NGSK0110 Kit 11
Wagon Kit
BR Seacow Bogie Ballast Hopper

Kit contains plastic parts, etched details, decals and wheels to complete one wagon.

To complete this kit you will need: Liquid Plastic Cement, Superglue, Paint, and Varnish

This is not a toy. Only suitable for persons over the age of 14. May contain small parts and sharp edges. Keep away from small children.

Getting Started

First, read the instructions thoroughly all the way through and be sure you are confident that you have identified all the parts. It is recommended that you adhere to the suggested order of assembly, though with experience, you may choose to deviate.

General Notes On Construction

Naturally, the N Gauge Society wants you to achieve the best results you can. These simple guidelines should help:

- Read the instructions through fully before you begin
- Use a sharp knife to separate the parts from the sprues and etch
- Clean off any flash or moulding pips with sharp knife and wet 'n' dry sandpaper
- Check fit before gluing
- Use a small paint brush to sparingly apply liquid plastic cement when joining parts
- Photographs of the prototypes will help you

But above all .... TAKE YOUR TIME!!

The Prototype

Based on a 1928 Southern Railway design, bogie ballast hoppers have a 40 tonne capacity and measure 33ft 10in over headstocks (diagram YG500H)). 251 were built between 1981 and 1982 at Shildon and Ashford. They were air-braked with a through pipe for vacuum braking, and given the code "Seacow".

Seen all over the BR system from their introduction in 1981, the Seacow wagons have a mainly welded body design, ride on French cast frame, coil sprung bogies (Y25CS) and have Oleo buffers. The 1971 batch of Seacows (DB982540 - 67) were an air-braked only version of the dual-braked Sealion and had riveted bodies. and Gloucester bogies - this is the version represented by the Bachmann RTR model.

Some Seacows have been fitted with generators (to power lights) and reclassified 'Stingray'.

DB980000 — 144 LOT 3966 BUILT AT SHILDON 1981—2

DB980145 — 244 LOT 3966 BUILT AT ASHFORD 1981-2

DB980245 — 250 LOT 4010 BUILT AT SHILDON 1981-2

Livery and Lettering

Body and underframe: Railfreight grey with yellow band at the top of body. See diagram below. As delivered the lower edge of this yellow line was at (i). On repainting, this was raised to (ii). Some acquired a further thin yellow stripe below the yellow band, separated from it by a thin strip of the grey or red at (iii).

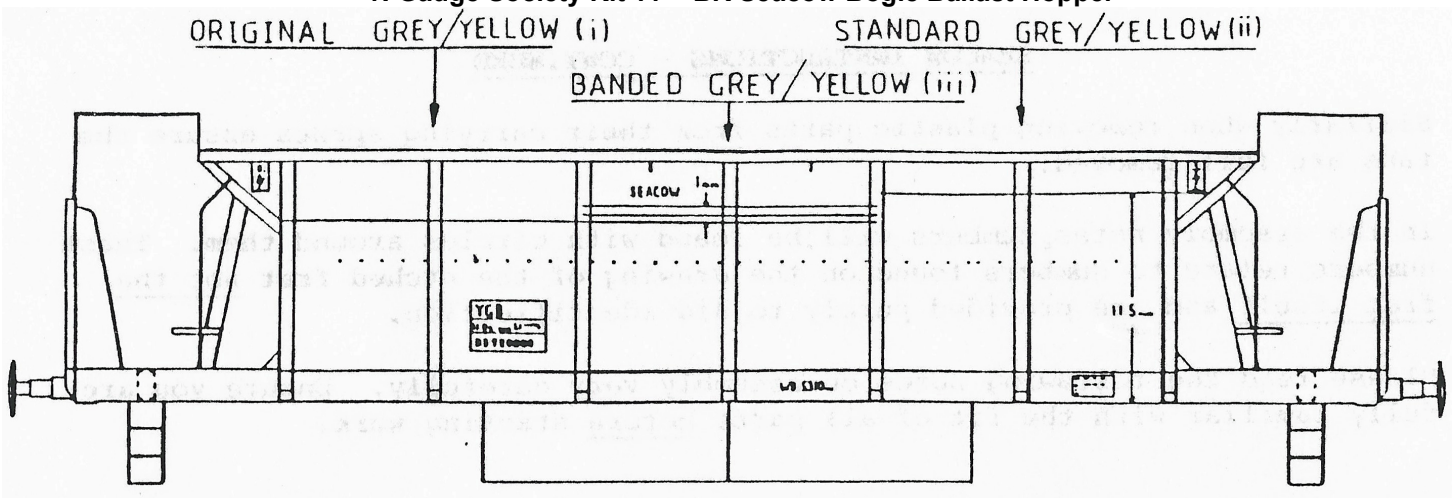
Bogies: black, axlebox covers yellow. Handwheels, handrails and steps: white

