

New Engine for Blue Goose

Most of our catboats use outboards for auxiliary propulsion, but some, like Blue Goose, have inboards. Hopefully this account will interest all owners.

Another chapter in the Blue Goose saga began on Memorial Day weekend. We headed out for our first sail since the “annual maintenance” had begun 11 months earlier (Bulletin 167), there was little wind, but the forecast said it would pick up. It did, finally, and we had about 45 minutes of fairly good sailing before it was time to head in. After about 20 minutes of motoring we got into the marina, ready to turn into the slip. The engine slowed and stopped. It restarted and we got in. I suspected a water pump impellor failure after sitting for 11 months, and changed it a few days later, finding 2 or 3 vanes broken off. Again, we headed out but didn’t get 5 minutes away when the engine slowed and stopped again. It wouldn’t restart this time.

Blue Goose, built in 1928, is 28 ft long, displaces about 8000 lbs, and the 50 HP BMW 3-cylinder diesel was installed new in about 1993. Probably overkill for this boat, but we had been told that the owner at that time had bought it because it was the quietest engine he could find.

After determining that it would only turn over with excessive force, it was removed and taken to the shop for inspection.



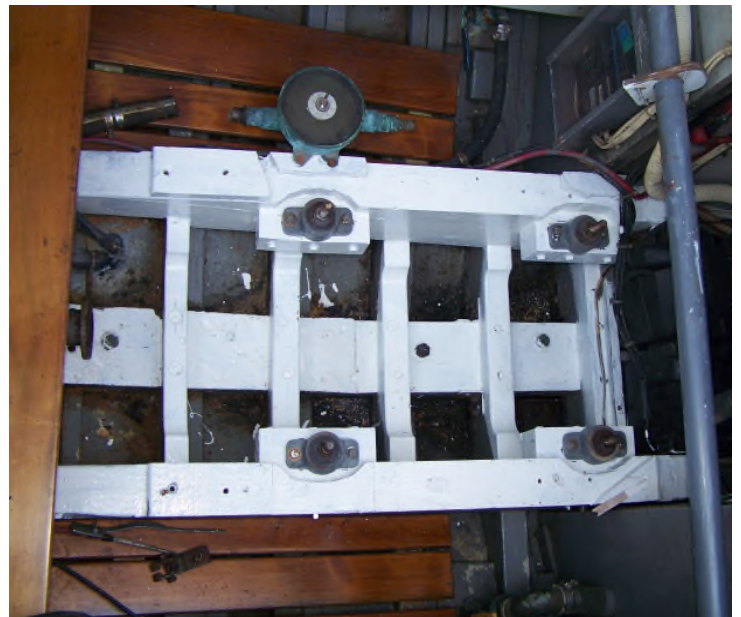
The picture doesn’t give you scale, but the engine weighs about 680 lbs, and the mounting centers are 21-1/4 x 25-3/4.

Final analysis showed that the oil cooler had leaked, the oil pumped into the bilge, the alarm buzzer didn’t work,

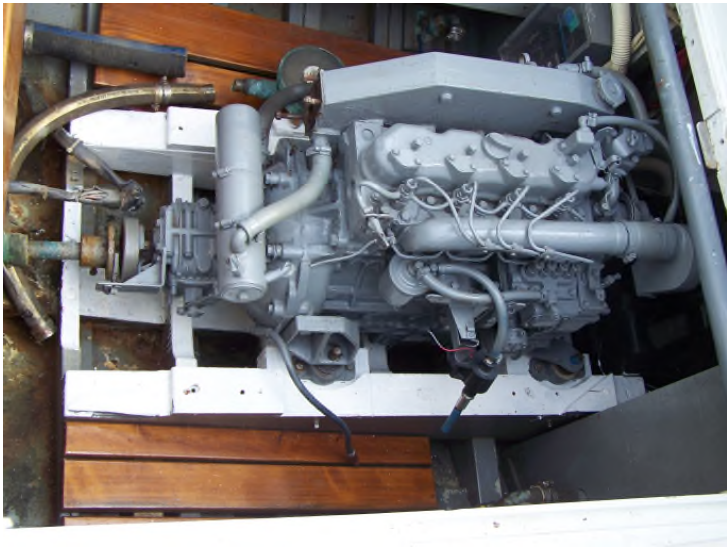
tho’ the gauge and low pressure light did, and one connecting rod large end bearing had spun. The estimate for a proper rebuild was about \$5000 in labor, and if parts could be found, add several more thousands.

