

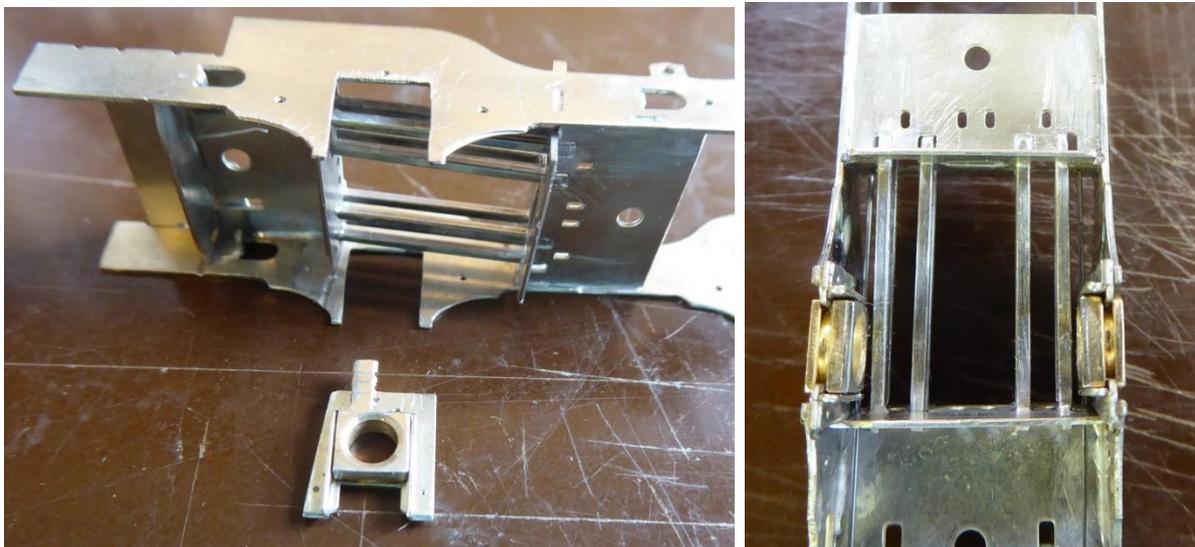
## ‘S&DJR Avonside 0-4-4T No.31 – some Odd Details’.

Steve Duckworth

This second contribution for ‘Virtual Missenden’ is a rather diverse collection of suggestions and ideas that you may find variously useful, or of no interest at all! I hope you will find something of use here....

### Inside motion and CSB suspension – High Level Kits’ ‘Spacesaver’ bearings

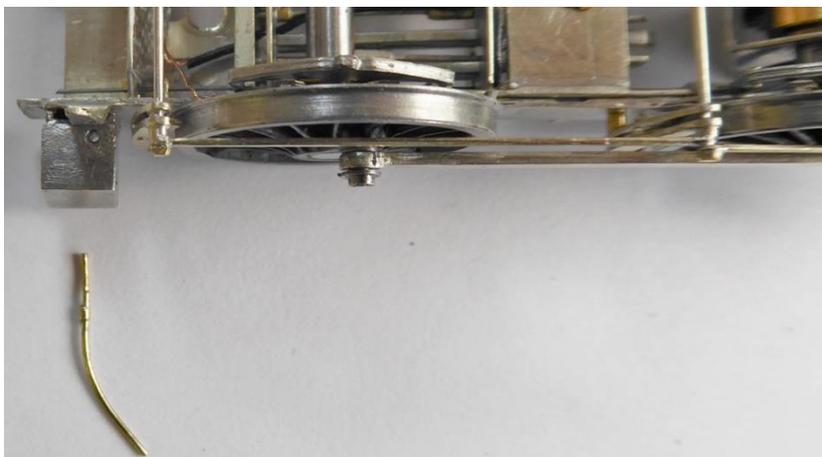
I diverged from the Rumney Models instructions on building their chassis for No. 31, partly because it appeared I would have to sacrifice part of the slidebar assembly to give clearance. This seemed a great shame, as the kit had provided full slide bars in the first place. Having fitted other locos with High Level Kits’ slimline ‘Spacesaver’ bearings and guides, I explored their use and duly found I could keep the full complement of kit slidebars, provided I set them slightly inboard of their correct positions; more-so for the outer pair, and less-so for the inner pair. I did have to chamfer the front edges of the guides, to clear the angled cylinder-rear kit spacer, as seen here;



There is space for a believable slidebar pair and clearance for the Spacesaver bearings and guides.

