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## Body and Fittings

Last updated 21-Dec-2017

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[The sectioned MGB at the British Motor Museum, Gaydon](#)

### Quarter-panel Replacement

I've had to replace all four rear quarter-panels on both cars now plus the left-hand front of Vee. In all cases they have corroded through from the inside, having been replacement panels themselves. Unless done properly these replacement panels will rot faster than the originals and any other replacement panel.

This is because they cover the end sections of the sill panel, which runs from the back of the front wheel arch to the front of the rear wheel arch, and there is only a gap of about 1/8" or so between the two panels. The narrowness of this gap means that even if they are treated with Waxoyl or similar by spraying from above (by removing the splash panel in the front arch and the trim panel behind the doors) it will almost certainly just form a bridge across the top of the gap and not penetrate it. So even if the sill itself has been painted after fitting the back of the cover panel cannot be, and with the oxidation caused by arc or MIG welding corrosion starts eating away at the new panel almost immediately. Spraying Waxoyl or similar as described above quite possibly accelerates this process as it will prevent circulation of air, so any moisture that gets into the cavity from below e.g. as a result of road spray cannot dry out easily.

Eventually the corrosion will become visible on the outside of the cover panel as bubbles with rust streaks running down. This usually happens near the bottom of the cover panel where it curves round underneath, which makes it easy to miss and even easier to ignore for a while. Until it gets bad enough to be worth doing something about.

Once the cover panel starts to corrode inside the cavity it actually becomes thicker - the products of corrosion having a greater volume than the original metal - and this gradually fills up the gap between the cover panel and the sill. Flakes from further up also fall into the bottom of the gap, eventually bridging it, and the rust debris comes into contact with the sill panel. The debris gets wet from the aforementioned road spray and takes a very long time to dry out - possibly never in a daily driver in anything other than a desert environment - and this starts rotting the sill panel too. If you leave replacement of the cover panels for too long, when you finally 'get a round tuit' you may find considerable corrosion or possibly even holes in the sill too even though the sill may have been protected by spraying the inside of the box sections.



In the first of the pictures here you can see that the lower part of the cover panel that was adjacent to the sill is heavily corroded bare metal, whereas the area immediately above and in front of the sill is completely covered with a waxy protective coating and has no rust at all. Although I left replacement perhaps longer than I should have, the sills were almost completely rust free with just one or two very small patches of surface corrosion, otherwise being painted a curious metallic silver-green as can be seen in the second picture. I was lucky.

I don't intend to go through the full description of replacing body panels, just a few points specifically concerning these two. I chose to cut the existing panels just above the top of the sill in an area that was rust-free, in order to keep the repaired area to a minimum. If replacing the sills at the same time you will probably have to cut higher for access. I used a nibbler in a drill and flanged the repair panel to fit behind the bottom of the existing panel to keep distortion of that panel to a minimum - that is your datum. The rear panel is easier to deal with as it is welded to the rest of the car on all but one of its edges and this should give you the correct fitting relatively easily. The exception is the leading edge that curves round the sill. This should have a right-angle flange to it but on all of mine it was too deep and even though it fits into a recess on the sill panel it was still proud. Rather than grinding it down I chose to fold it further onto the back of the panel, carefully so as not to distort it, trial fitting it until a straight edge runs cleanly across the sill and the repair panel with no gaps. Test the coating on the repair panels with cellulose thinners. If it comes off easily then it is just a shipping coating and must be removed before welding in place. If not it is a primer that can be left, although the edges that are to be welded should be cleaned back to bare metal. In both cases coat the whole of the **back** of the repair panels with a zinc-rich weld-through primer before fitting. After welding, the curved joint between the sill and the repair panel should be treated with seam-sealer, but do not flush it over, leave a shallow vertical groove.

With the front panel the front edge is unsupported so you have to be careful to get the correct curvature. As you want to keep a gap between the sill and repair panel I placed a strip of wood about 1/8" thick along the top edge of the vertical face of the sill for the repair panel to butt up to. Screwing along the bottom edge and welding along the top edge, then removing the wooden strip, leaves this gap. Without the temporary wood packing you could end up with no gap between the sill and repair panel which will cause problems later. But before welding careful work with angle-grinder, hacksaw and files is needed to get a good joint where the horizontal welded joint meets the vertical door opening. The joint between the rear edge of the repair panel and the curved part of the sill is **not** treated with seam-sealer but left open.

After welding, shaping, and painting we want to limit the possibility of corrosion occurring again, if no action is taken the welded edges will start rusting almost immediately. Unless you are in a very hot climate and the body panels are equally hot a product like Waxoyl, although you may be standing it in a bowl of hot water to liquidise it, will return to its normal 'tacky' state immediately when sprayed and not run down the 1/8" gaps between sill and cover panel but simply lie along the top of the gap. Either thin the Waxoyl with white spirit to a liquid and spray it in a jet rather than a fan until it runs out of the bottom of the sills (onto newspaper for example) or spray clean engine oil into the gap which will similarly run out. Get a strip of card (not metal which will scratch) and poke it into the gap to ensure the Waxoyl/oil is fully distributed along the length and height of the gap, then spray some more in. With Waxoyl you may find that it drips again in hot weather, whereas with oil it shouldn't. Don't be tempted to put the Waxoyl that has dripped out back into the pressure can for reuse, it may contain particles that will block the jet sprayer, but you can use it for brushing on behind the front arch anti-splash panel and elsewhere.

**Don't** be tempted to seal the bottom edge of either front or rear repair panel with seam-sealer or equivalent. You must allow any water or moisture to run out and not gather, and you will notice that the sills and castle rails have drain holes (see '[Sill Construction and Drainage](#)' below) for the same reason. It is better to protect the cavities and allow some water from road spray to get in then drain freely out, than to try to prevent any getting in and end up trapping it which will accelerate corrosion.

**Note:** Even if your 1/4 panels do not need replacement I strongly recommend you make sure the top of the gap is clear then squirt a jet of clean engine oil into the gaps and distribute it with a strip of card. Do this even if the panels **above** the gap show signs of treatment to ensure it has got right to the bottom of the gap. Although Vee had been comprehensively treated these areas had been missed (although I squirted oil in them some years ago), and they aren't even mentioned in Lyndsay Porters Guide, a significant omission in an otherwise excellent reference book.

## Aerial in Front Wing

### Radio

A frequent question in MGB circles is "How do I get to the aerial when it is mounted on a front wing?". After Martin Kennedy wrote and asked me that very question, having looked here for the answer and not found it, it prompted me to add this section.

 Behind each front wheel there is a 'splash' or closing panel which seals the gap between the front outside edge of the footwell and the front wing, having a rubber seal between it and the wing. There is also a small panel and seal for the gap between the top of the box-section visible from the engine compartment at the rear of the inner wing and the top of the wing.

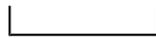
The main splash panel is bolted to the footwell with seven bolts, the lowest one being up into the front of the floor pan and not visible in these pictures. Particularly the lower ones can corrode into the nuts welded to the panels, and shear off. In bad cases the corner of the footwell can crumble away.

With the splash panel removed you have access to the aerial, and also the rear nuts for the door hinges. You can also examine the front section of the sills and the lower edges of the front wings for corrosion, and dribble oil down the very narrow gap between the two as described in [1/4 panel replacement](#) above.

*Added October 2008:*

 One thing to consider when adding an aerial to a front wing is the box-section that is immediately below it and behind the inner wing - see the accompanying thumbnail. There should be one or two large holes in the inner wing to enable you to see inside this box section, and the main harness and accelerator cable go to the cabin via it. If you drill the hole in the outer wing too close to the seam between the wing and the panel at the base of the screen you will also have to drill a hole in this box-section. Even then if you have a manually fully retractable aerial it may foul the bottom of the box-section, and a motorised aerial probably won't be able to be installed at all. The box section goes all the way forward to the splash-panel, and then there is a tapered 'trumpet' section in front of that, so you would have to go all the way forward to just about the front axle before you get a clear space under the wing if you are too close to the inner edge.

 However by positioning the aerial close enough to the outer edge of the wing there is plenty of room between the side of the box-section and the side of the outer wing for any likely aerial. This means mounting the aerial

 on a curved and angled surface rather than a flat and horizontal surface, but all the aerals I have seen have a fitting that can cope with this kind of location.

 These pictures from Paul Tegler show a motorised aerial in the process of being installed behind the splash panel.

## Arm-rest Cubby *Added July 2009*

 1972 models for all markets got a modified centre console incorporating a hinged arm-rest with storage space underneath. There is a plastic peg attached to the lid, and a spring clip on the base, but the way they have been installed results in frequent breakages of the plastic peg unless you are very careful to align the peg in the slot in the clip before pressing down.

Because there is just a simple hinge at the back of the lid it allows a lot of sideways movement of the front of the lid, but the peg and clip were fitted such that this sideways movement puts the greatest stress on the plastic peg in its weakest direction. If peg and clip had been turned through 90 degrees the weakest direction of the peg would then be to fore and aft movement of the lid, of which there is very little if any.

 Fortunately it is quite easy to turn the peg and clip through said 90 degrees. The peg is easiest as it has a square fitting, just squeeze the lugs on the back with a pair of pliers and push it out, and it will snap back in after turning (it's actually a fraction off-square but will go in the new way with just a bit of a push). The clip requires a bit more work. It's a little bit rectangular, which means the sides of the slot have to be filed out slightly. The overall width of the clip is greater than the length of the hole in the console, so will cover the sides of the hole **if** you are careful in your filing. Only file the minimum width needed for the clip, and in the middle of the sides of the hole, which will stop the clip sliding fore and aft and revealing the edges of the old hole (as well as nullifying the point of the exercise by putting the peg out of alignment with the clip again).

 Also only file enough to just be able to get the clip pressed into the new hole, if you file too much the clip will be pulled out of the console on the end of the peg.

 However even if you did that (as I did on the roadster many years ago) all is not lost. There is a depression in the console that looks as if it were designed to take a mounting plate for the clip, complete with two blocked-off holes for fixing screws. It's a simple matter to cut a plate to fit this depression, drill through the plastic console and use countersunk screws to attach it, and it is much easier to get a tight-fitting hole for the clip in the plate than it is in the plastic.

Herb Adler describes [making and fitting one to a pre-72 model](#).

## Bonnet/Hood

Release  
Strut *October 2016:*

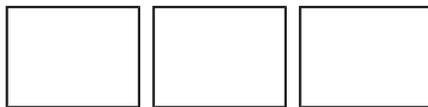
## Seals V8 Bonnet

### Release:

I imagine it is a bit of a pain to have the bonnet release cable break. Not only have you got to get in somehow and replace it, but the chances are you were opening it for a reason, and Sod's Law dictates the reason will be you will have ground to a halt at the roadside somewhere.

The rubber bumper car is not too difficult to get into - as long as you know what you are doing. It may be possible to gain access in a similar way through the recessed grill of 70-72, it isn't through the honeycomb grill of 73 and 74 (but [see below](#)), and it probably isn't in the pre-70 chrome slatted grill.

On an RB car like my 75 factory V8 one can push a long rod or screwdriver through the inner mesh grill, in a particular position and at a particular angle, and push the end of the lock lever so releasing the bonnet pin. The positions and angles are shown in the following pictures.



The first picture shows a long rod inserted and bearing on the end of the lock lever where the cable is attached. What you are trying to do is use the rod to push on the end of the lock lever to release the

bonnet/hood pin.

The second picture shows the horizontal angle of the rod, which is inserted through the mesh, right at the very top, the 4th hole from the centre mounting of the mesh. On mine the mesh makes 'diamond' shapes and the very top row only has the bottom half of the diamond, the top half is covered by the frame to the mesh.

The third picture shows the vertical angle of the rod. The end outside the car is angled down as far as it will go it is in contact with the bottom edge of the bumper.

The thing to bear in mind is that the rod is only a couple of inches behind the lock. So if the end of the rod goes too far it could puncture the rad. On mine, with the end of the rod just touching the rad at the angles shown, there is 10 inches of the rod sticking through the mesh. So if you wrap some tape around your rod, say, 9 inches from the tip, then at the angles shown as long as you keep the tape your side of the mesh you should be clear of the rad. The lock lever will require quite a push to release the bonnet pin, so be careful the rod doesn't suddenly slip and go too far.

**Honeycomb Grille:** (*Updated August 2007*) The only way I can see of doing it with these grilles is to push the out the grommet in the left-hand inner wing that the lighting wiring goes through, then insert a length of stiff wire with a loop twisted in the end, feeding it through straightening it as you go (you can't feed it straight in because of the wheel arch) then hook it round the release lever and pull. You **can** see to do this through the grille, but it will be fiddly. Should work for the earlier slatted and recessed grilles as well, if there isn't an easier method from the front.

### Preventing the problem in the first place - all models

Once (hopefully) open, the first thing to do is give yourself a 'second string' in case it happens again. I have used a length of curtain pull cord, which is a very strong braided nylon, with one end tied round the lock lever and the free end pushed through the hole in the left-hand inner wing where the headlight wiring goes through. Tie a loop in the free end big enough to get your finger through and that will stop it working its way back out again.

## NEW Bonnet Strut: October 2016



I started looking into these when restoring Vee and wondering how far to go with her bits and pieces, and was surprised just how involved it all got! The intention isn't concourse standard, just a tidy driver, but nevertheless the bonnet strut and its fittings were fairly manky (as are both of Bee's) but cleaned up pretty easily, what looked like rust apparently just being staining. Originally the strut consisted of a solid bar, what follows is only concerned with the telescopic struts used from the start of the 1971 model year.



Looking in the parts catalogue the strut itself (AHA9717) didn't change, but there was a change in the fittings for the 1976 model year. The fittings originally consisted of a cylindrical spacer (BHH298), a 1/4" v 1" hex screw and a stiff-nut top and bottom (however an original 10/74 brochure shows a round-head Phillips screw in the lower position at least). The body and bonnet brackets are offset by the thickness of the strut, with the bonnet bracket being inboard of the body bracket. Because of the position of the release lever it is the channels that face the brackets top and bottom, and not the flat side of the strut. This is why it needs the cylindrical spacers - they fit in the channels of the upper and lower portions of the strut to hold the strut away from the bonnet and body brackets so they can pivot without damaging the paint on the brackets. The spacers have a 1/4" hole, and a 7/16" diameter shoulder at one end which fits inside the 7/16" hole at each end of the strut, and means the strut isn't pivoting on the threads of the bolt (a nicety they didn't bother with for the [boot strut](#)).

For the start of the 1976 model year at chassis numbers 386601 (roadster), 391501 (GT) and 2701 (V8) the parts catalogue shows the spacer changing (BHH1933), and suppliers photos show it as being slightly shorter, together with one of the hex screws changing to a 1/4" x 3/4". Quite why this change was made to all cars - including the V8 - is a mystery. I did wonder if it was primarily for North American spec cars following the introduction of the brake servo the previous year, to give more clearance, and applied to all cars for commonality. But Clausager quotes the same chassis numbers for the strut being moved to the right-hand side of the engine compartment of all LHD cars - "to avoid fouling brake servo". Perhaps originally it was thought that the shorter spacer would be enough, but it proved not to be the case. The other oddity is that the spacers are shown for all cars, i.e. including LHD with the strut on the other side. But in that case - assuming the release lever was still facing forwards (to do otherwise would be completely illogical not to say stupid) - the flat side of each half of the strut would be against its respective bracket, so the cylindrical spacers wouldn't be required at all (but [see below for why they may be needed to clear relays, fusebox etc.](#)) and a simple washer would suffice to prevent the strut rubbing against the bracket and visibly marking the paint as per the [boot strut](#). That would leave the 1/4" bolt rattling about in a 7/16" hole, but a 1/4" spring washer GHF331 fits that hole perfectly.



Ironically, the upper spacer isn't really required at all! Both Bee and Vee came to me without one, by the simple expedient of fitting the flat side of the upper part of the strut against the inboard side of the bonnet bracket, instead of the channel part being against the outboard side. It does mean the angle the strut makes to the brackets changes fractionally but I doubt anyone would notice, and a washer between the two would be enough to stop them chafing. That leaves the 1/4" bolt rattling about in the 7/16" hole, but again a 1/4" spring washer GHF331 fits perfectly in the hole in the strut to support the screw. Having said that the correct spacers are available from the usual suspects for a couple of pounds or so. If that wasn't enough one of the Nylocs that came off Vee's strut has a shoulder of reduced diameter (similar to [this](#)) which is a perfect fit for the hole in the strut!

Then I found [this Moss US document](#) describing an after-market longer strut, which is also self-releasing. They are 4" longer, which makes quite a difference to the height of the propped

bonnet ... although you need to make sure you have the headroom in your garage to be able to use it! It shows an LHD car with the strut on the right, but with the radiator mounted in the original position, which makes it a 1976 car (the strut only moved across in 76 but the radiator moved forwards for 1977). Amongst the original hardware it quotes two spacers BHH298, but according to the Parts Catalogue one of them should have been the shorter BHH 1933 by then. Step 7 shows and describes fitting a spacer to the **lower** mounting point, saying "Without the spacer the support actually hit the lip of the channel in the fender up by the radiator support". That doesn't really make sense, as the only time the strut can hit anything by the radiator support is when the bonnet is closed, which is when the **upper** part of the strut is by the radiator support, so if anything the strut would need to be spaced inwards at the top. However it does also mention "equipment mounted to the inner fender on the RH side" and it makes more sense for the lower spacer to be needed to clear that, if not spacers top and bottom. As the strut has its flat face towards the body bracket, the spacer makes it stick out much more than usual, as can be seen in Fig. 5 of the Moss document. The story is similarly confusing regarding the bonnet bracket:

- Fig 1 shows the bracket with the strut mounting flange (very close) towards the edge of the bonnet, but Figs. 7 & 8 clearly show it positioned the other way round. Positioned as per Fig. 1 then it is almost certain that the bracket, and if not the bracket then the head of the bolt securing the strut to it, will foul the bonnet channel.
- It's reasonably clear that in the main picture of the engine bay the strut is on the inboard side of the bonnet bracket, which as that makes the channel face the bracket, a spacer is definitely needed. However Figs. 7 and maybe 8 show it on the outboard side, with no spacer. If there were a spacer here then again it would almost certainly foul the bonnet channel.
- Furthermore if positioned as per Fig.7, and it hits the bonnet channel, then you will have to fit the upper part to the inboard side of the bracket, which again will need a spacer.
- Fig. 6 shows how close the end of the upper part of the strut will be to the radiator mounting panel with the bonnet closed, and shows the channel facing inboard. However all the other pictures show the upper part of the channel facing outboard.
- Step 9 describes how to check the clearances with the bonnet closed, saying "*If the outer slide hits the radiator support you may have a vehicle that was damaged in the front, or the rear mounting bracket was mounted a little farther forward than normal. In any case some modification will be needed to fit the telescoping support*" without saying what they mean by 'rear bracket'. It seems to me that a good 1/4" could be cut off the end of the upper part of the strut to give more clearance, no information is given on what might be involved in moving the body bracket backwards. And whilst the test may be good enough to check for length (but see the next bullet point) it takes no account of lateral position i.e. how close it is to the bonnet channel, only fitting and careful closing while squinting in the gap, to determine whether you need an upper spacer, will do that.
- Step 9 begins by saying "With the inner slide all the way inside the outer slide ...". Fair enough, but it is the position of the bonnet bracket relative to the body bracket that determines how far the inner slide goes into the outer slide with the strut fitted and the bonnet is shut. If the bonnet bracket is too far forwards, the strut may well not be fully collapsed, and hence may still hit the radiator support panel even though it didn't in the test, or even if the body bracket has been moved backwards so that it cleared it in the test.

Whilst I can see the point of a longer strut and no more catching the top of my head on the bonnet pin or safety catch, I have no time for gas struts given that you need to fit them both sides, and judging by other peoples comments and pictures having had no end of trouble getting the bonnet to fit flush as it did originally.

**Bonnet Seals:** *Updated February 2013*

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Mk1 cars had a foam seal AHH 7120 sitting in the channel at the back of the engine compartment. The Parts Catalogue up to September 1976 then indicates that the foam seal was replaced by a rubber seal that fitted on the inner edge of the channel, across the back and part way down the sides.

The September 76 and later Parts Catalogue i.e. for the 77 model year on (spotted by Brian Shaw) then indicates that **both** seals were provided, with the foam seal now part number BHH 2270. Some leave these off to improve engine compartment cooling, however you will then get hot air and fumes going straight into the heater intake and thence into the cabin, so perhaps not such a good idea. Whilst my V8 had the rubber seal I added the foam as I originally thought all Mk2 and later cars had both, and that did noticeably reduce fumes in the cabin.

There are also rubber buffers in the side channels, to stop the bonnet rattling which could wear the latch mechanism and cause the bonnet to pop up at speed. Mk1 cars without the rubber bonnet seal may have had two of these each side, Mk2 and later only seem to have one, near the front.

### **V8 Bonnet:** *October 2017*

There is much speculation in various places as to whether the V8 bonnet had an increased curvature to clear the carbs, and whether that bonnet was then used on 4-cylinder cars as well. David Knowles mentions it in his 'MG V8 ...' book on page 32, but he doesn't specifically state it was for the carbs, it could equally well have been for the radiator, in place of the MGC bulge. The Parts Catalogues do show a different bonnet for the V8, but even that is confusing. The pre-77 catalogue states that HZA4015 is 'except V8' and HZA4197 is 'V8'. It lists both those as 'NLA' and 'Use with (bracket) BHH1934'. But HZA4015 is the alloy bonnet, and HZA4015 is the steel that replaced it in 1969/70. Also the 77 and on catalogue still shows HZA4014, and not the V8 item. Could be an error, could be that HZA4104 was allocated to the V8 bonnet when used on all cars - if indeed that is what happened. Other than that there is no clear information. If the V8 bonnet did have greater curvature to clear the carbs, it would have to be very close to the rear edge as that is where the carbs are, and I don't really see how that could be done without changing the panel at the base of the screen as well. The insulation panels do have cut-outs for the carbs and the radiator, but on Vee at least the tops of the carbs have been rubbing on the underside of the bonnet, through the cut-outs. [This V8 Register article](#) sets out to measure the curvature for a V8 as against an alloy bonnet, but is inconclusive. It shows a V8 with 3mm more curvature at the centre reinforcing strut, but there is no measurement for the rear edge, which is surely more relevant. Their V8 centre measurement was 5.1cm and that at the carb cutout 5.6cm, whereas my V8 at the centre was a fraction over 5.7cm and that at the rear edge of the insulation (in order to compare with the roadster as that has no carb cut-outs) was 6cm, which is more of a difference between the two V8s than their V8 and alloy! My September 72-built roadster was a fraction under 5.7cm at the centre and 6cm at the rear, i.e. to all intents and purposes identical to my V8. However I have no way of knowing if either bonnet is original to the car. "We shall never know".

Incidentally, bracket BHH1934 is the bonnet stay bracket. The same article says that these were welded to the bonnet by the manufacturer, but when the bonnets were stacked one on top of the other it damaged the one underneath. So it was deleted at manufacture, for installation when the bonnet was fitted to the car. But more confusion: That article states it was V8 bonnets that had the problem. But series production of the V8 didn't start until April 1973, whereas two suppliers list this bracket as being for 1970 on, which ties in with the change of the bonnet from alloy to steel (and another says for 1971 on). Also if the HZA4015 steel bonnet replaced the alloy in 1969/70, that would have suffered from the same problem ... unless the bracket was never welded to HZA4015 by the manufacturer, but for some reason it was on the V8's HZA4197!



During [Vee's restoration](#) I replaced the insulation as it had shrunk quite a bit and was very ratty. Holes for the carbs will have to be cut in the new insulation as there are no pre-cut pieces for the V8, not even for 77 and later 4-cylinder cars with the radiator in the V8 position.



I gave more thought to the rectangular cut-out in the front section. On the face of it the rectangle is needed to accommodate the raised section on the left-hand one-third (or so) of the header tank. But in that section is the filler plug, the top of which is easily 1cm higher than the highest part of the header tank. As that is twice the thickness of the soundproofing, strictly speaking one only needs another circle for the filler plug - if anything at all. If the bonnet is that close, then it's going to be hitting the corner of the plastic filler plug, and could damage it. There are brass filler plugs, but any contact between them is going to be damaging to the bonnet and making a noise, I'd rather have a layer of sound-proofing between the two. So I left that piece until the radiator and bonnet were back in, and could more accurately measure the clearance or lack of it, as well as the positioning of a hole - if one is needed.



In the event none was needed, measuring with the bonnet closed there is still 1/8" clearance from the highest part of the plug to the underside of the uncut insulation.

## Boot/Hatch

[Boot strut](#)

[GT tailgate supports](#)

[Unable to open](#)

[Emergency release](#)

[Alignment](#)

### Boot Strut:



Again the body and lid brackets are offset by the thickness of the strut, with the lid bracket inboard relative to the body bracket. The boot strut is subtly different in construction to the bonnet strut - as well as being shorter the holes for the pivot bolts are also smaller at 1/4". Because the release lever faces backwards for the boot but is positioned as it is on the bonnet stay, when fitted both boot stay channels face the other way compared to the bonnet strut, which puts the flat sides of both halves against their brackets. So no need for the large spacers, instead there are 1/4" x 9/16" washers (PWZ104) between strut and brackets so the paint on the brackets isn't damaged as the strut halves swing past them. It does mean the strut pivots on the bolt threads though. If the bonnet release lever had been positioned on the other edge, and the strut turned round to suit, smaller holes in the struts and washers in place of the large spacers (when the strut was on the left as originally) would have done for that as well.

### Unable to open:

Whilst failure of the GT hatch release is annoying it is relatively easy to open it from inside the car, but failure of the roadster boot latch is a much trickier proposition. The problem can arise here from either failure of the mechanism or loss of the key. It happened (to someone else) on one MG run I attended and they resorted to taking the affected roadster plus another car to a workshop where they proceeded to cut an arm-sized hole in the rear bulkhead. Why did they need the second car? So they could work out how to manipulate the mechanism from the inside on the affected car, of course, where they were working blind!

Some say they have removed a reversing light then used a length of stiff wire to hook into the lock mechanism, which sounds pretty tricky, and I can't see how you would get the leverage to operate the latch from the side.

Denise Thorpe has said that if you twist the lock to one side or the other as far as it will go it reveals enough space to drill a small hole through the skin that will be covered when the lock is centralised again. Inserting a narrow probe through this hole, and fiddling about, should enable you to push the latch out of engagement and so release the lid. Someone has said their lock twists nearly 90 degrees, but that sounds like the key-way has been cut away (or maybe they are thinking of the push-button and not the lock as a whole!), both of mine barely twist enough to drill the 1/16" hole so that it could be covered by twisting the lock back the other way.

Roger Parker also writes with [another tip here](#).

*December 2011:* Steve Leech wrote to me after fitting a new lock and push-button fitted to his existing latch, then closing the lid to discover he couldn't open it again! He writes:

"After walking away and considering my options for a number of weeks (my usual approach in these matters) I narrowed down my options to either:

"1. cut an access hole in the rear bulkhead and subsequently reweld and repaint. This presenting a high risk of damage to my show condition shell.

"2. drill out the old button/lock mechanism and remove, thus allowing access through the void in the chrome button surround left by the button/lock. Again running the risk of a slipping drill.

"Fortunately I had the old push button with cylinder lock to practice on. With the unit in the vice I was, with care and some force, able to drill a hole right through the button/cylinder lock of a size equal to their diameter, effectively removing the lock completely. I started with a 1/8th inch bit (using the key slot as a pilot hole), and then progressed through an intermediately sized bit to one the full diameter of the button/cylinder lock. The final drill bit was soon reassuringly contained by the chrome button surround and pull tab, and I progressed with some confidence. I encountered extra resistance when I hit the steel screw that holds the release cam in place in the centre of the lock; but with time and patience I removed enough of this screw for the screw head and cam to fall away. Henceforth I encountered little further resistance before drilling right the way through the lock. The entire process took less than five minutes, and gave me more than enough confidence to try the same on the car.

"Again the process went smoothly and successfully on the car, but this time the lock material was much softer and I completed the task within a minute or two, and I was thus able to access the latch lever through the void vacated by the button/lock cylinder in the centre of the pull tab/surround and release the lid.

"And the cause of my problem:

Stupidly I had ordered by part number and expected the correct part or matching copy part to be supplied. Instead the part supplied had a release cam of a different size and shape, i.e. [too short to contact and operate the latch release lever](#). Had I checked before fitting I could have easily replaced the new cam with my old cam; the remainder of the part being a faithful reproduction of the original. I have since wondered whether the part supplied to me was for a Midget, where logically the lock position could be closer to the latch in the scaled down boot lid.

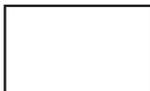
"I have always ordered by part number, but increasingly I find that mistakes such as these are made. I suspect that the supply chain is populated by business people rather than brown coat enthusiasts these days. But enough of that!!"

**More lock/latch problems:** *July 2015* Helping a local pal get his early Mk1 back together after a major restoration (that turned into a reshell, fortunately with another good original Mk1 shell), mainly with electrics, he asked my advice about the boot latch. Fortunately he had discovered before closing the lid that the cam on the lock was a good quarter of an inch away from the lever on the latch, and barely moved the latch even with the button fully pressed. He tried both old and new button mechanisms, and cams, but the situation was the same. Most strange as he had never had a problem with his previous shell, and it is reasonable to assume that the PO of the replacement shell didn't either.

 I took his latch and tried it on my roadster, and my cam rests on the lever of both his and my latches, so his latch isn't the problem. Next we tried my cam against his, and both his are about 1/8" shorter, but nothing like the 1/4" gap when fitted to his car. So I remove the button on both our cars and put a steel rule down inside to rest on the lever of the latch, to find his outer skin is another 1/8" further away from the latch lever than mine - eureka! Whether this is from a skim of filler from the paint shop, or something else, is unknown. Obviously that gap can't be altered on a newly painted shell, and although I could give him my longer cam it may still be marginal (as might mine with a shorter cam!). So we opt to build up his cam about 1/4" with weld. If he changes latches in the future it will be fine, but if he changes locks he will have to remember to change over the cam.

*August 2015:*

 Roger Parker has contacted me with a photo of a different type of release cam. This is much narrower than mine, and does mean that any looseness could allow it to lose contact with the latch lever more easily. However he has also found that when one of these cams is just loose i.e. hasn't fallen off altogether, then pressing down very firmly on the release button so that the lid is deformed very slightly, can make the difference between releasing and not releasing. The panel is very springy so unless you really go for it will spring back and be none the worse. He did have one come loose, but noticed it from the button not feeling quite right before it failed to open ("Listen to your car, it is talking to you"), used some thread lock and refitted, and that is still holding 44 years later.

