

LSWR LOW ROOF 10' 6" WHEELBASE UN-FITTED VANS WITH A TIMBER UNDERFRAME designed by Martin Finney

BRIEF HISTORICAL AND NUMBERING DETAILS

The LSWR and SR built some 3000 covered goods wagons 18ft long between 1885 and 1926.

This kit is for the goods traffic rated low roofed wagons with sliding doors and timber underframes built between 1885 and 1912.

The following are possible with the kit.

GOODS RATED – 10' 6" WHEELBASE – TIMBER UNDERFRAME - NOT VACUUM BRAKED OR THROUGH PIPED

S R Diagram	Date built	Wheelbase	Brake	End vents	Side vents	Remarks
1410 Covered goods wagon	1885	10' 6"	SB	None	No	Single end vent fitted from 1902
1410 Covered goods wagon	1888 - 1898	10' 6"	DB	None	No	Single end vent fitted from 1902
1410 Covered goods wagon	1911	10' 6"	M	Single	No	
1410 Covered goods wagon	1912	10' 6"	LL	Single	No	
1413 Vent. van for butter traffic	1898 - 1899	10' 6"	DB	Five	Five	Four roof-mounted torpedo vents
1484 Meat van for goods traffic	1886 - 1889	10' 6"	DB	Five	Four	

EXAMPLES OF NUMBERING

S R Diagram	SR Number	LSWR Number	Date built	Brake Gear	With-drawn	Remarks
1410	42342	1338	1885	SB	10/30	
1410		8744		SB		
1410	42554	1922	1888	DB	7/30	
1410	43717	9623	1894	DB	5/32	
1410	43015	6082	1898	DB	1/29	
1410	44124	14062	1910	M or LL	1/29	
1410	44158	14411	1911	M	3/45 Warner axleboxes	
1410	42399	1408	1911	M	11/46	Warner axleboxes
1410	44205	14458	1912	LL	9/36	
1413	43910	11681	1899	DB	8/30 Dia 1413. – 30 vans – LSWR numbers 11671 - 11700	
1413	43918	11689	1899	DB	7/35	
1484	51146	5179	1889	DB	11/24	
1484	51154	8567	1889	DB	6/35	
1484	51156			DB	7/43 Second set of brakes added 5/37	

None of the Dia.1413 & 1484 vans lasted into BR ownership. Typical withdrawal dates for those Dia. 1410 vans that did are: 1952 Nos. 42319/34/77,43951,44002,44102; 1953 Nos. 42315,42403,43099,44101/3/4; 1954 Nos. 42308,43035/60,44100 1955 Nos. 42419,43012,43937/38, 44092,44110;1956 Nos. 42409,44025/35; 1957 Nos. 44057,44107/11

SB	Single block and lever one side	M	Morton clutch brake
DB	Double block and lever one side	LL	Lift-link Morton style brake

The earliest vans were built without ventilators and had a single block brake on one side only. From 1892 double block brakes were used and a single end ventilator was fitted from 1902. The last vans built in 1911 and 1912 had brakes systems with a lever both sides and were fitted with Warner axleboxes. Many of the earlier vans subsequently had a second set of double block brakes added. This could have happened at any time between 1912 and 1939. Another feature to look out for in later years is substitution of the original Panter axleboxes with Warner boxes, when wagons were often to be seen with a mixture of the two designs of axleboxes.

The following publications contain much further information, including photographs and livery details.

An Illustrated History of Southern Wagons Vol 1:LSWR and S&DJR by Bixley, Blackburn, Chorley, King & Newton
Oxford Publishing - ISBN 0860932079
Southern Wagons Pictorial by Mike King - Oxford Publishing - ISBN 0860935973
HMRS Livery Register No.0.3 – LSWR and SOUTHERN – Published by the Historical Model Railway Society

CONSTRUCTION

Open out all holes to the required size. For small components this is often easier to do before removing the component from the fret. Some embossing of rivets is required and again for small components do this before they are removed from the fret. Most folds are through 90° and always with the etched fold line on the inside of the bend.

UNDERFRAME

Using a 0.35mm drill open out the holes for the suspension spring wires in part U1. If you use Alex Jackson couplings similarly open out the holes in the brackets on U1. Break off the small bracket shown in Fig. 1 unless you are fitting the single block brake.

Emboss the rivets in the W-irons and solder the hornguide ties (part U9) in place as shown in Fig. 1.

Fold up the W-irons on part U1 and strengthen the fold with a fillet of solder. Fold the small brackets in the middle hole of each W-iron.

Fold the four spring casting mounting pads on each of the sole-bars before folding the three sections of each sole-bar. Fold the suspension spring brackets and carefully solder to the sole-bars. If appropriate fold the Alex Jackson coupling brackets and strengthen with solder.

Make a slight bend in the centre 'finger' of the bearing carriers (part U10) as shown in Fig. 1. Cut the spring wire to length and solder in place together with the pin-point bearings.

