Living with an electric outboard

As I knelt on the bow buoyancy chamber of the dinghy, oar grasped in both hands, paddling against the rapidly ebbing tide I reflected that this was not what I had hoped for when I'd splashed out for an electric outboard at the Southampton boat show.

To return to the beginning, the 1995 Earl's Court boat show to be precise, would help to explain. Evadne's first tender was a flimsy affair, whose chief virtue on purchase from a friend of my Dad's was her low price and light weight. Her sole purpose was for me to row between Dan Webb and Feesey's yard, at Maylandsea, and the half tide mooring a few hundred yards away. When I took Evadne to Chichester harbour a year later, the distance rowed became about a mile, but I was young and foolish an thought nothing of rowing for half an hour to get to Evadne. Getting an outboard would have been an admission of inadequacy. Eventually, the concrete slipway took its toll on the underside of the little craft the half an hour's row inevitably resulted in wet feet, to those not shod in wellies. Sometimes, even for those with wellies. The return from a fortnight's holiday to find the dinghy "floating" two feet beneath the surface was the last straw so a new dinghy was sought at the next Southampton boat show.

In my defence I did try and row the new, larger and heavier dinghy to the mooring, but it was soon obvious that, due to a combination of increased luggage requirements and advancing years on my part, motorised propulsion was needed. The following January we visited Earls Court and I left the proud owner of a "Stealth" 24lb thrust electric motor. A 60 Ampere-hour leisure battery was fitted into a splash proof plastic box, and the cable was fitted with a deck connector and we were set for a life of silent and effortless motoring.

The advantages were immediately obvious. Except when the connector was abused, it always started first time. No petrol was needed, the "fuel" was contained in an odourless battery, which doubled as a spare for the main battery. The rather large battery contained sufficient energy for about two hours' motoring, at least two trips from the boatyard to the mooring and back. Operation was silent, a fact not lost on Jane, my wife. She is one of many people who detest smelly, noisy little two-stroke engines, and I am one of those who has always found them difficult to start.

The disadvantages were slower to appear. The available power was low, on paper probably less than ½ a horsepower (electric motor manufacturers are notoriously obtuse in quoting their motors' power, but in absolute terms it is much less than any petrol outboard). The battery seemed to get heavier over the years, especially when lifting it from the dinghy to the side deck. During one foray in a F6 headwind, against the tide, I had to deploy the oars as auxiliary power, as we were not going forwards, as such. But in flat, calm water the motor would push us along slightly faster than I could row, and we were happy with that. Arguably, in choppy, windy conditions it would do the same, but I try not to row in such conditions.

The little electric outboard served us well for over twelve years. Eventually, the fact that it was not designed for salt water was its undoing. It got slower and slower, eventually grinding to a halt. A post mortem examination showed that the body housing the engine had allowed corrosion to gradually misalign the bearings. As the manual said, reading it after I'd taken it apart, reassembly is not a task for the user. I'd hazard it needs a jig and a certain amount of know-how. The weight of the battery had become a serious matter as well, and I'd looked long and enviously at the Torqeedo, an AC motor from Germany with a lightweight, integral Lithium rechargeable battery. I seized my chance and at this year's boat show the purchase was made.

The first trip out to Evadne seemed to confirm all our hopes. At ½ throttle we got there in 10 minutes, instead of the usual 20-25, and the indicator on the battery told us we'd used about 20-30% of the available energy. This was what I'd hoped for: an electric motor is efficient at low speeds, having a flat torque curve. Producing a maximum of 31 lb thrust, the 800 Watt motor at ½ throttle should not drain the 300 Watt-hour battery unduly. This is partly because the AC motor, at 44%, is far more efficient than the old DC motor. Coming back was another matter. Late, we were plugging a couple of knots of tide so I wound the throttle up to full and let rip. All was well until we got to the last corner before the boatyard when it slowed, gave a little sigh and stopped. Out came the oars. For the first time in years I'd left the rowlocks buried in a bag, instead of to hand, so I paddled from the bows and Jane gamely paddled from her seat in the stern. We made it to the nearest pontoon, perched on the mud above us, and breathed a sigh of relief. Actually, I breathed a lot more that. We unloaded our gear and I rowed meekly around to the main slipway, water sluicing out past the rising mud banks on either side, but with several inches of water beneath the keel. Memories of Maylandsea!

A few moments of consideration revealed my error. The more powerful motor I had purchased will produce full power for 20 minutes, or an unspecified but constant power for an hour. As any physics student will tell you (he says, embarrassedly) increasing the power to a motor does not linearly increase the speed through the water. This means that if I'd throttled back a bit we'd have made it. The lovely light battery contains less energy than my old 5-ton lead acid battery, less than half, and is capable of consuming it at twice the rate. A recipe for paddling.

Performance was measured a little more scientifically on the next outing. I used the "constant time" setting which gives you an hour of running on the model I have, the 801. It's a constant speed setting, which removes the temptation to inch the throttle ever higher, as I had done on the previous outing. According to the hand held GPS this pushed the dinghy along at just over 3 knots. This got us out to Evadne in a little about twelve to fifteen minutes, and back in ten. There is also a "maximum range" setting which get pushes the dinghy along at just under two and a half knots. A burst at full throttle showed 4.4 knots. All these are on our fairly chunky pram dinghy, which is about 8' long if I recall correctly, two-up with no luggage and averaged in both directions, to allow for the tide. The 401, which has half the power would last longer but put out less power, you pays your money and takes your choice.

You do pay for being what the industry calls an "early adopter". When I bought the Stealth DC motor, the motor and battery were comparable in price to a Honda 2hp 2-stroke outboard. Costs are much the same today, but a Torqeedo will set you back a little over £1000. But it's only money and, as Evadne would say, she's worth it.

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