RAGSTONE MODELS

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LSWR 22ft Passenger Brake Van

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26 Wadham Close
Rowley Regis
West Midlands
B65 9SH

LSWR 22 ft Lantern roof passenger brake van

History

22 vans built between 1884 and 1885 for general suburban use and for adding to ‘set’ trains with other coaches. Little is known of their working, but from the few available photographs showing them, they are apparently in general use. Withdrawal occurred between 1900 and 1907

Numbers

Due the vans being constructed as replacements for older stock numbering was random

1884 build: 34, 77, 114, 125, 152, 164, 177, 186, 202 and 210
1884 build: 5, 45, 56, 61, 74, 80, 82, 102, 110, 116, 117 and 140

Livery

1882- 1923

LSWR coach livery was described as salmon and brown, the salmon being applied to the sides from the lower edge of the waist moulding to just below the cantrail, there being a brown line just under the cantrail. Body side below the waist moulding was brown as were the ends, solebars and buffer beams. It is possible that underframes etc. were black, but brown is also stated to have been used

Roof and wheel rims white, lantern lookout sides and ends brown (possibly black). Droplight frames (and quarter light frames – not applicable to this model) were varnished wood

Lettering was gold, shaded black applied to the waist panel

Lining was black/red line applied to all panels above the waist, except quarterlights. The red line was on the top edge of the raised moulding, the black line being applied to the inner curved edge. There was also a red line along the bottom edge of the waist panelling and top edge of the bottom moulding

References

LSWR coaches vol1. G Weddell/Wild Swan 1992 - ISBN: 1 874103 08 9 - Drawings & photos
HMRS livery register (vol3)

Introduction to kit building

Etchings
Cut the brass parts from the fret using a *sharp* craft knife (or similar) on a firm surface rather than using tin snips as these can distort the delicate etchings. The etching process leaves a small 'cusp' on the edge of the parts which should be gently filed to remove, along with any remains of the tab. This is essential to enable the parts to locate accurately as well as providing a smooth edge, which as well as looking better, provides a better surface for the paint to stick to.

Castings
These are supplied either attached to sprues or loose, if the former carefully cut from the sprue and (in both instances) clean up the remaining feed and any area you intend to solder to. If the casting forms a moving part, the relevant surfaces will need smoothing to ensure free running. Using fine files and emery cloth or other fine abrasive sheet to give a polished finish will pay dividends in reliable operation.

Folds
Generally all fold lines are on the inside of the bend, if not this is stated in the instructions. Folding can be performed in a number of ways, such as using smooth jawed pliers up elaborate folding bars. Clamping the part to a flat surface with a steel rule and using a second one to perform the folding action can be very effective. Long folds are ok as they are, but any shorter than about 10mm, and especially very small ones (less than 3mm), will benefit from a reinforcing fillet of solder.

Solder
This kit is designed for solder assembly using either 188 degree solder (brass to brass), 145 degree (brass to whitemetal) or 'lowmelt' 70 degree for whitemetal only joints. Where the term 'solder' is used in these instructions it will refer to any of these methods. It is up to you to decide the appropriate type and use the correct flux and iron for the job.

Glue
Some small parts can be added with glue. Use a good quality product and follow the manufacturers' instructions.

Cleaning
Keeping the model clean is a vital part of a good final finish. Flux residues and metal filings build up so always wash this off at regular intervals, especially at the end of a modelling session when you are not going to resume for a day or two. Occasionally I will wash the model during a session if it gets particularly bad. Several products such as lime scale remover or scouring cleaners can be used, but some, such as most washing up liquids do contain chemicals to give added shine which then need to be removed before painting.

