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WHAT WOMEN REALLY
THINK ABOUT BOATS**







BOAT TEST NO. 343

TEMPEST 44

Caution: This boat could be X-rated. Use by anyone under 18 years of age would be a waste.

BY RICHARD THIEL

There are times when I think I'm too old for this job. Like when some hotdog takes me for a ride in his brand-new raceboat and the chop is doing its best to jam my football-ravaged knees into my hip joints.

Then there are times when I feel too young to be loafing along at 27 knots in the splendid isolation of some gilded sportfisherman, so far removed from sensations of wind and water—much less speed—that I positively nod off.

Like a lot of boatmen, I want that rush of speed without all the palpitations that go with it. And like a lot of boatmen, I long to break that magical 30-knot barrier and still keep the cushy ride, the plush interior, and the option of fishing if I choose. I don't want to be lulled to sleep on a passage to Bimini, but neither do I want to forego that possibility.

Recognizing those desires is what brought Dick Simon (chairman of the board) and Adam Erdberg (president, and chief designer) of Florida-based Tempest Marine to design the Tempest 44. In it they've blended a true deep-V hull (25' of deadrise at the transom) with a waterline capable of spanning most seas, efficient diesel power (twin 355-hp 3208TA Caterpillars), specially designed and fabricated "T-Torque" surfacing drives (see page 71), and an interior that comes with everything from bidet to crystal.

The result is a Cleopatra's Barge that can nudge 50 mph and do it in conditions that would make most sportfishermen and cruisers throttle back to a crawl. In short, an adult sportboat.

Sultan of Swat

My introduction to the 44 occurred on a choppy intra-coastal in Florida with a brisk 15- to 20-knot breeze on the beam. The long, narrow hull displayed a classic deep-V tendency to wander, particularly in the mid-range speeds. Most yawing could be trimmed out, but too much tab would override the rudders.

Riviera model (foreground) and Sportfish make tracks. Note splash standing bolsters, tower on fishboat, radar arch on Riviera. In both, Caterpillar 3208TAs provide power. Detailing is clean, construction beefy.

PHOTOGRAPH BY ROY ATTAWAY

TEMPEST 44

Nothing unsafe, but a real attention-getter.

The ride on the Waterway revealed interesting characteristics about the T-Torque Drives and Tempest's steering system as well. I enjoyed the drive system because of its excellent low-speed maneuverability (particularly compared with other surfacing drives), it's good response to helm and throttle, and the fact that it leaves mind and hand free to worry about things other than drive trim. But I found such luxury has its price.

In the T-Torque, shafts are fixed and hold about nine degrees of down-angle, ideal for running but not for getting up on plane. Unable to tack its drives in for optimum attack angle, the 44 requires a bit more throttle to get up on plane than other performance boats, in-

cluding the Cigarette 43 (see the test report elsewhere in this issue). It isn't what I consider a major fault, particularly in light of the system's advantages. And, once on plane, the drives are as effective as any I've seen. They throw a moderate cocurrent, and their high-aspect-ratio rudders react quickly to changes in helm. The turning radius is too large for close quarters, but I'm told that will be corrected on future boats.

The Tempest's steering is a hydraulic system by Charlynn that uses a "cushioning valve." It acts annoyingly like a ratchet, draws out feedback, and detracts from low-speed helm sensitivity. However, I eventually got used to its mushiness, and when I later ran the boat outside, I found it to be much better suited to high-speed work.

One other note regarding the steering system: Tempest is one of the few manufacturers offering optional dual power-steering pumps, one per engine. Each pump works continuously and feeds a common priority valve. In the event of a failure, the valve automatically isolates the defective pump and draws from the functioning one. Thus the loss of a single pump (or engine) has no effect on steering.

Once our speed and fuel-flow testing was over, it was time to take the boat outside. Dick Simon was along for the ride. Halfway through the maniacal seas of Baker's Headover, I began to understand Simon's undiggessed enthusiasm. The Tempest 44 was born to serious offshore work. Her fine entry knifed the running six-footers nicely while the cockpit stayed dusty dry—surprising in view of the minimal flare forward.

The hull showed no excessive tenderness, and the harder she was pushed the more stable she became. Once again, the bow-wander showed itself as I brought both wind and sea on the beam, but this time I was ready. The 44's excellent tracking and a judicious use of tab overcame the veering.

Once out of the inlet, I nudged the throttles forward. Taking seas on all quarters, I began to appreciate the Charlynn steering. With no kick-back, the hull remained precisely where it was pointed and made maning in the chop not only bearable but downright relaxing. Clearly the steering, like the hull, was meant for high speeds offshore, not wimpy jogs down the Waterway.