 These photos (click the thumbnail) show the features of the release mechanism including what stops it twisting very far, what comes loose/drops off to cause the usual problem, and where to pull/push to open the latch. These are taken on a GT for ease of access but the lock on the roadster is identical.

A future project is to look at the feasibility of using a bonnet or choke cable mounted on the rear bulkhead and permanently connected to the lock mechanism. Whatever you use as a one-off or a more permanent 'emergency release' needs either to pull the upper part of the release lever (the part the cam bears on) forwards (i.e. towards the front of the car) or the lower part of the release lever (that hooks under the bar on the rear panel) backwards to clear the bar. On a GT a piece of timber with cross-section up to 3/4" high and 1 1/2" wide can be pushed through the loop of the bar to push the lower part of the release lever backwards and release the tailgate. It takes surprisingly little force to do so, so there shouldn't be much pressure on any permanent 'emergency release' cable used on a roadster. Such a cable obviously introduces a security risk since it is easy for someone to gain access to the cabin of a roadster, but hinging the handle should reduce that risk. Watch this space.

In the meantime, get out there and put some Loctite on the screw and tighten it up!

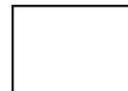
*Added November 2009:*

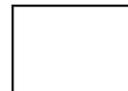
 Still watching? I'm still waiting to get a round tuit before looking at this but Bruce Mills has written to me with what he has done. As well as adding an emergency boot-lid release he has gone a lot further and added an electric release triggered from a key fob for both lid and doors. A 'popper' spring on the doors then pushes them open just a bit for you to open manually the rest of the way. The boot lid had one as well to start with but it exerted too much pressure on the catch so the solenoid was unable to open the latch and had to be removed. These changes have allowed Bruce to remove the locks and handles to get a smooth finish.

**Given how close my pal above came to shutting his boot lid and not being able to open it again, I finally get a round tuit *July 2015:***

 Bruce's arrangement did give me some ideas, although I didn't want to weld brackets to my boot lid, and thought there must be an alternative way. There are two holes in the exposed part of the latch frame, ideal for mounting a plate to support the cable. I cut a plate to size and drilled a hole in it for the inner to pass through, and welded a bar across the hole, to act as a radius to pull the cable inner round similar to Bruce's arrangement.

 Looking at the pivoting part of the latch there is ample space to drill a hole for the cable inner to go through, in the part that the button cam bears on. It didn't take long to come up with that from bits of scrap, but I soon found that even with a relatively thin and flexible cable like on the choke the radius round the bar was rather small and the angle acute which made the action quite stiff.

 So plan B was to fix the outer to the plate in such a way that it had a straight pull through a hole drilled in a different place in the pivoting part, and that worked much better. The socket for the outer was a convenient spacer with a hole up the middle larger than the inner but smaller than the outer, which I drilled out part-way through to accept the outer. It was steel, so again welded to the plate.

 I have an old choke cable (replaced when it no longer locked) which looks to be an ideal length to reach the rear bulkhead. However two problems - one is that the exposed length of inner is rather short which means the cable clamp has to be adjacent to the pivoting lever, which interferes with its movement slightly, rather than being long enough to be fed through the lever and back towards the cable outer and clamped to itself as in [Bruce's picture](#) (which incidentally is how the bonnet cable is attached to that latch). I could cut the outer back, but that would shorten the cable and may impact on it reaching the bulkhead. So the lock end works, but the second problem is that I don't think I'm quite ready to lose what is after all the only relatively secure part of a roadster i.e. a locked boot. Yes I know the objective is to be able to release the boot in the event of lock failure (or losing your keys, or shutting them in the boot ...), but with the hood up the release knob is likely to be quite visible, and rather obvious as to what it is for. OK it could be covered by a flap, but I think I'll do something else even more concealed, which I don't propose to go into.

 So plan C uses a longer plate, with the outer positioned further away, and a longer cable with more exposed inner so that it can be fed through the latch lever and back towards the outer, to be clamped to itself. When ordering some other stuff I took the opportunity to order a bonnet latch cable as

well, which has a hole through it large enough to for the inner to pass through twice. I have a bonnet cable with a T-bar handle, which as well as having a longer exposed section is also much longer overall, which gives me more scope for concealing the handle. That still needed the outer to be trimmed back, but only half an inch.

#### **Alignment:** *November 2014*

Pal Terry was having problems getting his latch to click shut. As well as problems with the seals being too hard he was having to push the button in before the latch would start to move past the striker on the rear panel. It would only start to do that by itself if the striker was spaced forwards by maybe 3/16", even though the boot lid was positioned further back than it should be leaving an over-large gap to the part of the surround by the tonneau cover.

Terry's striker on my roadster had a similar problem, also with his latch, but his latch with my striker was fine. When I compared his to mine it was evident that his was twisted with one side further back than the other, both sides were further back than mine, and his had a rearward bend in the top part. Each of these factors were progressively moving the central part of his striker, that engages with the latch, probably 1/4" further back than mine, which clicks shut just from the weight of the lid - no pressing down or dropping. Not difficult to deal with, just clamp both bars in a vice, then whack Terry's with a large hammer until the vertical bars on his are parallel to mine, and then clamp up the top part of his bar in the vice to flatten the rearward bend out a bit. That still left the problem with the seal preventing the lid going down far enough for the latch to click under the bar, even though the bar was at it's highest position, but more of that here.

#### **Boot and Hatch Seals** *February 2014*

Originally the main seals on both roadster boot (AHH 6535) and GT hatch (AHH 7833) consisted of a sponge core with a smooth very thin outer wall to keep moisture out, and the result was a very floppy and highly compressible seal.

I've had occasion to remove these seals on both roadster and V8 for painting. Best removed by carefully teasing out one end where the two ends join at the bottom of the opening, then pulling gently all the way round. For refitting although the T-section of the seal would appear to be a sliding fit in the channel on the lid and hatch, that only works for short lengths. Maybe easier to slot one side of the T in an inch or two at a time, then ease the other side in with a blunt flat-blade screwdriver, steadily working all the way round. Tension the seal slightly as you work round, so you are not left with a gap (refitting the old seal) at the end. Any excess can be worked back in the channel slightly, rather than cutting it off.

Moss state these are no longer available, and too expensive to reproduce, so have sourced a hollow rubber seal. However this is significantly harder than the original sponge, and can cause problems in closing the boot, and getting a good seal all the way round. This can be a particular problem in the GT hatch, where gaps can cause exhaust fumes to be drawn in. Other MG parts suppliers also seem to only have this hollow seal.

A number of specialist seal suppliers seem to have the correct item specifically for the MGB, but having obtained a sample these are much denser than the original sponge seal, and much harder to compress than the hollow seal, so I have removed the links to them.

That still leaves the problem of what to do when you have one of these new seals and you can't get the latch to click shut, even when the bar on the rear panel is adjusted to its highest extent. From tests inside his boot (!) Terry had come to the conclusion that his bar needed to be raised almost 1/4" before it would latch. The holes in the U-bar mounting plate are slotted for adjustment, so one could file them out, and there is about 1/4" 'spare' metal in the mounting plate to extend them. However my rat-tail file which is a good fit for the width of the slot made no impression on the metal at all, and neither did pressing down the flutes of a bit in a drill. I had already considered welding an extra piece below the mounting plate - the bars extend below it by about 1/4" - to strengthen the bottom of the extended slots. But now I think I'll have to use an angle grinder to cut into the slots in order to extend them downwards, which will mean I will definitely have to weld a strip across the bottom to close the slots.

**Roadster Boot Seal:** Originally the sponge seal AHH 6535 was fitted to the boot lid, and quite fiddly as it has to be slotted into a channel running all the way round. In March 1976 at chassis number 401000 it was changed to a seal HZA 5386 that simply pushes onto the lip around the opening in the body, and is much easier to deal with. This later seal has a completely different profile to the original, and I suspect was hollow and not sponge-cored.

#### **GT Hatch Seal:**

The GT hatch has two seals - a full-length 'inner' seal AHH 7833, and a three/quarter (called a half or even a quarter seal in some places) 'outer' seal AHH 9778 that runs across the top of the hatch and down the sides. Both these seals are of similar sponge-cored construction to the roadster boot lid seal. The top section of the 3/4 seal is retained by an alloy strip AHH 7818 with a series of screws PTZ 603 (pan-head, Pozidrive, No.6 x 3/8" long). This seal can only be removed/refitted with the tailgate off the car. The parts catalogue does not indicate any change to either of these seals, or where they were fitted, i.e. neither moved to the hatch opening during production.

#### **Bumpers**

##### Chrome

##### Rubber

**Chrome Bumpers:** Just a warning that there have been some poor copies of chrome bumpers from some sources - incorrect in shape as well as poor in quality. Whilst the latter is not always easy to confirm before purchase, you can at least check that the basic shape is correct. One problem has been in the ends of the rear bumpers. Originals are tapered in towards the wing leaving a very small gap as further back, whereas copies have them chopped off short leaving an open hole facing forwards. That's the biggest and most obvious, there are other more subtle differences such as the part facing forwards is shorter, perhaps in an effort to correct the first problem. I'm not aware that this also occurs with front bumpers, even though the ends are very similar. Bb Muenchausen has some useful comparative photos here.

#### **Rubber Bumpers:**

##### Mounting

Left to their own devices these get dull, rough and greyish with exposure to road dirt and sunlight.

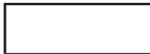
Having tried a couple of products I used to recommend Turtle Black Chrome but it is no longer available. It is quick and easy to apply, brings tired bumpers back to black and shiny,

and they stay that way for ages. A subsequent application several months after I got them to a good shine made hardly any difference, they were still so good. It has the same effect on various items of black trim of different materials on my 89 Celica although I only use it on the bumpers on the V8. It is a black almost creamy liquid, and a word of warning, if you get it on paintwork you can only get it off again with car polish, so I slip sheets of paper behind the edges of the bumpers while I am applying it. [Turtle Wax Trim Restorer](#) seems to be the current product, or maybe [Black in a Flash](#), but I haven't tried either yet.

I had previously tried ArmorAll and sure enough with enough applications left to dry in the sun and then finally polished up you could get them back to black and shiny, but the effects faded very quickly, in fact they seemed to end up rougher and greyer than originally, even when not exposed to sunlight for long periods. Some recommend its use on interior vinyl but others say it dries it out and can cause it to crack in the sun. Having seen the effect on the bumpers I can believe it. About the only thing it is good for is tyres for a show finish, being better than that awful high-gloss tyre paint beloved of second-hand car showrooms. But if you are going to drive the car don't bother, after a few dozen miles the effect has worn off.

Another recommendation I have seen is black boot polish, and whilst I can believe it works I can also believe that it will rub off black on light-coloured clothes even after being polished up. I say this after having had to clean a light-coloured carpet where someone with highly polished shoes had been shuffling their feet.

#### Mounting:

 The front bumpers have four studs screwed onto the armature - two each side, with washers, lock-washers and nuts fitted behind the chassis brackets. There are usually several slotted spacer plates fitted between the armature and the brackets to position the bumper as close as possible to the wings without touching, mine have three each side. The outer corners are unsupported.

The rear bumper has five studs - two each side and one centrally going through into the spare wheel space. In this case the outer corners are supported by one bracket each side. However it is not necessary to unbolt these from the body to remove the bumper, as the bumper has slots which slide off the brackets.

## Carpet

#### Boot/Hatch

 Two strange pieces of carpet (amongst many) fit immediately in front of each rear light cluster. One flat squarish piece glues to the inside of the rear wing in the space that is bounded by the back of the rear wheel arch, the boot floor, the rear light cluster, and under the boot lid rim (roadster) or C-post trim (GT). The other is two pieces stitched together such that the natural inclination of the 'hinge' is for the pile-sides to fold together. The wider half lies on the side piece of the boot floor and the narrower half covers the back of the rear light cluster. Both pieces are handed so try them both sides for the best fit.

 The narrow part that covers the back of the light cluster is held in position by a plastic trim fastener pushed through the carpet into a bracket, but neither the bracket nor the fastener are shown in the official parts lists I have. The roadster didn't have these brackets so it was always a bit of a puzzle how the 'hinged' pieces were supposed to fit. It wasn't until I got the V8 which happened to have just one of these brackets and fasteners that I realised, and I was able to make three more brackets using the existing one as a pattern. I was able to get suitable fasteners at Halfords from their range of generic trim fasteners at the time. These are black

plastic, have a 15mm diameter head, 17mm overall length, 15mm shank length. The shank has serrations and a maximum diameter of about 7mm.

 I made the brackets out of some bits of body panels I had lying around (Hunts Eighth Law: "If you haven't found a use for something yet, you haven't kept it long enough"). All measurements are approximate but these are taken from the one original bracket I have. It isn't critical, it isn't visible, and I doubt even a concourse judge would be looking at them.

 For each bracket cut a flat strip 19mm wide and 55mm long. Mark a line across the width 15mm from each end, this is where a bend of approximately 40 degrees is made. Mark and centre-punch the centre of each 19mm x 15mm area for the hole to accept the plastic fastener. Get the fasteners and drill a hole of suitable size for them but in my original they are 6.5mm diameter. Finally make the bends so you end up with something like in the picture at the left.

 The bracket is secured on the top stud for the rear light cluster and held by an additional spring washer and nut. It is angled down and towards the boot/hatch opening, as shown in the picture on the left. The plastic fastener pushes through the carpet and into the free hole in the bracket.

#### Battery 'shelf'

 The wheel arch and battery shelf pieces leave the chassis rails exposed, so I cut and glued some additional pieces for a neater appearance.

## Dimensions

Car	Overall Length	Overall Width	Overall Height
CB Roadster	12' 9.2"	4' 11.9"	4' 1.4"
CB V8	12' 10.7"	5' 0"	4' 2"
RB GT	13' 2.25"	5' 1.75"	4' 3"

## Doors

[The 'Crack of Doom'](#)  
[Drain Holes](#)  
[Hanging and Adjustment](#)  
[Key lock](#)  
[Latch August 2010](#)  
[Door Pulls May 2011](#)  
[Door Cards November 2014](#)

#### The 'Crack of Doom'

 When I bought 'Bee' the drivers door had the 'crack of doom' which is split at the top of the door skin near the front door glass channel. After much study I decided there was a design weakness in the door skin, in that the flange that supports the outer rubber seal ends just before the front door glass channel. The MGB doesn't have much scuttle-shake - where the screen wobbles from

side to side over rough surfaces - but there is some. If this is allowed to waggle the quarterlight frames from side to side, that's when you get splitting of the door skins. To strengthen the skin I welded a small piece in such that it extended the flange alongside the channel and round the front, meeting up with another flange. The first two pictures from Lyndsay Porters Guide shows the area quite well. The first shows the area that splits (arrowed), and the second where I have extended the flange in yellow and blue (false colour). Subsequently I saw a Heritage door that seemed to be constructed in just this manner. I MIG-welded the crack, and used a large oval plate behind the door skin to support the door mirror. It has a slightly larger radius than the door skin, so bracing the mirror over a large area.

*Update January 2005:* During a thread on this subject in a mailing list Rich Chrysler posted the text of a BMC (Canada) Technical Service Bulletin from 1963 showing this problem and saying a production change was being made. My first thought was "well, they never did" but by the date of the bulletin the MGB had only been in production little more than a year and less than 20,000 had been made, so the problem must have been serious. 30 years and 500,000 cars later we know it still occurs, but most cars **don't** have it, so I'm thinking that they **did** make a change which considerably improved things, but did not completely eliminate it, hence the further change some time later (i.e. after 1973 when mine was made) which can be seen on the Heritage doors. The drawing in the bulletin shows three edges joining at a single point, whereas the Porter picture shows a slightly different arrangement, and the former **would** be more prone to cracking in my view. For interest a scan of the complete document can be seen by [clicking here](#).

Following repair it is vital that the way the screen and quarterlight interface with each other is correct to minimise any reoccurrence. 1. The front of the quarterlight frame must only just touch the bulbous part of the pillar seal and not depress it, and 2. there must be a small clearance between the side of the quarterlight frame and the thin part of the pillar seal. These two adjustments allow the quarterlight frames to be kept static even if when the screen wobbles.

1. The adjustment of the front of the quarterlight frame to the bulbous part of the pillar seal is done by adjusting the fore and aft position of the screen, and its rake. Other than moving the doors on the hinges (which should be done first to get the correct shut-lines) there is no other provision for fore and aft adjustment of the quarterlights i.e. within the doors. Note that old seals can be hard and shiny, allowing some 'slip' between frame and rubber. However new rubber is 'sticky' hence the need that the two only just touch,

2. The adjustment of the side of the quarterlight frames to the thin part of the pillar seal to get a small clearance is done partly with screen leg shims to centralise the screen relative to the quarterlights, and by an adjustment on the long leg of the quarterlight frame. This goes down to a slotted bracket at the lower front corner of the door, and the stud in the leg moves in a slot in the bracket to move the leg between the inner and outer door skins, which moves the top of the quarterlight closer to and further away from the thin lip of the pillar seal. Adjust the long leg stud to get an equal clearance all the way up, as far as possible.

NEW **Drain Holes** *November 2016:*

 There should be three drain holes along the bottom of each door - one at each end just before the carcass starts turning up, and one in the middle, all where the carcass meets the skin. The hole should be right through the carcass flange, so half of it is in the horizontal part and half in the vertical, so water in the crevice where the door skin meets the carcass flange has a chance of draining out. Unless your car never gets wet water will always get into the doors, so it's really important to use Waxoyl, Dinitrol or similar to creep into the crevice and keep water out, indeed across the whole skin including behind the brackets. Make sure the treatment doesn't block the holes!

## Hanging and Adjustment

I see the objective as four-fold:

1. To get the crease where the chrome strip goes running in a straight line from the rear wing, through the door and into the front wing when the door is fully shut.
2. For the door to achieve that from open **without** the rear of the door being raised or depressed by the action of the lock on the striker-plate or binding on the pin and catch.
3. For the wing sill and door panels to be flush with each other all the way round.
4. For the gaps to be even all the way round.

There are no less than twelve separate steps to correct alignment of the doors and 1/4-lights to aperture front wing and windscreen.

On my drivers door the front and rear wings were not in line, so lining up the rear of the door with the rear wing and the front of the door with the front wing resulted in a zig-zag. I had to slacken the bolts holding the front wing, put a piece of timber from the top of the wing to the bottom of the garage roof, and jack the car up to press the wing down into the correct position! Sounds drastic but it worked.

Adjusting the overall height of the door is set by sliding the hinges up and down wrt the A-post. As well as the four visible Philips screws there is a nut behind the front wing which is accessed by removing the splash-plate aft of each front wheel. *May 2016:* The four screws go into two sliding tapped plates, which are in slots behind the trim panel in the footwell.

Getting the leading edge of the door flush with the front wing is set by sliding the hinges in and out (relative to the car as a whole) on the A-post, and getting the top of the leading edge adjusted relative to the bottom is achieved varying how much each hinge is moved relative to the other.

*September 2009:*

 There has been some discussion of this area recently on a mailing list. John Davies nearing the end of a restoration has found that the bottom of his drivers door needs to be moved out by about 1/16" or so to clear the wing. Opinion was that the hinges can't be adjusted on the A-post, even though they have sliding threaded plates like in the door and for the striker plate.

Even if the screw holes for the hinge in the A-post don't give enough adjustment I can't see any reason why they can't be filed out a bit to give more movement, but of course that would leave a mark, if not a gap in the paint, around the hinge and is why this adjustment really needs to be sorted before painting. There was talk of putting a shim in the door, but the threaded plate the hinge screws go in to is boxed in so may not be accessible. Then John described a method of bending the hinges his local garage showed him, which would achieve much the same thing without actually moving the hinge relative to the A-post. Basically you put a wedge into the hinge and close the door onto it. Pushing against the door carefully should tend to bend the part of the main hinge body that the pivot is attached to (which is much thinner than the tongue itself) and will have the effect of moving the pivot and hence the door out from the body slightly. Of course you can go too far, and it is not possible to bend it back again without removing the hinge from the body and door, or revert to Plan A and move the hinge on the A-post with all that entails. Care required!

Adjusting the height of the rear of the door relative to the front is the second-easiest of the adjustments to perform. Each hinge-to-door fixing has three Philips screws that go through

the door panel, through the hinge and into a sliding threaded plate inside the door. This plate doesn't seem to be a listed part and seems to have been installed during door manufacture, and is not easily replaceable if you should strip the threads, unlike the plates in the A and B posts. If you slacken all of these you should be able to imagine being able to slide the whole door forwards and backwards on the hinges, and this sets the basic fore-and-aft position of the door in the aperture and hence the front and rear gaps. With the same screws loose if you let the door go the rear edge will drop right down, the top hinge will slide out of the door and the bottom hinge will tend to slide into the door. Likewise if you lift the rear edge of the door the top hinge will tend to slide into the door and the bottom hinge will slide out and that is how you set the height of the rear of the door relative to the front. But before you slacken the screws you need to decide whether you want the top of the vertical gap between door and front wing to get smaller or the bottom of that gap to get larger. If you want a smaller top gap you slacken the top screws fully but just slightly loosen the bottom screws. Then when you lift the rear edge of the door it will pivot about the bottom hinge and the top hinge will slide further into the door. If you want the bottom of the gap to get larger you just slightly loosen the top screws and fully slacken the bottom screws, then lifting the door will pivot it about the top hinge and the bottom hinge will slide further out of the door. However if the hinges themselves are worn or bent you there may not be enough adjustment left to raise the rear of the door to the correct position. In that case you may be able to get by with swapping top and bottom hinges over (there seems to be no difference in top and bottom hinges, only RHS and LHS) or another possibility is to shim the lower hinge to get more 'lift'. However both these will disturb the 'up and down' and 'in and out' settings of the front of the door.

With the height of front and rear and the panel gaps set there are now four more adjustments left to do - yes four. You may have to twist the whole carcass of the door in order to get the rear edge flush with the rear wing for the whole of its length. The factory used a large bar that clamped onto the top and bottom edges of the door to achieve this, [Herb Adler describes the principle here](#).

Finally you adjust the striker plate in and out so that the rear edge of the door is flush with the rear wing and up and down so the door does not lift or drop as the lock engages, and add/remove shims between the striker plate and the B-post so that the lock opens and closes cleanly and doesn't bind. *May 2016* Again the striker-plate screws go into two sliding plates that are in slots that can be accessed by removing the trim panel.

However if the sills and rear wing have been badly fitted, or the door skin, it will be very difficult to adjust the door to compensate - or even fit properly. For that reason you should remove the minimum of front and rear wings and door whilst fitting new sills, even though the door will be in the way. They are vital to get correct alignment.

Happy hanging.

*Update September 2003:* I was never happy with the fit of the drivers door which had always used the striker plate to lift the door into position slightly, which is something it shouldn't have to do. This makes a bit of a clatter when closing, and unless the lock and striker plate are kept lubricated with a smear of grease it can need a push to open and the grease can get on one's clothes. I knew this from the outset but I'm sure I originally spent ages trying to get the door-to-hinge adjustment correct so this wasn't required but was unable to do so. Finally I decided I had to try again and blow me if slackening the top hinge to door screws alone allowed me to raise the rear edge of the door into the correct position, it only taking a few minutes including removing and replacing the trim. However that moved the lock slightly forward in relation to the striker plate and the two were now binding a little. There were already three shims under the striker plate, so I used one as a pattern to make another out of even thicker plastic, and one thick and two thin have now put the striker plate in the correct position, and the door now shuts with a nice click and springs open instead of needing a push.

## Key Lock



One of the first things you should consider doing, and certainly if repainting the doors or working on the locks, is to replace the very poor arrangement for holding the external lock in the door skin. This is nothing more than a flimsy spring clip which at best allows the lock to rotate in the door skin slightly, wearing away the paint around the hole and allowing rust to set in. At worst the locating 'pegs' in the door skin that stop the lock rotating too far can wear and allow the whole lock to be rotated far enough to unlock the car just with a screwdriver in the key slot.



There is a much better 3rd party lock fitting kit available from many of the usual suspects which secures the lock positively in the door and giving it no chance to move and chafe the paint. It is quite easy to fit once you have the door trim off, you just have to remove the existing spring-clip, ease the lock out of the door slightly to be able to fit the circular washer over the end (chamfered side facing the door skin) of the forked lever that operates the locking rod sticking out of the latch assembly, relocate the forked lever over the rod, then the C-shaped washer just slides into the groove vacated by the spring-clip. Tighten the grub-screws equally, and Bob is your Mother's Brother. Note that to remove the door trim you will need to remove the door-pull/armrest, the window winder, and whatever arrangement you have for opening and locking handles, then unscrewing or carefully levering up the concealed snaps. On Mk2 cars with the rectangular safety handles simply slide the top half of the plastic finisher upwards and the bottom half downwards, being careful not to tear the vinyl. The screws in the window winders seem prone to seizing, but if you remove the waist rail as well then once you have released all the trim panel snaps you can rotate the panel downwards about the winder handle and that will give you sufficient access. Remember to refit any polythene sheets over the holes in the inner skin to protect the hardboard trim from rain-water, and if you don't have any then fit some!

*Added November 2009:* Cars used in all weathers and particularly those kept outside can suffer from the locks getting stiff, as can garage locks and padlocks. You can ignore it until the key snaps off in the lock, or do something quick and easy sooner rather than complicated and expensive later. Vee was kept under a car-port for a long time with the prevailing weather against the drivers side, and that lock periodically used to stiffen-up, rather than the little-used passenger side. I've seen various recommendations for oil, silicone and Teflon sprays, and graphite powder each usually stating that only they should be used! [This advice](#) from a locksmith and safe engineer says silicone and Teflon can be used, but graphite is better, and oils like WD40 should definitely not be used. I see silicone and Teflon advertised but not specifically mentioning locks, so I'd steer clear of those. Graphite powder specifically for locks is available in small quantities, but for small quantities like a lock you can make your own (as recommended on the above site). Take a graphite pencil, and cut back the wood to expose 1/2" or so of the graphite core. Fold a sheet of paper in half and cut a diagonal, so that when opened out again the crease forms a point, like an arrow or a paper dart. With the pencil held over the crease scrape down the exposed graphite with a sharp blade held at right-angles to the graphite until you have a little pile of powder. Fold the paper and tap the pile into the crease. There should be little shutter in the lock across the key entrance, wedge this open with a matchstick, put the tip of the crease in the folded paper into the slot, angle the paper and tap it gently so the graphite powder trickles into the lock. Don't do this in windy conditions or it will simply blow away! Remove the matchstick and use the key in and out and turning it to distribute the graphite and it should soon ease up. Normal use of the lock will distribute it further. In exposed conditions like Vee's you may need to do this once or twice per year.

*Keys Added November 2010:* Replacement keys can be tricky. Using blanks and worn keys as a template is very iffy, I have a spare ignition key done like from the only key that came

with the car which was itself a copy, which if I'm not careful can jam in the lock (subsequently the 'original' key started jamming as well, so I [replaced the lock](#)). Both lock and ignition key numbers should be on the Heritage Certificate so potentially available for purchase 'new' rather than recut, but needs the original locks to be on the car of course. Easy to check with door etc. locks as the number was stamped on original keys (unless you already have a recut), but not the ignition key. A spare door key seems to have been attached to the car - to the firewall in the engine compartment, inner wing, and inside the glovebox have all been mentioned. Blanks are available from the likes of [Triple-C](#) (USA and Canada) but in all cases it is the pattern of length-wise grooves that is most important. Triple-C don't give these - you have to know the blank pattern number - but [Moss US](#) (but seemingly not Moss Europe) and [LBCarCo](#) show these patterns for ignition keys at least. The latter indicates which years have which pattern, but compare to your existing key before purchase and cutting.

#### Latch Added August 2010

I noticed Bee's driver's door button was suddenly stiffer than usual, and as it seemed to be getting stiffer thought I had better have a look as I didn't want it to suddenly fail altogether (remember Nory's wisdom: "Listen to your car, it is talking to you."). I hadn't lubricated it in 20 years, although with the door open, even with the latch pushed into the closed position with a screwdriver, it was very light to operate. So I removed the latch (remove the trim panel, but just the shoulder rail and pulling the trailing edge of the door card back should be enough to disconnect the two internal handle rods from the latch levers). The old oil was pretty sticky, but everything seemed to be moving well enough. Nevertheless I cleaned all the old gunk off and put new oil on, and the levers did seem to be a little easier. However back on the door (grease the plate the button bears on, and peer down through the window slot to engage the latch bar in the forked lever of the key lock) the button was just as stiff. Just as an experiment I eased the striker plate forward about 1/8", which did seem to help a bit. It subsequently struck me that the button in the handle may need lubrication as well. That can be accessed from above just by removing the shoulder rail with the window wound down, and pressing the button in then putting a bit of copper grease on the exposed pin has also made it a bit easier. Time will tell if that is enough. *September 2010*: A couple of weeks later I suddenly realised I wasn't noticing stiffness anymore, and when deliberately trying it found it really easy, so perhaps the grease has worked its way into where it was needed.



In the meantime, literally a couple of days after my initial investigation, Herb Adler writes to me from Oz having had exactly the same problem, although more severe as his was so stiff that he had broken the internal handle.

However he cured his problems by dismantling, cleaning and lubricating the latch, which he [describes here](#). He also describes [installing central locking](#)

[part 1](#), and [part 2](#).

#### Door Pulls May 2011



"Whatever can there be to write about concerning door pulls?", you may ask. Early cars had a simple handle, later a combined pull and 'arm rest', but despite having a thick wodge of hard foam around it the latter is more for safety than comfort and in the roadster does get quite uncomfortable on long runs. However the V8 has a different design extended further backwards

and angled slightly downwards, and is much more comfortable. I'd always assumed it was original as there is no sign of extra holes in the handles, door panels or cards, but in response to a question about the lack of comfort I checked a number of catalogues looking for mine and couldn't find them. I then looked in my original 75 model year GT and V8 brochure to see the shorter ones depicted and not the long ones, so it is looking like a PO swapped them for something from another BL model, probably for reasons of comfort. Anyone know where they might be from?

#### Door Cards November 2014

Just a fitting tip really. From 1970 on the door cards or liners had plastic clips that fit in cut-outs in the back of the liners, and are simply pushed into holes in the door frame.

