PMY
POWER & MOTORYACHT
ELECTRONICALLY REPRINTED FROM JUNE 2011

2011 ENGINES REVIEW
OUTBOARD
TWIN DISC
POD DRIVES
CATALYST

MASTER OF MANEUVERABILITY

Twin Disc's new joystick-control system may give those pod drives a run for their money

TEXT BY CAPT. BILL PIKE PHOTOS BY JEFFERY SALTER

Let's begin this treatise on maneuverability on a historical note—or rather two of them. The first dates back to an enjoyable dinner I had with Bill Barry-Cotter in Australia several years ago. Barry-Cotter, of course, is an Aussie boat racer, builder, and designer and the guy who founded Riviera Yachts in 1980 and then in 2003, Maritimo. Far from a hands-off, besuited, desk jockey, Barry-Cotter's the kind of guy you see in blue jeans and a plaid shirt working on the shop floor alongside his employees — or climbing into the cockpit of a 150-mph, dual Lamborghini-powered offshore catamaran.

I asked him, over postprandial coffee, "So Bill, whataya think o' pod-type propulsion?"

"You won't see it in Maritimo's bigger boats," he briskly replied. "It doesn't make sense for us. We've done loads of testing with pods so far and, primarily because our big-boat hulls are quite efficient to begin with, we don't think substituting pods for angled-shaft inboards—and redesigning everything to accommodate the substitution—is going to significantly increase our operating efficiencies or offer any other real advantages."

"But what about joystick maneuverability—it's the coming thing," I persisted.

A smile came to Barry-Cotter's face, as faint as it was hermetic. Did he have something up that plaid sleeve of his, something big, I wondered. "We'll see," he said inscrutably.

The second historical note dates back to yet another enjoyable dinner. This one took place two years ago at the Fort Lauderdale International Boat Show and featured Barry-Cotter's right-hand man, Martin Lewis. At some point in the festivities after I'd voiced my admiration for the maneuvering capabilities of offshore oilfield vessels with dynamic-positioning computers, angled-shaft inboard propulsion, and hydraulic thrusters, Lewis whipped out a business card with a telephone number on the back. Calling that number ultimately got me an exclusive first look at an experimental vessel that both he and his boss were very excited about.

The vessel turned out to be a 47-foot sportfisherman hidden in a little marina on the outskirts of Fort Lauderdale, a joint venture between Maritimo and Twin Disc, the U.S. purveyor of transmissions and other gear. I discovered that while she had conventional angled-shaft inboards, the 47 also sported a radically new Twin Disc joystick control system that, according to the engineers I spoke to, went way beyond the capabilities of joystick-controlled pods.

JOYSTICK FEATURES

Right: There were three EJS control stations on our Maritimo 56, one topside at the helm, one in the cockpit, and a third on the "veranda" abaft the enclosed bridge, each with a Twin Disc joystick. **Below:** PMY Senior Editor Bill Pike takes advantage of the stowage console upon which the latter joystick is conveniently mounted. A super setup for a right-hander, it allowed Pike to back the boat down on a slip while remaining comfortably seated.

2011

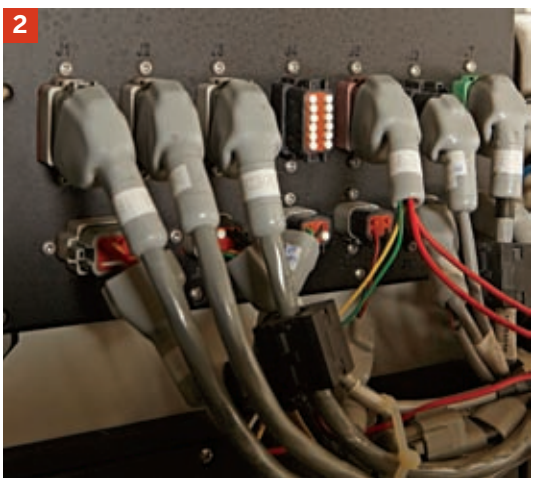
ENGINES REVIEW

OUTBOARD
TWIN DISC
POD DRIVES
CATALYST

Top to Bottom:
1. The Maritimo 56 emphasizes comfort and cruisability. With 775-mhp Volvo D12-800 diesels, she reportedly does a top speed in the mid-30s.
2. A black-box computer is an important component of EJS technology—the 56's black box is mounted on her engine room's forward firewall.

After joysticking the boat for two hours—backing into slips, doing 360s, and moving both sideways and diagonally—I was ninety-nine-percent sure that those engineers were right and wrote a story to that effect ("Game Changer?" *PMY* January 2010) laced with only a few reservations based on the 47's experimental nature.

Dinners with builders may offer entrées into new technologies but in the end, the test of any new technology is real-world experience. And just a few weeks ago, as if to bolster the truth of this apothegm, Lady Luck handed me a new Maritimo 56 that had been recently purchased by a Canadian couple and outfitted with a production verssion of that same Twin Disc control I'd seen two years before, now dubbed the Express Joystick System® or EJS™.



It turned out that this version of the system was just as smooth and seamless as its experimental predecessor. Because Twin Disc's QuickShift® transmissions—which, with an EC300 Power Commander engine control, black-box computer, and BCS hydraulic thrusters, comprise the whole the EJS package—produce instantaneous, proportionally adjustable clutch loading, they allow even radical joystick-actuated changes to prop speed and direction that are millisecond-fast and mechanically positive. Joysticking the 56 had a shockless, uninterrupted feel— no lurching, lugging, or clunking. While backing down on a slip in 15-knot gusts, I was able to instantaneously and seamlessly adjust prop speed from full-tilt to zip (Twin Disc reports a mindboggling minimum shaft speed of 50 rpm) while perfectly maintaining my lineup. And all the while the engines purred a barely audible 1000-rpm maneuvering hum as the QuickShifts did all the work.

