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CARBONICS

Advanced Composite Engineering & Manufacturing for Marine & Industrial Applications



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Photo: Morris Yachts

GMT spars grace Morris 52-02, FAR OUT, launched this summer.

GMT CARBON FOR INDUSTRIAL APPLICATIONS

Since its founding in 1984, GMT has been known for its quality carbon fiber spars and rudders, but few in the marine industry know much about GMT's work in other fields. From its inception, GMT has been sought out by engineers working in a variety of industries. Their goal was to find a company experienced in the latest technology of carbon construction with the ability to work closely with a design team to their exacting requirements. Over the

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AROUND ALONE A THREE-PETE FOR GMT

This year's edition of the Around Alone Race marks the third time GMT spars and rudders have been speeding competitors on their way around the globe. Racing in the Open 50 class are Tim Kent, whose Everest Horizontal is equipped with a GMT spar and John Dennis, whose Ascencia has both a GMT spar and rudder (pictured). While both boats were built for previous races, Tim and John are extremely confident in their GMT equipment because GMT has a reputation for building the most reliable parts in the business. This isn't just sales hyperbole,

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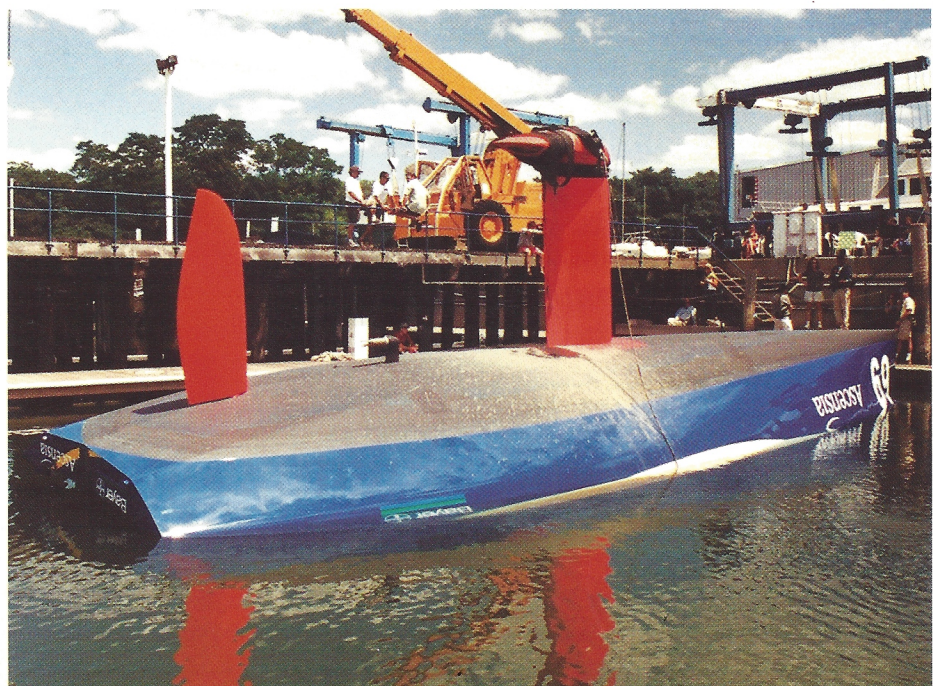


Photo: Ben Sprague

John Dennis's ASCENCIA during her righting test. She features a new GMT carbon rudder (pictured) in addition to her 9 year old GMT carbon mast (not pictured).

GMT NEWS

Earlier this year GMT built a carbon fiber stemhead fitting for Hodgdon Yachts' 152 foot ketch, SCHEHERAZADE. The stemhead fitting (right) is nearly six feet long by four feet tall, but when installed (above right) all that can be seen are the carbon knuckles to accept the 1 7/8" diameter pin which connects the stainless steel toggle to the chainplate. The headstay is -190 rod from OYS and will support the 180 ft. main mast. The Bruce King design underway at the Ea. Boothbay, ME yard will feature a number of GMT parts. Rudder tube, prop shaft strut, winch bases and deck house/partners assembly for the 140 ft. mizzen mast are also supplied.

From the race course, JACQUELINE IV (Hinckley SW 42) and SCEPTRE'D ISLE (Alden 63) both finished third in class in the Newport to Bermuda Race. OLYMPIAN (1913 P Boat) (pictured opposite) finished a credible 14th of 163 in the Queens Cup Regatta. GMT technician Carl Gustafson recently

Now you see it, now you don't! Carbon stemhead fitting for King designed 152 ft. ketch SCHEHERAZADE nearing completion at GMT's shop (below) and installed in the boat at Hodgdon Yachts, Ea. Boothbay, ME (right).