Before that they are attached with a series of screws and cup washers, which are OK for refitting originals, but it seems that replacement liners from some sources at least have no holes. So they have to be drilled, but have to be to the centres of the holes in the doors. You could make careful measurements, but that's not feasible for my blind pal Terry. I suggested he screw self-tappers in from the back of the door frame so the points were sticking out, then using the window winder to locate the card, and feeling round the edges for equal gap, thump the liner over each screw to leave an indentation, which he could use to drill to. That worked well, and only a thump from the palm of his hand was needed. But there were some positions he couldn't get a screw in from the back. For those he cut the head off, and screwed the stump of the shank in from the outside - brilliant!

#### Drinks Bottle Holder Added September 2009



The Navigator likes to keep a small bottle of water with her, but it keeps rolling under her seat so she has been nagging me to install a holder of some kind. Hadn't given it a lot of thought, but while I was rooting through my box of old MG bits for something else I came across a broken windscreen washer bottle holder that I had replaced when I first had Bee 20 years ago. The frame between the two mounting holes had broken away, but I realised it would make an ideal 'holster' for the small water bottles she uses.

My first thought was to mount it above the sill in the footwell somehow, but that would probably have meant screwing through the trim panel which I didn't want to do. Then I investigated hanging it from the square-section bracing tube behind the bottom edge of the dash. Possible, but it would have to hang several inches down and not swing about. Looked along the tube towards the centre console to see the two brackets for the LHD steering column, which were a definite possibility, but again the holster would need to be lower and not swing about. Then my eye fell on the lower screw in the side of the centre console, and Bingo, the ideal location.

Repaired the frame by welding a strip between the two broken holes, and re-drilling the top one, did a test fit and it looked fine. However the water bottles are quite a bit smaller diameter than the washer bottle and if at an angle in the holster would fall through the frame. Started pondering welding more strips around the bottom, but then I seemed to remember I had replaced the water bottle as well when I replaced the frame because it was holed and leaking. Another root through the box of bits and Lo and Behold! Cut the top off the washer bottle to just below the top of the frame, perfect. Then it was just a matter of stripping and painting the frame, and installing.

#### October 2017:



I say 'perfect' - and I'd done the same to Vee - but being against the tunnel the bottle did get a bit warm in hot weather. When Vee had been restored the passengers side trim panel had been removed to replace the front wing, and when I came to refit it I realised that - unlike Bee - there is a trim-screw half-way up the edge by the door. That makes a convenient mounting point, although it rather forces the height and angle the holder has to be positioned at. So we'll see how that goes, and either try another position lower down and more upright, or I'll add a trim screw in that position on Bee and move hers. If I move Vee's, then I'll perhaps try adding some 'legs' to the holder so I can still use existing trim-screws.

#### NEW Door-glass and Regulators August and October 2017

A bit of manipulation is needed to get both the regulator in and out of the door, and connected to and disconnected from the glass. All the following applies to later regulators, i.e. Mk2 on, but the Mk1 probably isn't much different. Originally written with more description than pictures in August when fitting-out Vee, John Maguire from Australia sent me his version in October which consists of a number of captioned pictures and a video. What's more, with a genius bit of lateral thinking he has come up with a method that pulls the glass and top of the regulator out of the top of the door, so the glass can be slid straight off the rollers of the regulator. This results in drop-glass removal being accomplished in about 15 minutes, and refitting in not much more, so I've replaced my method with his. Drop-glasses were always curved, and handed.

#### Removal



The vent/quarter-light frame can be removed with the glass still in place ...



... or the glass can be removed with the quarter-light in place, depending on which component(s) you need to get at.

#### Reinstallation



If you are replacing the GT outer weatherstripping you will need to remove both the quarter-light and the drop-glass. The roadster weather stripping can be accessed with the quarter-light in place, only the drop-glass needs to be removed.

### GT C-post Liners *November 2014*



When I bought Vee 20 years ago come January bodily she was in very good condition, and apart from one thing the interior was also good - patinated but very original. The exception was the C-post liners, where the nuts on the back of the tail-gate spring stays had been allowed to gouge the vinyl of the C-post liners. Really annoying, as all it took was a little force to bend the

pivots in towards each other a little bit so they cleared the liners. That left what to do about the liners. Never in a rush to do things (it took me 18 years to replace the plastic covers on the tail-gate struts ...) I decided now was the time, so as I had built up a list of things I wanted to do on both cars over winter I went on a shopping trip to Leacy's.



There are two colours - cream and grey, and looking at mine I couldn't tell for sure what I had, but I managed to get a sample of each, to find I had grey. Removing the old is pretty straightforward - one screw with cup washer at the very top, two screws for the rear window latch, three screws for the rear shoulder rail that has to be slid forwards, and five spring clips.

On the first side all five of these came out easily, but on the other (only started when the first had been finished) one snapped, and another fell out and hid. The old boards were quite significantly warped, but otherwise in pretty good condition.

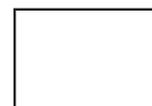


Comparing old and new it is apparent that the size and shape is slightly different, and the foam padding is probably only a quarter as thick on the new. The spring clips lower into holes in the back-board and slide on, and

on the old were all orientated in the same direction. The holes in the new boards are slightly smaller than the clips, so the open end needs to be slotted in, then a screwdriver used to open up the end so it can be slid onto the board. I orientated them the same way as on the old

boards. I made sure I had clean hands before handling the boards. I was using various tools from time to time during the fitting process, and whilst they are generally 'clean' my hands still get a little grubby from using them, so I kept a man-size wet-wipe handy to use when handling the liners after tools.

Care is needed as the board has to be slid behind the bracket on the hatch opening for the spring stay. The rear edge of the upper half then has to be twisted so that it can sit on top of the rear padded section above the hatch, as will be seen from the witness marks of the old liner, so this is part of the reason for the warping in the old boards. Using the cut-out in the liner that goes round the stay bracket as a guide I peer behind the board to find the lower two clips are nowhere near the holes. I can't move them with my fingers behind the board, so the liner has to come off again to adjust first one then the other of the lower clips, and there are three more to align!



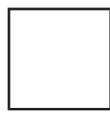
At this point I realise the new liner is showing the effects of being fitted, removed and refitted behind the stay bracket, so wrap the bracket in masking tape to protect the liner. The upper three clips are more awkward to align - I'm either having to peer down from the edge of the hatch opening through a narrow gap, or outwards from inside the load space, to

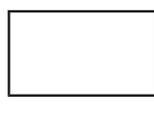
get a glimpse of the ends of the clips in relation to the holes. I'm also having to push at least one of the lower clips into its hole and unclip it again each time I tweak the upper clips as that is the only way to get a consistent position of the liner relative to the body. There is some up and down flexibility of the whole board, but you have to be aware that the top fixing screw is very near the edge, and in practice the liner has to be pushed up pretty-well as far as it will go. Eventually I get all five lined up, but a couple of the upper three are now sitting in the hole rather than being slid onto the board, and pressing them into the holes in the body is leaving the square imprint of the base of the clip in the vinyl - hopefully that will vanish in time. It's obvious the positioning of the holes in the new liners is perhaps 1/2" different in various directions compared to the old.

There are no holes in the new liners for the top screw or the rear window latch screws, so how you get particularly the former in the right place as there is very little room for error, only a cup-washer? The latch is easier as there is a rectangular plate with two holes, which will give quite a bit of room for manoeuvre. Funnily enough pal Terry had asked me the same question when fitting his early front door liners, which are screwed to the door in the same way, and after a little thought I suggested screwing a self-tapper out from the back, then pressing the board against the sharp point will leave a mark which he could feel and use as a drilling reference. Terry did that, but a couple of them were not accessible from the back, so he took it one stage further and cut the head off, and screwed the shank in from the front, which still left the point sticking out to make the mark. Can't get a screw in from the back, so off with it's head. However it's so near the edge and mixed up with folds on the vinyl and staples that I can't see the mark, so use a blob of pant on the end of the screw instead. For the latch holes position not being critical I use the old liner as a template ... but when I get the liner clipped into position and with the top screw in, despite angling the screw in all directions I can't find the holes. Also even with the screws through the liner only and not through the latch, they are too short for me to be able to see the tip in relation to the hole in the body, to know how far to move the hole. However the screws I had removed from the shoulder rail are about 1 1/2" long, and with those through the liner I can see they are about 1/4" out! Never mind, the latch will cover a multitude of sins, and I can redrill with the liner in-situ. The next problem is that the new liner is about an inch or so away from the body panel, and has to be pressed in very firmly, with a screw through the latch and the liner, wiggling it around to find the hole. Screwing it in enough to bite is proving very difficult, so again I use one of the longer screws to find the hole and pull the liner in to the panel, then put one of the correct screws in the other hole and tighten, then I can remove the long screw and replace it with the other correct screw. Phew, that was a struggle, given the position and having to clamber in and out of the

load space all the time, and took about one and a half hours. Still, it's kept me warm in what otherwise would have been a chilly garage.

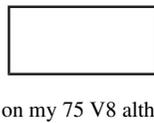
The second side is much the same, except I opt to mark one of the holes for the latch with the painted screw stub same as for the top, then use the old liner and that hole as a template for drilling the second hole. With one broken and one missing clip I only have three, so opt to use them in the bottom two holes and the middle of the upper three, as the latch and the top screw prove to be plenty good enough for holding it in place. With that and familiarity that one only takes half the time. Step back to appraise my handiwork, looking in from the drivers door to examine it from that angle as well, and immediately espy the errant spring clip sitting on the wheelarch right in front of the seat belt reel, so completely hidden when looking in from the load space. Oh well, I'll keep it in a safe place.

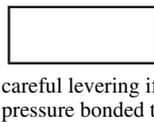
 Then when I lower the hatch to make sure the stay nuts are going to be well clear of the new liners, I suddenly realise that edge-on they are nowhere in sight! As well as being thicker, the old liners sat on the side of the flange around the opening, whereas the new ones are behind the flange. If there **was** any contact now it would be with the flange before the liners.

 One of the things that put me off replacing them for so long was whether they would look like a diamond in a goat's bottom i.e. make the rest of the trim look really shabby. But I could see from the colour samples that they weren't that bad, and whilst the new liners are cleaner and brighter it's not showing the rest up too badly.

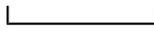
## GT Headlining *Added October 2009*

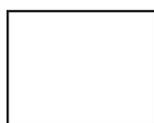
I'll say at the outset that I haven't removed and replaced the headlining on my V8 as I have a glass-panel sunroof which makes the job much more involved. I did do some investigations for a pal who is rebuilding a GT that came to him without a headlining, and trying to work out what parts were needed was a bit of a puzzle.

 The Leyland Parts Catalogue shows drawings and part numbers for five parts - the main board, the front and rear header rails, and the left and right cant rails. The drawings appear to show that the front header and cant rails are of a similar size and thickness to the rear header, for all eras of GT, but on my 75 V8 although the rear header was obviously a covered and padded removable board, the others were solid when tapped and could have been hard plastic. I wasn't able to find any reference to the front and side rails from any source, new or used, via Google, and only one to the rear section. Cutting a panel from sheet is definitely feasible for the main board, recovering kits are available at the rather shocking price of £40-£60. The only other possibility seemed to be breakers and abandoned projects. In jest my pal suggested I take mine out and have a look at it, and was horrified when I said I had already decided to do just that! I then remembered the sun-roof and realised I wouldn't be able to remove the main section to use as a template, but at least I could remove the rear section and have a look around.

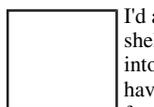
 To do that the C-post trim panel really needs to be removed, which involves removing the screws from the rear window catch and another screw right at the top. I then discovered five spring-clips which need careful levering if they are not to rip the hardboard. The plastic covering on the trim panel had pressure bonded to that around the rear window, but peeled apart without ripping with a bit of careful pulling.

 The rear header is attached with two screws through the load-space light plus four spring clips. There appear to be two holes at the ends of this rail

 for more clips, but only four are shown in the Parts Catalogue and the top of the C-post trim panels support them anyway.

 With those out the way it became apparent that far from the cant rails being rigid strips, they are part of the body structure and simply covered with headlining material glued on. The front header rail is the same, as the rear-view mirror screws into it with short screws, the edges of the holes being at earth potential when tested with an ohmmeter, i.e. part of the body. These rails form a 'shelf' running along the front and sides of the roof. My pal managed to get a set of old side and front pieces, which amazingly someone had been able to peel off the body without ripping. Comparing these to the strips in the recovering kit reveals the new pieces to be extremely thin and flimsy by comparison, even taking into account that the originals will have hardened over time and have a coating of glue on them. However I suspect the originals were heat-formed to fit round the box-sections to make attachment easier, and the ends of the front section have stepped ends (also heat-formed) for the ends of the side pieces to sit on, to make a smooth transition from the one to the other.

 The main headlining on my V8 is not much more than compressed orange fluff about an inch thick, with a layer of card between that and the visible vinyl covering. When stripping Vee the mechanic said to be very careful moving it around as they can crack, although whether that was because mine has a glass sunroof to the amount of headliner to the sides is rather narrow, or whether that applies to all, I didn't enquire at the time.

 I'd always imagined that the main board just pushes in from the rear above this shelf, the rear panel covering the back edge. The back edge on mine is tucked into a metal recess which is part of the body structure, that may be as a result of having slid back a bit when the sun-roof was fitted, and would need prising forwards and down for removal. As far as cutting a panel to fit goes you wouldn't want to go the full width available above the shelf as I felt various protrusions i.e. reductions in width at various points. Neither would you want to cover less than half the width of the shelf, because if the panel moved over in use it could leave a visible gap, so maybe covering 2/3 or 3/4 of the shelf is the way to go. The amount of board that is 'hidden' above the shelf is surprising - 2" to 2.5" at the sides and just over 3" at the front! However the mechanic stripping Vee said when it is slid fully to one side the other edge drops off the shelf, so it can be removed and replaced through the hatch opening tilted. But I'm pretty sure I measured the maximum available width at 43", and the visible width at 38", which means the headlining would have to be a maximum of 38" or it wouldn't fit as suggested without bowing, which he warned against.

The maximum size of the tailgate opening at the top is 39", and at the bottom is 41.25". As can be seen above the maximum width available for the board is 43", so some bowing of a board this wide would be required to get it in. Even with a suggested width of 41" it would still have to be fed in from quite low down or bowed along its length, and because the highest point of the tailgate opening is lower than the shelf the board would have to be bowed from front to back at the same time. The other issue relates to the upward curvature of the roof. To follow this curve either the board has to have a 'natural' curve produced by steaming or damping and then drying in a mould, or it has to be slightly **wider** than the maximum available so that the board can then be forced to curve upwards. But that would require a precisely cut board - too wide and it wouldn't go in even bowed up, too narrow and it will flop down again. I don't actually know whether it is a natural bow in the board or a precise width that forces it to bow up, as I say at the beginning my V8 has a glass-panel sunroof the surround of which holds mine up against the roof as well as preventing removal without interference to the sunroof which I'm not prepared to do at this point.

## GT Load-space *Updated September 2014*

As Greg Stome asked some questions about the board that covers the spare wheel and tools I have updated this section. He subsequently wrote to say that he had been struggling with the later hinge, and asking around opinion was that the hinges did not attach to the car body. But looking at my pictures he could see that someone had cut the end pieces of his later hinges, which meant that although the seat back and the load floor were attached to each other, they were not attached to the body and so flapped about, hence his problem. Then searching out an old seat back he had put in his attic years ago, he found a pair of correct, unmolested later hinges. So if this section helps you, thank Greg ☺

### Accessing the spare wheel and tool area Luggage cover



There is a large flat area above the spare wheel and tools which gives a reasonable load space, especially with the rear seat back folded down which extends the flat area. With the additional carpet it is also neat in appearance while empty. Originally there was a two-piece hinged board, with a short section that screwed to the body, and a larger section that hinged up. Simple hinges (AHH 7527) were used here as well as on the seat back, and were screwed to the short section.



Then in October 1973 the board changed to a one-piece, with more complex hinges (BHH 976, no longer available) that provided the pivot for both the seat back and the board. If needing to reproduce this type of hinge, note that although the pivot and the plates that screw to the board and the seat-back are above the board, additional sections are needed to go down past the edge of the board, then turn at right-angles underneath it to be attached to the body.

### Accessing the spare wheel and tool area:



After getting the V8 I very soon tired of supporting the spare-wheel cover on the top of my head when getting tools out of the space underneath - I blame it for my hair-loss ... With the cover raised I noticed that the toggles that fasten it down are very close to the hatch struts and realised how simple it would be to fabricate a simple hook to hold it up. In the end I just formed a piece of stiff wire into a suitable shape and Hey Presto! Click on the thumbnails for a full-sized image.

**Luggage Cover:** The Navigator has always been bothered about leaving the V8 parked whilst touring as all our worldly goods are on display in the load-space. I've thought about making a cover from a window roller-blind fitted with black fabric and attaching to the top of the rear seat-back, and the free end to a couple of hooks on the tail-gate so it was lifted up out of the way, with the locking mechanism disabled. The MGOC still advertise one in their Accessories Catalogue (Part No. E015) at £55 but apparently it hasn't been available for some time. Too pricey for me anyway, and it doesn't lift with the tailgate. I think they also sell a hard moulded cover, like many modern cars have, but at some huge price several times that of the unavailable cover. Not only is that less convenient as you couldn't use it with anything that sticks up higher than the top of the rear seat, but if I were going down that route I think I'd be looking for one off a similar sized car at a scrapers even if it had to be trimmed a bit.

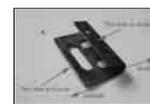
Then one trip away I had the idea of putting the load-space carpet **over** the luggage instead of underneath it and that together with the tinted windows meant you had to look pretty closely to see anything. The only drawback with that was that the luggage then slid about all the time on the shiny spare wheel cover which was irritating. However it gave me the idea of getting a piece of carpet to do the same job. Next Stoneleigh MG Spares Day I spotted someone selling

load-space carpet quite reasonably at about £15, but also selling sheets of carpet a couple of metres square for just £10, so I got myself one in black. It was described as 'Volvo quality' but was significantly inferior to the load-space carpet from the same vendor and other carpet squares from other vendors, but as it wasn't for 'walking' on and only a load-space cover I reckon it will do just fine. It will also allow me to make one long enough so that with the back seat lying flat with large loads I can still cover it all.

## <sup>NEW</sup> GT Rear Windows *October 2017*

These were originally chromed brass, changing to stainless in May 1972. The earlier hinges were handed, and seem to have been full-length - one per side - probably similar in design to piano hinges, and probably in brass or chromed brass. The later stainless windows had a much simpler system which was just a rectangle of thin stainless steel bent into a 'U' shape (BHH698), as the amount of movement at that end between open and closed was negligible. Two per side, and they are not handed. What follows relates to the later design.

I removed these as part of Vee's restoration. Quite straight-forward - remove the screws holding the catch to the C-post at the rear. Pull the door seal away from the flange and you can get at the screws that hold the B-post trim strip on. With that off you can remove the screws that hold the hinges (two hinges per window, two screws per hinge) to the B-post. Replacement is inevitably the reverse.



One of the hinges on the off-side was detached from the frame - I think the rivets had pulled through the hinge and were still in the frame. I've replaced a hinge on a front quarter-light opening vent, and that was quite easy, just using an ordinary pop-rivet. However the folded-over shape of these hinges means that at the very least you would need a tool with a long tubular nose, and possibly a rivet with a longer shank, to get across the folded-over part. There may also be a problem in getting into the frame, I can't recall. If replacing them, remember that the curved part of the 'U' of the hinge goes towards the inside, and the open part towards the outside!

Alternatively you might be able to do what has to be done when replacing the front vent hinge -pin, and that is to remove the glass from the frame, in order to put a screw through from the inside, and use a nut on the hinge. Bit trickier with the rear window, though, with the frame going all round the glass as it does. As I never open the rear windows, and the other hinge was fine, I opted to leave it alone. If both hinges were suspect though, there is a risk that air-pressure would blow the window out.

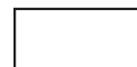
## GT Tailgate Props *November 2012*



Well, the spring covers, rather than the props as a whole. When Vee came to me 18 years ago the 'chrome' plastic covers were a bit tatty, and the domed cups that hold them on quite tarnished and a bit rusty, and the only change since has been for them to get worse. Someone on a BBS asked how to get the domed cups off, and that was a prod to me to do something about mine.



I got new covers and the two sizes of domed covers from Brown and Gammons, together with a bonnet badge for the ZS. This had faded badly in my ownership, as it was parked under a carport facing due south and so got about as much sun as it was possible to get. Now we have moved it faces East when parked, so gets the early morning sun, but much less than before (the boot gets more and that has started delaminating!). But I digress.



Getting the old covers off took about five minutes - the domed covers simply ping off, but it needs quite a hefty screwdriver to do so. You can

 lever the big ones off by jamming the screwdriver in, then twisting, as there is a metal piece behind the cover that you can lever against. The small ones have nothing to twist against, but if you angle the screwdriver across the centre spindle where the large one was and lever against that you can pop the small one off. After that the covers just come off the spindles.

 The new covers didn't slip straight on the spindles, even though the smaller of the two holes is elongated, they aren't quite wide enough apart. I didn't fancy forcing them on only being plastic, and probably quite brittle at that. I compared the spacing on the old and new covers and they were identical, so had another go at easing them on, and that they did.

 That was the easy bit. The cups were very difficult to get on. No matter how hard I pressed or squeezed with my thumbs, either square on or trying to get one side on first, I made no headway at all. I was gripping with my fingers round the back of the cover, and was wary about putting too much pressure on that and breaking it. Next attempt was a large hammer against the nut on the back, and tapping a mallet against the larger domed cap. Well that got it on, but at the expense of bashing the dome in a bit - most annoying. For the smaller one on that side I tried a folded cloth about an inch thick against the dome, and used a pair of channel pliers to ease an edge on, then worked round the edge to avoid pressing direct on the dome, but it still marked it a bit. What it needs is a concave domed surface to press over the whole surface including the edge. So I got a bit of softwood, and a 'ball' grinding wheel in a drill, and that made the perfect shape and size for the larger cap. Taped it in place, then with the large hammer on the back tapped the wood with the mallet and on it popped with no damage. I then cut a smaller depression for the smaller cap, and that went on just as well. Subsequently Ray Owen wrote to say before reading this he used a 1/4" block of balsa which deformed around the caps and also fitted them without damage.

**Hardtop** *Added January 2010*

  Original accessory as well as quite a few after-market variations, each with their own parts for glazing and seals, but the method of attaching to the car should be common so that's what this section is about.

**How Many?**

Clausager has much information on this in his book, but for some reason omits the total numbers for each market for the basic roadster and GT, even though he includes them for the MGC and GT V8. They are as follows:

	RHD Home	RHD Export	LHD North America	LHD Other Export	LHD Sweden/Germany	LHD Japan	RHD CKD	LHD CKD	Total
Roadster	49699	6507	298052	19217	1929	1379	9278	900	386961
GT	64980	6989	47188	4889	916	0	216	104	125282

So whilst six times as many roadsters were sold in North America as the UK, there were less GTs - only 72% as many.

And whilst on the subject of numbers, see [this info](#) on how many UK cars are still currently taxed or on SORN with the DVLA.

**How Strong is my Body?**

 Originally, very strong. But the bulk of the strength is in the sills (just open both doors, squint through the gap and see just how little metal is joining the front and the rear of a roadster together!) and chassis rails and corrosion of the former at least is very common and weakens the structure to such a point that it sags and the bottom of the doors can rub on the tops of the sills. In this state the body is very weak indeed and you could get significant crushing of the cabin space in even a relatively minor impact.

  But going back to the original strength Abingdon were carrying out impact tests in the 60s and 70s, pages 216/217 of 'MG by McComb' and 142 of David Knowles's 'Untold Story' showing the results of just such impacts into a concrete block at 30 mph by a roadster and a GT. Even now Euro NCAP only tests at 40mph (albeit as a partial frontal and not a full frontal as this is) but the damage is usually much more severe than this. Apart from the crumpled bonnet there appears to be no damage behind the front arch.

BMC crash tests a Mini, 1100, 1800 and at 9:33 an MGB. From underneath at 10:48, and steering wheel intrusion at 11:58.

See also this factory video of a test of [air-bags in an MGB](#).

There is also [this well-documented case](#) of an MGB at Silverstone hitting a concrete barrier at an estimated speed of 90mph and experiencing a deceleration of 75G in not much more than a couple of feet. The driver was unconscious but this was from the effects of deceleration, not impact of his head with any object. And although the driver suffered a broken bone in his foot this was purely from the force of his foot flying forwards and hitting the toe-board or pedals, there was no intrusion into the footwell.

 Modern cars have carefully designed crumple-zones at the front and the rear to give a more gradual deceleration than the Silverstone case, and a strengthened passenger 'cage'. However this means that even in relatively minor accidents the crumple zones will be deformed to the point where the car is declared a write-off (although there is a legal cottage industry specialising in the repair of many of these). Also, and more importantly, above a certain impact speed the passenger compartment will crumple like tin-foil. This is obviously an extreme case, and the fact the 'other vehicle' was a truck doesn't help, but remember the next time you are bowling along a single carriage-way, that even at legal speeds your closing speed with someone coming the other way is 120mph.

 And nothing is going to protect you (short of a tank) if you pull out of a side turning while talking on a mobile phone.

## Identification Numbers (was 'Body Numbers') *Updated May 2010*

[Body Numbers](#)

[Chassis Numbers](#)

[Commission Numbers](#)

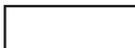
[Replacement ID Plates](#) *October 2013*

[Australian CKD MGBs](#)

### Body Numbers:

Clausager has quite a lot of information on this, but not entirely correct as we shall see. To summarise his information:

- MGB roadsters originally had two body numbers.
- One with no prefix, starting from '1', stamped into a steel strip, spot-welded to the inner wing behind the radiator on the dynamo side. This number was written into the Abingdon records.
- The other with an 'MGB' prefix, starting from '101', stamped into an alloy strip, screwed to the inner wing by the carbs, not recorded by Abingdon.
- On Mk2 roadsters (but see below) the MGB tag moved in front of the radiator, still on the carb side, riveted in a vertical position.
- Mk2 roadsters for North America had body tags prefixed MGBU, and those for Germany and Sweden from 69 to 74 were GBSN, and both had their own series of numbers.
- From 1969, roadsters with Swindon/Cowley bodies just had the MGB tag, which was now the one recorded by Abingdon until 1972, after which body numbers ceased to be recorded.
- GTs and V8s had different prefixes - GBD for the 4-cylinder except GBDU for Mk2 for North America and GBSD for Mk2 Germany and Sweden, and GB75D for the V8, each with their own number series.
- Until GT production started body numbers stayed pretty close to chassis numbers, for example Clausager dates chassis number 66580 to July 1965 and body number 66808 to August 1965. With the separate series for GT, North American and Germany/Sweden, but all cars using the same chassis number series, they got further and further apart.
- Rubber bumper cars had the body number on a larger strip welded into a depression on the bonnet slam panel.
- [Australian CKD cars](#) were **very** different in several aspects.

 However going by actual examples it was sometime between April 65 and October 66 that the 'MGB' tag moved to what Clausager says is its Mk2

 position, and almost certainly at the same time the unprefix tag also moved, to the very front edge of the inner wing on the dynamo/alternator side, orientated vertically, between two bolts for the outer wing. GT production started in September 65 so it's possible that was the actual change point. There does appear to be an example of a one-owner, unrestored (going by its present condition) 63 roadster that has the MGB number but not the other one.

Why two body numbers? Some cars (MkII roadster bodies built at Coventry) - could have **four** tags - two body number plus the Commission and Chassis numbers. MGBs were built in at least three plants, possibly four, being shipped between them so some means of keeping track at each stage was required. The spot-welded, un-prefixed, steel tag was almost certainly attached during body assembly, certainly before painting. As the MGB-prefixed tag was originally screwed, but also painted, it was probably attached at the paint and trim plant i.e. at the next plant in the sequence. This could well explain why the two numbers could drift apart, for example a 1966 example has its two numbers over 500 apart. The Commission number plate was riveted to painted bodies i.e. at the trimming stage before shipping to Abingdon. The Chassis number plate was riveted by Abingdon after final assembly. This still doesn't fully explain two body numbers, but there **must** have been a reason, they wouldn't have done it just for the hell of it, it's simply lost in the mists of time.

 I've never seen a picture of a Chassis number stamped into the body of a UK-built car, and Clausager indicates this is a very confused and uncertain feature (*October 2017*: Maurice Irwin says his 1980 GT has "a stamped number on the top of the rear offside chassis leg, just under where the boot floor board is"). However [Australian CKD cars](#) definitely did. Their special (BMC Australia) plate had the body number as a suffix to the chassis number, as well as the engine number and body colour. On an example of a Mk2 this plate was on the inner wing in front of the radiator by the oil cooler pipes. The body number was stamped into the actual shell, just behind the opening for the pedals on the carb side in one case, beside it in another, and the chassis number was stamped into the top of the carb-side chassis rail at the very front. There also appears to have been a 'diecast' plate behind the wiper motor giving the date the kit of parts was put together, presumably supplied by Abingdon, the actual build date being later of course.

### Chassis Numbers:

Similar confusion over the plates for these, it seems. From Clausager:

- "Until January 1967 a [small rectangular plate](#) with the MG octagon logo was used", and his pictures shows them stamped from the front.
- "In January 1967 a new type of plate, [rectangular with rounded ends](#), headed The MG Car Company, also used on MGCs". The statement has been made that this was also front stamped, but his picture appears to show it as rear stamped. Also the credits indicate this is a 69 model, and Clausager says that plates were screwed until 1970 then pop-riveted, but this MGCs plates are pop-riveted.
- For UK cars, "In the autumn of 1972, and certainly on all cars from January 1973, the name of the manufacturer was changed to '[Austin Morris Group](#)', also used on the V8, and this style was used until 1979", and his picture (74 V8) shows this reverse stamped.
- Also for UK cars, for the final year of production a deeper, [square-ended rectangular plate](#) was used, headed "BL Cars Ltd.", and with paint and trim codes included. Clausager shows this as front stamped.
- For North American cars a [second strip-plate](#) was introduced from 1st January 1969 viewable through the screen from outside the car, and from September 1969 a special identification plate was introduced riveted to the shut-pillar of the left-hand door. Originally "The British Motor Corporation Ltd.", the company named changed to

"British Leyland (Austin-Morris) Ltd. in 1970, and in 1972 to "British Leyland UK Limited"

All fair enough, but there has been a statement that the direction of stamping changed in the autumn of 1972 along with the plate type. However 73 model-year cars started to be manufactured in August of 1972 with chassis number 294251 for roadsters and 296001 for GTs, and my September-72 built 1973-model roadster has the MG Car Company plate (i.e. the old one) stamped from behind (i.e. the new way). So the direction of stamping changed before the plate type, which could have been as late as January 1973. I've pondered the possibility of both types of plate being used for a while during the cross-over period, as parts sometimes were. But that would mean two or more people stamping them, probably in different locations, which seems very unlikely, given the need to avoid any possibility of stamping the same number more than once.

