Hatteras 50

BY OLIVER MOORE

For fun or fishing, when perfection is only good enough.

If you think the value of the dollar has been tumbling, take a look at what has happened to status. Everywhere you turn the currency is being depreciated.

Such palaces of posh as Gucci have come down with a bad case of "Saturday Night Fever" as hordes of gum-snapping shopgirls fork over the equivalent of a week's wages for a pair of flimsy Italian shoes. Once exclusive watering holes like the Polo Lounge and 21 are jammed to overflowing with the seekers of the instant chic. Gone too is the Hackercraft, the Bugatti Royale.

But fortunately there are still some objects in this age of Gresham's Law that convey that indisputable *je ne sais quoi* to the few privileged to own them. And high in that pantheon of clout is a Hatteras Yacht.

The all-new Hatteras 50 is typical of the breed. An uncompromising boat for serious fishing and serious cruising. And, as befits a boat with a $400,000 price tag, it is built to the exacting philosophy that perfection is just good enough.

Planning for the 50 began three to four years ago when the company made the decision to build the 60 Convertible. After a lot of soul-searching, the decision was made to replace the highly popular but aging 53 Convertible, which was first introduced in 1969, with not one but two new boats—the 50 and the 55. As Hatteras president Dave Parker puts it: "It's very difficult to take one of your children and shoot it, but we felt it was time to incorporate everything we had learned and develop an all-new boat. If it was no easy decision to build a family of replacements, it does aptly demonstrate the wealth of resources at Hatteras' command.

From go-ahead to drawing board to launch is a long but fascinating process that demonstrates the depth of creative thinking that goes into the design of a major boat. It all begins with the engine. "You have to tune your design to the engines that are available or are going to be available," explains Parker.

In the case of the 50, design factors were influenced by the forthcoming availability of GM factory high-performance

Photograph by Bob Gelberg

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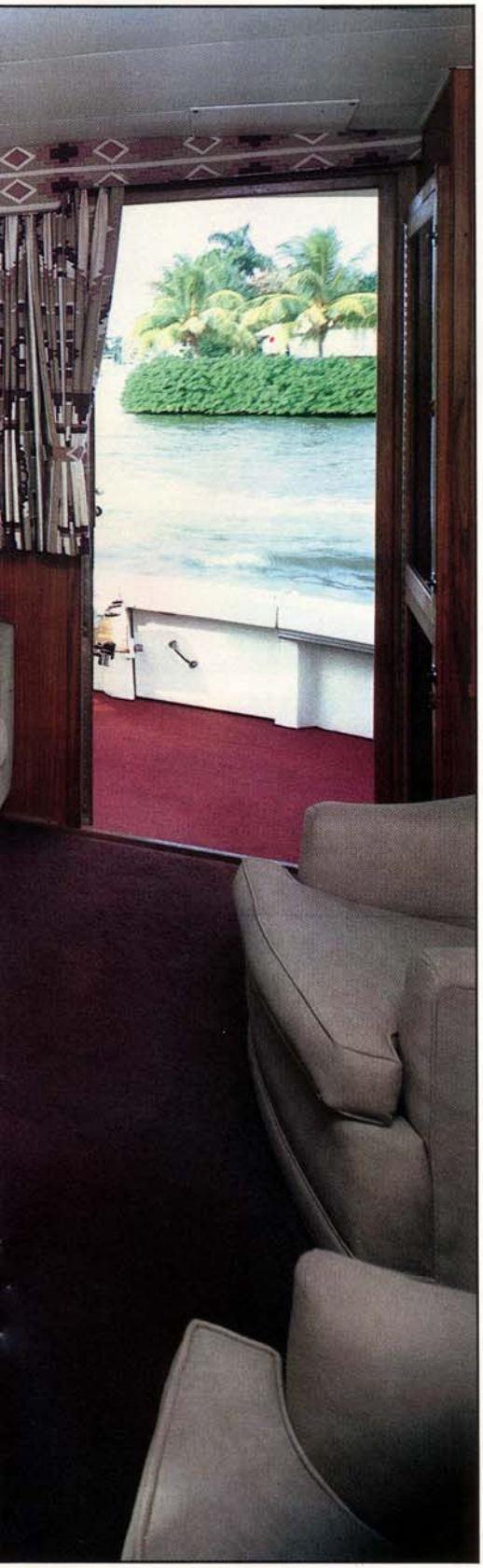
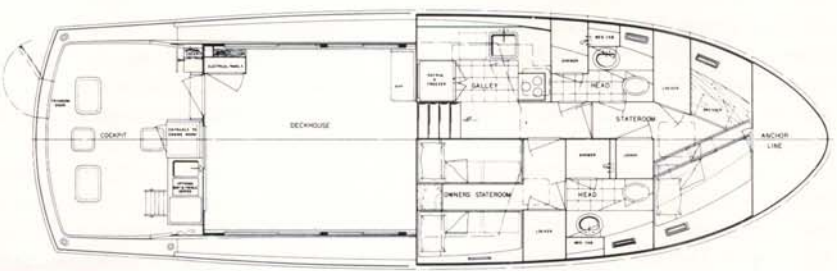


