

Working on the theory that the less holes in a boat, the better, Saunders Yachtworks replaced powerplants in two separate engine rooms through one hole in the hullside. Systems Technician Bruce Forehand shows the neat cut work.

Hol(e)y Repower!

A Gulf Coast yard gives a Hatteras a new life in 90 days

When the decision came down to rebuild the engines or repower the 74-foot Hatteras, *Kaybird*, Captain Mark Gowdy says experience had taught his boss that rebuilding wasn't for him. "We put six hundred to eight hundred hours a year on our engines," Mark said. "Rebuilding the Detroit's would have meant spending \$80,000 on parts we weren't sure we could trust."

Kaybird makes a twice-yearly trip between her owner's home in Michigan and his winter digs on Longboat Key, Florida. For her captain, finding a yard that could do the repowering without interrupting the owner's schedule was paramount. During his research, he was pleasantly surprised to find an experienced repowering yard right on his route, Saunders Yachtworks in Orange Beach, Alabama. "We knew we'd have to cut at least one hole in the boat, somewhere," said Mark, "but some of the estimates we got were for pretty crazy proposals with lots of holes."

The team at Saunders sized up the 1988 Hatteras 65, which had been extended nine feet by a previous owner, and decided the smartest, least disruptive plan was to cut a single engine-size hole in the port side and remove and replace both engines through that one opening. What made the project a little more complicated was the fact this particular Hatteras model has split engine rooms amidships separated by a hall to the owner's

stateroom aft. The single opening approach necessitated pulling out sections of two stateroom walls, "But it was a much better solution than cutting two holes in the main deck and two holes in the flybridge to lift the engines out vertically," said Mark.

To hear Saunders project engineer Murray Loper tell it, cutting a hole in the side of a big Hatteras and pulling out a pair of 800-horsepower V-12s and their transmissions is just another day at the beach. Like any other repair and refit project, however, the key is preparation.

"We used a marine surveyor at each stage of the project to check the plans and the actual work," said Murray. "We began and ended the fiberglass work with thermal imaging to check for voids in the old or new glass that had to be repaired to guarantee the boat's structural integrity. Actually, we found some old hull damage that had been puttied over just forward of the area where we were going to begin our cut. We wouldn't have known it was there until we got into the project, so with the owner's blessing, we cut out the previous damage and repaired it when we patched the engine cutout."

Was he worried when Saunders' men took a saw to the boat? "Naw," said Mark. "I've built boats before and we knew they would

By MARILYN MOWER



be able to do this without cutting through any ribs or stringers. My concern was that we were on a schedule." Indeed. *Kaybird* arrived at the yard and was hauled September 20. She had to be underway by December 13 to meet the owner's holiday plans in Florida.

To make the cutout for removing the engines, Murray started from the top line dimensions of the engine room air intake box. "I wanted to keep the cut as small as possible," he said. "The new engines [Series 60 MTUs] are actually smaller and lighter than what we were taking out, although they are slightly more [825] horsepower." Although both old and new engines were rated for the same rpms and had the same gear ratios, the owner chose to replace the old transmissions with new ZF gears just to make sure the entire power train was new.

Once the Saunders team had cut the hole in the port side, drained all the engine and transmission fluids and tied off the hoses and the electrical connections, the engines were disconnected from their beds. Murray and Michael Dunlavy created jacks and jigs in place to raise and slide the old 5,400-pound engines. Simple comealongs winched the port engine out to the point it could be lifted with a forklift. Then the interior walls came out and the lift-and-slide technique was repeated with the starboard engine, followed by the transmissions.

"We had to create beds for the new engines, but we were able to work off the existing stringers," said Murray. With the new engine

beds in place the process was repeated in reverse, made easier by the fact the new engines were 1,200 pounds lighter.

Of course, the tricky bit was repairing the hullside. To piece the fiberglass, the hull laminate had to be ground back on an angle to create in essence a flange inside and out, joining old and new glass and spanning the void of the cut itself. Using a gel stripper, a worker ground away a predetermined amount of glass creating what's called a V-trench. Then, with various weights of cloth and using the heaviest mat inside, the fabrication team rolled layers of fiberglass and resin around the cut.

"Today's resins are so much better, I didn't have any concern about the strength of the patch," said Mark. When the resin had cured, Saunders' paint crew was rushed into action to make the work look it had never happened both inside and out.

"To keep to the owner's schedule, there wasn't time to paint the entire boat. We simply blended the new paint to match the old, but I'd defy you to find where it begins and ends," said John Fitzgerald, president of the yard.

"I don't know what the owner's most happy about," said Mark. "The fact that you can't see the patch or the fact that the new, lighter engines are more efficient and we've doubled our fuel mileage at ten knots. At cruising speed we are saving eighteen gallons per hour."

See more of *Kaybird* and other projects at Saundersyacht.com.



From top left: Kaybird comes out of the water; the old V-12s come out of the hull; as seen from the hallway, the starboard engine has been lifted and will slide across to port for removal; Murray Loper positions a new engine for insertion; with the original hull panel back in place, fiberglass was ground away prior to building up a new skin; the fairing process; the finished hull and a lighter Kaybird.