GMT Carbonics 28

GMT Composites

Advanced composite engineering and manufacturing for marine and industrial applications

Product Bulletin #28
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Mobile battlefield and air-traffic radar.

Precise aim for military

GMT is in discussions with a military systems provider to supply carbon support arms for their new Ground/Air Task Order Radar (G/ATOR). This system will allow U.S. Marines to detect, track and provide quality data to engage hostile aircraft, cruise missiles, rockets, mortars and artillery, as well as provide air traffic control. GMT is the builder of choice because we can maintain precison to .005 inch.

PPL Ltd

TotallyMoney.com, with GMT mast, boom, and rudders, go 30,000 miles round-the-world with 17-year-old Mike Perham at the helm.

Deerfoot 67 with GMT's PowerFurl boom.

Anniversary speeds past!

We sailed by our 25th Anniversary in June without stopping to celebrate. But we want to thank our many customers for their confidence in us since our start in 1984!

If you have an interesting story about working with us or about products we've built for you, do let us know. Just e-mail jay@gmtcomposites.com.

Youngest circumnavigator sails *TotallyMoney* to new record

The sailing press has been filled with accounts of the youngest solo circumnavigator, Mike Perham, who at 17-years 164-days completed a remarkable trip 'round the world. Mike sailed the Open 50 *TotallyMoney.com* nearly 30,000 nautical miles, faced storm-force winds, 50-foot seas, knockdowns past 90°, and reached speeds up to 28 knots. He shaved two months off the time posted by Zac Sunderland who held the record for youngest circumnavigator over the previous two months. And he certainly sailed to adventure.

But what all this attention to youth overlooked was the age and identity of the boat Mike sailed – and its incredible history. That's because *TotallyMoney.com* was originally launched in July 1996 as *CCP Cray Valley* for Jean-Pierre Mouligne. JP sailed this boat to victory in the 1998 Atlantic Alone, the 1998 BOC, and smashed the Newport-Bermuda record the same year.

Under a long list of sponsor names through the years, this amazing Groupe Finot design has finished at least twenty trans-Atlantics and two trips around the world! That incredible itinerary doesn't include all this boat's "local" racing (Round Europe, Newport-Bermuda, etc.). JP estimated that her log exceeds 120,000 miles under sail.

And now for the punchline: From *CCP Cray Valley* to *TotallyMoney.com*, this Open 50 has had but one mast, one boom and two rudder blades – all four original components built by GMT Composites and still going strong. Mike Perham may have had autopilot failures, bad rudder bearings, electrical problems and torn sails – and he even laid the rig in the water, but his GMT mast, boom and rudder blades never let him down.

Fran Grenon/Spectrum Photo

"It was an amazing ride!" says Cetacea owner Chris Culver, who cruises up north in summer and south in winter, and races to Bermuda every year.

Rough trip for 2009 Bermuda Race winner

The 2009 Marion-Bermuda Race is in the record books and it's an indelible memory for those who took part. Among them is Chris Culver, whose GMT-rigged Hinckley Sou'Wester 59 *Cetacea* placed First in Class A.

"Obviously, we are happy to see we can hold our own in the Cruising Division with a big, solid cruising boat," Chris admitted. "Over a period of 30-36 hours, we had one squall after another. The wear and tear on crew and boat is significant. Many other boats had issues with broken gear and fear for their rigs, but we really didn't worry about our boat or our rig!"

"We've never had the boat heeled over this much. The water was only about two inches from coming into our cockpit in a few of the 40+ knot squalls."

"We tried to navigate through the worst squalls using our radar. The squalls show up as big red blobs. As we approached Bermuda, 3-4 days into this pretty tiring effort, we saw one squall on the screen so long and solid that we couldn't find a route through it. Then, we realized in our tiredness that red blob wasn't a squall; it was Bermuda!"

In addition to his Class victory, Chris won the Sail Magazine Trophy for best combined performance in successive Marion-Bermuda and Newport-Bermuda Races, the RHADC Past Commodores Trophy for best performance by an electronically navigated yacht, and was a member of the NYYC's team that won the I-Boat Track Trophy for the best 3-boat combined result. He was widely quoted for his summation: "Winning is a bonus. Arriving was the challenge."

When Chris replaced his original rig he looked at builders in both the UK and USA. He says, "GMT was highly recommended and was in the States. I could come see the mast being built!"