Now assemble the bearing carriers and wheel sets as shown in Fig.2 and check the suspension works freely. There are three holes in each suspension spring bracket to enable the final ride height to be adjusted.

SINGLE BLOCK BRAKE – FIG. 3

Emboss the rivets on the required solebars (parts U2 & U3). Fold out the small bracket for the brake pin rack. Form the horse hooks from 0.3mm wire and solder in place.

Solder the solebars in place ensuring:

- the holes in both brake shoe wire brackets align
- the top face of part U1 is straight
- the top edges of the solebars are straight.

Solder the three laminations of the brake shoe (parts U17 & U18) to a piece of 0.8mm wire and solder in place, checking position against a wheel set.

Fold up the brake pin rack (part U16) and solder in place. Fold the handle on the end of the brake lever (part U11), bend to shape as shown in the diagram and solder in place.

DOUBLE BLOCK BRAKE – FIG. 4

Emboss the rivets on the required solebars (parts U2 & U4) for brakes on one side and (parts U5 & U4) for brakes on both sides. Fold out the small bracket for the brake pin rack. Form the horse hooks from 0.3mm wire and solder in place.

Solder the solebars in place ensuring:

- the top face of part U1 is straight
- the top edges of the solebars are straight.

Open out (0.35mm) the small holes in parts U19 & U20 to take the 0.3mm wire pins which attach the brake push rods. Fold up part U19 and insert part U20 between, aligning the holes with the 0.35mm drill. Grip the brake shoe with tweezers, remove the drill and solder together. Solder these assemblies in place over the fingers in part U1. Use the outer finger for EM/P4 and the inner finger for OO.

Solder the V – hanger (part U7) in place checking the alignment of the brake shaft hole with the V – hanger on the solebar.

Open out (0.35mm) the small holes in part U21 to take the 0.3mm wire pins which attach the brake shoes. Assemble the push rods together with two part U22 over the 0.8mm wire brake shaft and connect the push rods to the brake shoes with 0.3mm wire pins. When you are satisfied with the alignment of the components, solder together.

Fold up the brake pin rack (part U16) and solder in place. Fold the handle on the end of the brake lever (part U12), bend to shape as shown in the diagram and solder in place.

Fold up parts U23 & U24 and solder in place in the small slots in part U1.

MORTON BRAKE – FIG. 5

Emboss the rivets on the required solebars (part U8). Fold out the small brackets for the brake pin racks. Form the horse hooks from 0.3mm wire and solder in place.

Solder the solebars in place ensuring:

- the top face of part U1 is straight
- the top edges of the solebars are straight.

Solder the three V – hangers (parts U7 & U8) in place checking the alignment of the brake shaft holes.

Open out (0.35mm) the small holes in parts U19 & U20 to take the 0.3mm wire pins which attach the brake push rods. Fold up part U19 and insert part U20 between, aligning the holes with the 0.35mm drill. Grip the brake shoe with tweezers, remove the drill and solder together.

Solder these assemblies in place over the fingers in part U1. Use the outer finger for EM/P4 and the inner finger for OO.

Open out (0.35mm) the small holes in part U21 to take the 0.3mm wire pins which attach the brake shoes. Assemble the push rods together with two part U22 over the 0.8mm wire brake shaft and connect the push rods to the brake shoes with 0.3mm wire pins. When you are satisfied with the alignment of the components, solder together.

Fold up the brake pin racks (part U16) and solder in place. Fold the handles on the ends of the brake levers (parts U12 & U13) and bend to shape as shown in the diagram. The Morton lever is soldered in place together with a short length of 0.8mm wire which passes through the upper hole in both the lever and V – hanger.

Fold up parts U23 & U24 and solder in place in the small slots in part U1.

LIFT – LINK BRAKE – FIG. 6

Emboss the rivets on the required solebars (parts U4 & U5). Fold out the small brackets for the brake pin racks. Form the horse hooks from 0.3mm wire and solder in place.

Solder the solebars in place ensuring:

- the top face of part U1 is straight
- the top edges of the solebars are straight.

Open out (0.35mm) the small holes in parts U19 & U20 to take the 0.3mm wire pins which attach the brake push rods. Fold up part U19 and insert part U20 between, aligning the holes with the 0.35mm drill. Grip the brake shoe with tweezers, remove the drill and solder together.

Solder these assemblies in place over the fingers in part U1. Use the outer finger for EM/P4 and the inner finger for OO.

Solder the V – hanger (part U7) in place checking the alignment of the brake shaft hole with V- hangers on the solebars.

Open out (0.35mm) the small holes in part U21 to take the 0.3mm wire pins which attach the brake shoes. Assemble the push rods together with two part U22 over the 0.8mm wire brake shaft and connect the push rods to the brake shoes with 0.3mm wire pins. When you are satisfied with the alignment of the components, solder together.

