

Carbonics 33

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Carbon Saves a Bus Load!

Originally launched in 1929, the beautiful Alden designed schooner, Summerwind, went thru a significant re-fit in 2007-2008. At that time, GMT Composites was called in to create two carbon fiber "park ave" style Pocket booms to match the sitka spruce masts. The results were nothing short of astonishing, and on-lookers would swear she had wooden booms.



Summerwind came into new ownership in 2012, and one of the first calls they made was to GMT to inquire about making carbon masts to match her booms. Not much was known about the technical specifications of Summerwind's wooden masts, so the head engineer and owner of GMT, David Schwartz hopped a flight to personally inspect the masts and rigging.

The potential benefits were staggering and weight savings aloft could literally be measured by the ton. Rig weights were taken and mast stiffnesses calculated. When the dust settled, it was determined GMT carbon masts would reduce rig weight by a total of 2,800 lbs compared to the original masts, while being 20% stiffer.

To put this in perspective, when you take 2,800 lbs out of a rig with two masts over 100' tall, it is equivalent to adding 14 tons of ballast.. That makes Summerwind's new masts equivalent to the weight of a famous fully loaded double-decker bus of London in her keel.

The gains in performance, handling, and safety were irresistible to the new owner, and he gave the go ahead for GMT to custom build two new pre-preg carbon fiber masts for Summerwind. In keeping with the yacht's classic heritage, the masts will both be hand-painted in GMT's faux bois finish to match her remarkably authentic looking sitka spruce painted carbon booms. Everyone is excited to see the finished product, and experience the improvements that a bus load of stability will make to a classic wooden boat.

Friendship: Made in the USA.

The newest boat in the Friendship series from Fontaine Design Group is a cold molded, shoal draft, centerboard, twin rudder 36 footer. Rockport Marine in Maine was awarded the contract to build the boat for a 2013 launch.

With a draft of only 32" reducing weight aloft became critical. A carbon rig was spec'd to address this concern. GMT was selected over several carbon rig suppliers. Project manager, John England, commented, "We knew GMT had the top notch quality this job demanded, and their pricing was competitive, which made the decision easy". GMT is excited to partner with a builder of Rockport Marine's caliber.





ADVENTURESS: History remade

Rockport Marine did a 3 year refit to the classic yacht, Adventuress, finishing in 2012. After more than 90,000 man hours, the results are stunning. Everything from the wooden blocks, interior joinery, and even the wood burning stove are historically accurate. GMT was particularly pleased when Rockport ordered a 2 piece folding carbon Passerelle, or gangway, for Adventuress. It was an honor to play even a small role in the project, especially being one of the few modern composite parts on this classic rebuild.

SOLUTIONS: Call the Bomb Squad?

This is not a picture of a floating mine or the latest sighting from Area 53. In reality, it is a highly specialized antenna with both military and commercial applications. GMT has been supplying the composite parts for this interesting program, including the center "hub". Tight tolerances, weight, and strength are all key factors in making this product survive in the field.



Radical Terrorist

Terrorist was a radical IOR yacht designed by Bruce King in 1973. She featured twin asymmetric centreboards, angled outwards and 'toed in' to the centreline. Terrorist introduced the concept of internal ballast, a considerable change from keeping ballast as low as possible in a keel.

Terrorist was re-discovered a few years ago sitting forlornly in a yard in the US. An American yachtsman Paul Tullis is presently refurbishing the yacht, and hopes to have her back in the water for the Northern Hemisphere spring. The hull fairing process is nearly



completed, and the boat will be fitted with a new carbon mast, and dual rudders. There will be even less interior than originally, so the boat will be a big daysailer, at least initially.

The yacht will be fitted with a GMT carbon-fibre mast and the increased righting moment earned by the new spar has reduced the amount of internal ballast by over 1,000lbs. That will certainly add to boat speed and comfort. For the full version of this article, visit Richard Blakey's RB Sailing Blog:

<http://rbsailing.blogspot.com/2012/10/featured-yacht-terrorist.html>



Photo credit: Carter Cassel Collection

Cape George 45

Cape George Cutters of Port Townsend, WA is not typically associated with "hi-tech" carbon rigs. However their latest Cape George 45 footer is definitely not your typical cutter. Beneath her traditional lines is a very high tech vessel. This owner has spec'd a hybrid electric propulsion system with lithium batteries, and is counting every ounce of weight that goes into her build.

Rig weight was identified as a significant area of potential savings. Todd Uecker, president of Cape George Marine Works, contacted GMT to find out just how much they might save with carbon. He was pleasantly surprised when GMT confirmed the carbon mast would literally be just under half the weight of an aluminum mast and weigh a svelte 170 lbs. Taking that much weight out of the rig also allows for reduced ballast, producing even greater over-all weight savings.

This is an extreme example of applying modern benefits to a traditional design. The owner obviously values both aspects of his boat. In a nod to the traditional, he also opted for GMT's "faux bois" hand painted wood finish on the rig and sprit for the ultimate finishing touch on an impressive project.



