

Chic Northwest 45 • Green Boat On The Horizon

PassageMaker[™]

—The Trawler & Ocean Motorboat Magazine—

INDEPENDENCE

YACHTS:

**The Quest For
Sustainable Alternatives**

The background image shows two white motorboats with dark stripes, docked on a calm body of water. The boats are reflected in the water. In the background, there is a dense line of green trees under a clear sky. The overall scene is peaceful and scenic.

**GREAT HARBOUR'S
FLAGSHIPS**

SHOWCASE

On The N47

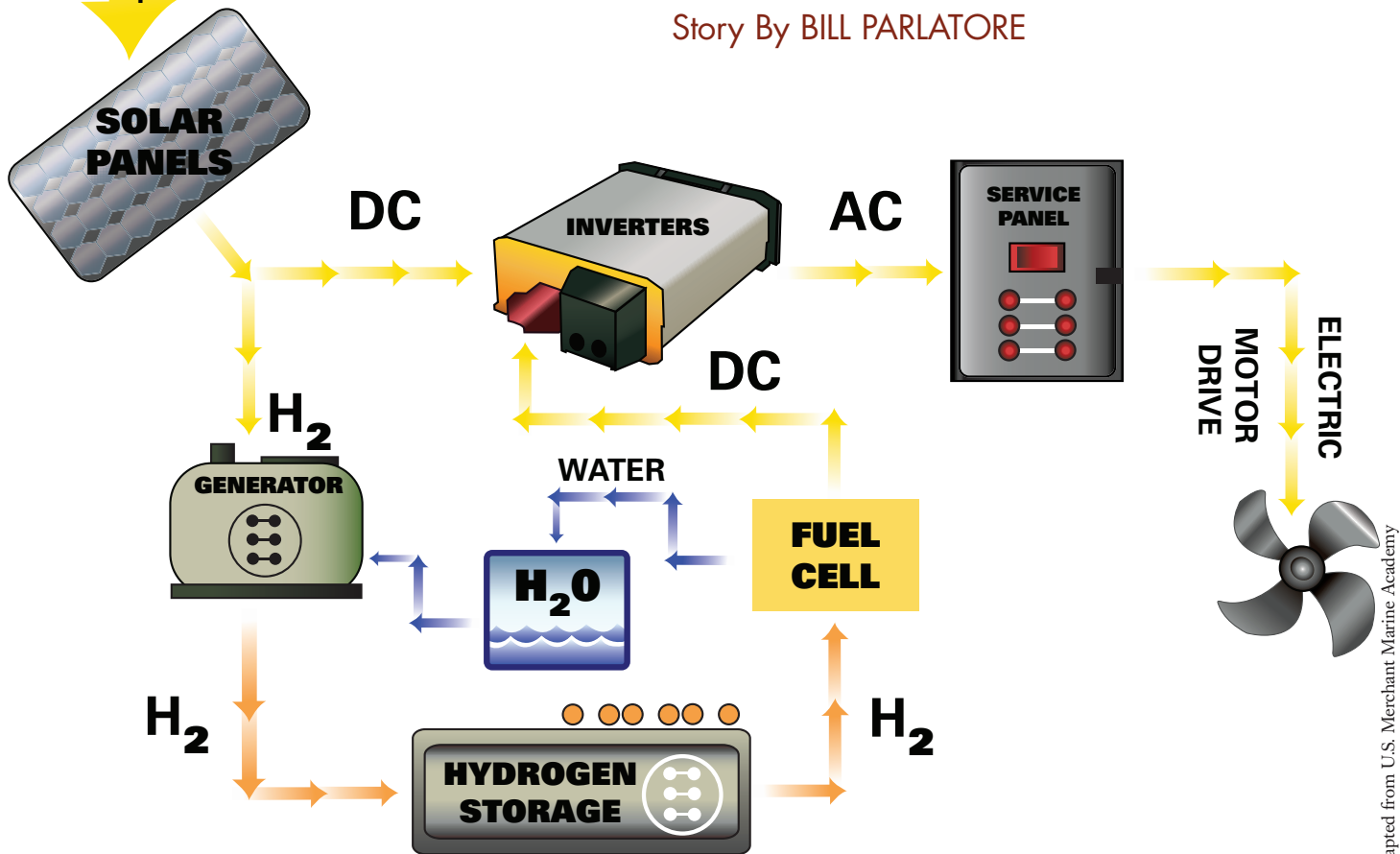


SUNLIGHT

A Green SILVER BULLET?

THE QUEST FOR SUSTAINABLE ALTERNATIVES

Story By BILL PARLATORE



Adapted from U.S. Merchant Marine Academy

With oil approaching \$100 a barrel and with instability in the regions from which much of it comes, I often wonder what the future holds for us. It is a simple fact that oil is an integral part of our way of life, and we pay a price for such dependency.

And that price is rising.

