

Rufus - Bonnet Modifications:

Introduction:

Stored away in my bottom garage I had the remains of an NG TD that I purchased from NG cars, amongst the remains was a new four piece bonnet. I have never liked the 'Butterfly' style bonnet that is fitted to a TA and had visions of cutting-and-shutting the TD bonnet to fit Rufus. Unfortunately the bonnet has louvres in places that prevented altering the bonnet to fit. I mention this to help other TA builders/restorers who might have similar ideas. Deciding to modify the TA's original bonnet the first job was to modify the radiator fitment and radiator cowl.

Radiator and cowl:

The radiator installation was a bodge. I had a very good Austin/Morris Land-Crab radiator for which I made up new brackets out of flat steel plate. It was such a good fit that I think that the TA chassis must have been designed around that radiator? The build instructions that I obtained don't mention the source of the radiator although they do suggest fitting using the original Austin / Morris 1800 fixings. ***WAS THERE A SEPARATE LIST OF NON MGB PARTS REQUIRED?***



Original setup, not the best of installations or fixings.

Measuring the bonnet length gave me the distance of the radiator cowl from the body scuttle; to this I added an extra 6mm to give 3mm clearance at front and rear.

The radiator cowl was a relatively easy fit onto the new brackets. There was a 3mm gap on each side between the radiator cowl and the flat plate and this gap will be taken up with 3mm thick self adhesive solid rubber strip during final assembly. To allow some adjustment for a good bonnet fit I slotted the holes in the cowl which allows the cowl to move forward and back.



Trial fit with the Land-Crab radiator and new brackets.

Bonnet modifications:

With the bulkhead arrangement and the trial fitment of the dummy radiator cowl finalised I turned my attention to the bonnet. I decided to do away with the butterfly bonnet** and have just a single hinge along the top two pieces and fix the side panels in position separately.

Note.

*** The bonnet had been assembled without adequate precautions against corrosion; remedial action required fully dismantling so I decided to modify it in the process.*

Always one for the easy option I removed the hinge pins to get four separate bonnet sections that could be more easily worked. Removal was by tapping them with a pin punch at one end so that the pin protruded from the other end sufficient to enable a pair of old mole grips to get a good grip. The mole grips were then tapped with a rubber mallet until the pins were out.



Hinge pins removed.

Normally drilling out the pop rivets is an easy job but unfortunately, in his wisdom, the original builder had filled the holes in the pop rivets with body filler. The rivets were removed by viciously prodding the centre of the pop rivets with a pointy tool to remove some of the filler and get a location guide for the drill bit. The whole job of removing 84 rivets took over two hours.

For the new centre hinge I purchased an un-drilled stainless steel hinge with a 4.4mm diameter stainless pin. When opened the hinge was 42" long and 2" wide. Luckily I still had the drilling jig I made when I made the bonnet on Kermit my Aero Merlin.

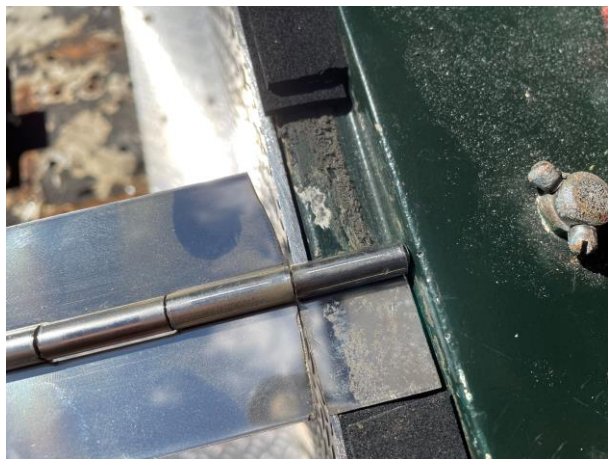
As the original hinges were only one inch wide when opened this meant that the rivet holes were very close to the edge of the panel, they were even closer after I trimmed 2mm off the sides of each panel to cater for the larger diameter hinge pin and to make the bonnet a better fit. The solution was to drill new securing holes in a totally different place and disguise the old surplus holes with some aluminium moulding. At this stage I decided to replace the pop rivets with A2 stainless steel M4 fixings, which will be either cheese or button head, I haven't decided which yet, although the photo shows the use of button heads.

