
RAGSTONE MODELS

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GER Bullion van

Diagram 36

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26 Wadham Close
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GER 'Sundry' vans

Type	Built	Numbers	Post 1896	LNER	Withdrawn
<u>Diagram 32 – kit CK21</u>					
Order D22	1888	13-32	1813-1832	6166-	6/22-6/31
Order K32	1893	33-57	1833-1857	-6180	6/23-5/31
<u>Diagram 33 – kit CK22</u>					
Order F22	1888	1-20	2001-2020		see notes
<u>Diagram 36 – kit CK19</u>					
Order P32	1893	2029			6/31

Diagram 32 vans 1840-43 were converted for Continental luggage around 1905, becoming diagram 38. The major modification being removal of the droplights. They returned to normal traffic in 1918. These vans can be modelled using kit CK22.

In 1922 the remaining 19 diagram 33 vans were transferred to wagon stock and renumbered (known numbers 13210/12/15, 13280/81/85). Air brakes (and steam heat if fitted) were removed and screw couplings replaced by 3 link. All were withdrawn by 1927.

The vans were oil lit from new (except the bullion van, which didn't have lighting) and probably received gas lighting later. Parts are provided for both types of lighting. If in doubt – fit the oil lamp!

Livery

From new,

Body varnished teak, with metal fittings black. After a period of service the teak became stained and discoloured so a teak brown paint was used.

Solebars Headstocks & all underframe black with varnished teak wheel centres.

Roof white including vents, handrails, etc. Often dark grey between lower rainstrip and edge.

Lettering (in waist panel) was in Gold/yellow shaded black.

From 1919,

Teak/teak colour paint was replaced by crimson lake.

From 1923,

If repainted, teak (i.e. 'Stratford brown') would have been used. It is also likely that unshaded black white lettering was used rather than the normal shaded gold LNER style. The bullion van wasn't renumbered, so it is possible it did not receive LNER livery.

References

Historic Carriage Drawings vol. 3 (Pendragon 2000) by Peter Tatlow

Model Railway Constructor – January 1986, drawing & notes by John Watling

Historical Model Railway Society photographs refs H1237, H1238, H1302 & H1303

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 to 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, whilst there are no known pictures of the bullion van, the other vans had similar details so the info will help

Assembly

Chassis

1. Remove W irons (3&4) from fret and emboss rivets on keeper plate, then fold with the fold line on the outside. Fold up sides, then W part and reinforce corners with solder.
2. Take brake hangars (5) and add brake shoe detail overlay (5a), note the small hole is at the bottom. Once completed and the parts cleaned up, fit to W iron assemblies. Use a small strip of fret waste (if necessary) between the parts to space the brakes clear of the wheels
3. Assemble 2 x combination lever (6) on a short piece of 0.7mm wire (through the end holes at the long end, spaced apart approx 1.5 mm (the backing card from the kit packaging make a useful spacer here)
4. Fit short pull rod/yoke (10) between brake shoes (at the end with the pivot hangar), with a piece of 0.7mm wire through the pivot hangar, combination lever and pull rod. The long pull rod/yoke (11) fits after the wheels are in place, and attaches to the lower end of the combination lever, again with a short piece of 0.7mm wire
5. Fit wheels, bearings in W iron assemblies and add axlebox plate to the outer faces. Drill axleboxes to fit over bearings and fit these.
6. Cut out main underframe/chassis (1) and emboss rivets. Make the various folds in the following order: (a) the bottom lip of the solebar, (b) bottom angle of buffer beams, (c) main buffer beam (d) solebars and (e) compensation tabs. Add coupler plates (2) over the coupling holes.
7. When new side chains were fitted, but later removed – the square holes remained. If these are to be fitted, you will need 4 lengths of chain with five 3mm links. If fitting side chains fit eyebolts 2x (2a) into bush (2b), push through the hole in the buffer beam and solder.
8. Remove spring hangar bracket overlays (7) from fret by cutting the tab close to the fret leaving tab attached, this will locate in the cut out in the bottom lip of the solebar, making it easier to fix the overlay. Drill holes 1.6mm and fit spring hangars into these holes, making sure they are firmly up against the solebars, with the bracket vertical and the yoke sloping at approx 60 degrees – the spring should then fit neatly between the yokes. Note – thicker part of the centre strap faces inwards
9. Form rivets on spring limit stop (12), bend to shape, fit to solebar centrally over the middle rivet above the W irons & file top flush with top of solebars. Fit solebar end plate (13) to the outer ends of the solebars (full etch line outwards). Fold brake

cylinder support (14) and air reservoir/triple valve support (15) and fit where marked to the chassis etching

It is not clear if this van was fitted with a handbrake (like the other vans) or not (like the other 4 wheel coaches). Both options are possible, although I would go with the 'handbrake fitted' option. Ignore sections 10, 11 & 21 if not fitting it