PROJECT: Carbon SeaStairs

Expedition Grade

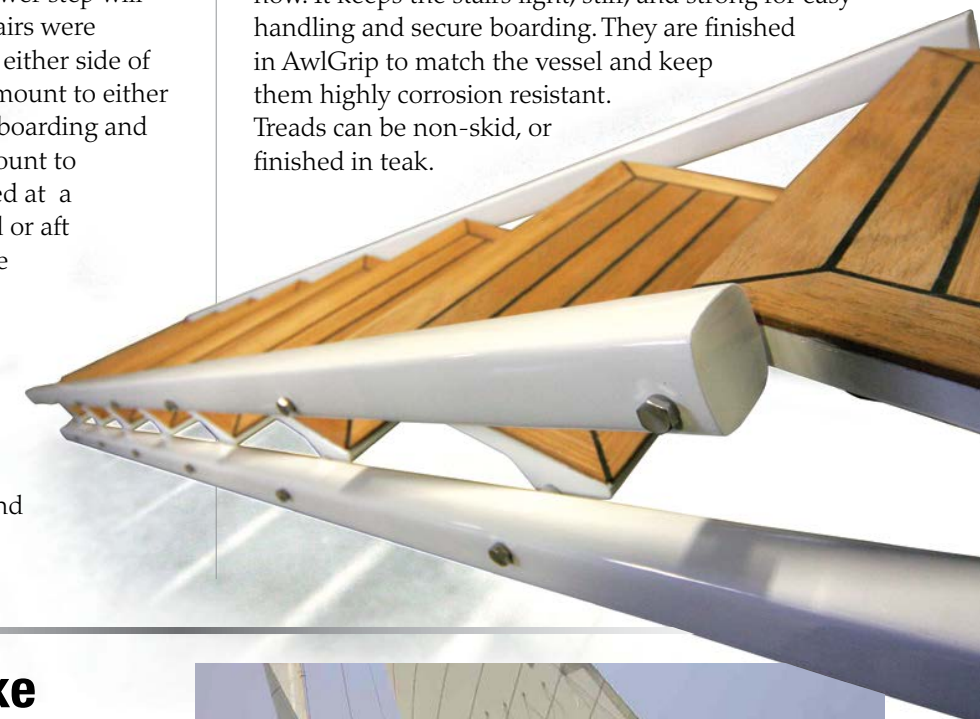
Nordlund Yachts in Tacoma, WA came to GMT when they realized an "off the shelf" boarding solution would not satisfy their client. They wanted a set of SeaStairs that offered several design specifications not readily available on the market. They needed the stairs to be light, provide multiple mounting angles, have a landing platform option, and yet stow inside a compartment only 4.5" high.

GMT submitted designs to construct a set of carbon fiber sea stairs with eight articulating steps. The lower step will have caster wheels to ride on the pier. The stairs were designed for perpendicular mounting on the either side of the boat. There is also a platform which can mount to either side of the hull to provide additional ease of boarding and mounting options. The stair assembly will mount to the platform so that the stairs can be deployed at a slight angle out from the hull either forward or aft facing. When attached directly to the hull, the stairs shall project 90° from the deck edge.

The owner had also requested an innovative low profile hull attachment assembly - something similar to what he had seen used in smaller scale. GMT was able to design and fabricate a custom attachment mounted hardware that is both low profile and extremely secure.



SeaStairs are a great application of our carbon know-how. It keeps the stairs light, stiff, and strong for easy handling and secure boarding. They are finished in AwlGrip to match the vessel and keep them highly corrosion resistant. Treads can be non-skid, or finished in teak.



A Classic Artisan Re-make

This is a modern adaptation of the classic Herreshoff designed Buzzards Bay 18, and the second such boat to be built by Artisan Boatworks. Alec Brainerd, owner of Artisan, is known as a wooden boat specialist, but also as a stickler for detail. His finished works could be museum pieces if they didn't sail so darn well. After finding the original drawings of the BB18 in the MIT archives, Alec teamed up with Naval Architect Mark Fitzgerald to add some modern touches, such as head room and an engine, to this timeless design.

Alec excitedly reported,

"We will be building our second Buzzards Bay 18—a 29' gaff-rigged Herreshoff-designed keel daysailer nearly identical to UNCAS, which was launched here last August and is featured in WoodenBoat magazine March 2013 issue. The new boat will have the same (GMT) carbon fiber mast, Beta diesel engine, and be delivered to her home near Falmouth, MA, in early July."

