A 4mm Stretching Exercise: Modifying the Rumney Models MR 1P 0-4-4T chassis kit, to fit a JM Models SDJR Avonside 0-4-4T body.

By Steve Duckworth

If I had been tutoring at a ‘real’ Missenden weekend, I would probably have brought along my latest project to demonstrate various aspects of how I do things. This contribution is made in that spirit.

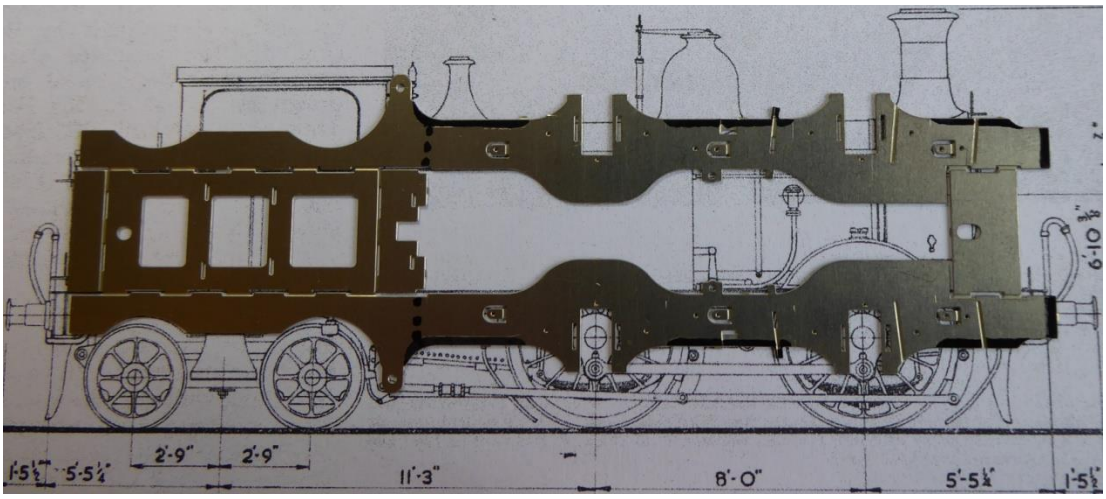
My modelling project (in P4) is the ‘Blue Period’ S&DJR at the time of the 1923 Grouping, so I require both the Avonside and Vulcan versions of the Company’s 0-4-4T for passenger traffic. Both were slightly smaller, lighter versions of the first MR Johnson 0-4-4T design, having the same wheelbases but with smaller superstructures, the Vulcans having slightly larger tanks and cabs than the earlier Avonsides. An abortive attempt to modify an early Craftsman MR 0-4-4T kit foundered amidst ‘nylon hornguides’ back in the 1980s, but the acquisition of a second-hand kit for the Avonside 0-4-4T version, from JM Models of Paulton, prompted a re-start a few years ago.

More recently, Peter Tarver and Justin Newitt have produced a splendid ‘state of the art’ chassis kit under the Rumney Models label, intended to go under the bodywork of the revised Craftsman MR 0-4-4T kit. This incorporates CSB springing and a sprung bogie in an ingenious fold-up chassis design with half-etched detail overlays. There are bonus features such as full slide bar and dummy internal motion, and a ‘keeper plate’ carrying dummy leaf springs with a detailed ashpan sub-assembly. Alternative etches for 00, EM and P4 gauges are provided.

I have become a confirmed CSB fan in recent years, after trying a ‘single-wire’ spring in my pair of 2-8-0 builds, a decade ago. Given the wheelbase and other similarities between the MR 0-4-4Ts and their S&D offspring, the Rumney chassis was clearly a ‘must have’, and I have been very impressed with its concept and build quality.

There is just one caveat for the absolute ‘scale fiend’; the chassis as currently available (Autumn 2020) is designed to fit the Craftsman kit. The latter, unfortunately, has a discrepancy in the wheelbase between the rear drivers and the leading bogie wheels, where the kit superstructure is ‘short’. The Rumney kit’s resultant amendment is absolutely fine for the its intended market, and Justin acknowledges that there may be future demand for a version to fit the forthcoming Bachmann MR 0-4-4T when it hits these shores – so a ‘full-scale’ Rumney chassis may well appear later.