Moss Europe also causes confusion by stating the UK plate changed from 'MG Cars' to 'Austin Morris' in 1970. The North American plate **did** change in 1970, so either it is a typographical error or they simply assumed the date of the change was the same for both markets. All the other evidence points to the UK plate not changing until after the start of 73 year model production.



What doesn't seem to have changed much is the fitting position. Clausager implies that until the final year of production 4-cylinder cars plates were always on the right-hand inner wing (on the left as you look in from the front), just in front of the radiator. The final year used a larger plate on the same side of the bonnet locking platform. The MGC chassis number plate seems to have been on the left-hand inner wing (i.e. carb side) behind the radiator. V8s are immediately behind the oil filter.

#### Commission Numbers:

Much less confusion over these ... but still some. It seems these were generated from the beginning of production, but Clausager states they were only attached to vehicles with the start of MkII and MGC production in 1967 - to the bonnet-lock platform of MGB and GT V8, by the chassis number plate on MGC. They continued to be generated and attached to vehicles until at least June 1976, but Abingdon stopped recording them in April 1971. This would be the only place off-car they **were** recorded, so if yours is lost you should be able to retrieve it from BMIHT records at Gaydon if manufactured before April 71, but not afterwards.

#### Replacement Identification Plates

*November 2016:* I've just been made aware of the full range of identification plates available from MiniMail, covering B-series engines as well as A-series. Far more comprehensive and with more background information than any of the other sources.

*October 2013:* I note that some of the usual suspects have decals and blank identification plates of various types. Moss Europe seems to have the full range of chassis number plates but for some reason commission number plates for 62 to 69 Coventry-built roadsters ('F' suffix) and 70 to 76 Cowley built roadsters and GTs ('Z' suffix) only, and not for Swindon built 69 and 70 roadsters or GTs up to 1970 ('P' suffix). SC Parts have 'P' GT plates as well as 'F' and 'Z' roadster plates. Moss US has two types of commission plate - for what they describe as '68-69' and 'Roadster, 70 on' at almost twice the price of the first one, but the image shows one completely blank plate. Completely blank plates are also available from a Mini supplier on eBay, but you would need to confirm the size is correct. You could get an 'incorrect' plate and remove the screen-printed suffix - or a blank plate, then stamp or engrave and paint-fill the correct suffix.

For stamped plates I'm aware of three sources in the UK - and for the chassis number you will usually be required to send the old plate if legible, or a copy of the V5 registration document showing the same name and address as the delivery address: Welsh MG who can supply the plate as well as stamp it, Retro Minis and Classic Plates, plus Clarke Spares and Restoration in the USA. However Classic Plates require you to supply the correct screen-printed blank for chassis and commission plates, and although they say they can stamp plain alloy e.g. for the engine number which you could then cut to size and punch the holes, when Bill Etter contacted them about an engine number tag they didn't offer him this option! Retro Minis have blanks of screen-printed and engine number tags, and the rivets, although whether they are the correct size and format for MGBs is another matter. They give the dimensions for their engine number blanks but comparing them with my 18V their overall length and rivet spacing is slightly bigger, which is perhaps a little odd given the Mini A-series engine is smaller than the MGB B-series:

Dimension	My 18V	Retro Mini	Note that for rivet spacing Retro Mini state: "holes on drilled at 2.64 inches 67mm centres" in addition to "holes 2.49 inches 63.1mm apart", I don't know why.
Length	3.08	3.24"	
Width	0.59"	0.490"	
Rivet spacing	2.45"	2.49"	

Moss US have engine number blanks and rivets available, but indicate the plates are only suitable for 18G to 18GK engines.

All three stamping sites show embossed i.e. reverse stamped to give raised characters. However original plates varied as to whether they were impressed or embossed according to plate type, market and year, although engine numbers may have been embossed right through.

*January 2016:* Classic Vehicle Spares have (albeit listing ended) engine plates for what they say are MGBs up to 65 (however the 18GB ran from late 64 through to late 67 and Moss US indicate the same plate is suitable for all 18G engines i.e. up to March 71) but don't state the size although they may well respond to a question. They also have a stamping service at £10.10, which appears to show impressed characters, not embossed.

Character size also varies. Bill Etter was told by Classic Plates in his enquiry about an engine number plate that they use 5/32" stamping. However mine measure 0.193", which given that the raised characters on the plate will be slightly larger than the embossing on the die, probably equates to 3/16" or 0.1875", which is the size on another engine with an original plate that Bill has. It's also the size that Clarke's use, although Bill finds the spacing on one of theirs he has is too close compared to his original. I then checked my chassis number plate, and although embossed as well they are smaller at 0.170" which is closer to 5/32" than 3/16". No doubt a factor of engines and bodies being made in different places since time immemorial.

*April 2014:* Bill got his plates back, nicely stamped. However to get all the characters in they used a longer blank than the ones that Bill had provided so now it won't fit the engine! There is also the question of whether hyphens and slashes were used. Bill's contain hyphens, as Clausager shows them (although he shows one after the '18V' as well). Even when slashes between the prefix and the serial number weren't used there was a space, and where slashes were used these have occasionally been interpreted as a '1' by the DVLA.

I've also just discovered that apparently Australian CKD cars had the tag removed and the number stamped directly into the block. V8s are like this, but then they have an alloy block. How hard the stamp had to be hit to make an impression in cast-iron, and how long the stamps lasted, can only be guessed at. Or maybe they were engraved, the information I read used both terms.

## Mud-flaps *September 2017*

One of things that could be derided as bling, but then particularly at the front they do protect the sills, and if having them at the front it would look a bit silly without them being on the back as well. Vee came to me with them, and having been bought as an all-weather daily driver it seemed sensible to keep them. However many years ago one of the front ones got stuck behind a wheel when I turned out of a parking space with a speed-hump right in front of it, and by the time I noticed the noise and could stop it had damaged the inner corner.

After restoring the body and rebuilding the engine over 2016/17 I debated whether to refit them. Vee is used more as a daily driver than Bee, so even though I have never fitted them to Bee I decided to refit them. Vee being a rubber-bumper GT they don't look as 'heavy' as they would on chrome-bumper wire-wheeled Bee. Even though one pair of the original flaps was sound, they were very shabby, so I opted for two sets. This time with a monochrome MG octagon in white on black rather than the red and white of the originals. There are also MGB and particularly V8 variants, but I didn't fancy those.



Fitted with a choice of clamps or massive screws and washers which would mean drilling through the arch flanges, I opted for the clamps, but found only moderate resistance when tightening the screw, until the head 'bottomed' on the face of the clamp. Fitting to a curved face, there is a wide range of positioning available, but anything other than the outer vertical edge being truly vertical looks odd, to say the least, so a carpenter's spirit level sliding on a metal ruler was used to judge that. A bit of a fiddle holding the flap in the right place, and the clamp going round the flange and the flap, and tightening the screw first on one then the other, and that only enough to hold the flap on while one applies the spirit-level, and slides the flap round the curve one way or the other to get it vertical.



Fitted, they stick out a bit and look quite clunky, as the flange on the flap is a good inch whereas that on the wings is about half that. So off they come with a view to trimming off a centimetre or so. But I thought I'd practice on one of the old ones first - to find they have a metal insert in the curved section that goes against the wing flange, which means that the screws can only cut into a relatively thin bit of rubber before they encounter the metal, and pressure from further tightening of the screw clamps the remaining rubber firmly between two sheets of metal - the insert and the wing flange. The new ones have no metal insert, so the screws in the clamps cut into the rubber until the head 'bottoms' against the clamp. One wonders how long it will take for the rubber to extrude out from under the screw, clamping force being reduced, and for a flap to fall off!



Hunting through my several containers of miscellaneous bits and pieces I find a number of thick 'washers' with a tab on one edge, and a small hole in the middle. Had them so long I can't recall where they came from. I find five, so four of them will be enough for one per flap, which should be more than enough to keep hold of them. Cut the tabs off, and fit them under the screws in the lower clamps.

## Passenger Foot Brace (aka 'Numpty Board')

On a visit from fellow MGer Michael Beswick his wife asked the Navigator if she had a 'Numpty Board'. This turned out to be an angled board in the passenger footwell that she could brace her feet against. Now having had Michael describe looking for a problem by doing full-throttle gear changes in his supercharged MGB I can see why his wife might have felt the need for one ... I'm not allowed to do things like that with the Navigator on board, but she did say that it sounded like a good idea as on long runs she found herself gradually

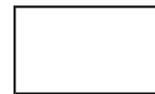
slumping in the seat with the low seating position and long footwell of the MGB, and had to hitch herself up now and again.



Michael emailed a sketch to me as a starting point, and I fabricated a trial unit using hardboard for the sides and an angled piece of wood for the footrest. The shape of the MGB footwell is quite convenient in that the side pieces can be shaped to 'dig in to' the angle between floor, sill/tunnel and toe-board so it doesn't need to be bolted in and can be removed in a moment for vacuuming or transferring between cars. As leg length varies from person to person, the seat adjuster gives quite large steps, and I like to keep the two seats in line (OK, I know it's a bit James May, and I do like to keep the dashboard fresh-air vents straight and level when closed but at least I don't carry a toothbrush to clean the slots ...) we got the basic fore and aft position of the board by her sitting in the seat and holding her feet at a comfortable position, and I stuck masking tape on the sill and tunnel carpet to give me a measuring point for the length of the side pieces. I then used card trimmed bit by bit to get the basic shape as there are several angle changes of the bottom of the side pieces from front to back, and finally transferred that shape to hardboard. Now I know hardboard isn't very strong and heavy braking (from me or the Navigator ...) is likely to break it, but this was just a trial to get the right positioning before constructing something more robust.



However whilst the Navigator found it useful she does like to move her legs and feet around which the angled wood didn't really allow for as it kept her knees and ankles at the same angle all the time, so the MkII test unit was born. This has a length of wardrobe rail as the foot rest between the side-pieces, which allowed her to rest either her soles, instep or heels against the bar, or indeed have her legs at full-stretch and the backs of her heels on top of the bar, all of which allowed her to change the angle of ankles, knees and hips as and when. As the footwell narrows on the tunnel side as you move forwards, and the bar is the full width between the sill and tunnel, the tunnel side piece angles in slightly, hence the end of the bar that side is angled to suit. The wardrobe rail used for the bar is hollow tubing so I cut wooden inserts to slot inside for about an inch, then a screw through the side pieces into the end of the inserts expanded them to wedge tightly into the ends of the tube. That is, until the wood dried out and shrank a bit, but it's still tight enough to hold the bar firmly.



After a couple of weeks of long and short journeys she pronounced herself satisfied, so the shape of the side-pieces was transferred to offcuts of 3/16" aluminium sheet I happened to have, and the gold-coloured bar painted flat silver to match. Oddly, when installed this put the bar at a bit of angle, with the left-hand deeper into the footwell than the right-hand than the test unit seemed to be, so I had to extend the left-hand piece by about half an inch by MIG-welding a bit to it. Subsequently I made a second one for the V8.

## Quarter-lights *March 2013*

The quarter-light frames were chromed brass until May 1972, changing to stainless.

[Removal/refitting](#)

[Adjustment](#)

[Glass](#)

[Repair and Restoration](#)

### **Removal/refitting:**

The quarter-lights can be removed with the drop-glass still in place. When refitting it's important to barely nip up the two upper front bolts and the stud nuts, before tightening



either, to get the quarter-light correctly aligned, or that area of the door frame can become distorted.

**Adjustment:** This is vital to get right if splitting of the door skins - the Crack of Doom - is to be avoided, and is a combination of screen alignment and quarterlight adjustment and the way the two interface with each other. There is only one adjustment, but there are three parts to their installation and they need to be done in the right order. There are two studs that go through the top of the door that take deep nuts, two bolts that go through the front of the door, and the adjustment stud at the bottom of the long channel. The nuts must be tightened first, while the quarterlight is pushed as far forwards as it will go. Next the door is shut, and the nut at the bottom of the long channel going through the slot in the bracket tightened, so that the side of the quarterlight frame just kisses the bulbous part of the seal on the roadster screen upright, ditto the GT door opening seal. Finally the front bolts can be tightened. Then for the roadster the screen positioning has to be considered as well.

**Glass:** Roadster quarter-light glass (the opening vent, not the drop-glass) was originally flat, with a single part number for both sides, until the change to stainless frames in April 72 when they gained a slight curve. GTs always had two part numbers, so may well always have had curved glass and hence had a different part number for each side. The drop-glasses on both models were always curved, and handed.

**Repair and Restoration:** Not content with reassembling a GT 'All by Touch' a couple of years ago my blind pal Terry bought a 67 roadster in a similarly dismantled condition. This had most of the outer bodywork done and had been primed, but then had been abandoned for a long time, and underneath was in very bad condition in places. He had the body finished and painted elsewhere, but again is doing almost everything else himself. (He completed it to gain its MOT at the first attempt in June 2015, but by the end of July he had succumbed to cancer and passed away).

Whilst he could tell the chrome on the quarter-lights wasn't too bad he still wanted them rechromed. One has a broken top mounting stud and on the other the bottom stud plate has corroded away. Three out of the four hinge parts had broken or were missing, and a bolt had sheared-off in one of the front mount threaded plates. I found several rechromers in Birmingham and the West Midlands quite near to me, hanging on from their industrial past, and one of them will rechrome them for £70 each. They know MGB quarter-lights and do them for someone else restoring them. He wants £350 a pair for restored - exchange - with a £200 surcharge each in case your exchanged unit can't be restored! A retailer of restored units wants £250 exchange each!!

For rechroming they need to be completely dismantled, and what with that and the several repairs that needed doing it was going to be more than Terry could manage. I offered to do them for him, and he jumped at it! Terry already had the four upper stud plates and nuts which he sent up with the quarter-lights, and doing some research I found that Brown & Gammons seem to have practically everything else I might need, including small parts like the handles and pivots (expensive though!) if they can't be rechromed successfully. Fortunately the main frame, the opening frame, capping and rain channel and the glass are all in good condition, even the felt channel in the long leg. The only part that no one seems to have is the rivets to secure the rear top mounting stud and the latch plate for the handle on the opening window (but see below). The rivets for the hinge and the handle pivot on the opening window are available, but they are smaller.

Interestingly the hinge on the main frame is held on with two countersunk slotted screws, one of only two places I'm aware of where they are used (the

other being used to hold the mounting plate for the distributor in the block). However on the later stainless units both halves are riveted. One of Vee's - the vent half - was broken when some scrote got inside, but each half is available separately (gotta love these cars), and I was able to drill out the old blind-rivets to get the broken-off bit out, and fit the replacement with pop-rivets.

Also interestingly the replacement top stud plates have threaded holes for a screw, the same size as the hinge screws. And whilst a screw was originally used for the front stud a pop-rivet will be perfectly satisfactory, as the only thing it needs to do is hold the stud from flopping about while the quarter-light is being fitted and the nut attached to the stud. Once tightened it serves no purpose at all. However screws are no good for the rear stud as the latch plate for the handle on the opening window sits on top of it, which is why that one is riveted. The original rivets are flush both sides, but whilst pop-rivets are nearly flush at the one end, at the other there is always the crumpled tube and ball from the end of the pin sticking out, and I wondered whether there would be enough clearance for that. There is even less clearance below, just the thickness of the gasket between the quarter-light and the top of the door.

In fact there is plenty of space in the channel between the latch plate and the bottom of the seal for the opening window. However I'm still wary about using pop-rivets as the handle closing the window against the latch will tend to bend it back and fore, which could well loosen it. The stud plate itself is fine as that is pulled down onto the bottom of the channel by the nut underneath. So a screw up through the frame, the stud and latch plates, with a nut on top of the latch plate, seems the way to go.

Ready to go to the chromers now, with the lower stud plate repaired, and the forward-facing threaded plate repaired. I removed that, thought gripping the remainder of the bolt that had gone through the plate with a pair of grips was worth a try, and with a bit of releasing fluid it just unscrewed. Refitted that with pop-rivets as again that is simply pulled against the channel when the deep-head bolts are tightened.

To be continued ...

**May/June 2013:**

Took a while to get the parts back from the chromers - Castle Chrome at Dudley. Initially they said they would be four weeks, and to ring a couple of days beforehand. I did and they said they would be ready for 5pm on the Friday, which is no good to me at that time of day because of the traffic between Solihull and Dudley, so I'd collect them Monday lunchtime. They then said that helped them as they were a bit pushed, i.e. they hadn't started them yet. After another repeat of that I realised that each time I agreed a date it was going to be 5pm that day, so agreed a date but didn't go, then double-checked next morning that they were actually ready before setting out! All a bit casual, I was beginning to think they had lost the parts. Even more so when I did go, the goods receipt and despatch area is a large warehouse full of pallets of industrial-size and quantities of stuff for plating, and amongst them is my two frames and handful of small parts. But carefully packed and wrapped, and opening them up the results are absolutely superb, well worth the cost.

In the meantime I'd obtained a considerable number of replacement parts, so now it was a case of very careful reassembly so as not to mark the new chrome. You have to work out the correct order of doing things, like rivet the hinge into the opening part before fitting the glass and glazing seal, which involved working out the best way of closing a blind rivet without a

press. One of the trickiest jobs was getting the glass and glazing seal into each frame. Despite clamping them up it just wouldn't go in as far as it should. Eventually I realised that to secure the handle brackets in the opening frame I had used pop-rivets as the correct blind rivets weren't apparently available from any of the usual sources, and the bobble on the top was sticking up too far and stopping the glass going down and hence in as far as it should. So more research, and then I find that the correct rivets (AHA7554) are available from Moss Europe, but they are only listed for some of the models and not the MGB. Earlier I had also found that some of the parts listed by another supplier are incorrect and vary from model to model, so more research was needed to find the correct ones. (*December 2017: Currently available from Moss, Leacy, and several others.*) After that the glass went in fairly easily.

 One of the most annoying things was the poor fit of the replacement hinges, they go in OK but are dimensionally incorrect and position the opening vent too close to the back of the channel for the drop-glass so the edge of the glass and the corners of the frame foul the seal. I'd previously spoken to someone else who restores these, and they said if they have to replace the hinges they don't guarantee the fit afterwards, and I can see why! I spent more time getting these to fit decently than anything else, which involved some careful 'machining' to improve the fit. (*December 2017: Michael Nunn on the MGOC forum said he got his from MGOC about May 2014 and had no problems.*) I got one working nicely, but the other was still binding, which I eventually discovered was because the main channel was bowed in towards the vent instead of being flat. I'd not noticed that before, as all the hinges had been broken so I couldn't see the fit before I started. I didn't fancy trying the straighten the newly chromed frame, so settled for relieving the seal instead and that is now much better. Still not perfect, but I don't see how I can improve it any more. So then it is a case of parcelling them up with copious bubble-wrap between two sheets of hardboard, hoping that they don't get bent. I'll have to insure them for at least £750, as that is the cost of replacing them if they get damaged beyond repair.

## Roadster hood/top

[Folding the hood/top](#)

[Replacing the hood/top](#)

[Hood/top fittings](#)

Originally as standard the MGB had a pack-away hood that was completely removed from the car and the frame dismantled into two parts, as well as an optional folding frame. The pack-away frame slotted into two sockets screwed to the inner panel aft of the doors, and the folding frame screwed to the same welded nuts on the back of this panel. In 1970 both of those were replaced by an improved folding frame, and that is the type described here.

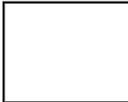
 The pack-away frame sockets can be installed with either of the folding frames to be used for the tonneau or hood cover sticks, the sockets are also used for the hardtop.

**Octagonal Origami** (or, the art of folding the MGB hood)

[Front bow fouls the body](#)

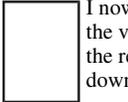
I posted the following on the MG BBS in response to an enquiry, and one person was kind enough to contact me and say it had helped him, so I decided to include it here. It relates to the 1970-on Michelotti hood, not the packaway or earlier folding types for which [see here](#).

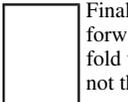
By the way I keep seeing exhortations not to fold the hood if it is damp. Fair enough, I wouldn't put the car away with a damp folded hood, but are you going to keep driving with the hood up after a shower now the sun is shining again? Nor am I, but it does go up again when I get to my destination. In fact I always erect the hood when in the garage, just in case the roof decides to start leaking.

 With all fasteners (front and rear) undone I pull the header rail back just enough for the hood to clear the slotted chrome things behind the cockpit, then push the header rail forward again. At this time the rear window is dangling down behind the rear seats, I lift it up and forward and lay it over the central part of the hood.

 The quarter-lights are now sticking out at the sides. I lift the rear window part and tuck each rear quarter-light under the rear window so that they lie between the rear window and the main part of the hood. If you get this right the three pieces of clear plastic (rear window and two quarter-lights) will be lying flat, unfolded, uncreased and all the folds will be in the black vinyl.

You can see one of the cords that pulls the rear bar into the correct position when the hood is erected.

 I now pull the header rail back lift the rear bow by pulling up on the trailing edge of the vinyl (the part that hooks into the chrome things behind the cockpit) so that the rear bow doesn't wedge on top of the inner arches, and lower the whole thing down into the space in front of the rear cockpit rail.

 Finally I drape the rear window part, complete with tucked-in quarter-lights, forward over the header rail, making sure the header rail clamps are closed. If you fold the black vinyl edges correctly it is these that lie over the screen fasteners and not the clear plastic.

I have seen two pieces of cloth employed at this point - one between the clear plastic and the header rail and the other between the tonneau cover and the hood to protect the clear plastic but personally have not bothered to do this - after nine years and 25k wet and dry miles my windows are still in pretty good condition. You should have two hood straps (or rather two ends of one strap each side) that allow the rear part of the hood to be rolled round the bottom part of the whole folded arrangement and held up out of the way of anything on the shelf, but although I have these straps I use the full-length tonneau cover as a hood cover fastened to the rear heel board so there is no need.

With the rear bow attached to the hood material using the two strips that are provided for this purpose I found the bow wasn't in quite the right place when the hood was erected, but too far to the rear. I now have two cords, one each side, tied between the middle and rear bows, and adjusted so that the rear bow is pulled up right under the seam as the header rail is pulled forward. See the 2nd picture above. Subsequently I discovered the early folding frame had something similar as standard. It was two lengths of webbing joining the front and rear bows and going over the middle bow. One can be seen clearly in Clausager on page 54, 2nd picture down, as cream webbing contrasting with the black hood material and grey frame. Also a glimpse of it in the bottom-left picture, which also seems to show the rear bar sewn or glued into hood material flaps the same as the later hood.

**Front bow fouls body:** *April 2015*

 I've been folding Bee's hood for 25 years without a problem then suddenly one time last year the ends of the front bow were fouling the body both

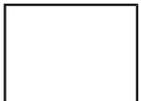
 sides. It took me a few minutes to realise that for some reason this bow had pivoted, and stuck in a different position to normal. Normally when erected the ends of this bow point downwards, and when folded they should point straight forwards and tuck inside the cockpit rail with a clearance. If for any reason they are pointing too far backwards when the hood is erected, they will be pointing straight down when the hood is folded and foul on the cockpit rail. Since then it started happening more often, and now (September 2015) happens every time.

September 2015:

 Looking at where the front bow pivots there is a block of metal welded beside it, which looks as if it was an afterthought to stop the bow pivoting at all, or only very slightly at most. But after 42 years wear has taken place in various places so that the block no longer restricts the movement of the bow. It seems that the sides of the bow support should butt up against the edge of the block, which would put the bow almost vertical. But in that position, when folded the ends of the bow stick up which isn't ideal for the hood cover or tonneau cover. With the ends of the bow pointing straight forwards when folded, they are pretty-much the same angle to the vertical as the middle bow when erected. However at that angle, because of the wear in the bow support and the block, the corners of the bow support are overlapping the block which can't be right. Looking at two pictures in Clausager the front bow does seem to be almost vertical when raised, which would put the side of the bow supports against the edge of the block. The bow support is sandwiched between two other parts of the hood frame - a short curved piece pointing backwards to the outside, and a longer curved piece facing forwards to the inside, but it only pivots in relation to this longer piece while being folded. It doesn't need to move in relation to the shorter outer one at all, so could in theory be welded to it. But I shall ponder for a bit whether to do that, or weld another block on top of the existing one, ... or ... something else.

**My hood/top doesn't fold low enough** *Updated July 2008* This relates to something that happened when I restored the car some 19 years ago, so I don't have any photos and it is dependant upon memory to a large extent. I'm only including it now as someone has written to me with what seems to be the same problem, although it doesn't appear to be a common one as I can't recall anyone coming back when I mentioned it on the various lists and BBs some years ago.

When I first had the roadster it came with a full-length tonneau cover with snaps half-way along so it could be used as a hood cover as well, the front half of the cover being tucked up under the folded top on the shelf. However my hood sat so high when folded that the snaps were nowhere near the posts on the heelboard, whereas pictures of cars showed the top of the hood dropped right down into the space behind the seats. But what I could do was fold the hood back with all the rear fasteners still done up, which made it very quick and easy to erect. A friend's car of the same age (73) was exactly the same, and he related how he could erect his top while driving along!

 When I restored the car I wanted to get the hood lower so I could use the tonneau cover as it does look much neater, and after some pondering realised that a couple of the struts in the frame were folding as far as they could, then jamming, and that was stopping the top and frame folding all the way down. After a bit of beating on these struts (time elapsed prevents me from remembering which) and changing the angles 'lo and behold' the frame and cover now drops all the way down as shown here, with the frame bows resting on top of the inner arches, and I can fasten the tonneau cover heel-board snaps and now have a neat hood cover. But I then discovered I can no longer fold the top back with all the rear fasteners in place as it traps and stretches the material. No matter, I'd rather have the neat folded appearance.

I've got the sticks, but it is a real stretch to fasten the snaps of the full-length cover when used as a hood cover, and it doesn't really make that much difference to the appearance anyway so I don't use them. I think they are mainly intended in that position to shape the separate hood cover which I don't have. Where the tonneau sticks **are** useful with the full-length cover is when both sides are fastened full-length, when if you position the sticks **in front** of the seats instead of behind it lifts up the centre of the cover so rain runs off the sides instead of pooling in the middle and dripping through the zip. I've never seen this advice anywhere else.

I don't understand why so few stick up in the air like mine did, unless it was a different manufacturer of the frames for a while, but even then I'd expect more cars to be affected. Having said that at the Stafford MG Enthusiasts run to Upton House in September 2009 I noticed quite a few of each type i.e. some low and some high. These were all the later Michelotti style, and there didn't seem to be any correlation with the year i.e. some early and some late with both appearances. No pics, maybe next year if I remember.

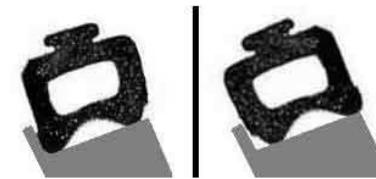
 This 65 roadster has the (later Michelotti) frame dropped pretty-well all the way down, but also has the rear still fastened to the rear panel! However it is a later zip-out hood, maybe that makes the difference.

### Replacing the hood

Two things to be aware of here - buying a new hood, and fitting it.

#### Fitting

I will deal with the fitting first as it may impact on which one you buy. IMHO you must read through a set of hood fitting instructions, such as those contained in Lyndsay Porter's excellent "Guide to Purchase and DIY Restoration of the MGB" before embarking on the task. It may incline you towards buying a hood without header rail already fitted or indeed the other way. Personally, I feel that buying without may well result in a better fit, albeit at the expense of extra effort. Buying one with header rail ready-fitted is a lot simpler but the resultant fit may not be as good if your screen/hood frame/rear fastening dimensions are not exactly the same as the template used by the manufacturer of the ready-fitted item. You don't want something that is going to look like Nora Batty's stockings (see [Last of the Summer Wine](#)).



When closing the hood I had always had to run a finger along the seal in the gap between the header rail and the screen top rail from inside the cabin to prevent the rubber seal getting trapped by the flange on the screen top rail, which was a pain. When I received the new seal I immediately noticed that it was slightly asymmetric front to rear in that the two 'bumps' on the seal that press down onto the screen top-rail are slightly off-set. I checked the old seal and found that this off-set was rearwards (i.e. to the left in this profile image) which could account for the seal getting trapped. Fitted the other way round the rear bump drops neatly onto the screen top rail without getting trapped. But the forward bump, instead of lying flat on top of the rail, now lies on the angle between the top and front faces. My first thought was that this can't be right, surely lying flat on the frame rail is correct, but then it occurred to me that being on an edge rather than a flat surface it probably conforms to the shape better actually giving a better seal. Time will tell. Since then the one opinion expressed by others was that the bumps should be rearward as the original was, and they hadn't had

problems of the seal getting trapped. But in subsequent torrential rain the seal hasn't leaked at all, and as it easier to close this way I shall leave it as it is.

### Buying

The hood on my roadster was replaced shortly before I bought the car and is probably one of the cheapest you can get - single thickness vinyl. Although it is waterproof in itself its fit to the remainder of the car is less than perfect in one or two places so I have been considering replacing it with something of higher quality.

 In May 1999 we stayed at a hotel in Guernsey for a few nights with a group of other MG owners from across the UK so the cars were in the hotel car park overnight with the hoods erected. I was amazed to see the variation in fit amongst the cars, and even more amazed to find that mine was one of the best. On my hood the gutter rail just reaches the top of the side windows and there is a flap of vinyl that hangs down inside the glass for an inch or so. On some of the better quality and more expensive hoods this flap barely reached the top of the glass and the gutter was way above it. Furthermore the flap was bowed in leaving a considerable gap between it and glass, which meant that with the slightest breeze any rain would blow straight into the car. So, when considering buying a new hood, carefully measure from the top of one side glass, over the middle hood bow and down to the top of the other side glass, and compare with the gutter-to-gutter measurement of the new hood. Hold out for a good fit, new hoods are not cheap and you are likely to be stuck with it for some time.