A new Beta Marine 22 HP engine, which should be enough power, would cost right at \$10,000, plus installation costs. After hearing warnings like, “if you put a different engine in, you’ll have all sorts of fitting problems,” I decided to buy a local, used Universal 32 HP 4-cylinder engine, and proceeded with preparations for the smaller engine, which weighs in at about 490 lbs.

The engine mounting is 5 in. narrower, 5-1/2 in. shorter, and 2-1/2 in. lower – the first of the “fitting problems”. The engine bed stringers have 17-3/4 in. between them, the new mounts are 16 in. apart, some additions to the stringers are needed.



Maybe it’s easier working with wood than it would have been with fiberglass, except perhaps for cleanup. The frames and bed stringers were pre-cleaned of oil, loose paint, etc., and then painted with white Bilge Coat after completion of work. I had some thick Sapele sections left from the transom project, so cut blocks to be epoxied and bolted in place on the stringers. Removal of 1 inch spacers from the top of the stringers was easy, cutting out pockets to lower the mounts another 1-1/2 in. was a bit harder. A small hand-held circular saw, and oscillating tool were used to good advantage.



OK, what else can be wrong? You name it, everything that connects to the engine, except the propeller shaft coupling, is a different size or connection than what was here before.

Exhaust – the new engine has 2 inch pipe fittings, the old was 1-1/2 inch. A trip to the plumbing supply house got the needed fittings and adaptors, a trip to the marine consignment shop brought a short length of 2 inch exhaust hose.

Battery hookup – one different length cable needed.

Alternator hookup – all connectors different, including one for the tachometer.

Fuel pump – the old engine had a mechanical pump, the new one is set up with an electric pump – mount the pump and run wiring. Of course, inlet and return hose sizes are different.

Gearshift hookup – an existing bracket on the new engine must be modified. Care must be taken to make sure the gearbox shifts to forward when the shift lever is pressed forward.

Throttle hookup – here's the unexpected but difficult one. This engine doesn't have a shutdown feature, it is stopped by moving the throttle lower than the idle position, to close the fuel supply. The existing single lever shift/throttle control can't do that. Dual lever side mount controls are not common. To temporarily solve this, the existing lever was just used for shifting, and a heavy duty push-pull lawnmower throttle cable was installed. Not a long term solution, but would allow checking things out, and some short outings. More problems, this old control unit failed when coming in to the slip, internal gears slipped teeth, and it would not shift. It's time to do it right.

A proper new, two-lever, side mount, control was identified and ordered, they are not common. Again, Murphy steps in, the supplier didn't have it in stock as he had told me, and the control arrived 6 days later than

expected. But Murphy is still riding high, this control uses a common Teleflex 3300 series cable for the throttle, but a bigger, less common, 6000 series cable for the shifter. The gearbox is set up for a 3300 series small cable. I will have to modify one end, whichever size cable I use. I chose to modify a clevis to fit the control end with the existing smaller cable. A small change to the engine end for the throttle cable is also required.

I think that covers all the "side jobs" involved in this engine replacement. The original warning of "problems with a different engine," certainly was accurate. At this writing, it is mid-Dec., almost 6 months after the engine failure. I think everything is ready for action in a final state. While awaiting completion of the control installation we have sailed 3 times, but not for a month or so. Fortunately North Carolina affords us sailing weather year 'round, we will get out again soon.