Preliminaries over, the throttles went to the firewall. The Cats responded admirably, almost (but not quite) like a pair of big gas engines. They were obviously assisted by the drives, which allowed them to reach full speed (2900 rpm) noticeably quicker than normal. The drives also made the task of on- and off-throttling in a diesel much easier and closer to the feel of a gas boat. I found myself in very sloppy conditions, yet relaxed, dry, and comfortable.

It wasn't long before I had the 44 leaping swells. *Continued on page 124*

PROPULSION AND PERFORMANCE: Tempest 44 Rivalry

Standard power: twin 340-hp MerCruiser gasoline V-8 inboards.

Power options: twin 370-hp MerCruiser gasoline V-8 inboards; twin 400-hp MerCruiser gasoline V-8 inboards; twin 430-hp MerCruiser gasoline V-8 inboards; twin 300-hp Caterpillar V-8 diesel inboards; twin 355-hp Caterpillar V-8 diesel inboards.

Test boat power: twin 355-hp Caterpillar 3208TA V-8 diesel inboards (dual surfacing drives, turbocharged, intercooled, with 9.56 cu. ft. displacement, 4.50" bore x 5.00" stroke, swinging propellers of undigested size and pitch through 1:1.1 reduction gears).

rpm	knots	mpg	% of top speed	% of fuel use	fuel, mpg	mpg	n. mi. range	angle	noise	
900	7.8	9.0	18	5.2	13	5.6	1.7	405	1.8	75
1100	8.7	10.0	21	7.0	17	5.2	1.4	339	2.8	81
1280	8.7	10.0	21	7.4	16	5.1	1.3	297	2.5	83
1500	9.1	10.5	22	8.6	21	5.0	1.2	270	3.0	84
1700	9.6	11.0	23	9.8	24	5.0	1.2	270	3.0	84
1900	10.2	14.0	30	14.4	35	5.9	1.0	243	4.0	85
2100	14.8	17.0	36	17.8	44	5.8	0.9	218	4.5	86
2300	24.3	20.0	60	23.2	57	5.0	1.0	270	5.0	92
2500	32.0	28.0	81	29.2	71	5.1	1.0	297	4.5	92
2700	37.8	42.0	93	35.2	86	5.1	1.0	297	4.0	95
2900	40.8	47.0	100	40.8	100	5.0	1.0	270	3.5	98

Adjusted fuel capacity: 500 gal. Range based on 90% of full figure. Performance measured with three persons aboard: mast fuel, half-water, minimal gear. Sound levels (9000 ft.) at 100 ft. A.

SPEED & FUEL vs. RPM



SPEED vs. FUEL



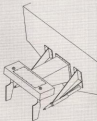


Tempest's interior glitters with bright metalwork, cool fabrics. Comforts include head with standard bidet. Lounge area makes into a berth, adding to aft space's function. V-berth is forward. Instrument panel (left) has high-tech alarm system that includes visual indicators on boat's diagrams.

TECH HIGHLIGHTS: THE T-TORQUE DRIVE

When Dick Simon decided to build the Tempest 44 he had specific, demanding goals. The boat had to be fast, yet maintain good cruising range. It had to have excellent maneuverability at all speeds. Low maintenance was important. Finally, he was fanatical about reliability. He knew of too many performance boats that spent more time in the shop than on the water. He demanded that hull, engines, and drives be impregnable.

Adam Erdberg, Tempest's engineering wizard, took care of the hull, and Caterpillar took care of the engines. But what about the drives? Although Simon wanted surfacing units, he worried about the massive torque of the Cats. He also wanted a boat that could



be left in salt water without electrolyzing, a problem for drives using dissimilar metals.

The first 44s were built with Amazon drives modified by Second Effort. They were okay, but Simon and Erdberg longed for something less complex—a design that would give them speed, maneuverability, and durability. Most of all, they wanted total control over the drive's design and manufacture. They wanted it to be their drive, designed for their boat.

Erdberg started tinkering. His experience during his time with the Israeli Navy and Bertram Yacht had left him with an obsession for economy and simplicity. He designed a driveshaft that was one-
(continued on page 126)

occasionally leaving the water completely. In a boat this big and heavy, it was an eerie sensation, yet odder of all was the feeling of her 16,000 pounds settling softly yet solidly back into the water, ready for the next wave. Not only did the hull feel strong and tight, it sounded that way. There was no persistent crackle or slamming of liner or cabinetry.

Built-In Beef

The hull is conservatively designed and built. It's based on the famous Gurnee raceboat, Copper Kettle, and uses four pairs of narrow stringers to help with lift and minimize wetted surface. Each stringer is filled with microballoons and covered with three layers of glass laminate for stiffness.

