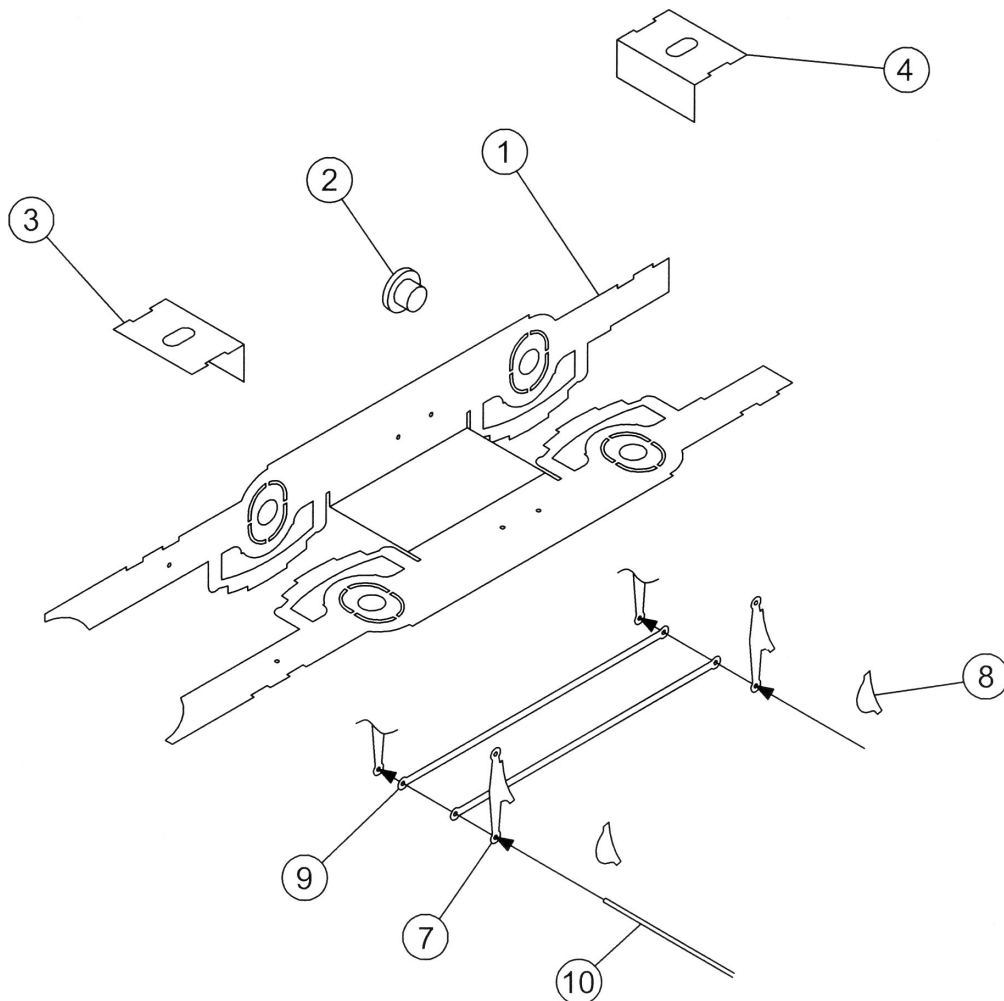


D11/2 'SCOTTISH' DIRECTOR 4-4-0 INSTRUCTIONS

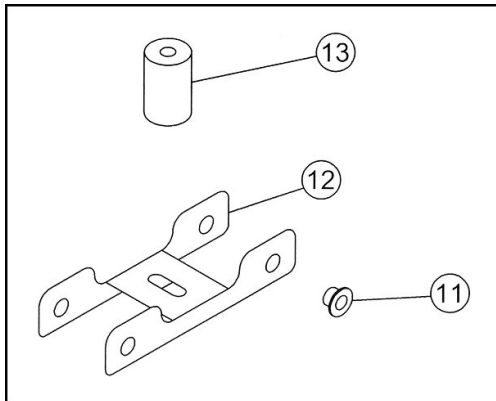
CHASSIS ASSEMBLY

The chassis can be built rigid or compensated so decide now which one you are going to make. If building a compensated chassis remove the sections from the front and rear axle holes.

