

SER/SE&CR TIMBER TRUCKS - ASSEMBLY INSTRUCTIONS

Revised March 2010

PLEASE READ BEFORE STARTING THE KIT



INTRODUCTION

These kits of parts were developed in order to speed up my own model-making and I hope they will encourage other modellers of this neglected railway. The drawings are very carefully researched, and I try to make the kits as historically accurate as possible.

TO COMPLETE THE KIT, you will need 3'1" Mansell wheels (Slaters 'Furnace Railway' or equivalent), quick-set epoxy resin adhesive (eg. Araldite or Devcon), superglue, paint and transfers. A filler such as Milliput is useful. SER wagon transfers should become available from Fox Transfers during 2002. If you plan to model the wagon before about 1890, you may need safety chains, eyes and hooks, available from SER-KITS as an optional extra.

TOOLS NEEDED: medium and fine flat files and triangular files for cleaning up castings. A drill, which need only be a pin vice, or hand-drill, but preferably a 12V model drill. The following drills are useful: 2.5mm, 1.3mm, 0.9mm. (You can probably manage with 1/16" & 3/64" if you're stuck.) Sharp point for marking. Craft knife, small set square, sandpaper and sanding block.

HEALTH AND SAFETY: Like all white-metal castings the ones in this kit contain small amounts of lead. Keep them away from young children. Dispose carefully of all filings, drill swarf and metal dust. Do not eat while handling parts, and wash your hands thoroughly. So far as I know, the polyester resin poses no health risk, but avoid inhaling filing dust.

PACKING LIST

4 solebars with axleboxes	4 headstock castings	26SWG soft brass wire
8 buffer stocks	8 buffers	8 small springs
4 coupling hooks	8 10BA nuts	4 large springs & 4 split pins
6 large coupling links	2 medium coupling links	6 small links
2 cast resin floors	2 cast resin bolsters	2 12 BA nuts and bolts
4 stanchion castings	Length of fine chain	Fine brass wire (for s-hooks)
Wagon drawing	Instructions & history	Safety chains – optional extra

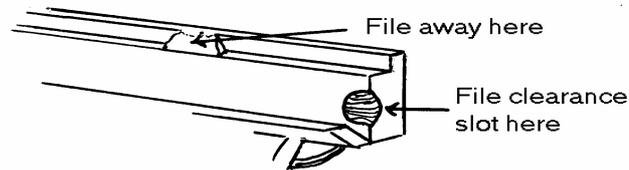
ASSEMBLY METHOD – OVERVIEW

The instructions are written for making a single wagon. If you're confident, it's quicker to assemble the pair simultaneously.

1. Clean up metal castings and add horsehooks
2. Assemble frame with wheels
3. Paint frame, floor, bolsters and buffer stocks
4. Assemble buffers and fit. Add couplings
5. Fit floor
6. Add detail

WHITE-METAL UNDERFRAME - PREPARATION

1. Before assembly, check the solebar castings against the drawing, and file or cut off excess metal ('flash') left over from casting. It was difficult to get the fine axlebox/spring detail to cast, and there are more casting ridges behind the W-irons than I would like. I run a coarse flat file over the back of the solebar casting, holding it in one hand so as not to spoil the front detail. Next I cut or scrape off the thin 'flash' with a craft knife. Since the springs on the original have only two leaves fixed into the spring hangers, I have had to make casting ridges on the inner ends of the springs. These ridges need carefully cutting away, and then the spring profile can be filed.
2. The remains of the casting sprue on the inside of the top side rail must also be filed off. This area is mainly hidden by the lower bolster (part of the resin interior casting.)
3. Run a medium file over the top edge and make sure it's straight. If not, the solebar can be gently bent. (Unlike some white metal, this kind is fairly pliable)
4. There is a slight danger that the buffers can foul the solebars when fully compressed (the prototype wagon being so narrow). To avoid this problem, it's worth filing a semicircle in the ends of the sole bars. Alternatively, open out after assembling frame using a finger-held 3.6mm (9/64" or No.28) drill.



