

# Sunny Side Up



The 40-foot Island Pilot DSe Hybrid can cruise without burning a drop of fuel just by catching some rays.

BY JOHN CLEMANS  
PHOTOGRAPHY BY JIM RAYCROFT



**W**hen Simon and Garfunkel chose an extreme oxymoron — “The Sounds of Silence” — as the title for one of the most celebrated songs in 1964, it’s safe to say being under way in a 40-foot motoryacht was not their inspiration. But that cliché is what came to mind as I stared at my decibel meter aboard the Island Pilot DSe Hybrid in the Florida Keys. It read 59 decibels as we motored along at 5 knots. If this sounds appealing, then Reuben Trane has a boat for you. (The Island Pilot was one of our Best of the Year winners in February.)

There’s no disguising the fundamentals of the Island Pilot DSe (diesel solar electric) Hybrid 12m. Its appearance can be summed up as “all roof.” Much as an aircraft carrier, which it vaguely resembles, can be said to be “all deck.” Almost 90 percent, roughly 850 square feet, of its skyward-facing surface is comprised of shiny, black solar panels. The solar panels are installed everywhere except the side decks and a foredeck just big enough for a couple of chaise longues, in which Reuben, the president of Island Pilot, and his wife Cheryl sat as I parked my car next to the dock outside their Ocean Reef Club home in Key Largo for a spin on Reuben’s new brainchild.

The DSe I tested that day remains unchanged in most respects. However, instead of being electrically powered by a bevy of AGM lead batteries, as hull number one was, future DSeS will rely on lithium ion batteries — cell phone batteries on steroids — that will increase its capacity four-fold. So, instead of having a continuous range of 25 to 30 miles without a break for a sunbath or a charge from a fossil fuel engine, it will have a range of over 100 miles,



**FIRST RATE.** The DSe’s interior is bright and light, particularly the salon (top) and the master stateroom in the bow (above).

which, to my mind, increases its appeal dramatically.

Just what is the appeal of a \$650,000 battery-powered motoryacht with a top speed of 6 knots? To begin with, there’s that sweet silence (don’t they say it’s golden?) that must be experienced to be fully appreciated. Secondly,

top speed is actually 8.5 knots, because batteries aren’t the only power source in the twin sponsons of this slippery-hulled catamaran. Each sponson houses a 75 hp Steyr diesel engine. Most significantly, however, the answer is contained in a single word: lifestyle.

Naval architect George Petrie, designer of the DSe, describes the life of leisure it offers as akin to that of a vagabond sailor. “But one who has access to all the comforts of home,” he adds. Indeed, it’s hard to imagine a more comfortable 40-footer. It has five air conditioners for a total of 48,000 BTUs. Both its stove and fridge are state-of-the-art. (The stovetop doesn’t even get hot, yet it cooks fast.) Of course, because they are fueled utilizing solar power, you can avail yourself of these amenities without firing up a smelly, noisy genset or having to plug into shore power. One last luxury: You can drive from bed.



**LOOKING UP.** The solar panels on the roof provide enough power to run the boat.

Using the remote control that reaches all over the boat, you can pretty much drive from anywhere. The master queen berth faces forward at the front end of the main deck’s living quarters, separated from the salon by a pocket door and a big bi-fold window. The visibility ahead of the boat is actually better from there than from the pilothouse. A big TV swings down from the headliner if you get bored with the view. If you get bored with your bedmate, the DSe is ready-made to satisfy a

50-50 prenup. If you sliced it down the center, both spouses would get essentially the same things — the same bank of batteries, same Steyr diesel. One would wind up with the hot water heater and the dinghy’s electric outboard, while the other would get the washer/dryer and the Segway that comes with every boat. One would get

## ISLAND PILOT HYBRID

### SPECIFICATIONS

**LOA:** 39’6”

**Beam:** 17’

**Draft:** 2’2”

**Disp.:** 16,000 lbs.

**Fuel:** 120 gals.

**Water:** 120 gals.

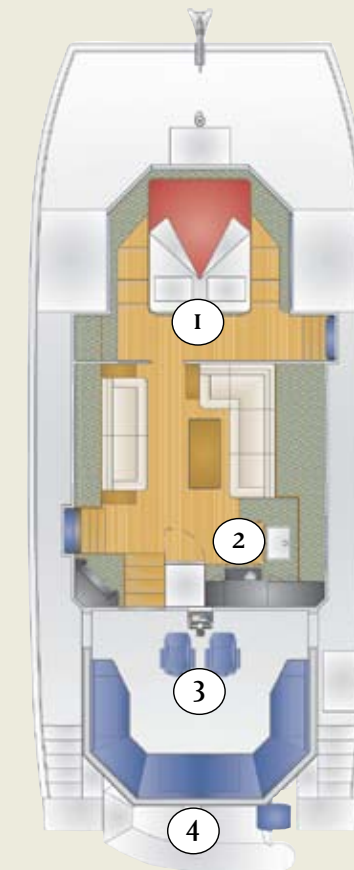
**Contact:** Island Pilot, [dsehybrid.com](http://dsehybrid.com)

**Price:** \$649,500

### PERFORMANCE

**TEST POWER:** (2) 75 hp Steyr Hybrid diesels; (2) Ossa Powerlite 25 kW generators; (2) 36 hp Ossa Powerlite electric motors. Speeds measured by GPS in Card Sound off Key Largo, Florida, with three people aboard, full fuel and full water. Fuel flow measured by Steyr instrumentation. Sound levels measured at the helm in dB-A.

