

DON'T BE LEFT IN THE

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The new PowerTech 4045SFM85 propulsion engine makes a big splash with impressive power, speed, and fuel economy

Looking for an efficient marine engine that delivers speed and torque in a compact engine package? A lot of boat owners are, and a growing number are finding the John Deere PowerTech™ 4045SFM85 is helping them meet their performance goals without compromising reliability and durability.

Announced in late 2017, this is the first seawater-aftercooled John Deere 4.5L engine model that produces 205 kW (275 hp) at 2600 rpm and 235 kW (315 hp) at 2800 rpm.

“The PowerTech 4045SFM is a high-power-density engine for light-duty commercial vessels, high-speed governmental applications and, of course, high-speed pleasure craft,” says Vince Rodomista, John Deere Power Systems (JDPS) marine sales engineer. “The

reserve power available for acceleration and getting the boat up on plane is exhilarating.”

In this issue of *PowerSource*, we introduce you to the first four owners of the new 4045SFM85. They include two commercial fishermen, a dive boat operator, and a recreational boat owner. Each participated in a sea trial involving JDPS application engineers, John Deere engine distributors, and each customer’s local John Deere marine dealer.

“The sea trials offered us the opportunity to meet with the customers, distributors, and dealers to evaluate the installation and performance of the 4045S in varied boating applications with an M4 or M5 rating,” says Mike Van Donsel, senior marine application engineer.

“It was useful to test the 4045S in varied applications — a bow picker, crabber, dive boat, and recreational vessel,” says Nick Pfeiffer, marine application engineer. Each application was a repower, and in some cases the 4-cylinder 4045S replaced 6-cylinder engines. Vessels were tested fully loaded with equipment, fuel, water, and crew typically on board during daily operation.

What did the sea trials reveal? As the first 4.5L marine engine equipped with a wastegate turbocharger, the 4045S delivers impressive speed, low-end torque, and fuel efficiency, say the JDPS application engineers. But don’t just take their word for it. All four boat owners share their initial experiences about this powerful, nimble engine during their first season of operation.



PAIRING WITH JET-PROPULSION

Alaska commercial fisherman Marty Wise nets salmon in a Freddie Marine–designed bow picker, *Graycie Lynn*. When the 10-meter (32-foot) vessel was first built, a single 317-kW (425-hp) John Deere 9.0L engine powered an UltraJet 305HT water jet through a ZF transmission with a 1:1 gear ratio. Jet propulsion allows the gillnetting vessel to maneuver around drift nets and access the shallow waters of the Copper River Delta.

Although *Graycie Lynn* cruised a respectable 20 knots and a top-end speed of 30 knots with the single engine, Wise wanted more speed to get to the fishing grounds. “I work in a high-speed fishery. Everybody goes fast, even with a load of fish on. If you can’t, you’re behind everybody.”

Bill Greenstreet, a longtime friend and John Deere marine dealer in Homer, Alaska, suggested Wise turn the single-engine vessel into a twin-screw and repower it

with 4045S marine engines, new ZF 220 transmissions, and 25.4-centimeter (10-inch) Hamilton 274 jets.

“The first thing I noticed was the power ... I am also surprised the two engines are so quiet; they’re very smooth-running engines. I’m very, very, very impressed.”

— Marty Wise, *Graycie Lynn*

“The first thing I noticed was the power. At half throttle, we cruise 20 knots and 36 knots full throttle. I am also surprised the two engines are so quiet; they’re very smooth-running engines. I’m very, very, very impressed.”

The vessel’s fuel efficiency improved too. “My boat was extremely fuel efficient, and I was burning a gallon a mile (0.43 kilometers per liter) with the 9.0L, and that’s efficient. But now the boat is consuming 0.6 gallons per mile (0.7 kilometers per liter), so I’m way below the expected norm, which I’m very excited about. It made a huge, huge improvement.”

Wise is a diesel minority in a fishery heavily dominated by gas-powered boats. “It’s been very interesting the number of people who are interested in the engines. People have been coming to my boat and checking them out.”

Marty Wise converted his single-engine jet-propulsion fishing vessel to a twin engine, repowering it with the PowerTech 4045S.



Alaska commercial fisherman Marty Wise nets salmon in a Freddie Marine–designed bow picker with son Devin.



Repowered with the new 4045S, the dive boat Escapade runs 26 knots at 2600 rpm.

DIVING INTO JOHN DEERE

Jim Capwell’s 20-passenger dive boat, *Escapade*, is popular among recreational scuba divers, film crews, and research scientists searching for whales, dolphins, and other marine life off California’s coast. In 2017, Capwell conducted his own research, deep in the dive boat’s hull, where twin 6-cylinder diesel engines powered *Escapade* for 16 years.

Faced with the need to repower with Tier 3 diesel engines, Capwell contacted Peninsula Diesel, a John Deere marine dealer in Moss Landing, California. “I’ve worked with them for 16 years, and they’ve been punctual, reliable, and provide good follow-up and quality work. I’ve always sensed that they had my needs in mind and they were listening to what I was asking for or what I wanted done. They tried to understand rather than upsell me. They told me there was a 4-cylinder engine that would provide similar horsepower to my 6-cylinder engine, which would make it more efficient and meet emissions standards. It was less money buying a 4-cylinder versus buying a 6-cylinder.”

In a two-step plan to repower the vessel, Peninsula Diesel installed a prototype 235-kW (315-hp) 4045S engine in early 2018, keeping the remaining 6-cylinder diesel engine in the hull until a second John Deere engine is installed later in the year.

