## boat tech BY BILL DePRIEST Trail

## *Repowering Stern Drive Trailerables with Diesels – The New Fad*

hen I returned from Australia, I found that my 23.5-footer, which we keep in the harbor at Dana Point, had oil in the bilge. I immediately called Pawel over at Kozwel Boatworks to find out what to do.





We topped off the oil and ran the boat over to the ramp and trailered it up to Kozwel right away. Pawel did a compression test before we moved forward on what we thought was a rottedthrough oil pan. Once he did the test, we found out that we were running on six cylinders – not eight. Not good!

We knew that we were committed on a serious level at this point. We went back and discussed all of the options and what we were looking for in a new engine. With a small trailerable many things come into play when deciding what to repower your stern drive with. During our roundtable discussion with Pawel, we discussed points such as weight, power, fuel economy, and size of the engine. The engine we removed was a Mercruiser five-liter 220 hp carbureted engine that gave us five great seasons of life but never enough fuel economy to stay out at the island overnight or to chase the tuna to the farther grounds.

Most gasoline engines are heavy, but most diesels end up being even heftier. As we moved further along with this, we knew that every pound is important for the small boater. Pawel had suggested the Volvo D-3 190 hp five-cylinder turbo charged, which weighs in at around 200 pounds lighter than the five-liter Mercruiser. We knew the weight was right, but what about the lower horsepower rating? Well, with diesel engines it's not so much about the horsepower but instead about the torque. This was a hard sell for me, but once we sea trialed the boat, all suspicion went out the window.

The next thing we were interested in was getting an engine that would give us better fuel economy. The D-3 really shines in this category which we found out in the sea trial as well. Another thing that we were looking for was to be able to cut down the large hatch that obstructs our cockpit. With a few measurements we figured out that we could cut the hatch down from almost 12 inches to around four inches – a huge improvement! Well, after much discussion we decided to go with the Volvo D-3 190 hp as Pawel had suggested.

We matched the D-3 with the Volvo dual prop outdrive with stainless props, which we had heard make a huge difference as well. A lot was riding on this decision since we fish as far as 85 miles offshore in this little vessel and really need a reliable, strong and economical engine. Although the price of the diesel engine is a bit higher than a gasoline model, in the long run it will even out the bill by giving us better fuel economy, cheaper servicing, and a longer life.

Once the decision was made, Pawel and his crew jumped on the project right away. Within days we had the new engine ordered and the old one removed. They quickly adapted the fuel tank to work for diesel by adding a simple valve. They drained the fuel and washed the tank out with diesel. The next step was removing the old engine and drive, which took a day or so. (When you go to repower, make sure you ask if they can help you sell your





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old engine on eBay. We ended up getting 1,250 dollars for our old motor and drive to help offset the cost of the installation.) Once everything was out and cleaned up, the process began, and the installation of the new gauges moved forward. By working on these small projects while we were waiting for the engine (which only took a week to get), they were ahead of the game when they received the engine. They also got the new sidemount controller in place, which fit right in, concealing the fact that we had even changed them.

Once the motor arrived the boat was ready for it to be dropped in. As it ended up, the motor actually fit directly onto the existing motor mounts, making the initial installation a snap. The outdrive ended up fitting right through the same holes in the transom that our old one fit into, making this a quick install as well and saving us from plugging the old holes and cutting new ones.

Once the engine was in place, it was obvious how much smaller this one was compared to the gasoline one (see images 1 and 2). The new space created by using the smaller engine will make working on the engine a breeze. We also noticed the height difference which made it possible to cut down our existing hatch, so we called Tomas of Bautista Boat Repair to cut the hatch down. He cut about 12 inches down to just four and made it



look as if the boat were designed that way. This part of the project made our engine choice really shine as the tall hatch has been a deck hazard since we bought the boat (see images 3, 4 and 5). The total process took around two weeks once the motor arrived, and it really fit into place so well that it seemed as if the boat was designed for this engine from day one.