Fold up the brake pin racks (part U16) and solder in place. Fold the handles on the ends of the brake levers (parts U12 & U14) and bend to shape as shown in the diagram. Form the bends in part U15 and solder to the lift – link lever.

Solder the brake levers in place. Part U15 is soldered to the solebar.

Fold up parts U23 & U24 and solder in place in the small slots in part U1.

AXLEBOXES & SPRINGS

For Panter axleboxes & springs use part W5. For Warner axleboxes & springs use part W6 and the springs from part W5.

BODY

SIDES – FIGS. 7 & 8

Clean up and if necessary straighten the side framing castings.

Remove the unwanted bolt heads from the side framing castings and shorten one of the framing brackets as shown in Fig.7.

For this I used a small curved scalpel blade (Swan – Morton No. 15).

Drill (0.35mm) the holes for the door handrail. Mark out and drill (0.35mm) holes for the horse hooks. Form the horse hooks from 0.3mm wire and fit in place.

For a Diagram 1413 or 1484 ventilated van attach the side vents (parts B8, B9 and, if appropriate, B10). For this we used thin superglue.

Open up the holes in part B1 with a 0.5mm drill. Fold the flaps on part B1, locate over the locating pins in the centre of the recesses in the back of the sides and fix in place. This can be done either with superglue or soldered by those with the skill and confidence.

ENDS – FIG. 9

With a 0.5mm drill open out the holes for the end stanchions in the ends (part B3). Fold over the roof gluing pads and strengthen with a fillet of solder. Solder parts B4, B11 & B12 in place. The hole in part B12 is towards the bottom of the end.

Clean up the end stanchions (part W2 & W3) by rubbing the sides on a sheet of emery until the part lines are removed before fixing in place.

For a Dia. 1410 van, if appropriate, fix part B5 in place.

For Dia. 1413 and 1484, fold up part B6 and solder in place. The lower edge aligns with the plank line with all of the plank line visible. Fix parts B7 in place.

Form the ends of the headstocks.

ASSEMBLY AND ROOF – FIGS. 10, 11 & 12

Solder an end and side together (on the inside!). Repeat to make a matching assembly. Now solder both assemblies together.

Check the fit of the body on the underframe and adjust the spring wire position to obtain an accurate buffer height.

Trim and fit the roof. Note sides of the roof are vertical and flush with the top faces of the doors. Fix part B2 in place.

Drill out the buffers (part W4) for the heads of your choice and fit. For Dia. 1413 fit the torpedo vents (part W7).

After painting, the underframe and body can be permanently glued together.

ETCHED COMPONENTS

UNDERFRAME

- U1. Underframe
- U2. Solebar – without V-hanger
- U3. Solebar – with bracket for single shoe brake
- U4. Solebar – with V-hanger
- U5. Solebar – with V-hanger – lift link brake
- U6. Solebar – without V-hanger for Morton brake – (2)
- U7. V-hanger – (2)
- U8. V-hanger – Morton brake
- U9. Hornguide tie – (4)
- U10. Bearing carrier – (4)
- U11. Lever – single block brake
- U12. Lever – double block brake – (2)
- U13. Lever – Morton brake
- U14. Lever – lift link brake
- U15. Solebar bracket – lift link brake
- U16. Brake pin rack – (2)
- U17. Brake shoe/hanger – single block - (2)
- U18. Brake shoe – single block
- U19. Brake shoe/hanger – double block - (4)
- U20. Brake shoe – double block - (4)
- U21. Brake push rods – (4)
- U22. Brake shaft crank lamination – (4)
- U23. Brake safety bracket – long – (2)
- U24. Brake safety bracket – short – (2)

OTHER COMPONENTS

- Waisted pin-point bearings – (4)
- 0.25mm steel spring wire
- Pre-formed roof
- 0.3mm wire for handrails
- 0.8mm wire for brake shaft

BODY

- B1. Side planked section – (4)
- B2. Door runner cover plate – (2)
- B3. End – (2)
- B4. End curved top plate – (2)
- B5. Single end vent – (2)
- B6. Multiple end vent support – (2)
- B7. Multiple end vent – (10)
- B8. Side vent – lower – (4)
- B9. Side vent – upper – (4)
- B10. Side vent – door – (2)
- B11. Coupling hook lamination – (4)
- B12. Coupling hook pocket – (2)

CASTINGS

- W1. Side framing – (2)
- W2. End stanchion – left – (2)
- W3. End stanchion – right – (2)
- W4. Buffer - (4)
- W5. Panter axlebox & spring – (4)
- W6. Warner axlebox – (4)
- W7. Torpedo vent – (4)

COMPONENTS NOT SUPPLIED

- Wheels – 3'1½" split spoke with 26mm axles
- Buffer heads - use Slaters for fixed, Wizard or Dart Castings for sprung