Paint
Before painting the model should be thoroughly cleaned to remove any remaining flux, dirt or other construction debris. Allow to dry completely before painting. It is best to use some sort of etch primer, but providing the model is completely grease free, acrylic grey primer (car paint in spray cans) will provide a good base for the final livery

Photographs
These instructions are a guide to assembling the kit, but in order to get an accurate model, reference photographs are essential - see references section on page 2

Assembly

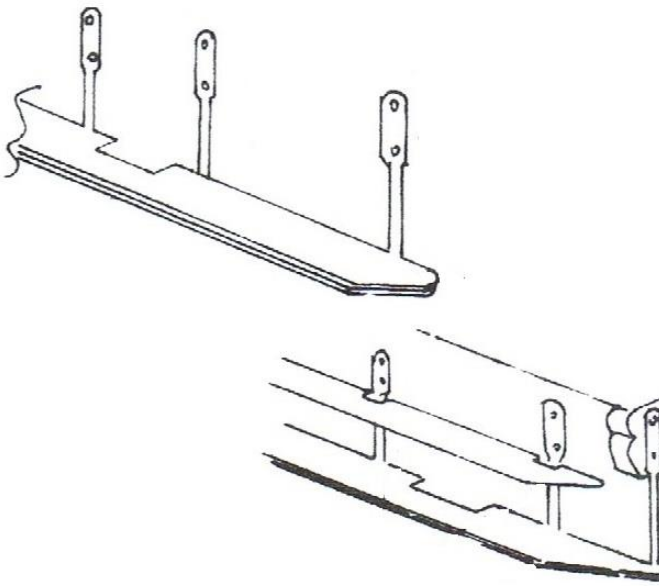
Underframe

1. Remove the underframe (1) and solebar overlays (2) from the fret. Form rivets from rear of part 2 and fold down solebars on part 1. Solder on the solebar overlays, note they are handed, the block of four rivets goes at the same end as the vac shaft mounts on the underframe

2. To be able to remove the body from the chassis for painting, 4 cut outs are required 7mm wide and 7mm deep in each corner of the floor to clear the buffers. There is no actual fixing, the body can be glued to the chassis at final assembly or holes can be drilled in the floor, close to the solebars, and these holes transferred to the body bottom angle after the basic body has been assembled (step 16)

3. Inside bearing compensation is provided for, but the kit can be built with rigid axles at both ends. Drill out the holes in the fixed end W-irons (or both ends if not compensating) with a No. 40/2.5mm drill and then fold down the W-irons and brake shaft hangars, reinforcing folds with solder. Drill brackets for the compensation unit 1.0mm and fold down

4. Fit the two inside bearings into the rocking unit (3), drill the holes for 1.0mm wire and bend all 4 parts down. You can ream the inside bearings to give plenty of clearance for the axle, if you wish to avoid paint clogging them. Fit wheels and remove pinpoint axle ends. Fit rocking unit to under frame with 1.0mm wire and fit the fixed axle into the W-irons



5. Laminate lower footboards (4) and overlays (5) - fit to side with out the rivet ½ etch, then form rivets and fold hangar brackets. Reinforce bracket/footboard joint with solder. Fit assembly to underframe, locating over raised areas on solebar overlay. Note: the extreme end bracket is twisted 90 deg. and locates to the outer face of the bufferbeam, but do not permanently attach this as you won't be able to remove the body