In later years, the livery faded badly and there were many spots of rust to be seen, often leading to re-plating and patch painting. Some received the Transrail "T" logo upon privatisation of the railways, and a few received full repaints into EWS red livery with a thin yellow top lip (and red axlebox covers).

References

- *BR Air Braked Wagons In Colour* by David Ratcliffe : P90
- *Railways In Profile Series – British Railway Wagons No7 Engineers'Stock 1* by Geoff Gamble : Cover, P29
- *LTSV Rail data has a profile with links to other sites with photos: https://www.ltsv.com/rd/profile_detail.php?id=12*

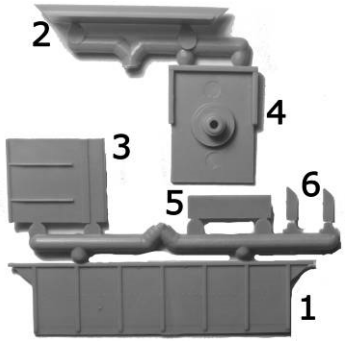
N Gauge Society Kit 11 – BR Seacow Bogie Ballast Hopper



Parts

Four sprues, two white-metal parts, bogies, couplers, buffers, wheels, etch and decals are packaged with this kit. Use the following photograph and table to identify all the parts. Keep all the parts in a container or re-sealable bag to avoid loss and only remove parts from the sprues as you need them.

Part Number	Quantity	Description
1	2	Bodyside
2	2	Lower Hopper Floor Section
3	2	Hopper End Slopes
4	2	End Floor/Bogie Pivot
5	2	Hopper Builkheads
6	4	Vertical Reinforcement Plates



Construction Tips

Only a few basic tools are required – a sharp craft knife, wet ‘n’ dry sandpaper, needle files, a selection of small drill bits and tweezers (preferably fine point). A liquid polystyrene glue such as butanone is best for the plastic parts, using a small paint brush to apply small amounts to joints.

The etched parts may generally be fixed in place using cynoacrylate adhesive (“superglue”), however some parts are better fixed in place with a gel superglue or a twin pack epoxy resin (such as Araldite) to allow time for accurate positioning. A useful tip when using cynoacrylate glue is to place a small amount in a suitable container and then transfer the small amount required to join parts on the tip of a cocktail stick.

When removing etched parts from their carrying fret, rest the fret on a hard surface like a scrap of MDF or a rectangle of aluminium sheet, not a cutting mat as the etch will bend and distort. Cut through the tabs with a sharp knife. Remove any remaining part of the tab using a fine needle file (scissors can be useful as well). Folds are almost always with the half-etched line on the inside of the fold.

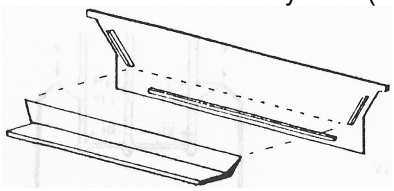
You will need to thread 0.33mm wire through 12 holes in the etch. Variations in the etching process mean the holes in may be slightly undersized, they are best opened out (if necessary) before removing the parts from the etch. There is a hole in each operating wheel (parts 11 and 12), and 3 in each set of operating gear (parts 9 and 10). You can use a drill, but a small broach is easier to use. Sets of broaches are available from suppliers of modelling tools.

In the instructions, numbers in brackets relate to numbers found on the *drawing* of the etched fret and not the fret itself, and are provided purely to aid identification. Roman numerals in brackets relate to the construction drawings.