5. Referring to the scale drawing, drill out the horse-hook (or hand-hold) holes in both solebars (underframe sides) with a 0.6mm (No 73) drill. There are 'dents' to guide you. NB: small drills bind easily in white metal and snap. Use a sharp drill, slow speed and remove frequently to clear swarf.
6. Bend small pieces of the soft 26 SWG wire to make square U-shaped horse-hooks and stick in place in the holes you've just drilled.
7. Check that the wheel bearings fit in the axlebox holes, and if necessary, clean out the holes. Gently scraping the inside is usually enough. If you are using Slater's wheelsets, the narrowness of the wagon means that the holes must be deepened if the axleboxes are not to splay out. you can use a 2.5mm (No 39) drill held in the fingers or a pin vice. Careful, there isn't much spare depth! You should aim for the 'brim' of the 'top hat' bearing to project about ½ mm from the casting. NB: because the clearances inside these early axleboxes are so small (they're to scale!) there are occasional pin holes in the casting. These can be filled with model filler after assembly.
8. The headstock (buffer beam) castings need much less cleaning up. At the same time, clean up the buffer stocks and check that they fit into the headstock holes.
9. If modelling the wagon as running before about 1890, it may need to be fitted with safety chains in addition to the normal couplings. (See later Historical Notes) Refer to the drawing, and drill at 7mm. on both sides of the coupling hook with a 0.9mm drill. The safety chain eyes will fit in these holes later on. NOTE – safety-chain packs are an optional extra.
10. If you plan to paint the parts before assembly you should fit the buffer stock to the headstocks at this point. NOTE that the buffers must be fitted before assembling the wagon frame– it is very fiddly to fit the nuts on the shank ends after assembly. The easiest approach is to assemble the

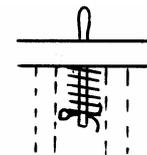
buffers off the wagon, and fit them after the wagon frame, but then the stocks will need painting separately or the buffer heads masking.

UNDERFRAME ASSEMBLY

1. I recommend making a simple jig. Cut a 67 x 44 mm. rectangle of 60 thou styrene sheet or 1,5mm card, and glue it to flat base of ply or MDF about 80 x 60 mm. (The base can be larger, it doesn't matter.
2. Put the bearings into the axlebox holes, and sandwich the wheelsets between the solebars. Turn the wagon upside down and place over the jig. Fit the headstocks over each end. They should be a nice snug fit, with the solebars as far apart as possible, so that the W-irons are vertical viewed from one end. If necessary file the headstock slots outwards a very little.
3. Check the length of the wagon – it should be 70mm (10 scale feet) over headstocks) File the ends of the solebars if necessary. When satisfied with the dry run...
4. PAINTING: Before glueing the solebars, this is a good point to wash and paint the metal parts and resin floor and bolster, particularly if you intend to spray. (If you spray later, you will need to do a lot of awkward masking.) Clean up the resin parts first, referring to the notes below. Paint the wheels too! – it's very difficult afterwards.
5. Glue the frame together, with a small amount of resin glue on each corner. Hold on the jig until the resin begins to set – about 5 minutes – then carefully prise the frame off the jig.
6. Place the wagon the correct way up on a sheet of glass and check that the wheels sit level. If not, gently press the offending corners down. I usually put a thin piece of ply onto the wagon frame, and sit a weight on it while the glue sets overnight.

BUFFERS AND DRAWGEAR

1. The self-contained buffers are now supplied ready-sprung and assembled. Best to disassemble for fitting.
2. Prop the wagon up on end, and glue two of the buffer stocks in place, checking that the buffers are perpendicular to the headstock when viewed from the side and from above.
3. Repeat for the other end of the wagon.
4. If you're a stickler for detail, little footsteps should be fitted on top of the buffer stocks. When available, these will be supplied as small etches. Otherwise, use a point to emboss a diagonal anti-slip grid on scrap 10 thou styrene sheet (not supplied). Then cut the steps approximately 3mm square and glue in place.
5. In turn, insert each coupling hook and thread one of the larger springs over it. Hold the spring in place with a split pin bent apart. The lengthwise floor 'timbers' are slightly skew, and as clearance is tight, the assembly works best if the split pin is inserted from the left, as in the diagram. You may prefer simply to glue the drawhook into the headstock without springing.



From above

THE RESIN FLOOR AND BOLSTER

1. If the floor has warped in storage (unusual), warm it in hot water or with a hair-dryer and then gently bend it between the fingers.
2. Occasionally pin-holes occur (air bubbles in the casting) and these can be filled with resin glue or filler.
3. File the edges until the floor is a snug fit in the wagon frame. Do not fix until buffers and drawhooks are in place.
4. When cleaning up the bolster casting, be careful not to remove the ring-bolt detail
5. Trim the casting sprue off the bottom of each bolster stanchion (upright) and glue into place in the holes in the bolster
6. Clean out the pivot holes with a 1.3 mm (No.55) drill, and check that the 12 BA bolt will fit easily.
7. I recommend washing and painting at this stage.

DETAILING

1. Fit the four safety-chain eyes, if using them. Cut the fine chain to fit, open out the links at each end and fit in place, hanging one of the cast hooks at the end of each chain.
2. To make 5-link (SER) coupling chain - clench together three of the smallest links, and clench a medium link on one end and a large link through the other. The large link is threaded into the hole in the coupling hook. To make SE&CR chain, join together 3 large links on each hook. Coupling hooks and links are scale size, and if you work to 'coarse' standards, you may need to replace them with larger, non-scale versions.
3. Cut 2 pieces of fine chain about 35-40mm long. Bend an S-hook about 3mm long from the very fine brass wire and fix to one piece of chain. Chemically blacken, then superglue each piece of chain to the shackles cast onto the stanchions. (See drawing)
4. To secure a load, both chains pass over the tree trunks and the hook is fine enough to catch the other chain.

