



Image 1

RV8 rear light repair

After a recent accident, RV8 owner Aidan Pavey in Australia had a broken tail light. Luckily a replacement was found and the car was repaired under an insurance claim. He still had the damaged light and as they are in short supply he thought that he might try and repair it. This is what he discovered on his repair journey.

The photo alongside (Image 1) shows the damage to the tail light. Some parts were dislodged however I was able to collect all of them. On inspection I found that some of the parts needed to be fitted from inside the light. There was also a reflector inside the light that had become dislodged, therefore I needed to take the light apart.

The lens of the light is held in place by 16 pins around the outer edge. During the assembly process the pins are heated and mushroomed over to secure in place. The photo below (Image 2) shows the bottom back of the light with some of the pins. In this

case many of the pins were broken during the impact.



Image 2

You can see here how the ends of the pins are mushroomed over.

Dismantling the lamp unit

To get the lens off the main body of the light, I needed to remove the mushroom ends while trying to retain as much of the pin as possible. I used a Dremel with a bur tip. Not all the pins survived but I was able to disassemble the light. The photo on the following page (Image 4) shows the individual parts of the light.

I initially tried gluing the broken parts together with super glue. However this proved to be problematic because the parts would not fit together neatly and the cracks were highly visible. On closer inspection I found the parts didn't fit together well. This is because when the plastic breaks it tears and stretches, as a result the mating edges don't match. Therefore I needed to trim some of the pieces to get a better fit. Unfortunately this did leave some gaps.

I put the super glue aside and found that the better solution was plastic hobby glue (the best is extra thin liquid cement). I started the repair in stages building up bigger and bigger parts that would hold onto the lens. I found that the thin hobby cement was also good on repairing cracks as the capillary action took the cement in and it was almost invisible. Some of the joins didn't work as well as others due to residual super glue which I was unable to clean off. The parts were held in place with tape and left overnight to dry.