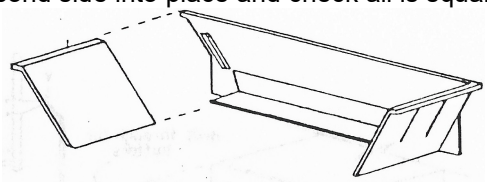
NOTE Some details are omitted from some diagrams for clarity.

Construction Of The Main Body

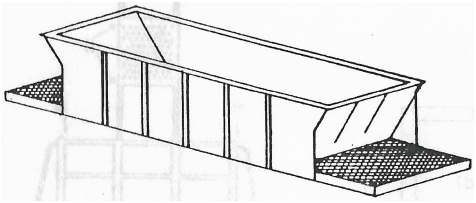
1. Glue the lower hopper floor sections (**Part 2**) centrally to each side of the main bodysides (**Part 1**).



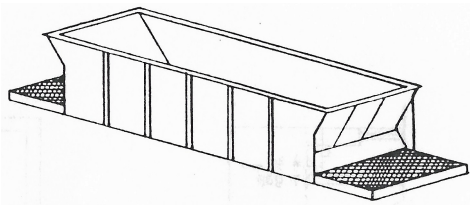
2. Take one side section (Parts **1 and 2**) and add hopper end slopes (**Part 3**) to both ends. Then glue the second side into place and check all is square.



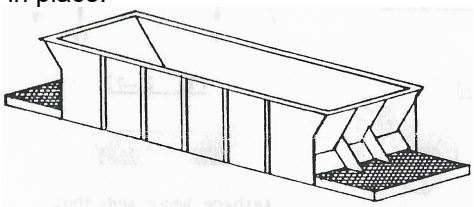
3. Fit the two end floor/bogie pivot (**Part 4**). Ensure that these are fully 'home', and that they sit level and without twist at each end. Try to complete these steps in one go since with all the joints not fully hardened, it is easier to make any necessary adjustments until all is square and straight. This completes the basic body shell which should be allowed to thoroughly set before proceeding with the detailing.



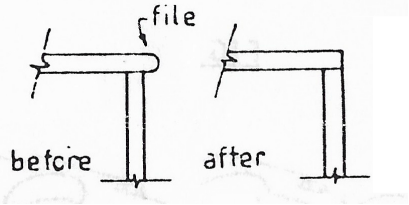
4. Fit the horizontally placed hopper bulkheads (**Part 5**) to each end. These are angled along one edge only; place this edge on the floor unit immediately behind the chequer plating and ease into position so that the top of this part fits immediately behind the reinforcement ribs moulded on the hopper end. This is a little tricky but patience and the use of tweezers will achieve the desired result.



5. Fit two vertical reinforcement plates (**Part 6**) to each end. These have one end angled; this fits onto the floor unit and the plates push up to the bulkhead and tight to the inside edge of the reinforcement ribs moulded on the hopper end. Once satisfied with fit glue in place.



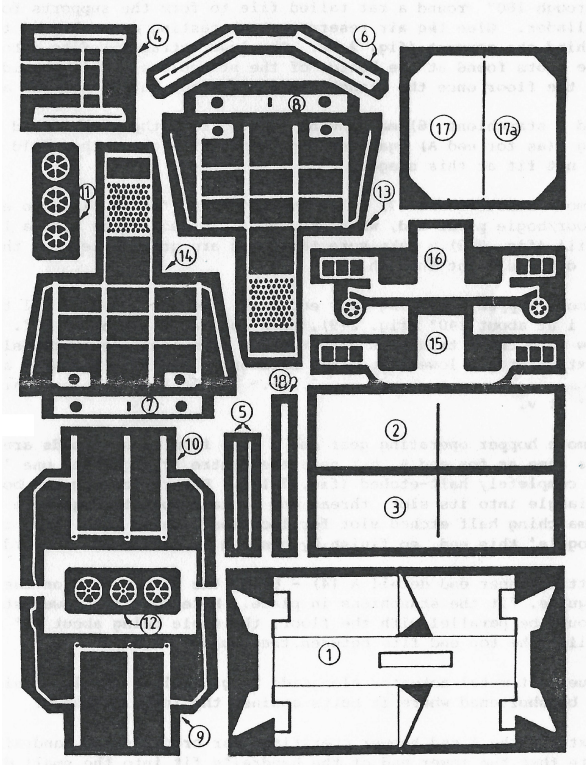
6. After all joints have set hard and before adding the etched details, file the slightly extended top lip of the sides back to get a good square edge to the top.



