

# GREAT WESTERN RAILWAY

## 4 WHEELED COACH KITS

### ASSEMBLY INSTRUCTIONS

ref: 7C04

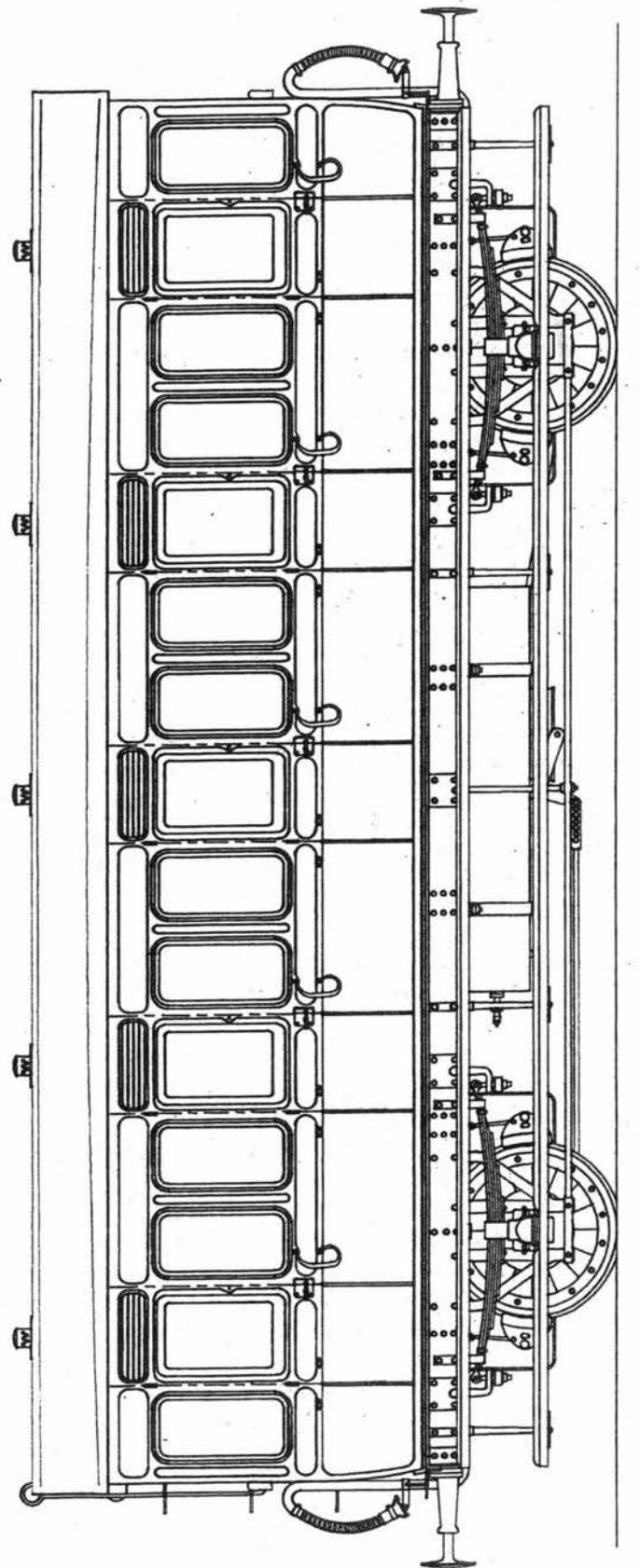


Illustration shows full third class coach (Diagram 59)

SLATERS' (PLASTIKARD) LTD.

## GREAT WESTERN RAILWAY DEAN PERIOD 4 WHEELED

There are two parts to the instructions - first this part which provides some limited historical information, livery notes, and of course the assembly instructions and diagrams. The second part contains the building dates, numbering details and so on in tabular form.

### HISTORICAL NOTES

These types of vehicle were built from the early 1890s until just after the turn of the century and all had a great many features in common such as the roof profile, style of panelling, etc. They were built for branch line and local main line use and lasted until well into the 1930s on similar duties although by this time many would have been converted for workmen's trains and the like. These types of vehicle would have been found on almost any Great Western route and would have been equally happy on a Cornish branch line as on a line approaching Paddington. During the period in which they were built, the clerestory roof reigned supreme on the best trains, but low roofed stock such as these vehicles were being built in increasingly large numbers in four, six, and eight wheeled varieties.

The style of carriage design as seen in these particular examples dates from about 1887 and they continued to be built until about 1904. The width, roof profile, exact nature of the panelling, and so on was in fact common to a colossal number of different carriages of this period. Effectively all that changed were the numbers and types of compartment and hence the length. The study of even just a few diagrams of Dean coaches will illustrate this quite clearly as compartment lengths remained constant for the various classes of passenger. This is obviously a very simplistic review, but it will serve to illustrate that the carriages we have produced can, if you so wish, be used as a basis to produce a plethora of different vehicles by cutting up the sides and splicing the compartments together as appropriate! The underframes are something else...

### DETAILS

Fortunately this series of carriages were fairly consistent throughout their life as regards detail modifications, and those that there were are quite well defined and not too drastic! Modifications were basically confined to three areas - safety chains, lighting, and emergency vacuum brake release (ie: the communication cord's function). Later in life other changes would have become apparent as major repairs were carried out and so on. Late photographs of the carriages also show the mouldings (or panelling) to have been removed and areas of the coach bodywork having been replaced with larger sheets of wood or sometimes metal.

### Safety chains

These were fitted either side of the main couplings to all vehicles as built but were eventually found unnecessary and removed from around the turn of the century.

### Lighting

The first vehicles of these types were built with oil lamps but these were replaced by gas lamps fairly early on in their life. The first type of gas lamp to be fitted was described as a "flat flame lamp" and gas was fed to them from a cylinder (or sometimes two) mounted on the chassis via a pipe running up the outside of the end of the carriage and along the roof. Branches from the main feed pipe supplied each individual lamp. The later type of gas lamp fitted from the early years of this century was only subtly different to the above in appearance. The difference basically lay in the mantle now used which provided a much better light than previously. In addition, a second pipe was run along the roof which provided a pilot light for each lamp and this meant that a valve could be introduced to switch off the whole supply. This was fitted to the end of the coach just below the regulator and had a long lever so that the supply could be switched off from the platform. For a much more detailed account of the changes and the various types of lamp you are recommended to the articles by John Lewis appearing in the "British Railway Journal" numbers 13 and 16 (Autumn 1986 and Spring 1987 respectively). Note that the kits cater for the later incandescent gas mantle type lamp although it should not be too difficult to produce the earlier type by a little butchery!

### Emergency Vacuum Brake Release

As originally built it would appear that the communication cord was suspended from rings mounted along the edge of the roof on the outside of the vehicle. These rings were mounted along each side of the carriage although the cord was only threaded through on one side. It is believed that around the turn of the century the communication cord was moved inside the carriages and connected to the vacuum brake via the linkages mounted on the end of the carriage rather than being connected to a whistle on the engine. The kits cater for this later arrangement.

### LIVERIES

There were several distinct livery styles adopted by the Great Western Railway on this series of coaches according to the period actually in question. These styles are all dealt with in detail in "Great Western Way" by J.N.Slinn (published by the HMRS, 1978) and "Great Western Coaches" by Michael Harris (published by David & Charles, 1966 and subsequently reprinted) although it is also necessary to describe them briefly here.

