# LONDON ROAD MODELS

## M.R. "1698" (3130) Class 0-6-0

### Prototype Notes

The "1698" Class was a series of 60 engines built by the Midland Railway between 1885 and 1888 and in their original condition were perhaps the most handsome of the Johnson single frame goods engines,. They were coupled to either 2750 or 2950 gallon tenders.

Their original Midland Railway numbers were 1698 - 1717 and 1758 - 1797. Their 1907 numbers were 3130 - 3189. A number were rebuilt with "H" class boilers from 1904, some retaining their original "B" class boilers. In the 1920s, a few received G6 and G7 Belpaire boilers. The class was extinct by 1961.

The driving wheels were 4' - 10" 15 spoke, with 4' - 3" 10 spoke on the Johnson 2750 or 2950 gallon tenders. As built, these engines were originally fitted with the traditional Johnson smokebox doors. These were to be changed later for the Deeley smokebox doors.

Originally when built, these engines probably carried full MR crimson lake livery, which would have been replaced later with a simplified version of the crimson lake livery, with less lining. In late MR days they would have been plain black, with cabside crest and number on the tender. By the thirties, these engines probably had 12" cabside numbers and the letters LMS on the tender. After 1948 they remained plain black with the new BR number on the cab side and either BRITISH RAILWAYS in full on the tender or the Ferret and Dartboard logo.

### General Assembly Instructions

To complete this model you will require the following:
**Motor:**
00: A DS10 open frame motor will fit between the frames in an underslung (below and ahead of the rear) position to minimise interference with the cab floor using a LRM motor mount and 38:1 Ultrascale type gears. You may also find it possible to fit a Mashima 1220 or 1224 flat can motor as the chassis spacers have been made 12mm wide but careful alignment will be required due to the small clearance available.

EM/P4: A 1220 or 1224 flat can motor can be used in the same way. Both narrow and wide motor mounts are available from LRM for P4, the wide version allowing access to the motor screws in situ.

Portescap: A Portescap RG 1616 (C1) with a MJT 4902 gearbox conversion set, and

driving on the rear axle. Other types may be preferred and are possible, but the builder should make sure the choice will fit before commencing construction.

**Compensating / springing:**
We strongly recommend compensating the chassis, irrespective of gauge / flange profile for improved current collection, adhesion and overall performance. London Road Models' own cast hornguide system provides the best on the market but any standard system designed to fit 6mm chassis cut-outs can be used.

**Wheels:**
To complete you will require 3 axles, 4' - 10" x 15 spoke driving wheels, which at the time of writing are only available through LRM under the Sharman Wheels listing. You will also require 3 axles of 4' - 3" 10 spoke tender wheels: also available through LRM.

**Pickups:**
Can either be proprietary plunger type (Alan Gibson or KM) or brass wire mounted on a piece of gapped P.C.B.

**Numbers:**
A selection of numbers and smokebox door number plates (where applicable) are to be found on the brass etch.

Soldered construction is recommended, using a 25 watt iron with LRM 145deg. solder and 12% Flux. A LRM Resistance Soldering Unit can also be used for soldering many of the parts quickly and cleanly and is highly recommended. Superglue or a two part epoxy is recommended for attaching the whitemetal components, although low melt solder can be used with care.

Many of the overlay and other half etched parts are fairly delicate and should be treated with care. All half etch fold lines are to the inside of the etched components, unless otherwise stated. A fillet of solder should be run into the inside of all the folds when made to strengthen them.

Right or left refer to that side of the loco when viewed from the rear. Numerals in the text, e.g. 28, refer to the etched part as identified on the etch and parts list.

We recommend reference to relevant information and photographs of your chosen prototype. Recommended reference books are:
"An Illustrated Review of Midland Locomotives" - Volumes One and Four.
"An Illustrated History of LMS Locomotives" - Volumes Four.

**Kit variants**

Included in this kit are etched parts to build variations to build both locomotive superstructure and, more so, the tender superstructure. These parts are itemised here to avoid confusion to the builder when assembling the kit.

Locomotive fret
PT No.43 Smokebox door fastener (1905-1907).
PT No.44 Smokebox door handle flange.

Tender fret
PT No.29 High front coal plate toolbox support.
PT No.29A High front plate beading.
PT No.30 Front transverse toolbox.
PT No.31 Toolbox/Locker doors x 2
PT No.32 Toolbox door.
PT No.36/37 Coal rails. (To be used in conjunction with parts 29-32).

The following procedure is for the assembly of tender parts 29-32 and should be used if building a high bulk head version. It should be used along with the main text after paragraph 4.9. PT No's 17 and 19 are not required if building this version.

Fold PT No.29 at right angles, and using the half etch on the underside and along the outer edge, solder in place onto the lower coal plate, PT No.8/8A.

Solder beading PT No.29A to the upper edge of PT No.29.

Fold up and fit toolbox PT No.30, onto the platform formed by PT No.29.

Solder PT No.32 centrally to the front of the toolbox, and PT No's.31 x 2 toolbox/locker doors also on the front either side of the toolbox door PT No.32 with the hinges to the bottom.

Coal rails PT No.36/37 are to be used with this version, and can be soldered in place to replace PT No's.24 and 25.

**Locomotive Chassis Assembly**

1.1 Identify components from the diagrams and parts list before commencing. Decide on how you want to assemble the chassis - it is possible to build the chassis for OO, EM or P4, and either rigid or compensated / sprung.

1.2 Remove frames LH and RH frames from chassis etch and modify if required to take hornblocks. The hornblock openings have half-etched guide lines to facilitate cutting out. These are the areas shaded in diagram C1. Ream the holes to take the axle bearings, etc, and if using sprung plunger pickups, after deciding which to use in relation to the motor / gearbox, the frames should be drilled where half etch popped on the inside face of the frames.

1.3 Select frame spacers required, cut out and clean up. Three widths are provided, for OO , EM and P4. Check the fit of the tabs on spacers in the slots in the frames. It is easier to file down the tabs if necessary, rather than trying to open up the slots. Solder the front spacer (with hole), to one mainframe and the rear (also with hole), to

the other. Fit the wheel bearings for the driving axles, and align the chassis for assembly by threading a length of 1/8" axle-rod through the bearings. If building a compensated chassis, we recommend driving on the rear axle with the motor underslung - use the rear axle bearings for checking the chassis alignment.

