

Upholstery and Trim

GENERAL



Fig 17.1 Basic racing seat in GRP which can be upholstered

Unless you are going racing, when all you will want in the way of trim and upholstery will be a piece of foam in a bucket seat, you will need to do something about the comfort and appearance of the inside of your car.

Trim panels cover the interior walls of the car, hiding the structure and providing an attractive finish and sound insulation. Seats are, of course, a necessity and need to be adequately comfortable and supportive to make travel in your car a pleasure. You may also want the protection of a hood and tonneau cover if you have an open car, but such items are likely to require the use of an industrial sewing machine and a lot of experience, so are best left to the specialists.

For those who want, and can afford to pay for, modern seats for their kit cars and specials, there is a wide range available from specialist suppliers. If you cannot afford 'off the shelf' seats, or you want something traditional, like the seat shown in Fig. 17.2, it is not too difficult to make your own. Alternatively, pay another visit to a breaker's yard where you may be able to find something suitable, perhaps in leather.



Fig 17.2 A traditional type of sports car seat

SEATS

Methods of seat construction differ considerably.

Modern seats of complicated shape are moulded from polystyrene-type foam on a metal frame; others have the seat formed from a rubber diaphragm stretched on a metal frame with a moulded and upholstered back.

Some seats are of a more traditional construction, with padding over a sprung frame, which are not too difficult to repair but would be tricky to make. The most basic seats, which are easy to make and quite comfortable, have a wooden base, with thick foam cushioning and a covering of vinyl.

If you decide to visit a breaker's in search of seats, go armed with the measurements of the car interior - especially the width - and buy the runners as well as the seats.

Some cars had leather seats, either as an option or as standard on the more expensive models, and it is worthwhile looking for these, as they are very comfortable and can often be repaired, rejuvenated and dyed.

Vinyl-covered seats come in all shapes and sizes, and their appearance is nearly always improved by a good scrub with soap and water. You can buy various preparations for cleaning vinyl seats and changing their colour, but they are difficult to repair satisfactorily. Whilst it may be



Fig 17.3 A partially stripped oak framed seat from a luxury car

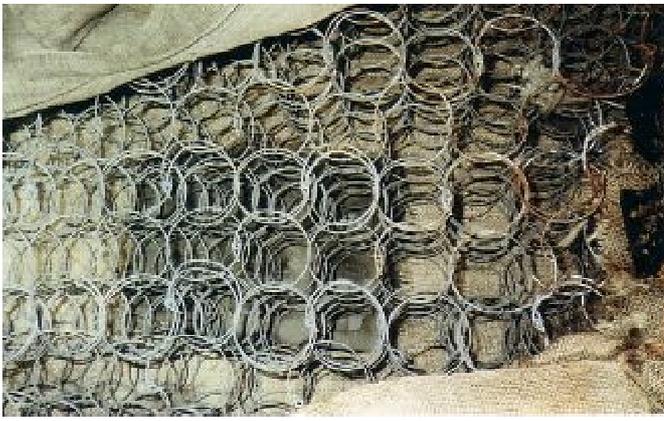


Fig 17.4 Original "innards" of the seat previous seat - springs encased in hessian with horsehair padding

possible to get hold of some patching material and adhesive to deal with small cuts, more major damage will have to be repaired by renewing the complete panel.

Cloth-covered seats are often very attractive, but tend to soil easily and can fade, although they can often be cleaned and freshened up with the appropriate upholstery cleaner. Their use should be restricted to closed cars, as cloth soaks up water, which is not only unpleasant to sit in, but will also leave watermark discoloration.

