

# Bay Life

## A Green Wave to the **FUTURE**

by Ben Cuker

**A** green wake will follow Michael Carr as he crosses the starting line of the fourth BOC Challenge race on September 17, 1994. He will be guiding his environmentally correct boat, *Imagine*, on the first of four legs of a race that will take him on a solo voyage around the world. Some 27,000 ocean miles will pass under *Imagine*'s hull as Michael makes his way over the Atlantic from Charleston, S.C. to Cape Town, South Africa, around the cape of Good Hope and across the Indian Ocean to Sydney, Australia, through the Southern Ocean and under Cape Horn to Punta del Este, Uruguay, and finally returning to Charleston. He hopes to better the 120 day record set during the last race.

Imagine and the rest of the stars of the fleet will race in Class I, which consists of ultra high technology 50-60 footers sailing under corporate sponsorship. Smaller 40-50 footers will sail in Class II.

Every sailor in the race is out to win and Michael is no exception. However, being first over the finish line is only of his goals. His vision of victory includes a statement about a new direction for industry and the global economy. For Michael and his wife, Stephanie, it is important that *Imagine* shows the world just how fast an environmentally conscious boat can sail. They hope to inspire industrialists, entrepreneurs, government leaders, every day working folks, and especially children to take a new look at how we can live and do business in ways that are less threatening to the health of the planet.

Don't get the idea that Michael and Stephanie are simply environmental advocates who latched on to sailing as a vehicle for promoting their ideas. They are sailors first and foremost. Michael grew-up in a Navy family and graduated from the Coast Guard Academy. He spent 12 years in the Coast Guard and served on its famous

strike team, jumping out of helicopters and diving in icy waters to effect heroic rescues. Among other things, he is a captain and instructor of navigation for the 73-foot schooner, *Ocean Star*. His racing credentials include a first in class for the single-handed Bermuda race.

Stephanie Chilton-Carr is the other half of the team. She manages the campaign, seeing to all the details from promotion materials to autopilots. Stephanie can skipper more than a desk and a computer. Although

According to proponents of this view, cleaning up the environment and adopting low pollution strategies for manufacturing will create jobs and profits. The Carr's are applying this philosophy to their quest to win the BOC race.

For years, the American economy has functioned to produce goods and services with little regard for environmental consequences. It is only in the last 25 years or so that we enacted most of the anti-pollution laws. Bad air, polluted water, maimed

containers, rain gutters, V.W. engine blocks, and industrial scrap into new product. Golden skips the ingot step, going directly to finished product. This cuts energy consumption in half and saves them money.

The aluminum is being transformed into the Kaufman designed hull by Howdy Bailey's Custom Yachts in Norfolk, Virginia. The assemblage of stringers and plates resembles a cross between a jet-liner and a sailboat. Each weld is done to perfection, for all is closely scrutinized by the American Bureau of shipping (ABS) inspector on his frequent visits to the yard. *Imagine* will be the only BOC entry to earn ABS certification. This voluntary action is consistent with the Carr's dedication to the idea that American industry can produce the highest quality products.

Interlux paint will form a protective barrier between the hull and the sea. A clear coat will expose the natural aluminum luster between deck level and the waterline, emphasizing the boats composition. Interlux's newest product, Tri-Lux II, will provide anti-fouling protection for the bottom. This paint is the only non-tin based paint that can be used on an aluminum hull. Tributyltin paints have been banned from use on all but metal boats because they pollute the sediments of harbors and waterways. Traditional copper paints will eat away the aluminum by electrolysis, however, Interlux has discovered a way around this. By using the copper in a complex with thiocynate, they can protect the bottom from both corrosion and marine fouling. The copper that is released with the co-polymer paint base into the marine environment is much less toxic than the tributyltin alternative. As an added feature, Interlux will tint the bottom paint for *Imagine* with a fluorescent coloring agent (probably yellow). This will make the hull easier to spot in the unlikely event the boat turns turtle.

*Imagine* will be using its head to lead the way in environmentally sound

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trained in early childhood education, she also has a big-ship Coast Guard license and a wealth of experience under sail. It could just as easily be Stephanie at the helm of *Imagine* on its way around the world. In fact, Stephanie is looking forward to the finish of the race so she can take her turn circumnavigating. That trip will be on a more leisurely schedule and in a traditional cruising sailboat where Stephanie and Michael can enjoy each other's company.

During the recent U.S. presidential campaign we heard much about how environmentally sound industries would be the wave of the future and that the United States must take a leading role in these efforts if we are to be competitive in a global economy.

landscapes and toxic dumps are a testimony to an economy subsidized by giving away our children's natural heritage. The Carr's and others like them are showing us that we can change the way we do business and make the very best products in environmentally sound ways.

