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JUNE 2018
NUMBER 262
\$7.95
\$8.95 in Canada
£4.99 in U.K.

EGRET

The transformative refit of a Chesapeake deadrise

by Bernard H. Gustin

MATTHEW COHEN

For more than two decades, I admired a 1950s-era 46' Chesapeake Bay oyster tonger named FOUR SISTERS, thinking she would make a wonderful harbor-tour, race-start-viewing, afternoon-picnic, and general coastal party boat. Her low profile, sloping but virtually straight sheer, long cockpit, and sleek roof—all typical of so-called “deadrisers” (see sidebar)—make her a striking sight on the water. These same traits also make for an ideal pleasure boat.

Today, after 67 years of existence, FOUR SISTERS, once a hardworking commercial fishing boat, has been reborn as EGRET, a day-cruiser combining timeless design, contemporary technology, and full compliance with the standards of the American Boat & Yacht Council (ABYC; see sidebar page 26).

EGRET was designed and built in 1951 by Robert F. “Frizzy” Atwell (1902–94), then the lead new-construction foreman at Trumpy Yacht Building Company in Annapolis, Maryland. Trumpy was one of the most elite yacht builders in the United States in the first half of the 20th century. Unlike its predecessor and sister company, John H. Mathis & Company, Trumpy didn’t build practical workboats. But Atwell had been a Chesapeake fisherman earlier in his career, and occasionally he built fishing boats at his home in Shady Side, Maryland, using discarded scrap lumber he collected at the yard.

So, in essence, EGRET was launched as a Trumpy-quality deadrise, built of Trumpy lumber by a Trumpy foreman, but then sold as a prosaic workboat. Although particularly handsome and distinctive, and finished with mahogany and teak trim, she was basically no different in her function from the hundreds of other deadrisers built before and after World War II by

individual builders up and down Chesapeake Bay.

Atwell built the boat for Ellsworth Brown, an African-American commercial fisherman also based at Shady Side. Brown had four sisters, and named his boat FOUR SISTERS, after them. He owned and worked the boat for 35 years, until he died in 1986.

FOUR SISTERS had three subsequent owners over the course of seven years. During that period, her forward cabin was modified, and she was converted from fishing to pleasure use. By 1993, however, FOUR SISTERS’ days seemed to be over after she sank at her owner’s home dock in a cove off the Wye River.

Before she sank, FOUR SISTERS had attracted the attention of Peter Max, a Washington, D.C., businessman and boat lover with a home on the Chesapeake, who had long admired her lines and profile. Max had the boat raised and brought to the Oxford Boat Yard in Maryland for restoration in 1994. There, FOUR SISTERS was completely rebuilt, and relaunched in 1995. This first restoration mainly involved substantial reframing and replanking, plus restoring the cabin to its original profile. The yard also installed a new 1995 Chrysler 318 V8 gas engine, and a simple electrical system for navigation lights, a few deck and interior lights, a VHF radio, and a depthsounder. But FOUR SISTERS had no fresh-water tanks, toilet, or other amenities. She was also very loud because she lacked mufflers and any other engine-noise suppression. Her engine box was built from thin, simple plywood, so when her engine fired up she sounded like an old Harley-Davidson with straight pipes.

The 1994–95 restoration was meticulous, and it returned FOUR SISTERS to her original profile and great structural condition. But Max had several other major yachts, including the last Trumpy built, and as

Above—EGRET (ex-FOUR SISTERS), is a Chesapeake Bay workboat—a so-called “deadrise”—built in 1951. She was converted to pleasure use after ending her working career in 1986, and she was recently further upgraded to high functional and cosmetic standards. But her latest appearance still reflects her early Maryland workboat origins.

a result FOUR SISTERS saw little actual use during his ownership: in the ensuing 22 years, her engine clocked only 138 hours.

I had already admired FOUR SISTERS when Max listed the boat for sale soon after completing his restoration and on several occasions came close to buying her. But it was not until mid-2016 that I finally took the leap.

After purchasing her, I brought FOUR SISTERS back to Oxford Boat Yard (now called Brewer Oxford Boat Yard), on her own bottom, so that her modernization could continue with some of the same craftsmen who had done the 1994–95 work. That earlier job had been so thorough that the hull remained largely in fine structural condition 20 years later. My initial instinct was to leave her as she was and to limit the new work to cleanup and cosmetics. The topsides had been painted repeatedly over the years, which had left the hull somewhat rough; this was easily addressed by longboarding. The roof, which had originally been assembled in sections, had developed a slight knuckle in its middle, so it was dismantled and reassembled to be made fair. The cockpit and cabin needed thorough cleaning before any other work could be done in these spaces.

