



Great Western Railway British Railways

Diagram N6 Horse Box 1889-1938/1961

Prototype

50 of these vehicles were built during 1889-91, numbered 581-610 and 671-690. Numbers 598, 678, 680, 682-3 and 685 were withdrawn in 1927-29, 684 in 1930, 600 in 1937 and 686 in 1938. The remainder were withdrawn in the period 1932-36, except for 603, being fitted with a loading gauge frame in 1933 for tunnel inspection and renumbered 80951. It was eventually withdrawn in 1961.

The N6 body design was based on the N5 Horse Box of which only one, number 88, was built. The most obvious difference between the two diagrams was the tumblehome sides and ends of N5 in comparison to the plain flat sides of N6. The basic underframes were similar, though N5 had the earlier outside rigged brake gear, superseded on N6 by the later standard pattern with triangular tie-bars between the brake blocks.

Livery details are believed to be as follows: body sides and ends coach brown, possibly crimson lake between 1912-22. The sides were almost certainly lined in gold at first with black mouldings, with droplight frames and window bolections in Indian red. An unlined livery was later adopted, probably during the Great War.

Lettering and numbering was originally on the second plank down from the louvres with GWR and for example '686' in small characters, the number being towards the groom's end. After 1903 the large 25" letters G W were applied to the lower flaps of the horse doors, with the number just below the waist panel on the groom's door. The 25" letters were superseded by the 16" size from 1920. It seems unlikely that many would have been repainted in the 1934-43 round monogram livery. The underframe and fittings were black. The roof and fittings were white when newly painted but soon weathered down to grey or black in service.

References

A Pictorial History of Great Western Coaches (Part 1 1838-1913) including brown vehicles, JH Russell, p23

The most recent version of these assembly instructions will be available on the 51L web site: www.51l.co.uk. For further help or information please email: andrew@modelsignals.com

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Assembly

This model requires Mansell pattern 14mm carriage wheels, bearings and paint to complete.

Please read these instructions before starting to build your model. Examine all the parts and familiarise yourself with their assembly. Remove any moulding flash or etch attachment points and ensure all parts fit correctly. We suggest wet fine emery paper (1200 grit) to clean up flash marks. Carry out a dummy run before assembly. Assembly is best carried out using ordinary solder for etched components or low melt solder for white metal. An epoxy resin such as Araldite and glues like UHU, Multibond or Thixofix can also be used. For small parts use superglue. To obtain the best results a combination of several techniques will be needed.

Most sharp bends are given by a half-etched line, which is always on the inside of the bend. Where rivets need to be raised these are shown on the back of the part, and should be punched with a blunt scribe on a firm surface, taking care not to distort the part.

This is the suggested order of assembly but there are many ways of assembling this or any other model. The part numbers quoted are those etched on the fret; those suffixed A are on the coupling fret.

1. Floor. Bend buffer beams, vee hangers and axleguard brackets down.
2. Buffer beam detail x2. Raise rivets and fit to the floor. Fit buffer bodies and, if required, the safety chain eyes (30A x4 – they were removed at the start of the 20th century), and the central coupling hooks (25A x2).
3. First inner solebar. Fit tabs through the slots in the floor and secure.
4. First outer solebar. Raise rivets and fit on top of part 3. For parts 5 & 6 repeat what you did for parts 3 & 4.
7. First inner side. Bend each end and bottom flaps to 90 degrees and the top flap to match the roof curve. Bend the door hinges to 90 degrees (outwards). Bend the brackets on the bottom flaps not quite vertically, and then back on themselves at their bottom ends (see sectional drawing). Fit side onto the floor over the solebar tabs.
8. Second inner side. Repeat what you did for part 7.
9. Step end. Raise the rivets and fit to the inner sides at the groom's compartment end. The lower steps should be bent out from the inner sides, and also the alarm gear brackets if required (fitted at the turn of the 20th century).
10. Plain end. Fitted to the other end of the inner sides.
11. Middle end steps x2. Bend and fit to part 9 from behind.
12. Upper end step. Bend and fit to part 9 from behind.
15. Brake blocks x8. Fit them to the axleguards 13 & 14 before you bend them. The blocks go on the side WITHOUT bend lines; use a pin to locate them in place. Fit bearing cups for pinpoint axles, making sure the bearing surface stays free of glue or solder.
13. Fixed axleguards. Bend W-irons, brake hangers and linkage hanger and fit to the floor at the grooms end with the linkage hanger pointing towards the end of the vehicle. It is worth test fitting the wheels and axle to ensure that there is no binding on the floor; open out the holes in the floor with a needle file if required.
14. Pivoted axleguards. Bend as you did with part 13 and set aside.
16. Safety loop. Bend and fit to fixed axleguard nearer to the centre of the vehicle.
17. Safety loop. Bend and fit to fixed axleguard nearer to the end of the vehicle.
18. Safety loop. Bend and fit to pivoted axleguard at the side away from the linkage hanger.
19. Safety loop. Bend and fit to pivoted axleguard at the side with the linkage hanger.
20. Brake block connecting bars (short links) x2. Bend sideways the three small prongs on each brake linkage hanger (on the axleguards). Twist the link of each connecting bar through 90° and fit between the brake blocks at the inner end of each axleguard, hooking the middle prong of the hanger through the middle hole of the link.

