Practical projects

Great ideas and tips from PBO readers

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Fitting a solar panel

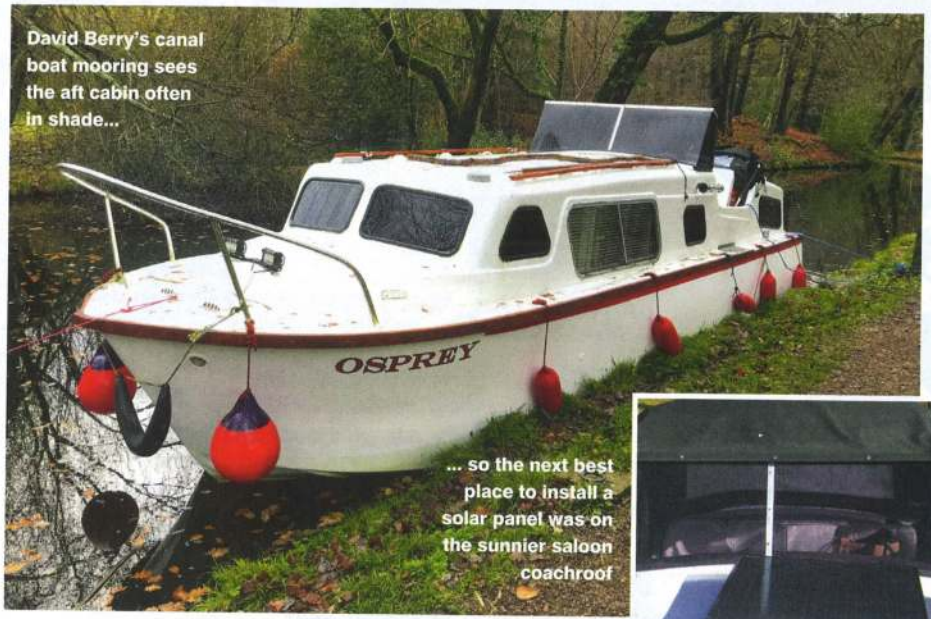
David Berry solves his solar charge situation

Our new canal boat needed some way to ensure her batteries stayed topped up and the best solution, as far as I could see, was to connect a solar panel.

If you read my piece on page 44 you'll know that fitting solar panels on a yacht is no panacea and there are also certain specific pitfalls to avoid when fitting panels on canal boats.

I'm firmly of the opinion that the only type of panel worth looking at is a crystalline one, either micro- or poly-crystalline, in a rigid frame – not least because they are cheap at less than a pound per watt.

I opted for a 100W panel because it fitted perfectly on the aft cabin roof, the batteries were a short distance from where the wires would emerge from the panel, and because there was ample bulkhead space to fit a controller.



David Berry's canal boat mooring sees the aft cabin often in shade...

... so the next best place to install a solar panel was on the sunnier saloon coachroof

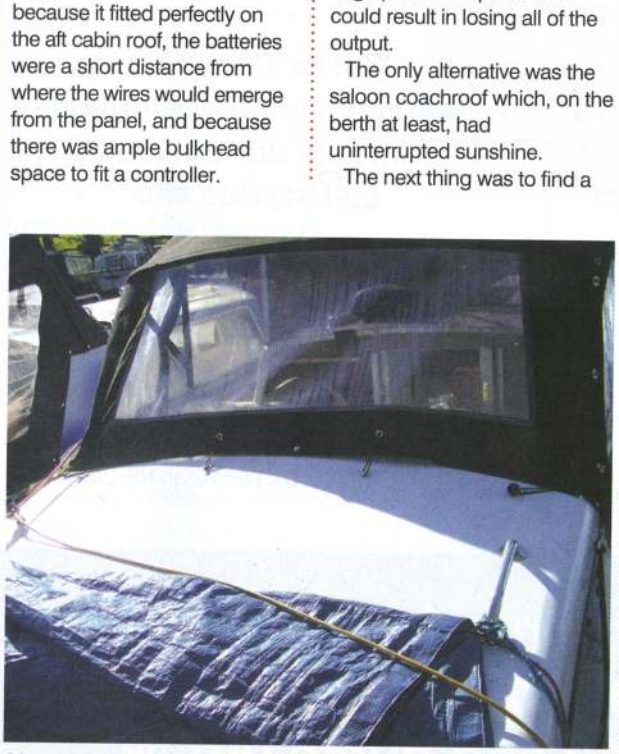
Then I discovered that in her usual berth the cockpit cover would cast a shadow over a large part of the panel and could result in losing all of the output.

The only alternative was the saloon coachroof which, on the berth at least, had uninterrupted sunshine.

The next thing was to find a way of supporting the panel. I found on ebay the perfect aluminium angle brackets. I decided not to anodise them, as canal boating is less corrosive than sea-water boating. For anyone afloat on the brine, anodising is a must.