1.4 If building a compensated chassis then we compensate between the middle coupled and leading coupled axle. Drill a suitable size hole (1/16" is right for the rod in our hornblock set) midway between coupled and leading coupled axle centreline and 3.5mm below the top edge of the frame.

1.5 Solder the chassis up on the front and rear spacers, checking to ensure it is square and level. Making the joints at opposite ends on alternate sides helps even out chassis heating / expansion, and hence avoids distortion on cooling.

1.6 "Spring" the frames apart slightly, and insert the remaining spacer (the one with slots). This represents motion bracket. This will have to be omitted if compensating. It is a good idea to test fit the motor / mount / gearbox at this point.

1.7 Punch in the rivets in the firebox / grate pieces and solder in place between the rear and centre coupled axle. The rivets should slope downwards to the front with the firebox side "point" to the rear, fitting up into the curvature on the inside of the frames.

1.8 Assemble the four laminations of the coupling rods each side, and finish-file the edges smooth. Ream to suit the crank pin bushes in use. If compensating the chassis, use the coupling rods, together with LRM taper end alignment jigs to accurately locate from the fixed rear axle, the middle axle hornblocks and then the forward axle hornblocks.

1.9 Fit the top brake hanger pivots from the wire provided through the holes in the chassis. Make up the brake hanger / shoe assemblies. After consulting photographs of your chosen model, make up either the straight or curved brake hangers. Solder the brake shoes onto the brake hangers, remembering to make them up as three left-hand and three right-hand. It is recommended to leave the hanger fully attached to the etch. Solder three shoes onto one side of the brake hangers, turn the etch over and solder the remaining three onto the other brake hangers. Now detach from the etch.

1.10 Fit the driving wheels, gears, mount, etc, as chosen. If push-fit wheels are being used, bear in mind that these will need quartering, and that is best accomplished when the driving wheels are free to rotate. So do not mesh gears or install motor until this has been attended to.

1.11 Fit the brake shoe / hanger assemblies in line with the wheel treads and as close as possible without risk of shorting.

1.12 Test chassis for free running, track holding, etc. Pick-ups are not provided, but we would recommend a simple wire pick-up system, mounted on a piece of gapped PCB fitted between the frames.

1.13 Fit pick-ups and adjust for minimum reliable pick-up pressure. Fit the motor and test under power, after lightly lubricating all bearings and gears.

1.14 Solder brake stretchers in place, leaving the extended ends as these will be required for the outside pull rods.

1.15 Fit front guard irons after carefully bending to shape.

1.16 Brake pull rods are best fitted also after painting chassis / wheels and are attached to the extended wire of the pull rods, on the outside of the wheels.

1.17 It is recommended at this stage that the cast white metal sandboxes are attached to the chassis along with sand pipes made up from wire . Depending on the gauge the chassis is built, the sandboxes will require spacing from frames, (more so for 00 ) . Use the waste etch material for spacing. To ascertain positioning, the half etch circles on the footplate are for the filler caps. Therefore you will require the footplate PT No.1, held temporarily in position (i.e. with "Blue Tac"). Use the half etch circles to position the sandboxes. Attach sandboxes with adhesive / solder.

1.18 Finally, wheel balance weights can now be added, referring to photographs of chosen prototype for positioning of weights.

1.19 The chassis is now ready for painting, but is best left until model is finished to avoid wear to paint.

**Loco Superstructure Assembly**

2.1 Remove footplate PT No.1 from etch, detach fittings from middle area, and keep safe for use later.

2.2 Clean up footplate; and if modelling 00 remove metal to half etch line at rear wheel aperture.

2.3 Solder in place the rear drawbar PT No.3 flush with rear end of footplate, note markings "up" on etch to indicate correct fitment onto footplate, (i.e. slot nearer top).

2.4 Solder in place L.H. and R.H. valances PT No.25. Locate these 1mm in from outer edge of footplate with the wider part facing the front. (These parts are on the chassis fret).

2.5 Sweat together inner and outer buffer beams PT No.2 and solder across the front of the footplate, butting up against side valances. (Buffer beam is fitted with the buffer holes nearer the bottom).

2.6 Carefully fold up the four splasher sides, ensuring that they are at right angles to the footplate.

2.7 Carefully roll and form the four splasher tops PT No.4. This is best done by rolling with a piece of tube or rod along the splasher tops on a piece of foam rubber (track underlay). Note the half etch areas at either end of splasher tops. These are to locate and solder onto the footplate. You may find annealing the metal helpful and will ease bending.

2.8 Remove cab sides PT No.5 and fold along half etch to right angles.

2.9 Fit one cab side onto footplate with bend facing inwards and using half etch line as location.

2.10 Remove and clean up spectacle plate PT No.6. Remove metal to half etch lines if modelling 00. Fit spectacle plate to footplate, (making sure half etch around spectacle windows are inside the cab). Tack solder to fitted cab side and footplate, making sure all is square.

2.11 Locate and solder second cabside onto footplate and spectacle plate, using etch lines on footplate as a guide. When satisfied all is square, seam solder all joints.

2.12 Make up internal cab splashers PT No.10, using half etch lines for folding, removing excess metal back to half etch line if modelling in EM / P4. Fit to inside of cabsides and onto footplates.

2.13 Remove cab floor PT No.11, fold at right angles along etch lines. Fit cab floor, making sure small slot is to the right hand side. This is for the reversing lever to be fitted later, (the smaller fold facing the spectacle plate). Again remove metal on the left hand side if modelling in 00, so as to fit between the two splashes.

2.14 Solder one 10BA nut underneath the rear hole on the footplate and on the top of the front hole. (These are for body locating).

2.15 At this stage, it would be well to check the "fit" of the footplate onto the chassis. Any adjustment can be made easily before proceeding.

2.16 Solder in place smokebox saddle PT No.21 to the rear of the 10BA nut, and lined up with the edge of the footplate. Again, remove surplus metal to half etch line if modelling to 00.

2.17 Solder the seam on the underside of the boiler, remembering to check for concentricity.

2.18 Curve the inner smokebox wrapper PT No.18 to match the boiler tube. This is best done by rolling a piece of tube or rod along the wrapper on a piece of foam rubber (track underlay). Fit the inner wrapper, lining up the central hole with the chimney locating hole. It is not necessary to sweat the wrapper to the boiler tube. Solder, run in at the edges of the wrapper/boiler joint will locate and retain the wrapper perfectly adequately. Alternatively, solder with an R.S.U.