The time of reckoning had come, and we met Pawel down at the launch ramp to put the *1 Hot Tuna* back into the water and see what this new Volvo D-3 190 hp was made of. As we idled out of the harbor, we really noticed a difference in the boat's tracking. It was straighter and didn't require much adjustment, which we knew was due to the dual prop outdrive. We also felt that the boat really went in and out of gear extremely smoothly without the grinding of gears like on our old outdrive. The boat is also much more responsive while maneuvering in tight quarters.

We left the harbor and gave it some throttle and were just about knocked back into our seats. The acceleration with that engine is intense, jumping you right up on plane. Now I had a real idea of what that torque could mean to my vessel. Once up on plane we ran at a cruise of around 24 knots at 3,600 rpm. We cruised at around 22 to 23 knots with the old motor, so the new cruise is a bit









higher. The old engine gave us a fuel economy of around 1.4 miles per gallon at cruise. The fuel economy with the Volvo Penta at that cruise is around three miles per gallon – just over double what we had previously. We topped out at around 4,000 rpm at a speed of 28 knots with the new motor while getting an astounding 2.6 miles per gallon. Another thing to remember is that the tests were done with three large men onboard as well as a tower and 48-gallon bait tank on the boat, which adds a fair amount of weight. We also had a full tank of fuel, and since the boat is in a slip, it has the bottom paint which hinders performance, too. On a stock boat the mileage would be even better. We are expecting it

"The fuel economy with the Volvo Penta is around three miles per gallon – just over double what we had previously."

to get even more efficient after the break-in period. Where we will notice the huge savings in fuel will be at trolling speed. Not only are we getting way better mileage, but diesel is currently around a dollar-per-gallon cheaper at the gas docks.

While running the boat around, we noticed almost no fumes at all. Advancements in common rail fuel injections as well as other areas have made the new diesels virtually smokeless as well as quiet. Safety is also another huge issue with boats (especially while far offshore), and the diesel really adds a level of safety since it cannot blow up like the gasoline engines can. While idling at the dock, the motor is quieter than the gas motor. The only time it gets a bit noisier is when the turbo kicks in, but it's a sweet sound!

My first break-in trip was down to the *please see* **BOAT TECH** *on page 107* 

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## **BOAT TECH** from page 74

domes for some rockfish, mostly just to shake down the boat. We ran a total of 42 miles and fished the entire day. This trip would have normally cost around 95 to 100 dollars for us at the fuel dock. When we got our receipt and it said 33 dollars, we were just shocked. We had only burned a fraction of the fuel we would have burned with the old motor.

When your stern drive engine burns out in your trailerable, consider the option of repowering with a Volvo Penta Diesel. With the advancements in weight, a smokeless output and noise reductions, the diesel is becoming the new standard for the trailerable crowd. I am sure most of you are noticing that the trailerables

"Local marlin trips were costing us around 350 dollars per trip, and now we are looking at a bill of around 90 dollars."

we bought a few years back are now being offered with diesels.

Most are in a position where the larger new boats are out of reach and all the options they want are already on the current vessel anyway, so repower with a diesel, and keep the boat you love running for a long time, (and keep your bank account balance a bit higher, too). Give Kozwel Boatworks a call, and get a quote on what might be the best decision you have ever made with your boat.

Local marlin trips were costing us around 350 dollars per trip, and now we are looking at a bill of around 90 dollars or so! Thanks to Pawel at Kozwel Boatworks for doing such a great install and the folks over at Volvo Penta for making sure our repower went so smoothly.

For folks in the Bay Area, Helmut's Marine does these same repowers and engine sales, so give them a call and get the ball rolling. The season is right around the corner.

Volvo Penta: volvo.com/volvopenta/ Kozwel Boatworks: (949) 456-9935 Bautista Boat Repair: (714) 785-0313 Helmut's Marine: (800) 326-5135



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