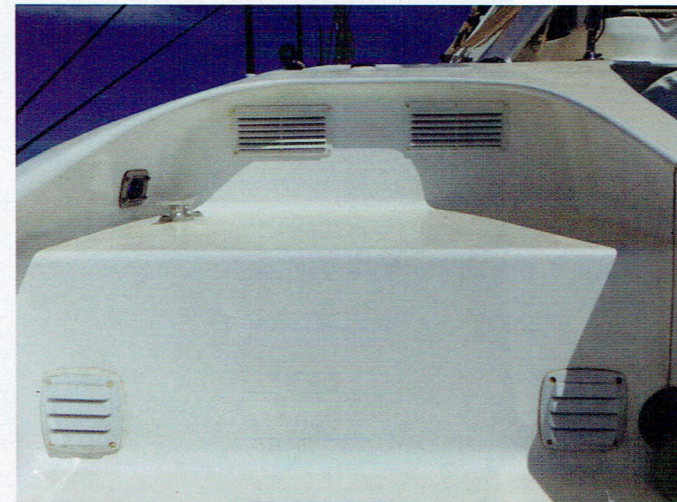


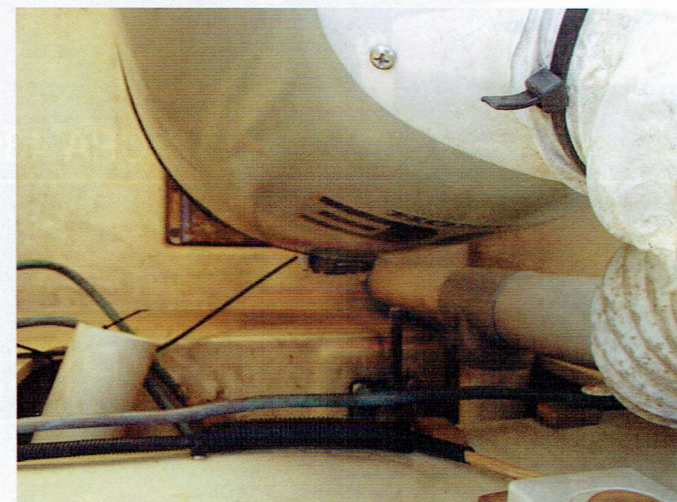
AN OUTBOARD INSTALLATION THAT WORKS



Air in vents bottom.
Air out vents top.



Fan extracts warm air from the top of the motor bay.
Ducting goes to motor cowl for fresh air intake.



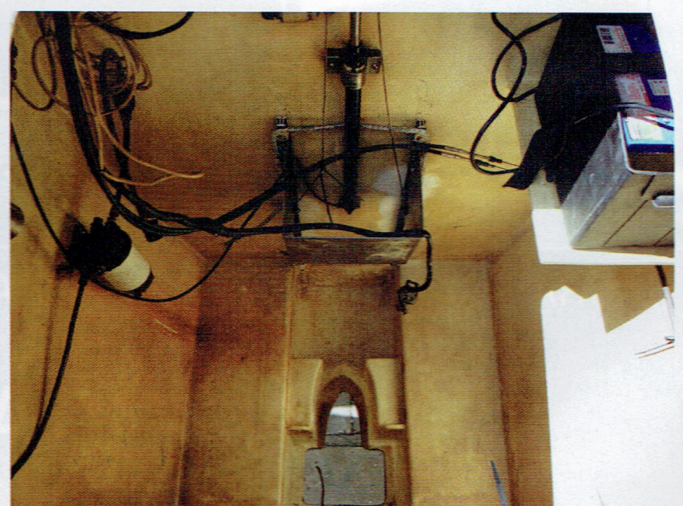
Fresh air intakes into the lower motor bay. Left is into the motor bay, right is ducted directly into the motor.



Motor down showing prop position in relation to the rudder.

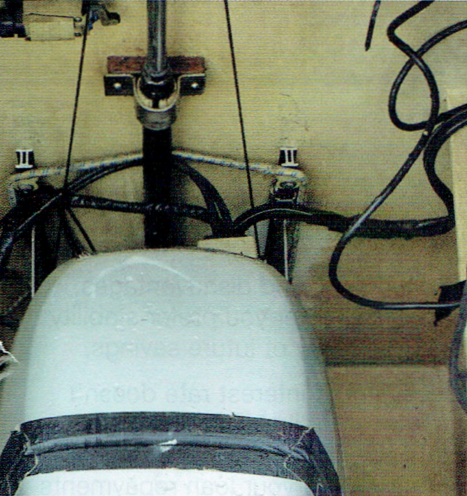


Motor up with plate closing hull.