Repainting EGRET, as I renamed her, was more complicated. I had decided to move her from the Chesapeake to Rhode Island, which triggered a tactical dilemma as to where she should be painted. Having made many trips through the C&D Canal, up the Jersey Shore, through New York Harbor, and then along the New York and Connecticut coasts, I wondered whether such a passage was more than a newly restored EGRET might be up to. But, on the other hand, how would a freshly painted, 66-year-old traditionally planked wooden hull react to a several-days-long trailer ride at highway speed on Interstate 95?

The compromise was to limit cosmetic painting in Maryland to areas that would be concealed by new structure or machinery. We completed most of the functional restoration in Maryland, trailered EGRET largely unpainted overland to Rhode Island, then completed the painting, cosmetics, and detailing at Rhode Island Mooring Services, south of Providence, before launching her into Narragansett Bay. This approach worked out perfectly.

Simple cosmetics, however, would soon prove to be insufficient. I wanted to update this beautiful boat for a new era and new functionality, and that presented the following challenges:

- For comfortable day-cruising, we had to quiet the engine as much as possible. This entailed completely re-engineering the engine box and its insulation as well as adding a modern muffler and exhaust system.
- Maneuvering a narrow 46' hull with a massive, full-length keel, a single engine, and a small rudder in the congested inner harbors of New England would be tricky. A bow thruster would come in very handy. But where could it go, and how should it be powered?
- Any plan for gracious day-entertaining would have been unthinkable without an enclosed head, which required a holding tank. Where could we fit these conveniences, not to mention their fresh water supply?
- In the two decades since the 1994–95 restoration, an assortment of electrical and electronic devices had been added, most of them in overhead boxes directly under the roof, on or near the centerline. The ergonomics of this placement left much to be desired: on EGRET, the helmsman stands and steers from far outboard to starboard, so he or she had to turn their head 90 degrees to port and look upward to see and operate these devices. How could the essential gauges and navigation instruments for a simple coastal boat be located to be more in the helmsman's immediate line of sight, and directly at hand?
- Due to her hull shape and shallow draft, EGRET never had more than minimal storage space under her deck and in her cabin. And much of the limited space available under the V-berths was soon assigned to the various elements of the new plumbing system. Where could we put such necessities as anchors and rode, fenders, docklines, and cleaning supplies—and where would the new exhaust system be housed?

We were also committed to adhering to ABYC standards despite the very limited space available for locating or hiding additional systems.



After the author purchased FOUR SISTERS, he brought her to Brewer Oxford Boat Yard in Oxford, Maryland. The work there included updated electrical, electronic, and plumbing systems; a complete engine rebuilding; new exhausts and a new sound-proofed engine box; a bow thruster; and hull and roof fairing.

The ABYCs of EGRET

by Matthew Smith, N.A.

Hundreds of decisions are required for every system in a boat that's being built, refitted, or repaired. The time and knowledge needed to make those decisions would entail a long and rough passage if each builder or service yard had to make them from scratch. Aside from the inefficiencies inherent in such a situation, imagine the chaos that would prevail if the systems on every boat, or every model of boat, varied dramatically in their underlying principles or practical details.

Fortunately, a valuable basis for making those decisions efficiently is provided by the standards of the American Boat & Yacht Council (ABYC). These standards have been compiled by more than 400 marine professionals from all sectors of the industry, and they are used by the U.S. Coast Guard and other international governing agencies. It's no surprise that over 90 percent of all boats on the water in the United States today have been built according to ABYC standards.

EGRET (ex-FOUR SISTERS) was built as a working Chesapeake deadrise almost 70 years ago, and as such, she had minimal systems when first launched. In fact, she probably didn't have an electrical system other than the engine starter until her refit in 1995, after she was raised from the bottom of the Wye River.

For EGRET's 2016-17 refit, safety and ease of use were the two main requirements. By working with the ABYC-certified electricians and mechanics at Brewer's Oxford Boat Yard, we upgraded and replaced the entire electrical, fresh water, head, fuel, and exhaust systems.

First, we upgraded the bilge pump system, based on ABYC standard H-22. Chesapeake deadrides are notoriously wet, and because their cockpit soles are low in the boat, they are not self-bailing. We realized that powerful and reliable bilge pumps were critical. As per the

EGRET received a new freshwater VacuFlush head, a holding tank, and a pressure freshwater system. These and the boat's other new systems were installed in strict accordance with ABYC standards.