With the galley below, the spacious saloon makes for gracious entertaining. Informality reigns with the galley tucked into the saloon. Fabrics and furnishings are virtually limitless. The result? Outside she may be king of bluewater, but inside she's the pampering queen.



The galley is straight *de gustibus*, and includes a three-burner range with oven and exhaust hood, kitchen-size stainless steel sink, radar oven, even a dehumidifying crisper for putting the snap back into dry foods. To the right, out of frame, a solid nautical touch—a handhold.

8V-92 turbo-charged Detroit Diesels pumping out a solid 550 hp at full chat. It is a testament to Detroit Diesel Allison's reputation of delivering exactly what they promised that the designs were submitted long before the engines actually went into production.

At first glance, the mating of a tournament-grade sportfisherman with creature comfort fit for a sheik would seem contradictory. Not at all. For this boat works, whether fishing or funning.

The reason is careful attention to detail. Tracing its thoroughbred lineage to the proven 46 Convertible, the 50 boasts such features as a full-width bridge, which not only makes it easier to bring the boat alongside a fish or a dock, but provides extra seating as well. Typical of the careful thinking that abounds on this boat is the transom door/gate. It's big enough for giant tunas. At the same time, the fully opening gate makes it easy to handle the dinghy and board the optional swim platform or the dock. Simple? Sure. But details like this spell the difference between comfort and luxury.

Innovation in noise control is another example of the engineering touches that sparkle in this new boat. The effort to muzzle the roar begins with special fiberglass mufflers that were specifically developed for the 8V-92s installed in the boat. Indeed, Hatteras engineers found that each engine requires its own muffler design. Hours were spent working with the engines set up on test beds before the muffler design was finalized.