### Removable sandpipes

I have never liked fixing sandpipes in place if they then impede the removal of wheelsets for any reason. In some cases they can be fixed to a brake assembly which is sprung into place in holes in the frames, but not in this case. I have therefore experimented with an interference fit, into the cast sandboxes, having introduced a kink into each sandpipe. So far it works, but might need tweaking after multiple removals, though that should not be required, after construction and painting.



## Double brake hangers, removable brake rigging, ashpan detail

These hangers are a feature on many older loco designs, and worth replicating. The JM kit for the Avonside contained single hangers, so I soldered the four of them to spare etched brass fret from the kit, and drilled/filed up duplicates before assembly.



The brake gear is assembled on 0.6mm NS wire, which is both robust enough and springy enough to allow the brake gear to be sprung out of holes in the chassis. Short slices of brass tube are fitted to the 0.7mm brass wire of the hangers, to maintain a constant spacing away from the frame.

This underside view also illustrates the screw-fitted keeper plate, to which are attached the dummy leaf springs under the axleboxes. Removal of this plate, and withdrawal of the CSB suspension wires running through the tags above the bearings, allows the wheelsets to be dropped from the frames easily – once those removable sandpipes have been eased sideways or else removed fully! In the original kit design, the ashpan was attached to the same keeper plate, but I preferred to separate it and solder it to the chassis, before packing it with lead.

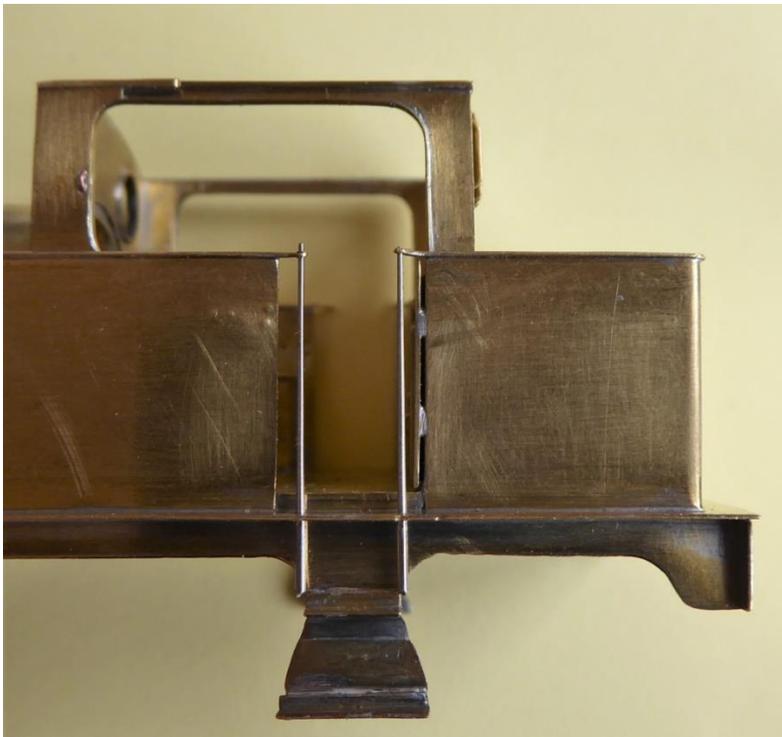
## Buffer detailing

I prefer the turned buffers that are available, over whitemetal castings, especially when sprung buffers are desired (always, for me). Their only disadvantage, to my eyes, is the lack of bolt detail, which I find very evident when buffer beams carry so much other detail. Therefore I always drill four 0.4mm holes on the base of a turned buffer, and solder in 0.3mm brass wire 'bolts'. This Avonside loco also featured the wooden spacer blocks which were fitted to locos to give the correct buffer separation when screw couplings were employed. This required me to solder the pre-drilled buffers to slabs of whitemetal (from old kit tender sides, I think?), before re-drilling through the latter, and soldering the 'bolts' in using 100deg solder. Finally the 'wooden' blocks were rounded off at the corners, per photographs.



