

Adams Radial Tank Instructions

These locos were designed by Adams for the **LSWR**, and a total of 71 were built from 1882-5. They were built by various outside contractors, and there were a number of differences between the batches, such as long or short side tanks, plain or fluted coupling rods, round or rectangular cab windows, etc. Only 30 of the class lasted until Southern days, and all but two of these were withdrawn in 1924/5. The two survivors, Nos. **0125** and **0520**, were retained for working the Lyme Regis branch, and were rebuilt in 1930 with new frames, fireboxes, springing, and cylinders with double slidebars. In 1933 they were renumbered **3125** and **3520**. **3520** acquired a Drummond boiler in 1936. One other member of the class survived on the East Kent Railway, and this was purchased by the Southern in 1946, fitted with a spare Drummond boiler, and numbered **3488**. The boiler was replaced in early BR days with an Adams boiler.

All three locos entered BR service, and were renumbered **30582 (3125)**, **30583 (3488)**, and **30584 (3520)**, and finished in lined black livery. All were withdrawn from service in 1961. Two of them were broken up, but **30583** was purchased by the Bluebell Railway, where it still survives. This kit is principally for these last three surviving locos, although obviously it can be used to model another member of the class. However, care must be taken over detail differences, some of which have already been mentioned. There were also differences between all three surviving locos, and these are noted in the assembly instructions.

Further, more detailed information is available in the Wild Swan publication 'LSWR Locos - The Adams Classes'.

The kit requires 2 pairs of 22mm driving wheels, 2 pairs of 12mm bogie wheels and 1 14mm bogie wheel for **30582 & 4** and 3 pairs of 12mm bogie wheels for **30583**. Provision has been made for fitting either a Portescap motor, or a can motor and gearbox.

Chassis Assembly

Take the frames (1) and solder in the driving axle bushes (2). Choose either the '**00**' or '**EM**' frame spacers (3), as required. Take the two lower spacers, fold up the ends, then solder an **8BA** nut (4) over the hole in the bogie mounting spacer, and over the hole at the front end of the long spacer, to screw the collector tag to. Assemble the frames and the four spacers, making sure everything is square and level. Pass pieces of **.7mm** wire through the holes in the frames to form the brake gear supports (5), leaving approximately **5mm** extending either side of the chassis. Crank outwards the lower ends of the equalising beam brackets (6), and fold up the bottom pieces to make the lower ends double thickness (see assembly diagram), then solder the brackets to the frames, passing a short piece of the **.7mm** wire through the hole in the lower end of each and through the holes in the equalising beams at the same time. Take the two trailing wheel bearing plates (7) and solder them inside the frames, over the trailing wheel holes. (These holes are elongated to give the trailing wheels some vertical movement).

Take the cylinder block (8) and fold down the front and back at right angles to the top. Solder a piece of the **3/32"** diameter tube (9) into each of the cylinders, so that they protrude **2mm** at the sidebar end, and are flush with the face of the cylinders at the other end. Take the slidebars (10), fold them in half so that they are double thickness, slide them

into the cylinder block, and solder in place. Note that **30583 (3488)** had single slidebars, and therefore only the top ones are required if modelling this loco. Fit the cylinder ends (11) and their overlays (12) to the slidebar end of the cylinders. Those fitting double slidebars will need to file a small square out of the overlays to clear the lower slidebars. Fit the cylinder fronts (13) in place, and then take the sides (14), shape to match the cylinders, and solder them to the cylinder block. Now solder the front guard irons (15), and rear guard irons (16) to the frames.

Take the brake hangers (20) and solder the brake blocks (21) to them, making **L/H & R/H** pairs, then solder the assembled brakes onto the wire brake gear supports. Temporarily fit the wheels to check that the brakes do not touch them. Trim the ends of the wire after fixing. Use **.7mm** wire threaded through the lower ends of the brakes to form the tie bars (22), fitting the pull rods (23) at the same time. Angle in the ends of the pull rods so that they join together **8mm** before the ends. Take the brake lever (24) which goes on the **L/H** side of the chassis, and pass the piece of **1/16"** diameter brass rod through the holes in the brackets on the chassis, through the brake lever, and through the holes in the ends of the pull rods, and solder in place. The frames can now be painted.

Fit the driving wheels, axles, crankpins, and motor and/or gearbox to the chassis. Take the collector tag (17) and screw it to the underside of the chassis using one of the **8BA** screws (18) and the two fibre washers (19), making sure that the tag is not electrically live to the chassis. Solder a piece of the handrail wire to the tag and bend it to bear on the insulated wheel rims, to form the current collectors.