The later folding frame and top can be fitted successfully to early cars, as the rear bow is 'floating' and can be adjusted to sit under the rear seam. However if anyone is perverse enough to fit the early removable frame and top to a later car Kelvin Dodd of Moss America writes that the rear bow - the position of which is fixed in relation to the rest of the frame - does not sit under the rear seam in the top, which implies the positioning of the tonneau bar/hood frame sockets was moved on later cars.

### Fittings

 I've been asked a couple of times now for a diagram and dimensions of the hood fittings, so here it is. The hole to the left of the 8cm line for the rear-most peg is the tapped hole for the static shoulder belt attached with a quick-release fastener for some markets in various years. The front-most peg is measured from the front of the socket for the hood/top tongue, and has a press stud close behind it, which is for the tonneau cover.

 Another question popped up on the length of the retaining bar at the back of the hood. I knew it had chamfered ends to follow the curve of the hood material, and little boots on the end to stop it wearing through, but I hadn't realised the whole bar was curved, even though the pocket itself seems to be straight.

### Rubber Bumper Radiator Grille

These can be fiddly to remove and you have to manoeuvre them just so, as well as have sufficient clearance between the back of the rubber bumper and the front of the wings. Although the wing drain channels stop about 1" short of the very front of the wing the grille is about 1/2" too wide to be lifted up immediately in front of the end of the drain channels, which would make things that bit easier without reducing the effectiveness of the grille. But as it is the grill has to be angled even further forwards and lifted up through the gap between

the back of the rubber bumper and the very front face of the wings. Click on the thumbnails for a larger image.



First remove the two large screws from the bottom brackets and the three small screws going through the slam-panel to the plastic sockets in the top brackets then slide the whole grille forwards, keeping it vertical, just enough for the top brackets to clear the front edge of the slam-panel.



Next tilt the grille by pushing its bottom edge back as far as it will go, this should allow you to tilt it even more by bringing the top edge further forward to clear the end of the wing drain channels and the very front edge of the wings themselves.



Now you should be able to lift the whole grille up, keeping it square and tilted, with the outer edges of the grill passing through the small gap between the back of the bumper and the front face of the wing. If your gap between bumper and wing is too small to allow this, slacken the nuts securing the bumper to the chassis legs which should allow it to angle forwards increasing the gap.



This image shows the vertical edges of the grille and the reinforcing bar for the upper part of the rubber bumper. This bar sits in a channel across the top edge of the bumper, then bends back for a short distance and then downwards. There should be about 1" clearance between the edges of the grille and these bars i.e. they should not interfere with removal at all.

### Screens

[GT Screens - pro advice](#)

[GT Screens - DIY experience](#)

[Roadster Screen](#)

**GT Screens:** Had my GT front screen replaced due to stone damage and the fitter expressed relief that the rubber and trim were OK as it was much easier to work with than new rubbers. A couple of months later I had to go back as a result of someone trying to break in, and he groaned when he saw the mangled rubber and trim. The new rubber has a smaller recess for the trim than the old so it is more difficult to get the trim to stay in, and the rubber is very soft and sticky which means that every millimetre has to be lifted over the trim. On the old harder, slipperier rubber it is possible to slide the trim in for quite a way before having to resort to lifting it. It took him three times longer with the new rubber, very little of which was taken up by removing the old rubber and fitting the new to the body. Many years later I had the 'opportunity' to [fit them myself](#) as part of [Vee's restoration](#).

From the fitter:

When removing the trim strips make sure you know exactly which piece goes where, and which way up. They will come off looking like corkscrews, don't try to straighten them or you won't get them back in again.

Remove the rubber beading that is concealed by the trim strips. Press the top of the windscreen out from the inside using hand pressure. Lift out the old glass. Leave the rubber in the car, remove all dirt and old sealant.

When fitting the new glass get one bottom corner in firmly, then work your way along the bottom and part way up the sides lifting the rubber so that it rests on the edge of the glass, not overlapping yet. Only when you have done the bottom and part of the sides should you use hand pressure on the face of the glass to press it into the groove.

Now do the same with the top half, and when the rubber is resting on the edge of the glass all the way round, use hand-pressure again to press it into place.

Inject sealant under the edge of the rubber. If fitting glass to an undisturbed rubber then you only need to put sealant between glass and rubber on the outer face. If fitting new rubber as well, or if the old rubber was removed and being refitted, you will need to put it on both the glass and painted metal edges of the outer face.

Then fit the rubber beading (this was the only bit where he used a specialist tool, but it isn't essential).

Now to refit the trim. With all the trim, fit the paint side into the rubber first and use an implement to lift the rubber lip over the trim strip. That way if the implement slips, it goes onto the glass not the paint.

Fit the corner pieces first, then the sides, bottom and top.

When fitting the sides, top and bottom, look at the twist (if refitting old trim) and start with whichever end allows you to fit the paint side under the rubber lip first so you have to press the glass side down against the twist.

Took him one hour to replace the glass using the old rubber and trim, about three hours the second time with new rubber.

#### NEW DIY installation: August 2017

Seals: This is quite a struggle by itself as they - particularly the rear - appear to be several inches too long to fit in the hole! This excess also seems to impact on the fitting of the trim later on. You have to fit the top corners first - which needs the sides to be fitted to hold them up - then the top edge. Then the sides need to be eased off, pushed upwards to compress the rubber and refitted, then work down the sides and along the bottom, continually pushing the rubber to compress it, going back and fore along the bottom and up the sides, to reduce the amount of 'surplus', until finally it's all fitted onto the flange. No sealant used at this stage. The front seal wasn't quite so difficult, however whereas with the rear seal once it was in stayed in, the front seal kept coming off the top body flange while inserting the glass, and needed holding in place with masking tape.



An extra on the rear seals was to punch holes for the HRW wires, using a hole punch tool. With the original HRW the wires are glued up the edges of the glass and a few inches along the top each side, and the glass has been cut back to accommodate the wire when the glass is fitted. They exit the seal through holes near the hinges. Check the top edge of the glass and measure the distance between the ends of this cut back area, i.e. where the glass has gone back to full height again. Mark that distance in the middle of your seal, and punch the holes slightly further apart than that, so the wires come off the glass and go through the seal while they are still in the cut-back area of the glass. Think carefully where the holes need to go - i.e. from the bottom of the slot the glass fits into, through to the inside!

Rear glass: With a pal helping the glass went in quite easily using mainly halves of sprung clothes-pegs to lift the seal over the edge of the glass, and Swarfega 'original' (smooth) as a lubricant. We did try cord, but it pulled away from the corners so

we persevered with pegs for the rest. With the glass in, and before the locking-strip, you can inject non-setting sealant under the seal on the glass side and the paint side by running the nozzle along lifting the seal up as it goes. New locking strip for the rear as the original had vanished, and that pressed in quite easily using more Swarfega, both done in not much more than an hour.

#### Front glass:



A lot longer to get this glass in. Thick cloth sheets laid across the bonnet and the panel at the base of the screen to protect them, with the ends trapped in the doors to hold it in position. Started with one bottom corner, and nothing else is anywhere near. But by persevering up one side and across the bottom, using purpose-made plastic levers this time, we can start working across the top. Because the bottom isn't fully in the lip is miles away from the edge of the glass, but with pal variously pushing the lip up from inside the car and me levering from outside, we work along towards the final side. By now the seal there has detached itself from the body. It did that before, and we decided to remove the partly fitted glass and start again, but having done three sides we weren't going to do that again so struggled refitting the seal with the glass in the way. And by variously pushing the glass across to the already fitted side, pushing the seal from the inside, and more levering, it finally went in. Again with the glass in, and before the locking-strip, inject non-setting sealant under the seal on the glass side and the paint side by running the nozzle along lifting the seal up as it goes.



The front locking strip is the original, it's hard and crusty, and has a slightly different profile to the new, all of which make it much harder to get started, it keeps lying on its side in the main slot instead of its side flanges going into the side slots. Pal has brought along the purpose-made tool with a wire loop which is a bit too small for the strip which was why we hadn't used it previously. But opening it out a bit, and with plenty of Swarfega, it suddenly starts going in easily, as usual the proper tool making life easier. You can get three different sizes of this tool from some suppliers, but the only difference seems to be in the width of the loop, and there is no sizing info so you don't know which one to get! A pro would have all three, but for occasional use like this you can get away with just one, either squeezing it smaller or levering it wider as we did.

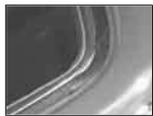
Trim: Always slot in the paint-side first, so you are working on the glass side lifting the lip of the seal over the edge of the trim, to reduce the risk of anything slipping and damaging the paint. Not an easy task, the edges are so sharp it's very easy to cut the lip of the seal, which on new seals are very soft. On the plus side they are very pliable which should make it easier to wrinkle the lip out from under the edge of the trim. We really struggled fitting just one half of the rear trim - especially going round the upper corner as it is a tight turn, and it took an hour. After that, and one side piece at the front (the corners fitted first are easy), we had been going at it a good five hours so called it a day. We couldn't really see how we were going to cope with the long strips at the front, and wondered whether I would have to resort to taking it to a fitter, which can't be done until after the MOT. Particularly the long front sections didn't want to lie flat against the seal, but I found it very easy to carefully work along them bending a bit at a time until they did lie flat, although the top one still needs a couple of strips of masking tape to hold them against the seal until you can get a few inches in. Also when starting the very end tends to pop back out, but keeping an eye on it and going back to it, once 2 or 3 inches are in it should stay put.

The plastic levers used for the glass were too thick, as were the peg halves. So it was a case of seeing what we could find in the tool-box, and towards the end I had been getting better results using a pair of long-nose pliers. So next day I had another go on



my own, as well as having another look at a YouTube of fitting a front screen we had found the previous day. Jumping in stages through the prep and the seal, glass and locking-strip fitting at one point the fitter mentioned that sharp edges can cut the seal, but you can sand them down with emery. And sure enough the edges of the

old trim I was refitting were sharp, serrated where they had been levered under the lip before, and with some crusty corrosion. However when viewing the video again I realised he was talking about the glass, and not the trim, so I was lucky to spot it. But some fine wet and dry smoothed it off considerably, after that it went in quite much easier - with the correct technique, of which more later. No discussion on that or another useless video of fitting trim to a rear screen of what tool is best, but from freeze-framing the first it looked like it was round bar with the business end curved over, and a ball-shaped end. Googling "windscreen fitting tools" came up with [this at £12.99](#), although they also have a longer version which is almost half the price! However I think the shorter the better being easier to manipulate. There are similar hooked tools with a sharp end, which might help getting the ball-end tool started, but would cause more damage if they slipped. But back to the long-nose pliers, at the ideal angle instead of having to lever the lip out a couple of mm at a time, I found I could push them along and ease the lip out and over in one smooth movement, several inches at a time, and ended up doing the second rear section, and the front second side and top and bottom, in not much more than a couple of hours. Care is definitely needed with pointed tools, at one point my pliers slipped and stabbed into the base of my thumb. Initially it looked like a couple of stitches might be needed, but plasters sufficed (with a thick glove for the rest!), and at least it avoided what could have been significant damage to paint. Bodies heal by themselves, paint doesn't! With both halves of the rear trim in place the ends were overlapping, which would affect how the finisher would sit, but by wedging a paint-scraper between the two ends, and levering, the two halves ended up end to end, and the finishers went in just fine. One oddity with the lower strip at the front was that as I got to the end I realised it was almost 1/2" too long - where has that come from? By pushing the bottom corners round a bit, and pushing the strip along to one end as far as it would go reduced it a little, but didn't eliminate it - it's like it is the opposite effect to the upper corners at the rear (see next para). In the end I could see no option but to cut a little off the end, with a thick protecting pad under the trim and above the body, seal and glass, then file the edges smooth.



However that left a small problem with the upper corners on the rear screen. It seems that as the seal has to be squashed up to get it all onto the hatch flange, it is pressed into the top corners very tightly, so much so that it describes a tighter radius than the trim, and you end up with a gap between the outer edge of the trim and the lip on the seal.

Someone on one of the fora recently mentioned a problem in this area, I couldn't imagine what he meant, and no one else responded, so - apologising for the potential insult - I wondered whether he had the trim upside down! But now I can see what he probably meant. It can be reduced by pushing the seal towards the trim to reduce the gap once the trim is fully fitted, but doesn't completely eliminate it.

#### Roadster Screen:

[Glass Replacement](#)

[Frame Replacement](#)

[Quarter-light and Header-rail Seals](#)

[Parts Changes](#)

#### Glass Replacement:

Whilst travelling to the 2004 Lincolnshire Wander mine developed a crack running down from the top edge right in front of the driver as a result of a stone chip. As this is an MOT failure item I had to deal with it, although fortunately the next MOT was many months away, giving me plenty of time.

Although covered by insurance without affecting No Claims bonus my first thought was to repair it myself for two reasons: One was simply for the interest and experience, but the other was the thought of some spotty youth from a windscreen replacement company making a bodge of my pride and joy given the special nature of the roadster screen, particularly removing the frame from the body and replacing it. However the benefit of having it done professionally is that any mistake on their part, including cracking from unequal stresses shortly after fitting, would be their responsibility to resolve. Spoke to Roger Parker at the MGOC who said often they won't remove and refit the screen, but require the removed screen to be delivered to their premises. That would get rid of one of my concerns (damaging the paintwork during removal or replacement) but still leaves me with the problem that if the screen cracks after refitting it is open to argument as to whether it was incorrect fitting of the glass to the frame that was the problem or incorrect fitting of the screen to the car. Seems to me that the only choices are doing it all myself, or letting them do it all, the half-way house being the worst of both worlds. I spoke to the company that would do the job and was satisfied with their knowledge of all the steps and pitfalls of doing an MGB roadster screen, including removing the screen from the car, so opted to let them do the whole job.

**Preparation:** Nevertheless I wanted to do any preparatory work myself so set about seeing just what was involved in removing the screen with the minimum of other dismantling. I had removed the screen back in 1989 preparatory to a full rebuild, but as part of that I had removed all trim and the dashboard which makes the job considerably easier. I didn't want to have to remove the dashboard again unless I really had to. Consulted Lyndsay Porters (Guide to Purchase and DIY Restoration of the MGB' (republished as 'The MGB Restoration Manual' which says it is possible but is a right fiddle. Porter covers the whole job in considerable detail with many photos, so I'll just limit these notes to anything extra I can add.

- First I removed the side trim panels in the footwells, and this gave clear sight of the two bolts each side. The lower of these is easily accessible, but the upper one is tucked right up and immediately behind the dash.
- I found I could just get a 3/8" drive ratchet and 9/16" socket on to the bolt on the passenger side. However I had to use the very narrow gap between the lower edge of the dash and the reinforcing bar going across the cockpit and even with a very fine ratchet I could only move the bolt just one click at a time, which was going to take ages. So I opted to remove the glovebox, which didn't take many minutes, and go in through there. I completely removed the door and fibre-board 'box' although just removing the screws holding the box to the dash plus another securing it to the reinforcing bar behind the dash and pushing the box back would probably have been enough.
- On the drivers side I couldn't get the socket and ratchet on the top bolt with or without a wobble-extension because of the overdrive switch. Removing this and the fuel gauge, again only a few minutes work, allowed me to go in through the fuel gauge hole. Be careful rapping the handle of the ratchet on the edge of the holes doesn't chip the wrinkle-finish paint, either wrap the handle in tape or cover the edge of the hole.
- Between the two bolts each side there is Pozidrive screw. This holds in a packing piece, and should be left in-situ when removing the screen as if removed it may allow the packing piece, through which the securing bolts

pass, to slip out of position. However it is advisable to **slacken** these, particularly to allow fine adjustment of the position of the screen on refitting.

- It is usually said (including in Porter) that the two bolts holding the centre of the lower frame rail to the dash top cannot be fully removed until the side bolts have been removed and the screen partly lifted up. Likewise and much more important to remember, these bolts must be started and partly screwed in before the screen is lowered into its final position. Forgetting this and lowering the screen right down, then having to lift it up again, may result in an imperfect seal between the rubber seal on the bottom of the frame and the body. Whilst for removal this was certainly true in my case, the bolts were much longer than they needed to be and it is the excessive length that contributes to this 'feature'.

So far so good, but then when I rang the fitters to arrange a date they said they had the screen but were unhappy with the seals and asked me to order them, which I did. By the time they had arrived I had tried loosening the screws in the top of the screen frame and found four I could not shift. Rang the fitters again to arrange a date, and they said they would order a set of screws.

**Screen Removal:** When the day came I rang beforehand and was told they had the screws so took the car round. Fortunately they were happy to let me hang around and assist in getting the screen out. One of the two centre-bolts was cross-threaded and stuck, turning the 'captive' nut in its cage. So we removed the centre bar, then pulling up on the frame left the bottom bracket attached to the dash top, having pulled the rivets out that were securing it to the bottom frame member.

While they were dismantling the frame I pondered what to do about this nut. Cutting the head off would still leave the thread stuck in the captive nut, although possibly that could be drilled and tapped, if the cage would hold the nut tight enough. Then one of the fitters came up with a stout slotted metal strip that just wedged under the bolt head, and the friction that created between the top of the nut and the bottom of the dash-top, together with the cage, was just enough to allow us to remove the bolt, which was a bit of luck. The end of the bolt was a bit chewed where it had been cross-threaded, but as I wanted to shorten them anyway I cut it off, ground a point back on (the point is needed to centralise the captive but loose nut under the bolt so the threads can start), and cleaned up the threads with a hacksaw blade. Shortened and pointed the other bolt to match and confirmed that both would screw into both nuts. The cross-threaded nut was a bit stiff, but with a bit of grease and working the bolt back and fore and gradually in like a tap (should have brought my taps from home) got it to the point where I could screw them in with my fingers.

*Update October 2010:*

 David Council wrote to the MGs email group saying it looked like one of his bolts was going to shear, and did anyone have any suggestions. The problem is that the bolt goes through a plain hole in the thick spacer first and if it shears with the stub still in that hole you can't get the screen out, as the thick spacer and the frame leg can't be removed as one. However there is a cover panel secured by rivets that can be seen at the top of the A-post with the door open, and with that removed you can get at the back side of the threads, to apply releasing fluid or perhaps heat and avoid shearing the bolt. However his workshop sheared the bolt! It was the passenger side so removal of the glovebox allowed him to get a drill on it (the drivers side would probably mean removal of the dashboard), but he got nowhere. So he removed that cover panel, and was able to wedge the thick spacer

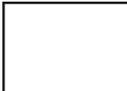
and the frame leg apart just enough to get a small hacksaw blade in and cut through the stub of the bolt and remove the screen. Ordinarily you would then have the problem of removing the stub from the threaded frame leg, but in David's case he was replacing the screen anyway so that wasn't an issue, he just has to replace the bolt. Opinions vary on this - SH506101 (3/8" x 1 1/4" coarse thread) or SH506091 (3/8" x 1 1/8" coarse thread), available from the usual suspects. The longer bolt **may** allow you to grind a point on the end to aid location, but check it is long enough i.e. doesn't reduce the number of threads engaged with the frame leg first!

**Frame dismantling:** They managed to remove one side piece and the top piece from the frame which was enough to get the old glass and rubber seal out only snapping one frame screw in the process although we discovered one was missing from the bottom anyway. I said "Never mind we can replace that" then they admitted they hadn't got the screws. I was not best pleased (and by then suspected they hadn't obtained the seals either) but by now there was nothing I could do about it. Still we could move one from the top to the bottom then I could replace the two (one missing and one sheared) at the top with the screen back on the car at a later date.

**Reassembly:** I watched while they prepared the new glass and rubber seal, and we were all puzzled as to why the cut-outs in the seal for the frame screws seemed to be more on the sides of the screen than the top and bottom, when there should have been an equal amount either side of the corner. Then I held a frame side piece up to the side of the glass ... and discovered the glass was 2" too deep! They turned over the glass and looked at the label ... and it was for a GT! I was even more displeased. They started ringing round and said they couldn't get another one until 4pm, so there was nothing more for me to do but go home. The fitting place is buried in the depths of an industrial estate and despite them saying Bee would be in the building which would be locked and alarmed and her keys in the safe, I had nightmare visions of some scrotes choosing that night to either break in or fire-bomb the place.

Next morning I went back to find the proper screen had arrived, and they were fighting with the new frame to body seal. These are a nightmare, both getting them into the bottom rail as the new rubber tends to be sticky, and the lip of the seal which rests on the body panel at the base of the screen is turned right back on itself, making it extremely difficult to get it to lie in the correct place when refitting to the car. But that was nothing compared to the struggle getting the new glass and its new seal into the frame, and the frame reassembled.

Because one corner was still screwed together the glass could only be put into those two pieces slightly offset, then slid into position. Despite most of a container of washing-up liquid (and the prospect of the thing flying across the workshop as it slid out of peoples fingers) it just wasn't going. **Top Tip:** The washing-up liquid was actually drying on the rubber too quickly to be of much use. So I nipped home and got my tub of smooth Swarfega (they only had the gritty kind) and suddenly things started going together. Relatively. The new frame seal seemed to be a couple of millimetres less deep (into the frame) than the old seal, and the new glass was also a slightly different shape at the bottom corners. It was not looking good for a tidy and secure finished job.

 **Note:** Late model glass does seem to be different shape in the lower corners, reputedly to accommodate differences in the frame uprights. It's said that whilst late model glass will fit an early frame, early glass won't fit a late frame, although I've seen one

\_\_\_\_\_ claim that it does. Certainly there were six different part numbers for the complete frame over the years, the last change being in September 76 for the 77 model year onwards. There were seven different pairs of uprights **prior** to the 77 model year, the Parts Catalogue doesn't list part numbers for the constituent parts of the frame for the 77 model on, just the complete frame. For the glass there is only a single part number listed - AHH8227 - throughout all these changes in frame parts, even for the 77 model year on. However Clausager states that the glass and glazing rubber changed in April 77 but makes no mention of a frame change. Either the change in frame shape was a very late one that didn't get into the Parts Catalogue or Clausager, or the change in glass shape was perhaps just to make assembly easier and didn't require a frame change and so kept the same part number, which is why early glass **does** fit the later frame as at least one person claims. *Update July 2008:* The effect of the later glass with the cut-outs in the lower corners is that the edge of the glass can be seen from outside, as shown in these pictures of my roadster - firstly just by looking through the glass, and secondly by pulling the seal back, the edge of the glass is arrowed in both cases. I was concerned that with so little overlap between rubber seal and glass it might leak, but doesn't seem to be so far.

Getting the frame back together was a real struggle. Again the problem was the non-dismantled corner, trying to get the glass into this corner and then adding the top and other side was pushing the frame into a parallelogram, where the two top (and bottom) corners had unequal angles to each other. The glass also seemed to be going further into one side frame than the other, barely being in the seal on the 'loose' side. We had several goes positioning the glass in the bottom rail slightly to one side or the other before we got it more or less equally into the two side frames. They tried a rope-cramp round the ends of the screen which pulled the sides together but still left it canted over. Then I suggested looping the rope diagonally round the screen so as to pull the two 'long' corners together. Bingo! We could now get a 'square' frame, but still not pull the sides together close enough to get the screw in. From that point it was just a matter of getting 'muscles' Scott to pull the sides together as hard as he could, whilst the main fitter kept the tension on the rope, and I got the screws in. That alone was about three hours effort from three people.

#### Body Seal:



New body seals are a nightmare. When supplied the lip that rests on the panel at the base of the screen has to project forwards and upwards from the rest of the seal, but as supplied this lip is tucked right under the seal, you can see the 'as supplied' and 'fitted' profiles on the left. When fitting the screen to the body this lip has to be pulled out from under the frame, and sealant applied, at some point. You would need a couple of dozen pairs of hands, which there isn't room for round the car, or maybe half-a-dozen octopi. By contrast an old seal sticks out at the correct angle and even though it isn't delivering much downward pressure, unlike a new seal initially, with sealant it still doesn't leak. Unless the old seal is damaged I would recommend reusing it, as I had done when removing the screen for painting some years ago. That was a single-handed job to remove and refit and the bolt holes all came to hand easily. I suggested to the fitters that they reuse the old

seal, which would have saved them the struggle of pulling out the old and fitting the new, but they insisted on using the new.

Porter seems to indicate not fitting the seal until the frame has been reassembled, but then that means either levering it all in to the channel with a suitable implement (which [John Twist shows here](#)), or trying to slide-feed it in through one of the screw holes in the bottom channel, which involves an angle and sharp corners. The former is very long-winded and the latter very difficult with both new and old rubbers. We opted to slide it into the bottom rail with the frame dismantled as that makes it a straight pull even so it is hard enough. **Top Tip:** Pulling the rubber in tends to stretch it, meaning it may shrink a bit over time. As there is not much overlap by the side rail 'feet' over the ends of the body seal make sure you keep pulling and pushing the seal in towards the centre from both ends before offering up the side rails and cutting the ends (of a new seal) to suit. Even then, cut them a bit long, when you screw the frame together it will tend to compress the seal slightly, making it even less likely to shrink enough to expose the ends. Then the glass and glazing seal is fitted (join in the centre of the top), the ends of the body seal pulled out of the channel to expose the screw holes, the side rails fitted, and the ends of the seal pressed back into the channel with a blunt screwdriver - angle the seal so that one side of the 'T' lies in the channel, then push the other side into the channel. This should lock both sides of the 'T' in the channel. Give it a bit of a tug to make sure.

**Reinstallation:** After a short break the bottom bracket was pop-riveted back onto the bottom rail, and I refitted the centre bar, leaving it loose at this stage. It had been a bit pitted so overnight I had taken it home and cleaned it up with fine wet and dry and wire-wool and clear-coated it. **It is critical to ensure the packing pieces and shims in the body sockets are selected to ensure there is no side to side movement of the frame legs in the sockets. If there is, then when you tighten the bolts it will tend to bend the legs in towards each other which can crack the glass. This is particularly important when replacing the whole frame, rather than just the glass.** The shims go on the 'inside' and the packing pieces on the 'outside', i.e. the bolts go through the body panel, then the shims (qty. to suit), the packing pieces and into the frame legs.



It should also be noted that whilst new packing pieces and shims are available from the usual suspects, they have been manufactured incorrectly. The part number is embossed in raised lettering on one side, on a further raised plinth. This must be ground off before fitting or again it can bend the legs, or come loose over time as the lettering is squashed down. They are also missing the central tapped hole for the securing screw. When this was queried with the supplier they said they had a note in their system saying the lettering must be ground off (but didn't mention it on purchase), and that their drawing showed the central hole, but they "didn't know why it wasn't there". Another suppliers photo shows exactly the same part, so it is not isolated to one supplier, as they probably all use the same manufacturer. Another feature of the shims is their ability to centralise the screen across the car, in relation to the quarterlights, as part of preventing splits in the door skins, aka '[The Crack of Doom](#)'. However this does require the quarterlights (and hence doors) to be fitted.

Because the lip of the new bottom seal is so tightly curled under the fitter decided he would add the sealant when the screen was partly on the body, rather than apply it to the seal off the body then have the very sticky job of trying to pull the seal into position which would probably remove quite a bit of the sealant in the

process. Initially he thought that he would be able to do this from the back, but there was simply not enough room with the screen pushed down far enough for the lip of the seal to be in position. Put sealant under the base of the side rail 'feet', slip on the feet seals, and put more sealant under these in the grooves.



Note that when fitted the body seal lies on top of the feet seals leaving a small triangular gap as the seal makes the transition from the foot seal to the body. This should automatically ooze sealant, and hence be filled with it, as the screen is bolted into position. At least that was how mine was originally, but after the second screen replacement I discovered the body seal appears to have been trimmed round the foot seal so there is no triangular gap. We slotted the screen into the body, pushed it down all bar about 1/2", pulled the tucked-under seal out with a hook, then he got the nozzle of his sealant gun under the seal lifting it up, pulling the gun along sideways, all the while holding the gun clear of the paintwork. He had taped cloths round the body of the gun so it wouldn't scratch the paint if it came into contact, but I don't think it did anyway. An alternative suggestion has since been to use many strips of duct tape to pull the lip of the seal back, being stuck onto the glass, at the expense of having to clean goo off seal and glass.

We then pushed the frame right down, causing loads of sealant to ooze out as expected (and some out the back onto the dash top). I checked the position of the holes in the frame legs through the holes in the body but they were miles out. It took quite a bit of downwards and fore and aft pressure from the two fitters just to get the bottom two holes visible, and I got the bolts in. Another breather.

However the upper holes are much more difficult to see with the dashboard in-situ, especially on the drivers side, and just manual pushing and pulling wasn't going to get them lined up. Fortunately just a few weeks earlier I had seen pictures where someone had used a G-clamp to press the frame down far enough and mentioned this to the fitter. They have a similar clamp to hold the modern bonded glass systems in position while it sets, and this was enough to get the passenger side top bolt in position. On the drivers side we had to resort to that clamp plus 'muscles' Scott, but eventually we were there. With slack bolts to allow final positioning I wasn't very happy with the side-to-side alignment with the doors as it seemed to be much closer to one 1/4-light than the other whereas before it had been almost equal to both. The 1/4-lights themselves are adjustable in the door frame so I resigned myself to some final fettling at home, but by the time I had got the fore-and-aft position to my liking, and the four bolts tightened, the 1/4-light gaps miraculously fell into position. We took a step back and looked at the glazing seal, to find that too and the glass had seated properly and evenly all the way round, much better than we had expected.

Whilst the fitters cleaned off the excess sealant I tackled the two centre bolts. As I mentioned before one of the reasons that people say that these bolts have to be completely removed last and partially fitted first is that they are too long and also need to be at right-angles to the dash-top to start to screw in. The captive nuts are loose in their cages and can be angled, slid fore and aft, and raised or lowered so that if the bolt is short enough it will screw in at an angle to the dash top with the screen fully in position, and once it has started and gone in far enough it straightens up to lie vertical to the dash top for final tightening. I removed the two fresh-air vents (although I could actually feel the cages and nuts from through the glove-box hole) and screwed a 7/16" bolt in from the **bottom** a couple of turns,

which allowed me to angle, slide and lift the nut into the correct position. However whilst I found I could get an 'ordinary' bolt in, I couldn't get either of the proper chrome-plated bolts in either side. It took me a while to realise the point I had reground onto the end of the bolts after shortening them was fouling the end of the bolt I had screwed up from underneath before any of its threads could engage. The point is there to push the captive (but loose) nut into position so the threads can start, without this or any other way of positioning the nut it would be pure hit and miss. Because I was positioning the nut with another bolt from underneath I didn't need that so ground most of the point off, and bingo got both bolts in. However I think I cut the bolts a bit too short as I couldn't get them in with both the chrome plain washer and the split lock-washer fitted, so omitted the lock-washer. But I had always felt the lock washer looked 'clumsy' so was happy to leave it out. Time will tell if it shakes loose in which case I shall try Loctite or something. I tightened the centre bar not going mad, just enough to make it 'ping' when plucked. It only occurred to me then that the function of this bar is probably to stop the header rail tending to pull the top frame rail up off the glass when the top is fastened down, there is considerable upwards pressure on this from Bernoulli Effect at speed.

