

An autopilot for tight spaces

Easy-fit space-saving system

Many sailors would prefer an inboard autopilot, but installing one isn't always feasible in the space available. However, PBO's David Pugh met one satisfied boat owner who found the Octopus system held the answer

For people with wheel-steered boats of around 9m (30ft), the selection of autopilots is limited. Wheelpilots are a popular choice, but the exposed drive system is prone to damage, can slip and is, to some eyes, unsightly. Modular systems with a linear electric or hydraulic drive to a tiller arm on the rudderstock are common on larger boats, but the size of the ram can rule them out when space is tight.

Other problems can also preclude their installation. We spoke to David Foster, who bought his Bénéteau Océanis 31 *Aragon* in December last year and fitted an autopilot over the winter. He was keen to install an inboard autopilot rather than a wheel drive, and having already assessed the job at the London Boat Show this looked like a simple task: the boat already had a tiller arm and pin installed, so it should be a case of simply buying the appropriate linear drive and fitting it. For the size of boat, Raymarine's SPX10 core pack and a 'Type 1' electric linear drive looked perfect.

Luckily, David measured the tiller pin before spending any money, only to find that Bénéteau had fitted a 15mm diameter pin rather than the 12mm pin required by the Raymarine Type 1 linear drive. This, it transpired, was because Bénéteau fit a Type 2 hydraulic drive as standard – which in turn would mean David would have to buy a much more expensive core pack to drive it.

Enter the Octopus

It was time to think again. David considered modifying the Type 1 linear drive rod end, but it's always a big step to adapt a piece of brand-new equipment, probably



Octopus buyer David Foster (inset) and *Aragon*, his Bénéteau Oceanis 31

invalidating your warranty along the way. However, some more research turned up Octopus Products, a Canadian company who have come up with a space-saving solution so simple you wonder why nobody thought of it before: an electric drive which works through a Bowden cable, allowing the drive to be installed remotely from the steering quadrant. Similar systems are already in use to control stern drives on motorboats – why not use one in the much more hospitable environment of a yacht's lazarette?

David's experience with Octopus was excellent. After consulting with Tim Bell at their European sales office and concluding that the standard drive fitting would not meet David's needs, he was put in touch with Dave Shannon at Octopus HQ in Canada, who designed and supplied a custom fitting for the 15mm Bénéteau tiller pin within three weeks.

Fitting the Octopus

As a professional engineer and practical boat owner, David carried out the installation himself. The drive is remote from the tiller arm, so you need both a reinforced area near the steering quadrant to take the thrust of the drive cable, and a site to place to the motor. This can be almost anywhere, as the motor itself does not take any of the drive thrust.

Bénéteau had already reinforced the starboard bulkhead adjacent to the steering quadrant to accept a standard steering ram, so there was no question about where the thrust bracket should be fitted. David made a substantial support from angle iron, gave it a thick coat of silver Hammerite, and firmly bolted it to the bulkhead. The drive unit he fitted at 90° to it, out of the way on a shelf in the starboard cockpit locker.

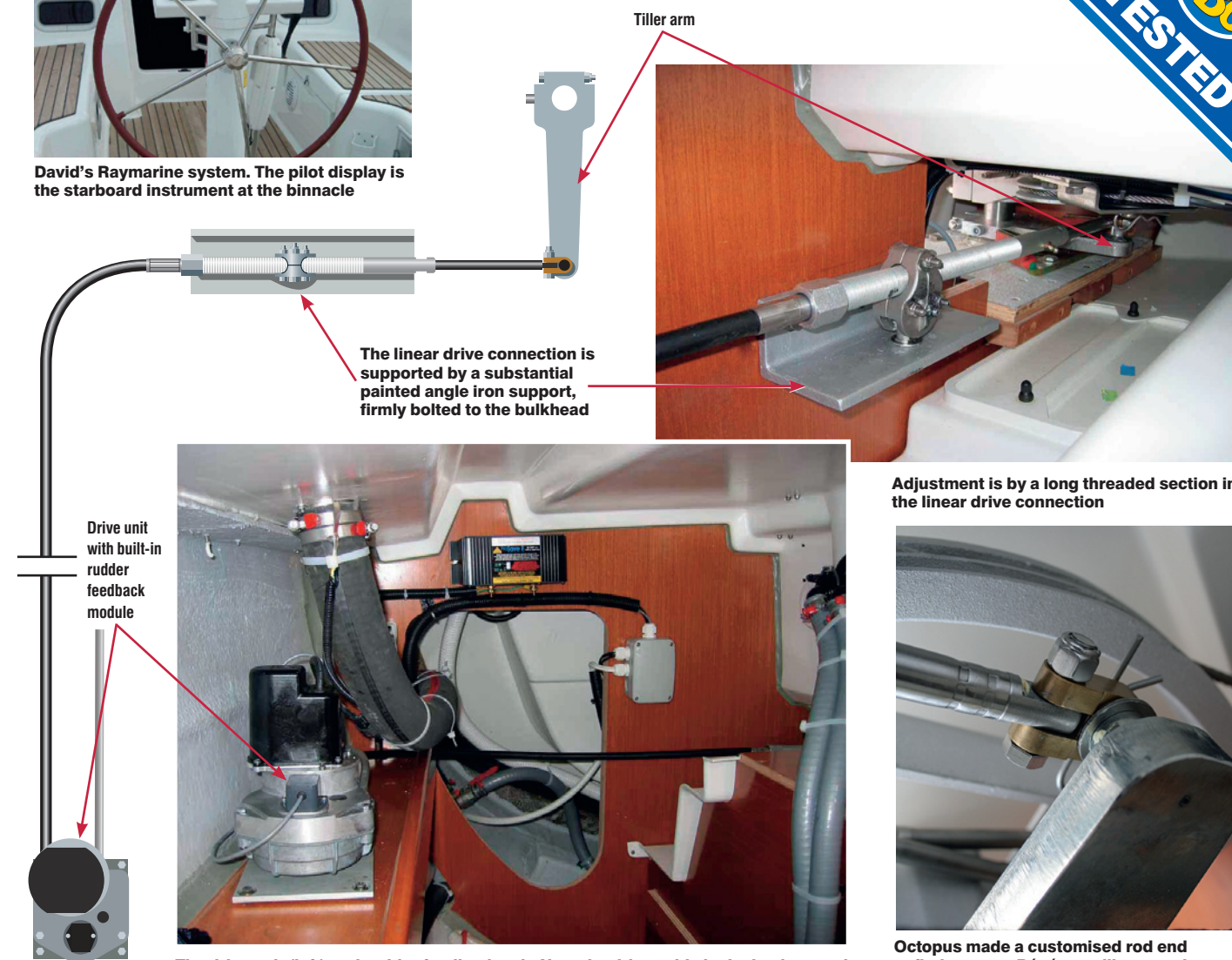
The drive unit itself is a fairly simple design, with a motor