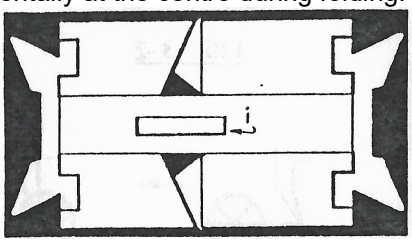
7. One end of the wagon had all the air braking equipment, this is called the A end, the other is the B end. Draw a line across the top of both floor/bogie pivots (**Part 4**) that are 6mm in from each end as a guide for the later fitting of etched parts. On the underside mark with a pencil one end 'A' the other 'B' to remind you where to fit parts.

Adding The Etched Details

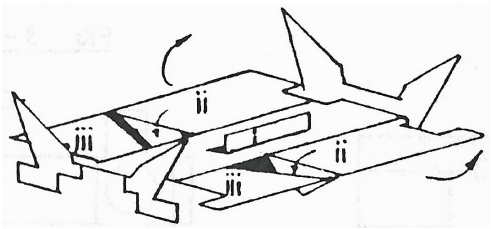
8. Numbers in brackets relate to numbers found on the *drawing* below and not the fret itself.



9. Remove lower hopper chutes (**1**) from the etch. Fold over the small tab (i) at 90 degrees with the etched line inside. This will stop the hopper spine bending accidentally at the centre during folding.

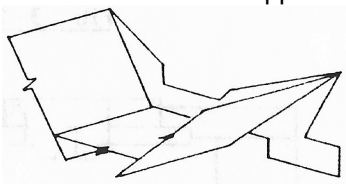


10. Fold the divisions (ii) and the ends at 90 degrees with the etch lines inside.



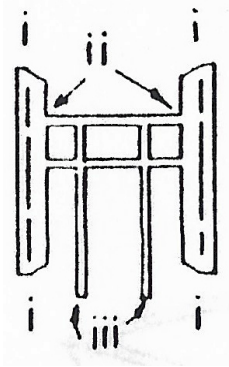
11. The drawing above shows the chute assembly upside down. On each side, first fold up the smaller chute without the central divider about 50 degrees, fold down the central divider on the other chute 90 degrees, then fold the chute up 50 degrees.

12. Slot the two chute discharge plates (**2**) and (**3**) into place from top centre (bottom centre in drawing). Do not glue until the chutes have been adjusted to sit correctly, that is, when the lower edges line up with the lower corners of the end supports.

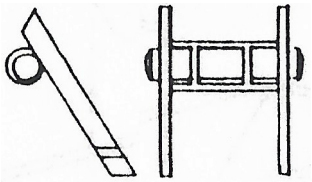


13. Once satisfied this unit is complete and may now be glued into position in the recess between the two end floor/bogie pivot units underneath the main hopper body.

14. End A stanchions (**4**) may now be removed from the fret — fold 90 degrees at (i) each side then fold 90 degrees at (ii). and run superglue into the inside of these folds for strength.

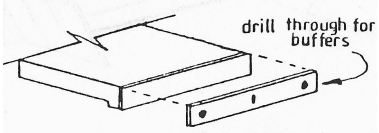


15. Fold back the straps (iii) and then roll through 180 degrees round the shank of a 2mm drill bit to form the supports for the air reservoir tank casting; glue this casting centrally in the straps behind the support. The lower strap (5) fits into place in the slots found at the bottom of the stanchions - this should be parallel to the floor once the stanchions are fitted, but do not fit at this stage.



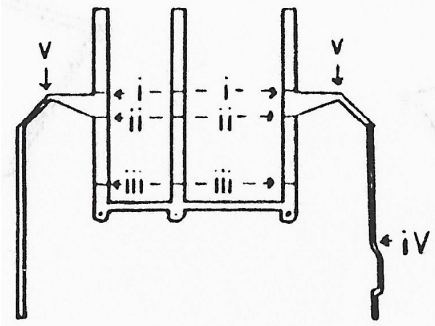
16. End B stanchions (**6**) may now be removed from the etch. Fold at (i) on each leg (as for end A) then fold at (ii), strengthening with superglue. Do not fit at this stage.

