"Old Rube restoration part 10"

This document was written by Paul Naylor in autumn 2025 and is the eighth article in a restoration project. The articles were published more or less simultaneously in the Frimley and Ascot Locomotive Society newsletter.

A bit of waiting time now pending the wheel tyre arrival, so I can return to the springing arrangements for the rear two axles. These are compensated in that both axles are sprung from one beam on either side of the loco. These beams themselves need to fit in a confined space between wheel and frame and frame and ashpan, so there is not a lot of room to allow for thick metal or protruding fastenings. Last time on this topic, I had loosened the countersunk screws on one side (the right-hand side) and could see how to remove it. That was an easy job then to remove, even though there was only a couple of threads of what look like 2BA countersunk screws and some obviously added-after-assembly weld holding the axle box pad mount in place on one beam. They were originally designed and made for seven screws each side, but there were only four left each side on this beam.

The other side had somewhat mangled screw heads visible, that eventually after much bashing came out: there were screws on both sides of the beam (two on one side, four on the other left). Again, after much more bashing, these came out and I could remove this beam in one piece. This is difficult to explain and hard to see on the photos (top one shows the place where the springs resided in the frame, bottom one the beams, spring mounts and springs), but the long and short of it is that the means of fixing is not satisfactory and I will have to re-engineer some of this to make it more robust, and potentially easier to remove for service, although it will never be possible to make it removeable with wheels and ashpan/boiler in place. Although it would be better to fix modified axle box pads to the beams with screws and remake the bottom spring mount to use better screws from both sides, lack of clearance will probably make this impossible. It rather looks like the axle box pads were just slotted in place and this proved unsatisfactory, resulting in use of a welder (however see later).

As an aside, it is interesting to see these bits and pieces as they have 'loco history' imprinted on them, with the addition of weld, broken and missing screws presumably arrived at 'in situ' to avoid stripping the loco to cure a fault. It is a bit like the use of a taper pin to hold a recalcitrant wheel in place, which was probably also applied without stripping the loco. In fact, I have a very vague

memory of the loco being taken out of service one day decades ago when a front wheel shifted on its axle ‘crossing’ the connecting rod, but it re-appeared quite quickly after this working again! Hopefully such difficulties are only going to be evident on highly stressed bits, such as the bits I am working on now.

I have now cleaned up these suspension parts and investigated them more. The two beams on each side were silver soldered onto the axle box pads, so assembly required the central spring mount at the bottom to be removeable. It looks as though the silver solder had not penetrated some of the joints, only left a dubious looking fillet in the inside corner. Two had parted company completely and one had been held in place with that small weld in one corner. I cleaned them all up, got rid of all the oil and debris with heat, degreaser and thinners to give new solder a chance. ‘455’ silver solder and plenty of flux allowed the solder to flow properly and the new joints look strong enough for use.

Many of the screw holes in the central spring mount were full of broken off screws, so I drilled all these out and retapped the holes… they were 2BA, and, as it ‘appens, I have a large number of 2BA countersunk screws from some acquisition years ago. The holes are a little close to the edge of the metalwork and there is thread witness on the surface here and there, and the countersinks ‘spill over’ the edge of the beams, but a full complement of screws will suffice. I will probably eventually assemble them with copper grease as they are very close to the ashpan and will be prone to drying out and rusting. I elected to paint these components with spray etch primer and satin black paint as they are in a confined space and will rub as they move, rather than the thicker brush painted ‘combi-colour’. The photo shows the repaired beams with central spring mount temporarily in place. You can see the threads near the surface, especially on the lower one, unsightly but not seen when assembled, and there is enough thread contact for strength. The hole in the centre of the axle box pads is for oiling the axle box through the pad: they mate with holes in the axle boxes. Reassembly will have to wait until I have cleaned and repainted the chassis.

The next job whilst waiting for a tyre is to start on the rear suspension. I need to strip this to paint the chassis as before, although the axle box pads this time use much smaller screws (and they are all there) and I might just chicken out of trying to remove these. This assembly is more involved with more parts (and less apparently wrong with it): here are the photos I took in situ to remind me where it all goes! In terms of further stripping, I intend to leave the cylinders, crossheads, guides and valve gear in place and, where required, paint around the fixings. None of the pivots in the valve gear or crossheads look excessively worn, although I have been contemplating making a crosshead water pump for it if I can work out mounting and drive. I am not overly keen on water for a

boiler only coming from two injectors (and a hand pump, with low impact on a boiler this size). After that, there is only the bogie and the intention to add side control. More thoughts and work next time