### Up to 1908

This was truly the era of "chocolate and cream"! All of the bodywork was painted in "Windsor brown" except the panels above the waist which were in creamy white. Note that during this period the ends and solebars were also painted brown. All ironwork beneath the solebars was black. Droplight frames in the doors and the bolection mouldings were left in varnished wood (mahogany). All the beading was painted black and the roof was white (which would soon weather to very "off white" of course!) although some photographs show the lower rainstrip and the area below it to be brown. Lining is somewhat complex to describe (and apply!!!) and you are best referred to "Great Western Way" or "Great Western Coaches" which both contain excellent diagrams. Essentially, however, this consisted of a fine gold line down each edge of the panelling and a very fine brown line just inside the cream panels.

The carriage number would be in the eaves panels and in gold lettering shaded black. Class designations appeared in the waist panel on each door also in gold letters shaded black. The monogram was applied to the lower panels and usually appeared twice per side.

In 1907 a few alterations were made to the livery style and the ends were now painted black. The numbers were moved to the waist panels and a garter totem replaced the monogram.

#### 1908 to 1912

For repaints and new coaches the two colour livery was (temporarily) abandoned and replaced by all over chocolate described as being of a warmer shade than the previous colour (possibly due to a different type of varnish?). The ends were black and the roof as before but the panelling was no longer painted black. Lining was much the same, however. It is believed that for a time yellow replaced the gold in the lining.

#### 1912 to 1922

Again the change in style was not particularly dramatic except that the basic colour was changed to lake colour which now included bolection mouldings and droplight frames. The ends and all below the solebars were black. The lining was still in gold.

#### 1922 onwards

The two colour chocolate and cream livery was now reinstated albeit in a slightly simpler form than before and with black ends and gold lining. From about 1924 the lining was further simplified with only the waist and lower panels being lined, and from 1927/8 the lining was virtually swept away altogether there now being just a single gold/black line dividing the chocolate and the cream (panelling now not being painted black).

From this time onwards not many carriages survived long enough to be repainted again and anyway there would no doubt have been repairs to the panelling and so on giving the carriages a somewhat decrepit appearance! Photographs are, as always, by far the best guide as to how you should paint your model so please consult all you can find...

"Great Western Way" contains a good summary of the interior finishing for the various periods and we suggest that you refer to this for detailed information. Basically, however, the interior woodwork was left varnished (oak, mahogany, and walnut were used) and up to about 1911 the first class seats were in dark green leather, second class in brown moquette, and third class in red rep. After this time green cloth was used in first class compartments and dark blue rep in third class. Later on brown or chocolate cloth was used in first class and red material in third class compartments. These, however, were the colours adopted for new construction and it would appear somewhat unlikely that all the upholstery in older vehicles would have been changed.

#### REFERENCES

Several books and magazine articles have appeared over the years which contain photographs and other information on these coach types. Photographs of trains of them often appear in the many books published about the Great Western Railway and in particular those books and articles about the branch lines. Other sources worth consulting, however, are:

"A Pictorial Record of Great Western Coaches" Part 1 by Jim Russell (OPC)

"Great Western Way" by Jack Slinn (HMRS)

The following published photographs may be found useful:

"A Pictorial Record of Great Western Coaches" Part 1 by Jim Russell (OPC)

Figure 69 - Full 3rd no.937 as Tool van no.24

Figure 70 - Full 3rd no.2776

Figures 72 to 76 - several vehicles, useful for detail

"Great Western Coaches Appendix" Volume 1 by Jim Russell (OPC)

Figures 436 onwards - several useful views of compartment interiors.

#### ACKNOWLEDGEMENTS AND SOURCES

These kits were all prepared from copies of the original Great Western Railway works drawings. In addition, we have worked from measurements of preserved vehicles and numerous detail drawings of individual components. Many photographs have also been studied to ensure authenticity. We are extremely grateful to Mr. Patrick Reardon for supplying us with vast quantities of constructional data and for providing us with the enthusiasm to include as much detail as possible! Mr. John Lewis has been good enough to provide copious notes on the historical details, and Mr. David Geen has filled in some of the other details. Gentlemen, thank you.

#### CONSTRUCTION - GENERAL NOTES

There are two major subassemblies in each model, the underframe and body which we suggest are constructed as separate units as far as practical and united only when necessary. Please note that many of the details provided are very delicate and careful handling of both the components themselves AND the finished model will be necessary in order to avoid damage. Indeed, you may wish to omit some of the very fine parts if your model is going to be used on a layout where the models are handled heavily - some of the finer brake gear parts, for instance, may be omitted without sacrificing appearance greatly! Whenever possible, however, we recommend that you fit all the parts as much thought has gone into the kit in order to make it look as realistic as possible from any viewing angle.

A variety of materials have been utilised in the manufacture of this kit although it is predominantly moulded in polystyrene. Moulded parts should be cut from their sprues with a SHARP craft knife or scalpel; do not attempt to break them off the sprues as the risk of damage is high especially with some of the smaller items. Clean off any ejector pips and/or flash using small needle files - do not use a knife as there is a high risk of removing too great a quantity at a time!

Take great care with the etched parts as some are very delicate indeed as you will soon find out! They should only be removed from the frets when required as the identification numbers are usually etched into the surrounding waste metal. To remove the parts use a SHARP craft knife or a piercing saw; do not try to break them out or use cutters as the risk of damage is very high. Any remaining pips and ties should be removed using

small needle files, and the metal cleaned if required using a small glass fibre burnishing brush. Note that several spare and alternative parts are provided on the etchings so do not worry if you have a few parts left over!

Castings should be removed from their sprues using a piercing or razor saw. The use of cutters will probably damage them so don't. Resultant pips, etc. should be removed using small needle files and/or emery paper.

To construct the model upon it is well worthwhile investing in a small piece of plate glass - this will help to ensure that all the parts go together squarely and accurately. Use MEKPAK fluid cement to bond plastic parts together, and use an epoxy type (eg: fast setting Araldite) or one of the slower curing cyanoacrylic adhesives (eg: Loctite Multibond) for bonding metal to plastic. Solder is recommended for assembling the etched items although it is conceivable that certain types of glue could be used. Solder, however, is far superior!

Before starting the construction of the model please read all through the assembly instructions and study as many photographs of the prototype as you can lay your hands on so as to ensure you get the details correct. Note that we have tried to cater for most possible variations but doubtless there are many others! The notes above will provide some information and basic guidelines but with such large numbers of the prototype being built it would be impossible to cater or describe every variation - CHECK DETAILS WITH PHOTOGRAPHS!