2.19 Prepare the smokebox front PT No.19 by folding at right angles along half etch line. Solder it in place on the front of the boiler, taking care that it is vertical in relation to the boiler, with the fold facing forward.

2.20 Form the outer wrapper PT No.17 by rolling it on a piece of foam until you have the upper portion of the wrapper formed to match the boiler (the outer wrapper overlaps the smokebox front). Make sure you line up the wrapper with the chimney guide hole. Locate the points at which the smokebox outer wrapper needs to bend down to follow the outline of the lower section of the smokebox front. Mark these points and make the necessary bends with fingers and a straightedge.

2.21 Now complete the forming of the outer wrapper, aligning the bends with the smokebox front, and again using chimney hole for alignment. Once you are happy with the alignment and fit, tack the wrapper in place, making sure you don't get things hot enough to release the whole wrapper at once.

2.22 Boiler bands and smokebox bands PT No. 13 / 14 are supplied on the etch. These can be fitted at this stage using drawing for location. However, decal film can be used as an alternative to be more representative of the correct thickness, if required.

2.23 The whole assembly can now be checked for fit onto the footplate, making sure all is in line and square. A small amount of filing may be required around the cabside folded area to allow firebox to fit snugly. When all is correct, solder assembly in place, making sure the footplate lays flat through all of this operation.

2.24 Form rivet detail in both front end frame extensions PT No.34, using etch lines on the footplate as a guide, with the sharper curvature of the frames to face forward, this forms the contour for the cylinder cover.

2.25 Form cylinder cover PT No.37 and solder in place between frame extensions and up to the fold on the smokebox front. The two rivet/bolt details on the cover are offset and fit nearer the smokebox than the footplate.

2.26 Remove cab step back plates PT No.26 x 2 along with four cab steps. These are not numbered but are along side back plate PT No.26. Fold all steps along etch lines.

2.27 Solder steps onto back plates, using half etch relief as a guide. Do not fit completed footsteps to footplate yet, preferring instead to keep the footplate flat to aid further construction. Fit when convenient to the builder.

2.28 Fit all four buffer housings PT No.35 "wooden" buffer backing pads. (Some also on locomotive and tender chassis fret). It is recommended you fit the buffer housing to the pads whilst still on the etch. This will reduce handling. When soldered, remove from etch and clean up.

2.29 Fit front buffer pads / housing into place on front buffer beam, putting the other

two to one side for later use on the tender. Springs and buffers are best left until after painting.

2.30 Referring to drawing on page DD1, form and fold PT No.36 x 2 "wooden" buffer beam ends.

2.31 Solder PT No.36 x 2 in place at the ends of the buffer beam and onto the side valance. Refer to drawing on page LB1.

2.32 Remove PT No.30 reversing quadrant and fold at right angles along etch line.

2.33 Solder reach rod inner (cab interior) PT No.33 and PT No.29 reach rod fork end, either side of corresponding hole on PT No.32 reversing lever, using 0.45mm wire to locate all parts. Refer to drawing on page DD1 for further assistance.

2.34 Remove and clean up reversing lever ratchets PT No.31 x 2 and solder one of them onto the reversing quadrant PT No.30 on the same side as the fold, using wire to align. Fix the other ratchet onto the other side of the quadrant, using a piece of waste etch, the same thickness as the reversing lever, as a spacer, (this is to represent the lever). Refer to drawing on page DD1 - this will help clarify.

2.35 Solder lever assembly into the hole on the R.H. side of the cab floor.

2.36 Position quadrant assembly down over reversing lever and solder quadrant in place with the fold on top of the splasher.

2.37 Fold reversing shaft actuating arm PT No. 28 at right angle, and solder in place into the half etch on the underside of the footplate - with the actuating arm pointing up toward the boiler, (located just in front of centre splasher R.H. ).

2.38 Using the wire provided, attach PT No. 27 reach rod (outer) onto actuating arm, and pass the reach rod in behind the firebox. Trim and clean up pivot wire.

2.39 Solder firebox support covers PT No. 40 x 2 L.H. / R.H. at base of firebox and onto footplate.

2.40 Solder in place the four sandbox filler caps into the half etch discs on the top of the footplate. (These are the small brass turned parts).

2.41 Fit cab side beading (upper) PT No. 12 L.H. / R.H. onto cab side curvature, on L.H. side and R.H. side.

2.42 Fit cab side horizontal beading / grabrail bracket PT No. 15 x 2 L.H. / R.H.

2.43 Using the wire provided, fit vertical grabrails, one at the front of the cab side and one at the rear of the cab side. Use the small washers on the etch, (which are unnumbered), to fit onto the wire - one onto the footplate and one on the underside of

horizontal grabrail bracket. See drawing on page DD1. Repeat on the other side.

2.44 Smokebox door:
"Johnson Style" (Turned brass): The smokebox door can now be fitted, after fitting the smokebox door hinge plate PT No. 45. Use wire to represent hinge pin. Fit also the door fastener/door handles (turned brass items). Refer to drawing and photograph of chosen model.
"Deeley Style" (Whitemetal castings): This door has a horizontal handrail across the front of the door above the top hinge and this can be fitted before securing to the loco. Use drawing and chosen photograph to assist.

2.45 Fix in place the chimney and dome - using epoxy adhesive, as this gives time to adjust.

2.46 The safety valve cover can now be fitted. This can sometimes be polished brass depending on the livery (ie Midland Crimson), and may be fitted after painting and lining.

2.47 Fit rainstrip vertical PT No.8 across the rear of the cab roof and rain strip PT No.9 onto the cab roof and up against the rain strip vertical. The cab roof can be fitted now or later after cab interior detail work.

2.48 Cab interior detail can be added now or if preferred after painting. These include the firebox backhead. Spectacle beading PT No. 23 and 24, (these were normally polished brass in Midland liveries). The vacuum pressure gauges PT No.16 can be fitted above the backhead onto the spectacle plate/cab front. N.B. PT No.16 need only be fitted along with vacuum pipes and ejector (on boiler side) if the locomotive is to be fitted for passenger train workings. However, at least one gauge requires fitting to represent the boiler pressure gauge.