6. Laminate upper footboards (6) and overlays (7) – fit to side with fold lines, then fold brackets and fit to solebars.

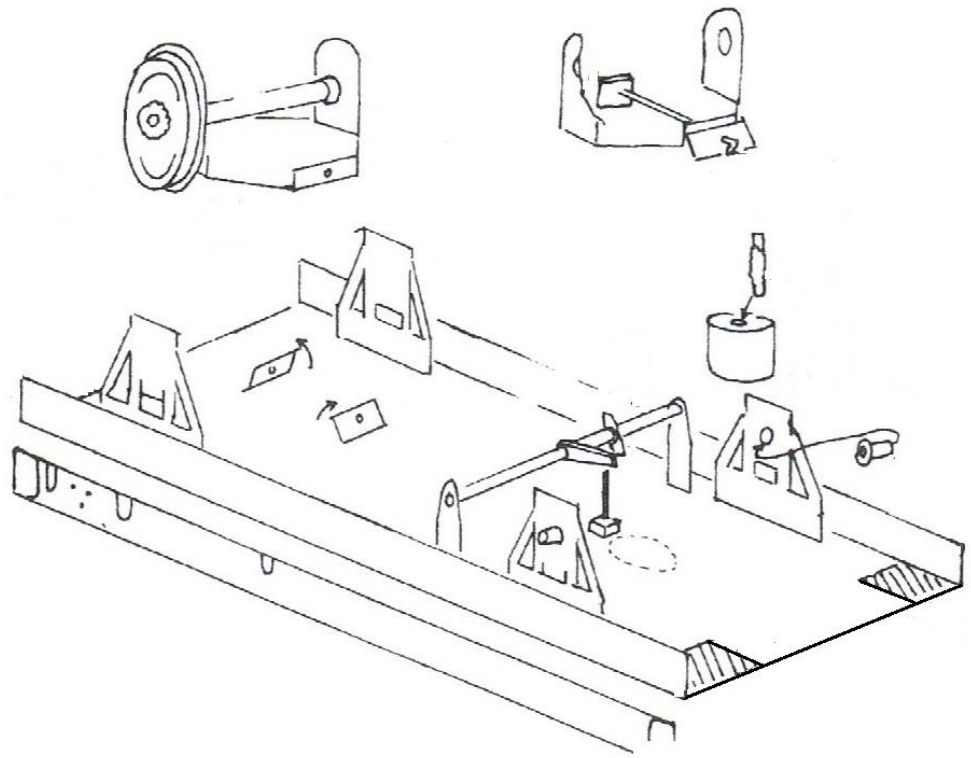
The small cut outs for the lower footboard hangars will need filing to ensure a snug fit

7. Ease axleboxes and springs into position behind the stepboards and fix them in place. You can either glue or solder

8. Make brake crosshaft from a 45mm length of 1.5mm wire, loosely add the two vacuum cylinder cranks (8) and double crank (9) to the rod and fix to the two folded down supports. Fit the piston rod into the vacuum cylinder. Using the shaft/brake cylinder

cranks as a guide, position the vacuum brake cylinder offset by 12mm and fix it to the floor.

9. The hand brake pull rod which has its square base on the shaft side of the vacuum cylinder, with vacuum cylinder cranks (note the square part of the hand brake pull rod also fits between them) fitted each side of the end of the piston rod. The double crank fits centrally but leave loose until adding the pull rods



10. Fit brake shoe detail overlay (14) to brake hangar (13) (side with fold line), drill for yokes and fit to underframe in line with wheels, they may be a tight fit, but this helps hold them in place whilst soldering and they can be pulled away from the wheels slightly one fixed

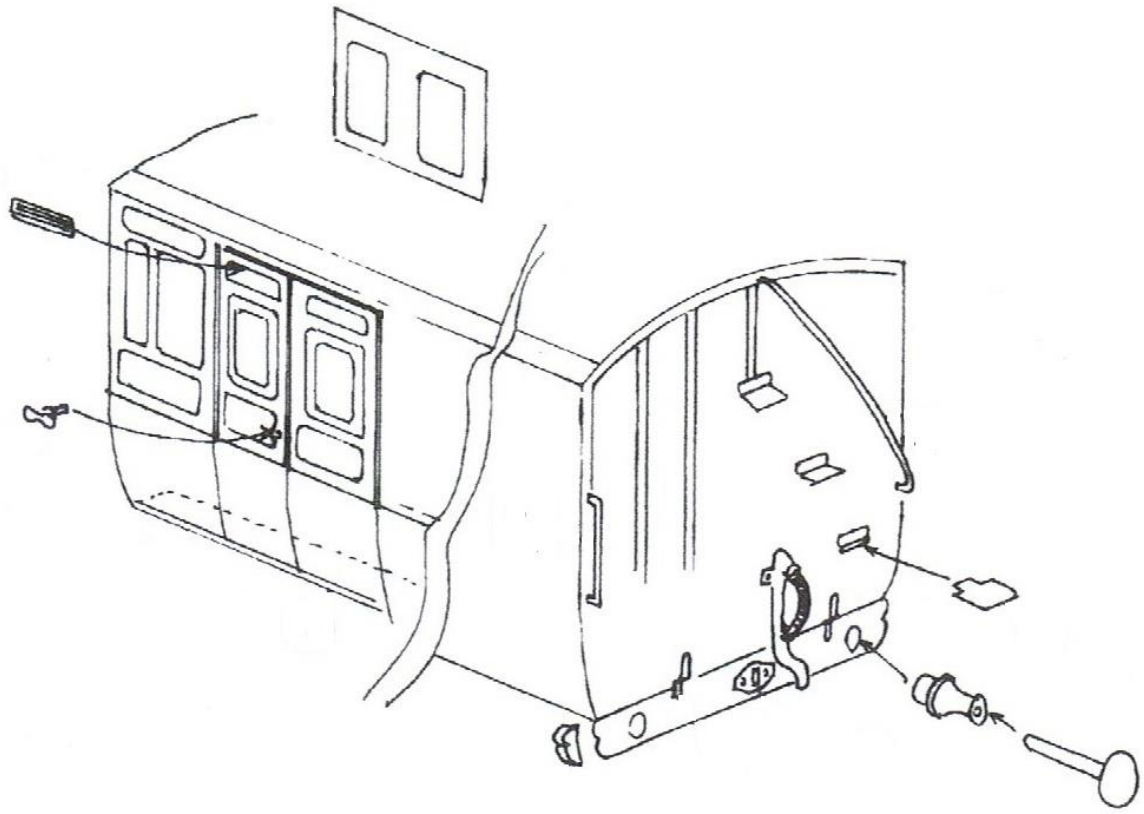
11. Drill holes 0.7mm in connecting levers (10&11), fit to slot in the yokes (12) (note orientation and fit to brake hangars, pointing away from the axle

