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“Old Rube restoration part 17”

This document was written by Paul Naylor in winter 2025/26 and is the seventeenth article in a restoration project. The articles were published more or less simultaneously in the Frimley and Ascot Locomotive Society newsletter.

Now that the connecting rods are all back on and turning freely, I can add the rest of the bits that I know really need to be fitted prior to turning it all the right way up. When I started, one of the first bits to come off was the brake gear in one piece. I ‘did up’ the brake air actuation cylinders when I removed them, and so these were an easy bolt on job starting at the rear of the chassis. I thought I would deal with all of the brake gear at this stage as access is better around the cylinders without guide bars.

The main brake linkage, including brake levers, rods and shoes, came off in one go by removing the hanger nuts, and this lot remained rusty and seized, so I need to work my way through it now. I did not do it before, because I would probably forget how it came apart, but now I can add renovated bits back to the chassis as I go.

Starting with the brake hangers and blocks, and the connecting link for the rearmost axle, I dismantled the assemblage and took stock. Apart from cleaning rust off and painting it all, there were two main issues: the pins at the end of the connecting link came out with the hanger retaining nuts. I thought they were threaded, but in fact they seemed to be just pressed in with about 5mm of interference and the brake blocks had worn to mimic the worn wheel treads. The photo right shows the cleaned up (ie degreased and wire brushed) bits. The hanger pivots are loose at each end of the cross link. This also has one too many holes for linkage pins and a little corroded, but serviceable and out of sight. The amount of wear matching the old wheel



treads on the cast iron brake block is shown in the other photo (left)...it is the same for all brake blocks, there being three wheelsets braked with the unflanged wheelset not braked, perhaps because there is very little clearance for a hanger between this wheelset and the driving set. Although it is not desperately clear, you can see the two levels in the block worn in contact with the worn and unworn parts of the wheel.

The pivot pins were silver soldered into their holes as an easy fix. I ‘ummed and aahed’ about the brake blocks. The purist way would be something like bolting them to the lathe faceplate at the desired radius and ‘boring’ them out or similar and I did contemplate this. Out of curiosity though I tried one on my linisher (on the end pulley), using the most worn bit as a guide to radius. I ended up doing both this way as it was quite quick and easy

and the blocks did not rock or have large uncontacting areas when placed on the wheels. Remembering that they will wear in to the wheel, I thought this was adequate and will do them all like this. Paint came next (etch primer and spray satin black here). Having done one of the three sets, I moved to the driving wheel set: very similar except that one cast iron brake block had been replaced with a steel machined one, presumably a long time ago as it



was as worn as the rest: it also has a machined step in the outer edge for some reason (maybe a machining error). This set also presented the conundrum for the week. The brake linkage, being balanced so that equal force is applied to each wheel, has to avoid the 'earlier' brake stretchers (the bottom bit in the above photo) and this happens with welded up sections that the stretcher passes through. The driving set has such a section (see photo left: uncleaned) but it is not large enough to remove the stretcher for this wheel

set. The ends have bits welded on for the hanger pivot pins that are larger than the slot in the link section. Looking at the loco, this stretcher cannot be the same as the others as the axle spring beams get in the way, so obviously this is to avoid these. I will have to arrange something to allow this to be dismantled methinks... maybe make a bolted-on bit in the link section. The brake arrangements have many clevis joints, and the good news is that these are all commercial components with split-pinned pins as pivots. They all look in reasonable condition (if dirty) so that should speed the work up a bit. To make up for it, the longer links like the above photo are quite crudely welded and tidying them up a bit will be good.



I cut the link as planned to get this apart and cleaned it all up. This revealed a lot of 'running repairs' as the brake stretcher, under all the gunk, was bent. Both ends were welded on, one looked like done in a rush (!), bearing the marks of a good old wallop presumably from a derailment. A lot of the brake



linkage rods were also bent a little maybe from the same happening. Although I am making things straight and functional, I am not setting out to replace parts just for cosmetic reasons (apart from cylinder cladding!), these are part of 'patina' and loco history, repairs here were called for. The top photo is the misshaped stretcher (right hand end on photo) before and then after cutting the end off and rewelding it back in a better place. The shine is having skimmed it with an angle grinder... still to be painted etc. Note that in both photos, the brake hanger pin is missing from one end... yet to be fixed back in place. The bits and pieces like this stretcher were rust pitted and so, after cleaning, I resorted to 'rust converter' again prior to painting. Most of the clevises and their pins were still plated and so these will be left unpainted.

The pile of bits to be refitted look like this after painting. You can see the modified bypass section at the bottom: it has a bolted on 'hatch' to release the rod without the stretcher



now. This does not show the

clevis pins, most of which are commercial headed plain pins with a machined recess near the end for a clip to match the clevises. Two were replaced with bolts for no reason I can see, so I made up two more so they are all the same. Two are existing 'quick removal clips', but apart from one split pin at the brake cylinders end, the rest are 'E' clips from my handy box. After some referring to pre-disassembly photos and other fiddling, I eventually got it all rebuilt with appropriate travel on 'the system' to enable operation by the brake air cylinders. Experimental wheel rotation shows it all misses the connecting rods as they rotate: now it is back together, it is clear that the damage to the brake stretcher came about after a meeting with the adjacent connecting rod for some reason.

It is starting to look more complete now... note that although the side rods are fitted, the slide bars and main connecting rods are not, and that is the next task.