#### CHASSIS ASSEMBLY

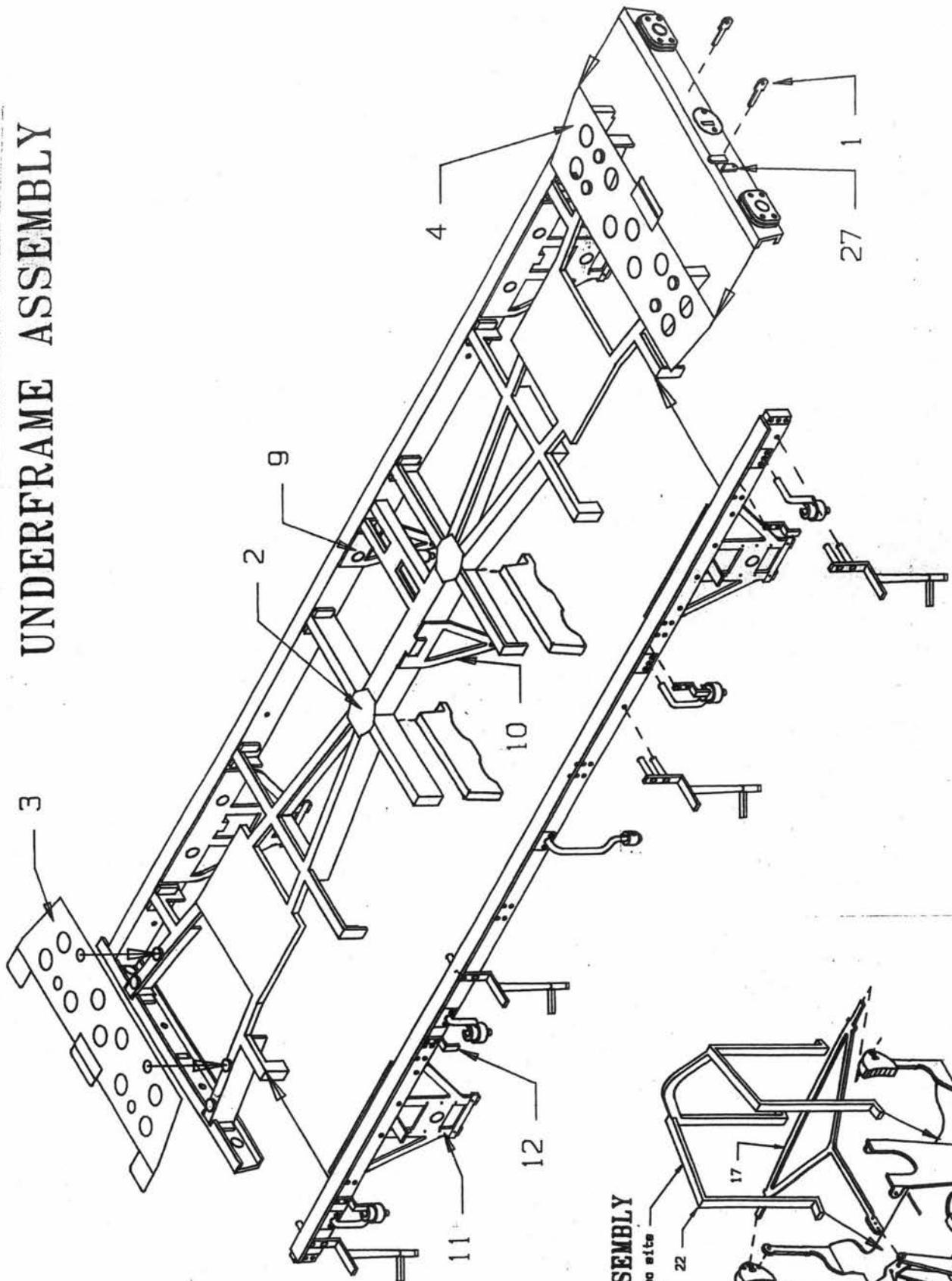
Please note that this assembly is quite delicate and will be found easily damaged - you have been warned!

Remove the underframe "spider" from the sprue. The easiest way to do this without breakage is to cut the feed away with a piercing saw, rest the unit on a flat surface, and then cut the sprues away with a sharp craft knife. Alternatively cut the sprues away using a piercing saw. Make sure all the remaining pips are removed before continuing. Do remember that this part is extremely fragile and is easily broken so take care!

Cut the solebars away from their sprues and clean up. Clear the spring hanger and truss rod support holes with a 1mm drill (No.60/0.040"). Carefully locate each solebar against the underframe ensuring that the top of each are in exactly the same plane and that the solebar with the two extra pegs (to locate the vee hanger) is on the same side of the underframe as the vacuum cylinder supports. In order to make the solebars and underframe locate correctly it will be necessary to carefully trim the ends of the legs of the underframe moulding. Resting the underframe along the edge of your piece of plate glass will assist here but take care as there are several locating pegs on the top surface of the underframe unit! Before cementing in position check that everything is correctly orientated and that the solebars are vertical.

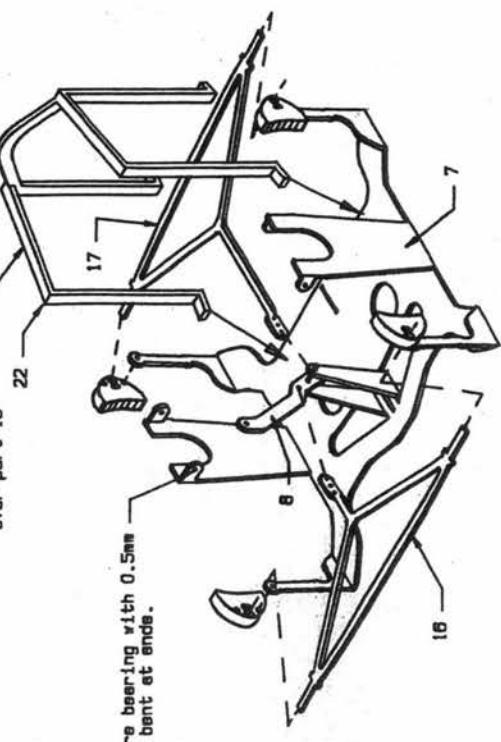
If you wish to model a coach in its pre-1900 (or thereabouts) condition drill out the two holes in each headstock (bufferbeams are fitted to locomotives, not carriages!) for the safety chain lugs (etched parts, no.1) with a 0.75mm drill (No.69/0.029") but do not fit them just yet.

## UNDERFRAME ASSEMBLY



## SUSPENSION UNIT ASSEMBLY

This item also fits over part 16



The headstocks should now be located against the ends of the underframe and cemented in position. Do ensure that all mating surfaces mate correctly and that all is square.

Cut the etched gusset plates (parts 2) from the etched fret and locate them over the moulded underframe. Ensure they sit down properly over the framing before gluing them into place.

Cut the etched rack plates (parts 3 and 4) from the fret. Note that the two are slightly different in that one has a pair of steps extending from it. Do not yet bend the end "stops" - this can be done whilst fitting the body to the underframe. Locate and glue these to the underframe over the moulded pips; there is only one way of doing this as the two are keyed.

Carefully clean out the holes in the compensation unit baseplate (part 5) so it will fit over the pegs on the moulded underframe and repeat for the fixed bearing unit (part 6). Do not glue them into place at this stage!