**Finishing-off:** After final positioning of the screen and tightening down the centre bolts there was a bit more excess sealant to clean off, then putting back the fresh-air vents, glovebox, fuel gauge, overdrive switch and trim panels. **I can't emphasise strongly enough how important it is to get the alignment of the screen to the 1/4-lights correct.** Get too tight an engagement between the two and you will almost certainly get the 'Crack of Doom' in your doorskins. Too loose an engagement and they will leak, but that is minor in comparison.

Lastly the windscreen stickers went back on. I had managed to recover all but three. One of the missing being a small paper sticker from the one and only 'MG World' show at the NEC (the second year it was 'MG and Triumph World' and then it died altogether) from the very early days of my ownership, so early I didn't record the date, and the sticker itself had faded to nothing. The other two were from Gaydon, the first being from the inaugural Arden Heritage run to Gaydon the day after its opening in, May 1993, the other from a run from Gaydon to Donington to celebrate the Centenary of the motor car in September 1996. Both these were fluorescent paper and stuck to the outside of the screen, and not only had they faded to white but the rain and washing had removed all the paper and just left a disc of adhesive! But I'm sorry to lose them just the same.

#### Frame replacement:

Kevin Barrel wrote to the Yahoo MGB list with a problem he was having fitting a replacement frame that already had the glass installed. He said:

"I'm now into my 2nd windshield (windscreen) replacement for my 71B, I cracked the 1st because of stupidity. Luckily I found a used one, in frame, in pretty good condition. I was told it was off a 74B. So I clean it up, got the bottom rail seal installed in about 30 minutes and the cracked one out of the car in another 30 minutes, all the time thinking this is all going too well. That feeling of euphoria quickly subsided as I attempted to put the replacement in the car. Doesn't fit! The distance between the pillar legs of the assembled frame is at least 1/4in (6mm) wider than the one that came out. They don't appear to be bent. I know about the shims, and they are there, but this frame is so wide it doesn't even fit inside the notches in the fenders (wings). I see different frame rails listed in Moss (I'm guessing that's because of mirror, visor mounting etc.) but I see only one **size** windshield so I'm very perplexed. Since I have good glass in a frame that doesn't fit, and bad glass

in a frame that does fit, I'm debating about pulling the glass and fitting it into the original frame. I've read about all the grief there is in fitting the glass in the frame. The glazing rubber from the original windshield looks to be in good shape so would reuse that hoping it will help and I might even practice with the cracked window ----- but this assembled frame size thing is a real conundrum for me and will I end up with the same problem when I'm done? Any thoughts, comments, suggestions?"

He received a number of suggestions about possible causes and solutions, and in the end posted the following:

"I used the original frame F1 and glass from F2. I would highly recommend anybody doing this to dry fit (no glass) the frame together and actually install it in the car. If the frame itself can't be assembled and installed without contortion (distortion) it's not going to get any easier with the glass. I had a fair amount of hand-fitting before the frame would assemble without undo effort lining up mounting holes. When I installed it in the car, (no glass) I could see the bottom rail deflect (bow) outward when the pillars were torqued down tight to the car body. There was no perceivable movement of the frame when trying to push the frame laterally between the shim packs. Rather than mess with the shim packs for a few thousandths I found that snugging all the flat head screws holding the frame together and not torquing them down super tight allowed just enough float to eliminate that deflection. I deburred the inside channel of all the frame pieces so there was no additional resistance when the seal was installed. There was a fair amount of flash around all the rivets for the visor, mirror mounting, etc. Using the recommended hand cleaner lubricant (my preferred cleaner is DL) and the recommended extreme patience the glass installed surprising easy, at least in comparison to what I had read online. And, during the whole process if something doesn't seem or feel right, it's not. Take it apart and start over.

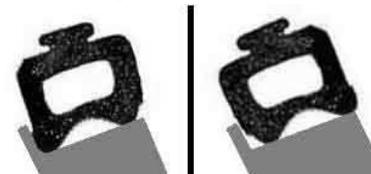
"Why didn't Frame 2-with glass fit in the car? The bottom rail and it's mounting looked to be the culprit. There looked to be a difference with the amount of bow between the two extrusions and the location of mounting holes in the rail and the L brackets. The dimensions and geometry of all the bits doesn't have to vary much before the error accumulation bites you in the butt. I suspect F2 had it's glass replaced sometime during it's life and they couldn't get it into the car and if it was, they cut the XXXX out of the car to make it fit."

Kevin didn't see the replacement frame in the car, so it's fair warning when buying an assembly such as this - don't assume it will go straight in!

**Quarter-light seals:** I had taken the opportunity when buying the screen seals to get new 1/4-light seals for the side rails of the screen as I felt these had been cut a little too short in the past, and a new header rail seal as it was very slightly damaged by the Navigator's clip and that was where water usually came in. The old side rubbers pulled straight out of their channels, which were in fair condition, and with a bit of tweaking of the channels and using a pair of long-nosed pliers to **pull** them down into position rather than pushing, the new ones went in without any lubrication. It was then a matter of cutting the bottom angles bit-by-bit so that they lie flat and filled the gaps when the doors are fully shut, and the tops to match the header rail when fastened. Note that some distortion of the rubber from the chrome piece on the leading edge of the door capping rail occurs during closing, but everything drops neatly into place when fully closed. However the new rubbers are fatter than the old ones which have been compressed over many years, vibration and heat/cold cycles, and the surface is not so hard, shiny and slippery as the old rubbers. These combine to prevent the 1/4-light frames from

dropping into their natural position and are pressing them outwards. My concern is that this could be yet another factor in the 'Crack of Doom'. A thin smear of Swarfega acts as a lubricant allowing the frame to take up its natural position but dries out after a couple of days. I'll see how things go over the next few weeks but may have to reposition the screen forwards a little to relieve the pressure. With the old rubbers the frames only just touched them, which actually allowed a little rain past them if running in rain with the hood down. But with the hood up and the Bernoulli Effect on the hood pulling the screen frame back, the seals were pressed onto the frames and didn't leak. Design or serendipity, I wonder?

#### Header Rail Seal:



When closing the hood I'd always had to run a finger along the seal in the gap between the header rail and the screen top rail from inside the cabin to prevent the rubber seal getting trapped by the flange on the screen top rail, which was a pain. When I received the new seal I

immediately noticed that it was slightly asymmetric front to rear in that the two 'bumps' on the seal that press down onto the screen top-rail are slightly off-set. I checked the old seal and found that this off-set was rearwards as shown in the left image, which could account for the seal getting trapped. Fitted the other way round the rear bump drops neatly onto the screen top rail without getting trapped. But the forward bump, instead of lying flat on top of the rail, now lies on the angle between the top and front faces. My first thought was that this can't be right, surely lying flat on the frame rail is correct, but then it occurred to me that being on an edge rather than a flat surface it probably conforms to the shape better giving a more effective seal. Since then it has never leaked even in torrential rain, whereas it had before. Someone subsequently stated that the bumps should be rearward as the original was, and they hadn't had problems of the seal getting trapped. The new seal may have been responsible by itself for the non-leaking now i.e. whichever way round it was fitted, but as it doesn't leak, and as I don't get the trapping problem either, it will stay as it is.

**Update October 2004:** Torrential rain and a howling gale on the way back from the MGOC Autumn Gold run (ditto while on the Lincolnshire Wander in 2005). Absolutely nothing came past the header rail seal or the glazing seal between glass and frame, the only disappointment is that a trickle seems to be coming past the square seal between the bottom of the frame side-members and the body each side. Shouldn't be too difficult to fix by lifting the frame a bit and applying more sealant, probably my fault for not putting enough on.

**Update May 2006:** Having heard that new bottom seals retain their tight curve for some years I decided not to remove the screen, but instead just slackened everything off and managed to slide the whole screen forwards a fraction so that the 1/4-light frames weren't so tight a fit to the screen frame side seals. Had three days of rain on the Dales Trail later in the month, but despite that only a little came in between the bottom corners of the screen frame and the body. What was a bummer was finding the new screen cracked in the bottom left-hand corner after we had got home. We did hear a sharp impact just after running into some infernal top-dressing over the Pennines even though we had already dropped back from the car in front, but I can't believe we spent the rest of the weekend and Monday in the car and didn't notice it. I consoled myself with the fact it could only travel a few inches before it reached the side of the glass from the bottom, but then a few hours later I noticed a second crack coming off the first at a right angle and this time heading right up and across in front of the Navigator! I can't face

changing it again just yet, I'll wait and see if it becomes an MOT failure. Subsequently it did get worse, with first one then a second subsidiary crack coming off the main crack at right-angles across the navigators view hence a potential MOT failure. I can't say the fitters were pleased to see me again. The process was very much as before, although I'd say the re-installation at least (I wasn't there for the reassembly) did go easier, and I was able to get the correct clearance to the 1/4-light frames right first time. One slight concern is that the bottom rail seems to be higher on the uprights than before, as if the glass were not quite to deep as it should be. This left gaps in the corners between the bottom rail and uprights particularly on the drivers side. Putting Comma StopLeak screen sealer in at the front came out the back indicating a major leak source. I pressed the black sealant into the gap, then used StopLeak, which no longer came through. In overnight rain on the Memorial Run in September none dripped through on the drivers side, although some did on the passenger side, so I did the same thing there although the gap was smaller and the StopLeak didn't run through to the inside. Since then rain has to be heavy and persistent for any to come through at all, and drips 'harmlessly' down the door cards and not on the occupants.

**2016:** That just left two sources round the passenger's drop-glass - one at the top and one at the rear vertical edge being blown despite internal air pressure from the fresh-air vents being open or heater set to Interior or Demist, which gets onto the Navigator's shoulder. This one was solved by carefully shaping a length of clothes-hanger wire that slots up inside the double skin of the hood material and hooks over the hood frame at the bottom, which presses the rear vertical edge of the hood firmly against the glass. The one at the top, even though there is only a very small gap between the glass and the flap that hangs down inside, remains for the time being and is subject to further pondering.

**Parts Changes:** *March 2014* The Leyland Parts Catalogue indicates the screen assembly changed in December 72, but also indicates the two types are compatible. However the top rail changed in September 69 when the rear-view mirror moved from the vertical bar to the top mounting, so they certainly weren't identical. It changed again for rubber bumper roadsters, and in September 76 i.e. four types for the UK plus two different types for North America and Sweden. However Clausager also has a change to North American windscreen assemblies in Feb 69, saying change points for non-North American cars is not known. As far as I know all are interchangeable as far as installation of a complete assembly to the body goes, although the component parts i.e. top, bottom and side rails almost certainly will need to be compatible with each other. What will vary is the positioning of the interior mirror - originally on the centre bar, then as part of the centre-bar top mounting and the provision of sun-visors - with Mk2 cars for North America, Sweden a year later, but not until the 77 year for the UK. The MGOC and Moss web sites indicate these changes were in 1969 (for the 1970 model year) and 1974 (presumably 1974 1/2) respectively. The same body and screen upright seals were used throughout.

Again according to the Parts Catalogue part numbers there was only one glass throughout production, although Clausager mentions a change for the 77 year which may have been related to the use of thinner glass and compatible seal. There definitely are 'early' and 'late' glasses in the field, the 'late' having cut-outs at the bottom corners, whether this is the change that Clausager refers to I don't know. These do fit the earlier frames, but some say early glass may not fit the later frames. MGOC and Moss have clear and tinted glasses available but tinted aren't indicated in the Parts Catalogue. MGOC talks about 'up to 1969', '1970 to 1975', and '1976 on' for glasses but doesn't explain the differences. Moss talks about 'up to 72' and '72 and later' glass, the difference being the cut-outs. However whilst this ties up with one of the frame changes in the Parts Catalogue, my 73 roadster didn't originally have the cut-outs in the glass, and the Moss glass change doesn't tie in with their frame changes.

I wrote the above in response to a question from John Wynne Davies, and subsequently he happened to mention that his screen has press-studs at the base of the screen uprights and asked what they were for - which is the [tonneau cover](#).

## Seats

[Seat Removal & Refitting July 2013](#)

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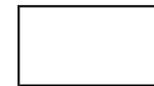
[Head Restraints December 1014](#)

[Seat Foams and Covers](#)

[Seat Webbing/Diaphragm](#)

### **Seat Removal & Refitting: July 2013**

They can be a bit of a fiddle, but recently on a bulletin board someone wrote that they couldn't gain access to the rear runner bolts 'with his smallest socket as the instructions in the manual were wrong'. They subsequently wrote that they had found a better way on an Australian RV8 web site, but never came back with that method or a link to it despite being asked. Both my Leyland Workshop and Haynes manuals basically say "Release the seat catch and push the seat fully back to gain access to the front screws. Remove the screws and push the seat fully forward; remove the rear screws and lift the seat and seat runners from the car". I can't see much there to be 'wrong'.



On both my cars sliding the seats fully forwards exposes the rear bolts more than enough to get a socket on a long extension on them. However the **front** bolts are covered by the front of the seat frame just enough to prevent a 3/8" wobble extension and socket, or a 1/4" straight extension and socket, or the ratchet on a socket directly from locating on the hex head, so a ratchet ring driver needs to be used. These are worth their weight in gold in the common sizes of 7/16", 1/2" and 9/16", and if you don't have one you will be fiddling with an open ended or a fixed ring for some minutes!

However there are a couple of things to look out for. The first is the seat-belt buckle, that it isn't preventing the seat from sliding fully forwards, or the seat back ditto - this should be obvious. Less obvious is if the front of the seat is hitting the tunnel as it tapers outwards, before the end-stop is reached, and both these may prevent the rear bolt heads from being exposed. For that reason it is probably best to do as the manuals suggest and remove the front ones first, as that will then allow the front of the seat to swing across a bit as it is pushed forwards, and so clear the tunnel to move fully forwards. Earlier seats and runners could be different (although the Mk1 tunnel is narrower), and with non-standard seats you are on your own.

The next thing to watch out for when lifting the seat out, and replacing it, is that the tunnel-side floor rail doesn't fall off the seat rail and ding your paintwork, the sill-side runner is retained by the adjuster mechanism. The easiest thing to do is take the loose runner off before lifting the seat out, and only refit it after the seat has been lifted back in, [as described here](#).

**Refitting:** People seem to get equally exercised about refitting them, saying to put the rear bolts up through the floor first to locate the runners on the threads, before removing first one then the other. If you have the correct slats and large spacers, and if the spacers are in holes in the carpets as they should be and not sitting on top of it, then **refitting** shouldn't be any problem at all, as the holes in the floor pan should be clearly visible through the runners and large spacers. Maybe a little more difficult with new carpet. The spacers should be held in position by the carpet, so it's just a case of positioning the carpet over the holes, inserting the

spacers and fine-positioning them and the carpet, placing the wood slats over the spacers, then dropping the seat in. If you are struggling then a spare bolt (or two) with the head cut off and screwed in a couple of turns from above makes more sense than screwing up from underneath, or simply a cross-head screwdriver to wiggle the carpet, spacer and wood slat into position. The front floor-pan nuts are concealed in the crossmember, so you would only be able to use headless bolts or screwdriver from above anyway. If you get the easy rear ones in first (i.e. the reverse of removal as the manuals suggest), but not fully tightened, then with the seat pushed fully back on the runners the front holes must be at the correct fore and aft distance for the floor pan bolt holes, and it is just a matter of pivoting the front of the seat and runners sideways a bit to locate first the hole in the spacer, then the hole in the floor pan.

#### Slats & Spacers: *September 2016:*

 When I restored Bee in 1989/90 as part of completely replacing the interior I also replaced the wooden slats and spacers under the seat runners. The former were rotten but the latter were missing altogether, as I recall. I was perplexed to find the holes in the slats were nowhere near where they needed to be to fit the runners, to had to cut new ones. With considerable care, as the large spacer fits in the holes, which doesn't leave much wood left between there and the sides. Looking at seat components for something else I came across the attached from Moss (also available from other suppliers ...), which includes slats with two sets of holes cut, exactly as I had to do. When I bought mine they must have been for another model, and the MGB requirement had yet to reach the manufacturers, and now they manufacture a dual-purpose.

#### Spacers:

 Alloy discs, which go between the rails and floor at each mounting point. Some say their spacers are the same size as their slats, whereas mine are nearly twice as thick. For that reason I chose to cut holes for the spacers in the carpet, and leave the slats sitting on top of the carpet. The bulk of the weight is taken by the spacers, but the slats on top of the carpet spread some of the load and support the runners. With different thicknesses like mine if you put both on top of the carpet the slats wouldn't be doing anything at all, and the runner could sag in the middle. If they are the same thickness, and both placed on top, then as the carpet compresses it could loosen the bolts. But if holes are cut for the spacers then as you tighten the bolts and the runners try to tighten down the slats onto the carpet by the same amount the runners are likely to bow and jam the seat. To get round that some have slits in the carpet so runner, slat and spacer are all on the floor, and a flap of carpet sits on top of the runners. I don't know what original carpets had, but [Prestige show holes](#) which look large enough for my spacers.

#### Mounting Points

There have been a couple of questions recently about measuring up new floor pans for the seat rail mounting points. I'd expect Heritage panels to come with the holes and captive nuts already attached, after-market panels certainly don't or at least not always. The following measurements were obtained from my two cars, both sides, which although showed they slight variations from panel to panel there was a consensus.

The distance between the hole centres for the two rails, i.e. across the width of the car is 12 5/8".

The fore and aft distance between the two holes for each rail should of course be governed by your rails!

The front holes are above the fixed cross-member, about 1" behind the centre-line of the jacking point in two raised pads. These pads are in a flat area between the front and rear flutes, which coincides with the cross-member underneath to give a flat surface for welding.

For what ever reason the pads seem to be neither central to the flat area, nor central to the seat mounting points, the holes are displaced rearwards. If you use 1" behind the centre-line of the jacking point you should be OK, there is plenty of fore and aft adjustment of the seat after all!

The distance from the holes to the inner sill panel is 2 5/8" this should be enough to give a small clearance for sill carpets and not rub. It is important this spacing isn't too great or it moves the seat closer to the tunnel which causes two problems: 1) The seat can't be moved as far forward as it will foul the tunnel, and this also has an impact on accessing the rear bolts. 2) Depending in what type of belts you have the seat back may foul the buckle, which will also limit how far the seat can be moved forwards as well as how far the seat-back can be tilted forwards.

The distance from the holes to the tunnel is about 4 1/4" at the rear and 3" at the front, the reduced front measurement being due to the widening tunnel at this point. This occurs on both cars but may be different on 3-synch to my 4-synch cars.

*August 2009:* There are often questions about what to do about the front holes/nuts when replacing the floor or part of it. I had the same question after welding in a part floor and failing to mark, drill and weld the fronts before welding the floor in! I opted to weld the nut to a 1" strip of metal the width of the nut, cut a slot in the floor slightly more than the thickness of the nut plus strip, then with a bolt in the nut I was able to fiddle the nut through the slot, turn the strip at 90 degrees to the slot, and weld. But after reading other suggestions of a long bolt that goes right through the floor and crossmember (distorting the pan/crossmember if overtightened), or welding a drilled and tapped plate to the **top** of the floor pan (OK if it replaces the alloy spacer, but doesn't give enough thickness in my view), and how drilling holes in the **rear** crossmember to allow insertion of a socket to make installation of the gearbox mounting rubbers easier, it suddenly occurred to me that surely the easiest method is to drill such a hole in the front crossmember, plugging it afterwards with a rubber bung (never mentioned in the case of the rear crossmember) to prevent water ingress and corrosion, although that box-section is hardly water-tight anyway, and drainage and air circulation might be beneficial.

#### Seat Rails by [Les Bengtson](#)

The MGB seat rails are made of a combination of wooden rails and two aluminum spacers directly under the four bolts (two per side) which hold the seats to the floor. The basic set up for bolting the seats in is thus:

There are two "L" shaped steel tracks with a curved over lip at the top of the upper arm of the L. These are the seat adjustment rails (Seat Slide set in the Moss Catalog). These adjustment rails have an upper section that is bolted directly to the base of the seat frame. This is the part with the adjustment locking arm, located to the front of the seat, which is used to allow the seat to be moved forwards and rearwards. The lower section, which has a series of square notches towards the front end for locking into by the release tab of the upper seat adjustment rail, is bolted to the floor of the car. Both the seats and the adjustment rails are "handed"--there is one for the right side and one for the left side and they are not interchangeable. The lower adjustment rail is bolted to the floor using two 1/4"-28 TPI bolts on each side. Depending on the year of the car, and whether the bolts are original or not, they vary from 1" to 1 1/4" in length. These bolts pass through the aluminum spacers and, hence, into the floor of the car where they are engaged by captive nuts (nuts welded or otherwise secured to the frame of the car to hold them in place). These aluminum spacers (about 1/4" thick and 3/4" in diameter) are sitting in two holes in a wooden spacer strip (Moss "packing strip") which is a strip of wood 1/4" thick, 1 1/8" wide and 20 5/8" long. It has four holes bored through it, the innermost two of which are used for mounting the MGB seats.

These packing strips and their associated spacers are a problem. The wood tends to attract and hold moisture. This is especially true when rain or other liquid spills get onto the floor of the passenger cabin. This retained moisture in turn, promotes rusting of both the floor and the seat adjustment rails. Under certain conditions (constant humidity and not allowed to dry out), the packing strips can rot and come apart. To do away with these problems, I decided to make up some packing strips out of aluminum bar stock. It is relatively easy and can be done with simple hand tools.

First remove the seat from one side of the car. Slide the seat fully backwards and use a 7/16" box end wrench to remove the two front bolts holding the lower seat adjustment rail to the floor. Then, slide the seat fully forward and use either a wrench or socket to remove the rear two bolts. Carefully lift the seat from the vehicle. The lower adjustment rail which does not have the adjustment locking tab will tend to drop off as you move the seat. Remove it when you can by sliding out the rear of the upper rail. Then remove the other lower adjustment rail by releasing the locking tab (adjustment handle) and sliding the lower adjustment rail to the rear. Examine these rails for rusting. If rusted, clean them with either some form of media blasting, naval jelly or wire brush. Prime and paint them. (Priming helps the paint to stick better.) Set aside to dry.

Then remove the old packing strips and aluminum spacers. Use a 1/4"-28 Unified National Fine (UNF or NF) taper tap to clean up the holes for the hold down bolts. Clean up the bolts as necessary. They can be replaced if too rusty by using standard 1/4"-28 hex head bolts, 1" long. If you can find stainless steel bolts, they probably would be the best, reducing the likelihood of the bolt and captive nut rusting together.

After tapping the holes, lay down the new packing strips, re-assemble the lower adjustment rails to the upper adjustment rails (use a little grease to lubricate the mechanism) set the seat back into the car and bolt down. Then, check to see that the seats move forwards and backwards easily. If they did so when you removed them, they should do so now.

#### MAKING REPLACEMENT PACKING STRIPS OUT OF ALUMINUM BAR STOCK

You can purchase aluminum bar stock from several sources, including many hardware stores. You want a piece 1/4" thick, 1" wide and at least 20 5/8" long. This bar stock is most commonly found (in hardware stores) in lengths 4' long. One of these strips will serve to make two packing strips. Or, you can choose to purchase your aluminum strips from a metal retailer and have them cut to exact length, saving you from having to do this. Metal retail outlets are listed in the yellow pages under several headings including machine shop supplies.

First, assuming you have a four foot length of bar stock, measure 20 5/8" from each end and make a small mark using a Sharpie, magic marker, etc. Use a machinists square, tri square, etc. to draw a line across the bar exactly 20 5/8" from each end. Cut on the lines. Then, use the uncut end (the end that was cut at the factory) as your reference point for all future work. Measure from the end 2 3/8" and make a cross mark, then measure from the same end 18" and make a cross mark. The end you are measuring from is now the front end of the packing strip. Then, use your square to mark a thin line all the way across the strips at these points. Then, use a set of dial calipers to measure .400" in from one side of the strip and make another mark on top of the cross marks. If you only have a normal rule or tape measure to work with, measure in 3/8" (.375") and this will be close enough. (**Note:** The original wooden strips seem to have two holes at one end as the mounting points can differ, some need 17" for the second measurement and not 18". Check against the old packing strip, or if that is too badly rotted use the runner itself or floor tapping dimensions themselves.)

At the intersection of the two marks is where you will drill your two holes. Use a center punch to make a mark for the drill bit to start into or, better yet, use a center drill. Drill two holes of about 9/32" or 5/16". These slightly larger holes will allow some slight adjustment of

the packing strip when being bolted in. Then, lay the strip into the, car and make sure the holes align properly. If you have done your work carefully, they should. If not, use a round file (chain saw file works well) to enlarge the holes so that they mate properly with the holes in the floor. The end that you originally measured from goes towards the front. The holes are off center in relationship to the centerline of the long axis of the packing strip. Put the short side to the inside of the seat and the slightly longer side outwards. This is easily seen by holding the packing strip against the lower adjustment rail. In the proper position the rail and packing strip will fit perfectly, while in the wrong position, they will overhang each other.

The new packing strips may be painted or left raw. I painted mine black using Rustoleum and allowed them to dry before assembly and installation. All of this work can be done with hand tools. It will result in a packing strip that is stronger and longer lasting than the factory wooden strip. It will also allow you to examine the condition of the seat adjustment rails and repair or replace them as necessary.

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#### Head Restraints



In Bee's seats there is a friction arrangement inside the frame which is supposed to keep the restraint at the desired position. It consists of what looks like a coil spring made out of swarf, in a tube going across behind where the headrest tube goes down, held in place with a wire tie. There is also a spring-clip that locates in a slot in one side of the restraint tube,

which hooks under the bottom of the hole in the frame, which only allows you to pull the headrest up so far. Be aware that this has very sharp corners, particularly the part that sticks out of the slot in the tube. Some recovering instructions say to cut a hole in the back of the cover so you can release this if you need to pull the restraint out altogether, which you wouldn't want to do if planning on refitting. But you should be able to peel the cover up from the bottom turning it inside out as you go, with the restraint fully extended, and expose it that way. I had great problems getting the restraints moving in the tubes when I first recovered Bee's seats, to the point on the passenger side that I had to use a hydraulic bottle jack sitting on the floor, with a piece of timber wedged underneath the headrest, and jack it out.

#### November 2017:



Vee's are quite different in that there is a plastic rod with a steel bar inside. The head restraint has to be withdrawn before this can be removed, but that was easier in this case, it just needed a hammer and wood drift to tap the clip at the end of the restraint tube up inside the seat frame tube, then it could be pulled out. It is easier to lift the seat out and back in with head

restraints removed - if you can. However to do that in a GT means the seat-back has to be reclined, or for non-recliners the whole seat has to be tilted back after the four seat bolts have been removed.

#### Seat Foams and Covers

When planning to replace seat foams and/or covers pay particular attention to the shape of the foams and the covers. Despite reading three sets of instructions, including Lyndsay Porters otherwise excellent 'Guide to Purchase and DIY Restoration of the MGB' and the set that came with the covers, I only discovered that the base foams and covers for the 4-synchro cars, at least, are handed **after** I had glued on the first set while restoring Bee in 1990/91.



My seat base frames, foams and covers are all tapered on the inside edge - the front is narrower than the back - I assume to take account of the shape

[redacted] of the transmission tunnel. Once glued on I did not want to risk damaging my new covers by ripping them off again. Fortunately the difference is not great, and although one can see the mistake if one looks for it, at least it does not stick out like a sore thumb. I've looked at early and late seat **frames** at Stoneleigh and they all seem to have the same taper, but the early covers seem to be square.

*December 2014:* This started out as a few tips I discovered along the way when recovering Bee's seats for the second time that aren't in the supplied instructions. As you see there are quite a few!

*November 2017:* Recovering Vee's is very similar, any differences have been added to the appropriate paragraph. Things like it suddenly struck me that it's easier to leave the loose runner in the car, than try and lift the seat out and replace it still attached, and have to tie it, tape it or hold it in position to prevent it dropping out at the wrong moment. The out-board runner is fine as the adjuster holds it in position. With the bolts removed, tip the whole seat back and you can disengage the runner sideways i.e. without having to slide it out along its length. Likewise on refitting the seat put it by the slat, lower the seat in, tip it back, and slot it onto the seat runner. With the seat back down pull both runners to the rear to expose the fixing holes, insert the bolts, then slide the seat back and do the fronts as normal. Tighten the rears to a turn short of tight, then when you have the front bolts fitted, and can no longer slide the seat forwards enough to expose the rear bolts, there is just final tightening to do with your spanner.

[redacted] I recovered Bee's seats in 1991 but was disappointed with the quality of the new covers, noticeably flimsy compared to the OEM grey 'deck-chair' covers that she came to me with. Some 25 years later they have gone into holes in various places on the back and wearing thin on the seat. OK, quite a long time, but only 55k miles, whereas what look like OE covers on Vee that were definitely not new and have now done 100k and 20 years with me, and maybe 200k and 40 years overall, are in far better condition. Given the disappointing quality of the previous set I spent some time before deciding which ones to buy this time. Of the people that were able to supply samples only one had the original pattern of fabric and vinyl, but I (and others) have had too many problems with them so won't use them anymore. Other than that I was able to see some ready-made [covers at Leacy](#), which looked good to me, so were the ones I settled for, again opting for the black GT cloth over the roadster vinyl for summer comfort. Comparing old and new the old fabric seems to have a woven appearance and quite thin surface texture, and is backed by a very thin layer of foam, whereas the new have a much thicker brushed outer covering with more texture, and a much thicker layer of foam backing. Conveniently the base covers are marked 'right' and 'left' although the included instructions still don't mention the difference, but I'm not likely to get that wrong again! **Vee:** I used the same supplier again.