12. Join connecting levers to each other and brake crank with 0.7mm wire, the top outer pull rod from the vacuum cylinder end is connected to the top of the brake crank, the lower end of the brake crank fits to the top outer pull rod at the far end away from the vacuum cylinder. The bottom ends of each pair connect together and the top inner ends are (on the prototype) fixed to a pivot mounted on the underside of the floor

Body

13. Remove the body sides (15) and ends (16) from the fret. Lay the side flat with the top of the side touching. Ensure that they are accurately aligned and on the mark the centre line. Make two further marks 47.5mm apart. These marks will help align the lantern roof in due course

14. Before folding the top and bottom flanges, it *can* be beneficial to run a triangular file the half etched line. This helps ensure that the side folds where it should, rather than along the edge of the beading, however providing you have a means of securely clamping the bodyside (i.e. folding bars), is not absolutely necessary. Once you have folded top and bottom flanges , form tumblehome in lower sides to match the ends to match ends



15. Fit the droplights (17&18) behind the windows and the door vents (19&20) above the doors – note the guards door ones are longer

16. The ends (16) need 6 rivets forming, 2 beneath each of the steps and can then be assembled to the sides, noting they fit inside them. Make up two L shaped assemblies, ensuring the top of the bufferbeam is just below the bottom of the bodyside (the top of the end is lower than the top of the side, this will be dealt with later), ensure they are square, then join them together

17. You can now fit the coupler pocket (21), the end steps (22), lampirons (23) - these fit on the buffer beam at 23mm centers, middle stepped part level with the top of the beam

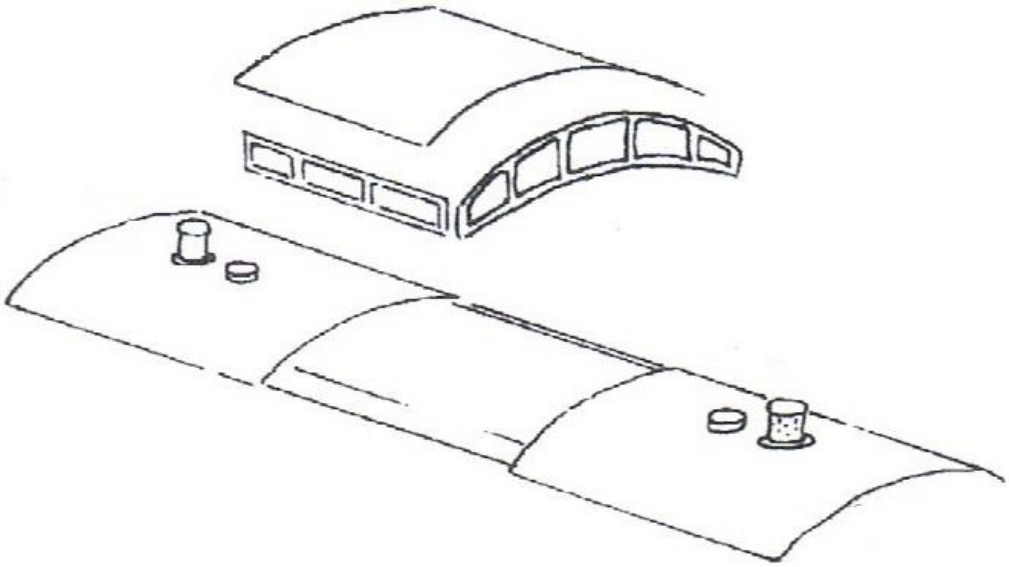
18. Form the hand rails from 0.7mm wire then fit to body sides and ends