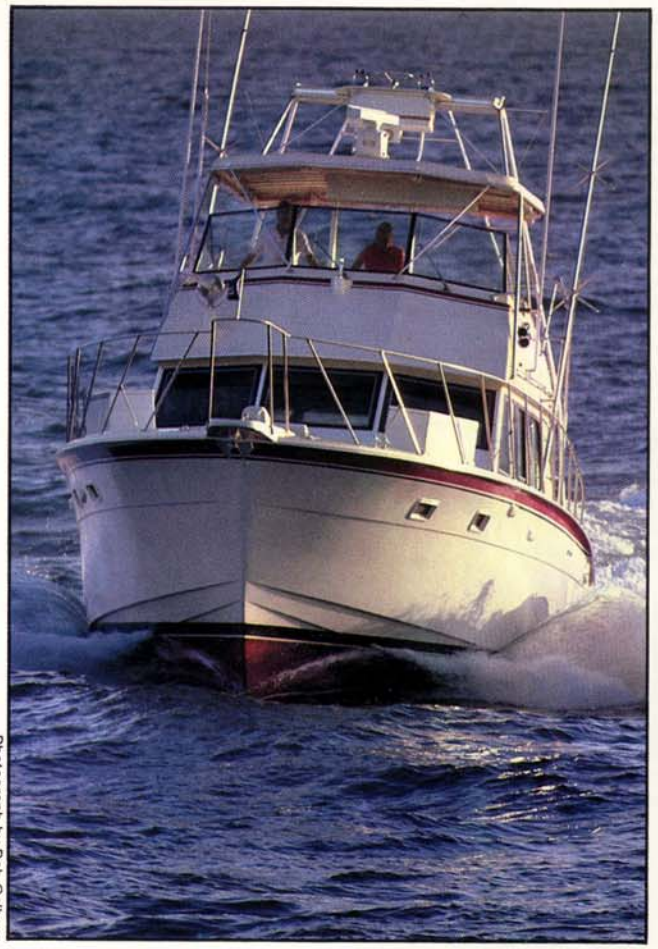
The trick, explains Don Thornburg, director of design engineering, is to quiet the sound without exceeding permissible back pressure. Says Thornburg: "Mufflers are one of the most innovative pieces of engineering on the 50 family of boats. To minimize vibrations, each engine is bolted to rubber isolation mounts that are in turn attached to the welded aluminum engine bed.

The turbocharger effectively reduces the "bark" associated with naturally aspirated two-stroke diesels. Nothing was done to further silence the intake. The intake system incorporates two 90-degree baffleboards on the aft engine room bulkhead to prevent induction noise from reaching the cockpit. The air intakes, however, are located under the cockpit covering boards, where they are essentially isolated from hull sidespray.

The effectiveness of the sound control engineering was confirmed when we took the 50 out for sea trials. Sound-level readings on the flying bridge were 80 dB-A—out of the wind at top speed. Cockpit sound level was 87 dB-A, which permits conversation without shouting.

Bear in mind that much of the apparent noise comes from the wind. For instance, with the forward weather curtains open on the flying bridge, sound levels at the helmsman's ear hit 92 dB-A. Running with the wind in apparent still air, the level dropped to 82 dB-A. Sound in the main saloon at 2100 rpm cruise with the air conditioning on and the aft door to the cockpit closed was an astonishing 76 dB-A.

Air conditioning can be a big source of



Photograph by Bob Gelberg

Passage to the laboratory-like engine room is through the door next to the cockpit bait center, a console with freezer and sink. The owner's stateroom has private access to the master head (includes a stall shower), comes with twin singles or an optional queen-sized berth.

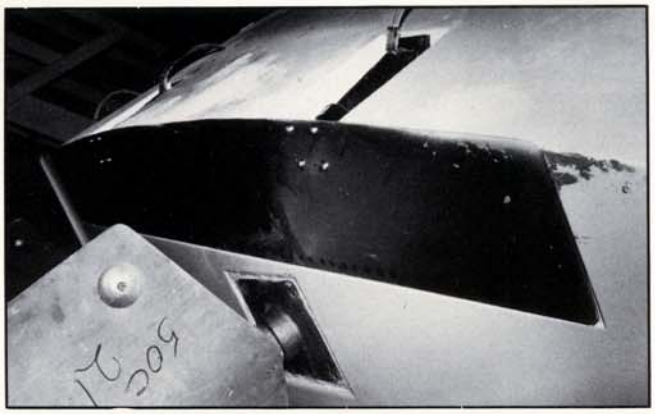
sound, thanks to the noise of the machinery, as well as the rush of the air itself through the ducts. But not on the new Hatteras boats. Jules L. Ceccanti, chief electrical engineer, explained that Hatteras engineers have been working for two years to control air conditioner noise. The result is that each evaporator unit is deck-mounted on vibration mounts rather than hung on a bulkhead. Moreover, the cold air is discharged into a large plenum, which slows down air velocity from 1,000 to some 400/600 feet per minute before the air is ducted into the boat interior. Hard work, yes, but the efforts paid off with a cathedral-like sound level of only 57 dB-A in the main saloon with the air conditioning on.