However, the JM Models Avonside kit does not have the Craftsman shortcoming, so the Rumney chassis fret, overlaid on the Avonside drawing, illustrates the problem in my particular situation (Pl.1).



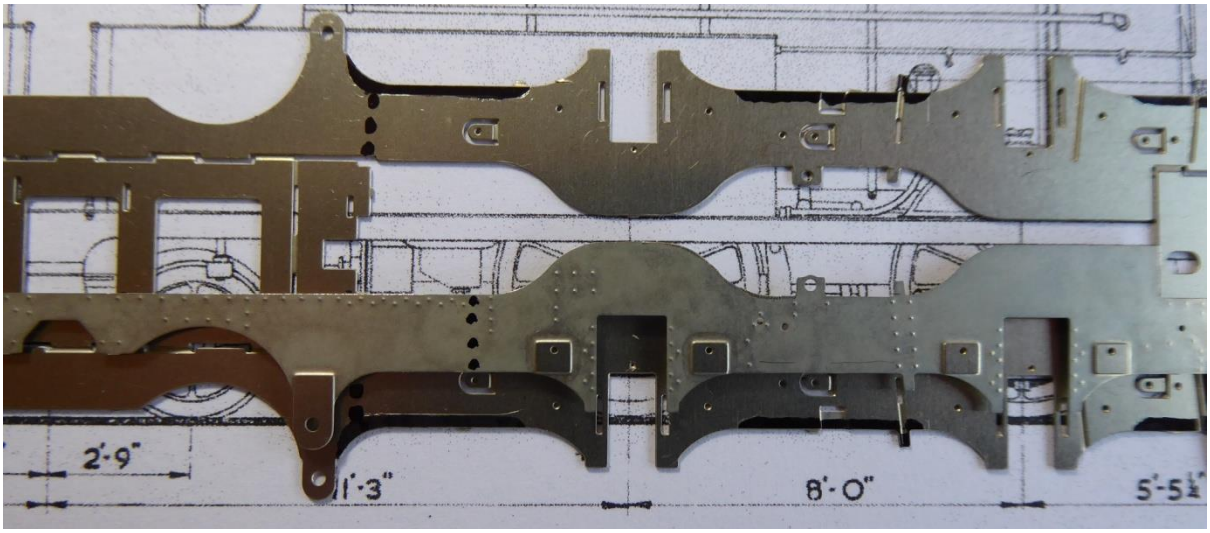
It can be seen how the shortened Rumney chassis ‘throws’ the brake weigh-shaft and bogie wheel ‘arches’ forwards by a significant amount. The bogie is thus moved forwards, placing the cab footsteps non-symmetrically to the rear, and so on.

A secondary consideration also arose, that I had not foreseen. The chassis’s bottom frame profile, while bang-on for the MR 0-4-4T, was deeper than shown on the Avonside drawing. This was a Tom Lindsay effort and seemed accurate in other major aspects; study of Avonside photos confirmed that the S&D engines did indeed have shallower frames. Since their general build was lighter, I should have foreseen this! Anyway, not a serious problem, and better than them being too shallow….. You will see that I have indicated in black marker, where the frame profile needed amendment. This also included shortening the front end, where MR and S&D dimensions differed.

After some thought, I decided that it would be worth the surgery on Rumney’s excellent fold-up chassis, to restore the ‘missing’ length. My idea was to use the kit’s frame overlay feature to enable a spliced joint on each frame half. Two critical pre-conditions were uppermost in mind:

1) The preservation of the important CSB fulcrum positioning.
2) Maintaining the etched accuracy of the original etch, in terms of the bearing positions.

Pl.1 shows a dotted marker line just forward of the brake weigh-shaft bracket location, where a break would be well clear of the rearmost CSB fulcrum. Before committing myself, I carefully studied the relationship of fold-up frame, overlay, and features on the Avonside drawing (Pl.2).