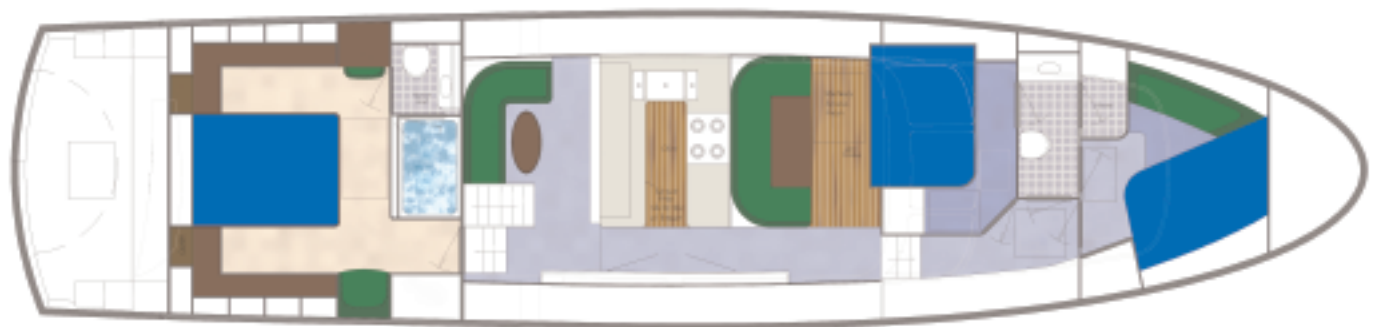
I'll leave conspiracy theories aside for the moment, beyond a comment that one would have to be daft not to see that dictators, kings, countries, and corporations will move mountains to maintain control of this planet's lucrative oil industries.

Only recently have we witnessed serious attempts to

The concept of a renewable and complete energy system, as developed by the New York Institute of Technology and the U.S. Merchant Marine Academy at Kings Point, New York. There is much to drive research to find the silver bullet of non-oil-based energy.



Renderings courtesy Robb Ladd Yacht Design



Top: The totally “green” Independence Yacht is designed to look like many other cruising boats, with all the usual amenities and comforts. Above: The slender interior features a large master stateroom aft, guest accommodations forward, and a central galley.

find alternative energy sources. The hybrid car is now considered almost mainstream, and in certain parts of the United States, wind and solar energy play a much bigger part in supplying the grid with power.

Among those in the trawler community, there hasn't been much development in this arena, although that is also changing. This year Reuben Trane hopes to launch a successful hybrid Island Pilot cruising cat that runs on solar and diesel-electric power.

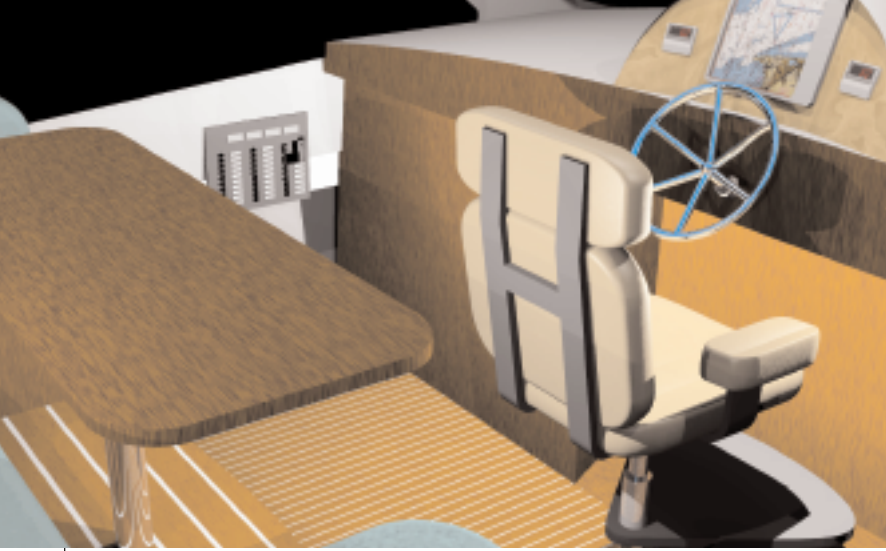
John Hayes built the small electric *Greenhorn* (PMM June '07) and has plans for a larger, more capable electric tug, *Greenhorn II*, that will be closer to 28 feet overall and will have more accommodations. I hope John will let us follow that project, as it's a fine example of an attempt to create an alternative cruising boat offering economy, comfort, and more range than the early electric boats.

Now enter Fred Berry and John Mann, two technical

guys who clearly aim higher than most other folks who are taking on such projects. Fred and John envision a luxurious trawler yacht whose systems are completely sustainable using renewable energy, unlike the basic battery-driven electric boat, which is plugged into the grid when docked. The two plan to build the Independence Yacht, a totally “green” yacht, using technology that is already out there in other applications.

The 60-foot displacement trawler, designed by Robb Ladd Yacht Design, will have a three-stateroom layout and all creature comforts and will be built of recycled aluminum. Initial specs include a beam of 14 feet, a draft of 4 feet, and a displacement of 61,000 lb. With no fuel tanks, the boat will carry 200 gallons of water, and tanks for both gray and black water.