17. Remove the buffer beams (**7**) and (**8**) from the etch and fix in place to each end of End Floor/Bogie Pivot (Part 4). The holes for the buffers should be offset towards the bottom of the buffer beam, make sure it is the correct way up. When set, drill through the holes with a 1.3mm drill bit. Make sure the holes are drilled level though they need not be drilled right through.



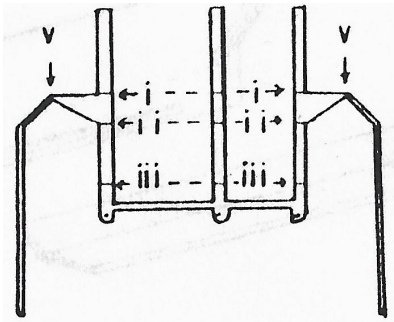
18. Remove hopper operating gear end A (9) from the etch. It is important you file all traces of the fixing tab from the end of the central strap. Lay on your work space as shown below. Ensure the "joggled" handrail section is to your right and closest to you. Fold all three straps at (i) away from the work bench to about 140 degrees. Fold again at (ii) to about 80 degrees, again away from the work bench to form three triangles. The top ends should locate in the slots at (iii). See photo on next page. Next twist the lower 'joggled' section of handrail below (iv) at 90 degrees away from you. Lastly fold both handrails forward 90 degrees at (v).

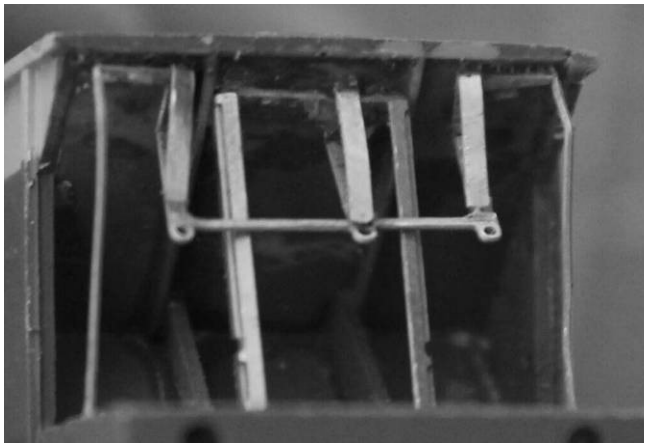
19.



20. Remove hopper operating gear end B (**10**) from the etch. The central strap has the centre section between (i) and (ii) half etched. Remove all of this, but keep the

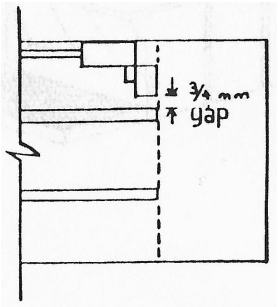
now separate end of the strap for later. The folds are the same as for end A. There is no handrail 'joggle' this end, finish by bending the handrails 90 degrees forward at (v).





Picture of stanchions and operating gear fitted at the B end. Note the bar on the operating gear is outside the stanchions at both ends.

21. Fitting the inner end detail A (4). Using the line marked on the platform as a guide, fit the stanchions in place. Note that the lower strapping should be parallel with the floor, the whole being about 15 degrees off vertical, whilst the top end fits between the moulded angles..Glue the cast metal brake actuator. The long tail will need to be shortened where it butts against the inner bulkhead.



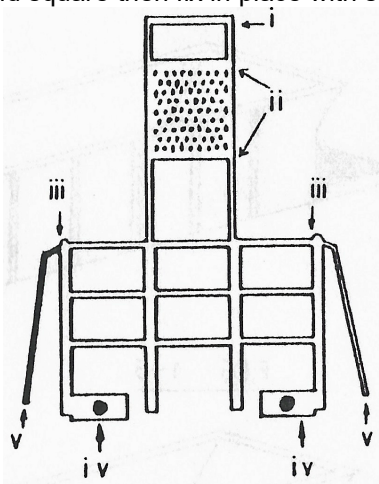
22. Fit the A end hopper operating gear brackets and handrails (**9**). Note that the lower end of the handrails fit into the small dimples moulded into the floor, just inboard of the line marked earlier, and the 'joggle' clears the cast metal actuator. For this join, Gel superglue or epoxy may be found more convenient standard superglue to allow time for positioning. At the top, the handrail spacers should be centred and glued in place.