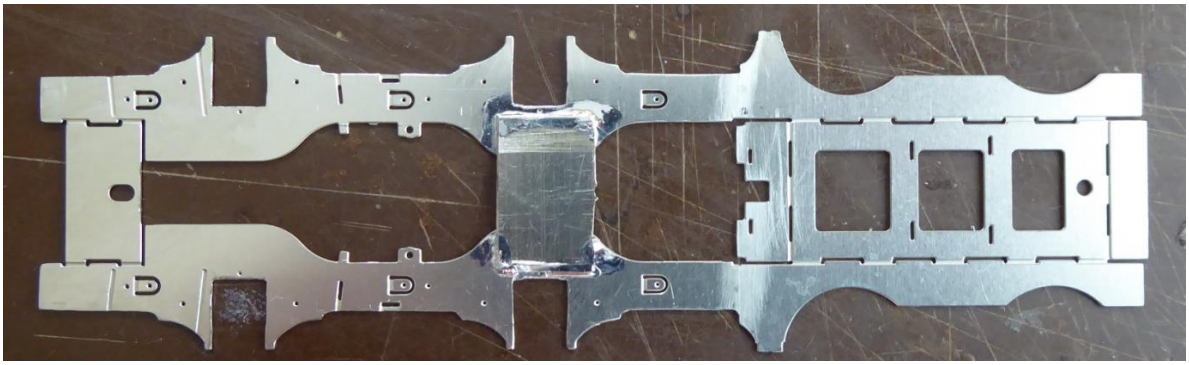


Positioned over the frames and drawing, the etched overlay demonstrated that there was an obvious location for a split, marked here, where the resultant gap after ‘stretching’ would be hidden behind the rear sandbox. This split would be sufficiently far from the proposed split in the fold-up frame unit, to create a strong ‘lapped’ joint between frames and overlays. It would not interfere with the adjacent CSB fulcrum point, other than needing to avoid soldering this ‘flat’, before bending it to shape.

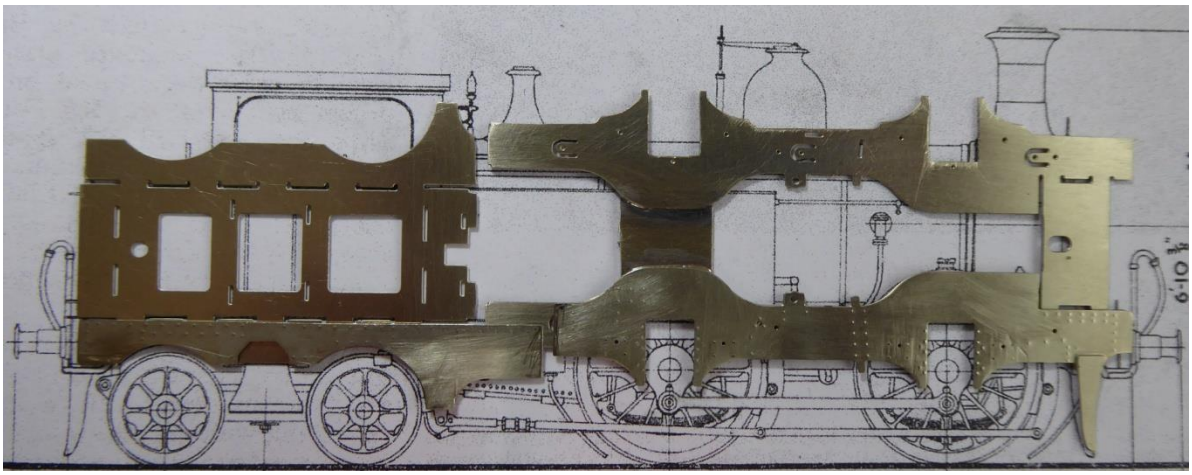
The raised rectangular features on the etched overlay, either side of the hornguide openings, deserve comment. There is no evidence of these in my collection of S&D Avonside photos. I have not studied similar MR 0-4-4T photos in detail, but I suspect the raised features originate with similar features delineated in GA drawings of those locos, published in the Wild Swan ‘MR Locomotives’ monograph. My interpretation of these is that they are features on the ‘inside’ face of the frames. I carefully ground and rubbed them back, flush to the frame face, anyway.

Having confirmed that the surgery was feasible, and could be disguised, the second pre-condition was achieved by soldering a substantial temporary brace across the frames at the rear hornguide

position, using 145deg solder, to be easily removable after re-assembly of the stretched chassis (Pl.3).