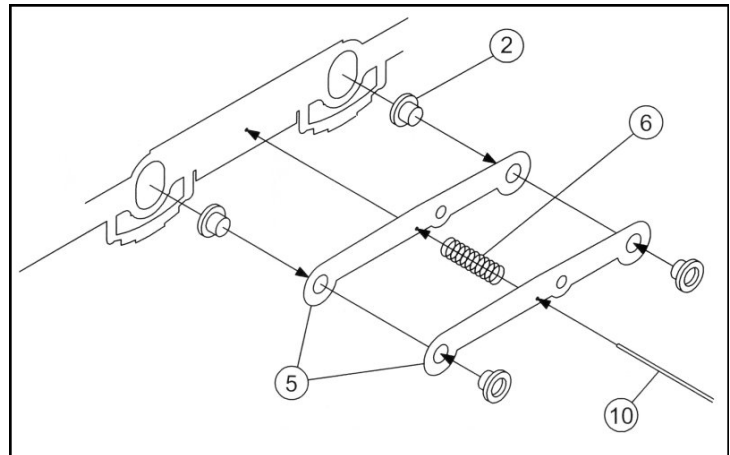
Take the frames (1) and solder the axle bearings (2) into the frames, if building a rigid chassis, or into the compensating beams (5) for a compensated chassis. Fold the chassis up and solder the front and rear frame spacers (3 & 4) into their recesses.



COMPENSATION



Beam compensation requires a fixed point, so that when the loco is on the track it remains level. With this chassis the fixed point is the bogie. Solder the four 2mm bearings (11) into the axle holes in the bogie (12). Turn to the compensating mechanism itself.



Solder the 1/8th axle bearings (2) into the compensating beams (5). The compensating spindle should be cut from the brass wire (10). The beams are held apart by the compensation spring (6). It is very important that no parts of this mechanism are soldered in a fixed position other than the spindle to the mainframe. Both beams must move independently of each other. The assembly of the beams is otherwise very simple. Make sure you fit the beams so that the large hole is over the rear brake pilot hole. Fit the wheels (to the bogie and chassis) so you can test the compensating mechanism. Fit the bogie spacer (13) and then the bogie and when satisfied that all works O.K. remove the wheels and the bogie and put them to one side.

BRAKE ASSEMBLY

Solder two lengths of the brass wire (10) into the holes in the chassis to form the brake mountings (take care not to get solder on the compensation mechanism). Take the brake hangers (7) and the brake blocks (8) and solder the blocks to the hangers, making four **L/H** and four **R/H**. Solder the assembled brakes to the wire **2mm** from the frames. Pass more brass wire through the bottom of the brakes, and then through the pull rods (9). Solder all the joints.

BODY ASSEMBLY

Take the running plate (1) and using the valances (2 & 3) as a guide form it to shape. The valances also have an 'S' shaped curve and you can use the recess under the running plate as a guide. Fold the rear drag beam down. Fit the running plate valances into the recesses under the running plate. **Leave the support frames on the valances.** Fit the buffer beam (4) into the recess at the front of the running plate. Solder the cab sides (5 & 7) into their slots. Form the curves at bottom of the cab front (6) so that they match the sides. Try and chamfer the bottom edge so that the front merges into the running plate. Locate the cab front into the recesses in the cab sides and solder in place. Solder three **8BA** screws (27) into the holes in the running plate.

Form the splasher tops (9 & 11) to match the splasher sides (8 & 10). Solder them together and then check that they fit to the running plate. Chamfer the bottom front edge of the splasher tops as with the cab front. Solder the completed splashers into the recesses in the running

plate. Take the frame tops (12 & 13) and punch through the rivets. Solder them into the slots in the running plate.

Form the firebox (14) using the firebox front (15) as a guide. Solder the two parts together. Check the fit of the firebox between the splashers and into the slots in the cab front. When happy with the fit tack it to the cab front **ONLY**.

Now turn to the boiler (16) and solder the seam together. Solder the smokebox front (17) to the boiler, the tabs on the boiler fit into the recesses on the edge of the smokebox front. Form the smokebox wrapper (18) and solder around the boiler front. Fit the boiler bands (32) now [see drawing]. Now check the fit of the boiler into the slots in the firebox front. Tack it in place and when satisfied that all is level solder both boiler and firebox firmly in place. If you are modelling a loco with riveted smokebox and front, the wrapper (19) and front (20) can now be fitted.