RPM	KNOTS	GPH	DBA
700	3.0	0.4	58
900	3.5	0.6	59
1,200	4.5	1.0	60
1,500	5.5	1.6	62
1,800	6.5	2.2	63
2,100	7.4	3.0	65
2,400	7.7	4.8	66
2,700	7.9	7.0	67
3,050	8.5	10.6	68



**INSIDE:** ① A cherry-wrapped master stateroom with a large walk-around berth and lots of storage; with the remote, you can drive from bed. ② In the galley, even the fridge and stove use cutting-edge technology. ③ Vast extra storage space for cruising/dry goods under the helm. ④ Walk-through in center of transom for easy boarding. Wide side decks make going forward safe and easy.

#### PROS:

- Ease of operation.
- Quietest motoryacht in the world.
- Most economical motoryacht in the world.
- You can drive from bed.
- Luxurious interior for living and entertaining.
- Huge pilothouse seats almost a dozen.
- Base price includes all the bells and whistles.

#### CONS:

- Wind can affect maneuvering under battery power.
- Solar power not useful in cloudy and rainy weather.



**CENTRAL CONTROL.** The Island Pilot DSe's super-clean helm (above); Reuben and Cheryl Trane in the comfortable twin helm chairs (below).

the twin/queen guest stateroom and head, while the other would get the master head — huge, and loaded with storage space, but long and skinny.

And we're off! I thought we had simply drifted away from the dock. That's the sensation the DSe provides — fast drifting. We were making 4 knots as Reuben checked the sun's intensity with his solar meter. It was six out of a possible 10. "A perfect November day," says Reuben. As the boat's batteries were fully charged, he figured we could continue on in utter silence for 10 hours (if the sun stayed out) before having to stop for a day or two to recharge the batteries. "We're using 30 amps and generating 20 amps of the same voltage off the roof," Reuben says. "The boat is using 500 watt hours right now."

"Uh-huh," I reply. That's as far as I want to take that conversation.

"Of course, if we went slowly enough we'd be in equilibrium and wouldn't be draining the batteries at all," says Reuben. In other words, there is a speed at which we could go forever if the clouds cooperated, making the DSe the most economical powerboat under the sun.

Despite the complexity of its electrical network, it's one of the easiest boats to operate. Switching from solar to diesel power is as challenging as flipping a light switch. Operation is truly seamless for the owner. When you plug in at the dock, shore power charging starts, augmenting any solar charge. When you start a diesel, charging starts, also augmenting the solar charge. When you're anchored with no diesel running, charging is done by the solar array. It's all very simple. The steering wheel is extraneous, as a steering knob controls the boat, which can be reached from either helm chair (actually, plush sports-car seats) and interfaced with the autopilot.

Your only decision is which mode to choose. You can



ABOVE: JOHN CLEMANS

run on both diesels for maximum speed and maximum charge; or you can run in the "serial hybrid" mode, which is with one diesel-powered prop and one electrically powered prop, to get good speed and good charging with a minimum of noise and engine hours. Then there's the genset mode, in which both engines are run as generators in neutral, and, finally, pure solar for zero emissions. If you run in the one-diesel/one-electric mode you can increase mileage by about 20 percent over pure diesel drive at the same speed. This would be the preferred mode if you want moderate speeds — 5 or 6 knots, say — for longer periods of time, such as when crossing the Gulf Stream to the Bahamas.

The idea behind the Island Pilot DSe was simple enough. "About three years ago," says Reuben, "we were looking at making a larger version of our Island Pilot 395, and we sketched out a bigger version, a 495. That's when fuel

## Behind the Green Curtain

Hybrid propulsion can be described in a single word: synergy. All of the components on the Island Pilot DSe Hybrid — including the diesel engines, electric motor/generator, battery bank, solar panels and wind generators — are off-the-shelf items. Bundled together, their whole is greater than the sum of the individual parts.

