30-40 knots and cut fuel consumption by a third. That’s impressive. (A bit harder to accept is the idea that these kinds of boats are being developed with the charter trade in mind.)

“All these things we’re working on are technically difficult to design, but the result has been a clear improvement. Over a single America’s Cup cycle, we’ve seen performance gains of 35 percent from first launch to last race,” he says. “It’s just about pure development,” he adds with relish.



Pete Melvin

Currently, Morrelli's major focus is on establishing the new HH Catamarans brand of super premium, all-carbon 55ft and 66ft sailing cats built in China—seven-figure boats are targeted at those who breathe rarified air like Silicon Valley tech gurus, bored with traditional racing or timid cruising. To this end Morrelli plans to spend much of 2017 on the Caribbean racing circuit, showing off what these cats can do. His itinerary includes the Heineken Regatta, the Caribbean 600, BVI Spring Regatta, Antigua Sailing Week and St. Barth's Les Voiles among others. Somewhere in there, the HH77 has to be designed as well.

Meanwhile, Melvin's aforementioned three fabulous foilers are all set to launch before summer of this year, which should involve plenty of barely coordinated bedlam and just what the M&M office lives for. Interspersed among all these efforts are a number of other projects, including small self-driving hybrid CNG boats for a not-to-be-named but renowned amusement park in Shanghai; wind farm support vessels; and possibly more charter cats similar to the ones M&M created for Robertson & Caine's South African Leopard line. "The adoption of sailing cats took 15 to 20 years, but power cats are likely to catch up in half that time because charter has gone a long way to building acceptance of multihulls," says Morrelli. "And sometimes, Leopards spawn Gunboat and HH owners."

Beyond that, the pipeline of ideas includes everything from foil-assisted power cats destined for the leisure market, high-strung racing machines with sails, center console fishing multis and commercial ferries. Ideas seem to come from everywhere and nowhere. "We're pretty weak-kneed," says Morrelli. "If our customers can dream it up, we'll generally try to design it."

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If you manage to score an M&M T-shirt, you get instant street cred as the cool kid with insider knowledge of all things hip in the watery world. Suddenly, you're a member of an exclusive club that is so out there on the razor's edge, that it seems never to rest.

Will Morrelli and Melvin themselves make it to their next landmark anniversary? Maybe. For sure though, if the current team of rising young talent in the office keeps taking risks

and pushing the envelope, M&M will likely have little problem riding that badass silver-anniversary brand another 25 years, right to gold.

The whirlwind evolution of catamaran design feels like the Wright brothers era. Orville and Wilbur made modifications to their flying machines almost daily and M&M isn't far from that. "Things change so quickly that by the time something is built and tested, we're already designing the next generation," says Morrelli. "Foiling and flying is where it's at." *



Morrelli seems to be enjoying sail trialing the brand-new HH66 catamaran *Night Fury* in Xiamen, China

KNUCKLEHEADS AND WEAK KNEES

Ruminating on the continued popularity and growth of catamarans overall, Morrelli thinks their time has come. From charter sailing and power cats to high-strung America's Cup rocket ships, there's no doubt it's time for life on more than one hull. "Cats are finally starting to get the positive mainstream reputation they deserve," Morrelli says. "As the knucklehead homebuilt boats are replaced with professionally designed and constructed ones, people are getting to know cats and getting to like them."