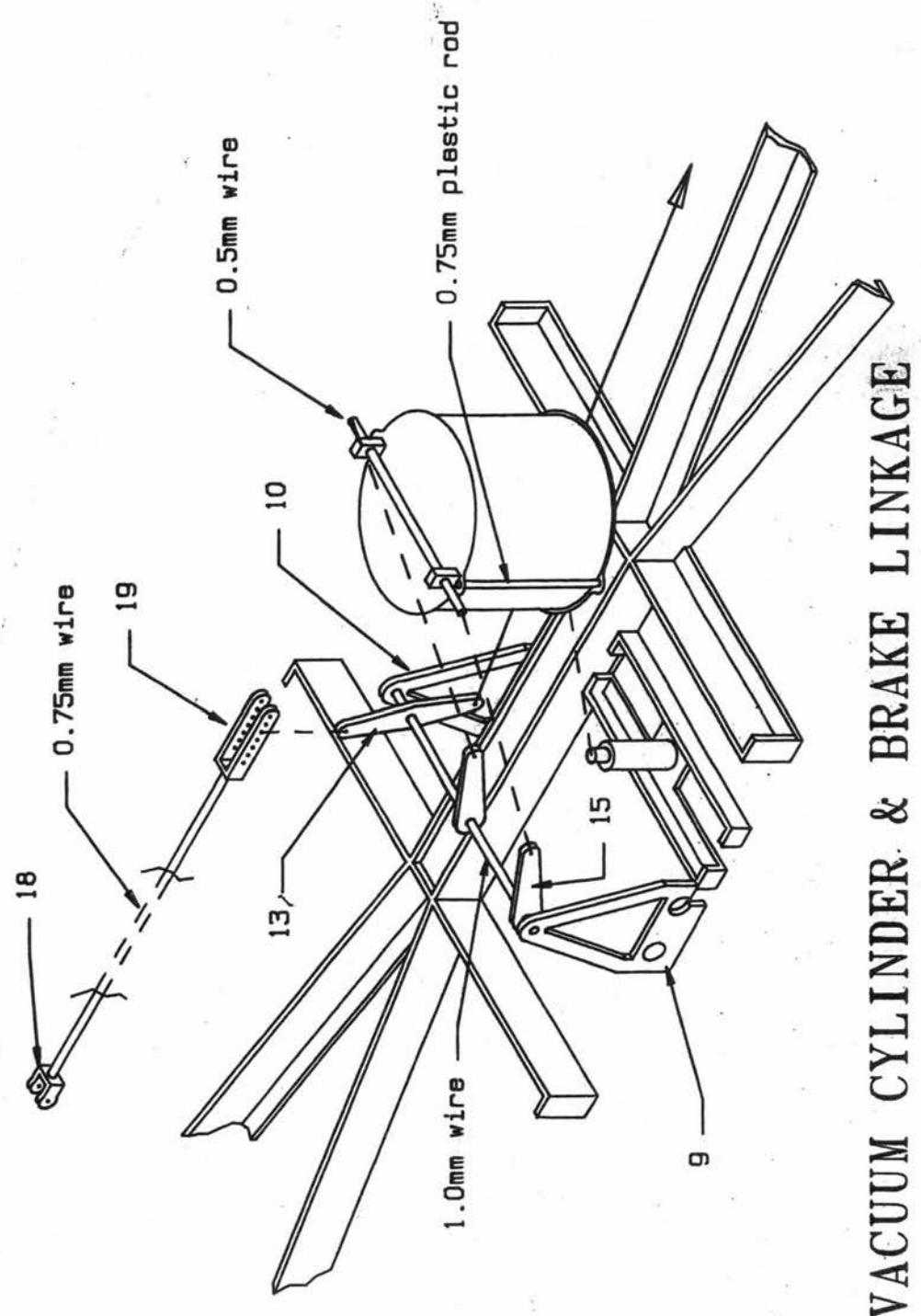
Before folding up the bearing units check that the moulded brake shoes will fit properly over the lugs on the inside bearing units (parts 6 and 7). Note that the brake shoes do not fit to their hangers by means of the central hole in each shoe but to the projecting lug at the top of the shoe. Do not attach the brake shoes at this stage. Now fold up the compensation unit baseplate (part 5) and the two bearing units (parts 6 and 7). Remove the brake shoes from their sprue and clean up but do not yet fit them.

Slide a short length of 0.75mm wire through the holes in the brake guide link brackets (folded down from each suspension unit) sliding on the guide links (parts 8). Solder the wire to the bearings but NOT to the links and trim off flush on either side.

The wheels come ready mounted on their axles with bearings in place but the pin pointed ends of each axle will require removing. To do this use a pair of heavy duty side cutters or a fine saw and clean up each axle end with a file. The axle ends should be removed to about 0.5mm away from the wheel faces. Now drop the wheelsets into the bearing units and temporarily secure in place with a short piece of 0.5mm wire through the holes in each leg.

Trial fit the brakeshoes to their hangers bending them slightly if necessary such that the shoes just clear the wheels. Once satisfied glue them in place using a small amount of epoxy or cyanoacrylic adhesive.

While waiting for these to set, assemble the vacuum cylinder parts and drill the two lugs on the bottom plate 0.5mm (No.76/0.020"). Thread a length of 0.75mm plastic rod into the vertical holes/lugs and cement in place trimming off flush at the top. Thread a length of 0.5mm wire through the two holes just drilled but do not glue into place. Locate and cement the vacuum cylinder onto the underframe by means of the moulded peg ensuring it is vertical.



Cut off the vee hangers (parts 9 and 10) and the W-irons (parts 11) from the etched fret. Prepare the inner vee hanger (part 10) by bending it just slightly to allow it to stand vertical when glued to the underframe. Prepare the W-irons by rivetting the stays and legs and bending the stays over through 180' (fold line on outside of bends). Carefully open out a small gap between the stay and legs to allow the wire truss rod to fit later. Fold the spring stop over at a right angle. These parts can now all be glued to the chassis assembly locating them over the moulded pegs.

The brake shoes should now be set (preferably wait overnight, however!) and so more of the brake gear components can be added. Cut the brake yokes (parts 16 and 17) from the fret VERY CAREFULLY as they are very fragile. Take the long leg of each in a pair of pliers and gently bend the end through 90'. Now assemble these to the brake shoes and guide link taking great care not to damage anything! The yokes fit into the central hole in each brake shoe. A drop of glue will bond them to the brake shoes and a quick touch of solder will secure them to the guide links. The diagram will make the arrangement much clearer than these words.

The wheels should now be removed again and placed to one side. Paint the suspension units and brake gear (black is ideal!) and leave to dry. Replace the wheels and securing wires.

Now fold up the brake safety loops (parts 22) taking care not to distort them. Although numbered the same, there are two slightly different parts one being slightly taller than the other. The taller parts should be attached to the fixed W-iron unit. These are fitted over the brake yokes, the "feet" sitting on the compensation unit baseplates. There would appear to be some variation on the prototype as some had the "V" shaped cross piece to the outside ends of the vehicle aswell as to the inside so check with photographs and remove this extra limb if required.

The two suspension units may now be fixed to the underframe noting that at both ends the guide links should be to the outside. Glue the units to the underframe locating them over the moulded pegs. Before you go any further check that the coach will roll freely and that the "floor" is horizontal.

Thread a length of 1mm wire through the two vee hangers also threading on the operating levers (parts 14 or 15 as per your prototype) and arm (part 13). Note that the operating arm (part 13) should be towards the centre of the chassis. Do not yet solder these levers in place; but solder the wire to the vee hangers and trim off flush. Connect the two operating levers (14 or 15) to the wire protruding either side of the vacuum cylinder and secure with a very quick touch of the soldering iron or a small drop of glue. Leave the operating arm free at this stage.

The remainder of the brake gear can be added at this stage if you wish but in view of the fact that it is rather fragile it is recommended that you wait until later.

Carefully remove the moulded gas cylinder supports and fit them to the underframe. There is a choice of support, one for a single cylinder and another for two. Some vehicles were certainly fitted with two cylinders but as you will discover they are a bit of a squeeze! It is possible that some of the full thirds were so fitted and the inner vee hanger could be

joggled to clear. Photographs are not always too helpful, unfortunately, so if in doubt fit the single cylinder! They fit on the side opposite the vacuum cylinder and into the webs of the underframe channels either side of the centre of the vehicle. Again, the diagram should make this clear. Do not yet fit the gas tank(s).

Fit the cast truss rod supports into the holes in the solebars but do not yet secure. Cut a length of 0.75mm wire to a length about 2mm longer than the distance between the inner edges of the W-iron stays and flatten each end for a length of just over 1mm with a pair of pliers - these "flats" should both be in the same plane. Carefully thread this wire through the truss rod support and wedge it behind the W-iron stay at each end. Check that the rod is straight and level before soldering to the support and stays. It is possible to bend the support slightly if required but take great care not to overdo this as it will break! Glue the support from the back of the solebar and repeat for the opposite side.