Three longitudinal stringers are used: balsa-cored material forward of the engine room, solid plywood where they will support the 2,000 pounds of each Cat. All stringers are covered and laminated to the hull with continuous layers of mat and roving.

Five main bulkheads, including a forward collision bulkhead, are of marine plywood and are glassed-in while the hull is in the mold by use of precision jigs. The interior liner, cockpit liner and deck—all of Klegecell core—are then glassed to hull and bulkheads.

Fuel and water tanks are mechanically fastened instead of foamed-in, as Erdberg feels foam tends to trap bilge water. Factory-installed engine mounting brackets are removed from the Cats, beefed up with extra gusseting, reinstalled, and attached to five mounts of Tempest's own design. All stringers in the engine room are capped with heavy copper foil for continuous bonding.

Ergonomics

Since the Tempest's hull and power systems make her a serious offshore tool, the cockpit and helm station naturally follow suit. All instruments are arrayed on a three-sided panel facing the helmsman. Atop this panel is the standard Danforth Consolidation compass, as well as owner-specified electronics. Trim tab indicators face the pilot directly ahead, and just below them are gauges for fuel and water.

On either side, angled at 45° toward the driver, are the gauges appropriate for the engine on that side. Sounds simple, but it's surprising how many builders scatter their gauges all over the panel with no logic.

All gauges are VDO, with four-inch faces (0-4,000) and smaller gauges for engine coolant temperature, gear-lube-oil pressure, engine-oil pressure, and voltmeter. Unfortunately, the two pressure gauges aren't labeled, which can lead to confusion when first taking the helm.



SPECIFICATIONS Tempest Riviera 44

LOA	44'8" (13.6m)
Beam	8'8" (2.6m)
Draft	3'2" (1.0m)
Displacement (bu.)	15,000 (dry)
Freeboard fwd.	39" (1.1m)
Freeboard aft	25" (0.7m)
Bridge clearance*	8'9" (2.7m)
Cabin headroom	6'5"
Fuel (gal.)	300
Water (gal.)	50

*Waterline is top of race arch.

Standard Equipment (major items): a.c./d.c. distribution panel; anchor and line; four maintenance-free heavy duty batteries; 40 amp battery charger; battery parallel switch; bilge and head blowers; sidet; holding-type MSD; three bilge pumps; bonding system; china, crystal and cutlery; compass; dock lines; emergency safety kit; dual horns; fresh water pressure system; fresh water tank (50 gal.) and gauge; fuel filters and separator; forward hatch; hydraulic engine hatch; power steering; one pair prop; forward SS deck rails; AC/DC refrigerator; sea strainers on all intakes; 30 amp shore power; AM/FM stereo cassette; 2 burner alcohol/110v stove; Tempest Warning System; tool kit; towers; twin control indicator; portable vacuum cleaner; six-gallon water heater w/ heat exchanger.

The horizontal surface directly forward of the helm station contains a series of color-coded buttons controlling engine ignition, blowers, horn, bilge pumps, lights, etc. Each is backlit when operating, a nice touch during night operation. To port are dual gear selectors and to starboard the throttle, both by Teleflex—silk smooth and placed with obvious concern for user-friendliness.

Also on this panel is the standard Tempest Safety Warning System. It consists of a diagram of the hull with a number of lights—some red, others green—located at various points. The green lights are lit to indicate each of the three bilge pumps is in the automatic mode.

When a red light is lit it means either high engine temperature, low engine lube-oil pressure, excessive water in one of the two Racor fuel/water separators, or more than eight inches of water in the bilge, depending on its location on the diagram. Any red light is accompanied by an audible alarm to attract the pilot's attention. The best warning system I've seen to date.

Tempest 44s come in three models, the Sport, the Sport Fish, and our top boat, the Riviera. Our model is the party boat, with expansive sunning areas on the raised deck ahead of the cockpit and on the engine cover directly abaft the control cockpit. Since the engines in the Riviera are moved forward from their location in the Sport, there is also seating all the way aft, available in either a double "L" or "U" configuration with a pedestal table in the center. (Walking aft means making a zig-zag series of movements past the helm seating and huge engine box.) If the owner wishes, the furniture can be quickly removed from this area and a fighting chair installed in the table's place.

Our boat also had the optional transom door. Directly forward of this cockpit/lounge area and just abaft the helm was another option, the wet bar with ice maker.

Extra Frills

Indeed, my major complaint about the 44 is its sparse standard equipment list. On an upscale boat like the Tempest, it's tough to imagine anyone taking delivery without air conditioning (\$4,200), generator (\$4,975), Halon system (\$1,700), ice-maker (\$1,100), swim platform (\$4,500), and ladder for the swim platform (\$695). A good argument could also be made for the microwave (\$1,000) and the radar arch (\$3,525), particularly the latter since it's so complimentary to the boat's styling.