The other bit of work I needed to do before actually installing the panel was to connect suitable wiring. I chose high-current twin-loudspeaker cable for cars – again, the canal boat environment means expensive tinned marine wiring is not wholly necessary.

To join the wiring I resorted to soldering the joint and



Aft cabin roof is often shaded on the mooring, so there would be less output from solar panels mounted there

LEFT Wire joints were epoxy and heat shrink wrapped

Panel wiring enters the boat through a new gland

Plain aluminium brackets are OK for freshwater use

MPPT controller heat sensor cable tied to battery terminal

insulating it with two layers of heat shrink sleeving which I lined with epoxy resin. It's the way I was taught to do it working for the MoD quite a few years ago!

Then I had to get the wire into the boat and up to the MPPT charge controller. I encased the cable in split plastic conduit where it was exposed to the elements. We use this on my yacht in Greece to protect cables from the UV damage caused by the sun, so it should be adequate for the UK climate.

To get the wiring through the hull I used a twin gland (the wiring for the horn would use the other route).

I looked at Victron initially when considering which controller to buy, but I couldn't justify spending £100. I briefly considered a PWM type at about £20, but then discovered a 20A MPPT controller from US company Renogy. The Rover MPPT controller comes with an optional temperature sensor, which can be fitted to a battery terminal. The sensor gives the controller more information about how the charge is progressing.

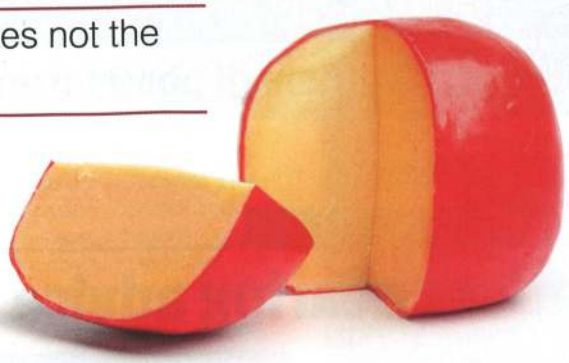
The only drawback to the Renogy Rover I discovered when it arrived was its large size. However, there was sufficient wall space on the aft bulkhead in the heads so that's where it ended up.

So now we have three sources for charging the batteries: a mains charger for when we are in the marina, the motor itself and the panel.

Renogy MPPT controller proved larger than expected

Wax works

Edward Sutton wastes not the wax on his cheese



Picture Partners/Alamy

When you next enjoy Dutch cheese, keep some of the coloured wax traditionally used as a protective skin.

The red (or sometimes yellow) wax on Edam is easily peeled and when softened by kneading with warm fingers, will form a cohesive mass. A walnut size ball of this free material has earned a place in my boat's tool kit over many years of yacht ownership.

Perhaps the most important use came from the wax's waterproof, sealing properties. Electric wiring passing into exposed exterior fittings such as navigation lights, often have loose fitting rubber grommets or may lack any type of seal. So a worm of hand softened wax, pushed firmly round the junction with a screwdriver will harden to make it waterproof.

The same goes for any push-fit cable junctions behind instrument panels. Encapsulating the electrical contacts in wax will keep them waterproof and less likely to be loosened by vibration.

Cabling from the mast usually passes through a gland in the deck and the sealing of this important fitting can be improved with wax treatment.

Guardrail stanchions are often the first fittings to suffer in collisions with jetties or other boats and their bases can lift from their seal with the deck. Wax firmly rammed under the base will prevent leaks into the deck structure until a more permanent repair can be carried out.

Cheese wax is also an adhesive. A small blob on the end of a screw can hold it in place on the end of a screwdriver. This is particularly useful when trying to put a screw into a place with accessibility limited to a one-handed operation. A blob of softened wax on the end of a stick can also help retrieve fallen screws and washers from confined spaces such as under the engine.

And finally, if you arrive on board to find you left the boat keys at home, you will bless the foresight you had when hiding a spare hatch key in a place known only to you, out of sight, stuck in place with a large blob of Edam wax.

Fix a label to it

Sam Longley makes a virtue of not fixing blemishes

I was somewhat disappointed when a scratch mysteriously appeared in my aft cabin door. More so, when moisture got behind the lacquer and it began to look larger and quite ugly.

I decided to order a bespoke vinyl sign to cover the mark up: it doesn't look out of place, it saved me the effort of fixing the damage, while preventing it from getting any worse. Win, win, win.

While I was at it, I ordered another bespoke sign for the front door at home. They were £5 each (including a couple of spares for future use) plus postage from a company called Funky Monkey.

A scratch in the door turned ugly when moisture found its way under the lacquer

Adhesive vinyl sign covers it up and serves as an aide-mémoire