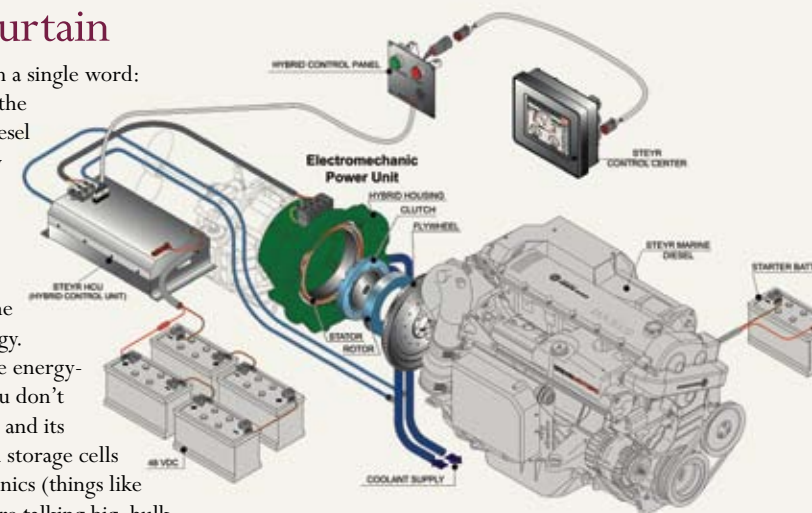
The heart and soul of this new machine are its lithium-ion batteries that store energy. Li-ion chemistry is known for its favorable energy-to-weight ratio, its no-memory effect (you don't have to fully discharge before recharging) and its slow loss of charge when dormant. Li-ion storage cells are commonly found in consumer electronics (things like cell phones). On the Island Pilot DSe we're talking big, hulking batteries rated 200 amp hours each — think 18-wheeler truck batteries. For its part, the DSe has six batteries in all, with three in each of the two banks. They total 1,200 amp hours, or about 60 kW hours of storage. That's massive.

During daylight hours the batteries are charged by 3.5 kW worth of solar panels, which is about as much power as you'd get from a small gas or diesel electrical generator. On a bright, sunny day, there's enough wattage to push the boat at nearly 5 knots using absolutely no fossil fuel and producing absolutely no exhaust emissions — now that's green. You also can think of the solar array that takes up the entire roof as a miserly genset that makes not a single decibel's worth of noise. When the boat is running on the electric motors, all you hear is the faint murmuring of wind and water.

Also on the roof is a pair of 1.5 kW wind generators that make volts in winds as low as 8 mph and cut out at 56 mph. These are vertical axis wind turbines, as opposed to what you're used to seeing on cruising sailboats. Highly efficient, they don't have to hunt for the wind. As long as the wind is

prices were really high. So instead of building more of the same, we felt a responsibility to offer a viable alternative so people would not have to give up comfortable cruising, but they would not have to use umpteen gallons of fossil fuel to do it." Reuben and Petrie soon realized they needed a multi-hulled boat for minimal wetted surface, with a fine entry and fine exit, and developed models for tank testing. The solar technology already existed, but they had a breakthrough more than a year ago when they teamed up with Steyr motors. "The Steyrs were more 'normal' than anything else," says Reuben. "It's a system with two diesels that hook up to two props and two electrical motors that hook up to two props — pretty simple."

Now the challenge is finding the right market. "The best use of the boat is not as a weekend cruiser, where time is limited," Reuben says. "It's best as a live-aboard cruiser where you go to Key West, the Bahamas, the Caribbean or the Chesapeake and drop the hook and stay a while. You



blowing, day or night, the turbines spin straw into gold.

But what happens when the sun isn't shining or when you can't catch a breeze? On those days there's a fossil fuel option. The twin 75 hp hybrid diesels from Steyr Motors generate 100 amps each (above). With the diesels running you can move the boat and charge the batteries at the same time, or run them like a genset and just charge the batteries.

Whether electricity is generated by the sun, wind or by fossil fuel, the boat's battery management system, replete with color touch screen, controls the flow of current into the batteries. This virtually runs itself; all you need to do is choose diesel or electric propulsion and flip a switch.

Finally, there's one more option that makes the DSe truly a universal boat. If you're at the dock and plugged into shore power, twin 95-amp chargers can draw from either U.S. 60 Hz or European 50 Hz and not only charge the battery bank but also isolate the shore power by routing it through an inverter. That cleans up the sine wave, assuring constant voltage and frequency. In other words, no fried electronics. — Tim Banse

move the boat 15 or 20 miles, and you relax. You really don't want to be planning one long run after another; it's not that kind of boat." In short, the DSe is not like other boats. It shows what can be done by a builder with an idea and a commitment to change. With the Island Pilot DSe, you become part of the solution, not part of the problem. And you're not burning fossil fuels, leaving emissions or supporting OPEC. You can relax.

By adapting an idea aimed at runabouts on European lakes, where there are severe noise restrictions around marinas, Reuben and Petrie have added an entirely new category to the cruising and live-aboard lifestyles — that of not only following the sun, but of also using it to purify the boating experience by bringing it as closely in tune with nature as possible. ❖

➤ **ONLINE EXCLUSIVE.** Check out additional photos of the Island Pilot DSe Hybrid 12m at our website, [motorboating.com](http://motorboating.com).