If checking off options is your idea of fun, Tempest has a long list of useful (and some frivolous) choices that will whet your appetite. Among them: an au-

chor windlass, completely controllable from the helm; a programmable cabin lock; a remote-controlled searchlight for the well-dressed radar arch; a fold-down "Jeep" windscreen that can be raised for wind and spray protection; a transom shower to keep icky salt off the girls on the settee; and dual shore-power plugs (one on either side) with selector switch so those ugly yellow cords won't be snaked all over the deck.

As you can see, although the base price of the Riviera with 3208TAs is a mere \$205,000, the real bottom line is likely to be closer to \$260,000.

The interior? Well, to be kind, it's high-tech/modern. To be more frank, it's glitzy. Lots of mirrors, smoked lexan, and indirect lighting. Good accommodations, though, with a spacious V-berth right forward, circular settee in the dining area that also makes into a big berth, galley to starboard, and head to port with *non-optional* bidet. (Nice to see *something* is standard.) A Pioneer AM/FM cassette stereo is standard, with speakers in both cabin and cockpit controlled by a fader switch. Towels, crystal and sliver are also standard.

Nobody will ever confuse the interior of the Tempest 44 with that of a Hatteras, but then they're in different spheres. Let's face it; the 44 is made to haul off somewhere in lots of style with lots of comfort and lots of speed, tie up, and discharge passengers for the nearest Hilton. Any use belowdecks is likely to be confined to extracting liquid from the Norcold fridge and making quick snacks. Among other things.

If the Tempest 44 were a car, it would be a Mercedes Benz 500 SEC. Stylish with a capital "S" and luxurious. The optimal way to get from here to there in speed *and* comfort. Not designed for family outings or trips to the corner. Overbuilt with a vengeance. Reliable and fuel efficient. And great for picking up chicks.

Perfect for us adults. ⚓

TECH HIGHLIGHTS *continued from page 71*

piece from transmission to prop, feeling joints, drop-boxes, and gears to be potential stress and failure points. Shafts were designed to exit the transom at a nine-degree down-angle and were spaced 36 inches apart (compared to 19 inches on the Amesons) to improve the leverage of one prop against the other in low-speed maneuvering. After analyzing the 44's wake, props were positioned 32 inches abaft the transom (compared to 48 inches in the Amesons). In short, the T-Torque Drive fits like a glove.

Erdberg's design allowed for each 1 $\frac{3}{4}$ -inch solid stainless prop shaft to be supported at three points: at the transmission by a tapered coupling/flex mount attached to the output shaft, just inside the transom by a bearing lubricated by salt water pumped from the engine cooling circuit; and ahead of the prop by a cantilevered bracket fabricated of stainless steel, through-bolted to the transom, and supporting the shaft via a two-piece, water-lubricated cutless bearing.

So far, so good. But two sticky problems remained: location of the rudders and configuration of the trim tabs. First the rudders:

Initially, they put them on the outboard bottom edge of the transom. Sea trials showed this didn't work, because in hard turns the outboard rudder would lift out of the water, and its slipstream would ventilate the outboard prop. As an alternative, two rudders were mounted on the lower edge of the transom. Again, failure because the props were getting insufficient bite at low speed.

The solution was obvious to Erdberg: move the rudders directly abaft the propellers so they would always be in high-velocity water. This is the design fitted to our test boat, basically a prototype with rudder-support brackets bolted to the cantilevered prop shaft support brackets.

Fine-tuning remains to be done on the shape and size of the rudder foil, and the design of the rudder and prop support arms, but it's likely the final production version will resemble the rendering (page 71).


The second problem was trim tab configuration. With the drive stationary, it was no longer possible to use it to raise the bow. The only alternatives were to try running without such trim or fashion a "bi-plane" tab; that is, one

with a second plane that hangs below the transom, constantly in moving water. Such a tab would create force on either of its surfaces, much like an aircraft's horizontal stabilizer, and could force the bow either up or down.

Bi-plane units were fabricated and fitted, but results were disappointing. It was discovered that in heavy seas, the plane is never neutral; it constantly varies its angle of attack (and hence, boat trim) as the attitude of the hull changes.

Sea trials with conventional tabs have since convinced Erdberg and Simon that raising the bow is not necessary with the 44. Like the drive's inability to tuck under for optimum planing, it's a trade-off against a simpler (and more durable) system that compares with other drives in speed, yet can be maneuvered for docking and remain in salt water without fear of electrolysis.

Does the T-Torque Drive work? In my limited running I found no obvious faults.

As for increasing bow attitude, I found no need for it as the 44's running attitude seems fine for most offshore work. And I hate to admit it, but it's nice not to have to fiddle with drive trim.  —RICHARD THIEL