19. Fit buffer castings with the bolts aligned NESW. Drill 1.2mm all the way through and 1.8 mm about 5mm deep (don't go all the way through!). Check using heads and springs that

they operate correctly and adjust if required. Vacuum pipes fitted to the right of the coupling, with the pipe central complete the end detail

20. Cut a piece of plasticard that will just fit between the body sides and about 15mm deep. Use one of the lookout ends to cut a curved edge to match the roof shape and fit this inside the top of the ends with the top edge level with the top of the sides. Using a roof section check/adjust so that there are no gaps with the roof fitted. Add a length of plastic strip to the outside of the infill to represent the cornice moulding (this will, correctly be slightly proud of the end panelling)

21. Fit the roof sections (27) with infill pieces (28) between them, using the location marks from step 13 as a guide. The roof sections are slightly over length and should be trimmed to give approx. 1mm overhang at each end. Alternatively, you could fit the outer roof sections and trim the infill pieces to fit, which gives a bigger ledge to mount the lookout ends on, but at the cost of it showing through the end windows and making glazing more difficult



22. Fit the lookout ends (24) to lookout sides (25) (ends fit between sides). Fit assembly to body and once happy add centre roof section (26)

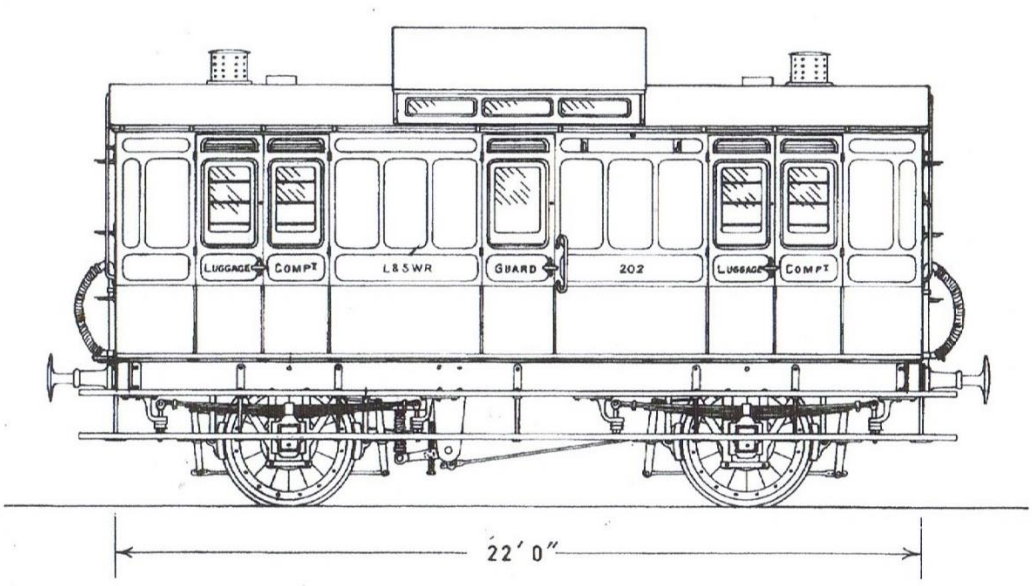
23. Lamps fit on the roof centre line, about 23mm in from the end (on the centre line of the outer droplights). The bung (to go in the lamp hole when the lamp is removed) is fitted 10mm inboard of the lamp