Form the cab floor support (28) and fit between the cab sides, with a 1mm gap between it and the rear of the running plate. Solder the cab floor (29) on top of the support. Form the interior cab splashers (30 & 31) and solder them to the cab floor. Form the cab roof (21) and tack in place. The front of the roof butts up to the cab front and slightly overhangs the sides, when all is square solder around the seams. Solder the window frames (23) into their recesses. Use some wire to make the rain strips above the windows and rear overhang, and then cut the roof ribbing (22) to length and solder into the recesses in the roof.

Take the running plate and cab steps (24 & 25) and form the bottom steps on each one. Run a little solder into the folds for strength. Form the middle steps (26) solder into the slots. Solder the steps under the running plate and cab.

Solder the chimney (33) and the dome (34) in place.

Fit the smokebox door (35) and the cylinder cover (36).

Check photo's to see if you need to drill through the valve chest cover to fit the vacuum pipe (37), as some fit onto the front bufferbeam.

Solder the buffer shanks (38) into their holes.

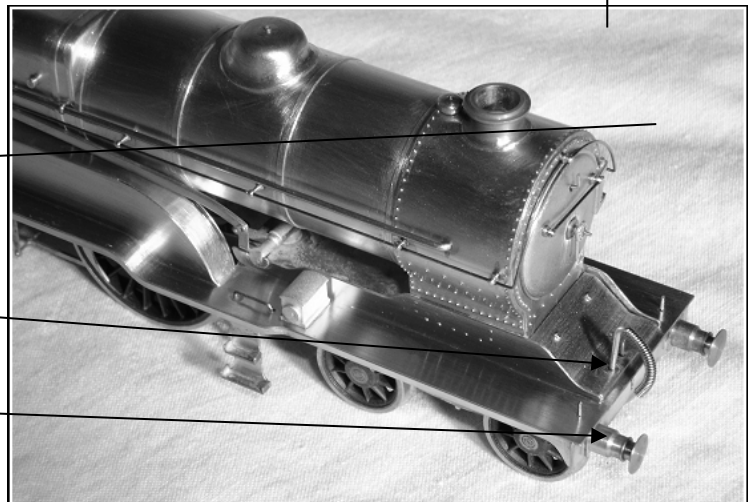
Glue the mechanical lubricator (39) in place.

Drill a hole in the reversing cover (40) to take the reversing bar (41). Glue the cover in place.

Solder together the two parts of the reversing bar. Make an 'S' shaped kink at bottom end. Fit the bar into the cover and line up the position of the reversing linkage (42).

Fit the linkage across the top of the frames.

Anti-vacuum valve (57).

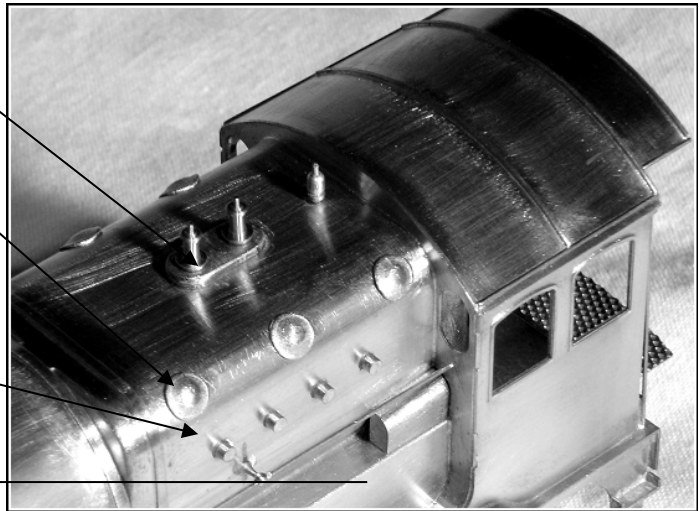


Fit the safety valve base (43). Leave the safety valves (44) and whistle (45) until the loco is painted.

Remove the mudhole covers (46) from the sprue, and glue in place.

Fit the washout plugs (47) into their holes (check which type first).

