

# PG'S tips

**In the second of the series of Paul Garland's technical page for people who are not so technical, he examines the options available for someone whose engine stops working mid-journey**

**A**lthough nothing to do with matters mechanical, I would like to take this opportunity to thank everybody who made the effort to attend the AGM, with a special thanks to those who have put faith in me to help Brian and the executive bring the association forward. I promised AGM attendees that I will do my best, but now you have it in writing!

Green diesel, or rather its demise for leisure boats is getting a lot of attention on the chat line and in the marinas. We are lobbying for an exemption, so if any readers have ideas or indeed the ear of a politician all help would be appreciated.

## DIRTY HANDS

Let's get our hands dirty! I had a nice email from Dominic Reddy, Barrow branch, who had opted for the idea of putting two transit engines in his Cleopatra 850, replacing the original Volvo petrol ones. They work well, but obviously are a lot noisier than the Volvos. He recommended Freedom Marine in Kent, saying they were about 20% cheaper than Lancing Marine. All he wants now is some advice on overhauling his Penta 270 D Legs. I told him they had about the same elasticity as Waterford Crystal. If anyone has advice or manuals please get in touch.

In the last issue, we looked at pre-cruise check,s and where to find things under the floor. Now lets see what can go wrong on a bad day in the middle of Lough Ree.

## THE SOUND OF SILENCE

It has all gone quiet! That reassuring drone of the diesel has changed to the sound of waves. What will you do? .Don't look at the engine until the

boat is secure. Establish your position on the chart, look where the wind is going to take you. With lifejackets on, go forward and let out all the anchor chain, even if you have a hundred feet of water under you. In ten minutes you could be on the Wood Shoal, but with the anchor out, it will grip as you drift into shallow water. If you doubt your ability to solve the problem, contact Lough Ree radio and advise them of your situation. If it is near dark, look for a tow. Put out your 'I require assistance Flag' (a red X on a white background). Towing on a rough day is best line astern. Your boat will be into wind if anchored. The vessel going to tow you will pass alongside about two metres away, they will throw you a tow line, and hold their boat into wind while you secure the line under the rail, and on to a heavy forward cleat. They then take up the slack, while you take up the anchor, and return to steer in the normal way. Don't worry about accepting a line, salvage law only applies at sea. But as Chris Tarrant would say 'We don't want to do that'.

## HOT STUFF

Let's lift the floor and have a look. Remember things are hot down there. Lift the hatch slowly, making sure that there is no fire risk. If there is a fire, discharge an extinguisher through a corner of the floor hatch and put it back down for five minutes.

Let us assume you have no fire – just an engine that won't go. What happened just before it stopped? This will give you clues. If it ran erratically, ie the revs going up and down, it is probably a fuel problem. Overheating should be noticed on the temperature gauge, but the smell and steam are a real giveaway. Air starvation is quite unusual, but the



**Paul Garland**

symptoms are a gradual decrease in revs.

Lets look at fuel – the cause of 80% of engine breakdowns. Have you got enough fuel in the tank? A lot of boats have good size fuel tanks, usually without baffles, they stop fuel sloshing about, so even if you have 20 gallons in a 60 gallon tank without baffles, air can still get into the fuel system. Dirt and water are normally found low in tanks, so top up regularly. If you have dirt, water and air in your fuel system, what do you do? Most boat builders lay out engine rooms for ease of access. Follow the copper diesel line from the tank until you find a water/sediment bowl. This is usually glass, and can be dismantled by hand. Have an old plastic bottle under it to catch the diesel. Clean it out and reassemble it. Make sure you get a good seal, some bowls have a drain at the bottom

which makes it easy. Examine what came out to see if this is your problem. If it is full of water or dirt you may have to replace or at least clean the fuel filter. This is on the same copper line often located on the side of the engine. Ensure you get a good seal when you reassemble it.

**SUCKING DIESEL**

Now that we have taken out all the dirt and water, we still have the air. Go back to the fuel filter and look on the top where the diesel lines enter. There you should find a 10mm bleed screw, loosen this, now look at the side of the engine below the filter. Follow those fuel lines, and you will find the lift pump. At the bottom of this is a lever which you pump up and down, this brings nice clean diesel through the line. You will see the air bubbles where you loosened the bleed. Wait until you have clean diesel with no bubbles coming through tighten the bleed screw up. Some lift pumps have a button to push in to bring fuel through. If all this works and you are going for *Master City and Guilds* in mechanics, remember that the source of your problem is still lurking in the bottom of your tank, so get it out and cleaned!

Overheating is next on the usual suspects list. I said it is obvious as it arrives with smells and steam when lifting the engine hatch, but don't confuse steam with fire – they smell quite different. Steam often causes a hissing sound so don't destroy your engine by discharging a fire extinguisher.

Let the engine cool right down. The only thing you might learn from a steaming engine is which pipe might be burst as you will see the steam. When things are cool enough, start looking at the fan belt (front of the engine). Is it snapped? If so, release the alternator bracket and fit your spare. What spare? Is it time to remove the panty hose? Check the header tank (top of engine with a radiator cap), fill with water and look for leaks. Temporary repairs can be made to burst hoses with self amalgamating tape, always have some on board.

**WEEDS**

Check the raw water weed filter clear it of debris restart the engine check the exhaust to see if you are getting a good flow of water, if not you may have to change the impeller, this is usually located at the front of the engine covered by a brass plate held



**Fuel filter, water trap and sediment bowl with drain**

in by four screws. If you do not have a spare, now is the time to take the number off the brass plate and order one. You will not get one on a bank holiday Sunday in Portrunny.

**AIR IS EASY**

Air comes in one end and goes out the other. The reason it can't get in is a blocked air filter (many boats do not have one), and if it can't get out it is because of a blocked exhaust. I know all this from a trip Patsy and I made in 1997 from Glasson Dock in Morecombe Bay to Malahide in a 1943 MTB Caprella. It ended in a tow into Preston. Both engines had been rebuilt and run for about 10 hours before we set out, so what could go wrong?

After several hours into the trip we found ourselves off Blackpool heading for Hollyhead. The revs had been dropping on both engines, and we were starting to look at Liverpool as a alternative port. I went to the engine room which was thankfully enormous, and with work bench and vice I proceeded to bleed the diesel from two huge Dormon Ricardio V8 which were original engines. At this stage we had now stopped making headway, and had been at sea about eight hours. It was November, so light was fading fast and it was time for the lifeboat. An hour or so later, out of the dark she came. Both engines had now failed. When I went to switch off the Lister generator, Patsy said leave it on. I liked the sound of it – I had to agree with her. The lifeboat crew were efficient and professional and towed us into Preston just in time to

make a decision between a Big Mac or a pint. The Big Mac won. For the next two days I pulled the engines apart, I tried fresh fuel and had the pumps checked in Lucas. Everyone in the marina had a different opinion. On the third night, third Heineken, I had an idea. There were stainless steel exhausts coming vertically into a funnel. Mmmm... I had to go back to the boat there and then, dismantle the exhaust, and fire it up. It ran to full revs which covered me in soot, but was I happy. Unlike the publican when I came back.

**DOMINO EFFECT**

Even though the exhausts were in excellent condition having sat in Glasson pointing at the sky for a couple of years, the baffles inside were rusting. Add the heat of running under power as opposed to running in the marina, and they had a domino effect. As each baffle collapsed, it increased the heat until they all lay in the bottom of two lovely looking stainless 3" exhausts.

This is how I know air is easy. There was a recent poll in a boating mag for the best boat ever. Right up there was an Arun 52' lifeboat, when you really need it! I agree!

Keep it coming in. Any boat related subject welcome. ■

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