23. Fit the inner end detail B (**6**) as for end A.

24. Fit the B end operating gear brackets (10) as for end A. After fitting, take the strapping cut off the centre triangle, remove the half etched part, then glue the end of the strap removed earlier in place above the lower part to form a triangle like the outer ones.

25. Add operating wheels (**11**) & (**12**) to both ends. These should be first fitted to lengths of 0.33mm wire 10mm long. Thread the wire through the small holes in the lower ends of the brackets and glue to the bulkheads. Start with the centre one as this is easier. Note that the angle of the wire should be 30 degrees from the floor.

26. To fit the outer end handrails and safety cages (**13**) and (**14**) first check the buffers fit through the holes (iv) and if necessary use a rat- tail file or broach to ease them, and similarly the holes in the buffer beams. Fit buffers through the end plates at (iv) into the holes in the buffer beams. Check that they are level and square then fix in place with superglue.

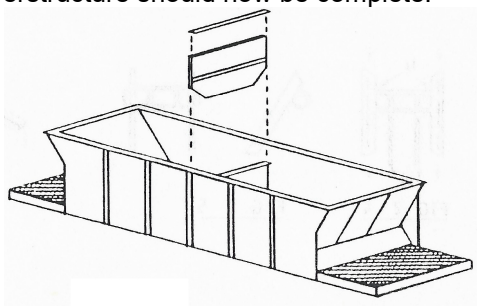


27. Fold down 90 degrees at both ends of the safety cage at (ii). Secure the top ends of the safety cages by gluing the bracket centrally to outer edge of the rim of the hopper. Fold the handrails back 90 degrees at (iii) then glue the ends (v) into the small holes on the sides of the wagon floor.

28. Remove the hopper division plates (**17**) and (**17A**) as one unit from the etch. Fold back to back so that detail is on the outside. Do not remove the tags joining the two halves together at the top as these will locate the top strengthening rib. Glue the halves together.

29. Add the strengthening rib (**18**) to the top of the division plate locating the three slots found on the underside over the three tags mentioned earlier. Once satisfied, locate the completed division plate centrally within the plastic body of the hopper and secure in place. The

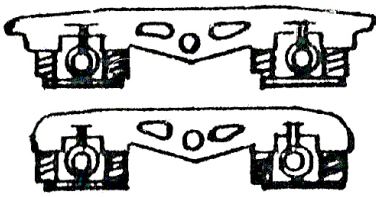
superstructure should now be complete.



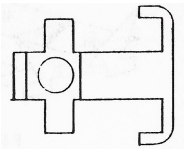
Bogies

30. This wagon is supplied with the N Gauge Society's own one-piece injection moulded bogies (thus enabling a smooth running and stable model) which only require couplings and wheels to be fitted.

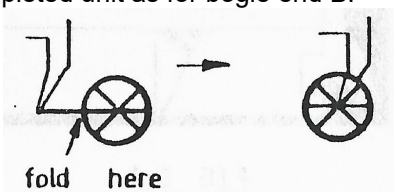
31.



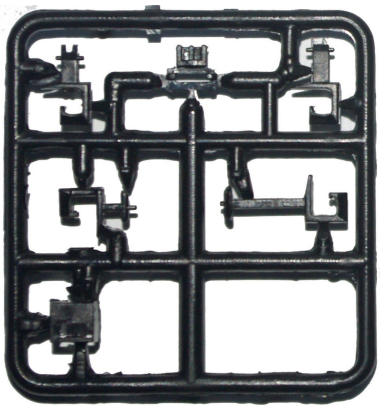
32. Reshape the ends of the bogie sides as shown the lower image to more closely resemble the prototype.
    The two bogies carry the brake and step detail which is slightly different at each end. For bogie end B (**15**) fold down the footsteps and glue the completed unit to the top of the bogie coupling bracket, butting up against the raised centre.



33. For bogie end A (**16**) fold over the brake wheels and glue to their brackets - note these fold with the half etched line on the outside. File off the remains of the tab after gluing, then fold down the brake wheel brackets. Fold down the footsteps and fit the completed unit as for bogie end B.

