REALITY

RESTORATION

An MG is Born

Part Two

Having surveyed the metalwork mountain he needs to climb, TV's Mark Evans reveals how he tackled the restoration of his decrepit 1973 MGB's bodyshell.

**THE STORY SO FAR**

Earlier this year, an unlikely duo (a TV vet called Mark Evans and an ex-engineer called Les) began work on the rust-ridden wreck of a 1973 MGB. They were given just 12 weeks to strip, mend, hammer, fabricate, weld, glue, screw, stretch and polish the chrome bumped roadster back to showroom condition. And all for a ten-part TV series called We're On A Mission.

WITH MY MGB gutted and most of her vital organs sorted and stacked, Les and I were forced to face a challenge that most sane men would run a mile from — rebuilding a complex monocoque that was clearly never designed with restoration in mind. It's a difficult, dirty, noisy, potentially expensive and extremely time-consuming task. Get it wrong and the finished car will look ridiculous. And it could be a death trap.

Fortunately, Les is a professional metalworker with decades of fabrication and welding under his belt (presumably that's why he's wearing a welding mask under his belt). He has the tools, skill, patience, enthusiasm and tenacity necessary to see the job through to a very high standard. But what we lacked at the time was any meaningful experience of working on MGBs. As you'll discover over the next two issues, we found repairing and restoring our bodyshell quite a challenge.

So read on to discover how we set about replacing the sills (five components each side) and the technique we adopted for separating spot-welded panels. An MGB's mechanicals are pretty agricultural and, by all accounts, tough enough to cope reasonably well with more than 30 years of Tamrac abuse. Its bodyshell, on the other hand, was never really designed or made to repel three decades of the great British weather. As a result, MGBs are prone to corrosion, and mine was no exception.

For an MGB, rust is not simply a cosmetic problem. The bodyshell is a welded 3D steel jigsaw or monocoque. Its strength and the way it deforms in a collision depends not only on the design and structure of each individual panel but also on the way in which the panels fit together. According to the gents at British Motor Heritage - who still make MGB bodyshells — every single panel contributes towards the monocoque's overall strength and stiffness. A rusty bodyshell is a weaker bodyshell and, depending on how rotten it is, could be a serious accident waiting to happen.

The same is true of a badly repaired shell. It just won't be as strong or as safe as the original design team intended. So repairing or restoring an MGB body is not a job to be taken lightly. You need to be very sure you are capable of doing it properly — if not for your own sake, for the safety of the enthusiasts who will own and drive the car in the years to come.

We knew we were capable of rebuilding the shell ourselves but that didn't make the prospect any less daunting. So in the hope it would make our metalwork mountain seem more like a series of small hills, we made a list of things we needed to replace or repair:

- Both front wings
- Both rear wings
- Both doors
- All sill components on both sides
- Both castle rails
- Outer sections (including jacking points) of main cross member
- Both main floor sections
- Boot floor
- Front valance
- Repair speaker holes in rear bulkhead
- Repair both rear wheelarches

Having read it through a few times, we turned the lights off, shut the door and went for a curry. Over a fiery Madras and a couple of naans, Les and I devised a plan of attack. With the MG still on its wheels, we would cut out and replace all the sill components and the castle rail on the near side, then repeat the process on the off side.

Next day, and with a following wind, we started work on the sills. We decided not to tackle both sets of sills at the same time for three reasons. First, even if we breezed it, we figured the monocoque could still twist or deform with so much of its core strength removed. Second, if we kept one side intact we could refer to it as a template if we got stuck. And third, we only have one set of tools. So, that left Les in the workshop to sort out the sill surgery and me in the leaking portakabin to plan the filming.

**TOP TIP**

To remove a spot weld, put a dot-mark in its centre. Then use a spot-weld drill on each weld but don't push too hard or you'll put a hole through both panels.
The door skins on our MGB were shot through, but because complete new doors are good value for money we decided to replace rather than repair them. Hanging the new nearside door would have been straightforward had it not been for a couple of raised lips on the inner skin preventing the hinge arms from lying flat. That’s what lips are made for.

With the door finally in its natural position, a second problem became apparent. Although the gaps around the old door had been very good, the new door was a slightly different shape. No matter how much Les fiddled with the hinges, he couldn’t get the new one to fit the old aperture perfectly. And, it seems, this is a common problem. In our case we needed to open the aperture a tad to very slightly increase the distance between the top of the A- and B-posts. The solution involved an apparently well-known trick using a trolley jack to exert a little upward pressure on the jacking point, mid-sill.

When Les was happy with the gap, he summoned another for a second opinion. No one couldn’t reach an agreement by eye so we used a 5mm drill bit as a feeler gauge, and all was well in the workshop.

Before attacking the bodyshell with a cutting disc, Les made a brace to prevent the door aperture from changing shape again as soon as he removed the sill. By brace, I actually mean braces. The first one Les made was, by his own admission, an over-complicated pile of poo – an adjustable contraption that failed to work on two counts. First, you couldn’t shut the door with it in position. Second, the adjuster mechanism wasn’t man enough to take the strain. You see, that’s what happens when I leave him on his own. By contrast, ‘version two’ was simple and effective: much more like Les: a length of 2mm box section welded to the inner A-post at one end and the inner B-post at the other. Rock solid and it didn’t get in the way of the door. Perfect.

The surgery could now begin. Using a 1mm-thick cutting disc (what a big of kit), Les first hacked out the rotten passenger floorpan in two main pieces – one either side of the monocoque’s central cross member – to give himself access to both sides of the sill. It’s almost impossible to describe in detail how Les went about removing the three main sill components and the castle rail. And even if it were possible, it would be such a dull read that you might well lose the will to live. So, what follows are simply the edited highlights of a long and tiring day – well, for Les at least.

In get access to the front end of the outer sill and the flat, turned-up end plate of the castle rail, Les whipped off the front wing. It’s bolted on (secured in our case) but came away easily. This was followed unexpectantly by the splash panel, which fell off together with the part of the footwell bulkhead it was attached to. By the way, a lot of the panel names I use are ones that Les and I have made up – they may not be their official titles.

Lots of work is needed to repair the footwell bulkhead.

New shells reflect the build accuracy of the era in which MGBs were originally designed and manufactured. So if you buy one, expect to have to fettle it a bit to make the stuff from your old car fit. All component panels are now made from zinc-coated steel (not available during original production) and its thickness varies from 1.2mm to 3mm.

The first step in the build process is to produce separate front and rear sub-assemblies, which are then united on the main assembly jig. Each half is located on critical alignment points for the chassis and suspension, before the components that join the two halves together, including the floors and sills, are spot-welded in position. The spot-welded underframe is then transposed to a body-refurbishment jig where all the CO2 welding is completed. It then moves to the ‘Top Dress Area’ where the trim and facia components are added and the bolt-on bits are fitted.

Finally, a small team checks the panel gaps and alignment and sorts out any minor imperfections before the shell is thoroughly checked and signed off. All finished bodyshells are electrostatically painted through full immersion in a tank of electrically charged paint. This offers the same level of corrosion resistance found on modern vehicles. One word of warning: you can’t weld through it so you’ll have to sand the paint off the relevant areas first.

 depending on the size of an MGB. The book, plus a CD-ROM of complete photographs of the project, will be available exclusively from www.markevans.co.uk from November 1 onwards. Orders can be taken by phone on 0800 1199050.