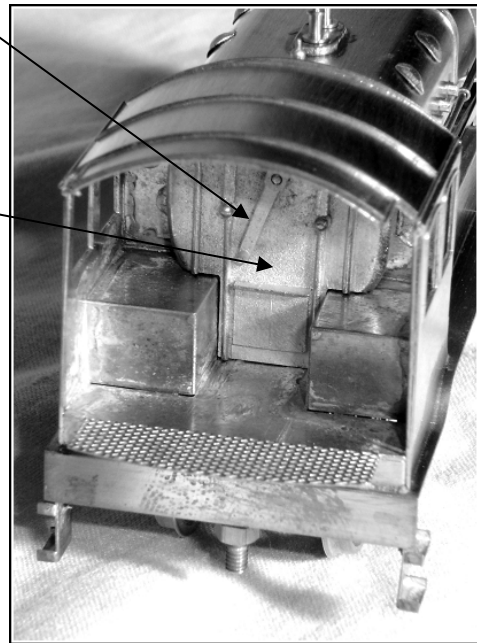
Glue the valve cover (48) in place.



Fit the regulator handle (49) to the backhead (50) and then glue the backhead in place.

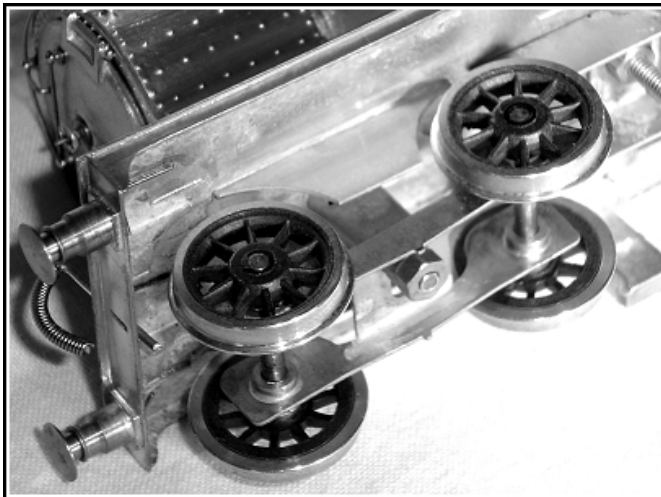
Solder a piece of brass wire (51) into the holes to the rear of the cab sides and then to the top of the cab to form the cab handrail.

Drill out the handrail holes on the firebox and smokebox [see drawing for dimensions]



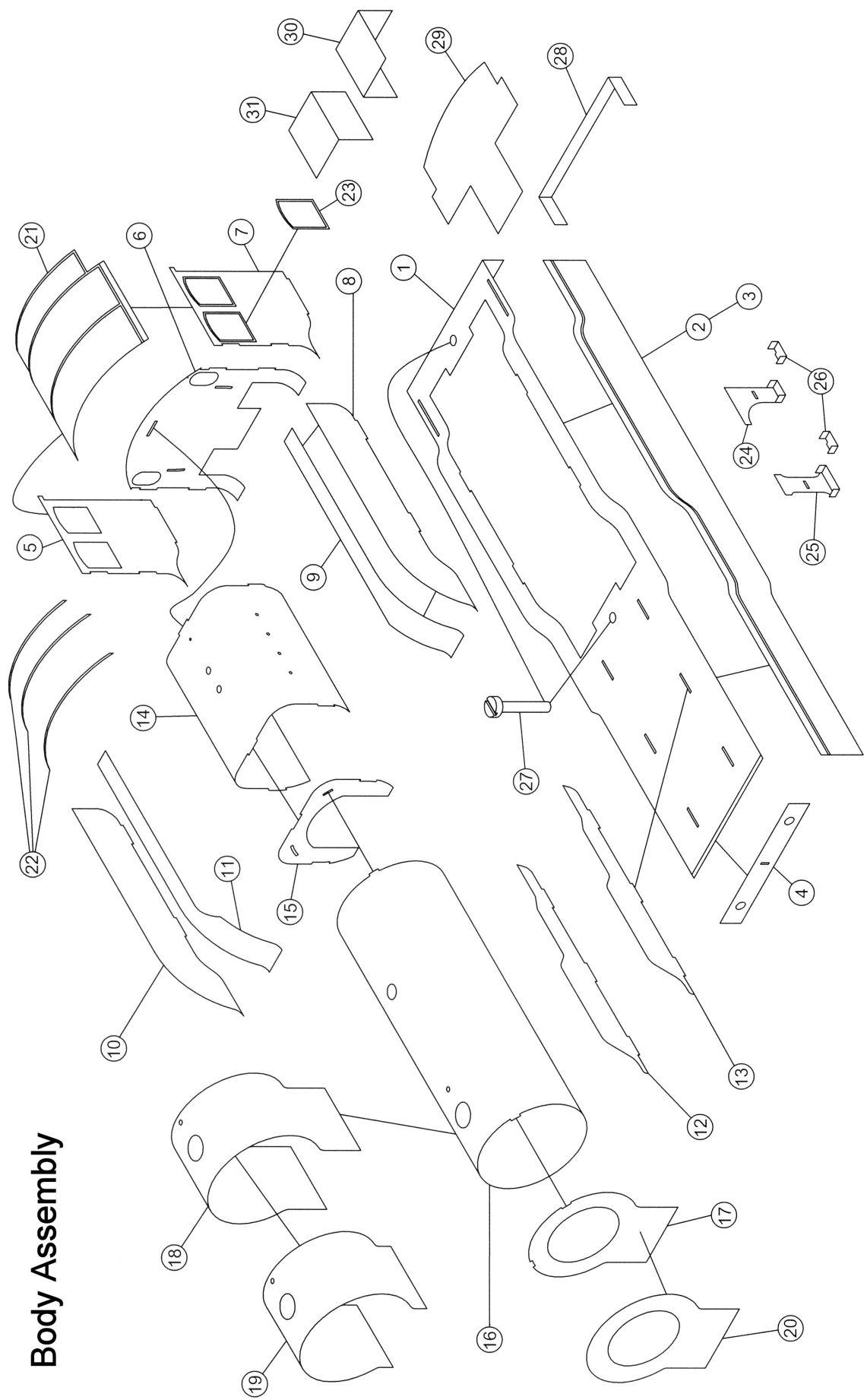
Lower frame sections (52).