The freshwater plumbing for the sink and toilet is hidden in the bow and beneath the hinged lids of the V-berth.

ABYC standard, the pumps were wired directly to the house battery with a dedicated switch panel and fuse.

The installation of a bow thruster was a challenge not only because of the limited space available in the bilge but also because of its DC power requirements. So, we installed a dedicated third battery for the thruster, and using ABYC standard E-11, specified charging relays and fuses to keep this battery protected, charged, and isolated during use.

At some point in the distant past, EGRET probably had a basic saltwater-flush head that discharged directly overboard; we found the capped intake and discharge through-hulls for such a toilet when we did the latest refit. But now, as everyone knows, the days of direct-discharge are gone. A new freshwater VacuFlush head was installed, along with a holding tank and pressure freshwater system. The U.S. Code of Federal Regulations (CFR) has specific requirements for heads; ABYC standard H-23 provides details for potable freshwater plumbing, and ABYC standard H-27 specifies the details of seacocks and through-hull fittings.

EGRET's 1995 engine installation did not include mufflers in the dual exhaust lines that ran to the transom. This resulted in a very powerful sound when running that was not conducive to a peaceful or quiet afternoon harbor cruise. We used ABYC standard P-1 to specify new inline mufflers and hoses so as to dampen the noise from the Chrysler V-8 engine.

In order to make room for the new dual mufflers in the stern, we had to change the fuel-tank layout. New and smaller 35-gallon fuel tanks gave us the extra room for the mufflers and additional storage. ABYC standard H-24 provided guidance for the new fuel lines, valves, fills, vents, and filters that completed the installation.

Much like today's land-based building codes, the ABYC standards provide an invaluable tool for boatbuilders to outfit and install correctly the many complicated systems on today's boats. The standards save time and money while providing safety and peace of mind.

In addition to publishing the standards described above, the American Boat & Yacht Council conducts education and training for marine professionals. Learn more at www.abycinc.org.

Matthew Smith, a naval architect from Barrington, Rhode Island, the boatyard, and I systematically worked through all of the issues to optimize EGRET's

limited space, and to find ABYC-compliant devices that would fit. Here's how we addressed the challenges laid out on page 25:



MATTHEW COHEN



JASON WRIGHT

The Cabin (Forward Portion)

In the bow, we added a 70-gallon polyethylene freshwater tank, custom-made to a triangular shape to fit directly aft of the stem. The tank (which has not yet been installed in this photograph) supplies a VacuFlush toilet located under a lift-up section of the port berth as well as a wash basin aft of the port berth. The freshwater plumbing also feeds a hose bibb on the port side of the cockpit. Next to this there's a saltwater hose bibb, from a dedicated through-hull and pump, for when the fresh water runs out.

Directly aft of the freshwater tank are two V-berths, each 8' long, with hinged lids, that hide the freshwater pumping and toilet systems. Because the new systems

fill much of the previous storage space under these berths, we added a large storage shelf athwartships forward of the berths; additional storage is available directly on top of the water tank.

The shelf and the freshwater tank were designed to be easily and quickly removed for servicing the bow thruster, which is located directly beneath them. Since EGRET's bow is not deep enough for a traditional, tunnel-style bow thruster, we used a shallow New Holland Jet Thruster system. It takes in salt water via a through-hull under the cockpit and pipes it under pressure to through-hulls on either the port or starboard side in the bow, supplying 110 lbs of side thrust.

The Cabin (After Portion)

Most of the electrical system lies near the bulkhead at the starboard aft end of the cabin. There's an AC-DC electrical panel, a shore-power intake, shore-power battery charger, Fusion stereo, and three 12-volt DC cigarette-lighter sockets. Small portable solar panels keep the yacht's three batteries charged when she's at rest. EGRET routinely lives on a mooring, so shore power for battery charging isn't regularly available.

Bronze deck prisms provide natural light below. EGRET's cabin sides originally had four large bronze opening ports, and we've added two more in the forward face of the cabin. The entire yacht uses low-voltage LED bulbs for exterior, interior, and navigation lighting.