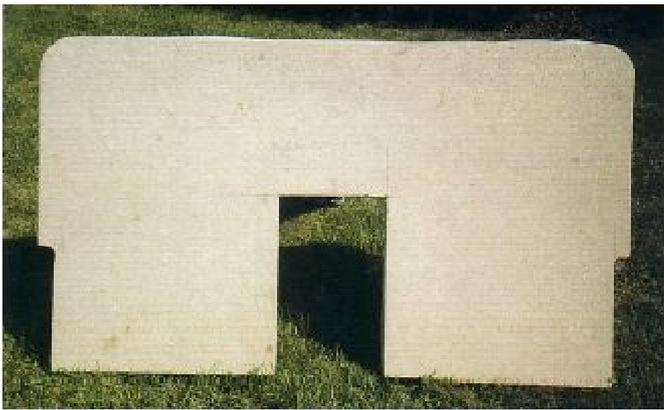


Fig 17.6 A back-board, like this one for a Locost can be cut out from 9mm or 13mm ply.

To make the

type of seat shown in Fig. 17.2, typical of many traditional sports cars, a basic board of 3/8in (9mm) or 1/2in (13mm thickness is cut from plywood or chipboard to the shape required for the seat cushions and the back (see Figs. 17.5 and 17.6). Measurement will, of course, vary from car to car. The measurements shown are those used for my Locost. Foam about 1in (25mm thickness) is cut to the same dimensions, and additional foam shaped



Fig 17.7 Adding shape to the back of the seat



Fig 17.8 Marking out the seat covers for the pleats



Fig 17.9 The pleats being machine sewn into the "sandwich" made up from the vinyl cover material, foam and calico backing

