DOLPHIN
YACHT ENGINES LTD

OMAHA ROAD · BODMIN · CORNWALL PL31 1ES Tel. Bodmin 3501

The Renowned DOLPHIN ENGINE is the automatic choice for the discerning owner who demands the ultimate in a light-weight (90 lbs.) 12 b.h.p. auxiliary.

OPTIONAL ADDITIONAL FEATURES

1. 500 watt alternator kit.
2. 2:1 reduction gearbox—remote mounted.
3. Hurth gearbox, incorporating forward/neutral/reverse, remotely controlled by Teleflex, with 1.5:1, 2.04:1, or 2.71 reduction, for use with modified single-direction Dolphin engine HGII.
4. Range of folding propellers available, from 9½" to 16" diameter.
5. Front-mounted emergency hand-start, standard pull-cord arrangement retained.
6. For extreme racing purposes, a special lightweight engine less electrics, to save a further 30 lbs. is offered.

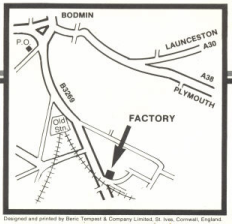
DOLPHIN yacht engines offer:

The Dolphin 12 b.h.p. direct drive, twin-cylinder engine. This firm favourite retains all the features that make it unique, including direct reversing which saves the weight and bulk of a separate gearbox, and makes this engine particularly suitable for cramped installations. Acknowledged as the 'smallest and lightest' engine of its kind, this unit comes complete with electric start and 100 watt generator, etc. Leaflets and independent test evaluations will be supplied on request. Suitable for yachts up to 7½ tons T.M.

OPTIONS AVAILABLE:

1
500 watt bolt-on ALTERNATOR KIT. This is available with subtleties in as much as separate charging systems can be used, to help ensure that the engine's battery voltage is maintained—leaflet available.

2
When used in conjunction with a HURTH GEARBOX, which provides ahead/neutral/astern running, the Dolphin Engine becomes a power unit with *considerably more propulsive power.* Conventional Teleflex controls and normal 12 volt starting with a 500 watt alternator as standard. Naturally there is a choice of gear reductions available. Suitable for yachts up to 10 tons T.M. with 2-1 reduction, and even larger on 3-1.



SEPTEMBER '86
SERIES II
WITH INTEGRAL GEARBOX NOW AVAILABLE
* * *
ITEMS 3, 4 & 5 NOT DEVELOPED

3
A super lightweight 12 b.h.p. engine, suitable for racing yachts, c/w only one handstart facility but weighing in at around only 70 lb !!

UNDER DEVELOPMENT:

4
The SAILDRIVE with the ultra-sleek, under water unit, and powered by the compact twin-cylinder, 12 b.h.p. Dolphin engine. Remember Dolphin introduced the Saildrive twenty years ago, and we believe this new unit to be a trend setter too.

and 5
A 700 cc, four-cylinder, horizontally opposed, 24 b.h.p. engine, which is the ultimate for smooth, quiet running.

Please refer to the separate price list for details of the comprehensive installation equipment available for these engines.

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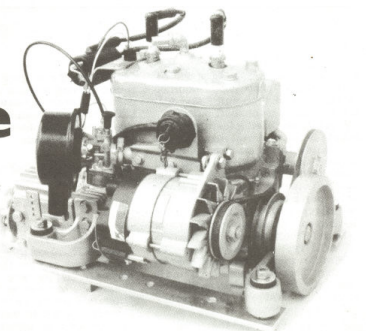
Dolphin two-stroke update



Dave Greenwell investigates

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Manufacturers comments in brackets

Small petrol auxiliaries have all but disappeared from the new engine market which is now dominated by an ever growing choice of compact, lightweight diesels. But there are still a few small petrol engines being built and recent changes to the Dolphin 12hp two-stroke twin may well prove that two stroke auxiliaries are far from dead.

Most yachtsmen will have come across the Dolphin Direct Drive at sometime or other. Even if they don't recognise the name, they know of the engine as the one you have to stop and start in reverse to go astern. It is a trick I have seen demonstrated many times without any problems and, indeeed, I've known owners who have become very nimble-handed at the manoeuvre. But there are still many who find it difficult to believe that the engine will restart just like that and look upon the whole operation as an act of complete madness to switch off the engine just at the time you need it most — just before you are about to hit something.

That is one of the factors which prompted David Chapman, MD of Dolphin Yacht Engines, to rethink the whole concept of the Dolphin, bringing it more into line with conventional marine auxiliaries. The result is their new Dolphin Series II. First to go was the sailing clutch. This was the device that connected the drive from the engine to the prop shaft. Below 1200rpm the drive would remain disconnected, above 1200rpm the centrifugal clutch would engage drive. All very smooth but apart from not being able to engage reverse except by reversing the engine, this drive system also limited the sterngear design to a one-to-one drive. The result, a rather high revving prop shaft which in turn meant a rather small, finely pitched propeller which was not totally ideal for pushing a displacment yacht. *(Whatever the theory - it worked very well in practice!).*

On went a ZF gearbox which as well as giving neutral and reverse capabilities to the Dolphin, also gave them the chance to include a gear reduction without resorting to a separate reduction box to give a reasonable prop speed.