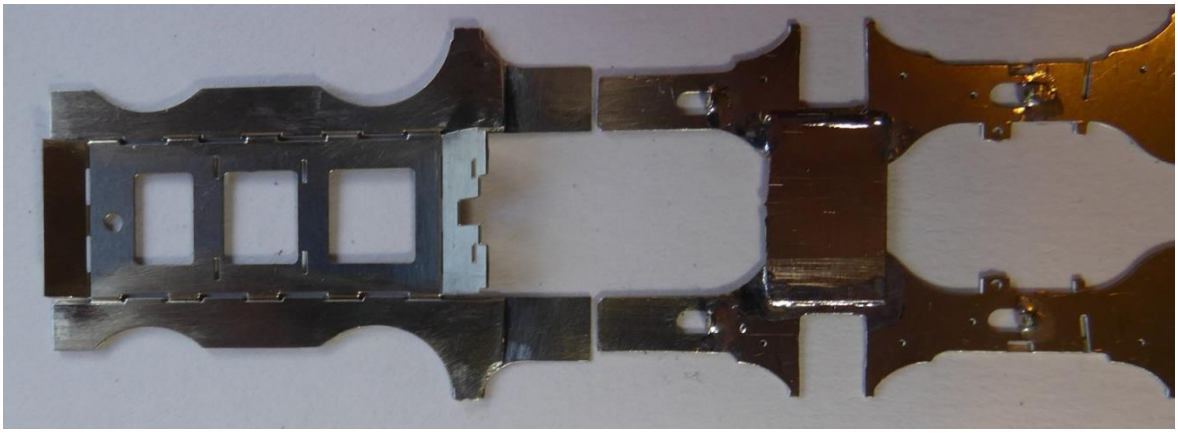


In addition to the temporary frame brace, Pl.3 shows that the lower frame profiles have been modified to suit the Avonside drawing, as well as removal of excess front length and the truncation of the brake weigh-shaft bracket, which was marginally incorrect for the S&D version and would be replaced in due course. I had also decided to replace the kit's perfectly good integral hornguide design by my favoured High Level Kits 'Spacesaver' bearing sets, which give some advantages with respect to the slidebar installation later. Therefore the hornguide openings have been widened here, to accept the HL version.

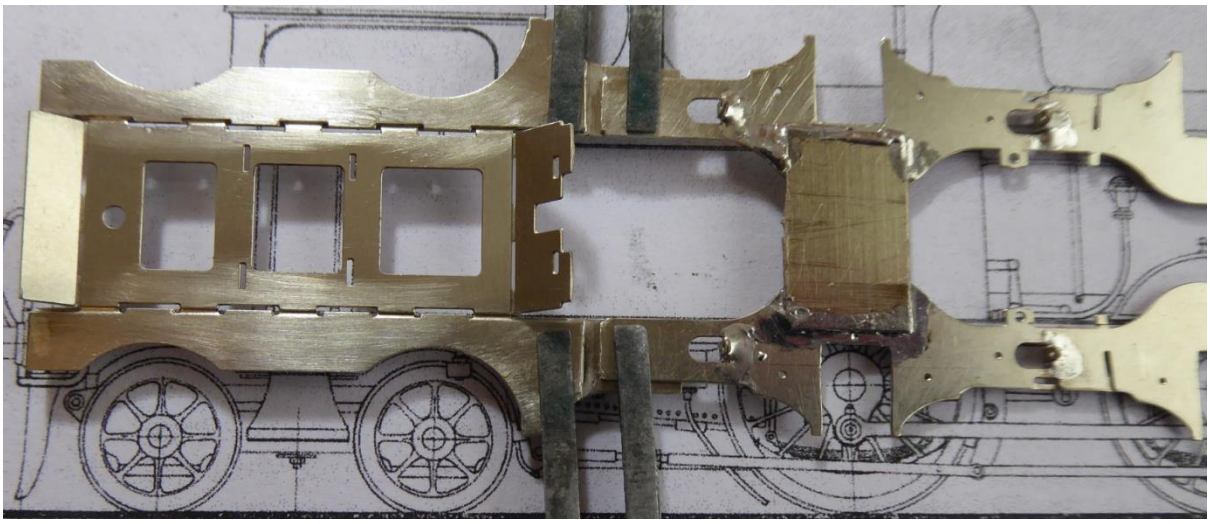


In Pl.4, above, the separated front and rear sections of the frames have been placed over the Avonside drawing, slightly offset to illustrate the corrected rear end 'fit' and the extent of the 'stretch', in relation to the rear sandbox location which will mask the surgery. The frame overlay sections are here untrimmed, since they would distort if filed down at this stage. Once they were soldered in place over the frames, the excess material was carefully ground back to match the revised profile of the frames underneath them.