Peninsula Diesel paired the John Deere 4045S to the boat’s original ZF transmission and prop. Running the same marine gear and props offered a side-by-side comparison that Capwell says he found surprising between the 6- and 4-cylinder competitive engines. “The John Deere held its own; in fact, it offers similar or more power in the low-rpm to mid-rpm range compared to the other engine.”

Unloaded, *Escapade* clips along at 23 knots at 2800 rpm — the same speed achieved prior to the repower. However, Capwell says the John Deere engine seems to achieve it with less effort. “To get the 2800 rpm only takes 92 percent of the power capability of the John Deere, which is less than the other engine.”

Capwell says the single John Deere 4045S is already shaving operating costs. “I’m getting better fuel economy, which is important



Scuba divers explore California’s diverse marine life.

since fuel is my number-one expense.” Plus, there’s no sacrifice in power and performance, and the John Deere engines are quieter. “I have no reservations about going with 4-cylinder engines versus the 6,” says Capwell. In fact, “I think it’s going to be just what I need.”

Editor’s note: We’ll continue to follow Capwell’s experience with a feature article after the second 4045S engine is installed in *Escapade*.



Since repowering with a 4045S engine, Donald Haught's 9-meter (30-foot) *Crab Chaser* runs 24 knots at 2600 rpm — 8 knots faster than before.



“The 4045S is lighter and about half the size of my old engine, but it packs some wallop for its size,” says crab fisherman Donald Haught.

A FAST, FUEL-EFFICIENT CRAB CHASER

A lifelong commercial fisherman, Donald “Spike” Haught of Port Norris, New Jersey, makes long daily runs to tend to his crab pots.

Since repowering his boat with the new 4045S engine, his 9-meter (30-foot) *Crab Chaser* is chasing crab faster than ever, running a top-end speed of 20.8 knots at 2600 rpm — 7 knots faster than the 1982 engine it replaced.

“It’s a boost to my financial bottom line. I estimate that I will save \$10,000 (USD) a year.”

— Donald Haught, *Crab Chaser*

Haught says the 4.5L engine flexes its muscles when the boat is loaded with pots and bait. “Before the repower, I would cruise 14 knots, and when loaded with pots, the speed would

drop to 12 knots. Today, I can load the boat with 120 pots and it gets up and goes, running 15.6 knots easy — no hesitation whatsoever.”

Haught paired the 205-kW (275-hp) engine with the boat’s existing ZF 220 transmission and 56x61-centimeter (22x24-inch), four-blade prop. Because the 4045S is shorter than the engine it replaced, Haught modified the engine bed and lengthened the shaft.

The new 4045S reduced the overall weight of the vessel by nearly 135 kilograms (300 pounds). “The 4045S is lighter and about half the size of my old engine, but it packs some wallop for its size.”

Not only is the 4045S powerful, it’s also more economical on fuel. At cruising speed, Haught calculates that the engine consumes 19 liters (5 gallons) per hour — a rate that’s almost half of the previous engine that burned 34 liters (9 gallons) per hour. “It’s a boost to my financial bottom line,” says Haught. “I estimate that I will save \$10,000 (USD) a year.”

NEW POWER FOR DEERE LADY

Milbourne Machine Shop of Crisfield, Maryland, is a John Deere marine dealer on the Chesapeake Bay and holds claim as the first dealer to put a John Deere marine engine into service. That engine was a John Deere 6076AFM, which after two decades still powers a crab fishing vessel owned by Bill Ryan of Crisfield, Maryland.

Milbourne likes to be among the first, especially when it comes to powering his 10-meter (32-foot) *Carmen, Deere Lady*, which he uses for recreational use on the Chesapeake Bay. In 2001, he was among the first to install the PowerTech 6068SFM. Then, after 17 years of solid performance with that engine, he was the first to power the *Deere Lady* with a new 4045S engine.

Using the same Twin Disc transmission and prop, Milbourne was able to compare the performance of the two John Deere engines. Overall, the repower increased the speed and reduced fuel consumption. “Cruising 22 knots the 4045S consumes 10 gallons (37.9 liters) per hour. That’s a gallon (3.79 liters) per hour better than the previous engine — a 10 percent improvement,” says Milbourne. “That’s pretty impressive.”

Milbourne says the engine’s fuel delivery system, quiet noise levels, and smooth-running performance add to the engine package. “The new technologies bring a lot to the table,” says Milbourne. “I can’t say it loud enough: I think it’s going to be a really good product for both commercial and recreational boat owners wanting good fuel economy at higher speeds. I’m certainly impressed with my own results.”

“The new 4045S is going to be a really good product for both commercial and recreational boat owners wanting good fuel economy and higher speeds,” says Mark Milbourne.



After 17 years of solid performance with a John Deere 6.8L engine, the *Deere Lady* was repowered with the new 4045S. Cruising 22 knots, the vessel consumes 10 gallons (37.9 liters) per hour.



Distributors: Cascade Engine Center in Seattle, Washington; www.cascadeengine.com
Western Power Products Inc. in Bakersfield, Long Beach, and Woodland, California; www.wppdiesel.com

Bell Power Systems, LLC in Essex, Connecticut; www.bellpower.com
Dealers: In Demand Marine in Homer, Alaska, 907-235-3488

Peninsula Diesel in Moss Landing, California, 831-633-1345
Milbourne Machine in Crisfield, Maryland, 410-968-0795