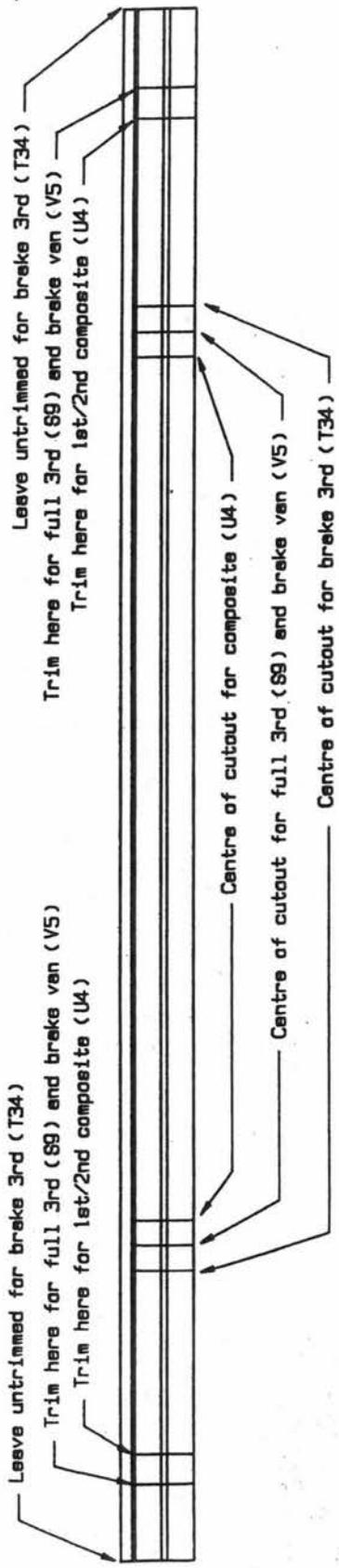
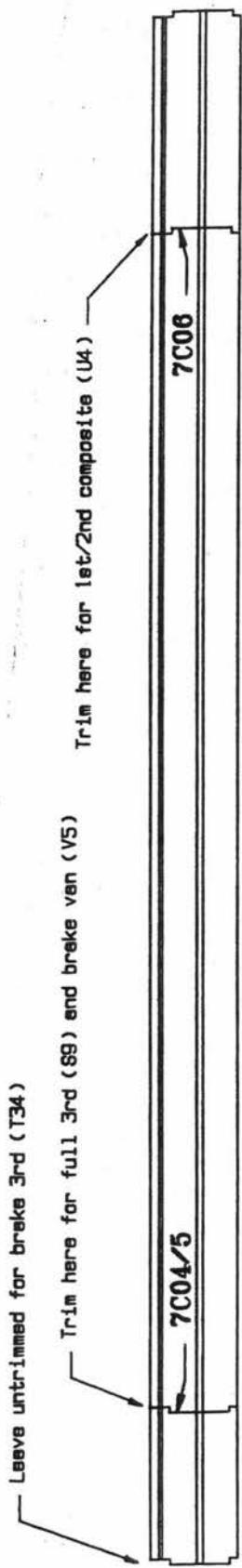
Clean up and fit the cast spring hangers to the holes either side of the W-irons. Note that these parts are handed. Clean up and locate the moulded springs into these from the rear (this is a little fiddly!) and glue in place. Fit the axleboxes to the underneath of each spring using epoxy to secure them to each etched W-iron.

Carefully clean up and fit the cast footboard supports to the holes provided in each solebar. Ensure that each support rests up against the outside of the solebars otherwise the footboards will end up too wide. Check also that the supports are level. These should be secured with a drop of adhesive from the inside of the solebars.

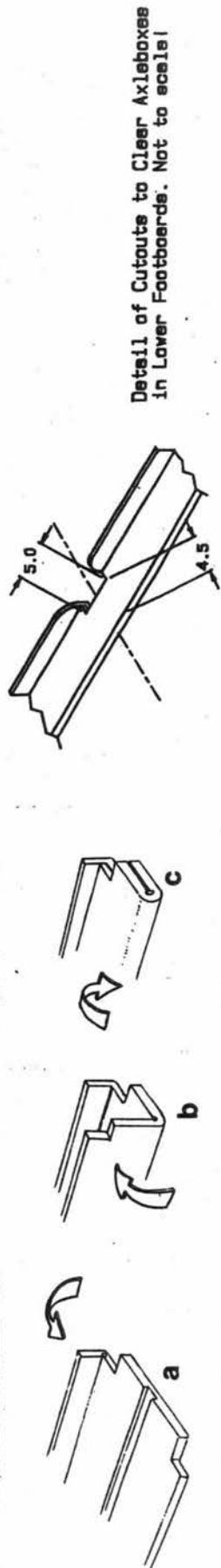
Before fitting the footboards it is as well to fit the etched spring "protectors" to the solebars (parts 12). Form the two rivets in each, fold up, and fit to the solebars so that their centres are 36mm apart equally spaced about the centre of each axle.

The footboards supplied in these kits are etched and require folding up. This is not difficult but take your time. Alternatively you may like to replace them with footboards fabricated from wood sections available from some model shops (try model boat and aircraft stockists) although the etched versions will be stronger. The etchings are supplied to the correct length for the longest coach in this series (the brake 3rd) but will require trimming in each instance. The diagram illustrates where to cut/file for each type! To assist folding the steps we suggest that you score the etched fold lines deeper using a triangular or knife edged needle file or a heavy duty craft knife (eg: a Stanley knife or equivalent). This is particularly essential for the rear edge of each board. Also the use of bending bars will ensure you get a straight footboard. Once folded up and cleaned up, etc. the boards should be soldered carefully to their supports. Note that parts 24 are the upper boards and parts 25 the lower.

This completes the underframe apart from a few details. The gas cylinders should now be assembled and the valve fitted to one end. It (or they!) can now be cemented to the supports ensuring it is central. Connect up the brake pull rods which are made from 0.75mm wire to the guide links using the etched adjusters (parts 18 and 19 or 20). The seven hole



## FOOTBOARD TRIMMING, ETC.



adjusters (parts 19) appear to be more appropriate to the full third. Fold up the inner safety loops (parts 23) and fit them over the brake pull rods and to the underframe 13.5mm away from the centre line of the carriage. The buffer housings can be glued into the headstocks but do not fit the buffer heads (or rams) until after painting. Fold up and glue the headstock lamp irons (parts 27) to each headstock, one at each end and 10.5mm to the left of the centre line.

## BODY ASSEMBLY

Before starting to actually assemble the components of the body it is worth while spending a little time working on them whilst still separate. Indeed, you may wish to paint the sides and ends and line them out before construction commences as it will be found far easier to do this now rather than after all the small details have been applied. Any damage as a result of assembling can of course be touched up later.

Take the side mouldings and clean off any flash and moulding pips, etc with fine needle files. Open out the holes for the door and commode handles with a 0.5mm drill (No.76/0.020"). Do not fit the handles at this stage, however. In the case of the full brake (ref:7C05) or brake third (ref:7C07) the guards' lookout should now be assembled by inserting the lookout sides into the lookout from the rear. Ensure they fit properly and cement in position. Clean up the door ventilators carefully ensuring the bottom is flat. One should be glued centrally in the panel above each door (see drawing on the box label)

Clean up the two end mouldings and check that they fit satisfactorily to the sides trimming if necessary. There is nothing to do to the plain end at this stage, but drill out the centre of the two raised vacuum release gear "lugs" with a 0.5mm drill (No.76/0.020") to take a piece of wire. You could conceivably fit the lamp irons, steps, etc. at this stage but we strongly recommend that you do not as they are rather vulnerable!