The calm that EJS engenders was also the same. Because the system owes its maneuverability to big, proportionally controlled props, proportionally controlled hydraulic thrusters, and engines that maintain low steady revs during system operation, the maneuvering qualities that often characterize pods—turbulence, major changes in engine pitch, and side-to-side lurching—are virtually absent. Walking the 56 into the gusts at full power felt about as dramatic and stressful as a nap.

Then there's the leverage factor. Just days before going aboard the 56, I'd had the opportunity to back a fairly light, mid-range cruiser with pods into a slip with a sporty 20-knot crosswind blowing. Completing the maneuver took several tries, mostly because of the bow's unmanageable tendency to blow down-wind. The 56, on the other hand, behaved with complete composure under similar circumstances because thanks to the powerful BCS hydraulic bow thruster, her props were not obliged to leverage the entire vessel from the stern as they are with a pod system. In fact, her bow needed no leveraging at all.

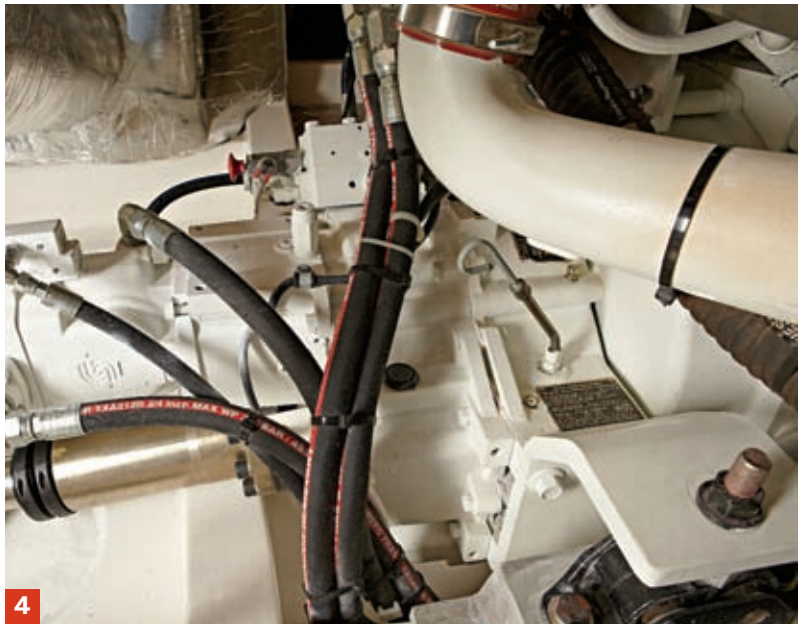
So what about cost? Are we talking super-expensive here? Maritimo USA president Dave Northrup says Maritimo is currently offering EJS on all QuickShift-equipped, angled-shaft inboard models 50 feet and above for an upcharge of approximately $40,000. The company will continue to offer pods on models below 50 feet,

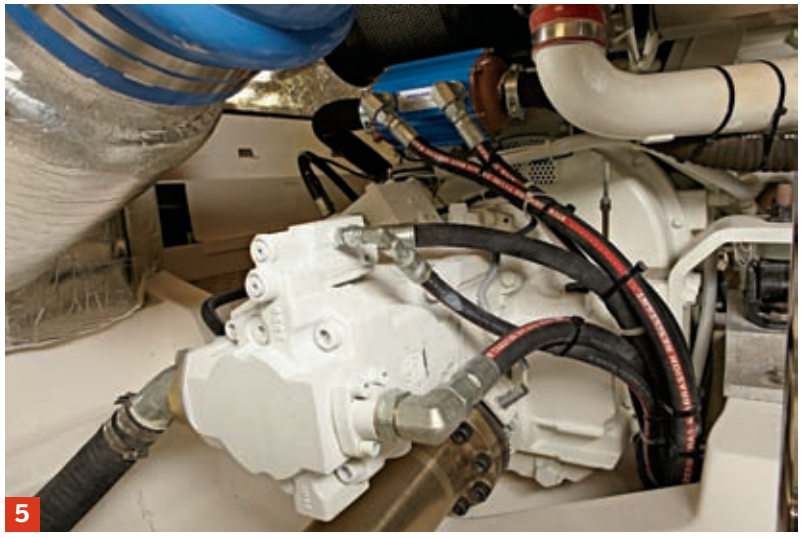
Northrup says, to satisfy customer demand and take advantage of the extra interior volume that pods can provide, especially in smaller boats.

How does EJS stack up against pods money-wise? "An EJS boat is going to cost roughly the same as a pod-type, all things considered," Northrup explains. "Moreover, we figure the cost of routine maintenance on a conventional inboard with EJS is going to be about 15 percent less. The spread for damage-related and/or mechanical repairs, however, is going to be even more significant, with EJS coming in three to five times less than pods. That's the latest from my dealers and service people at any rate." PMY

Top to Bottom: 3. Note that EJS does not preclude operating an inboard-powered boat in a conventional manner, i.e., with independently operating engine-control levers and thruster controls. **4.** A key EJS component is Twin Disc's QuickShift transmission. **5.** Power-takeoff units on both of the 56's QuickShifts actuate the boat's powerful, proportionally-controlled, hydraulic BCS thrusters, fore and aft.


3


4


5