Final assembly

24. Paint body (and underframe), add lining/lettering and once fully dry, fit glazing to all droplights and lookout.

25. Paint luggage grilles (29) grey, fit (horizontally) behind the luggage compartment droplights and door handles to doors

26. Fit body to chassis, assemble and fit couplings

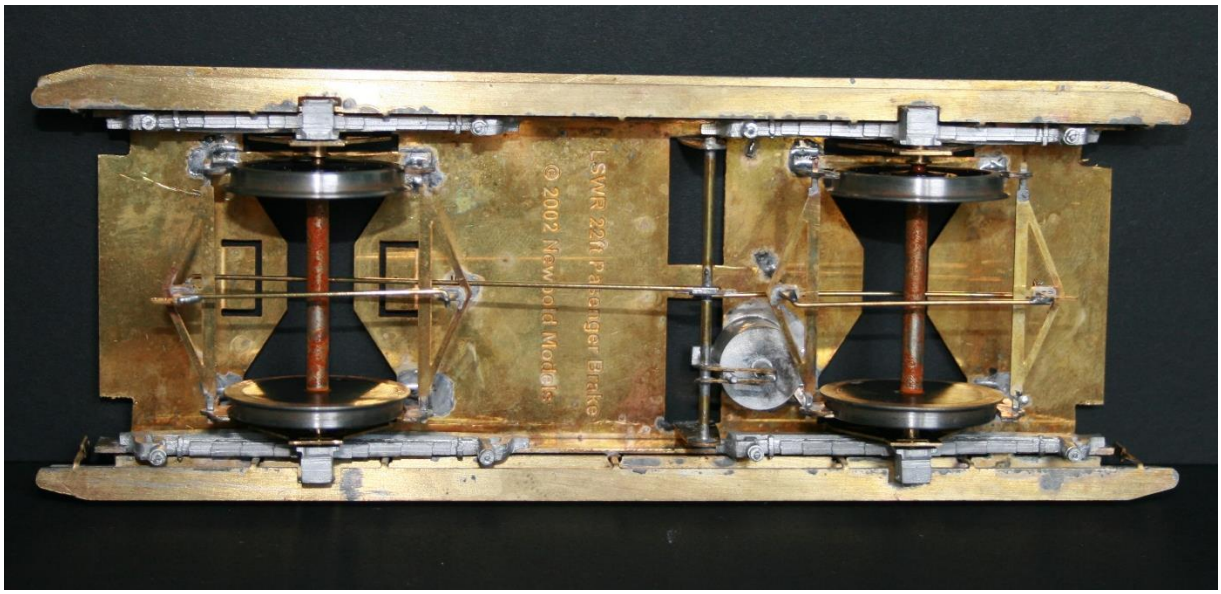


End elevation as for 30 ft. Passenger Brake Van of 1884.
Lamps and end steps possibly not fitted when built.
This drawing is based largely on photographs, the underframe in particular is partly conjectural.