Each compartment aboard the 50 has an individual thermostat for personalized comfort. Typical of the engineering efforts is the thought given to convenience as well as operation. For instance, if a dock circuit breaker blows, you won't have to rush below to turn off each of the individual compressors before the power can be restored. On the Hatteras the largest compressors are staged with 20-second lags, which enables the system to start up in series without overloading the circuit.

The average boatman equates quality with fine joinery and a sleek hull. Hatteras obviously abounds in both. But the kind of attention to detail that makes Hatteras synonymous with quality is more than skin-deep.

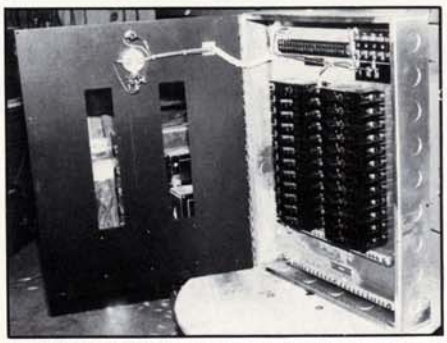
Electrical panels, for instance, are made to UL standards that regulate everything from the metal thickness of the box to the distance between the live end of the circuit breaker and the walls of the panel. Panels located in the engine room have extra circuits to accommodate the later installation of accessories. A panel on the bridge with eight circuits accommodates the navigation electronics and makes installation a snap. The critical shoreline connector is protected by a fuse instead of a circuit breaker, because it is heat sensitive. In addition, the fuse is located in a box within inches of the connection socket to make onboard equipment damage less likely in the event of a short circuit. Hatteras has solved the oft-times confusing problem of shore power polarity by eliminating it altogether. The problem, that is. The solution is to use a 15-kw shoreline transformer, which eliminates dependence on proper dock polarity. The transformer establishes its own on-board neutral ground.

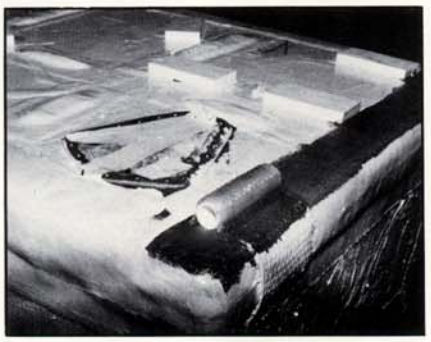
Color coding is common on all quality boats these days, but Hatteras takes it a step further. The wires carry numbers to specifically identify their function, and all the wires going to each appliance, accessory or outlet are bundled in individual multi-conductor cable. The service cables are themselves color-coded to make trouble-shooting easier. Gray outer sheathing indicates a.c. circuits, blue equals d.c. circuits. As a result, more than 100 different styles of wire, a mile-and-a-half of it in all, are used on each 50. Lugs and terminals are attached to the wires with special aerospace crimpers that are preset for the exact crush.



Looking past the rudder beneath the transom is seen the uniquely designed hydraulic trim tab. Unlike broad, two-part tabs, this unit is a single, narrow tab stretching the breadth of the transom. This gives good trim control and reduces drag.

Hatteras' fiberglass mufflers are carefully tuned to each engine.





A specially designed electrical panel gives easy access to circuit breakers. Fuel tanks, right, are built using fire-retardant fiberglass, coated with intumescent paint.

The d.c. system is made up of two banks of batteries, port and starboard. The two banks are divided so that the boat will never be without engine cranking power in the event one bank fails. Explains Parker: "We employ d.c. in all critical areas—everything you need to get out and back."

Hull construction

At Hatteras, quality control begins with the plant itself, where constant temperature and humidity are maintained to insure an even cure of the polyester resin. In addition, each shipment of resin as well as the fiberglass cloth, is carefully analyzed in the laboratory before acceptance.