10. Fold and fit V hangar (8) to chassis where marked just right of centre. Laminate crank (9) and fit to v hangar with a length of 0.9 wire but leave the crank loose for now
11. Fit cast handbrake ratchet to the right hand end of the side with the V hangar – it locates in the small hole but will need a small amount filed off the bottom corner to fit snugly against the solebar angle. Form and fit handbrake lever (17) – (2 types, straight one probably more common?) to protruding rod from the V Hangar and bend to clear the springs. Add two of part (18) to form the nut before soldering. Trim rod so only a small amount is showing from the nut.
12. Form and fit horse hooks (if required) from 0.7mm wire. If not fitting these, fill holes with solder
13. Form step board brackets, reinforce bends with solder and fit to solebars over the half etch lines. If you have fitted the handbrake, the bracket that would have fitted here is then fitted slightly left, centrally over the slot for the tab on the upper foot board (note the slot in one of part 21 – you could use this as a jig once trimmed – see next step)
14. Fit upper foot boards (21) tabs go through slots in solebar with the half etch lines on the bottom. If you have fitted the handbrake, one of them (the one with the cut out for the bracket) will need to be trimmed at that end to just clear the ratchet casting
15. Emboss rivets and fit upper step board supports (21b) over the half etch lines on 21
16. Fit lower step board in position on the bottom of the brackets 21a, remember to trim one to match the upper step board on the handbrake side (if fitted)
17. Fit air distributor & brake cylinder to mounting pads. Use 0.9 wire for brake rods, these fix to rods on cylinder casting and should be trimmed so that they end just short of the top of the brake combination lever (6)
18. Fit the buffer castings. Once fitted, drill these 1.2mm right through & 1.8mm about 5mm deep from the front. The steel heads can be fitted later with the springs and nuts (to avoid damage from flux fumes!). Make up and fit couplings and air pipes, vac pipes and steam heat pipes (if required, as these were not always present).
19. Solder 2x 6BA nuts over the holes at the non compensated end and bolt W iron assembly to chassis using 2 x6BA screws. Trim screws to length once fitted.
20. Fit the rocking W iron with a piece of 1.0mm wire through the pivot holes and adjust/trim axle boxes and/or springs so that it will rock slightly.
21. Emboss rivets on push rod (16) and loosely attach, one rod each side of the brake block (left hand end, handbrake side) with 0.45 mm wire through the lower holes, Also attach to crank (9) so that push rods are approximately level and then fix crank to shaft.

Body

22. Take Sides (23) and fold top flange to match the end profile. Ensure the lower side is securely clamped to avoid distortion and fold bottom flange almost to 90⁰ then form tumblehome, using the end to check the shape of the curve as you go. Fit door vents (25)
23. Fit lower hinges (26), middle and upper hinges (27). Fit bump stops from short pieces of 0.7mm wire in the holes either side of the hinge line
24. Emboss rivets on ends (24), for lamp irons being. Fold the bottom flaps in half to give a double thickness with a rebate for the bottom flange of the side underneath. Note: this fold line is on the OUTSIDE of the bend. Fold flap almost to 90⁰ and form tumblehome in end to match the sides. Fit 6ba nuts over holes
25. Fold end lamp iron (28) to shape and fit to the horizontal slots on the ends with the lower leg inside the end. Fit end lamp iron (29) to the vertical slot.
26. Fold down small tabs on end flaps and assemble one side and one end. Repeat with other side and end, remembering to make both 'L' assemblies the same hand. Once happy that both are square, bring together to make a box. I use a piece of plate glass for this stage to ensure the body is flat and square on all axes. Trim protruding locating tabs and check fit to chassis using 6BA screws
27. Add capping strips (34) to top of ends, then side capping strips (35). Both are slightly over length, the end strips should be trimmed flush with the side before fitting the side strips which should then be trimmed flush with the end strip (**not** the actual end)
28. Check roof for fit to body, adjust curve and trim if required, then fix.
29. Emboss rivet on side lamp irons (30), form to shape and fit to sides. These locate on the end beading with the cranked section level with the bottom of the waist panel
30. Thoroughly clean the model and once completely dry, fit rain strips using the thin plastic strips. My normal method is to apply an etch primer, fix the strips with MEK and apply a base coat/primer to seal them. When dry paint in your chosen livery and apply lettering. Fit the door handles and varnish if required.

Parts List

Etch

Chassis

1	Main underframe/chassis	21	Upper step board
2	Coupling plate	21a	Step board brackets
2a	Safety chain eyebolt	21b	Upper step board support
2b	Eyebolt ring	21c	Not used
2c	Safety chain hook	22	Lower step board
3	Fixed W iron assembly		
4	Rocking W iron assembly		
5	Brake hangar		<u>Body</u>
5a	Brake shoe detail overlay		
6	Combination lever	23	Sides
7	Spring hangar bracket overlay	24	Ends
8	V hangar	25	Door vent
9	Brake crank	26	Lower hinges
10	Short pull rod/yoke	27	Middle/upper hinges
11	Long pull rod/yoke	28	End lamp iron
12	Spring limit stop	29	End lamp iron
13	Solebar end plate	30	Side lamp iron
14	Brake cylinder support	31	Not used
15	Air res./triple valve support	32	Not used
16	Brake push rod	33	Side capping strip
17	Brake lever (2 types)	34	End capping strip
18	Nut	35	Not used
19	Not used	36	Not used
20	Axlebox plate	37	Not used
		38	Label clip

Castings

Whitemetal

1x	Brake cylinder
1x	Brake reservoir/valve
4x	Buffers

Other Parts

1x	Preformed roof
6x	6ba screws/nuts
4x	Turned buffer heads/springs/nuts
2x	Coupling springs
2x	Split pins
1x	0.7mm brass wire - approx 150mm
1x	1.0mm brass wire - approx 30mm
4x	0.010"x0.040" plastic rainstrip

Lost wax brass/nickel silver

4x	Axleboxes
4x	Spring & J hangar
2x	Couplings
2x	Vac pipe
2x	Air pipe
1x	Handbrake ratchet
6x	T handle

Parts required

2x	3' 7" Mansell wheels – 1 pack Slaters 7124W or similar
	Paint & transfers for your chosen livery
20 links	Chain with 3mm links – if fitting safety chains