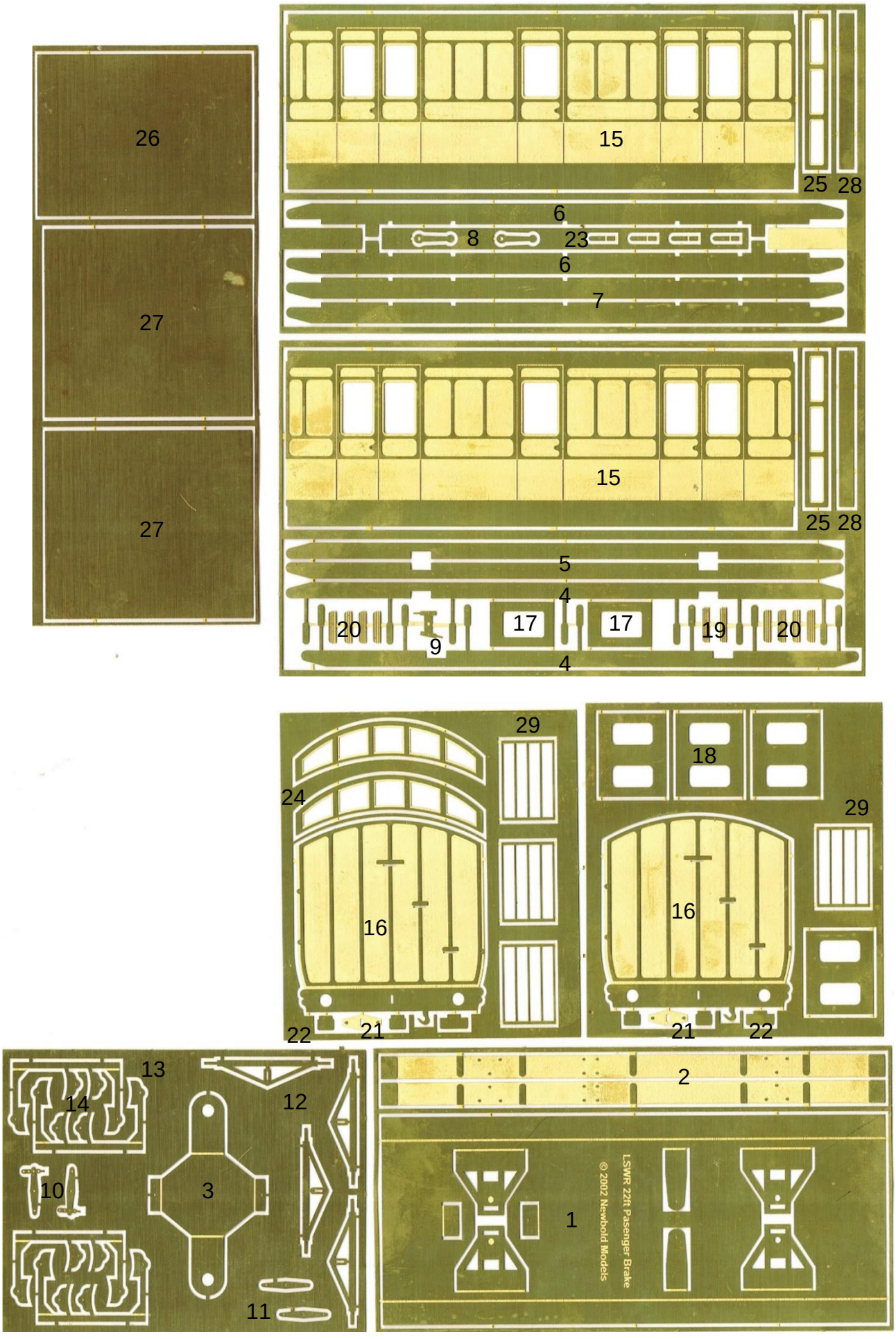
0 5 10 feet

LSWR 22 FT. PASSENGER BRAKE VAN OF 1884.

G.R. Weddell Drg.3.108 May 1989



View of underside – showing brake gear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LSWR 22ft Passenger Brake
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Parts List

Etch

1	Underframe
2	Solebar overlay
3	Rocking cradle
4	Lower footboard
5	Lower footboard overlay
6	Upper footboard
7	Upper footboard overlay
8	Vacuum brake crank
9	Brake crank
10	Outer brake lever
11	Inner brake lever
12	Brake yoke
13	Brake hangars
14	Brake block overlay
15	Body side
16	End
17	Droplights – guards door
18	Droplights – luggage door
19	Vent – guards door
20	Vent – luggage door
21	Coupler pocket
22	Step
23	Lamp iron
24	Caboose end
25	Caboose side
26	Caboose roof (rolled)
27	Roof section (rolled)
28	Roof infill
29	Luggage door window grille

Castings

Whitemetal

4x	Axlebox & spring
1x	Vacuum cylinder
1x	Vacuum cylinder piston
1x	Handbrake pull shaft
4x	Bufferbeam ends
4x	Buffer body
2x	Oil lamps
2x	Lamp bung

Lost wax brass

1pr	Couplings
2x	Vacuum pipes

Other Parts

4x	Turned buffer heads/springs/nuts
2x	Coupling springs
2x	Split pins
6x	Door handles
2x	1/8 axle bearings
1x	Glazing strip

Wire

2x	0.7mm approx 300mm

Plasticard sheet

Plastic strip

Parts required

2x	3’ 7” Mansell coach wheels (1 pack Slater’s 7127)

Transfers for your chosen livery