2.49 The boiler handrail knobs can now be fitted. If a continuous handrail is required then a further handrail knob is required, fitted centrally above the smokebox door. The smokebox front will require marking and drilling. Do not fit at this stage, as the handrail knob will have to be fitted onto the handrail before bending, to shape. Before fitting handrails, consult your chosen photograph as there are quite a few variations of smokebox doors and handrail configurations.

2.50 Handrail locating flanges. These items x 2 are not numbered on the fret, but are located at either end by the smokebox inner wrapper PT No. 18. These are fitted to the spectacle plate front and in line with the boiler hand rail, locating the hand rail to the cab front.

2.51 Make up and fit three front lamp irons and solder into half etch locations on footplate.

2.52 Remove PT No. 38, fall plate and PT No.39, fall plate hinges, fold hinges at right

angles, and solder into half etch on underside of fall plate. The fall plate can be located into the slots in the footplate, just to the rear of the cab floor. Do not solder.

2.53 The clack valves (wax castings) maybe fitted now, but are usually polished brass depending on livery, and may best be fitted after painting.

2.54 The Salter valves (turn brass item x 2) and Salter spring balance levers PT No.46 can be added. Two half etch pop marks are on the boiler top to the rear of the dome to help location. Again, this may be best left until after painting. The whistle can also be fitted now or after painting. These items were invariably polished metal in Midland livery.

**Tender Chassis Assembly**

3.1 Identify components from the diagrams and parts list before commencing. Decide on how you want to assemble the chassis - it is possible to build the chassis for 00, EM or P4, and rigid or compensated / sprung.

3.2 Remove L.H. and R.H. frames from chassis etch and modify if required to take hornblocks. The hornblock openings have half-etched guide lines to facilitate cutting out. These are the areas shaded in diagram T1. Ream the holes on any fixed axles to take the axle bearings. N.B.Note the half etch arrows, that indicate the front.

3.3 Select frame spacers required, cut out and clean up. Three widths are provided, for 00, EM or P4. Check the fit of the tabs on spacers in the slots in the frames. It is easier to file down the tabs if necessary, rather than trying to open up the slots. Solder the front spacer (with hole), to one mainframe and the rear ( also with hole), to other. Fit the wheel bearings and align the chassis for assembly by threading a length of 1/8" axle-rod through the bearings.

3.4 Solder the chassis up on the front and rear spacers, checking to ensure it is square and level. Making the joints at opposite ends on alternate sides helps even out chassis heating / expansion, and hence avoids distortion on cooling.

3.5 Spring the frames apart slightly, and insert the remaining spacer and solder in place.

3.6 Fit the top brake hanger pivots from the wire provided through the holes in the chassis. Make up the brake hanger / shoe assemblies PT No.39/40, remembering to make them up as three left hand and three right hand.

3.7 Fit all wheels and, using the wheels for alignment, solder the brake shoe / hanger assemblies in line with the wheel treads and as close as possible without risk of shorting.

3.8 Test chassis for free running and make any necessary adjustments.

3.9 Make up and fit brake stretcher rods from wire provided, and at the same time fit the brake pull rods PT No.38 (these fit behind the wheels.)

3.10 Fit guard irons PT No.41 after carefully bending to shape.

3.11 The chassis is now ready for painting, but is best left until the model is finished to avoid wear to the paint.

**Tender Superstructure Assembly**

4.1 Remove tender footplate PT No.1 from the etch, and detach and keep safe the parts from the centre, taking note of the part numbers.

4.2 Remove tender rear panel PT No.5 and flare the top edge.

4.3 Remove tender side panels L.H. and R.H. PT No.2 and 3 and form the flare along the top edge, same as for the rear.

4.4 Fit one side onto tender footplate, using half etch lines as a guide and for location.

4.5 Fit tender rear panel onto footplate, again using etch line to help to locate, and check fit against tender side previously fitted. N.B.Rear panel fits between the sides!

4.6 Fit remaining side onto footplate and check all is square and vertical before completing the seam soldering.

4.7 Any gaps in the flaring in the corners where the sides meet the end panel, can be filled with solder and filed to shape.

4.8 Remove from the fret PT No.4 x 2, coal plate supports and detach any small parts and keep safe, making note of part numbers. Solder both in place on the inside of the tender sides, slope facing the front.

4.9 Shape main coal plate PT No.9 to the contour of the coal plate and detach and keep safe any small parts. Sweat together PT No.8 and 8A and fit at the front between tender sides. N.B. The horizontal slot on PT No.8 should be to the rear on the right hand side.

4.10 Remove and clean up sandbox sides PT No.16, form and curve to the shape of the sandbox tops PT No.20 and 21 (annealing the brass may help with shaping these parts). The tabs locate the sides into the coal plate front; solder in place.

4.11 Solder in place both sandbox tops PT No.20 and 21 on top of the previously fitted sandbox sides, making sure the larger half etch disc is to the outer edge.

4.12 Remove both sideframes PT No.6 and 7 and clean up, removing small parts and keep safe. Do not fit to tender yet.

4.13 Clean up and fold tender side steps. (These parts are not numbered, but are located between coal rails PT Nos.24/25.) Solder the steps to the side frames, using half etch as a guide.

4.14 Solder in place the brake pivot bar end covers PT No.34 x 2 into the circular etch just above the lower step. (These parts should have been removed from the fret previously and in safe keeping).

4.15 Fit both sideframes in place using tabs to help locate, (steps at the front).

4.16 Solder in place the front dragbeam PT No.11 with the slot to the lower edge.

4.17 Solder in place rear buffer beam PT No.10.

4.18 Solder in place two buffer housings complete with wooden spacer blocks PT No.35, assembled earlier, onto the rear buffer beam.

4.19 Solder in place previously formed main coal plate PT No.9.

4.20 Fit front toolbox support PT No.17 using tab to help locate in rear of front coal plate.

4.21 The rear toolbox/water filler can be assembled as per the drawing using PT No's 12, 13, 14 and 15, and then fit across the rear of the tender. Alternately, omit toolbox/water filler and use whitemetal casting for water filler, along with the water filler lid PT No.33.

4.22 Solder in place PT No.18 coal divider and position 14mm in from rear of tender.

4.23 Fit PT No.19 top beading along the top of the coal plate PT No.8/8A, along with PT No.28 x 2 water cock handle base plates. Make up the water cock handles from wire.

4.24 Fit PT.No 26 handrail/brake handle bracket to the inside of the tender side at the front L.H. corner. Position 11mm up from the footplate. Cut three lengths of wire for the vertical handrails and solder in place along with small etched washers unnumbered on the fret, but are to be found next to PT No.26, REF to DD1 drawing for assembly details.