[redacted] My new 7/16" ratchet ring spanner made removal of the front bolts a doddle - with those out first the seat can be pushed further forwards than normal to expose the rear bolts to a socket. The drivers seat came out easily, but one rear bolt on the passenger side was turning but wouldn't come out. Oddly this had a 10mm head, in the end I used my drill-driver to spin the bolt while I pulled up hard on the seat and it came free ... with a tinkle as what was obviously a free nut under the floor fell onto the ground! I don't remember, but previously I must have used an under-sized bolt and additional nut for some reason. Stripping starts with removing back from seat. There are nuts on the inside of the frame where the back pivots on the base, as well as the bolt being screwed into the base bracket, and 'penny' washers between the two brackets. Took no more than an hour (each seat, although I didn't start the passenger side until the drivers was completed), and that was with carefully peeling back the old covers from the foam where they had been glued to see if I could save the foams again. Ended up usable, as was the card backing. **Vee:** Unlike

Bee's composite foam backs Vee's are one-piece, and in near-perfect condition as is the card backing.



Recently someone somewhere was asking if anyone knew of the availability of pivot covers, as his were broken and they were unavailable from the usual sources. Then while looking for something else on eBay I came across them, recognised them from somewhere else but couldn't remember where. Until I happened to get both cars out and there it was, large as life, on the V8. It attaches with a screw, which goes into a spire clip, and needs a hole in the base bracket, which Bee doesn't have. So sometime between 73 and 75 this cover came in, and Clausager gives it as September 73 at car number 329770, but no reference to them in either of the Parts Catalogues or at any of the usual supplies as far as I can see. They are handed, and need a bit of thought and persuasion to refit. Slide the slotted part over the seat base bracket, then pushing the covers and foams out of the way they can be swung back and down into position. Make sure the spire-clip is in the correct position over the bracket hole first.

As far as [removing the head restraints](#) goes Bee's drivers side only slots in loosely, as I used to remove that altogether to fit the tonneau cover that came with the car as that had no pocket (the passenger side was OK as that folded right forwards to be under the cover, the drivers side can only go so far because of the steering wheel). No longer an issue as I have replaced the cover with one with pockets. As previously I couldn't shift the passenger headrest, but was able to peel the cover up and remove the backboard to expose the bottom of the tube, then used a hammer and drift to drive it out. Neither headrest has its upper 'stop' fitted, but I do still have one of the originals from 25 years ago! With both headrests out the friction device can be removed, which consists of nothing more than what looks like 'coiled swarf'. Only a short piece and some broken bits on the drivers side, more complete but still damaged on the passengers. I shan't be putting those back in as they jam the headrests altogether. However they do need to be raised to act as head restraints, so I may put spacer tubes over the existing tubes to hold them at the right height, as only we two are ever in the car and always in the same seats. **Vee:** Vee's won't shift so again I pull the cover inside-out up and off the back to expose the friction mechanism, which is quite different to Bee's. Tapping the bottom of the restraint tube with a hammer and wood drift gets them out.

Whilst new-stock back foams are probably OK the base foams are too high and/or too dense. I've sat in a GT with those and the wheel was brushing my thighs and my head was against the sun-roof surround. In the event I reckon both will last another set of covers, saving getting -on for £100. The hessian is like Swiss cheese, so order some off the internet, it prevents the edges of the webbing in particular from cutting into the foam. The backboards are still usable, and the webbing still has plenty of tension after a dozen years or so. **Vee:** Seat foams, webbing and hessian also in very good condition, but for the cost - £2.49 per square metre, I order new hessian to use a double-layer as I did with Bee. Except for the covers it's all in surprisingly good condition. Given the amount of what looked like decomposing foam dust that had been gathering on the carpet under the seats, I expected them to be in very poor condition. Quite possibly recovered with new foams, card and hessian before my time, but the only thing that looks like it could be a date code on the foams has what would be an '04' year number, and I've had her since 1995!

[redacted] Something I've been wanting to do for 25 years was have a look at Bee's drivers reclining mechanism. When refitting the seats after the previous recovering a metal pin fell out, which looked like it had been welded somewhere. After that, I found that if I leaned back hard to get something out of a trouser pocket the seat would shoot backwards - so that pin was probably something to do with the recliner. I kept it, but it's got mislaid somewhere along the way. Examining the frame carefully there is another welded pin that guides the recliner

handle mechanism - at least it should be welded, this was quite loose which allowed additional movement of the handle mechanism. I wonder if that is the problem and the other pin is a red-herring. Then where the seat back pivots during reclining I could see a hole with some weld around it where something had obviously broken away - that must be it. There is a plate underneath that with another hole, and when the two holes are co-located with a pin it locks the teeth of the reclining mechanism together until the reclining handle is operated. Without that pin the seat back is 'free' (against considerable spring pressure it is true) to move without use of the reclining handle and disengage the teeth of the reclining mechanism, which allows the seat to shoot backwards. I find a bolt with a plain shank that just fits the holes, cut it to length, and weld it in place, as well as welding up the loose guide pin. I could put the seat back in the car and lean back hard to test it, but that's a bit of a faff, so I wedge the corner under the full length ramps, which have the weight of Bee on them, and push hard on the back, and it shows no signs of moving. I'll leave it at that, if it still collapses I wouldn't really know how to fix it, so I'll just live with it and not lean back hard!

 The irony is that when I had fitted the new cover I could clearly see my repair to the pivot, so could have reattached the original pin - if I had known where it came from at the time - when it fell out all those years ago!

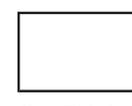
 The back foams on the drivers side have torn a bit where they rest against the outer frame uprights, so I lace three strips of gaffer tape round the outer uprights and behind the rear uprights to give it a bit more support. The backboard goes back on with two screws and large washers at the bottom, and a few pieces of gaffer tape to the frame sides and top. Sprayed glue round the frame and corresponding parts of the foam. There is a rectangle of vinyl that I have left glued to the top of the back foam around the headrest hole, so I position that over the hole in the frame. Another 'supposed to' is to glue polyethylene over the shoulders of the foam to help the cover slide down. I did that last time, but never liked the crinkling sound it made ever after. Other instructions say to put a plastic bag over the foam, then rip it out after pulling the cover fully down. That is preferable, but I decided to glue a strip of cling film over the shoulders and down the sides, which allowed the cover to slide fully on quite easily, and doesn't make a noise when using the seat. **Vee:** No such problems with the foams, and the back-boards are in good condition, but I'll probably do the same.

 After a trial fit I pulled it back up again to fit the half-moon cards (provided with this set, unlike the previous where I had to make my own) into the pockets at the bottom of the sides. It's worth spending a little time teasing the stitched edges inside the pockets onto the inside face of the card, so the cards are fully seated in the pockets and the outside face of the vinyl has a nice flat appearance. Glue them in place as they can get dislodged while fitting the cover to the seat and the stitching ends up on the wrong side again, although this needs doing before the cover is fitted to the seat. All work so far has been done with the back re-attached to the base as that holds the back upright while pulling the cover down. **Vee:** Vee's half-moon cards are not ideal, one is OK, but the other had been glued into the pocket which pulled some layers off on removal, leaving it a bit thin and floppy. However the previous set came with new cards so hopefully these have a well.

 Next the ears need to be screwed to the brackets on the seat back, as this helps to keep the cover tugged fully down when you come to clip the vinyl to the bottom of the seat back. Easiest done with the back removed from the base. Finding the existing hole for in the brackets is tricky. You could cut the head off a self-tapper, screw it into the bracket point outwards, then tap the outside face of the ears with a hammer so that the point of the self-tapper pierces the car and the vinyl, then remove the self-tapper and fit the screw and cup-washer. I opted to

make a 'puller' out of bent coat hanger wire, which hooked over the straight edge of the card in the ears, held in position with a bar wedged across the frame to keep the ears tugged down, then drilled through from the outside. You only need to be approximately in the right area as the bracket is plenty big enough. I did this the last time, and there were already two holes there then so whoever had fitted the covers that Bee came to me with had obviously done the same thing. There are now four holes, but that doesn't matter as they can't be seen of course.

 As pulled on the cover will take the shortest route across the seat back above the face of the central section of the foam between the side bolsters, but it needs to be glued down with the vertical stitching on the cover positioned in the angle between the central foam section and the side bolsters. The outer corners of the bolsters need to be as near to the join between the cloth face and the vinyl sides of the cover as they can be, but left to their own devices they will be a couple of inches away under the cloth face. Push down on the face of the cover while simultaneously pushing the edge of the foam towards the join, and the stitching will reach down to the angle between the central and side bolster sections of the foam more easily. After practising that with no glue, spray adhesive into the angle between the foam back and side bolsters, and onto the vertical stitching on the back of the cover that needs to fit into that angle. A couple of applications is probably best as both surfaces are absorbent, then repeat the manipulation of the foam towards the join between cover face and sides, before pressing the vertical stitching down into the angle between foam back and side bolster, while trying not to stick yourself to either part. With both sides done press down with the forearms up the line of stitching until the glue takes.

 Apply adhesive to the inside of lower back of the cover and the 'angle iron' that this piece attaches to with the flat clips. Wrap the vinyl round the angle iron, leaving a triangle folded back at each side where it is attached to the vinyl sides, pushing the horizontal edge behind the foam, and fit the flat clips. This is easiest done before tackling the vinyl strip at the bottom of the face of the seat cover, that goes round the large tube, attached with four round clips. Note that the clips you took off the tube will probably be larger than the ones taken off the base frame having opened up a bit, so if you haven't kept these separate pick the four biggest to refit to the tube. These have to be lifted over the tube, simply pushing them on will probably tear the vinyl from the 'teeth' on the clip that hold it in place.

 Finally tap with a hammer on the vinyl where it lies against the edges of the square bar for the reclining handle, to cut out a neat square of vinyl, and replace the handle.

For years the Navigator has been complaining about a rattle somewhere behind her, and whilst I could just about hear it myself when she was in the car I couldn't when I was on my own. The toolbox lives in the boot immediately behind the bulkhead her side, but despite removing that and everything else it was still there. But when manoeuvring her seat back on the bench during recovering (but not mine) I heard a rattle, which on investigation turned out to be the recliner folded torsion-bar spring inside the large tube at the bottom of the seat back. I stuffed some strips of hessian in there, time will tell if that has done the trick (it didn't).

The base is relatively easy. I had a metre of hessian and the width was enough for a double thickness on both seats. Apply glue to the foam and one side of one sheet first, then stick that down, then more glue on the top of that piece and the second piece, and stick that down.

 The instructions say to make identical marks on the base foam and cover at the front, but I found with these base foams with the raised sides and flat front it only goes on in the correct place. If you have the humped front

foams and apply glue to the hump you probably will need to mark foam and cover first to get it aligned. What is very important in all cases where the seat back can tilt forwards is to get the **rear** of the foam, where it goes under the seat back, in the correct position. It is tapered in that area between the pivot brackets because part of the back frame drops down either side of the foam and cover there. Get it off-centre, and the back frame will come down onto your new cover and foam, crushing it, and perhaps eventually ripping it. Re-attach the back to the base with just a couple of turns of each bolt, drop the foam on the base and position it between the relevant parts of the back frame. I used pieces of tape on the base rear tube to mark the position. Check that the angles between the central flat parts and the side bolsters of the seat foam line up with the vertical stitching on the back cover and adjust if necessary. With the seat back removed again glue the foam and hessian to the front and side rails of the base using your marks. Trial-fit the cover to check all is well, apply glue to the central section of both foam and cover, and fit the cover pulling it down at the front and the rear before pressing the central section down to bond. The stitching should lie in the angle between the flat part and the side bolsters, which should mean it will line up with the vertical stitching on the seat back.

The instructions talk about cutting the vinyl sides by the pivot brackets, but they also need to be cut either side of the uprights at the front that go down to the runners. Cut at the front down the inner side of these uprights, and again on the sides in line with the rear edge, and fold the vinyl back on itself, then you can neatly glue and clip the front and sides to the frame. At the pivot brackets cut in line with the front edge of the bracket and tuck the rear part of the vinyl behind the brackets. I applied glue to the sides of the foam at its narrower section behind this bracket to keep the cover from getting trapped under the metalwork of the seat back as it is folded back. Tuck the spare vinyl between the webbing and hessian.

Also necessary is to cut the rear vinyl strip in line with the end of the bar that is welded to the rear tube, that the tipping seat back latches behind. If you try to wrap the vinyl round that it won't lie flat and can't be clipped there anyway. That allows the vinyl to be neatly glued and clipped to the main tube, with the surplus again being tucked between the webbing and hessian.

And that is basically it. Reattach the back to the base, with penny washers between the two brackets and the smaller washers under the bolt heads. As soon as the bolt thread starts coming out of the inner bracket, position the lock-nut on the inner face so that as you screw the bolt into the bracket it screws into the nut at the same time, much easier than trying to fit the nut afterwards. Tighten the bolt just short of nipping the small washer up, then hold the bolt while you tighten the lock-nut.

Finally ~~refit to the car, fitting the lower runners to the upper first. The adjuster should hold the sill-side runner in safely, but you will need a tie of some kind round the tunnel side runner and frame member to stop that sliding off while lifting the seat into the car, removing it once the bolts are in but before tightening them.~~ **Vee:** As mentioned above by removing the loose runner while the seat is still in the car, and not reattaching it until the seat is back in, avoids it dropping off when lifting it in or out, or having to tie/tape/hold it. It's also easier to leave the head restraints off until the seat is back in the car in a GT. However I then discovered that it wouldn't go in with the seat back upright as the roof was too close, nor with the seat-back tipped forwards as the screen was in the way! Fortunately, with reclining seats, they can be fitted with the seat-back reclined. If you chose to leave them out on non-reclining seats you will probably have to tip the whole seat backwards before inserting any bolts.

But after using Vee for a couple of days, I'm finding that with the new covers the belts are slipping off the shoulders of the seats when getting in and out, instead of staying there and



being easy to grab hold of to fasten before driving off. They wouldn't stay there at all on Vee so I made some retainers/guides, hence make another pair for Vee.

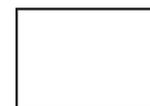
### Seat Webbing/Diaphragm

Both my cars have webbing. On the face of it the diaphragm ought to be preferable as it is far less likely to lose its 'stretch' over time, which is what happens to webbing, but I had these on another car and the wire that the hooks go round ripped out of the rubber. Also Sven Hinrichsen writes that on his the wire was so thin that it bent simply under the tension of being attached to the frame, not even being sat on, and he had to retrieve the much thicker wires from his old diaphragms (which had ripped out of the rubber) to reuse.

I changed the webbing on both seats when I restored the roadster in 1990/91 and the drivers side again about 10 years later. A few years later sitting in the passenger side I realised that side needed doing as well. The webbing hadn't broken as before, but had lost its tension. As such it came off relatively easily, but I remember some difficulty in fitting new webbing on both previous occasions, getting enough leverage to stretch the webbing enough to get the 2nd hooks into the frame, and doing it on my own. Previously I had used a length of timber and some rope, levering the timber against the frame with one hand, to pull on the rope looped through the main wire frame of the webbing, using one foot to hold the seat steady on the ground, and the spare hand to press the clip into the frame. It was a bit of a fiddle tying and untying the rope each time and getting the right length of loop, this time I decided to try something different, and it was much easier.

Remove the seat from the car by undoing the front bolts first (with a 7/16" ratchet ring). This then allows the seat to be moved right forward so you can use a socket ratchet on the rear bolts, which is much quicker. If you undo the rears first you will probably have to use a spanner on all four. When lifting the seat out of the car watch the tunnel-side 'fixed' rail doesn't fall off and hit your bodywork, it is now only hanging on the sliding lip. As recounted above with the bolts out tip the whole seat back and detach the inner floor runner, and don't replace it until the seat is back in the car. The outer rail should be held securely by the seat-locking mechanism. Remove all the spring clips holding the seat cover onto the frame and peel the cover back as normal, and remove the old webbing. Don't chuck it yet, one of the hooks on the new webbing was missing when I received it, and another pinged off somewhere, the old ones were fine as replacements. I used a length of wire tied into a loop - the length of the loop is relatively immaterial. Slipped the loop over the hook, braced one foot against the frame of the seat, pulled on a tommy-bar through the wire loop such that the hook was in line with the hole in the frame, and when I had pulled it far enough the end of the hook dropped right into the hole in the frame. Easy-peasy. The spare hand can also be used to steady the seat, and if you sit on the ground you can use both feet on the seat frame. Sometimes the wire got trapped between hook and frame, sometimes it pulled out easily, but even in the former case a bit of levering with a screwdriver released it. I'd imagine the same way with a diaphragm would work just as well. Then pull the flaps of the covers round the frame, refit the spring clips, and refit the seat to the car. Only took a few minutes to get all hooks located.

*December 2014:*



Subsequently on webbing I used a pair of channel lock pliers to pull the wire that goes through the hooks towards the frame, then another pair of pliers to manoeuvre the hook out of (or back in to) the frame. Do the front edge first then the rear (which has no wire through the hooks) can be unhooked by hand. This probably won't work with the diaphragm.

Take this opportunity to clean and grease the sliding parts of the rails, making sure they are straight and flat. Also replace the wooden slats and alloy spacers if they are missing or (in the case of the slats) rotten. If the seat lock wasn't working properly, now is the time to tweak that as well.

Refitting the seat is the reverse of removal, ~~again watching the inner rail doesn't fall off~~ not attaching the inner floor runner to the seat runner until the seat is back in the car, and tipped right back. I've not found it difficult to locate the bolts (rears first as they are easier to see) by wiggling things round until they line up, but some recommend putting bolts up through the rear holes first (you can't get at the fronts) as locating pins. With the back bolts in just short of tight, and the seat pushed right back on the runners, you only have to wiggle the front of the seat from side to side a bit to locate the first front hole, then the second should be in the correct position.

## Seat Belts *Updated April 2009*

[Mounting points](#)

[Adjustment](#)

[Belt guides](#) so you don't have to grovel around behind you to find them

[GT rear belts August 2013](#)

[Seat-belt warning system](#)

[Did the MGB ever have air-bags?](#)

Quite a lot of confusion over seat belt mountings from time to time.

Clausager reports that MGBs always had mounting bosses for three-point lap and shoulder belts, but they were dealer-fitted (and possibly locally manufactured) to North American Mk1 cars and until 1st April 1967 on UK cars when they became compulsory. The lap belt mounting points were always on the tunnel and sill either side of the seat, but the shoulder belt mounting point moved about a bit, and it is this that causes the confusion.

 Very very early cars seem to have had two 5/16" studs near the middle of the lower edge of the inner arch. Both these should be used with an adapter plate, one is not going to be enough if you really need the belts at any time.

 After that a single larger threaded boss was fitted to the rear arch, low down and about mid-way from front to back.

 On Mk2 North American roadsters up to December 1971, and on roadsters for other markets from January 1971, mounting points on the tonneau panel were used which necessitated a quick-release device so the belt could be detached each time the hood was raised or lowered or the tonneau cover fitted or removed! The fastening utilised a plastic button, most have probably broken by now and been replaced by inertia reels. When I received my roadster it had inertia reels - but fitted to the tonneau panel. Very inconvenient as these had to be unbolted to raise and lower the hood! This picture was taken on the 2007 New Forest run and shows a metal button which seems to be the only type available now. The Driver's Glovebox Handbook indicates that this quick-release fastening was used on GTs as well as roadsters, with the fastener mounted on top of the rear arch. Quite why isn't known, whilst the roadster did need it to raise and lower the hood that isn't the case for the GT. A friend's 72 GT had these belts

but with just a plain bolt on the arch, which meant the belt bracket could come off the bolt without having to depress any locking plate. I first thought this was an error and somehow his car had got roadster belts, but maybe not, maybe it was just the fastener that had broken. In any event he fitted inertia reels.

It seems that when the tonneau mounting point was provided the wheel arch boss was deleted - but only from roadsters, so these cars from November 67 to December 71 only have the tonneau panel mounting point. Presumably this was only on North American roadsters as UK roadsters didn't get the tonneau mounting point until January 1971, when the arch mounting point was deleted from those as well. To use static belts with a fixed shoulder point where your quick-release type are damaged and you can't get replacements, you will have to provide a mount on the inner arch. Probably the easiest way to do this is with 1/8" steel plates either side of the arch panel and bolted through. The belt should come with a spacer/boss that the belt end will rotate around even when the bolts are fully tightened. Only when North American cars got inertia belts as standard in December 1971 and RHD cars in September 1976 was a mounting point reinstated to the inner arch, however now it is right at the back of the arch and just above the chassis rail. The tonneau panel mounting points were probably deleted.

 To fit inertia reels to roadsters built prior to the above dates you will need [this fitting kit \(item 2\)](#) from the MGOC (maybe other sources). This shows Bee's inertia reels fitted to the later position using the kit, which entails drilling a hole in the panel. Alternatively I understand Securon reels can bolt directly to the vertical panel and the reel swivelled to the horizontal position to allow the belt to run freely.

 GTs kept the boss in the lower position, but did they always have one on top of the arch as well? It is classed as a four-seater, and late Mk1 shells at least had them, but perhaps not very early models. I've also heard of the roadster-type quick-release static belts attached to those points in a UK GT, but that may have been done by an owner.

 If that weren't enough the tunnel mounting position also seems to have moved, being further back on Mk1 cars compared to Mk2 and later. The earlier position can cause problems with inertia belts with a fixed-length tunnel stalk, being almost behind the seat. Some suppliers do have longer stalks to avoid this.

 From Feb 72 there was what Clausager describes a 'New seat belt parking cover instead of parking buckle'. However it looks like a socket that the tongue would slot down into, although I can imagine an inertia reel belt could pull it out.

 Another fabled gadget - the seat belt hook, fitted from Feb 77 to roadsters and GTs with new Kangol inertia reel belts. This is on a GT, mounted on the rear waist rail, with an enlargement of the actual hook inset. On a roadster the hook was mounted much lower down on the trim panel, below the folded hood frame.

**Adjustment:** Whilst the concept of adjustable belts may seem strange, those from some manufacturers may only function correctly i.e. pull out smoothly if they are mounted in one orientation, whereas others may be capable of mounting in two or more orientations. In this latter case there may be adjuster knobs with arrows on, locked with grub screws. These have to be set with the arrows in a particular direction to get correct operation, for example see these [Securon instructions](#).

**Belt guide:** *Added April 2010:*

 The Navigator has always moaned she can't find the belts every time she gets in Bee (personally I just feel around on the floor behind the seat, but what do I know?). Many years ago we met up with a couple who had some very neat purpose-designed clips attached to the seat, but he knew nothing about them. Browsing on the web showed some for the new MINI at about £60 (and break, apparently) and for BMW and Mercedes at a couple of hundred (what's that about pricing things for what you can get for them?). Pondered it on and off for years, and this Spring decided to do something about it.

All it really needs is a flat strip under the headrest, turned back at the end to retain the belt when released, but allow it to be unhooked easily if needs be. After a bit of thought I realised I could attach the clip to the bottom of the headrest using the tube and one of the screws. Experimenting with card templates showed that something following the curve of the seat back was the most pleasing and effective. I'd been cutting up some square drain down-pipe recently to use as cladding for my wooden garage door frame and had some left over, which seemed as good a material as any. 60mm sides, I shaped and angled the template to fit into a length of that, the end is angled to line up with the main piece when turned back. Using a block of wood either side and clamped in a vice, and a heat-gun, it's quite easy to get a reasonably tight bend for the turned back end, using another block of wood on the back to press it down (it gets hot!), then when you have got it to 90 degrees whip it out of the vice and press it back a further 30 degrees or so.

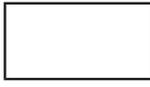
It certainly holds the belts up and makes them easy to find over one's shoulder, but with the hood folded it does need to be lifted up and fed through as you remove the belt as the inertia reel isn't strong enough to pull it round the folded hood, and without feeding it back it drops over the sill when the door is opened. The opinion of the Navigator is awaited!

**June 2010:** Showing a roofer pal the garage door cladding made out of guttering down-pipe I happened to mention I had used offcuts to fabricate the belt hooks but was planning to paint them black. He just happened to have replaced some guttering that morning, in black square-section, and dropped me off an offcut so I made two more from that which look much better.

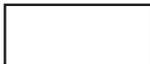
**November 2017:**

Up till now Vee's belts have always stayed on the shoulders of the seats, probably because they go straight back instead of down and back like on Bee. But since [recovering Vee's seats](#) they no longer stay there, so I make another pair, having an offcut of black down-pipe of the perfect length to hand.

**GT rear belts:** *August 2013*

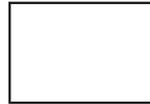
 One couldn't possibly contemplate seating anyone in the rear of a roadster, but children in a GT using a static lap-belt is a distinct possibility. Presumably because the GT is classed as a 'four-seater' the factory had to provide rear mounting points, although from when I don't know.

 There are two mounting points centrally behind the rear seat back which can only be for rear belts.

 However the side mounting points are not so straightforward. There are bosses on the side of the wheelarch, but these were originally used for the

 shoulder strap of static belts on both roadsters and GTs. Originally they were quite near the front of the arch, then on roadsters (like my 73) they moved right to the back, but not on GTs (like my 75 V8). Whilst they are usable for a rear lap belt, that half would only go across the front of a child and not curve round them like the central belt, so may allow them to move forwards more in the event of a frontal impact. I think I would prefer to provide another mounting point further back.

 Make sure you use the correct stepped spacer so the bolt can be tightened but still allow the belt ends to swivel, and use a wavy washer to stop the ends rattling. Both fit over the narrower section of the spacer. The wheel-arch boss isn't a through-fitting like the central mounting points (for obvious reasons I hope) so check the bolt will go in far enough to tighten onto the stepped spacer before it bottoms. If it bottoms first then shorten it by the minimum amount. If the buckle half belt-end is angled (like on the Securon) then even though it might seem more logical to angle it into the car, angle it the other way i.e. towards the side of the car so it doesn't jut out and stick in junior's side.

 Only a few minutes and a neat installation, to help bring the next generation of enthusiasts along. Strictly speaking the buckle half should be adjusted such that the buckle lies against the hip of the passenger on the buckle side, and the tongue half is adjusted to reach round the front of the passenger. But using the original boss would probably put the buckle across the lower abdomen which is not a good idea, so that half should be adjusted to reach around the passenger and the tongue half adjusted to be much shorter. If a new mounting point for the buckle half is provided at the back of the arch, or even behind the seat back like the central points, the buckle half could be positioned correctly.

**Did the MGB ever have air-bags?** *January 2017* It's fairly well documented (although the ARONLINE site that originally carried a summary of all the SSV vehicles has gone offline, [it can be found here](#)) that the MGB SSV shown at the Washington DC road safety conference in 1972 had air-bags as well as a wide range of other safety features, less so that they were crash tested in at least one North American spec car. A pal recently sent a link to a [1995 film about the MGB produced by the MG Car Club of Holland](#) in which there is an MG film clip (with Dutch commentary) showing just such a test. You may be surprised to see just how far forwards the 'driver' is thrown - knocking out the screen, but it has to be remembered that originally in the USA air-bags were designed to be used as a stand-alone restraint device, and not in conjunction with seat belts as they have always been in the UK.

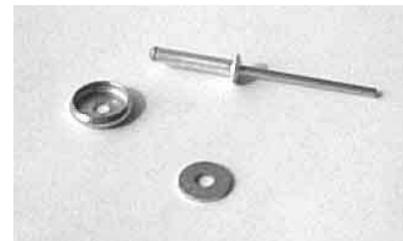
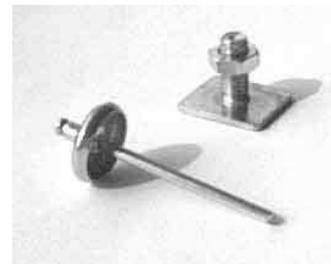
## Side Trim

This is the bright trim that runs the length of the other panels in three sections. For most of their length they are held on by cup-shaped washers over which the trim clips, but right by the headlights and the tail lights there is also a stud and nut. The door section should also have a stud which may be at the centre or the leading edge, opinions differ. The rear is the easiest to remove as it is kept clean, is clearly visible and you can get a nut driver on it. The door is trickier because of the limited access - you may have to use an open-ended spanner - and it could be rusty, but the front wing is worst as not only does it catch all the road dirt but the nut is so close to the flange on the inside of the wing that although you have the physical space to manipulate a nut-driver (albeit at an angle because of the headlamp bowl) you cannot usually get the socket over the nut. At least you can use the nut on the rear section to check which size spanner you need for the other two.

Once you have the nuts and washers off the studs you can lever the trim off the other fastenings. Start at one end with a screwdriver levering against a wood block resting on a cloth to protect the paint, then free the other end. You should be able to take one free end and lift the trim off the next fastening in line, sometimes lifting off one edge first then the other works best. By doing both ends first you avoid digging the end of the trim into the paint when taking it off the last fastener.

Drill out the old fasteners, which are held on with aluminium pop-rivets of about 2mm in diameter. You may have to hold the cup-shaped washer in a pair of pliers to stop it spinning round with the drill.

Fitting kits are available containing the full complement of pop-rivets with cup-shaped washers attached and six studs and nuts, sometimes washers too sometimes not, as shown in this picture.



However I have found that if a panel has been replaced from the trim down there can be a double-thickness of metal plus filler, and the pop-rivets as supplied are not long enough to go right through. Consequently they expand inside the hole and can work loose, sometimes when trying to refit the trim. Also if a panel has been skimmed, painted and drilled a couple of times or more the holes can become large and uneven, so again the

pop-rivets don't expand behind the holes but inside. I bought some long-reach rivets and transferred the cup-shaped washers over, then used an appropriately-sized washer behind the panel, so not only did the pop-rivet go through a skim of filler two panels and a washer, but it also secured firmly behind the washer no matter how large and irregular the hole was. The cup-washer removed from the original pop-rivet, a long-reach rivet, and a suitable washer can be seen in the picture.

When preparing to fit new fasteners to the body hopefully the painted holes will be large enough to accept them. But if not, slightly overdrill the hole and put some paint on the bare edges. In any case dip the fasteners in Waxoyl before putting them in the holes in the panels - to protect against rusting, but with the rear section being rivetted into the boot/hatch space it should also seal against water ingress. Even if you have a long-nose pop-rivet gun its nose may be too big to go inside the cup-washer. Don't be tempted to fasten them like this as the rivet gun may expand the washer and make it much more difficult to get the trim on, slip a small nut over the pin on the rivet so the gun bears on the nut and the nut on the cup-washer. Have a supply ready as they jump off and get lost as the pin breaks.

Before attempting to fit the trim to the car go carefully over the edges and make sure there are no sharp flashings that will cut into the paint, and paint the backs with Waxoyl.