Forward lower frame sections (53).



Use the thicker brass wire (58) to form the ejector pipe. Drill a hole as indicated on the line drawing. Use the split pin (59) to secure at the firebox end.

Body Assembly



TENDER INSTRUCTIONS

Take the chassis (1) [the one on the loco chassis fret, not the one on the tender fret] and open up the axle holes with a 3mm drill. Bend down the sides and ends at right angles to the top, and run solder round the joints and folds, then fix the **2mm** axle bushes (2) into the holes. Solder three pieces of brass wire through the small holes to form the brake supports (3). Take the brake blocks (5), and solder them to the hangers (6), making **L/H** and **R/H** pairs. Solder the hangers to the wire supports in the chassis, then thread wire through the holes in the lower ends of the hangers and through the holes in the pull rods (7) to form the tie bars (8), and then solder the pull rods to the tie bars.

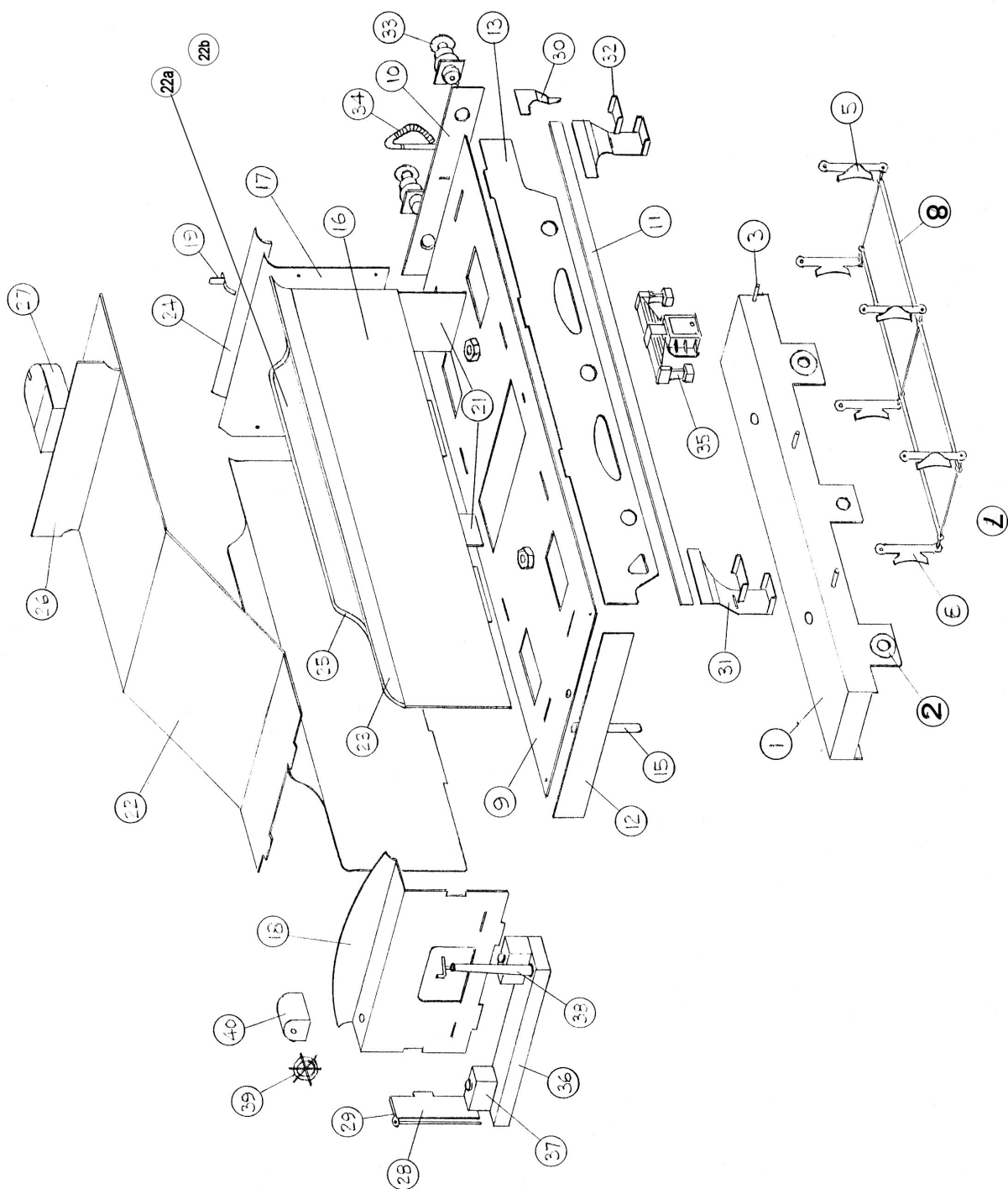
Turn now to the body, take the footplate (9) and solder the buffer beam (10) into the half etched groove in its underside. Solder the valances (11) into the half etched grooves, and then solder the drag beam (12) in place. Slot the frames (13) into the footplate and solder in place, and then solder an **8BA** nut (14) over each hole in the footplate. Fold the drawbar mount (15) and solder the **10BA** screw (41) into the hole. Solder this behind the drag beam to form the drawbar pivot.