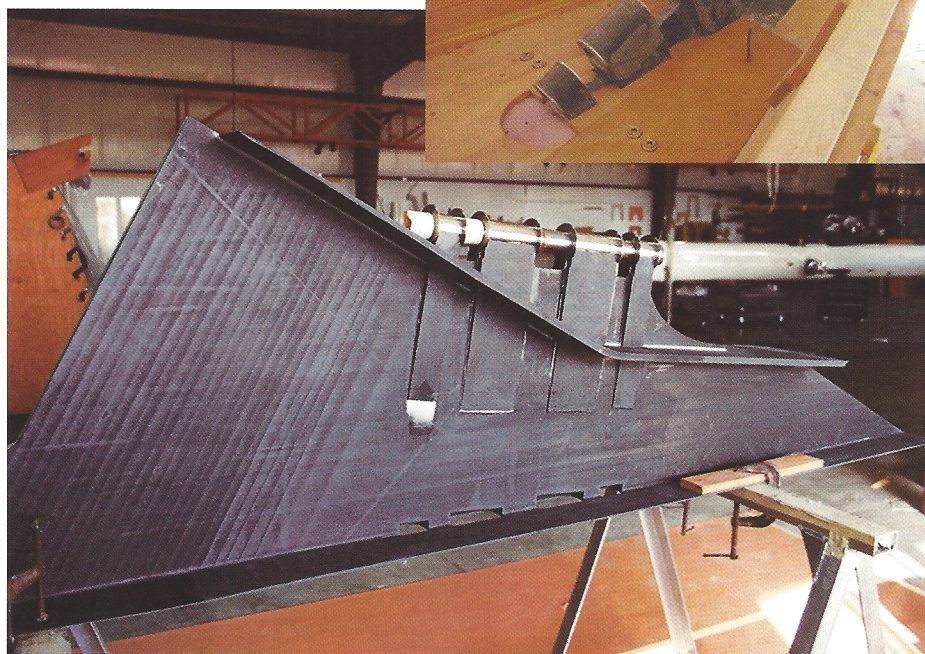


Photo: Hodgdon Yachts

Photo: Ben Sprague

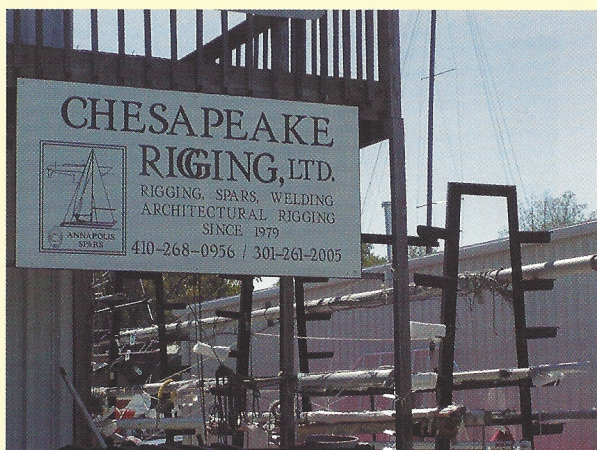
flew to Wisconsin to install jumpers on the soon to be 90 year old classic P boat. We hear she flew a masthead spinnaker in 30 knots of true wind speed and planed right along. Dave Verdier's RETRIEVER (Alden 53

ft. custom) entered the Chicago Mackinac race. Dave reports: "This was our third Mac race and we've improved every time, from fifth to fourth to a second in Division in 2002."

RIGGERS IN THE SPOTLIGHT

Chesapeake Rigging Ltd. was founded by Tom Wohlgenuth in 1979. In the nearly quarter century since, Tom has taken a small rigging shop operating out of a trailer and grown it into the largest full service rigging shop in the Chesapeake Region.

In 1991 Chesapeake Rigging acquired Annapolis Spars to augment its rigging work with aluminum spar building. In recent years this has led the company into a range of architectural rigging projects. In addition to spar repairs, upgrades and finishing in a climate controlled spray booth, Chesapeake Rigging are distributors and authorized service representatives for many of the marine industry's top



Chesapeake Rigging offers full service rigging and fabrication on the Chesapeake Bay.

Photo: Chesapeake Rigging

manufacturers. Currently employing 20 dedicated professional riggers and fabricators, Chesapeake Rigging is a true full service company with a wealth of experience.

In the summer of 2001, Kip Koolage of Chesapeake Rigging contracted with GMT for a replacement main mast for Sam and Maggie Lawson's Freedom 28 cat ketch which had been dismantled. The new free standing mast was 15% lighter and stiffer than the original mast. The Lawsons were so impressed that they ordered a second spar to replace the mizzenmast completing a spar upgrade that will provide years of safe and enjoyable cruising.

GMT LAUNCHES NEW REFIT MARKETING EFFORT

By way of spreading the word about carbon fiber spar refits, GMT has embarked on cooperative marketing efforts with Alden Yachts, Hinckley Service and Morris Yachts. GMT has manufactured new carbon spars for these fine companies. In turn, they found that our product was excellent and that working with us was a breeze. Many yachts built and/or serviced by these fine yards have converted their aluminum spars to lighter and stiffer carbon spars saving between 250 and 600 pounds aloft.