*Imagine*'s hull is made from 70% recycled aluminum, produced by Golden Aluminum of Colorado, the Carr's main sponsor. Recycled aluminum is preferable to virgin ore. Its use reduces loss of landscape to bauxite mining and land fills, along with saving the energy spent in processing ore. Golden's recycled aluminum has another plus—they use a special energy saving manufacturing process to turn old beverage

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human waste management practices. Sun-Mar corp. of Burlington Ontario is supplying a custom version of its soon to be released marine/RV composting toilet. Sun-Mar has been a leader in the industry that supplies cottage and home-owners with ecologically sound alternatives to septic and city sewage systems. Their toilets use a combination of airflow, peatmoss, and sometimes heat to turn human waste and toilet paper into soil-like compost. This process saves freshwater and eliminates the flow of oxygen demanding organic wastes and excess nutrients into our waterways. Being an aerobic process, there is no methane produced with this method of composting. This is important since methane is a "green house gas" which adds to global warming, and much more so than the carbon-dioxide which is produced by the toilet. Aerobic decomposition has other advantages. It is fast and there is virtually no hydrogen-sulfide produced, so the head will be free of any "rotten egg" smell.

The toilet is designed to evaporate excess moisture from urine using a small solar powered fan in the vent line. Bacterial action will transform the feces and paper into a virtually odorless organic material that will be easily removed at the end of the voyage. The bucket full of compost will be a welcome addition to soil under any tree or shrub. Wide scale adoption of composting heads on water craft could make a significant contribution to water quality in areas where boaters use convenience as an excuse to ignore discharge rules.

Innovative thinkers at Sun-Mar have taken another ecological step and will be using some of the compost from the toilet to help treat the "grey-water" Michael will produce by dish-washing and bathing. A small amount of compost will be introduced into the grey-water holding tank. Nitrogen from the compost will balance the nutrient supply to the microbial community which will attack the grease and other organic materials in the grey-water. This approach is a miniature version of the activated sludge process common in municipal waste-water treatment plants.

Solar panels will help change Imagine's extensive bank of batteries. A good supply of electrical energy is a must on a modern BOC racer. Autopilots, communication gear, navigation devices, computers, and lights all need watts to work. Even the larger array of solar panels planned for Imagine will probably not be enough to meet this demand, so a diesel generator will also be aboard. The Carr's are exploring a synthetic diesel fuel made

from soy beans. Results aren't in yet, but if it tests-out all right you can bet that this renewable resource based product will be aboard.

The Carr Campaign is working through the BOC Oceanwatch program to bring environmental education to thousands of school-children. The Student Ocean Challenge and Center for Marine Conservation organizations are working with the Carr's and other BOC contenders to develop a curriculum aimed at middle school students. The children will learn more than just geography as they track the racer's progress around the world. Units will include information on the ecology of the different environments traversed by the sailors, marine biology and pollution. Satellite and computer technology will bring the students first-hand reports from the skippers as well as regular newsletters. It is one thing to read about the problem of pollution in the sea, and quite another to hear directly from a skipper of a small boat about encounters with rafts of plastic waste a thousand miles from the nearest land!

Stephanie and Michael have spent many days visiting schools in the Chesapeake Bay area to promote this educational endeavor. All reports indicate an enthusiastic reception by students and teachers. The Carr's are encouraging smaller and local businesses to support their campaign by subsidizing the \$60 curriculum fee charged to schools to participate in the Ocean Watch program.

The Carr's commitment to the environment does not stop at the pier. Stephanie has worked hard to get their promotional literature printed on recycled stock. In one instance she had to transport recycled paper from the printer's warehouse to the shop herself and was charged an additional 40% for the material. But she knows the cheap and easy way is not always the right way and that the environment will not be healed by cheap and easy. Only doing it right will put Imagine in a position to be over the finish line!

Those interested in learning more about the environmentally sound products and programs mentioned in this article may find the following information useful.

**The Carr Campaign**, 4523 Dunning Rd., Norfolk, VA 23518, (804) 480-0203  
**Golden Aluminum**, 1600 Jackson Street, Golden, Colorado, 80401, (303) 277-7500.

**Sun-Mar Corp.**, 900 Hertel Ave., Buffalo, NY, 14216, (416) 332-1314.

**Interlux**, 2270 Morris Ave., Union, NJ, 07083, (908) 964-2316.

**Student Ocean Challenge**, Ms. Mame Reynolds, PO BOX 631, Jamestown, RI, 02385, (401) 423-3535.

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