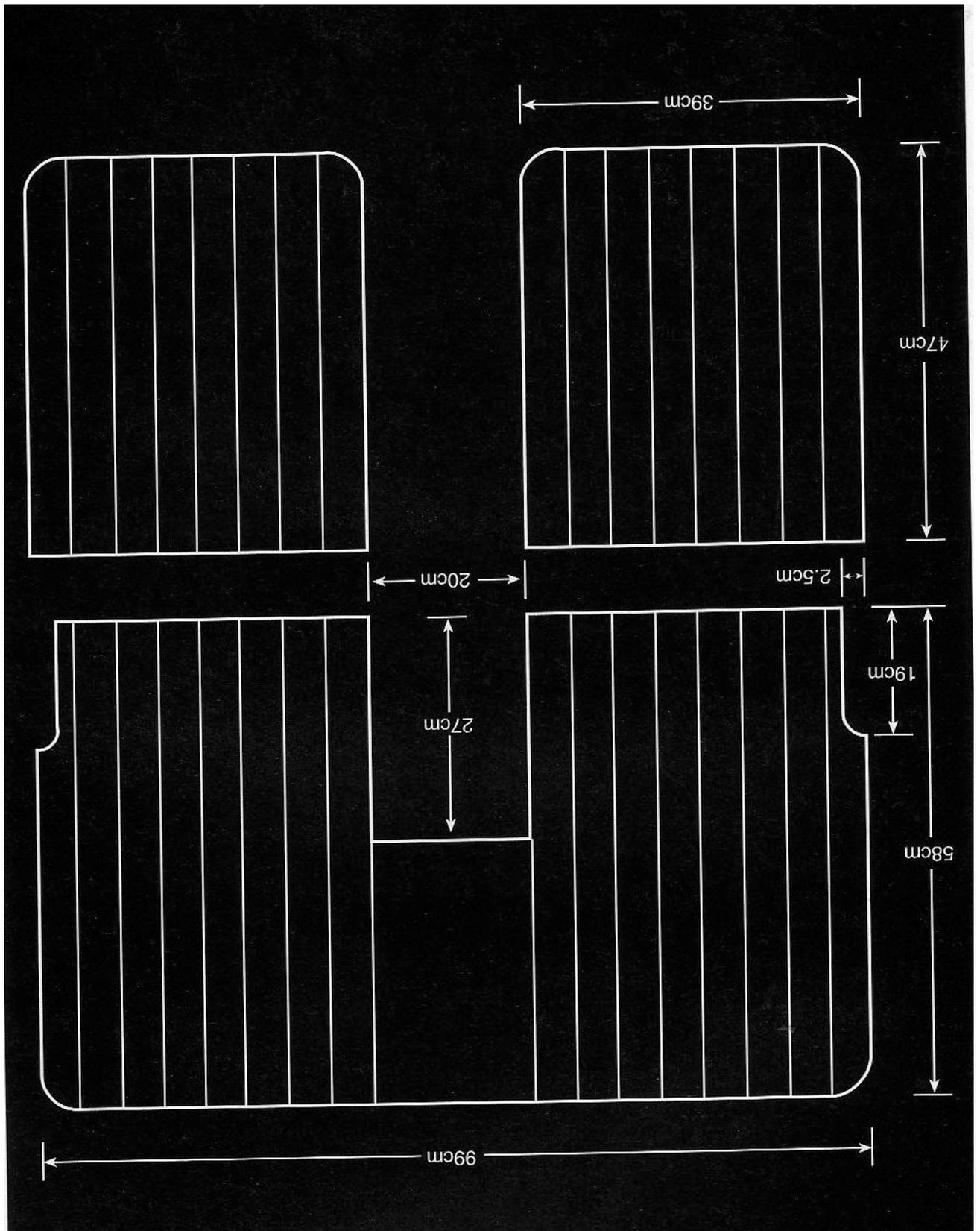


Fig 17.5 A cut-out pattern for making a traditional seat. Dimensions given are for a Locost seat



Fig 17.10 Making up the piping

Paper patterns are made to use as templates when cutting out the vinyl covering. Once the covering has been cut out, it is then lined with 1/2in (13mm) soft foam. The pleats are made by sewing the vinyl to a backing piece of calico, and filling the 'pockets' so made with 1/2in (13mm) foam strip, pushed down with a ruler or something similar. Alternatively, the vinyl can be sewn through, as shown in Fig. 17.9. The piping is optional, but it sets the finished seats off nicely and, like the vinyl, is available in different colours. A domestic sewing machine should be just about adequate for this work, but it might protest a bit when there are several thicknesses of vinyl and the piping to be sewn together.



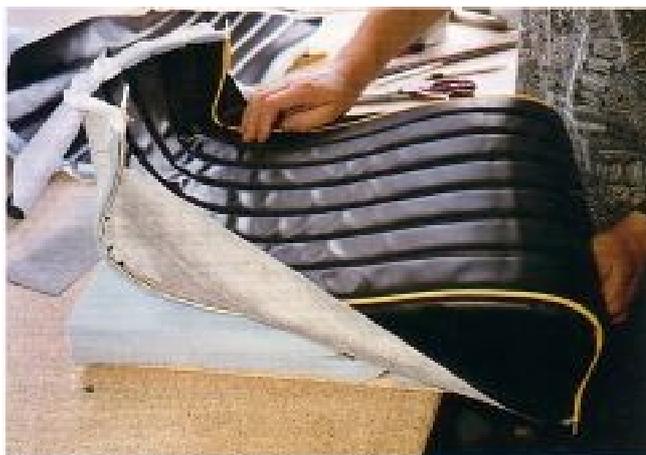
Fig 17.11 Piping sewn to the edge of the panel for the seat bottom

When the covering is completed, it is pulled over the foam-lined base and stapled to the back (see Figs. 17.13 and 17.14).

If you do not fancy the sewing required for the pleats, you can still make very effective seats in the same way, merely by stretching the vinyl covering over the foam and stapling it to the back of the wooden bases, being careful to get the corners to fold over neatly. As an alternative to vinyl, leather could be used, but a domestic sewing machine could be working quite hard to cope with it.



Fig 17.12 Material cut out to form a panel for the seat bottom side.



17.13 The completed seat bottom cover is pulled over the foam and the seat base



Fig 17.14 and stapled to the wooden base.

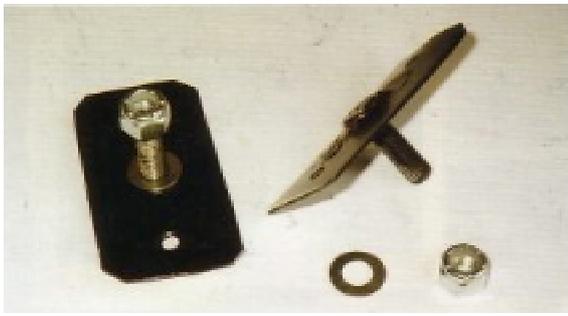


Fig 17.15 Metal plates with captive bolts are screwed to the seat back and bolted through the floor of the car.

