

Attempting to fix anything to a caravan's walls is a tricky job, undertaken neither by the ham-fisted nor the faint-hearted. **Michael Clear** outlines his tried and tested lines of attack

By hook or by crook...



Plastic coat-hooks like these (above) are notoriously incapable of supporting much more than a hankie by themselves. Reinforce their adhesion using a screw, however, and they suddenly seem tailor-made as caravan key-hooks

As we live in the computer age, it is hardly surprising that computers feature heavily in the design and manufacture of modern caravans. Each component is positioned meticulously at the planning stage and the walls and floor constructed to accept these fittings at the anchor points set into them. You will gather from even the most cursory examination of a caravan that its outside is usually aluminium, sometimes glass reinforced plastic (GRP), and inside, some sort of non-metallic sheet, usually very thin plywood is used. These two materials represent the slices of bread in a sandwich.

Between them is the filling and, just like a sandwich, this can be varied to suit the individual caravan. During manufacture, the ready-cut outside is laid face down and sprayed with adhesive. Wooden battens are positioned to provide both rigidity and anchor points for cupboards and the spaces filled with polystyrene slab. The whole lot is then resprayed with adhesive before the pre-shaped layer of plywood is pressed on to the adhesive, to finish the sandwich. Needless to say, both inside and outside layers are pre-cut by computer controlled machines.

During a caravan's construction, cupboards are usually fixed to the floor and the walls added next. Once the cupboards have been anchored to the battens in the walls, the ends can be added and, finally, the roof.

Understanding a caravan's construction can explain why it is so easy to screw a coat hook into the inside wall of a caravan, only to find it pull out almost immediately. I never fix anything to the walls of my caravan, either inside or out, unless it cannot be avoided. Nevertheless, there have been two occasions when I had no option but to pierce the outside skin of the caravan.



If you really must screw into an inner wall (above) it's best to use self-tapping or twin-thread coarse-thread screws



Take two cup-hooks, curtain wire and a pair of screw-in eyes, and you too could have a towel rail like Mr Clear's (above)!

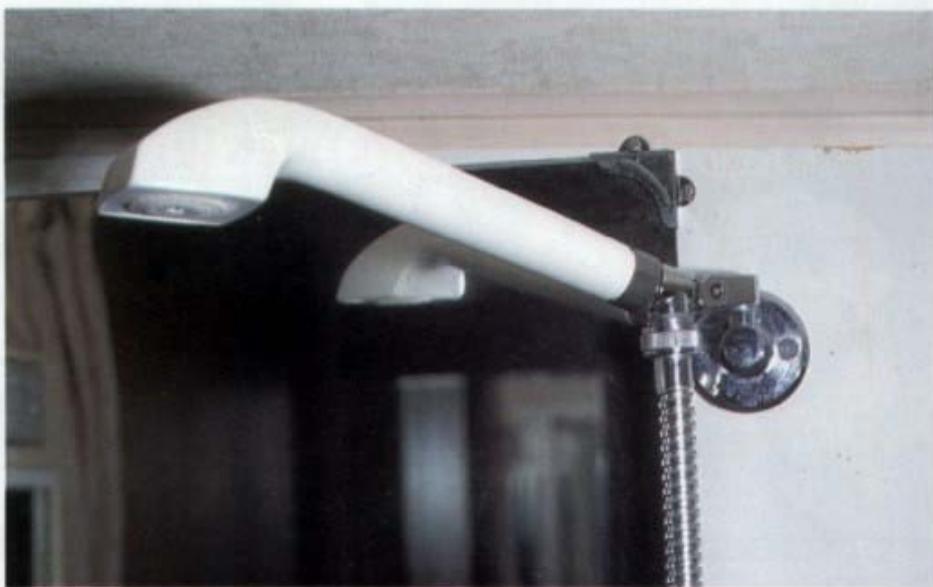
The first was to put a row of studs along the side to accept a pocket-apron for the awning, and the second was to fit three awning eyes to anchor the awning frame to the caravan. I put the first eye in with pop-rivets and then decided to put the other two in with self-tapping screws. There is little to choose between these two methods although pop-rivets make a permanent fixture, whereas screws can be removed. I never pre-drill holes for self-tap screws, but push and screw in one operation.