Take the sides (16) next and flare out the top **3mm** over a piece of **1/4"** dia. bar. Take the back (17) and flare out the top of this, then slot the sides and back into the footplate and solder in place. Bend the front plate (18) along the fold lines, and solder in place. Bend up the lamp brackets (19) and fix these into the small holes in the back of the tender, then form and fit the handrails (20) to the back. The horizontal handrail should be fitted with handrail knobs. Next solder the internal supports (21) into their slots in the footplate.

Next take the coal plate (22) and bend along the fold lines so that when it sits on the internal supports its front end slots into the front plate, then solder into the tender. Next curve the coping strips (23 and 24) to match the flare of the sides and back, and fix them to the tender body. Choose either the plain coping plates (22a) or the 'filled in rail' coping plates (22b) and solder them centrally on top of the sides. Then fix the beading strips (25) to the plain coping plates (not needed for the 'filled in rail' type). Slot the rear bulkhead (26) into the coal plate, and then fix the water filler (27) behind it. Solder the two side plates (28) in position, and then solder the pieces of beading (29) to their top edges, making the handrails at the same time.

Take the guard irons (30), fix to the back of the frames, and then crank inwards to line up the bottom end with the wheel rims. Take the step plates (31), bend them as shown in the drawing, and solder them behind the valances, then fix the steps (32) into the slots in the step plates. Fit the buffers (33) and vacuum pipe (34) to the buffer beam, and then fix the axleboxes (35) into the holes in the frames. Fix the floor casting (36) to the front end of the tender, then fit the sandboxes (37) and the brake column (38) to it. Finally, fix the sand gear operating wheel (39) to its base (40) and fix the assembly into the hole in the coal plate.