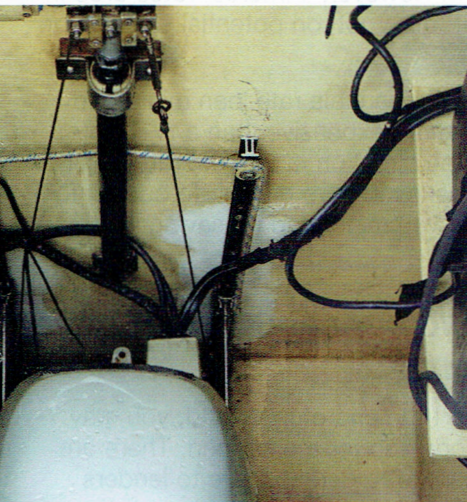


Raising and lowering ram and mounting bracket set up on the tracks.

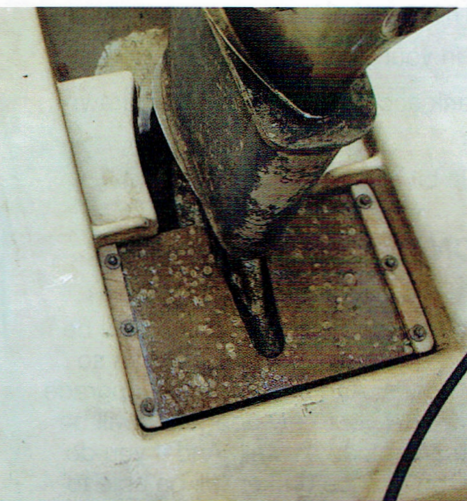
After lots of positive feedback from my last article about Outboards versus Diesels I thought I should probably follow up with an outboard installation that works. Many don't, for various reasons, but this is the way I have set up the outboards on my catamaran and it does work! I did have problems at the beginning but instead of giving up I worked through them and I'm now happy to share my experience with you so we can all enjoy a lightweight boat that is powered efficiently.



Fresh air intake to motor cowl, other air intake areas sealed off.



Motor down showing the general installation.



Top cavitation plate in position when the motor is up.

The first thing to consider is the location of the motors. The best place is in the hulls just in front of the rudders so the prop wash goes over the rudders as it would with a shaft or sail drive installation. Fit the longest leg motor you can to reduce the back pressure on the exhaust system. This will help with the performance.

The second, and most important, is ventilation. **THIS IS CRUCIAL.** The motor bay should have fresh air introduced low down and hot air exhausted from the top of the motor bay via blowers. I use rotary fans, Sirocco YX 2522, IP 55 rated, which only draw 380mA each. The next area to deal with is the motor cowl. Mold the air intake so fresh air can be ducted directly to the motor via 100mm flexible ducting. I run 30hp motors, larger motors will need larger diameter ducting. Don't force air into the motor cowl as it causes problems with fuel/air ratios. Been there, done that! Run the ducting from a dorade type intake so water doesn't make its way into the motor cowl. Make sure the motor can't draw air from the motor bay as this will affect performance due to exhaust fumes which do end up in the motor bay. It will also keep warm, moist air from entering the cowl which can cause corrosion. It's also a good idea to spray a product like Lanox around the motor for additional protection. If there are still concerns about dampness in the motor bay install a solar extractor fan so the air is circulated even when the motor isn't in use.

There are a few options when it comes to raising and lowering the motors, electric/hydraulic, 12 volt electric linear actuators and good old block and tackle. My motors raise and lower hydraulically on two small I beam tracks with four small four bearing cars. These have worked really well and I have only recently replaced the tracks after nine years of use. The cars are still working well. I've tried using slides instead of cars but unless everything is in perfect alignment they jam.

The area in which the motor leg exits the hull also requires a bit of care. Build the exit as close to the shape of the leg and prop as you can so you don't lose too much flotation. This area should be built to just above the waterline. A rectangular aluminium plate is bolted to the cavitation plate of the motor leg. Fix nylon wear strips to the plate to make it easier for the leg to raise and lower. In the motor down position this plate takes the thrust loads of the lower leg and also stops large amounts of water pushing into the motor bay when under way. I don't have water coming above the waterline while under way. There is a second plate which closes off the opening under the hull when the motor is in the up position. This is simply bolted to the motor skeg and bent to conform to the hull shape thus reducing drag while under sail. Less drag = better performance and a happy skipper.

It really is a fairly simple installation however it did take some determination and a couple of years to sort out the bugs. Proper ventilation is the key.