4.25 Using the wire, make up and solder in place brake handle to dimensions, as shown in drawing DD1.

4.26 Solder in place PT No.27 handrail bracket to the R.H. side of the tender front, using dimensions from paragraph 5.24. Note only two handrails are fitted on this side.

4.27 Remove, clean up, and solder in place the coal rails PT No.24 and 25.

4.28 It remains now only to fit the six axlebox/spring castings to the tender.

**Livery Details**

The subject of livery is quite complex, particularly for the Midland Railway. A brief outline is included in the prototype notes, at the beginning of the instructions, if contemplating building a locomotive in M.R. livery. It is strongly recommended as previously mentioned, the builder should consult Midland Locomotives Volume One.

Livery can be applied by bowpen, using enamels; or by transfers of the waterslide, Pressfix and Methfix variety. If using transfers, a coat of varnish with 5% - 10% black paint, added, will tone down the "brightness" of the livery and colour.

Bufferbeams and buffer bodies were painted red. The M.R. painted the inside of the frames in vermillion, cab interiors were crimson up to waste height, while above the waste height and up to the roof was woodgrained and the underside of the roof was in white.

Detailed instructions on the model are not provided, as it would take too long to cover all the variations and different techniques available. However, the model should be thoroughly cleaned before painting to remove all traces of flux, etc. The nickel silver used in this kit does not require an etch primer as for brass, so a dark grey primer or red oxide (e.g. a car aerosol) will give a good base for the colour coat. Satin black car aerosol will provide the best basic livery for black locomotives, with various "shades" of matt black for the smokebox, chassis, cabroof, footplate, etc.

We hope you have enjoyed building this London Road Models kit. The words and drawings were by John M. James and the type set was by Scott James.

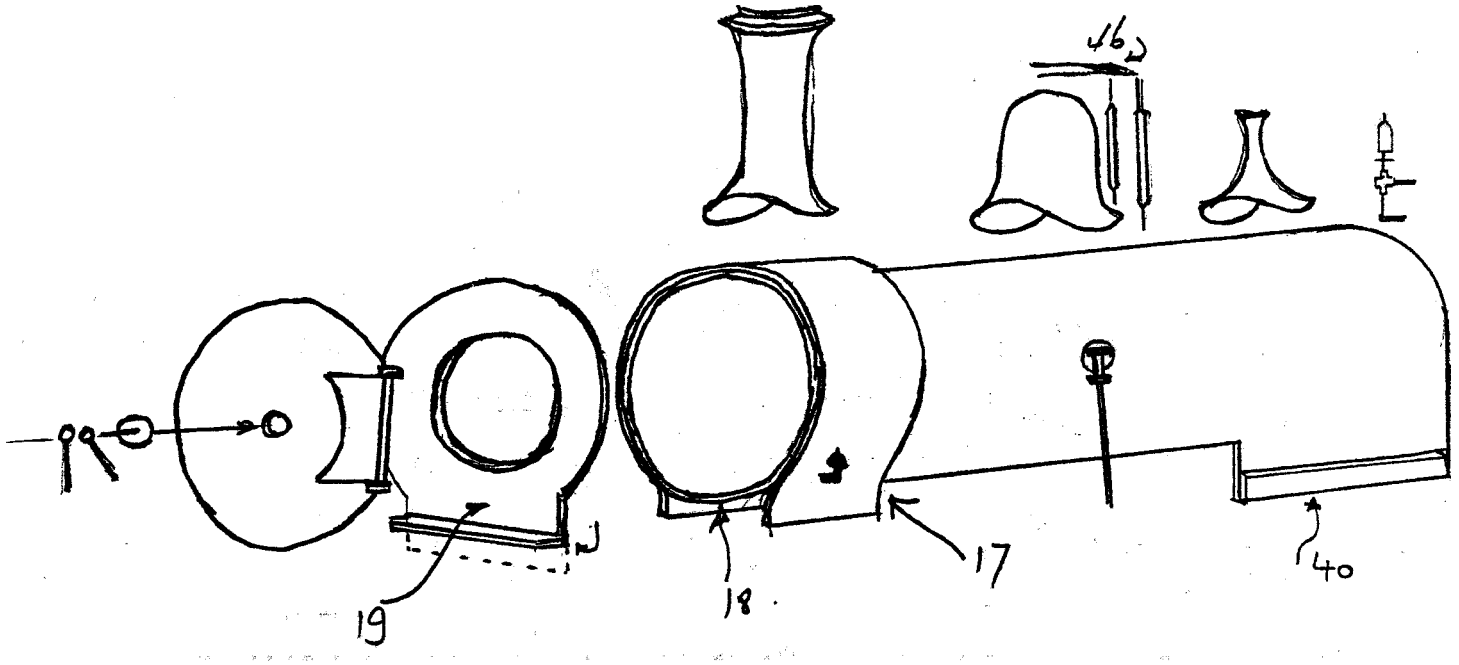
If you have any queries while building this kit, or have any suggestions for models for our range, please contact;-