### **Cab entrance stanchions, tapered**

The tapering of these features always stands out in photographs, but I confess I was nearly lazy and intended to fit plain 0.45 NS wire cab stanchions, then decided to go the extra distance. Four over-lengths of said wire were mounted in the craft drill and tapered against a selection of progressively finer files and emery paper. Mounted on the broach are some of the brass tube 'ferrules' cut to fit the bottom of the stanchions. I did not do the same at the tapered upper ends; careful fettling of the soldered joint gives sufficient illusion of the finer ferrules there. The tapered stanchions were pushed home from below, and cut to length using a cutting disc (careful!) after soldering in place.



The 'iffy' soldering of those cab steps was attended to after seeing the above photo.

### **A cab glazing suggestion**

In my last loco commission build before retirement, I had been frustrated by an otherwise splendid tank loco kit which provided etched spectacles for the cab interior, but had instructions to solder these in place, *before* adding glazing strip – which I found rather '*cart-before-horse*'.

My solution, which I have used here, allows glazing to be added after both construction and painting, although at the cost of some loss of cab depth – perhaps most noticeable at the rear if there is a shelf for eg. oilcans above the coal bunker.

The method is copied from the late, much-missed David Jenkinson, who described it in his Wild Swan book on coach construction. Although largely aimed at 7mm and 10mm scale workers, the principle holds good in 4mm scale, I think.

The Avonside therefore has double-skin cab front and cab rear, the kit parts being soldered to brass stock to enable copies to be made, before assembling with three spacer pieces on each, creating a vertical slot for glazing each spectacle. The separate etched spectacles were duly soldered inside these double skins.

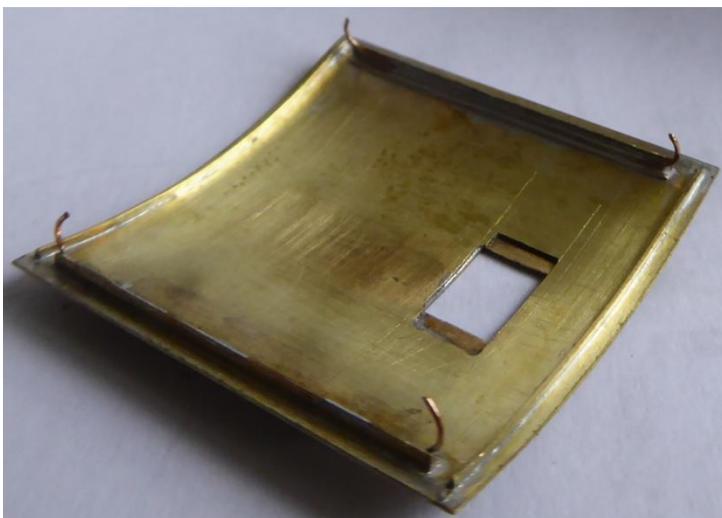
These S&D locos also displayed hefty support brackets front and rear, very different from the MR versions, and it was an interesting exercise to replicate the different styles of bracket; brass bar being used at the front, some etched wagon strapping and fine strip at the rear.



Also evident here are the sliding cab shutters, again a unique S&D feature, and witness to these 'suburban' 0-4-4T engines having a 'mainline' role on the S&D, over the Mendip heights, as well as across the windswept Somerset Levels on 'The Branch' to Highbridge and Burnham-on-Sea.

### **Detachable cab roof**

I found myself making a replacement cab roof, as the JM Models provision seemed to have the ventilator opening too far forward, according to photos. Drawings were deficient in this respect. The brass material used for the loco superstructure gave a rather 'heavy' roof. A thinner replacement was cut and shaped, with a revised shutter opening towards the rear - in line with the cab doorway, it now appears. A spring-fixing arrangement was created using two phosphor bronze wire lengths, soldered within strips of 'L' section brass along each cab side eaves.