The hull of the 50 itself is 100 percent hand laid-up, as might be expected of a top-quality boat. For top strength the fiberglass is placed so that seams do not fall on the keel line. Underwater sections of the hull are made of solid glass, and through-hull cutouts are incinerated on every boat to make sure that the proportion of resin to glass is within specific ratios. Above the waterline, balsa core is used to reduce weight. But careful engineering analysis makes sure that no loss of strength results. On one of the motor yachts, for instance, a complex computer analysis resulted in a significant weight saving, with a gain in structural strength.

The fuel tanks are manufactured to UL specs using fire-retardant resin. Each tank is pressure-tested for 24 hours and then coated with a special fire-retardant coating for added safety. The tanks are then positioned in the hull and foamed into place in such a way that the glass skin of the tank does not directly make contact with the glass skin of the hull. That way the tank is uniformly supported and high stress points eliminated.

After it comes out of the mold, the gel coat on each Hatteras is a minimum of 20 mils thick. But because of the inherent porosity of gel coat, Hatteras goes to the added trouble of spraying the boat with a durable two-part polyurethane paint. Hatteras believes this extra care is warranted because the hull will maintain its sheen much longer than ordinary unprotected gel coat, and it eliminates the need for waxing and cuts down staining. Moreover, the inevitable dockside scrape can be easily touched up.

Hatteras takes pride in its installation of fixed glass. With good reason. The plates themselves are placed in special aluminum extrusions from the outside, where they rest against an inside flange, which makes it physically impossible for any sea to push the glass through the opening. The glass itself is floated in the mounting with a special sealant to prevent stress cracking as well as leakage.

This concern for strength and durability can also be found in the engineering approach to the running gear. Before installation, each wheel goes to the Hatteras prop shop, where it is carefully checked against uncompromising specs for size and pitch. The props themselves are cast of a high-strength alloy of nickel, aluminum and bronze.

For added rigidity, which not only cuts down vibration, but also contributes to shaft bearing life, the prop shaft is supported by a massive intermediate strut in addition to the main strut. The strut itself boasts not one but two cutlass bearings. For optimizing running angle, Hatteras uses trim tabs. But unlike many tabs, these are long and narrow, a shape that Hatteras engineers find most efficient at changing the attitude with a minimum of drag. For the same reason, the tabs themselves are recessed flush with the bottom of the boat.

The crucial configuration on any boat, of course, is the shape of the bottom. In this regard, the 50 is mainstream Hatteras. Explains Designer Jack Hargrave: "I don't have any trick names for it, but we've always kept the aft sections flatter—12 to 14 degrees is a cutoff for a big diesel cruising boat. A deep-V doesn't lift the boat well and it is inefficient when loaded."

A fine entry forward makes for an easy ride. In fact, says Hargrave, the entry is finer than on a typical deep-V with a constant deadrise carried all the way forward. The constant deadrise, says Hargrave, is one reason for the deep-V's tendency to lean into the wind, which has the effect of flattening its hull sections.

For the designer, beam is a bugaboo.