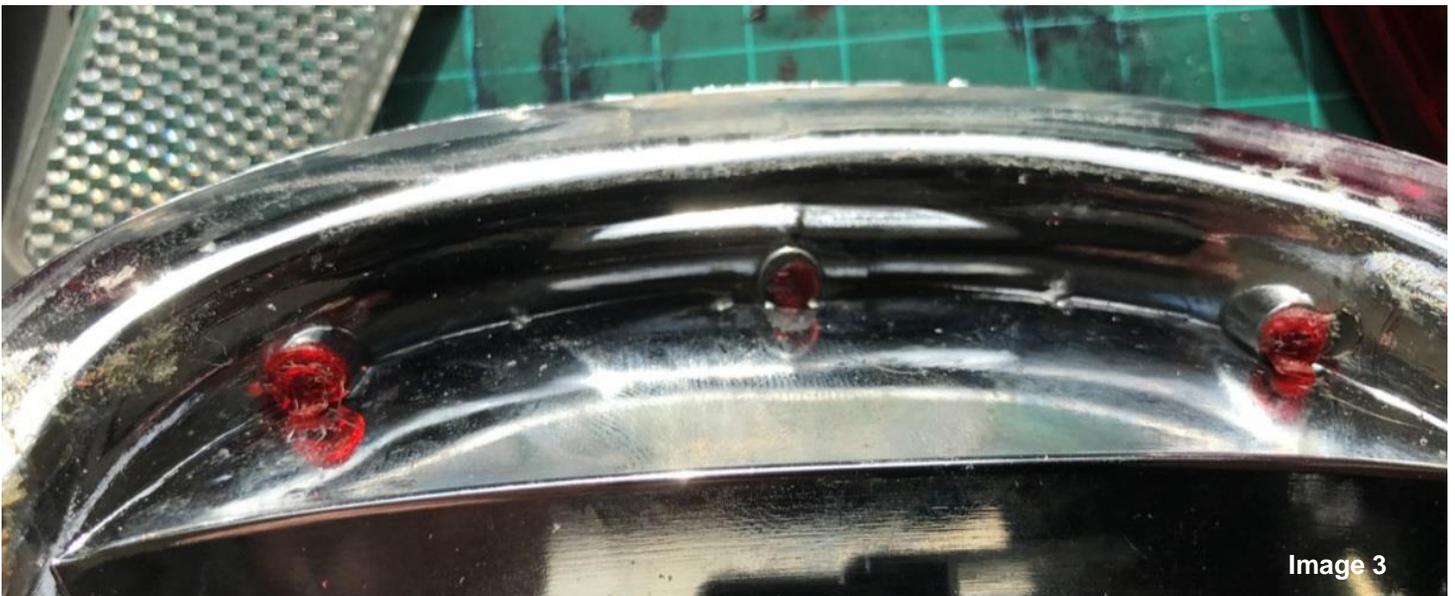


Image 3

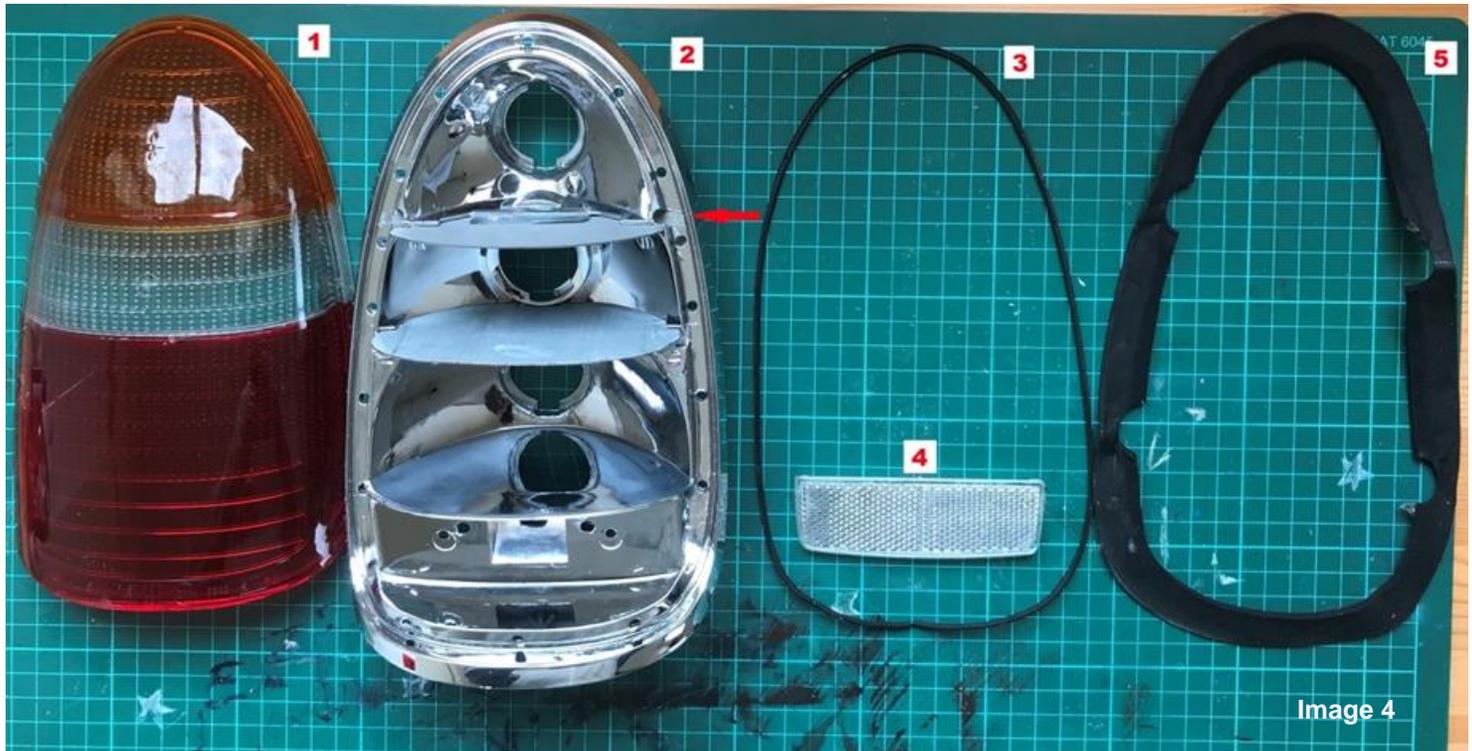


Image 4

Looking at the individual parts of the lamp unit

1. The lens, moulded in one part.
2. The base or backing has a reflective surface. There are two metal separating plates at the top and a plastic one at the bottom.
3. The lens seal. This goes in the groove at the base (see arrow).
4. The reflector that goes in the bottom section of the light.
5. The seal that goes on the back of the base (this is held in place with double sided tape) and mates with the car.

broken pins (the red ones in Image 3) and dissolved them in a small amount of liquid cement. I now had a red paste which I placed over the cracks and gaps. It looked like little weld marks (Image 7). I left this to dry for a few days to make sure it was as hard as the original plastic.

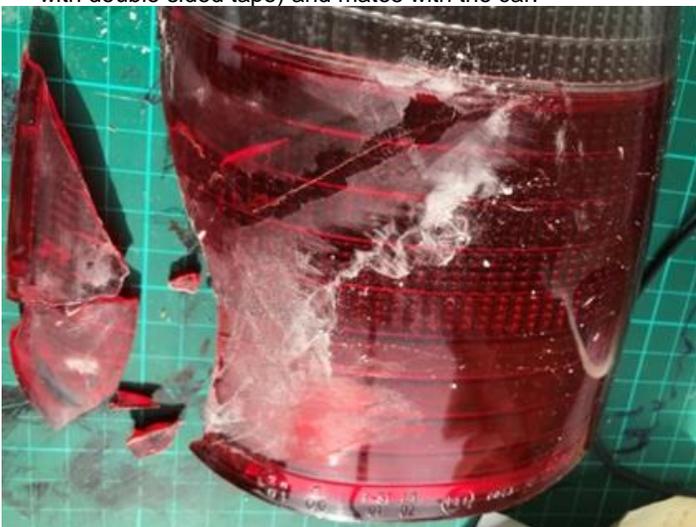


Image 5

Progress with the lens repair

Images 5 and 6 are the repairs in progress. Image 5 shows how I glued all the small parts together and then fitted the one repaired piece to the lens. The lens was then in one piece, however there were gaps where I had trimmed the edges. To repair this I took the



Image 6



Image 7

Next steps

The next step was wet sanding with 800, 1000, 1500, 2000 and 3000 grit paper. I followed this up with polishing compound until I was satisfied with the look. Below (Image 8) is the lens after polishing. Cracks are still visible but it was looking much better.



Image 8

Last step

The last step was re assembly. The first thing to go back was the reflector (please note in the photo - Image 9) I have the reflector upside down, I did correct this). As the pins on this were broken by the impact, I glued it back with silicone sealant (clear and water resistant type).



Image 9



Image 10

I then replaced the seal around the base (Image 10), holding it in place with little dabs of the silicone sealant. Most of the pins on the lens were broken off and there wasn't enough left to hold the lens in place so I decided to use the silicone sealant here as well. This went around the edge and the two halves were held in place with rubber bands and left for a few days to dry. After the silicone cured I used a soldering iron to mushroom over the few pins that were long enough.

Finished product

Here is the finished product. The photo is slightly deceptive as you can still see the cracks when you are up close. It is not a concours lamp unit, however a very serviceable one.



Image 11