MATTHEW COHEN

Cockpit

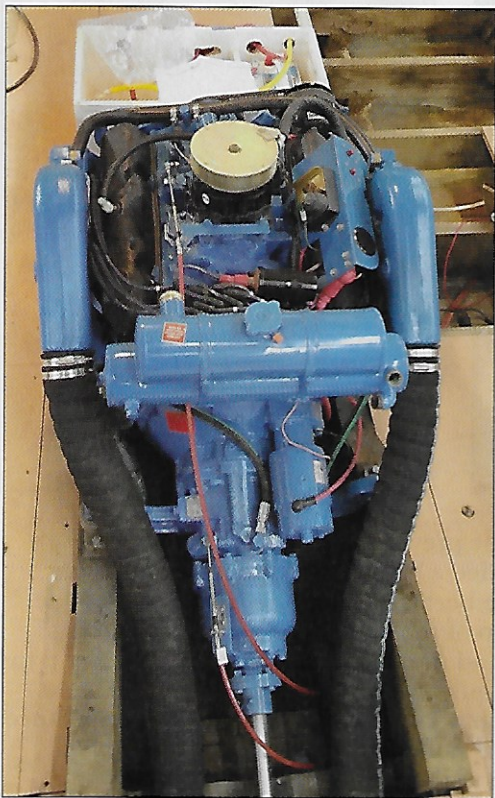
EGRET's 24'6" cockpit is one of her best features; its large size offers a spacious and versatile platform for entertaining. The large "kitchen-island" engine box located in the middle of the cockpit is covered with black Corian. The Spinneybeck waterproof leather-covered seating forward and aft of it incorporates the battery box, storage drawers, and an enclosed area for battery switches and relays. We fabricated the engine box from Nida-Core to reduce its weight and dampen noise and vibration. The central part of the box, directly surrounding the motor, is lined with Soundown lead-foam for further sound-proofing. The box also contains a Fireboy fire-suppression system.

The top cover of the engine box opens to port on a fore-and-aft piano hinge for simple, routine engine checks. For more serious maintenance, the entire box swings open on heavy-duty hinges at its aft end, providing complete access to the motor.

