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“Old Rube restoration part 5”

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

Well, I have finally committed the new boiler. I had had fairly detailed email dialogue with a supplier that sounded like he knew what he was doing and the price was appropriate, but in the final analysis, I realised that he never replied to my emails without at least one nag, and in the end, I gave him a test...I asked him to nominate a day that I could visit to bring the old boiler and waited. No answer... so no contract. Suppliers note! I started again by asking a friend in the trade of making copper boilers who I might look at. He recommended two, so I emailed both the same message (with a rough size and other details and an idea of the sort of cost). One simply did not reply. What is the point in having a 'contact us' option on a website that invites an email if you do not read it or act on it? And yes, I did check it had been sent and replies were not in my spam etc. I was down to the last option... but fortunately he replied with a positive answer that has now led to me delivering the old boiler to him and placing a deposit for an 18-24 months journey. I will update in an article when the journey ends!

This means that I am lighter by the deposit (!) and the old boiler, and have more room in the workshop, so I have no excuse for not continuing the work on the chassis.

The first thing to do was to turn the chassis on its rails so that I could get at the right-hand side. This was easy with the crane and a sling and I now have space to get at recalcitrant bolts.

I used an impact wrench with an appropriate Allen key and since this side ideally would be left hand thread, I tried to turn one of the bolts clockwise... it turned but got harder. At least it moved, and after reversing the wrench and trying again showed that this side was right hand thread as well, and after finding this out, all of the bolts came off easily.

To release the side rod behind the cross head meant moving piston, and, as for the left side, this was stuck as well, so I repeated my actions here (valve cover off, cylinder end cover and plenty of penetrating oil). This side was more worryingly rusty though, looks like an imbalance in the oil pump for the cylinders: memo for later.



Fortunately, most of this was surface rust and after some careful scraping, oiling and 'urging' the whole lot moved again the other side. I think that the cylinder is OK, it was not pitted but I will have to remove the valve check out the valve seat, as this is hard to get at in situ. Interestingly, although I could not access the rear part of the cylinder, it runs freely and shows no signs of rust at that end (ie no stained penetrating oil dripping out, stiffness or other problems). Note that I removed both steam operated drain cocks as well to allow me to squirt oil into the

bores.



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Now that the cross head moved, it meant I could remove the side rod from this side as well. These are all roller bearings working on steel crankpins and look in good condition. The main crankpin with side rod and connecting rod is worn but not pitted, but I think I will leave that (both sides) and no doubt have a small 'clank'. The other pins are OK. I have taped up all of the bearings on the now-removed side and connecting rods to avoid the loss of any roller pins and labelled them: previous restorations of other things has taught me that whilst it looks obvious what they are and where they go when you remove them, you will have forgotten all of that when you re-assemble!

In the spirit of removal, I thought I had better tackle the ashpan. This is a fixed installation (when the boiler is in, it is there for ever) and needs to be thought out a little, as you cannot drop it to release the fire at the end of a run.



Part of this is devising the grate and its fitting too (the grate is missing from the box of bits), and depends on the size of the boiler opening. There was no hope of removing the four bolts holding it to the chassis as it is rusty and will need replacing. I drilled out the bolts therefore and released the ashpan whole so I have the key dimensions if I want to copy it. It was not quite as rusty as it looked in situ, but mild steel is not really

the stuff to make it from, so I will have to dust off the TIG welder I have and make it from stainless steel. Before I do, though, I need to sleep on an improved

design, ideally to enable the grate to be removed after a run, to provide adequate draught for the fire, and yet to avoid spilling hot ash (or cold for that matter) onto running parts of the engine. The rear axle, that runs in the tunnel in the ashpan, is caked in oily ash, as are all surfaces at this end of the engine. The design does not allow much change as the big bits of the engine in the way are fixed (axle, compensated brake gear etc), but improvement seems to be called for.



The last job for this update is a refurbishment of the drain cocks. These are reasonably substantial steam operated cocks that were completely gummed up. I had to disassemble them obviously, and I could see no way to remove the piston from the cylinder end of the cock (without applying 100psi air and standing back). In the end, I speculated on the design and drilled a small hole in the requisite end so I could drift the piston out. This worked fine, and after cleaning them up and replacing the two 'O' rings on the pistons, they seemed to be acceptable.

The small hole in the end was enlarged to M4 after I could see it did not compromise anything and a stainless bolt used to seal it (and for future unjamming). These are visible in the upper pair: the photo shows two rebuild and two waiting their turn