Assemble one end to a side on your piece of plate glass to ensure that the bottom of each is coincident and ensure that the two parts are at right angles to each other. You may find it necessary to remove a small amount of plastic from the inside edge of each end to ensure that the panelling on the ends is at the same level as the extreme ends of each side - the ends of the side form the outside verticals of the panelling on each end. Run MEKPAK along the join to weld the two together. Add the other end and then the opposite side to form a box without base or lid. Ensure all is square and leave to set.

Cut out a floor from the 1.5mm thick (0.060") Plastikard supplied. This should be cut such that it will drop into the vehicle without pushing the sides and ends out. You may like to scribe planking to represent the floor boards which should be 4mm apart and running at 45° to the side of the coach (the prototype floor was made in two layers of planking each running at right angles to each other.) These plank lines should only be very shallow so as not to distort the floor. Cement the floor in place.

The partitions can now be added. These were also made up of two layers of planks on the prototype which is why the planks run vertically on one side and horizontally on the other. Check that the partitions when tried in place do not appear above the level of the ends and then cement in place between each compartment.

Seats can be made up from Plastikard at this point if you wish. An excellent way of reproducing the upholstery is to use the correctly coloured fabric or, alternatively, use plasticene moulded by hand to the correct shape and emboss the button heads using a pin held in a small pin chuck. In any event, it is difficult to see the interior when all is complete so all that is necessary is to "sketch" the details.

If you feel so inclined the luggage racks can now be made up and glued to the partitions. Two patterns of rack are supplied, the longer ones are for first class compartments, the shorter for second and third class compartments. Each support should be located in its baseplate and soldered and each assembly glued to the partitions in between each picture frame. A thin piece of wire should then be soldered across the tops but no netting is supplied. Very fine mesh netting is hard to find but it is conceivable that something could be found in the wife's wardrobe!!!

It is a good idea to paint the inside of the vehicle at this stage as it will become a little inaccessible later! Any extra detailing that you wish to incorporate should also be added at this stage.

Now cut to length and fit the 12mm wide strip of 1.5mm thick Plastikard into the channel formed along the top of the partitions. The length should be the same as that between the coach ends. Cement this in place and leave to set.

Try the roof in place and gently round the edges with a file. Drill out the lamp top positions with a 2.5mm drill (No.40/0.098") to clear the threaded spigot on the base of each cast lamp. The positions are marked on the underside of the roof moulding but do ensure that you use the correct holes for the coach being modelled! The drawing on the box label will help you to identify the correct ones!!! Now rest the roof on top of the body so far and mark the lamp top positions through the roof onto the bracing strip inside the model. This strip should be drilled 1.78mm (No.50/0.070") and any burrs removed. The roof is arranged so that the lamp tops can be screwed into this strip thus holding the roof in place and making it removable. If you wish the roof can of course be glued in place after glazing, etc. but the choice is yours!

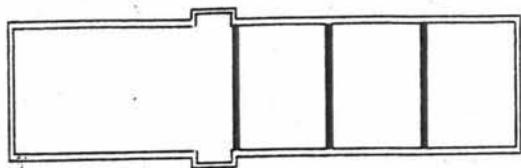
The lower rainstrips are formed from the Microstrip supplied. Carefully mark the positions of the ends and middle of each strip following the diagram and carefully cement the strips in place ensuring you get a nice even curve along the roof. Do take care to get this right as the roof is so obvious on the finished model. You may like to replace the moulded upper rainstrip with more Microstrip in which case the moulded ones should be removed with a file.

The destination board brackets can now be made up - these are immensely fiddly! The brackets (parts 31) should be bent over to a U shape so as to

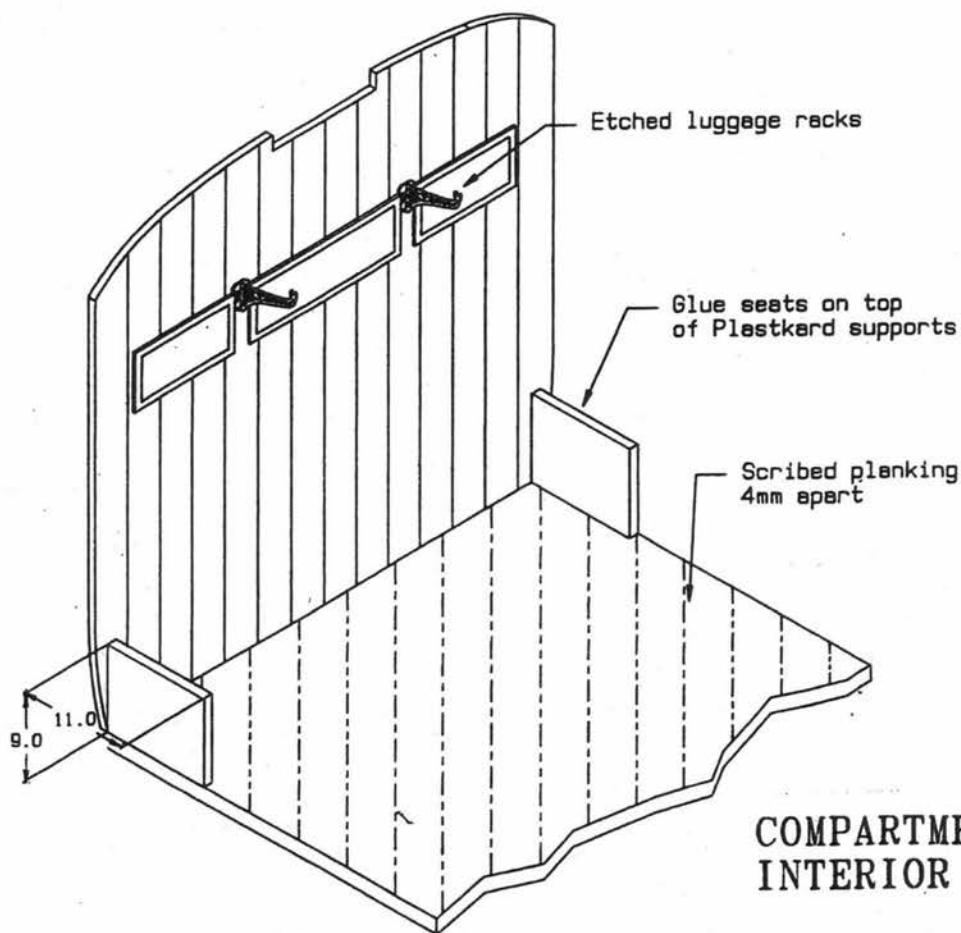
## PARTITIONS



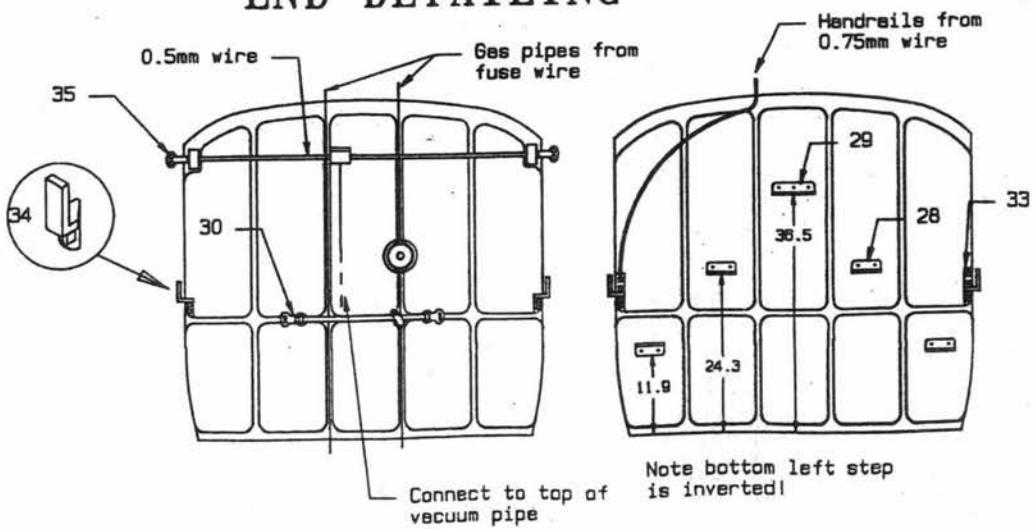
brake van (V5)