The law requires that seats are positively located. You can use runners if you want the seats to be adjustable, but if no adjustment is required they can be simply fixed to the floor direct. To secure the seats, captive bolts are made by brazing the bolt head (thinned on the lathe if you have one) to a small plate screwed into the wooden base, as shown in Fig. 17.15.

TRIM PANELS

These can be made in hardboard (or thin ply if you are making a quality car), using the thinnest outdoor grade obtainable, cut to paper patterns carefully drawn to fit the sides and doors.

The panels can be lined with thin foam, stuck on with a spray adhesive, then covered with vinyl. Allow about 1in (25mm) overlap, which can be folded neatly over the back of the panel, cutting out V-shaped notches at corners or tight curves so that there is only one thickness of material to be glued to the hardboard or ply.

Unless you use very thin backing, the backing will need chamfering along those edges which will be visible when fitted, to ensure that you get a smooth finish rather than a square edge. A strip of piping stuck to the back of the panel gives a professional finish, especially if a contrasting colour is chosen.

The panels are attached to the framework by means of selftapping screws. These should be of the 'raised-head countersunk' variety for preference, and should be used in conjunction with screw cups. Chromium-plated screws never seem to last very long before discolouring, and one solution is to use stainless steel screws from a yacht chandler, especially if you are building a car open to the elements.

When working on door trim panels, you will, of course, need to cut out the necessary openings for the door furniture (window winders, interior door handles, etc.) If there is room in the thickness of the door you will find a map pocket handy. This is no more than a shallow box, rather like a letterbox, and needs covering inside before fitting to the back of the panel.

Areas that suffer a lot of wear, especially from the shoes, such as the lower area of the side trim panels near the pedals, and the bottom of the door trim panels, can be covered in carpet instead of vinyl. The transmission tunnel also looks good finished with carpet.

CARPETING

The floor itself needs carpeting. Having spent so long over the build or rebuild of your car, do not spoil it by using the spare piece of carpet left over from when you recarpeted the spare bedroom, but go for purpose-made car carpeting, available from a specialist supplier - patterned carpet does not look good in a car!

Felt or rubber underlay helps to prevent wear and gives good sound insulation against noise of the engine and running gear. The carpet under the seats and on any vertical surfaces should be glued in place with spray or

contact adhesive, but that under the feet should be made removable for easy cleaning. Carpets must not be left loose, otherwise they bunch up and, on the driver's side, tend to get caught under the pedals.

Special carpet fasteners are available, which have a stud that screws into the floor, and a thin metal ring that pushes into the carpet and is secured underneath by a socket which clips on to the stud. These fasteners are virtually invisible and very effective, but care should be taken when fitting the rings, as the three prongs are viciously sharp.

Removable carpets should have their edges bound to stop them from fraying, and to present a professionally finished appearance. A strip of the vinyl used for the seat or panel trim will do for binding, and can be sewn or stuck to the carpet edge, allowing about 3/4in (19mm) overlap and carefully mitreing the corners.

The top edges of open bodywork sometimes create a problem, depending on how the metal body panels are finished. If the panels cover the top of the door or aperture completely and fold down over the inside, the unfinished edge of the panel will be covered by the trim panel, but if the panel finishes at the top, it will need covering. This can be done with trim material and padding, with a broad strip of extruded aluminium, or with 'Hidden Banding' which is fixed with tacks or small screws which are hidden when finished. Hidden Banding has a leathercloth finish and is offered in a small range of colours.

A padded armrest makes driving more comfortable, and is easily made with a roll of foam covered in vinyl trim material mounted on a piece of shaped aluminium.

WhitePointer Seats

I've bought 2 fibre-glass seat shells from White Pointer in Qld - seat details can be found here <http://www.whitepointer.com.au/seat.html>. They sent me a picture of their seats after upholstery.