I like pop-rivets; they are so positive and pull up very tight. Their limitation, perhaps, is the relative weakness of both the inner and outer surfaces of caravans when it comes to supporting any real weight. They pull through thin aluminium or plywood all too easily.

It is possible to obtain hollow, threaded pop-rivets for use where a component needs to be occasionally unscrewed. I have only used them very rarely, however.

If a pop-rivet does pull out, it leaves a large hole to fill and this can be messy to hide. I have done this, in the past, by tapping or pushing the aluminium gently back into position and then filling the hole with Araldite using a drinking straw. The resin is loaded into the straw and then blown into the hole. After setting, it can be disguised with touch-up paint.

However, I have found a superb epoxy product called QuikSteel, which looks like a cylindrical plug. You cut a piece off the length which contains both components and roll it in your hands for a minute or so. As it warms and becomes pliable, you push it into the hole and smooth it off with a putty-knife. The resin can be either painted or



Use short, large-diameter, coarse-threaded, countersunk screws when affixing something as heavy as this shower-head

‘If I use a screw in the outside skin, I put Araldite behind the fitting in a belt and braces approach. It also waterproofs it’



In case you didn't know, this is a small drawer knob, complete with integral screw: ideal for light weights only...



The trusty rivet gun. These rivets make for a permanent fixture whereas screws can always be removed later



When fitting awning rail press-studs like these (above), smear a little mastic on the threads to prevent water ingress



...such as on the back of a washroom door. Anything heavier than a bath-robe will probably damage it, though



Sandwich break: wood, aluminium and polystyrene are the key ingredients of a typical sandwich-construction caravan wall

drilled and screwed with a self-tapping screw within 15 minutes. It doesn't go as soft and runny as other resins I have used, and sticks resolutely to a variety of surfaces. Filling unwanted screw holes in the outer skin is always one of my DIY nightmares but QuikSteel seems to be the answer.

If I have used a screw in the outside skin, as in the case of the apron studs, I have always put Araldite behind the fitting as well. This waterproofs the fixtures and acts as a belt and braces back-up. I don't believe in leaving things to chance and make no apology for taking precautions. I would far rather put a dab of epoxy resin behind a fixing stud on the outside of the caravan when I screw it on, than omit it and discover rot through water ingress at a later date. This fear is always at the back of my mind and perhaps explains my great reluctance to drill holes into the outer skin of my caravan's body panels.

I am similarly reluctant to put screws into inner walls, but for a different reason. The inner

HOW TO ATTACH TO A CARAVAN'S WALL



Substantial towel rails like this (above) need equally substantial screws to affix them successfully to inner caravan walls.

wall of most caravans is made of three millimetre plywood bonded to polystyrene which, in turn, is bonded to the outer skin. The only effective holding material is the plywood, and with just three millimetres of it, I think it is expecting a lot of the material to screw heavy loads on to it. If there is no option but to screw something on to the inner wall – say, when fitting a shower bracket – then you should use a coarse thread screw, either self-tapping or twin-thread. Sizes six and seven are probably the most useful.

Since the thickness of caravan walls rarely exceeds 25mm, or one inch overall, I never use screws longer than 18mm or 0.75 inch. Any screw used in the interior wall is only going to bite into shallow plywood, beyond which is only polystyrene, so short screws are ideal. However, coarse-threaded, short-length screws of suitable diameter are not readily available, whereas 18mm (0.75 inch) screws of this type are found easily.

I bought a selection of boxes of suitable screws from Screwfix Direct, enough to last me for several years. The vast range is superb, but postage costs are such that you'd be better placing a larger order than is really necessary. I bought pop-rivets and push-fit 12v connectors, as well as screws.