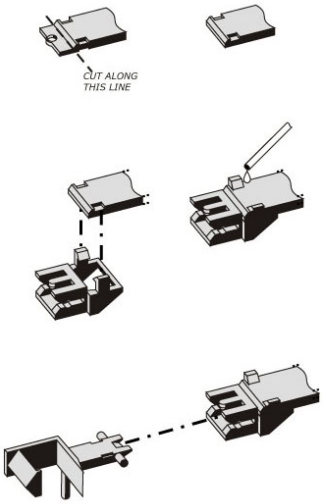


34. Each coupler sprue contains one of the following (see photo, left to right, top to bottom): Short NEM coupler; NEM coupler box; Long NEM coupler; Short sprung coupler; Extra long sprung coupler; Coupler box for sprung coupler.



35. Note that coupler springs are <u>not</u> included. The N Gauge Society is standardising on NEM fittings (where possible) for all its kits that have bogies. The sprung coupler parts are on the sprue anyway, but it is envisaged that NEM couplings will be the modern choice for most modellers. However, springs can be obtained from spare parts sellers such as BR Lines.

36. Cut off the end of the bogie coupler bar as shown.



37. Clip on the NEM pocket as shown and reinforce with a small amount of glue.

38. Clip in the chosen coupler (short/long NEM as supplied, or other NEM couplers).

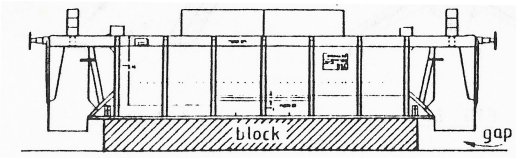
39. Add the wheels to the bogies. Place the end of one axle in an axle cup on one side, then place the other end over the axle cup on the opposite side. Use a small screwdriver to gently ease the bogie side away from the wheel until it drops into the axle cup.

40. Test run the bogie. If the wheels bind try squeezing the bogie side frames and rotating the wheels; alternatively if the wheel sets feel a little loose then remove, squeeze the frames gently, then replace.

41. Test fit the bogies to the wagon and run around the tightest curves on your layout. Clearances between the bogie wheels and the wagon body are tight and dependent on the severity of your curves it may be necessary to remove a little plastic in the form of a chamfer from behind the sides to clear the wheel

flanges. If this is necessary, take care not to damage the front detail of the sides.

42. The bogies are held in place with the bogie retainers which should be a press fit. Do not force! If necessary, use a small drill to open up the hole in the bogie pivot to take the retaining pin. Note that you may find it easier to complete this step after painting. Do not rest the body upside down on its safety cages. If you wish to fit the bogies in this way first place the wagon on block of wood or similar such that the safety cages are lifted clear of the work surface.



Paints for Dutch livery:

Railmatch:
Yellow: 202 or 2202 (Warning Panel/Engineers Yellow)
Grey: 226 or 2226 (Railfreight Grey)

Phoenix
P134 BR Signal (Warning) yellow
P182 B.R. Railfreight Grey

Humbrol:
RC407 BR Yellow (or 24 Trainer Yellow)
RC413 Engineers Grey

Weight

43. Plastic kits can be light, and some modellers find that a little weight improves running qualities. There is plenty of room inside the hopper to fit a little bit of lead weight which can be covered with a load.

Transfers (Decals)

44. It is advisable to prepare the painted surface with a gloss finish as this will accept transfers more easily and the carrier will not show as much. Use a gloss varnish or 'Klear floor polish'.

45. Cut round the transfers using a sharp knife and a steel ruler – always cut with the ruler over the transfer to avoid damaging it.

46. To apply the transfers, soak them in a dish of warm water for a few seconds, drain off the water, lay on a flat surface and then use the tip of a cocktail stick to check that the transfers will move free of the backing paper – if not, return to the water and repeat this step. Once the transfer moves, place it on the model and use the tip of the cocktail stick to hold one end to the model while pulling the backing sheet away with tweezers. There should be time to make a few adjustments as necessary.

47. Leave all the transfers to dry for half an hour and then apply a 'decal setting solution' (such as Micro-Sol) if required which will help the transfers to lie and form over detail. Then leave overnight before applying a coat of matt varnish to seal the transfers to the model.

Congratulations! Your model is now complete.