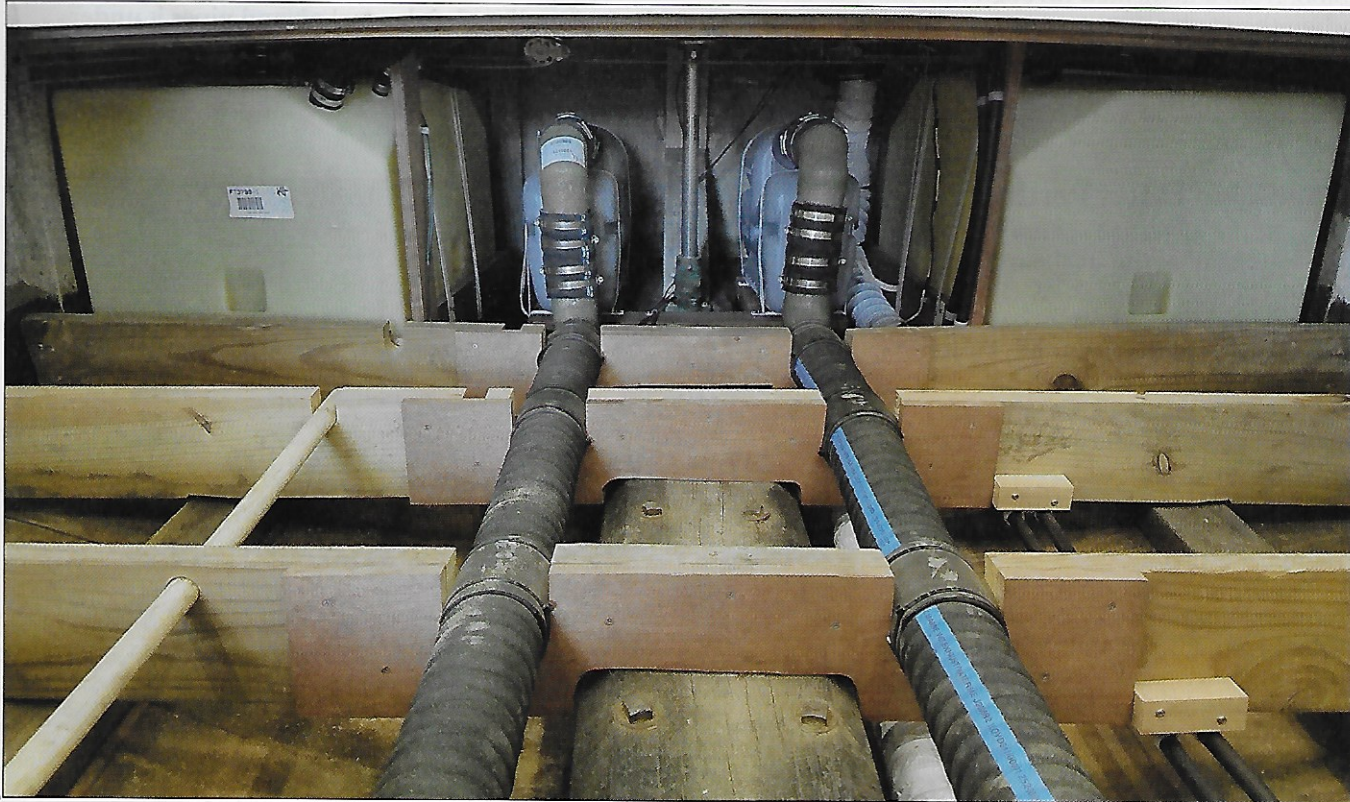
Power and Fuel

EGRET is powered by a single 1995 Chrysler 318 V8 gas engine that develops 250 hp. She cruises happily at 10–12 knots and has a top speed of 18 knots. Although the engine still had very low hours, by 2017 it needed cosmetic work. It was entirely dismantled, repainted, and rewired, and we replaced the starter, alternator, water and fuel pumps, manifold, risers, and other internal components. We added new Vetus silencers and water-lift mufflers. Despite its age, the engine starts promptly every time, runs smoothly, and has plenty of power to drive EGRET's 12,500 lbs of displacement.

EGRET's twin 35-gallon gas tanks are under the aft deck, near the transom. She used to have tanks twice as large, but we used some of the space they filled to house part of the new exhaust system and to create storage under the aft deck for anchors and rode, fenders, docklines, and cleaning supplies. The Racor fuel filter and the fuel valves are outboard to port, tucked under the cockpit coaming.




JASON WRIGHT



JASON WRIGHT

MATTHEW COHEN



Particulars

LOA	46'4"
LWL	44'1"
Beam	10'2"
Draft	2'4"
Displacement	12,500 lbs
Power	250-hp Chrysler V-8



The Chesapeake deadrise LORI D was built by Grover Lee Owens of Deltaville, Virginia, who died in 2014. He built his first deadrise in 1966, and in the ensuing 31 years he built more than 115 boats—all without plans; all by “rack-o-eye.”

Origins of the Deadrise

The first peoples of Chesapeake Bay, the Powhatan Indians, used dugout canoes to capture fish, oysters, clams, and crabs. In the early 1600s, English settlers adopted the Indian dugout canoe, at first paddled or poled, then fitted with a sail, to navigate and fish the shallow waters of the Bay and its tributaries.

After the Civil War, as the region's population grew and standards of living rose, larger sailing canoes were designed to carry heavier loads of clams and oysters. The bug-eye, as this type of boat was known, had a bottom that was typically built of seven to nine logs spiked together and then adzed to shape. The type had a full deck, forward cabin, and two masts.

Eventually, bug-eyes became too expensive to build, so watermen switched to two types of workboats that were planked: skipjacks and deadrises. These remained in use until well after World War II.

Skipjacks, which are sloops and typically 40' to 50' long, have a large triangular mainsail set on a steeply raked mast and a very long boom. The large sail plan provides power for the skipjack's main function: towing oyster dredges along the bottom, even in light air, with minimal crew.

The deadrise emerged in the 1880s from an earlier Chesapeake sail-powered skiff known locally as a bateau, which comes from the French word for boat. Deadrise boats were so-called because of the V shape of their bottoms between the keel and the chine.

Deadrises have shallow draft—only 2' to 3'—making them practical for use on the shallow Chesapeake Bay and its estuaries. Early deadrises, those from the first decade of the 20th century, were mainly used for crabbing. By the 1920s and 1930s, they were used for oystering and finfishing, as well, and were somewhat longer: up to 38'. Many had round sterns.

The 42-footers came after World War II, when builders were able to source appropriate-sized keel timbers. In the 1960s through 1980s, 45- to 50-footers came along to provide the wider and longer hulls needed in Virginia's winter crab-dredge fishery. There were also a few even longer deadrises—for example, the 100' MARY-DEL, built in the late 1920s by Lin Price of Deltaville.

Individual deadrise styles were tailored to local needs. Boats for southern areas of the Bay had stronger

planking to withstand the rougher, taller waves there. Maryland builders typically turned out shoal-draft hulls suitable for the Bay's shallow northern tributaries.