What is most interesting is that Fred Berry, a former Navy nuclear submarine officer, wants to create a



heat is removed. Metal hydrides can store hydrogen compactly and safely—and indefinitely.

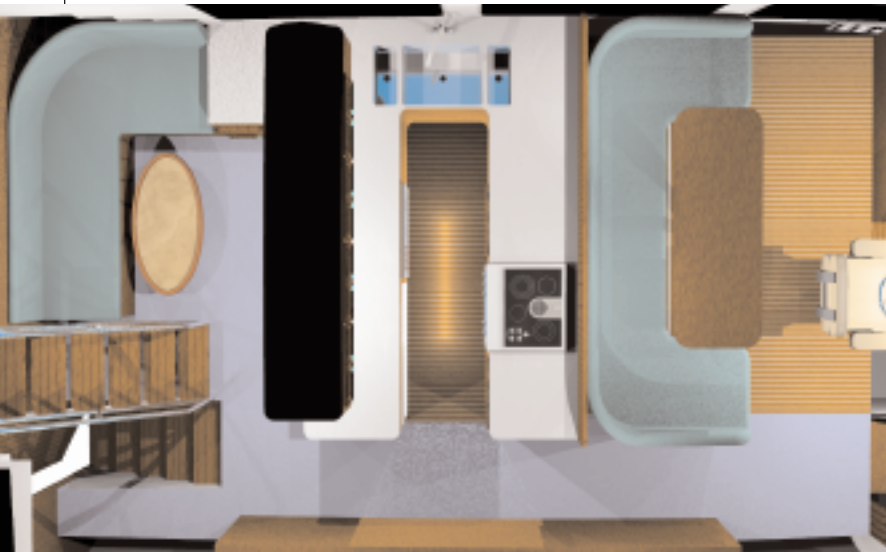
Adding heat to the metal hydride releases the hydrogen, which is combined with oxygen within a fuel cell to produce electricity and water. The water is used back in the electrolysis process.

The electricity from the fuel cell will be used to meet DC electrical demands on the boat. Or it will be routed through a controller and inverter to supply AC electricity for other house needs and to power a pair of 100hp electric motors in azimuthing pods.

The initial engineering estimates for the Independence Yacht indicate a top speed of 13.5 knots, with a cruising speed of 8 knots and a range of 600 nautical miles. At 6 knots, range increases to 1,200 nautical miles.

Fred Berry and John Mann hope to make this concept boat a reality, and they are looking for the right builder and financing to move the project forward. The boat's cost is expected to be comparable to that of a traditional 60-foot displacement trawler.

With such projects as the Independence



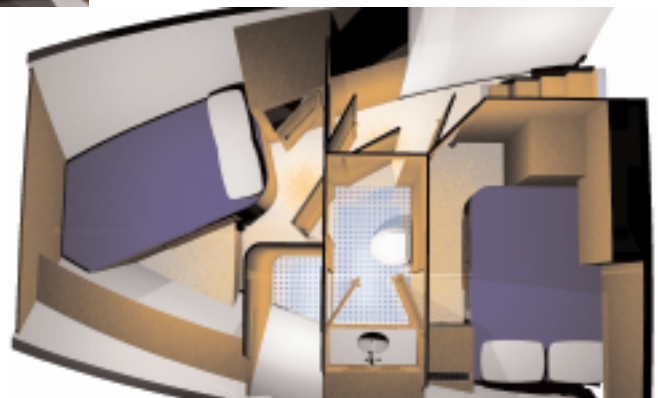
Details of the Robb Ladd design show a suitable helm station, with a large settee behind, just forward of the U-shaped galley. Efficient use of space and a simple interior help to maximize the energy needs of the yacht.

competent cruising boat that uses no fossil fuel whatsoever and produces zero emissions.

The idea for the design came to him several years ago when he noticed that rising fuel costs were keeping owners from using their boats. With his engineering background and nuclear experience, he reasoned it was time to incorporate new power sources and new technology into cruising boats. He feels the goal is within range.

The concept is not complex. A large array of solar panels sits atop the Independence Yacht and collects energy from sunlight, which then directly powers a hydrogen generator, through electrolysis, to separate hydrogen from oxygen in water.

The hydrogen gas is then stored in the boat, but not as compressed gas in large tanks. Instead, hydrogen is stored at low pressure by a substance called a metal hydride, a special alloy that absorbs hydrogen gas as



Renderings courtesy Robb Ladd Yacht Design

This rendering shows the guest accommodations. The forward space could be adapted to fit the owner's needs.

Yacht, it seems we may be close to that point where technology proves to be the silver bullet of alternative energy in powerboating. Maybe, just maybe, the time has arrived for sustainable and renewable energy to power a comfortable, capable trawler where camping is not an option.

Check Independence Yacht's website, www.independencegreenyachts.com for more information.