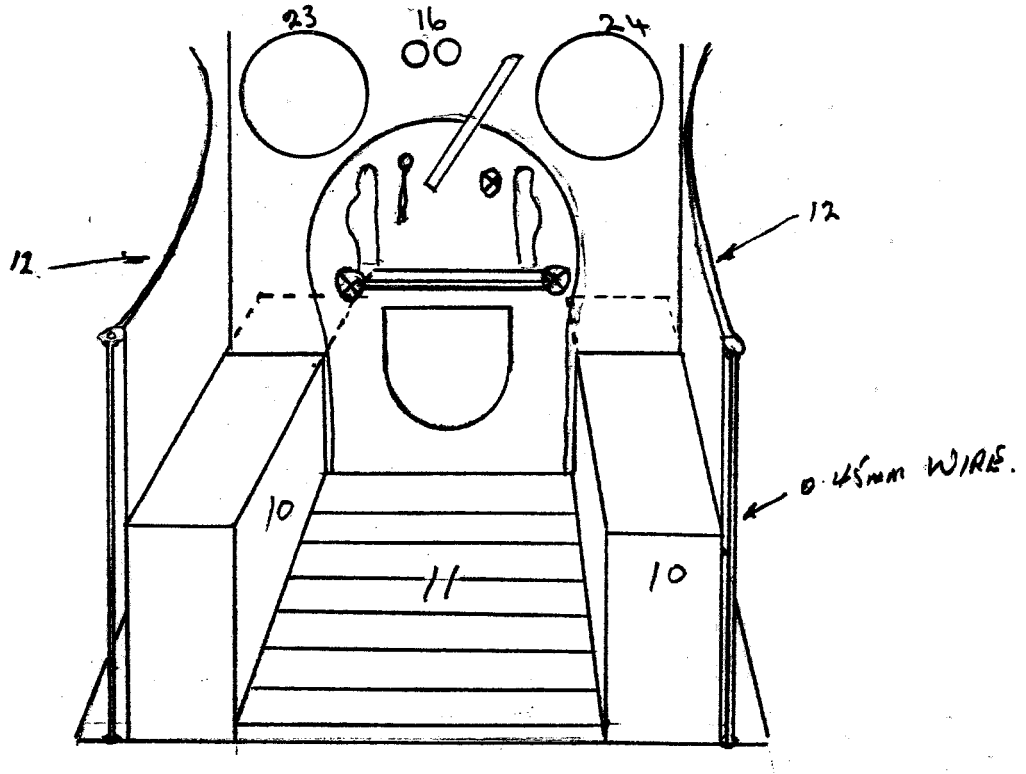
**LONDON ROAD MODELS**

P.O.Box 643
Watford
HERTS WD2 5ZJ

## Locomotive Parts List.

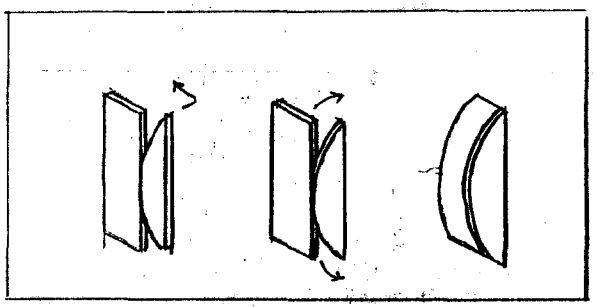
1. Footplate
2. Inner/outer front buffer beam
3. Drag beam
4. Front internal splasher tops
5. Cabsides x 2
6. Spectacle plate
7. Cab roof
8. Rainstrip (vertical)
9. Rainstrip support
10. Internal splasher tops x 2
11. Cab floor
12. Upper cabside beading x 2
13. Boiler bands x 4
14. Firebox band
15. Cabside beading/grabrail bracket
16. Boiler pressure and vacuum gauges
17. Smokebox outer
18. Smokebox inner
19. Smokebox front
20. Smokebox ring plate
21. Smokebox saddle
22. (Number not used)
23/24. Spectacle beading x 2
25. Footplate angle/valance (on chassis etch)
26. Cab step back plate
27. Reach rod (outer)
28. Reversing shaft arm
29. Reach rod (fork end)
30. Reversing quadrant
31. Reversing quadrant ratchets x 2
32. Reversing levers
33. Reach rod (inner in cab)
34. Front end frame extension x 2
35. "Wooden" buffer backing pad (Some also on locomotive and tender chassis)
36. "Wooden" ends of buffer beams
37. Cylinder cover
38. Fall plate
39. Fall plate "hinges"
40. Firebox support covers x 2
41. Driving wheel balance weights
42. Draw bars
43. Smokebox door fastener (1905 - 1907)
44. Smokebox door handle flange
45. Smokebox door hinge plate
46. Salter spring balance levers
47. Outer brake pull rods

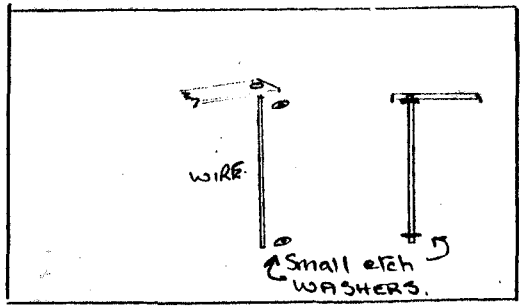


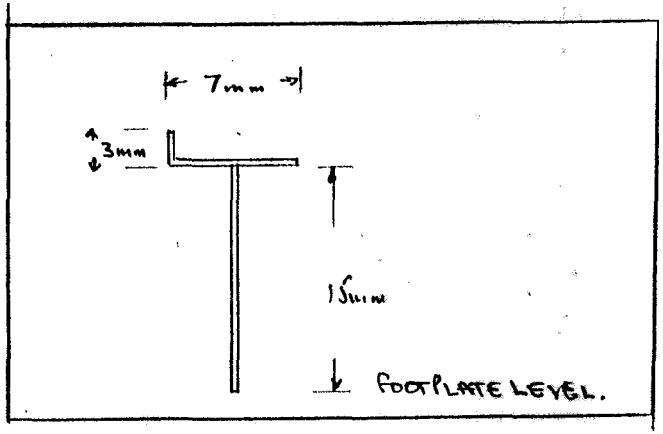

JM James
JGS.