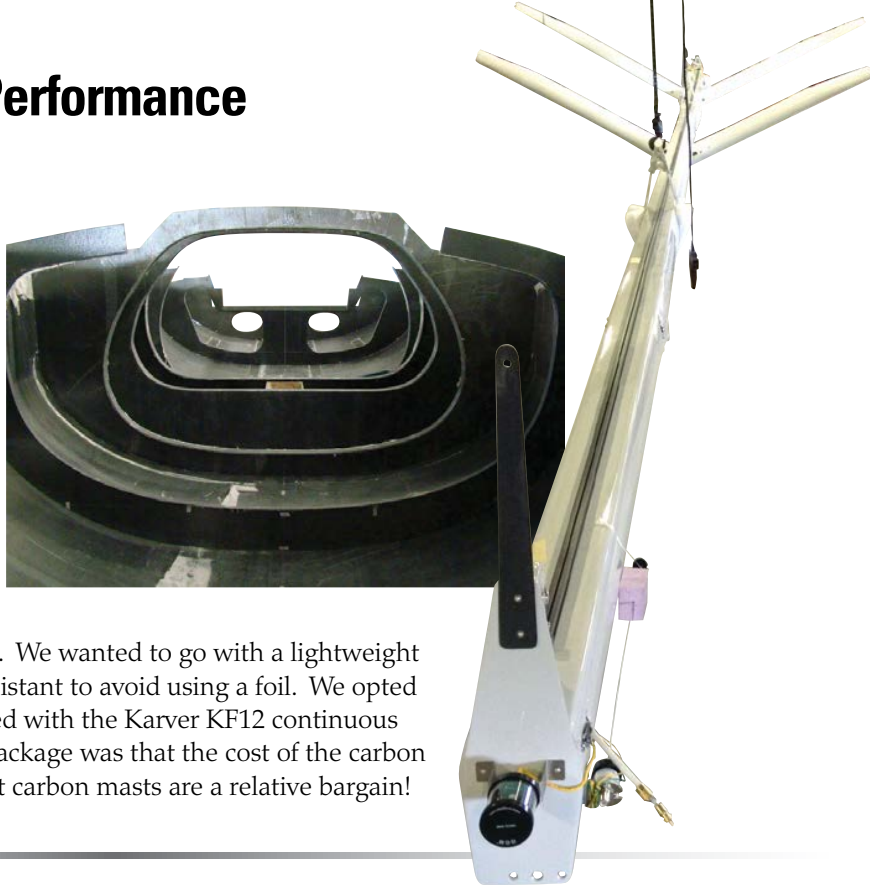


Photo by Allison Langley

Alec has spec'd out our hand painted faux bois finish on this mast to match the spruce boom & gaff. He knows how authentic this finish is from previous projects. Alec takes great measures to ensure his boats have exceptional sailing characteristics along with beautiful lines. We know if it passes Alec's inspection for performance and aesthetics we are on to something good!

Langan Design sees High Performance taking shape

In the previous Carbonic issue (#32), we highlighted a rendering of the new 55' high performance yacht from the drawing boards of Langan Design based in Newport RI. The boat is being built in Brazil for a Brazilian owner, and it is coming along nicely. As you can see, it will be a full carbon hull. The GMT carbon mast & boom are finished, and will be shipped to Brazil by mid-April. As the rig builder, GMT is able to spec out the standing rigging from the suppliers that best fit the demands of the project. This can range from Rod, PBO to carbon rigging. For this project, we spec'd out the EC6+ rigging from Composites Rigging, but with a twist – so to speak. We wanted to go with a lightweight composite headstay, but it needed to be torsion resistant to avoid using a foil. We opted for the Navtec Anti-Torsion (AT) Kevlar cable mated with the Karver KF12 continuous line furler. What surprised even GMT about this package was that the cost of the carbon mast was lower than the carbon rigging – turns out carbon masts are a relative bargain!



Goshawk goes Park Ave:

The 76' Stevens & Waring designed sloop named Goshawk is getting a GMT Pocket Boom to match her GMT carbon mast. Goshawk races in the Spirit of Tradition class and was built by Brooklin Boat Yard in 2005.

GMT Partners Up:

In 29 yrs of existence, GMT has rigged a lot of different boats, and worked with a lot of different yards and builders. In recognition of the type of partnerships required to pull off complicated jobs, we have published a "Refit Flyer". This is being sent out to a number of boat yards and builders. It highlights some of the essential reasons you might consider refitting and existing boat with a GMT carbon mast, and PowerFurl boom, and sprits.



The owner of Goshawk wanted easier mainsail management while keeping weight down and strength high. He considered both a carbon furling boom and a park ave style boom, and ultimately decided that a park avenue style GMT Pocket Boom gave him the simplicity, convenience, and styling he wanted. GMT matches the profile and volume of their Pocket Boom to a wide size range of boats by varying the sidewall height, width, and length for the right aesthetics.

You can't just put any boom on a boat as pretty as Goshawk. Some might think carbon doesn't even have a place on such a traditional beauty, but they would be left eyeing her transom. In considering a boom which incorporates mainsail storage, the owner had to be particularly careful not to specify a boom which disrupted the boats lines. It is always rewarding to have a repeat customer, and GMT appreciates their trust.



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