38. Brake block connecting bars (long links, numbered out of sequence) x2. Twist the parts as for part 20, and fit between the brake blocks at the outer end of each axleguard, again hooking the uppermost prong of the linkage hanger through the middle hole of the link.

Use the supplied piece of 0.9mm brass wire to fit the pivoted axleguard assembly to the floor with the linkage hanger towards the end of the vehicle. Ensure it pivots freely.

21. Brake cylinder bracket. Bend along the fold lines. Fix the cylinder casting into the centre of the bracket and fit the floor using the locating tabs in the floor near the vee hanger.
22. Brake cylinder levers x2. Thread the 0.7mm brass wire through the holes in the vee hangers and levers (22) at the outer end and brake pull rods (23) at the inner end, with the almost right angled joint away from the floor and ensuring that the pull rod is at the groom's end.
24. Bottom side steps x2. Bend both ends to 90° (there are no bend lines to maintain strength). One end is the lower step and the other can be glued or soldered into the recess on the underside of the top step.
25. Wooden top side steps x2. These are optional; they were not fitted when new but were almost certainly fitted latter. Fold each step double and fit above the small top steps against the solebar, centred below the groom's door.
26. Handbrake lever stirrup. Twist and bend as shown and set aside.
27. Handbrake pushrod. Pass a length of 0.7mm brass wire through the handbrake vee hanger, thread the pushrod onto the wire, and fix the pushrod to the wire and the nearby brake block.
28. Handbrake lever. Fix to the wire protruding from the vee hanger. Thread the handbrake lever stirrup over the end of the handbrake lever, ensuring that the groom's compartment is to the left.
29. First outer side. Ease down over the inner side hinges and glue or solder from behind and at the edges.
30. Second outer side. Repeat what you did for part 29.
31. Door vents x2. Fit to the panel above the groom's doors.
32. Lower strapping x2. Remove the frames carrying parts 34-36 from the centre, fold over the parts as shown to give extra thickness and fit in place. Repeat for the other side.
33. Upper strapping x2. Fit to each side of the body at the top of the middle of the horse compartment.
34. Window bolections x2. Fit these to the end windows of the groom's compartment.
33. Door T-handles x4. Fit after painting in the pre-etched holes in the groom's compartment doors and the bale doors.
36. Grab handles x2. Fit after painting in the pre-etched holes by the door to the groom's compartment.
37. Corner lamp irons x4. Raise the rivets, bend and fit as shown.

Now ease the wheels into place in their bearing cups; the ends of the brake pull rods (23) will need to be bent slightly to do this. They are then bent back and hooked onto the lowest prongs of the linkage hangers.

Now fit the axlebox/spring castings. At the fixed axleguard the casting can also be glued to the solebar but not on the pivoted axleguard as movement has to be maintained. Alarm gear as shown on the drawing is from the supplied 0.5mm brass wire, as are the handrails shown in the photo. Side chains if fitted should only have a hook (31A) on the right hand chain. Glue the vacuum brake pipe to the end and under the headstock. The other end has no steps or detail other than a vacuum brake pipe which should be fitted on the other side of centre. Add a steam pipe to each end if required.

The horse box can now be painted in the appropriate livery.

The interior can now be fitted and painted and the windows glazed. The interior wall is cut out from the supplied plasticard and is placed adjacent to the groom's compartment. Add the seat to the end, 2' (8mm) above the floor. Now that the painting is finished the door furniture can be fitted as shown in the drawing, as can the buffers (ignore the sketch – the tails aren't that long!) and couplings.

The roof etch should be formed to shape, detailed with the castings as shown in the drawing, painted, and fitted to the body of the vehicle.

Another method of assembly is:

- Follow the instructions for the underframe and brakegear, completing this as a separate item.
- Follow the instructions for the body and using a piece of scrap brass from the etch, solder a bolt on the top and solder between the two sides.
- Then solder the roof in place and detail with the castings.
- Drill a corresponding hole in the underframe to pass the bolt through and bolt the body to the floor.
- Separate the vehicle to paint.
- Paint each section of the vehicle.
- Now fit the door furniture and glazing, make and paint the interior and glue in place.
- Bolt the assembly together.

This has the advantage that should any of the interior become free you can repair it more easily.