Pt N° 36

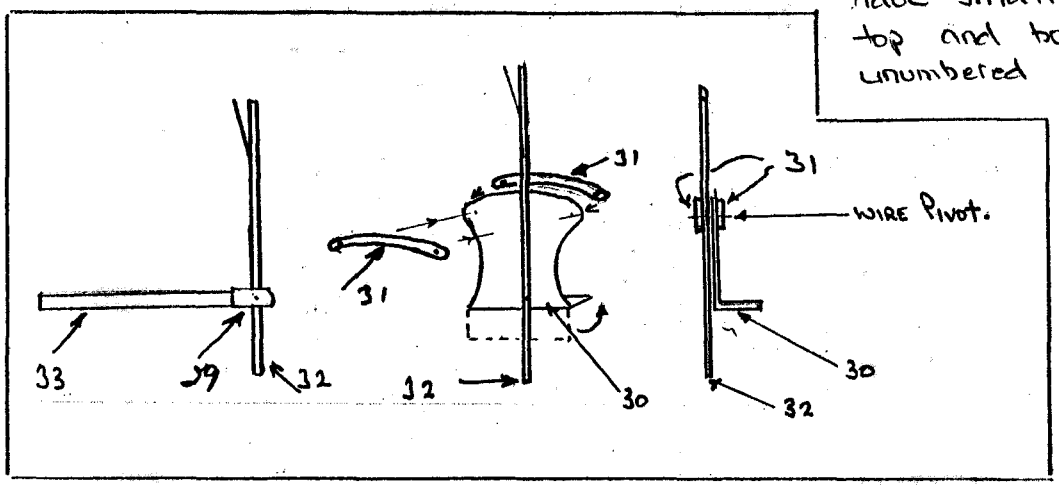


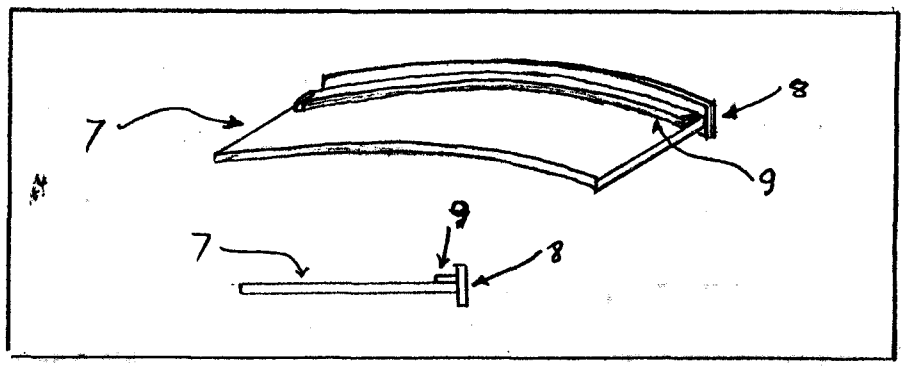



All vertical handrails have small etched washers top and bottom, these are unumbered on the etch.

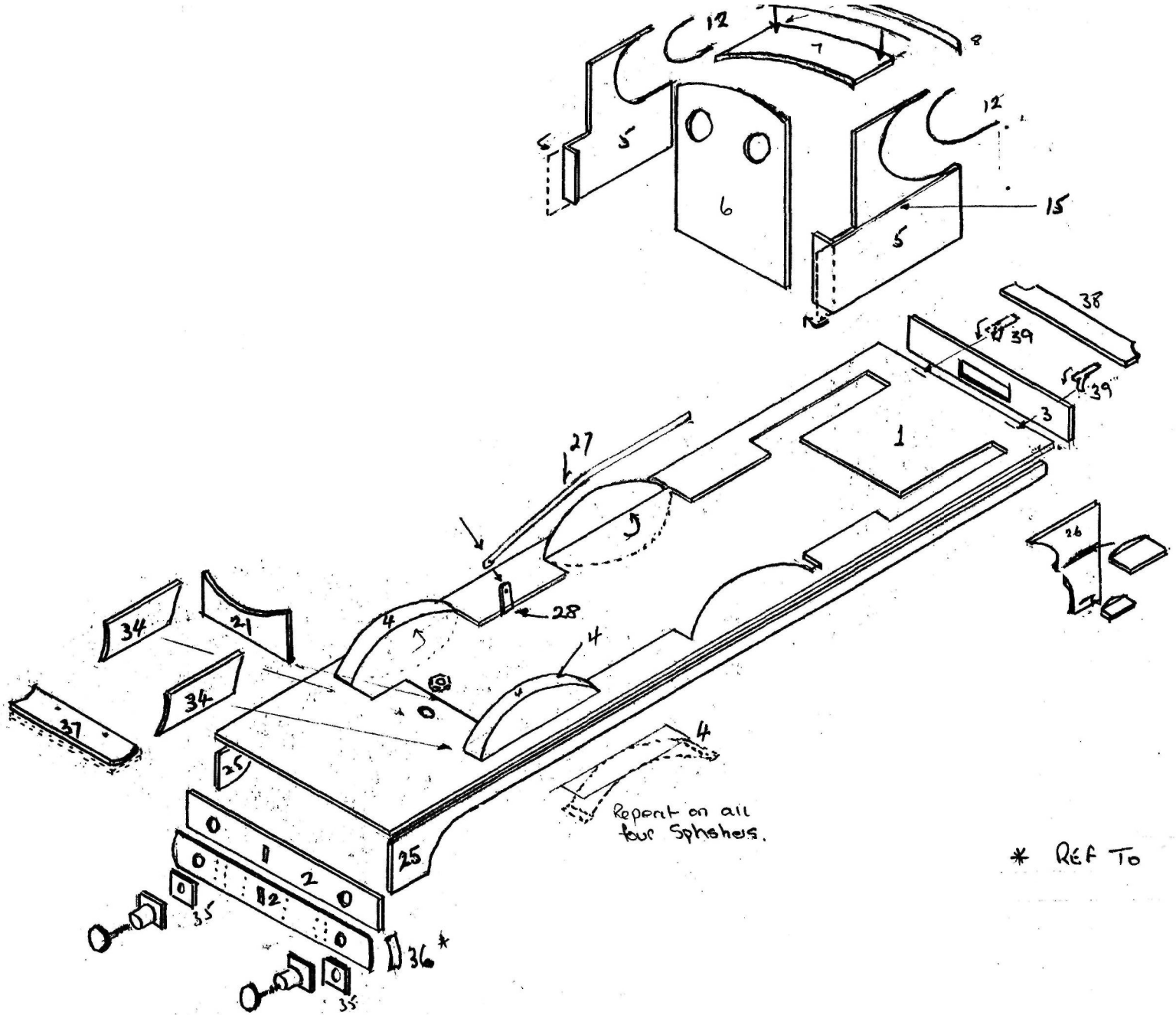



BRAKE HANDLE.