Needless to say, with the amount of condensation which can occur in a caravan, it pays to buy stainless steel screws. These are only slightly more expensive than the bright-finish, zinc-plated type. In the end, it comes down to not just what is available, but to what suits the pocket.

There is very little use for the conventional woodscrew in caravans. I have only ever used them once, in the brass version, metric M and imperial BA sizes. Each version has its own distinct thread. Because of this, I am careful to keep the two series well apart to avoid time-wasting efforts trying to put the nut of one on to the thread of another!

I find M4 and M5 metric screws are useful sizes, as are 2BA and 4BA. Available lengths vary but this is not a problem as they can easily be cut to size with a small hacksaw. M4 is slightly larger in diameter than 4BA, and M5 a little larger than 2BA. Heads of machine screws come in either slotted or crossheaded versions, according to individual preference. I have used these to fit coat



Machine screws and washers help prevent holders like this (above) from pulling through the thin interior woodwork

'Since the thickness of a caravan's walls rarely exceeds 25mm, or one inch, never use screws longer than 18mm'

hooks or internal partitions and to hold bottle-clips inside the cupboards. If you fit washers under the nuts, they won't be pulled through easily. The disadvantage of using machine screw is the visibility of the nuts and washers on the other side of the partition or cupboard. However, as these are not always obvious, unless you look behind, this is a small price to pay for really solid anchorage. I know anything secured with a machine screw stands a better chance of staying in place, come what may!

The most obvious and important additional item any caravanner might want to fix is a fire

extinguisher. These vary in type and size, but are unlikely to weigh more than a couple of kilograms. Nevertheless, although the ideal position for an extinguisher might appear to be the inside of the kitchen area, I would try to look for another location so that the wall does not have to bear undue weight.

If it really must go on the wall, use the largest diameter self-tapping screws that will go through the fixing holes of an extinguisher bracket, such that countersunk heads are used in countersunk holes and pan heads on flat holes. Attention to details like this ensures the bracket fits snugly and tightly. I have seen small rawplug cavity door fixings used as an alternative to screws, in order to secure a fire extinguisher.

The small size just fits into the cavity before it pulls tight. Remember though, that there is less than one inch of cavity when you use any form of cavity fixing. Whatever the location or the method of anchorage, it is important that the extinguisher is held firmly in place.

Towel rails are another popular addition; indeed, I have two in my caravan. The bathroom rail is fairly conventional and doubles up as a grab-handle. It is held securely on to the inside of the partition wall with screws. The other is on the dresser, by the doorway.

It consists of two cup-hooks, about 40cm apart, screwed into the end of the dresser with a length of plastic-coated curtain wire, each with an eye screwed into the end, stretched between the hooks. It is light in weight but can hold tea-towels and hand towels most efficiently. It's cheap, too! I have described this rail in detail, to show that professional-looking results can often be achieved with extremely simple and inexpensive ideas.

A large washroom mirror sits on the inside of the outer wall, its brackets held in place with a coating of Evostik behind them, together with a selection of small self-tapping screws.

When I replaced the original shower head, I used short, large diameter, coarse-threaded, countersunk screws for the shower bracket.

When adding coat hooks, the choice of design and means of fixing is wide and bewildering, but adhesive backed hooks are not really suitable for caravans. My tip is to avoid the inner wall at all costs and use machine screws to attach hooks which you want to support heavy coats. I have put a couple of plastic coat hooks on to the end of an overhead cupboard with a couple of screws, and they are really useful for hanging up keys.

Light-load coat hooks can be stuck on to the back of the washroom door. I used two small drawer knobs with integral screws which, by design, won't hold much. They are ideal for hanging a dressing gown or sponge-bag up, though.

Securing additional items to a caravan is really only a matter of common-sense based upon an understanding of how the caravan is constructed. It goes without saying that puncturing a caravan's outer skin, for whatever reason, is a risky business and should be undertaken with some caution.

Always cover yourself by adding Araldite to screws, and, if you have any to hand, a runny blob of waterproof mastic on a screw's thread should help prevent any moisture getting through and rotting the wood behind.

Better prevention now, than cure later. 