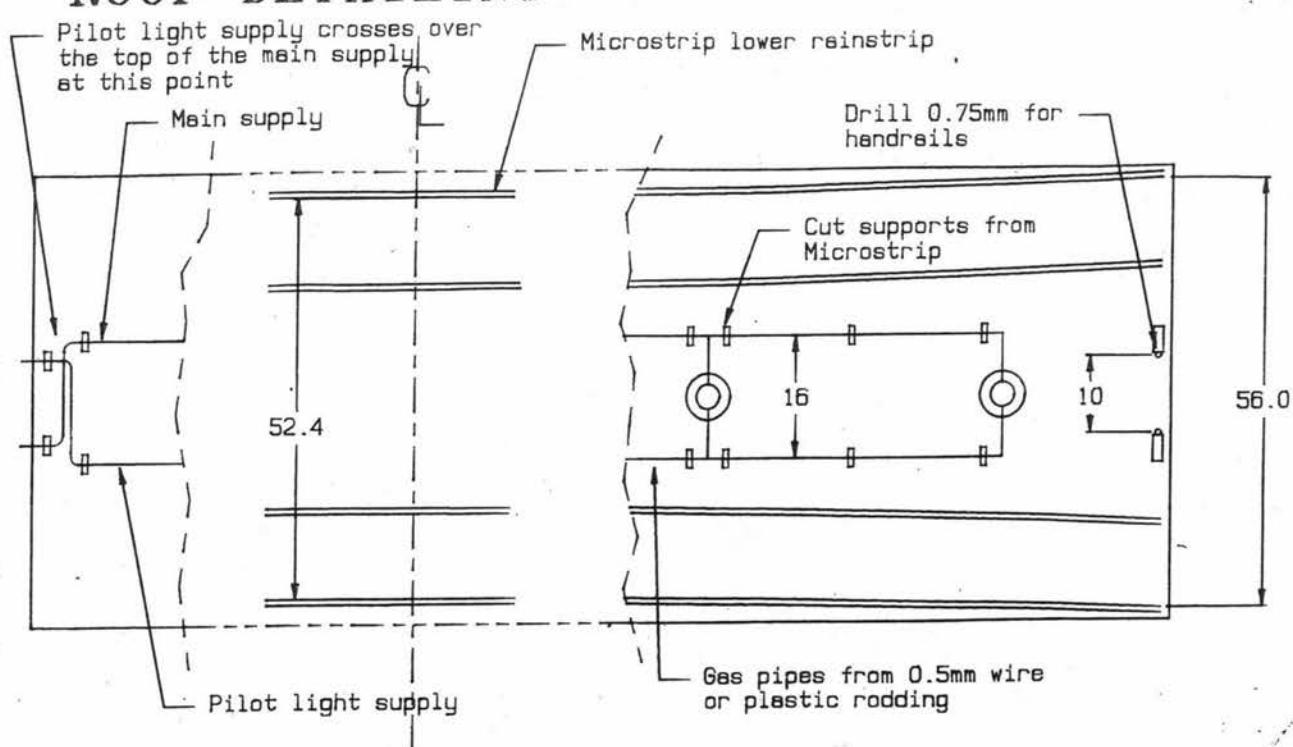
brake 3rd (T34)



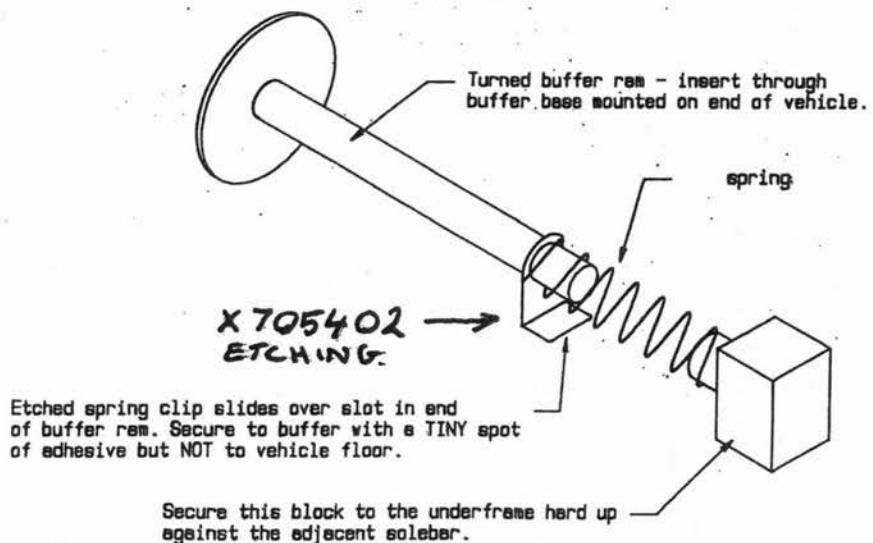
## END DETAILING



## ROOF DETAILING



## BUFFER SPRINGING ARRANGEMENT



form a thin recess for the boards themselves (parts 32). Following photographs for their correct position, glue the completed board/bracket assembly to the sides in the eaves panels.

The detail on the ends is next and this offers a little scope for variation (see the prototype notes) as will be found by studying photographs. It would appear that the most common configuration was to have just the steps, handrails, and lamp irons on one end and the vacuum release gear and gas control gear on the other but it is not always possible to tell from photographs of vehicles in a train! On the brake third the steps, etc would be at the brake compartment end and the gas gear, etc on the other. The steps (parts 28 and 29) should be folded up and glued to the end as in the diagram which shows their positions relative to the bottom of the end. Each step was central in its panel but note that on some vehicles the bottom left hand step was upside down. Take care with the lamp irons (parts 34) which are rather delicate and glue the handrail plate (parts 33) immediately above these. Drill through the top hole in the handrail plates with a 0.75mm drill (No. 69/0.029") to accept the handrail fitted later. The diagram should explain the gas control gear better than words but the gas pipes should be added from fuse wire or the thin plastic rod supplied running up the end and onto the roof after it is fitted properly. Note that in order to leave the roof removable the pipes can be cut immediately underneath the roof but as they should disappear underneath the carriage do not fit these pipes until the body and underframe are united. The pipe from the vacuum release box should be formed from fuse wire and connected to the top of the vacuum pipe to represent the vacuum release gear.

The roof is next to be detailed. This is best done with the roof attached to the body (see above) - note that if you are using the lamp tops to secure the roof the threaded spigots will tap their own way into the Plastikard. If the thread is not well formed run an 8BA nut down the thread to clean it up. If you can find some good photographs of the roof of your particular carriage then so much the better but otherwise the diagram will assist.