Early Chesapeake deadrise designs also reflected Northeastern influences. After the Civil War, the North's oyster fields began to be depleted, so New York and New England fishermen moved to the Chesapeake. They brought with them workboat designs derived from the New Haven sharpies of the 1840s that had been adapted for workboat use around New York City, and blended these with older Chesapeake Bay types.

By the late 19th century, boatbuilders in both Europe and the United States were generally using three-dimensional models, plans, and factory production methods to build in volume. By contrast, Chesapeake Bay workboats were built without drawings, based only on the builder's instincts and experience—a method known on the Bay as “rack of eye.” Deadrise builders typically worked with a few helpers and built only a few boats per year. Wood came from nearby forests or from local sawmills and builders used simple hand tools.

As internal-combustion engines emerged after 1900, deadrise builders replaced sails with gasoline motors, modifying the boats' shapes to improve performance under engine power. Many older deadrises with gas power are still active on the Bay, although today diesel is preferred.

Before World War II, many areas around Chesapeake Bay, especially the Eastern Shore, were not widely served by roads. Therefore, skipjacks and deadrises were a principal means of local transportation and freight-carrying in those rural areas.

Fiberglass emerged as a boatbuilding material after World War II. As the costs of lumber and of wooden boat maintenance rose, wooden deadrises were gradually replaced by standardized models designed for production fiberglass construction. Even today, however, one still sees many old wooden deadrises on the Chesapeake, especially in the traditional, small, local yards.

—BHG

For a more detailed discussion of the deadrise type, see Deadrise and Cross-Planked, by Larry S. Chowning (Tidewater Publishers, 2007). This general overview is largely based on that book, with the permission of the author.



Helm and Instruments

EGRET doesn't have a conventional helm station or console. Instead, there's a traditional vertical wooden tiller to starboard of the engine box connected directly to the rudder via stainless-steel cables. This ultra-simple system probably served her well during her days as a fishing boat and still works just fine.

Just ahead of the tiller is a small pedestal upon which are mounted the Kobelt single-lever shift and throttle control, a joy-stick for the bow thruster, small Faria engine gauges, fuel-tank-level displays, a digital depth gauge, the ignition and blower switches, and a dimmer for the courtesy rope lighting that surrounds the cockpit.

EGRET's compass is mounted under the shelter roof, directly forward of the helmsman. An Icom VHF installed in the cabin connects to a remote handset in the throttle pedestal. For trips farther afield, or in case of inclement weather, she also has a Garmin 742xs touch-screen GPS-plotter that mounts to a quick-release socket and cable under the roof—again, just forward of the helm. Most of the time this isn't needed or mounted, but it takes just a minute to connect, and it's very useful when dense fog rolls in, or when one is in unfamiliar waters. She also has a rooftop air-horn and a hailer linked to the VHF.


The EGRET team had heaps of fun solving the varied technical and ergonomic issues of the boat's latest transformation, but I'm convinced that much of the project's success resulted from knowing when to stop, and what *not* to try to add.

EGRET is not practical for overnighting since she lacks even rudimentary refrigeration and cooking facilities. There's no space for even a small water heater or a complete toilet room, and because her cockpit is not self-bailing, there will be no hot-water showers aboard anytime soon. She is open to the elements, so she'd be pretty uncomfortable in sustained bad weather.

One day, when I had EGRET at a dock in Newport for a washdown, a visiting commodore from a southeastern yacht club approached me, asking excitedly where he could find a boat like her to use as a race-committee boat. "Well," I replied, "they're all over the Chesapeake, especially on the Eastern Shore, if you keep your eyes open. But actually, a boat like this wouldn't make a very good race committee boat at all...she'd be pretty impractical and uncomfortable for that purpose."

EGRET has her limitations, to be sure, but think about what she was originally designed to do, what she's achieved in her long life, and the transformations she's endured. As a relic of a past era, she's a vivid reminder of a time when a simpler style of life on the Chesapeake was dominated by fishing for sustenance.

Today, EGRET's classic lines endure. As an entertaining and hospitality platform updated with basic technology and conveniences for modern coastal day-cruising, she provides just what's needed, and no more.

Her quiet, graceful beauty brings sheer pleasure to experts, old-timers, and casual observers alike. What more could one ask for? 

Bernie Gustin is a retired management consultant based in Newport, Rhode Island. He has sailed all his life all over the world, and built and restored many sail- and powerboats built of wood, fiberglass, and metal. He is particularly thankful to these members of EGRET's restoration team: Carl Langkammerer, Mike Casey, and Marcus James.