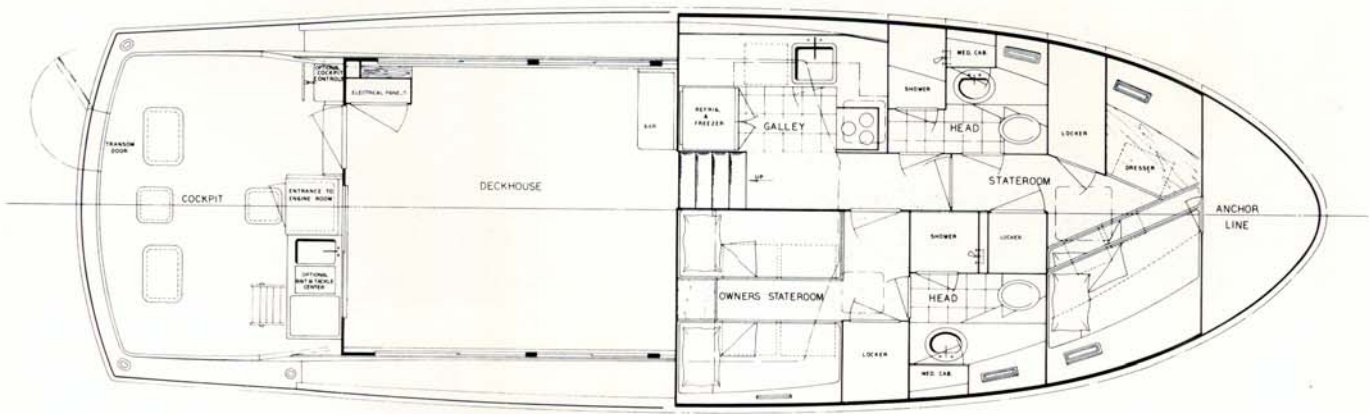
Says Hargrave: "Every boatowner understandably wants more boat for the dollar, but beam is a negative factor in terms of speed." His solution is to keep the beam at the waterline to a reasonable 14′2″, while adding beam topsides through the use of a double chine with hull flare.

Performance is obviously the bottom line. And in the case of the Hatteras 50, the numbers on the *Motor Boating & Sailing* radar gun speak for themselves—emphatically.

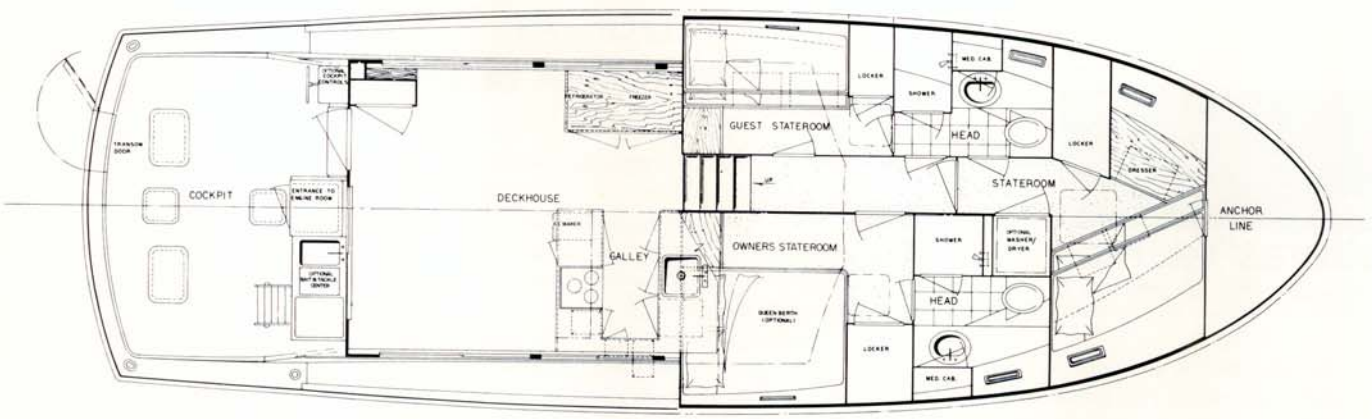
With the forward fuel tank full and the aft tank at three-quarters—some 750 gallons—the boat hit 23.7 mph with a 9-knot breeze 45 degrees off the bow. On the reciprocal run, speed topped 26 mph for a two-way average of 25.1 mph. Bear in mind that the big PipeWelder's tuna tower takes a hefty bite out of top-end performance. At 2100 rpm cruise, the boat knifed through the gentle swells off Fort Lauderdale at a brisk 22.2 mph two-way average.

For a 56,500-lb. boat, that kind of performance is impressive. But for Hatteras, it's merely expected. ⚓

Hatteras 50



STANDARD GALLEY DOWN ARRANGEMENT



OPTIONAL GALLEY UP ARRANGEMENT

Hatteras Yachts

High Point, North Carolina 27261 U.S.A.