The 'L' section aligns the cab roof, while the PB springs bear against the front and rear cab sheets. I also removed the beading strips which I had originally attached to the top of the front and rear sheets, and re-fitted them to the underside of the roof as seen, to lie immediately outside the cab front/rear. In this position, from normal viewing angles they now neatly hide any gap between the cab roof and the front/rear sheets, as demonstrated below.



### Boiler and tank-top fittings

The above photo neatly leads us into these detail fittings. The ejector and safety valve plumbing, with its various flanges and union nuts, all adds character to the loco. A brass split pin and an etched flange created the rather hefty ejector pipe bracket, with differing flanges characterising the cab front. The pipework flanking the safety valve enters the firebox cladding via a handrail knob with a flanged union, plus a spindle added on top; the latter will have a tiny handle added at the very end of detailing, along with fitting the whistle and its associated delicate pipework.

The massive base for the encased Ramsbottom safety valves is unusual, and rather an S&DJR 'signature' feature on the replacement boilers of various locos. I was initially wary of how to replicate this, until it struck me that my lifetime collection of redundant whitemetal domes included a couple that were of appropriate diameter. One of these was duly truncated, drilled to fit the mandrel on a pin chuck, and thus carefully fettled to remove casting seams, reduce the diameter, and provide a smooth turn-over at the top edge. A screw and nut then allowed the fitting to be carefully positioned, before running 100deg solder around the base and dressing back. The upper part of the safety valve is still on the 'To do' list.



On the tank tops, a beading strip was provided as an etched item, but its cross-section would have served as a 7mm scale item so it required lengthy and tedious sanding down and filing to give a 'D' cross section and appropriate size for 4mm scale. I was pleased to see that the hole for the water filler hatch, well forward, was in the position that photos showed, though Tom Lindsay had placed it on his drawing rather rearwards, towards the classic MR location. Rather nice whitemetal castings

were provided, clearly based on some official S&D, rather than MR, drawing. These only needed the addition of central 0.3mm brass wire 'knobs' and locking catches which utilised etched brass coach door 'T' handles, to complete them.

I had been puzzled by the rearward tank top holes, until a study of the drawing suggested that these must have been sandbox fillers. This was another S&D departure from MR practice, where the filler spout projected from the sandbox itself. Photos of S&D tank-tops are even rarer than those of MR ones, since the Avonsides and Vulcans were mostly withdrawn by the 1930s. However a works drawing of the similar Vulcan series suggested that a 12BA screw, with the slot filed off and a wire 'knob' added, would serve, as seen here.



This view also shows the junction of tank top and boiler cladding – again, different to strict MR practice. It appears that there was a narrow flanking strip against the boiler cladding, as well as the pair of trapezoidal riveted brackets; the latter seen here peeking above the ejector pipe run. The dome is still to be fettled; both it and the chimney are whitemetal castings, and will be left till later on before fitting, to avoid accidental damage.

Finally, the most recent progress has been in fitting the clack valves and pipework. This utilises some lovely nickel silver castings from Mike Waldron of EB Models, a serendipitous discovery on the back of Mike's enquiry to me, re tender drive trains. Although designed as LBSCR items, I was able to make a small modification to recreate the similar S&D fitting, all much neater than my attempted fabrications. I wish it were always that easy.....thanks Mike!



Also seen here are: some turned flanges from the stock box, which suited neatly as the tank-front anchors for the handrails; the ejector pipe entry to the smokebox, and front-end details. The cast valve chest casting is still loose fitted and needs further judicious filing to sit 100% right; a scored centre joint and four lifting knobs made from lace pins with much-reduced heads enliven it. The turned sandbox covers await adjacent lamp irons (no centre one on the S&D), and the holes adjacent to the front framing will house some miniscule rodding for the sandbox 'paddles'.

So that's a look at progress so far on No. 31, a number chosen because of two particularly good 1920s photographs, and because this was the number of the old family home at one stage! The SDJR is rather good for that sort of thing....

I hope that there are some ideas in there to inspire readers, either to emulate or diverge from, in pursuit of their own particular targets.

Thanks for reading, and enjoy the rest of your own 'Virtual Missenden'!

Steve Duckworth

September 2020