Southerly 57RS is fitted with GMT mast and PowerFurl boom

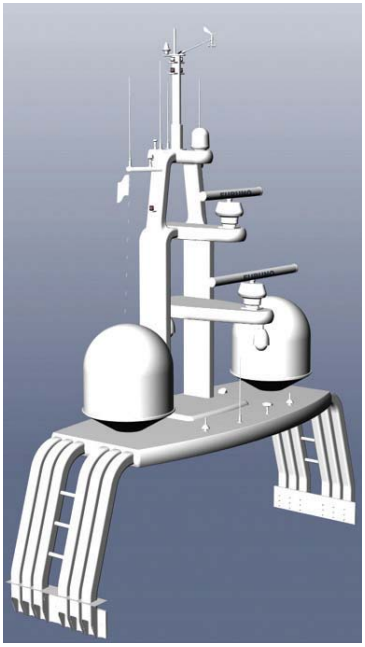
The Southerly 57RS is a 58'-2" (17.73m) raised-saloon yacht, drawn by Dubois Naval Architects and Rhoades Young Interiors. This new model from Northshore Yachts (UK) will be rigged with a GMT carbon mast and PowerFurl boom, and fitted with their Swing Keel, a hydraulic lifting fin which allows a much deeper draft than similar yachts with fixed keels. The 57RS draws 11'-9" with keel down, enhancing her upwind performance; with keel retracted, she draws only 3'-9", extraordinary for a yacht of this size and elegance, permitting her to "gunkhole" as well as stand on her own bottom-plate, dried out.

Northshore's design brief required innovation, powerful performance, luxury accommodations and easy handling by two. To match the Swing Keel advantage, the 57RS carries a tall, powerful rig. Her GMT carbon mast is 83'-6" (25.44m) above waterline.

The PowerFurl boom allows the 57RS's fully battened mainsail the power of a full roach and the push-button convenience of roller furling/reefing. A Solent rig is standard, which provides a self-tacking jib plus a large genoa for offwind work, both on powered furling drums. Powered winches plus the PowerFurl boom keep this large sailplan well within shorthanded capability for single-couple cruising.

Latest semi-custom model from the largest sailing yacht builder in the UK.

A classically-styled superyacht whose topline is enhanced by a structural arch which supports her electronics gear.



GMT's arch: beautiful, strong, lightweight.

GMT arch supports superyacht electronics

Holland Jachtbouw (Zaandam, The Netherlands) is putting the final touches on an advanced 140-foot aluminum superyacht. Langan Design Associates (Newport, RI) is the naval architect and Rhoades Young is responsible for the classically styled limed oak interior.

A launching date is anticipated early in 2010 for an owner whose previous yacht, *Cassiopeia,* came from the same designer and the same builder.

This new superyacht , which is being built to Lloyds and MCA regulations, has a design cruising speed of 15.5 knots from twin MTU 16V 2000 diesels. She is fitted with zero-speed stabilizers and an extensive inventory of the most advanced gear, equipment and electronics.

Langan Design Associates is known for very crisp detailing and distinctive yacht profiles. Typically, yachts of this size, scope, and luxury now bristle with navigation and communications antennae. Without great discipline, such equipment can spoil a yacht's topline appearance. For this new design, Langan developed a special arch structure to support the yacht's extensive electronics array.

Because weight savings are especially important this high above the waterline, GMT is building the structure in carbon composite. This reduces topside weight by over 500 kg (1,100 pounds) and avoids the need to add tons of lead in the bilge for stability requirements. Plus the superyacht can sit higher in the water, helping to make this elegant craft more fuel efficient and environmentally responsible.

The strength and stiffness of the GMT carbon structure allows a more striking design that's cleaner and compliments the overall appearance. In this boat such functional and aesthetic considerations go hand in hand!

Is autoclaving necessary?

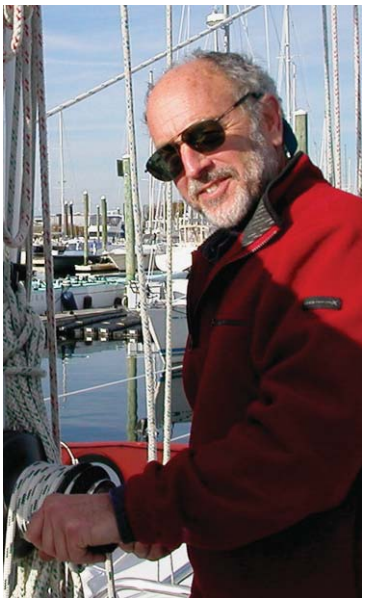
Myths about the superiority of autoclaved carbon composites periodically make the rounds. It's time to debunk them, especially since GMT has successfully used pre-preg carbon with vacuum-bagged curing at 250°F since we began building spars in 1991.

Carbonics asked David Schwartz to comment on the differences between autoclaving and GMT's approach. He told us that lab tests show that oven-cured parts are virtually identical in structure to autoclaved parts. "Technical journals say that autoclaved laminates delaminate at lower loads than oven-cured. The real world record of our spars that have gone hundreds of thousands of miles around the world confirms this."

"Autoclaves were first used, and are still needed, for some aerospace applications, where carbon could be exposed to 300°F jet fuel. The exotic resins needed to meet these conditions are viscous and need the extra pressure of an autoclave to force them into the fibers. The epoxy resin systems that we use are designed to produce quality parts under vacuum-bag cure."