#### FINAL ASSEMBLY AND DETAILING

At last we come to the point where the two parts of the model can be assembled. The body of the prototype was separated from the chassis by narrow strips of wood and this can be simulated on the model by inserting small pieces of Microstrip between the two parts. These strips should be glued to the underside of the floor running parallel to each end and positioned centrally under each door. They should each be 49mm long.

Ensure that the top of the chassis is free from obstructions (ie: ensure the pegs locating the etched rack plates are filed down flush) and try the two parts together. When happy with everything glue them together ensuring that the step end of the chassis is at the step end of the body! Note that it may be necessary to remove a little of the lower beading on each end to enable the etched stops (which should now be folded up from the rack plates) to fit satisfactorily

The model can now be painted or any touching up completed as required depending on how you decided to proceed. Before glazing fit the cast commode handles and the door handles. You may like to file these down a little and polish them before fitting. They should be secured to the sides using a tiny drop of cyanoacrylic adhesive so as not to damage the paintwork so carefully applied!

Fit the cast vacuum pipes to each end of the chassis on the opposite side of the centre to the lamp iron. Glue a connector into one end of each vacuum pipe spring and glue the other end of the spring over the top end of the vacuum pipe. These pipes will look most realistic in a train of vehicles as they can be easily coupled and uncoupled.

Following the diagram fit the buffer heads into the buffer guides, fold over a little etched spring clip and glue this carefully into the recess towards the end of the buffer ram.

glue  
a buffer spring pad to the underframe, and position a half spring between the spring clip and buffer pad. Admittedly somewhat "Heath-Robinson", but it does work! Unfortunately in order to get the buffer bodies scale size there is no room to put a spring inside the body as per our normal sprung buffers, hence this method.

Remove the roof and glaze each compartment by locating individual pieces of clear plastic onto the ribs on the inside of the sides. Take care not to frost the glazing with solvent. Now fit the roof and connect up any gas pipes, etc.

Carefully bend the end handrails to shape. The drawing on the box label shows the shape in side view and the end detailing diagram shows the end view. These are tricky to bend accurately so take your time and reject any unsatisfactory attempts! It is suggested that you glue the rail into the holes in the end only and spring them into the holes in the roof in which case you will still be able to remove the roof when you wish.

The safety chains can now be made up and fitted if you wish. Etched hooks are supplied (parts 26) but no chain. The chains can be easily fabricated from fuse wire or another soft wire or alternatively they can be adapted from a suitable chain (approx. 14 links per inch) if you can find any.

No couplings are supplied in the kits at present but it is hoped that some realistic screw couplings will be available from Slaters' (Plastikard) Ltd. in the near future. Suitable transfers are available from PC Models.

GWR 4 WHEELED DEAN PERIOD CARRIAGES - HISTORICAL DATA

This sheet of historical information regarding the four GWR 4 wheeled carriage kits has been compiled in order that you will be able to choose a prototype suitable for the period you wish to model. It has been kept as brief as possible whilst retaining as much data as practical and we hope you will find it of use. Our grateful thanks are due to John Lewis who has supplied the notes from which these tables are compiled.

For ease of use the information is supplied in tabular form and a few notes on its use are necessary. The GWR produced its carriages in batches of vehicles called "Lots" which were given sequential numbers. The year of construction is given in the same column as the lot number in the tables below. All dates in the remaining columns are given as month/year. Occasionally a figure is missing - this is because we do not have the information or, in the case of some columns, the carriage in question was never converted or whatever. The withdrawal dates given are those when the carriage was removed from passenger use although the vehicle may well have lasted longer in a new role (eg: as a Mess & Tool van, etc.) In some cases this new role is noted in the notes column but do note that the carriage was likely to look somewhat different to the form portrayed in the kits inasmuch that some of the beading may have fallen off or been replaced with sheets of wood or metal and so on!

Full 3rd class carriage, GWR diagram S9

Lot/ date	With- drawn	Notes
587/ 1891	305 1/1935 320 3/1938 335 10/1933 386 12/1937 478 6/1936 480 9/1936 481 9/1937 482 12/1935 483 1/1935 490 12/1935	To compo no.134 5/1898; to 3rd no.403 10/1912 To 2nd no.77 10/1899; to compo no.622 5/1910; (to 3rd no.405 3/1911)
703/ 1894	2701 12/1938 2702 11/1931 2703 7/1932 2704 9/1937 2705 5/1936 2706 9/1933 2707 10/1939 2708 6/1934 2709 1/1935 2710 6/1940	To compo no.197 8/1901; to 3rd no.12 10/1909 Condemned 4/1948 Condemned 11/1949 To 2nd no.50 9/1899; to 3rd no.188 7/1910 To 2nd no.45 5/1899; to 3rd no.204 11/1910
732/ 1894	2735 12/1935 2736 12/1938 2737 6/1934 2738 8/1935 2739 12/1935 2740 6/1934 2741 11/1931 2742 10/1933 2743 6/1939 2744 8/1936	To 2nd no.49 7/1899; to 3rd no.190 1/1910 To 2nd no.76 10/1899; to 3rd no.92 3/1911

760/ 1895	2757	1/1938	
	2758	12/1938	To 2nd no.46 5/1899; to compo no.6062 4/1910; (to 3rd no.406 4/1910
	2759	7/1938	
	2760	7/1938	
	2761	12/1938	
	2762	12/1938	
	2763	12/1938	
	2764	12/1938	
	2765	3/1938	
	2766	3/1938	Condemned 2/1951
	2767	6/1934	
	2768	7/1938	
	2769	11/1935	To Pilot Breakdown van no.61
	2770	10/1939	
	2771	2/1935	
	2772	2/1935	
	2773		To 2nd no.53 9/1899; to compo no.6117 4/1910; (to 3rd no.401 2/1911
	2774		To 2nd no.52 9/1899; to 3rd no.183 1/1910
	2775	12/1932	
	2776	1/1949	Condemned 11/1953
784/ 1896	3601	3/1940	To no.225 8/1899; Whitiand & Cardigan No.1
	3602	7/1938	To no.177 7/1899; condemned 11/1949
945/ 1900	902	11/1937	
	917	11/1938	
	930	6/1936	To ED 14746
	931	9/1932	To Loco Tool van no.40 Swindon
	932	1/1937	To ED 14935
	933	10/1933	
	934	1934	To Mess & Tool van no.84; condemned 2/1942
	936	1933	To Ballast coach no.80952; condemned 8/1936
	937	4/1934	To Tool van no.24
	938	1928	To ED 14805; condemned 2/1937
	939	4/1934	To Tool van no.86
992/ 1902	973	3/1937	To ED 14929; condemned 10/1938
	974	12/1935	
	975	4/1939	To Breakdown van tender no.108
	976	6/1944	
	978	12/1937	To ED 80998
	980	9/1938	To Mess & sleeping no.14138; condemned 9/1946
	981	2/1935	
	982	10/1947	
	984	5/1936	To ED 14972; condemned 8/1940
	985	5/1939	To ED 14913
	986	6/1936	To Mess & Tool van no.158
	987	7/1937	To Pilot van no.46
	988	10/1932	
	989	7/1937	
	990	12/1938	
1014/ 1902	977	8/1936	To ED 14928
	992	8/1936	To Breakdown van no.69
	993	12/1932	To ED 14933; condemned 11/1936
	994	8/1940	
	996	5/1936	To ED 14974

Total 83 carriages.

Note that lots 945, 992, and 1014 were built for use in close coupled sets. Certain other vehicles were used either in set trains or close coupled formations but information is scanty as to exactly which.