Check It Out

Taking a 25-year-old boat to the express lane — with 12 items or less

When a Washington supermarket chain owner decided it was time for a brand-new boat, he wasn't talking about buying another vessel. He planned to renew the boat he already had by replacing its old engines with something a lot more powerful: a pair of the latest electronically controlled, fuel-efficient diesel powerplants.

His boat, appropriately named Check Out, is a 1977 Uniflite 54-footer. The boat was originally a 48 foot cockpit sportfisher, but it had been given a hull extension several years earlier. It met the owner's cruising needs in most respects — but down in the engine room, it was beginning to show its age.

Check Out was no lightweight, weighing in at around 66,000 pounds. It took a lot of power to push this cruiser to a top speed of around 22 knots and a cruising speed of around 16 knots.

The old engines, a pair of 420 hp Cummins BT 903 diesels, did the job admirably for more than 20 years. However, emerging technology had passed them by — in terms of reliability, fuel economy and performance efficiency.

Check Out's owner turned to Cap Sante Marine in Anacortes, Washington to tackle the repower — but there ended up being a lot more to the job than changing the engines. Mark Hanger, who is now

NEW ARRIVALS — *Big changes aboard the 1977 Uniflite 54* Check Out *included removal of old controls and gauges to make room for new Mathers electronic controls and electronic instrumentation (top left).*

New Cummins QSM 11 electronically controlled diesels (top right) were installed, along with new 9 kw Onan EQD electronically controlled gensets (bottom right).

‘There were a lot of hurdles — but nothing that couldn’t be overcome’

AMAZING TRANSFORMATION — Check Out’s *original 420 hp Cummins BT 903 diesels (top) were more than 20 years old. The new electronically controlled engines that replaced them — 635 hp Cummins QSM 11 diesels — offer better fuel efficiency and performance. The boat now cruises 4 to 6 knots faster, and electronic helm instrumentation (center) allows the skipper to track all key performance data.*

facilities manager at Cap Sante’s Twin Bridges Marina location, was there at thestart — along with Mike McGlenn, marine surveyor and project administrator.

“This was a fun project,” Hanger recalled. “There were a lot of hurdles — but nothing that couldn’t be overcome — to help the owner achieve his goals.”

The Check Out repower project began in fall 2001, at Cap Sante Marine’s South Yard. The first step of the project was a haulout.

Check Out was hauled out by theTravelift, and moved into a covered facility. There it was supported on numerous stands, and every piece of furniture, drapery, carpeting and woodwork in the interior was covered, to protect it against dust or potential impact abrasions during the construction process. After all, the old engines would have to come out — and the new engines would have to go in — through the saloon.

POWER UP — *Before two new Cummins diesels were hoisted into the boat, lowered through the saloon floor and mounted in the engine room, Cap Sante Marine technician Chris May (left) installed new instrumentation.*

UNDERCOVER WORK — *After* **Check Out** *was hauled out, Cap Sante Marine performed most of their repower project inside a covered facility at the South Yard.*

OUT WITH THE OLD

Before anything new could be added, the old engines had to be removed.

After the engine intakes were removed and the big iron powerplants were unmounted, the Cap Sante crew gingerly — inch by inch — moved each engine. With the aid of a giant crane, the crew hoisted one powerplant out of the belowdecks engine room, maneuvered it through the saloon and into the cockpit — then lowered it onto a truck bed. Then, they did it all again, moving out the second engine.

The engine room was suddenly larger — and in need of much attention, before the new powerplants could be installed. (More on that later.)

Aft, beneath the cockpit sole in the lazarette, two 20-plus-year-old 8 kw generators awaited a similar fate as the engines. The generators — built on older-technology engines — were removed, making room for more fuel-efficient and powerful 9 kw Onan EQD gensets.

The electronically controlled generators would be equipped with water/exhaust separators and new start panels.

One of the biggest challenges of the repower project was preparing the engine mounting support system. "The motor mount beds were probably the biggest part," Hanger said.

The Cap Sante crew built new beds, modified the old beds and added new saddles forward. "We had to manufacture new front saddles, but we were able to use the old back saddles — however, we did have to modify them."

While new saddles were created and several modifications were made, Cap Sante was able to use the boat's existing stringer system.

"We made a lot of changes in the engine room," Hanger recalled. The engine bed and bilges were cleaned and painted with enamel coating.

IN WITH THE NEW

Once the new engine room was ready, a pair of brand-new 635 hp Cummins QSM11 diesel engines was installed — with the same giant-size crane and careful crew, inching the powerplants into place.

To accommodate these new engines, the boat was outfitted with a full complement of engine support gear.

"Everything was up-fitted (larger and higher-capacity than original) — including sea strainers, intakes and the new exhaust system," Hanger said. "We were able to use the same mufflers, though."

New shafts — in the same diameter as before — were installed, along with drip-free PSS shaft seals. In addition, new wiring was installed for both the engines and the gensets, and the onboard battery charging system was upgraded.

The boat's 30 hp hydraulic bow thruster had previously been driven by the forward portion of the old engine crankshaft. Because *Check Out*'s owner wanted to keep this powerful thruster system, Cap Sante Marine's technicians updated it to run with a hydraulic power takeoff (PTO) through a new ZF Marine transmission with a 2:1 gear ratio, built in Italy.

While there would be new engine instrumentation installed on the flybridge, *Check Out*'s owner also opted to have full engine instrumentation installed in the engine room, for the ultimate in practical performance monitoring.

On the boat's enclosed flybridge, Cap Sante Marine added new Mathers electronic controls. "Brain boxes" were updated to accommodate this precision control system.

The old dash gauges were thrown out and replaced with cutting-edge Cummins digital electronic engine instrumentation. These new digital displays monitor every engine function and offer complete performance data at a glance.

While they were making changes on the enclosed flybridge, Cap Sante's technicians added a new defroster system for the large forward windows. The new system moves 300 cubic feet of air per minute, for all-weather visibility.

One more feature was added to improve performance: new propellers. The new 34 by 31 inch props were professionally adjusted for maximum efficiency.

A HAPPY ENDING

The entire job was finished by spring 2002. With all the changes, *Check Out*'s owner experienced a dramatic drop in fuel consumption and a significant improvement in performance. The boat now cruises at 18 to 20 knots (instead of 16) and can achieve a top speed of just over 26 knots (instead of 22).

Perhaps most important, this 25-year-old sportfisher now cruises like a brand-new boat.

"All the things you want and hope for when you repower a boat, *Check Out*'s owner got," Hanger said. "He was very, very happy."