"Go to www.gmtcomposites.com/why/autoclave for the full story, or call me. The history of GMT's products and the latest research show that our cure method is the right way to go."

GMT sees recession receding



GMT President David Schwartz.

GMT's business is recovering nicely, although of course we've seen market declines during the recession. We're now working on a superyacht boarding system, several PowerFurl booms, masts for 34- and 42-ft sloops, a superyacht ketch with PowerFurl booms, and rudders for two sloops around 150 feet. Our military products serve in Afghanistan, Iraq, and Hawaii. We're especially proud of the high number of repeat customers – boatbuilders, medical instrument makers, and government contractors. Repeat orders prove that what we built before worked well. Looking forward, we continue to raise expectations and then exceed them!

Restored *SummerWind* wins her first Bucket

In a previous Carbonics we showed the just-relaunched 100-foot schooner *SummerWind*. Her Fort Worth (TX) owner had completed a 2-year refit of this 1929 John G. Alden design and planned to race her on the classic yacht circuit.

On July 18-19, *SummerWind* competed for the first time in Les Grandes Dames class at the 2009 Newport Bucket. On Day 1, racing in light winds and periods of dense fog, she finished fourth. But, on Day 2 in 15-knot winds on a crystalline summer day, she finished first in Class and first in Fleet, seven minutes ahead of the 93-foot *Taza Mas*. *SummerWind* was the Les Grandes Dames Class winner in her very first outing! Congratulations to the owner, Captain Karl Joyner, architect Neils Helleberg, and the entire *SummerWind* crew.

Contributing to this success are *SummerWind's* two GMT carbon composite pocket booms. Both have a faux bois finish that perfectly matches the color and grain pattern of her original sitka spruce masts. Faux bois helped preserve the authentic appearance of this lovely old design. A section of the old spars was sent to us to match; from a few feet away you can't distinguish between wood and carbon.

Carbon construction not only made these booms far lighter than the original but also allows modern sail handling systems to be hidden inside. *SummerWind* carries a powerful sailplan that can be adjusted and managed in a thoroughly modern way – without any disruption to her classic deckplan or historic profile.

© Cory Silken

SummerWind enjoyed a first in Class and first in Fleet at the 2009 Newport Bucket.

Fran Grenon/Spectrum Photo

A reefed Restive starts her long beat south.

Extra excitement in '09 Marion-Bermuda Race

The winning performance of Chris Culver and *Cetacea* wasn't the only excitement for GMT in the 2009 Marion-to-Bermuda Race, which included other podium finishes plus an Award of Merit for GMT customers.

Sheldon Brotmann took Second place in Class A with *Whisper,* a Canning 48. She carries a GMT carbon rig. Andrew Norris, who refurbished the 1969 Tripp yawl *Katrinka,* came Third in Class C, an impressive result for what was not only his first Bermuda Race but his first-ever ocean crossing. Brooklin Boat Yard's refit included new GMT carbon composite spars.

The Award of Merit went to a previous winner, George Denny, who with three other skippers suspended racing to search for the source of an emergency flare launched by a French solo sailor, who was subsequently rescued by a cruise ship. Denny said he happened to be at the wheel and thought he saw a flare. "I radioed and asked others if they had seen it, and I broke off racing to head in that direction."

George, whose *Restive* is a custom Alden 48 designed by Niels Helleberg and built in wood by Brooklin Boat Yard, noted that "We had to beat all the way into Bermuda. It was not nice: that's a long beat. And it was blowing 20-plus. I didn't worry about my GMT rig; it's solid in every respect and strong as hell. Before the start I had a concern about my boom vang, but GMT came right over; it turned out to be nothing to worry about. Absolutely, they produce a good product and back it up."

GMT COMPOSITES

Lightweight high-strength masts, booms, poles, struts, and composite structures for marine and industrial applications.

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More and bigger superyachts coming to GMT

Jay Kiley crews at Newport Bucket.

Lady B's rudder.

Are GMT's large yachts getting larger? Yes, indeed! But these larger vessels have much higher loads, which often can't be handled except by carbon fiber composites. And the need for greater efficiency means keeping weight and maintenance costs down.

We're one of the few carbon composite engineering firms that can handle larger yacht rigs. Jay Kiley, who joined GMT in 2009, has made a major contribution; he's GMT's point man for demonstrating our competence in this rarified field.

In Carbonics 27 we showed a profile of *Lady B,* a Dubois-designed 147-foot (44.7m) sloop, and a photo of her 20-foot tall rudder just before shipment to Vitters Shipyard in Holland. Here are progress photos of her rudder being installed. The extreme loads are handled by a massive thru-hull bearing.

A big bearing for big loads and low friction.