turning a wheel that grips the drive cable to push and pull it in much the same way a line is gripped by a self-tailing winch. The excess cable runs down a plastic tube attached to the motor housing, thus keeping all moving parts covered. A nice feature is that the optional rudder reference unit plugs neatly into the drive housing, taking very little extra space and making installation straightforward.

David added the rudder reference unit after installing and testing the rest of the drive, and advises that it's a worthwhile investment. He said that, once the unit was fitted, the autopilot was 'noticeably better at keeping a course, in particular down wind. It also knows where the rudder is, so if for example you had the wheel to port and asked the pilot for a course to starboard, it knows to drive the rudder past the centre rather than drive it a little and wait to see what happens, as it will do without the feedback unit.'



David's Raymarine system. The pilot display is the starboard instrument at the binnacle



Tiller arm

The linear drive connection is supported by a substantial painted angle iron support, firmly bolted to the bulkhead

Drive unit with built-in rudder feedback module

The drive unit (left) and rudder feedback unit. Note the drive cable in the background

Adjustment is by a long threaded section in the linear drive connection

Octopus made a customised rod end to fit the 15mm Bénéteau tiller arm pin

The drive is connected to a Raymarine SPX10 core pack with ST70 instruments. David found no problem interfacing with the Octopus drive: the setup process is the same as for the Raymarine mechanical linear drives.

Using the Octopus

I visited *Aragon* at her berth in Woolverstone Marina to look at the Octopus drive, and took her out on the River Orwell to see how it performed. David's installation looked neat and professional, and although he would have had room for a conventional drive unit, the flexibility to install the drive away from the steering quadrant will broaden potential installation locations for many boat owners and for some might make the difference between choosing a wheelpilot or linear drive.

On the water we tried both motoring and sailing using the pilot. Conditions were light and

hardly gave the pilot a hard time, but we could steer a steady course reliably at all wind angles. In use, David's onboard meter suggested the drive draws about 1A. Thanks to the stabilisation from the gyro compass and rudder reference unit, this is kept to a minimum.

To give the system some work to do we carried out some automatic tacks, which it achieved reliably and competently. It did not immediately pick up the correct wind angle on the new tack, but we later found that this was due to an incorrect system setting. It was certainly no fault of the drive.

When switched into standby mode, the drive does not instantly release the wheel, instead requiring a positive movement from the helmsman. Octopus have included this as a safety feature to stop uncontrolled manoeuvres if the pilot is switched to manual mode when you do not have a firm hold of the helm. You need to be aware of this as it can be odd to

feel that the pilot has failed to disengage – but you quickly become accustomed to it.

Once released, sailors will appreciate the minimal drag on the wheel. This is because a clutch disconnects the cable at the motor, so the helmsman only feels the resistance of the low-friction Bowden cable, rather than the entire assembly.

The drive itself makes a gentle whirring noise in use, entirely inaudible once the locker is shut.

Contact and costs

■ The Octopus RS drive is available directly from Octopus as the RS Sailboat drive, or from Navico as the Simrad SD10 drive.

■ The basic drive system costs £1,099, and the rudder reference unit an extra £175. By contrast, a Raymarine Type 1 linear drive costs £1,175.

■ www.octopuseurope.com

PBO'S VERDICT

Inboard autopilots are generally more reliable, powerful and customisable than wheel or tiller pilots, so any product that makes them available to more boat owners is a step forward. Octopus have done a good job with their RS drive and can interface with several manufacturers' electronics, so if you're struggling to fit a conventional linear ram or simply prefer the idea of being able to access the unit without diving head-first into the lazarette, this is well worth a look.