## Sill Construction and Drainage *Added January 2008*



Chatting to someone about treating the very narrow gaps between the lower wing sections and the front and rear of the sills (see ['Quarter-panel Replacement'](#)

[above](#)) we got on to the subject of sill construction and drainage, which lead to me making a drawing and taking some photos, click the thumbnails.

## Tonneau Cover *Rewritten March 2014:*

[Tonneau Bars](#)

Note 'Tonneau cover'. Strictly speaking the 'tonneau' is the space behind the front seats, or sometimes the whole of the interior. From the French 'tonnel' for a cask or barrel. Early vehicles sometimes had rear seats fashioned from barrels standing on end with part of the side cut away. Also where we get 'tun' from i.e. a large brewing vessel as in 'mash tun'.

There are many variations in the tonneau covers and how they fasten to the car:

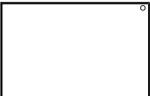
 Dash-top - posts or studs: Some covers fasten to three lift-the-dot posts on the dash top, others fasten to two press-studs on the bottom of the screen uprights plus a central post. North American cars with the padded dash (67 on) and the 77 and later plastic dash don't seem to have the outer posts, only the press-studs and the central post. Some photos in Clausager show both studs and outer posts on the same car (although one or other could have been added by various owners). He also has photos of RHD cars with the outer ones positioned differently - the right-hand one being either above the fuel gauge or above the overdrive switch. My 73 only has the posts, no press-studs, and the right-hand one is over the overdrive switch. Whereas the original cover had three post sockets, the replacement has outer press-studs and not post sockets, so I had to add these myself.

 Dash-top - central post: This is positioned slightly left of centre on RHD cars, vice-versa on LHD cars, so a single occupant can drive with the passenger seat covered, but even the exact position of this varies. Clausager shows them either barely to one side of the centre bar, or almost out to one of the bolts. However my 73 came to me with a tonneau cover which fitted the outer posts, but the middle post was out by about an inch. When I restored the car and stripped the dash I swung the post round 180 degrees on one of its screws which put it in almost exactly the right place, which is even further out from the centre bar. The replacement cover also fits this post.

 Heel-board: My car has two lift-the-dot posts for a hood cover, or when the tonneau cover is used as a hood cover. My original cover has a full-width flap each side with two sockets, but the replacement only has a tab with a single socket, nearest the tunnel. In fact I could never get my old cover to fasten to the heelboard over the tonneau bars, which is one reason why I have never used them. The new cover does, and looks really neat, but I need the sockets for the windstop, so still don't use the tonneau bars.

 Cockpit rear: Just aft of the door opening there is a square plate which is the socket for a tongue on the hood. Immediately behind that it seems there can be a lift-the-dot post, a press-stud, or nothing at all.

 Zips: As well as the long zip up the middle, Some (like my original) have a short zip where the cockpit rail turns the corner, others (like the replacement) have a long zip that goes almost to the middle of the car. Others have no zip at all.

 Seat-belts: Some also have a hole in the rear edge for the detachable seat-belts.

 'Darts': Again where the cockpit rail turns the corner, some have just a small slot, others two significant darts.

If that wasn't enough the lift-the-dot fasteners can sometimes be facing the edge of the cover and sometimes at right-angles to it!

 Someone on the BBS asked about heelboard stud positioning - my inner pair are at 267mm centres, the outer pair at 983mm centres, all four being about 20mm down from the top of the shelf.

 And finally the spacing of the fastenings around the rear of the cockpit.

**Tonneau bars:** Aka 'hockey sticks'.

 These slot into sockets screwed to the inner panel just aft of the doors. These sockets are also used for the pack-away hood frame and the hardtop and can be installed with both types of folding hood frame.

 The handbooks I have seen all show the tonneau bars positioned behind the seat backs. Whilst this makes for a neat installation of the hood cover, or the full-length tonneau cover when used as a hood cover, it occurred to me that when one wants to use full-length cover as a cockpit cover against rain, then the bars should be positioned **in front** of the seat backs. In this position they raise the cover and the rain runs off the sides.

 At least they did with the cover that came with the car which is fairly tight. That didn't have headrest pockets whereas the seats have the headrests, so I had to tilt the passenger seat forward and remove the drivers headrest which was a pain, as I use the cover every time I park the car to guard against bird strikes more than rain and always have. Proved wise as on one occasion a Golden Eagle dumped on the cover right over my seat, a real messy one splashing onto the top of the dash and even under the screen! But the faffing with the headrest and the seat was annoying so eventually I got a used replacement from Stoneleigh. However that is looser, and even with the tonneau bars in front of the seats rain pools a bit instead of running off, but still doesn't drip through the zip.

### Vehicle Heights

Car	Overall Height	Minimum Ground Clearance
CB Roadster (hood erected)	4ft 1 3/8in	5in
CB GT	4ft 1 3/4in	5in
V8	4ft 1 31/32in	4 1/4in
RB GT	4ft 3in	5in

### Vehicle Weights (Updated September 2008)

	Total Weight		Distribution
<b>4-cylinder Mk1</b>	<i>Roadster</i>	<i>GT</i>	

Unladen	1920lb	2190lb				
4-cylinder Mk2 - 1971	Roadster	GT	Front		Rear	
			Roadster	GT	Roadster	GT
<b>Kerbside</b> Including full fuel tank, all optional extras and accessories	2303lb	2401lb	1127lb	1162lb	1176lb	1239lb
<b>Normal</b> Kerbside weight plus driver, passenger and 50lb luggage	2653lb	2751lb	1235lb	1269lb	1418lb	1482lb
<b>Maximum</b> Normal weight plus towbar hitch load	2753lb	2851lb	1193lb	1231lb	1560lb	1620lb
4-cylinder 1971 - 1974	Roadster	GT	Front		Rear	
			Roadster	GT	Roadster	GT
<b>Kerbside</b> Including full fuel tank, all optional extras	2394lb	2446lb	1216lb	1198lb	1178lb	1248lb
<b>Normal</b> Kerbside weight plus driver and passenger	2694lb	2746lb	1332lb	1314lb	1362lb	1432lb
<b>Gross</b> Maximum weight condition including tow hitch and roof rack (GT)	2814lb	2866lb	1285lb	1267lb	1529lb	1599lb
CB V8		GT	Front		Rear	
				GT		GT
<b>Kerbside</b> Including full fuel tank, all optional extras		2442lb		1207lb		1235lb
<b>Normal</b> Kerbside weight plus driver and passenger		2742lb		1317lb		1425lb
<b>Gross</b> Maximum weight condition including tow hitch and roof rack		2892lb		1288lb		1604lb
4-cylinder RB		GT	Front		Rear	
				GT		GT
<b>Kerbside</b> Including full fuel tank, all optional extras	2448lb (est.)	2500lb (est.)				
<b>Normal</b> Kerbside weight plus driver and passenger	2748lb (est.)	2800lb		1456lb		1334lb
<b>Gross</b> Maximum weight condition including tow hitch and roof rack	2868lb (est.)	2920lb (est.)				
RB V8		GT	Front		Rear	
				GT		GT
<b>Kerbside</b> Including full fuel tank all optional extras		2529lb		1268lb		1261lb
<b>Normal</b> Kerbside weight plus driver and passenger		2829lb		1383lb		1446lb
<b>Gross</b> Maximum weight condition including tow hitch and roof rack		2979lb		1338lb		1641lb
<b>All models</b>	Roadster	GT				

<b>Maximum permissible towing weight</b>	1680lb	1680lb	
<b>Maximum towbar hitch load</b>	100lb	100lb	
<b>Maximum roof rack load</b>		50lb	

Added October 2008

Drive train component weights	
<b>Engine, dry with clutch, 18G/GA</b>	358lb
<b>Gearbox, 3-synch (OD or non-OD not specified)</b>	78lb
<b>Rear axle, banjo, disc wheels</b>	117.5lb
<b>Rear axle, banjo, wire wheels</b>	123lb

## Washing & Polishing

IMHO washing is far more important than polishing, and more damage can be done by washing incorrectly than polishing. I have **never** taken any car of mine to an automatic car wash, regular use will leaving it looking like it has been 'wet and dry'd, and that is assuming the owner of the wash is careful about removing the barbed wire and other debris from the brushes each morning put there by someone's little darlings (they take no responsibility for any damage to your car). My Black Tulip cellulose finish seems very susceptible to heat and sun so I always wash and polish it when cool and under shade otherwise it develops white patches than can only be removed by T-cutting (see below). I always use a brush on a hose with running water to wet the surface first and soften any mud before using the brush on the body, then rinsing off with the hose then leathering off. Using running water continually flushes particles away and they do not build up in the brush to act as an abrasive. I never use a sponge and bucket as the sponge traps tiny particles to scratch over your paint. I also never use a car shampoo and especially not washing-up liquid which can dull the surface, as they also take off any remaining polish. After thoroughly drying and before polishing I go over any stone chips with a touch-up brush.

As far as polish goes Mer is quite popular in the UK, especially with the concourse brigade it seems, but I find it leaves white powdery traces in the crevices of my less than concourse but rust-free black-tulip roadster and these only seem to appear over time several hours or days after polishing, so I keep finding new bits, and keep polishing them off makes me look like an anorak. The benefit of Mer is that it doesn't take any colour off onto the cloth. Turtle Wax does take a little off onto the cloth, which implies it is a mild abrasive, although I have been using it two or three times a year for 12 years or so and haven't worn through yet, but is much easier to apply and polish off and gives a good deep shine. T-cut and other 'paint restorers' should only be used to remove very fine surface scratches, as part of the process of repainting a panel, or on a body that has not seen washing or polishing for many a long day. More frequent use will wear paint down to the primer.

**Tree Sap:** I haven't needed it on either MGB but my Son's Celica that had been street-parked in London for several years was covered in thousands of very tiny clear raised spots which no solvent I had including WD40, Plus Gas (penetrating fluid), white spirit, petrol, meths plus cutting paste, bug wipe tissues etc. would touch. The only thing that did was 1000 grit wet and dry, but I didn't fancy doing the whole car in that! In the end I found another kind of 'abrasive' in Halfords which was clay-based and like a harder than normal Plasticine. This took the lot off without that much effort and left the surface in perfect condition, and although you could see the 'dirt' from the sap (or whatever) in the clay and had to keep turning it to a

clean surface, it removed no paint. Two years since then and it has been fine. Subsequently I get my Son's BMW Z3 M Coupe to look after as well now they have a son and a 'sensible' car and the BMW was languishing unused and getting bashed on the streets of London. This had the same spotting, and the same clay block removed that as well.

*Update 2007:* The packaging and formulation of Turtle has changed. Whereas it was a creamy liquid it is now almost like water. It doesn't give the depth of shine on the roadster that it used, and incidentally takes on no colour either. It seems fine on the ZS so is probably formulated more for today's water-based paints than the older cellulose. I have some fairly recently purchased Autoglym Super Resin Polish and that seems to have the creamy consistency that Turtle used to, and gives a better shine than Turtle does now, so that is my product of choice for the moment. Autoglym also sell Paint Renovator (amongst more than 40 products just for retail and cars, plus others for trade, motorcycles, PSV and others!) which is a mild abrasive. This should **only** be used if the resin polish doesn't remove any surface marks, but is good for removing over-spray on a partial panel respray. An even stronger abrasive, but still less than 1000 grit wet-and-dry is Halfords Cutting Compound. Neither this nor Paint Renovator contain silicones like the Resin Polish do so can be used before painting as well as after.

*Update 2008:* Looks like what I have is Turtle High Gloss Wax (NLA from the manufacturer), but [Turtle Wax Original](#) is also still manufactured so maybe that is the one to go for - when you can find it.

*Update 2009:* But then again ... while I was using the Turtle High Gloss I noticed the finish was gradually getting duller and viewed at an angle with my glasses on (never a good idea) the bonnet was showing fine surface scratching. "Oh well" I thought, "I never expected the paint to last this long (20 years) anyway". But when I started using the AutoGlym the shine immediately came back and the scratches went, for several outings anyway. I had always been concerned that the original Turtle showed a lot of colour on the cloth, i.e. it was taking a microscopic layer off each time, although it hasn't worn through (yet!) anywhere. The Turtle High Gloss didn't take any off at all, which on the face of it is better for the paint, but as I say the finish suffered. With the AutoGlym, whilst it does show some paint on the cloth, it doesn't seem to be as much as the Turtle original did, but gives a much better finish than Turtle High Gloss. So on balance I'll be sticking with the [AutoGlym](#).

## Wind-down Windows *Added November 2009*

[Removal and refitting](#)  
[Adjustment](#)  
[Stiff to wind](#)

**Removal** of the glass itself is quite straightforward. Remove the waist-rail strip with the brush seal and the upper stop-peg near the top of the inner skin. Then with the window part-way up remove the bolts securing the regulator to the inner door skin, support the glass while sliding the wheels on the regulator arms out of the channel across the bottom of the glass, and lift the glass up and out. If you need to remove the regulator as well then fold it up and it will come out of the large hole in the skin. I got both mine out easily enough, so much so I didn't really pay attention to exactly how I did it, then had a helluva game getting the first one back in! You have been warned.

**Adjustment** is really limited to the stop-peg near the top of the inner skin so that the top of the glass just tucks neatly into the rubber piece at the top of the 1/4-light frame. The bottom stop is by way of a plate welded into the door, and so not adjustable. This should have a felt pad gripped by some serrated teeth so the bottom of the drop-glass doesn't drop onto it with a clatter or rattle when fully down. Whilst the adjustment at the bottom of the 1/4-light long leg

will of course affect the drop-glass, it's primary purpose is to get the correct alignment to the windscreen upright. The plain channel at the lock end of the door also has a certain amount of adjustment in two directions, but apart from pressing the channel onto the glass gently while tightening it to stop the glass jumping out as it is wound up and down, the other adjustment should be allowed to take up its natural position, which will be controlled by the front channel and the brush and rubber seals against the glass.

**Stiffness** when winding seems to be the biggest problem, so much so that people break the plastic handles and replace them with after-market metal ones. With several BL vehicles over many years I've never had this problem, but as I say many complain of it. The glass slides up and down in 'flocked' rubber inserts fitted into the metal channels of the 1/4-light frame and another plain channel at the lock-end of the door. These rubber strips can rip and cause the glass to jam, and if the flock wears off the rubber may well make the action a lot stickier. The two channels may also not be in line so are trying to flex the glass as it moves up and down, and the regulator mechanism may also be stiff from rusting or lack of lubrication. The first thing to do is to determine whether it is the [regulator](#) or the [glass](#) that is causing the problem.

There is quite a bit of lost motion in the regulator and this can be used for diagnosis. Wind the window down, then start winding it up. Now grasp the top edge of the glass and lift - it should come up at least an inch or so. Now turn the winder again in the 'up' direction. It should move easily for an eighth of a turn or so before it starts trying to raise the glass some more, then you know the problem is with the glass and the channels, and it was probably very stiff when you tried to pull it up by hand. But if the glass moves relatively easily when pulling it up by hand but the winder remained stiff while taking up the lost motion, then you know the regulator is the problem. In theory if the glass gets easier to move as it is wound up that could well point to the lock-end channel being the problem, as there is progressively less of that in contact with the glass as it rises. But note that the regulator should move **very** easily back and fore through its lost-motion area, this can be checked in various places between fully up and fully down, but pulling up the glass by hand will always exhibit a certain amount of resistance. Of course you could have both problems! In which case deal with the regulator first, then you will know how much of a problem the glass is. There are quite a few pivots, gears, wheels, and a large spring in the mechanism, any one or more could be seized or stiff, so you will have to work through them all. If the car is a daily driver and is regularly going to get wet use waterproof (white) grease to avoid rain running down through the doors washing it off. For 'dry' cars a general purpose grease should be fine.

I've seen silicone lubricant spray recommended for easing the glass channels, but what long-term effect it has on the rubber, and whether any short-term benefits are then replaced by a worse long-term situation I don't know. Much better is a suggestion from Mark Robinson to use graphite powder, put some on your finger-tips and you can feel how slippery it is, but it never attracts dirt or gets sticky, which is why it is used for [lubricating locks](#). Making your own like for door locks probably isn't feasible in this case due to the quantity that will probably be required. It doesn't seem to be widely available, locksmiths may sell it but in quite large and expensive quantities, [Tooled-up](#) and [Graphite Store](#) are two possibilities for small quantities. However the point is that like metal winder handles, it shouldn't really be necessary, and it is better to fix the root cause once and for all rather than bodge it and have the problem arise again later. Examine the condition of the rubber inserts and if in any doubt as to their condition, replace them. Physical wear and tearing of these can be caused by incorrect adjustment of the lock-end channel or buckling or crimping of either channel so this should be checked before using new inserts. It's possible new non-OE rubber inserts are too fat or too sticky, which leaves you with a bit of a problem. It will be possible to open out the lock-end channel a little which should at least halve the problem, more care will be needed for the 1/4-light frame, especially the upper half.

## WindStop

### Observations on a commercially available product

I've never been a fan of WindStops or 'hair nets' as 'wind in the hair' has always been part of the enjoyment for me - as long as I'm wearing a hat to stop my hair from flaying the skin off my face - but the Navigator finally nagged me into doing something about it as she finds the buffeting at 60 or so for long distances wearing, and the alternative is hood up which is much worse. Having seen them advertised for £170 or so for the solid plastic ones - and where do you put them when you aren't 'wearing' them? - or up to £250 for fabric ones (which still have a solid frame) I thought I could do better myself.

But first I wanted to see how effective they were. I bent a couple of brackets from aluminium curtain track to slot in the tonneau bar sockets and wired a piece of old plywood to them. Couldn't see behind me using the interior mirror of course, but it was good enough for testing on a quiet road. I was surprised how effective it was. At 40mph there was no buffeting at all, whereas you can feel it start from as low as 10 or 15mph without, and at 70 mph there was still hardly any, so the solid ones certainly are effective. But I had in mind a fabric one that I could fold up and tuck away when it was not in use.

A neighbour had given me some aluminium sheet many years ago - her husband had been in the car industry in design even further back and this was some 3/16" thick stuff he had used for chassis and body frames, it was the ideal thickness for a snug fit in the tonneau sockets. I cut and shaped a pair of brackets that plugged in the sockets and more-or-less followed the line of the folded hood frame behind the seats nearly to the horizontal line of the tonneau cover over the folded hood. These ended in a vertical post about 10 1/2" high that was going to be the support for the fabric. I say 'vertical' but they are inclined in towards the centre of the car to follow the line of the screen side rails when viewed from the rear as the adjacent pics.

I drilled holes at the top and the bottom of these posts to thread 'shock cord' like bungee or those spider things used to secure suitcases to roof-racks, but much thinner at about 3/16" diameter - about £3 for 3 metres. These were going to run across the car to support the top and bottom of the fabric. A length of poly tubing to go over the vertical posts to act as a smooth support for the sides of the fabric to stop fretting and wearing through of the fabric - about £1 The bungee runs vertically through these tubes to avoid having any knots at the top and hence clearly visible.

Black veiling material seemed close to what I had in mind, although the holes were a little bigger than I would have wanted and the threads 'holding them together' a little thinner, but for £1 for enough for four single thicknesses, two double, or one quadruple it was cheap enough. Before cutting the material I did test runs with one, two and four thicknesses held on to the frame and bungee with clothes pegs to check effectiveness. As I suspected even four thicknesses was not as effective as the solid board, but was beginning to affect visibility. So I decided to opt for a double thickness with clear polythene in the middle.

After the test I noticed that the brackets had tended to work their way out of the sockets a little. I didn't think it would come out altogether but neither did I want to risk it, so I drilled and tapped the tongues of my brackets for a cheese-headed screw, which I then ground off at an angle. This would enable the tongue to slide in without difficulty, then the high edge of the screw head would engage in a convenient hole that was already in the socket. To remove the bracket from the socket one has to pull against bungee tension to disengage the screw head from the hole before the tongue can come out of the socket, which isn't going to happen while on the road.

I had trouble finding some polythene that was clear for distant objects (most 'clear' stuff is fine when wrapped around something but opaque when looking down the road through it) but eventually found a large bag that had

originally contained a folding garden chair - £0. Rolled the top and bottom edges of this around a length of dowel to form a tube to thread the bungee through, stuck down with double-sided tape. The same neighbour who had given me the aluminium was very interested in how I was planning to use some of it, and used her machine to sew up a double-thickness of the material so that it slotted over the verticals and I could thread the bungee through from side to side to make the finished article.

So for a fiver and some time I had something the Navigator declared herself well pleased with during our recent visit to the New Forest, but there are a couple of areas for improvement. Both concern the polythene which is very thin and was chosen for its visibility: Because it is so thin the buffeting that it is now stopping reaching us is causing it to flap which is quite noisy, it also bows out under the air pressure and this can result in reflections from the sun which reduce the area I can see through, so the hunt is on for a stiffer but equally transparent substitute (hood rear window material perhaps?) for MkII. I might also extend the screen to the tonneau cover to reduce the draft behind the seats ... or is that going to far?

Update: Put a couple of thin metal rods vertically between the top and bottom bungies about 1/3rd the way in from the ends. This keeps the bungee at the correct distance apart and supports the front of the screen, both of which reduce the bowing, flapping and reflections.

**Update May 2005:** In very blustery conditions on the A14 passing Cambridge the bracket my side broke where the horizontal strut is turned upwards, but at least the remaining half still sheltered the Navigator. I tried welding it but it wasn't going to work so I fabricated a new one out of the large amount of aluminium sheet I still have from when I originally made it. If I get another breakage I'll get another pair of tonneau sticks and modify those.

### **Update May 2007:**

Must be something about May. On the way down to the Tamar Valley Run the Navigators side broke this time. I was able to jury-rig another support out of a jack handle and some wire, but wasn't going to fiddle about with aluminium any more as it obviously can't take the stresses. I'd thought about modifying tonneau sticks, but it was going to be some time before I could pick up another pair at a spares show and needed it before then, and didn't want to chop up the pair that came with Bee. So I toddled off to B&Q to see what they had and was surprised to see quite an array of alloy and steel bar and tubing both round and square, and got a length of bar and two of tubing of different sizes, all in steel.

The part of the old strut that goes into the tonneau sticks socket and horizontally rearwards seems strong enough, it is the angle where the horizontal section turns upwards that has broken each time. So I shortened the horizontal section by about half and with a bit of swaging fitted it into a length of the larger diameter tubing, cut to just before the turn upwards.

I was going to use the bar for the turn from the horizontal and the vertical section and it had to be small enough to go through the netting and plastic tubing along with the bungee, which made it too small to fit into the tubing used so far. But with more swaging I used the smaller tubing as an intermediate, and the three were welded together.

I bent the bar to the appropriate angle, cut it to length, welded a couple of brackets for the bungee where it turned across the car, fitted it and the plastic tubing and netting, and job done. A couple of quid and a few hours

fun in the garage, with plenty more bar and tubing left over for when the other side breaks again.

**Which it did June 2008 on the Bridgend Vales and Valleys Run.** Another couple of hours using the passenger side as a pattern and the drivers side should now be OK. However the internal plastic membrane needs a bit of attention as the corners have come unglued and are wrinkling up, but I'm pretty amazed both it and the material have lasted as long as they have given the battering it gets on long journeys.

**Update July 2009:** No further problems yet but whilst the mesh fabric is holding-up the plastic inner sheet is getting a bit ratty and opaque. Idly Googled 'windstop fabric' one day and [this link](#) to a document explaining how to repair an MGF/TF windstop comes top of the list. Not a lot of use to me in itself, but it includes a link to Ikea for some apparently suitable fabric (FLYN LILL) at only £1.36 a roll! Not dead handy to me, and not available online, but worth a look the next time I'm passing.

#### Update March 2010:

 Bought a roll of the Ikea FLYN LILL fabric towards the end of last year, so now it's time to do something with it. The MGF frame is solid tubing with a slot and filler strip, so it is relatively easy to clamp a single thickness of material in the frame. I want to be able to fold mine up as before, i.e. keep the side struts and the top and bottom bungee so have to have a double-thickness folded over the top bungee and sewn together below the bottom one. I made a hardboard template to fold the fabric round, cutting to have a couple of inches of spare in each half at the bottom and several inches at the sides. Pin at intervals along the bottom, then slide the hardboard out and start stitching, just the 44" between the bottom of the uprights, and use a line of household glue along the stitching for strength. Slid it onto the assembled struts and bungee, attach to the car, and trim the ends to be a couple of inches long following the angle of the uprights.

 The big question was how to attach the sides, short of more stitching and glue, which would be a 'no going back' operation. I thought of sliding some split tubing down over the uprights trapping the material, and browsing B&Q found a length of white plastic plumbing pipe intended for 'push together' fittings (Speedfit), which looked about the right internal diameter. I slit this lengthways with a sharp knife, ran a screwdriver blade up and down the slit a couple of times to open it up slightly, and slid it down over the strut trapping the fabric. All went well until annoyingly the edge of the slit on the second tube caught in the fabric and tore it slightly. Cut a slight 'V' in the bottom of the slit to remove the corners and it slid on just fine this time. Oh well, it's double-thickness so not easily noticeable, and is worth running with to see if the overall thing is OK, plenty more on the roll to make another if needed. Trim off the excess from the bottom of the split tubing and we are ready to roll. I've kept the wire struts positioned along the fabric but had to angle them slightly as the pocket in this version ended up not quite so deep.

 On a quick test-drive it prevents the buffeting as before, but as it is fabric with holes some air does get through so there is a slight feeling of diffused breeze around the back of the head which wasn't there with Mk1. However that also means there is no noisy flapping of the material, so as such there should much less strain on the material and struts than before. This material has smaller holes closer together, so is more opaque than the previous version. I've only tried it on a dull day, i.e. things less visible anyway, so we shall have to see how it goes. I may paint the tubing (tricky being plastic?) and struts black to match the material, hood frame, tonneau cover etc. in the same area.

#### June 2010:

 Happened to find some plastic primer I had bought in error some time ago thinking it was normal metal primer, also had some satin black, so relatively easy to paint the removed tubes. With them back on very pleased with the result, but then realised the framework between the bottom of the windstop and the tonneau sockets was still silver, so painted those satin black as well - even more pleased with the result!

 That left the rear visibility. I had an old blind-spot mirror kicking around, and what looks like a convenient space above the existing mirror to position it, where the higher position as well as the convex construction would allow me to see 'behind' the windstop. The big question was how to mount it? Eventually I settled for a strip of black plastic (cut from the side of an offset of square-section guttering downpipe ...) as wide as the additional mirror, cut and shaped (with a heat-gun) to clip onto the back of the existing mirror, with the new mirror stuck to that.

 **June 2011:** However the blind-spot mirror being quite a bit smaller than the standard interior mirror meant that I had to focus more intently on it to see behind - not a good thing to take ones eyes off what is going on in the arc in front of you for too long. So yet another blast from the past is the stick-on mirror I used while teaching my children to drive some 20 years ago. Made another bracket to clip the mirror-part of that onto the back of the existing, and that's much better. Even though it is only immediately above it can still see over the top of the wind-stop, and it can stay in place when the top is raised.

#### Observations on a commercially available product by Michael Beswick, June 2012

Here are my observations on the MGOC windstop (made I think by Newton Commercial in Suffolk). I won't comment on the price, but if I think of increased comfort per mile it gets better!

Fitting is more difficult than the instructions show!!! It rather presupposes there are speakers in the side trim that can be removed, as there can't be a B on the planet where the hood nuts are still captive. Alternatively the hood folding plate has to be fitted direct to the (metal) side and the trim fitted afterwards. (In truth the same problem would apply to adjusting the hood). As always with the hood fitting the position of the raised hood is critical to get to the screws. Re-fitting is simply the usual nightmare of everything moving about and needing 6 hands and 2 people!

  It does just fit with the new high backed seats with headrests, (although my seat is not fully far back), the windstop just touching the head rest.

 The knurled nuts just foul the folded frame when the hood is down - not a problem - but a bit more so when putting the hood up, as jiggling is needed or preferably a person at each side.

The hood needs to be eased past it when being put down or the hoops catch and force the windstop backwards. My hood is not glued to the "rear" hoop so it can be lifted up out of the way to allow access to the hoops.

The bottom tube of the windstop is threaded to take the "knurled nut headed bolt". Mine was a bit rusty so I added Vaseline, but the quality of the "threading" will determine the life of the kit!

## Wing/Door Mirrors

I find most people adjust these so they can see more or less the same as in the interior rear-view mirror which includes quite a chunk of the side of the car. As someone else almost said "If you are in the car you should know the sides are there even if you can't see them". I have mine adjusted so that by moving my head one side or the other from my normal driving position I **can** see the sides of the car for manoeuvring, but not in normal driving. This means that the rear of even small cars is still visible in the interior rear-view mirror when the front appears in the side mirrors, and is similarly visible in the side mirrors when the front appears in my peripheral vision, and should be to most people when glancing in the side mirrors. Close Encounters notwithstanding you should also be regularly checking the internal rear view mirror for people coming up behind you, including other lanes of multi-lane roads and it shouldn't normally be a surprise to see someone for the first time in a side mirror, or your peripheral vision. But of course other drivers can often do silly and unexpected things which is why you do need side mirrors, and need to use them before indicating to change lanes or overtake. FWIW I also glance to the appropriate side before changing lanes as well, there is always the chance that someone on a uni-cycle is about to overtake you.

If that isn't enough you can get small, convex stick-on blind-spot mirrors that can be attached to a flat-glass door mirror e.g. [as here](#). They are called 'blind-spot' mirrors but some of them are so convex that you can see almost as much as in a flat mirror, but everything is made exceedingly small. They should be fitted to the outer upper corner of standard mirrors. And of course most cars these days come with the outer edge slightly convex anyway so don't need them. My Toyota came with one on the drivers side, but I took it off as adjusted as above I found I didn't need it and it just reduced the clarity of what **was** in the mirror.

Recently someone took the rather superior view that Americans always have their mirrors adjusted correctly as they can be passed both sides. For a start what is important is to be sure there is no one in the lane you want to move into before you move into it, which side you can be passed is irrelevant. But Americans have those annoying 'bifocal' door mirrors, which are fitted **precisely** because they are no better at adjusting their mirrors than anyone else, and nanny state has decided to intervene. These mirrors use a convex lens effect on the outer portion so that even when they are adjusted such that the plain part shows what is behind the car the convex part shows what is on the rear quarter. Hopefully. Of course that gives a distorted view across the mirror as a whole, so they also need to be shouted at with 'OBJECTS IN MIRROR CAN BE CLOSER THAN THEY APPEAR'!