Having fitted the FNR gearbox, there was no more need for the rather elaborate starting, stopping and reverse start switching system and so the Siba Dynastart, clamped onto the front of the original Dolphin was replaced by the more conventional separate starter and belt driven alternator.

The engine itself has that very traditional, almost antique look about it and we were interested to hear whether or not Dolphin Engines had taken the opportunity to bring that up to date. But the only part of the engine they had seen fit to change was the electrics on the ignition side. *(Gearbox, Alternator & 12v Start?).* Following the example set by most manufacturers of two-stroke outboards, Dolphin has adopted capacitor discharge (CD) ignition in place of the old mechanical contact breakers. This was not so much a modification but more of a logical progression because the contact breakers on the original Dolphin were part of the Dynastart and removing this provided the ideal chance to 'modernise' the ignition. For the most part, CD ignition means a complete absence from things to adjust. The electronics that dole out the sparks to the plugs are completely enclosed in plastic and, say its protagonists, is therefore totally protected from the rigours of life in a wet environment and is far more reliable than opening and closing contacts. The other side of the arguement, however, points out that if a CD ignition unit does go wrong, the only course of action is to completely replace the unit, a not inexpensive exercise, and there's absolutely no way that you could effect a temporary repair to get you home. Old fashioned contact breaker points, on the other, can usually be cleaned, adjusted and persuaded to work at least for a little longer, but are more likely to go wrong in the first place. *(You can please some of the people all of the time and all of the people etc.....).*

What's Changed?

The engine itself is exactly the same as before: a watercooled, three-port, twin-cylinder two-stroke with a compression ratio of around 8:1 and a five-bearing crankshaft. Cylinder

block and head are raw water cooled, fed by a single Jabsco pump mounted at the front of the engine and belt driven from a crankshaft pulley.

A rather surprising feature of this engine is the material mix. It has a light alloy (aluminium base) head, cast nickel iron cylinder block and an aluminium alloy crankcase. This, coupled with the bronze body of the water pump makes quite a cocktail of different materials for an engine that has raw water cooling. I put this to David Chapman who told me that in reality, corrosion due to dissimilar metals has not been a problem. They have not even found it necessary to fit anodes which is something that we find rather difficult to fathom.

More relevent to the cooling system, we were told, was the importance of flushing the waterways through with fresh water to dislodge silt that can settle in the bottom of the cooling passages. The occassional flush through with a hose pipe should keep the waterways in good order but for a real 'spring' clean, removing the exhaust manifold will enable you to see inside to check that all's well. *(Once every four to five years).*

On no account, we were told, should the cylinder head be removed just to have a look inside. According to Dolphin Yacht Engines, they are very unlikely to become coked up with carbon and removing the head can create more problems than it solves. Sounds like very good advice to us, especially when you consider that the head is aluminium alloy which is notorious for warping given half a chance. *(Not ours).*

Keeping the plugs clean and properly gapped is virtually the only other piece of maintenance that the engine will need during the sailing season. All the bearings on the crank shaft are lubricated by oil from the two-stroke mixture. Even the winter lay-up demands very little from the owner. If you're worried about damp getting into the electrics, it may be a good idea to take the CD ignition system home and put it in a nice dry cupboard, but there's no engine oil to drain off from the sump and provided you have run the carburettor dry after every run, that should not need disturbing either. Indeed, the whole philosophy behind looking after a Dolphin two-stroke seems to be leave well alone. Obviously it's a good idea to go round the engine once in a while to check that nothing has worked loose, but as far as maintainence involving 'deep engine exploration' it's best avoided. *(Well said).*

How Safe?

One factor above all others that deters owners from installing petrolengines is the possibility of fire. But is the risk as great as some believe? There are those who say not and, indeed, owners these days are perfectly happy with bottled gas aboard and there is really very little difference. We were a little surprised to learn that a drip tray beneath the carburettor is an optional extra and not fitted as standard, but how many cooker installations are fitted with over board gas drains to get rid of the unburned gas that leaks from a burner before it lights?

We carried out some test runs on a boat that had previously been fitted with a direct drive Dolphin. The installation was very neat and she started very easily with just a tickle of the carburettor and a push of the choke which is automatically opened when the engine is speeded up. Although the exhaust had quite a crack — it was fitted with a non-standard muffle — the engine was very smooth with hardly any vibration even at tickover. And at higher revs, apart from the engine note the only way you would know it was running was by watching the flywheel turning. Idle speed, however, needs to be carefully set because the load of the 35 amp alternator cutting in can make it cough before the engine is properly warmed through. Like all two-strokes, it did not like to be left idling for too long and you must avoid being timid when engaging drive or you seem to run the risk of stalling the engine. *(This rather depends on the cable adjustment).* But once we were accustomed to the feel of the combined throttle and gear lever, it responded well and gave power the moment it was asked for.

If you are looking for an engine with a substantial weight advantage over its nearest diesel equivalent and want to save something in the order of £400 to £500 in the bargain and you have previously been put off Dolphin two-strokes because of the start/stop control, the new Dolphin with a gear box may be just what you are looking for.

N.B. A fuel pump, sacrificial anode and the Hurth gearbox are now standard fitment.