TENDER ASSEMBLY DIAGRAM



CHASSIS PARTS LIST

- | | |
|-------------------------|-------------------|
| 1. Frames. | 9. Pull Rods. |
| 2. Axle Bearings. | 10. Brass Wire. |
| 3. Front Frame Spacer. | 11. 2mm Bearings. |
| 4. Rear Frame Spacer. | 12. Bogie. |
| 5. Compensating Beams. | 13. Bogie Spacer. |
| 6. Compensation Spring. | |
| 7. Brake Hangers. | |
| 8. Brake Blocks. | |

BODY PARTS LIST

- | | |
|--|--|
| 1. Running plate. | 33. Chimney. |
| 2. R/H Valance. | 34. Dome. |
| 3. L/H Valance. | 35. Smokebox Door. |
| 4. Buffer Beam. | 36. Cylinder Cover. |
| 5. R/H Cab Side. | 37. Vacuum Pipe. |
| 6. Cab Front. | 38. Buffers. |
| 7. L/H Cab Side. | 39. Mechanical Lubricator. |
| 8. L/H Splasher Side. | 40. Reversing Cover. |
| 9. L/H Splasher Top. | 41. Reversing Bar. |
| 10. R/H Splasher Side. | 42. Reversing Linkage. |
| 11. R/H Splasher Top. | 43. Safety Valve Base. |
| 12. R/H Frame Top. | 44. Safety Valves. |
| 13. L/H Frame Top. | 45. Whistle. |
| 14. Firebox. | 46. Mudhole Covers. |
| 15. Firebox Front. | 47. Washout Plugs (2 types). |
| 16. Boiler. | 48. Valve Cover. |
| 17. Smokebox Front. | 49. Regulator Handle. |
| 18. Smokebox Wrapper. | 50. Backhead. |
| 19. Riveted Smokebox Wrapper. | 51. Brass Wire. |
| 20. Riveted Smokebox Front. | 52. Lower Frame Sections. |
| 21. Cab Roof. | 53. Forward Lower Frame sections. |
| 22. Roof Ribbing. | 54. Smokebox Door Handle. |
| 23. Window Frames. | 55. Lamp Brackets. |
| 24. Cab Step, L/H & R/H . | 56. Handrail Knobs. |
| 25. Running Plate Steps, L/H & R/H . | 57. Anti-Vacuum valve. |
| 26. Middle Steps. | 58. Ejector Pipe (form from thicker wire). |
| 27. 8BA Screws & Nuts. | 59. Split Pin. |
| 28. Cab Floor Support. | |
| 29. Cab Floor. | |
| 30. L/H Cab Splasher. | |
| 31. R/H Cab Splasher. | |
| 32. Boiler Bands. | |

TENDER PARTS LIST

- | | |
|---------------------------------------|--|
| 1. Chassis. (From loco chassis fret). | 22. Coal Plate. |
| 2. 2mm Axle Bearings. | 22a. Plain Coping Plates. |
| 3. Brake Gear Supports. | 22b. Filled In Rail Coping Plates. |
| 4. Axle Washers. | 23. Side Coping Strips, L/H & R/H . |
| 5. Brake Blocks. | 24. Back Coping Strip. |
| 6. Brake Hangers. | 25. Beading Strips. |
| 7. Brake Pull rods. | 26. Rear Bulkhead. |
| 8. Tie Bars. | 27. Water Filler. |
| 9. Footplate. | 28. Side Plates. |
| 10. Buffer Beam. | 29. Side Plate Beading, L/H & R/H . |
| 11. Valances. | 30. Guard Irons. |
| 12. Drag Beam. | 31. Step Plates, L/H & R/H . |
| 13. Frames, L/H & R/H . | 32. Steps. |
| 14. 8BA Screws & Nuts. | 33. Buffers. |
| 15. Drawbar Mount. | 34. Vacuum Pipe. |
| 16. Sides, L/H & R/H . | 35. Axleboxes. |
| 17. Tender Back. | 36. Floor. |
| 18. Front Plate. | 37. Sandboxes (Not Included). |
| 19. Lamp Brackets. | 38. Brake Column. |
| 20. Handrail Wire & Handrail Knobs. | 39. Sanding Gear Operating Wheel. |
| 21. Internal Supports. | 40. Sanding Gear Operating Wheel Base. |
| | 41. 10BA Screw & Nut. |

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