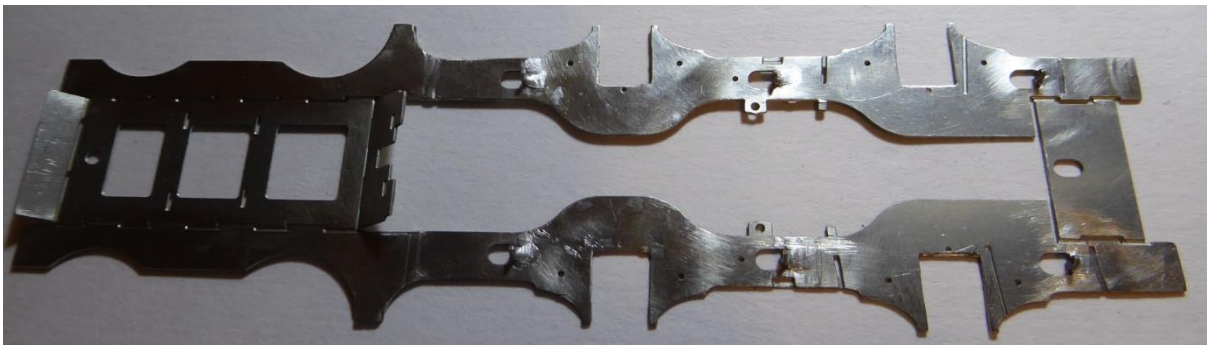
Having completed the 'cutting' aspect, the re-assembly started with soldering both of the rear half-etched frame overlays in place, taking great care to keep the top edge flush with the top of the underlying frame unit. After initial tack-soldering, the unit, still 'in the flat', was placed against the front frame unit to double-check that alignments were good (Pl.5).



Having completed the solder seams to fix the rear section overlays, the front and rear sections were assembled using Dinky grips, and adjusted over the drawing, to create the necessary ‘stretch’ between the two elements. Again, great care was taken to avoid introducing any twist at this stage (Pl.6).



Once the splice-joint soldering had been fully completed, the resultant gap on the inside face was filled with off-cuts from the frame etch. The excess depth of the rear frame overlay, forward of the brake shaft bracket, was filed away, and finally the temporary brace to the front half of the frames was unsoldered and removed, to allow the re-constituted frame to be folded up (Pl.7).



And, to conclude, here is the folded unit prior to soldering the various fold joints, nice and square, with the CSB suspension fulcrum ‘ears’ folded out and joints reinforced with solder. The front section overlays will then be fitted and their excess depth trimmed off, before the cylinder rear, motion

bracket, ‘keeper plate’ spacer and ashpan are added, all contributing to a nicely engineered, square basis for a smooth-running model. All I can say is – Excellent stuff, Pete Tarver and Justin at Rumney!

I hope the above sequence illustrates both the thought/design process involved in this example of kit surgery, as well as the actual execution of the concept. The same principles could be applied in the absence of either etched frame overlays and/or a fold-up chassis design - although the latter feature certainly makes it much easier to keep everything square throughout. Hopefully this contribution may encourage others who are unsure about how to tackle such a modification.

I should say I have no connection with Rumney Models or High Level Kits, other than as a very satisfied customer of both enterprises – thank goodness we have their superb products to keep us occupied in these strange and difficult times; so thank you gentlemen (and ‘teams’!), all.

Finally, if you are interested in seeing more on this build, I have created a separate Missenden contribution entitled ‘Detailing S&DJR Avonside 0-4-4T No.31 – some oddments’.

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

Steve Duckworth,

September 2020