Photo: Billy Black

Lyman Morse built AMELIA³ equipped with GMT carbon Stoway mast reaching at the start of this year's Newport to Bermuda Race.

KIVA REFIT: THE REST OF THE STORY

In the last issue of CARBONICS we reported on the new carbon mast, boom, sprit and radar pole for KIVA, Mark Stevens' Hinckley Sou'wester 51. Besides the new rig, Mark was just finishing a huge renovation of the boat's systems as race day approached. To help get everything done, GMT pitched in. Our technicians worked to tune up everything from the instruments to the rigging only getting off the boat 15 minutes before KIVA's start. Following is Mark's account of what happened next.

"I've never enjoyed sailing upwind especially offshore in my boat until now. Four hours into the Bermuda Race, I had to drop out from mechanical problems and faced going back to Newport into 20 to 25 knots of wind. For the first time since I bought the boat, going uphill was actually a pleasure. She did not hobblyhorse, pitch or heel excessively and drove through the sea faster than ever before. If I was unsure about the benefit of a carbon rig, this sail put it all to rest." It turns out that he and his partner in the race, Hank Halsted were having so much fun they beat all the way up Narragansett Bay to Portsmouth, RI - only turning the engine on to dock at the marina.



Photo: Boatpix

OLYMPIAN, previously featured in CARBONICS 15, added jumpers to her 74 ft. GMT carbon mast for Chicago-Mackinac Race.

NEW PROJECTS

GMT Special Projects are hard at work building a carbon deck house for the mizzen partners for SCHEHERAZADE. (See above for more.) Work has begun on spars for a Brooklin Boat Yard 50,

Apogee 50, Great Harbor 26, Schock 35 and a Sequin 40. New on the order book for 2003 delivery is the spar package for a Dijkstra 71 footer building in Canada. Recently completed projects include round section spars for a Freedom 40, 39 ft. Benford junk and a Seaward 23.

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Carbon diagnostic and treatment boards for medical imaging machines (left) and end effectors for inspection in silicon wafer manufacture (right).

AROUND ALONE

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either, as there is a stellar track record from prior contests which speaks to this claim.

In the 1994/95 race, then called the BOC, Steve Pettingill became the first (and still only, go get'em Bruce!) American to place second in the Open 60 Class. But it didn't happen without some nail biting moments to be sure. On different legs Steve suffered rigging failures that could easily have spelled disaster. Fortunately, Steve's cat-like reflexes and GMT's rock solid mast combined to keep the rig in the boat allowing him to safely complete the race.

Three years later, JP Mouligne had already put 18,000 miles under the keel of his Cray Valley by start time of the 1998/99 Around Alone. Launched in 1996, JP's red rocket Finot 50 sported a double spreader carbon rig and twin carbon rudders. Late in the Spring of 1999 JP introduced us to Isabelle Autissier who chose to replace her existing carbon mast with a lighter, all pre-preg mast made by GMT. Isa was leading her Open 60 class at the time of her capsizing, but JP went on to win the Open 50 Class by the biggest margin ever. JP sings the praises of his GMT gear crediting his success to their ruggedness and light weight.

This year as the racers speed out of sight en route around the world the entire GMT crew wishes Tim and John the best of luck for a safe and fast voyage.



Photos: Will Rogers

GMT CARBON

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years we have satisfied those goals with a range of industrial clients.

In past years GMT has built fairing covers for towed submersibles for the defense industry, windmill blades for energy concerns, and radio telescope components for a noted research group. More recently GMT was approached by engineers in the semi conductor industry about supplying carbon fiber end effectors. These robotic arms, resembling miniature paddles, are used for measuring and testing silicon wafer manufacture. The GMT carbon end effectors are lighter than the metal or ceramic parts they replaced. More importantly, they are stiffer by at least 15%. This allows for faster, more precise cycling of the machines resulting in significant cost savings. Now in our third year of producing these robotic pieces, GMT has developed, in conjunction with our customers, a range of custom end effectors (pictured above right) to suit a variety of inspection machines. The success of these parts has led to additional customers who require a higher volume of parts.

GMT is also involved in the medical equipment field. Beginning nearly a decade ago, GMT developed and produced a carbon pre-preg head frame that allowed the surgeon to view real time x ray images while performing neurosurgery. More recently GMT began constructing full length body boards for a Massachusetts medical imaging company. The boards are used both for diagnostic and treatment functions, so stiffness and radio lucency are paramount. Constructed of pre-preg carbon skins around a proprietary core configuration the GMT boards are perfectly suited to their purpose. Whatever your specific industrial application, GMT has the proven ability to go the extra mile to achieve a perfect end product.

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