PAINTING AND LETTERING

1. In SER days, the wagons were painted 'light red' - an oxide of some sort. Southern Wagons Vol. 3 states this was Venetian Red – an oxide of iron - but it's not clear what the source of that information is. In any case, Venetian Red as bought in artists' shops is way too bright. A watercolour painting of Folkestone Harbour in the Folkestone Public Library shows the wagons as somewhere between pink and red with a trace of orange – a kind of terracotta. No doubt the colour darkened with age.
2. A good colour can be obtained by using Humbrol red-brown 100, and adding a little black to taste.
3. Some detail of the painting scheme is arguable. The headstocks, solebars including the buffer stocks and the narrow ('one-plank') frame should be red. The floor was probably untreated timber – greyish-cream – and the lower and upper bolsters body red. Being iron, the stanchions were probably black, like the other ironwork – except when it rusted..
4. In theory, the Mansell wheel axles were painted blue as a distinguishing feature. The wheel centres were varnished hardwood (ie. brown) and the tyres white when new.
5. Transfers are available from Fox's. Note that the drawing of SER wagon lettering in Southern Wagons Vol. 3 contains many inaccuracies
6. Those timber trucks which lasted into SE&CR days probably retained their SER livery until scrapping. but would have been relettered (again, from Fox's).

HISTORICAL NOTES

This is the earliest SER Timber Truck for which we have an extant drawing (SER dwg. No. 285) – in the HMRS collection. The drawing is dated 1859, but construction doesn't appear to have taken place until at least four years later, because of a handwritten note:

[THE DRAWING IS SIGNED] "Rich C Mansell 5th December 1859 Carrge & Wagon Supt"
[THE FOLLOWING NOTE CROSSED OUT] "This is the drawing referred to in our tender of the 27th Novr 1861 – Joseph Wright & (?) Sons Decr 11 1861
N.B. – This is the Drawing referred to in the Specification for Twenty five Timber Trucks dated this day. Rich C Mansell Supt. Carrge. & Wagon Department 26th March 1863"
"South Eastern Railway Ashford Kent, This is the drawing referred to in our Tender of 21 of April 1863 Brown Marshall et Co June 19 1863"

By the end of the 19th Century, the South Eastern was constructing larger timber trucks with a 7 foot wheelbase, and 13 feet over headstocks. However, it seems likely that the smaller trucks continued to be built to Drawing 285 until at least 1890. A photograph in Southern Railway Wagons Vol 3 from L.E. Brailsford's collection (Plate 172) appears to show one of the short wheelbase trucks (as deduced from its low tare weight) and can possibly be dated from its number (6159?) to 1890. The wagon appears to be identical to Drawing 285 (and therefore to this kit) except for the absence of safety chains (these were generally discontinued around 1890) and a different style of independent buffers. So far as it's possible to tell, the buffers are the same as those on the mid-century coal

wagons. (See for example, SR Wagons Vol 3 plate 29.) If you wish to build a wagon to the Brailsford photo, SER-KITS can replace the supplied buffers with the coal wagon style.

At this stage in our researches, it's difficult to be certain about build numbers, building and withdrawal dates. To make number assignment more difficult, some timber trucks were dumb-buffered. A photo of Westenhanger in the Tonbridge Historical Society collection (available also from Lens of Sutton) shows a trio of timber trucks with the foremost bearing the number 3815. This confirms that the known batch 3801-3825 were of the type represented by the kit. I suggest that those modelling early trucks could also number them around 6159 – the batch being 6151-60.

Many of these little trucks lasted into SE&CR days. The Brailsford photo indicates that some of the them were sufficiently robust to be worth re-lettering with SE&CR. It's an open question whether they were repainted grey. We know that at the formation of the SE&CR, Ashford had large stocks of oxide paint. It seems quite likely that while these stocks lasted, old SER wagons were repainted oxide red but given white non-serifed SE&CR style lettering and numbering.

Further reading:

'An Illustrated History of Southern Wagons' Vol 3 – SE&CR, by G. Bexley, A. Blackburn, R. Chorley, M. King, OPC.

FINALLY:

I hope you've enjoyed assembling this kit. If you've had any problems or have any comments, let me know, and I'll try to find a solution for later kits.

If you want to know more about the SER, the LCDR and the SE&CR, why not join the South Eastern and Chatham Society? Membership is £20 per annum in 2009, and the membership secretary is John Arkell, 30 Meadow Road, Rusthall, Tunbridge Wells, Kent TN4 8UL.

The website is www.southeeasternandchathamrailway.uk.co

Dan Garrett,
20 Weald Close,
Weald,
Sevenoaks
Kent TN14 6QH.
Email: DrDanGarrett@aol.com