Drilling the centre hinge:

The first thing to remember is that you need a centre hinge pin that is as long as the bonnet, be very careful not to accidentally cut it short, if you do you will have to buy a new hinge!

The second thing to remember is that the hinge itself needs to be the length of the bonnet minus the two areas that are supported by the radiator cowl and cockpit scuttle. I adopted the following procedure.

1. Offering up various thicknesses of self adhesive rubber strip against the radiator cowl and bulkhead revealed that 6mm thick rubber gave the best fit to make the panel sit flush with the cockpit bulkhead and 8mm thick at the radiator cowl. With some suitable rubber off-cuts secured I offered up the two top bonnet panels and marked on them with a felt tip pen where the hinges had to be finished to length (**BUT NOT THE HINGE PIN**).
2. Measuring the aperture between the edges of the radiator cowl and the bulkhead scuttle revealed a centre hinge pin length of 36-3/4" this is the same length as the bonnet.
3. With the centre hinge pin knocked in 30mm I shaped the hinge at one end, cutting it at a slight angle.
4. After knocking the hinge pin in from the other side I cut the other end of the hinge to a length of 34-3/4", again at a slight angle.
5. Two small pieces of hinge were then cut to act as the front and rear pivots.



Rear fixing.



Front fixing.



Mock up of hinge assembly. Details of aluminium angle hinge strengtheners (before final fettling).

6. The centre hinge was then laid in position.
7. The two bonnet top sections were then offered up against the hinge and I decided to take a 2mm strip off each side to allow for the thicker hinge pin and give a better fit at the sides.
8. After clamping a steel strip 2mm in from the edge of the bonnet centre (photo) I filed the aluminium flush to the edge of the steel strip (adjusting the clamp positions as I moved along) which gave a nice straight edge.



One way to get a nice straight edge.

1. The original rivet holes were now very close to the edge of the bonnet so I could not use those holes to secure the bonnet to the new hinge.
2. The hinge was then laid next to the two bonnet tops and positioned for marking the securing holes so they were midway between the original holes
3. Once I had decided on a hinge hole spacing I used a simple jig to drill the holes the correct distance from the hinge pin.

Luckily I had an amount of aluminium moulding and 1" x 1/8" equal angle (to strengthen the hinge) left over from other projects and managed to retrieve enough to sort out the whole bonnet apart from the lower edges of both side panels (which probably won't need any moulding). The photos should explain all. I must admit that the 1" x 1/16" aluminium strip used to cover the excess holes next to the hinge looks a bit odd and sticks out like a pimple on a bulldogs gonads, I am trying to imagine what it would look like painted cream, if I'm not happy with it when it's painted I'll remake the top two bonnet sections.



Ditto.



Strengthening aluminium moulding on the side of the bonnet.



Bonnet trial fitted.

The bonnet will be secured to the side panels by short leather straps.

Bonnet side panels:

As they were originally hinged to the bonnet the side panels had a row of hinge holes along each top edge. To disguise them I fitted some aluminium moulding which also strengthened the top edge and acted as a support for the centre bonnet panels. The photos should be self explanatory.



Old and new holes in the side panel.



Side panel mouldings to disguise holes.



Ditto.

The bottom of the side panels had been held down with spring fasteners the fastenings for which had left surplus holes in the bonnet side panels. I will disguise the holes with 'Tinkers Patches' when I carry out the final pre-paint fettling. (Please see the separate article on Tinkers Patches).

As of yet I have not made a final decision on how the side panels will be secured but it will most likely be by Dzus fasteners.

Summary:

The bonnet is now stored away pending restoration, smoothing of all edges and a strip and repaint. I tend to save old brake fluid and use it as a paint stripper, plus I have a nylon wheel cup brush that is impregnated with abrasive and cleans aluminium up a treat, this combined with some Duralac Anti Corrosive Jointing Compound to insulate the stainless steel fastenings from the aluminium bonnet panels should ensure a long

lasting job. I managed to remove the dent in the left hand side top section by laying it on a flat wooden surface and rubbing the dent with a suitably shaped, and oiled, panel beaters dolly