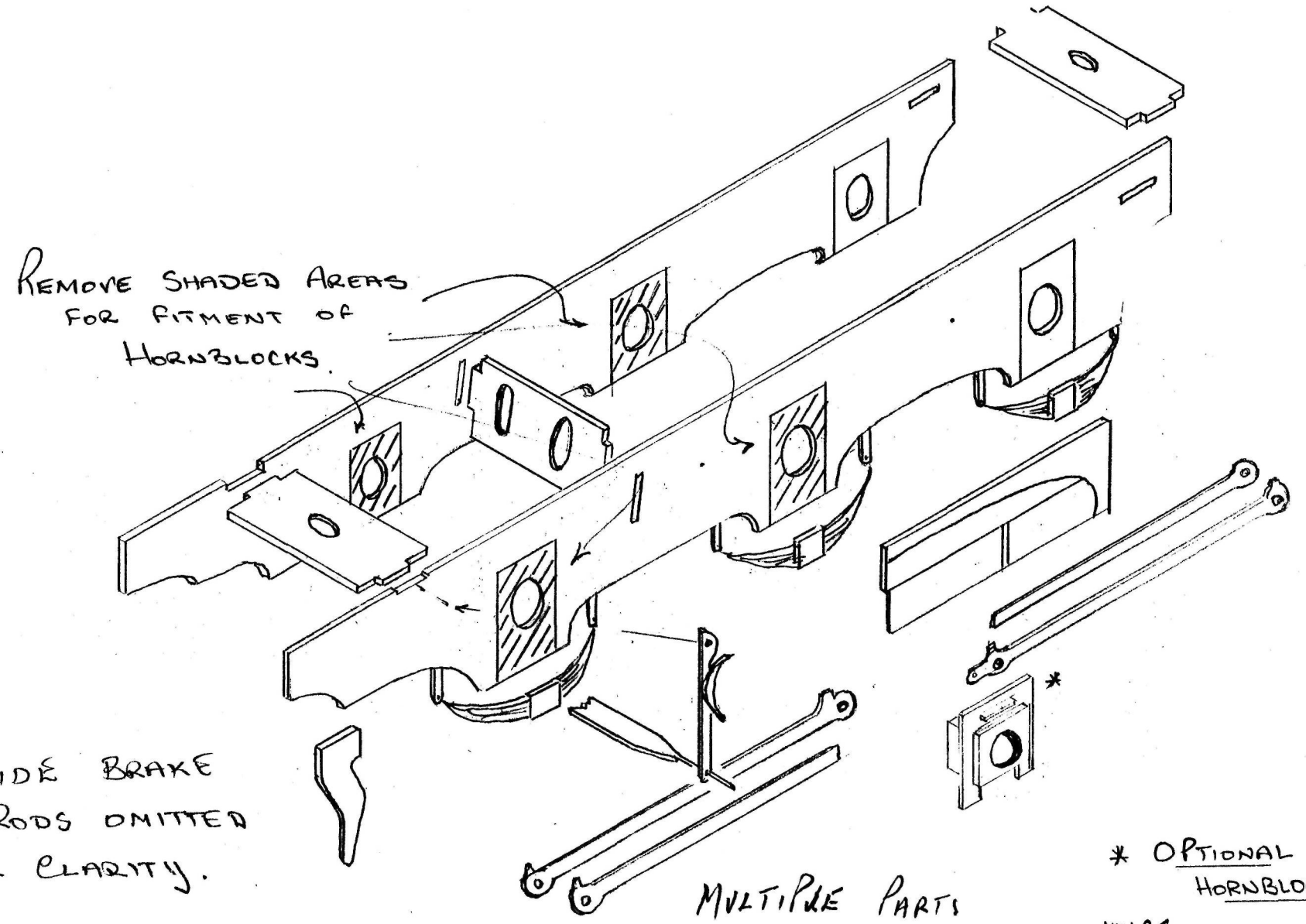

JM James 99




* REF TO PAGE ?

JMJ95.
James

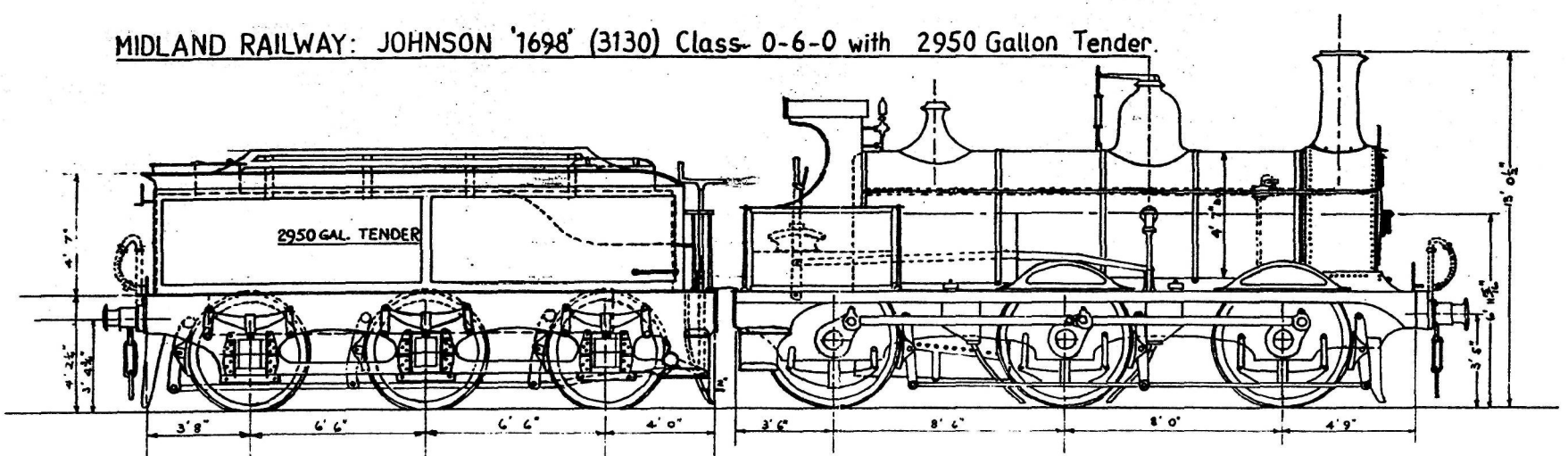
# Loco Chassis C.1



'1698' class Cylinders 18 in.– × 26 ins., Driving Wheels 4 ft. 10½ ins., 140 lbs, 'B' class boiler (Firebox 5 ft. 11 ins. long).

| Original No.'s | 1907 No.'s | Date Built | Maker |
|---|---|---|---|
| 1698–1717 | 3130–49 | 1885 | Derby |
| 1758–1767 | 3150–9 | 1886 | Derby |
| 1768–1795 | 3160–87 | 1887 | Derby |
| 1796, 1797 | 3188/9 | 1888 | Derby |

MIDLAND RAILWAY: JOHNSON '1698' (3130) Class 0-6-0 with 2950 Gallon Tender.




Vacuum Brake Pipes/Hoses & Ejector shown 'dotted' for if vacuum braked locomotive, also fit screw couplings.