

# A green voyage around the globe

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**SAN FRANCISCO--It was a June winter night on the sea off New Zealand's Manukau coast, and Peter Bethune was starting to walk up the wall of his high-tech powerboat as it succumbed to a 40-foot wave.**

Two men in Bethune's crew were seasick on a hemp floor in the galley next to sacks of organic potatoes and life preservers. Bethune struggled to hang on to the steering wheel after 12 hours at the helm in stormy weather. He thought the boat was going to flip, and it was close.

"The wave picked the boat up sideways. It was f\*\*\*ing scary," said Bethune, 41, a New Zealand native.

Bethune was here Thursday in touristy Fisherman's Wharf, where he retold stories of testing a one-of-a-kind, biodiesel-powered boat in rough seas. The 10-ton powerboat, called Earthrace, is specially designed with a needle nose to pierce through waves, instead of rising or undulating over them. The cabin stays dry thanks to three, 24-foot-tall hulls, making the vessel look like a Batmobile on water.

In June, Bethune managed to drive Earthrace through the middle of 40-foot waves barreling through Cook's Straight, which is also near New Zealand. But the storms near Manukau had the lightweight boat catching air.

"I've been the most scared in my life in the last two months," Bethune said during a tour of his speedboat.

Earthrace was docked in San Francisco as the main attraction of the Earthrace Project, a six-month, 30-city tour to promote renewable fuels that will culminate with an around-the-world speedboat race in March 2007. The wave-piercing powerboat, called a trimaran, is fueled solely by biodiesel, a so-called green energy source made from plant and animal fats.

Bethune, his crew and Earthrace's sponsors hope that breaking the world powerboat record of 75 days to circumnavigate the globe will raise awareness for biodiesel as a viable alternative to oil. Biodiesel has lower emissions, a smaller environmental "footprint" and "less reliance on dodgy parts of the world," Bethune said.

But this powerboat takes a lot of biodiesel. It holds as much as 3,000 gallons of biodiesel, enough to double the weight of the vessel. One refueling lasts awhile, however: It can travel from Vancouver to Acapulco, Mexico, on two full diesel engines tanks.

Bethune started his career as an oil exploration engineer, but he "swung over from the dark side," as he said, after researching a paper on renewable energy for his MBA in 2002. "In the oil industry, everyone knows that the reserves are getting smaller and smaller. Biofuels will come in and play a role in the transition from total dependence on fossil fuels," said Bethune.

As he got interested in renewable energy, he found himself drawn to powerboating, and had an urge to break the world record, as he tells it. Bethune began researching wave-piercing designs, which can travel at higher speeds than traditional speedboats by cutting through walls of water. That's when he took out a second mortgage on his New Zealand home for \$750,000 and started talking to sponsors for Earthrace.

In all, it's taken \$3 million in sponsorships and loans to get Earthrace this far.

The Earthrace crew started from New Zealand in July and has visited Samoa, Vancouver, Portland, Seattle and Hawaii, where biodiesel is the cheapest anywhere in the world at \$2.50 per gallon, according to Bethune. (Biodiesel is typically equivalent to the price of diesel, but the fuel needs to go through a processing plant before it's ready for consumption.) From San Francisco, Earthrace will go on to Panama, several ports on the East Coast, and New Orleans.

The boat itself was designed by Craig Loomis Design Group and built by Calibre Boats, a purveyor of high-tech custom yachts. About 78 feet in length, the boat is constructed largely of a lightweight carbon composite, which is typically used in military aircraft, and Kevlar. It's also green.

The boat's lower-deck floor is made of hemp, a durable industrial fiber that's renewable and can withstand small impacts. Because hemp is the root of the plant Cannabis, the floor is green. The crew also uses organic compounds to keep barnacles off the bottom of the boat, in order to avoid using common waxy chemicals that leach out into the water. Using organic means, however, the Earthrace crew must clean the bottom of the boat once a month.

Bethune's been living on the boat for the last couple of months with three other crew members in tight quarters. The lower deck technically sleeps eight, but there are only six bunk beds that line the inside walls of the front of the boat.

Externally, the powerboat is silver with black symbols painted on its body. The boat's hulls are shaped like horns, and on those horns there are symbols meant to represent positive and negative influences on the environment. A warrior symbol in the shape of a spear, called a Taiaha, is also painted on the nose of the boat, signifying strength and power.

Facing waves any higher than 40 feet, Earthrace's going to need it.

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