Take the coupling rods (26) next, and solder the two halves of each together. Select the crossheads (27) you require (double slidebar type for **30582** and **30584**, single type for **30583**), and fold these up as shown in the assembly diagrams, fitting the piston rods (28) from the **1/16"** diameter rod at the same time. Assemble the two pieces of the connecting rods (29), and then fit the connecting rods to the crossheads using the **14BA** screws and nuts provided. Now fit the coupling rods, connecting rods, and crossheads to the chassis.

On the prototypes the big end of the connecting rods go behind the coupling rods, but on a '00' model it will be found better to put the connecting rods outside the coupling rods. When fitting the crankpin washers in place put paper between the rods and the washers to avoid soldering the rods to the crankpins, then remove the paper after fixing.

Turn now to the front bogie, and fold up the main etching for this (30), as shown on the assembly diagram. Fit the dummy equalising beams (31), and then clean out the axle holes, if necessary, with a **2mm** drill. Fit the wheels to the bogie, using the axle washers (32) to take up any side play. Solder the washer to the small end of the bogie link (33), tap the hole **8BA**, then screw the bogie to the link. Cut off the end of the screw after fixing so that it is flush with the top of the link, and then screw the bogie to the chassis, using an **8BA** screw and the cast pivot (34). Fit the trailing wheels to the chassis, and then solder the cylinder drain cock pipes (35) to the cylinders. Those with double slidebars should fix the rear end of these to the underside of the lower slidebar. Those modelling **30583 (3488)** should attach the ends to the frames with short pieces of wire. Finally, glue the balance weights (36) to the driving wheels. The larger pair of weights go on the leading wheels.

Superstructure Assembly

Take the footplate (1) and the valances (2), and curve the footplate on the half-etched lines to match the raised sections of the valances. Make sure that these parts are a good fit together before soldering the valances into the half-etched grooves along the edges of the footplate. Try to avoid getting solder in the grooves for the step positions and the cab handrail holes. Solder the front buffer beam (3) and rear buffer beam (4) in place, noting that the rear buffer beam has a hole to the left of its centre for fixing the rear vacuum pipe into. Solder an **8BA** nut (5) over each of the two holes in the footplate to screw the chassis to. Take the two front step plates (6), bend up the steps, and solder them in place behind the valances, in their location grooves, then solder the narrow steps (7) into the slots in the step plates. Repeat this with the rear step plates (8) and steps (9), and fit them into their location grooves, which are inset from the valances.

Take the bunker (10) and curve its corners to **2mm** radius along the half-etched lines, then solder the bunker into the slots in the footplate. Fit five of the lamp brackets (11) into the slots in the back of the bunker. Bend the coal plate (12) to shape along the half-etched lines, and solder it into the bunker. Next take the cab rear (13), curve along the half-etched lines to **2mm** radius, and bend down the lower section at right angles. This can either be done with the fold lines inside the cab, or, if preferred, with the fold lines inside the bunker, in which case it will be necessary to fill the hole for the brake column and drill another one to the left of the cab centre. Solder the coal door (14) to the centre of the bottom section of the cab back with its top level with the bend, then slot the cab rear into the footplate and solder in place. Its upper section should be level with the front edges of the coal rails.

Take the tank sides/cab sides (15) next, and bend the tank fronts at right angles to the sides. Now take the cab front/tank tops (16), bend the tank tops at right angles to the cab front, and then solder the three pieces together, fitting the cab front / tank tops into the grooves in the sides. Now slot the assembly into the footplate. It may be found that the rear tags require about **1mm** filed off their back edge to make them a good fit. If modelling **30583 (3488)** the top edge of the tank fronts should be filed down flush with the tank tops (see separate sketch on assembly diagram). Next take the side overlays (17) and fit these to the sides of the loco. Once fitted, bend the beading extension at the front of each at right angles and fix it to the top of the tank front, unless modelling **30583 (3488)**. In this case drill out the small, half-etched holes in the footplate just forward of the tanks with a **0.5mm** drill, and fit handrails through these holes, with their upper end soldered to the beading extensions, trimming off the excess beading after fixing. Next fit the long beading strip (18) around the top edge of the bunker, below the coal rails, then fit the tank filler (19) into the bunker.

Fold down the sides of the cab floor (20), and then fit it into the cab. Fold up the tank ends (21), and solder these inside the cab. Unlike the other locos, **30583** had beaded edges to the back of the cab sides, and these two pieces (22) should be fitted if required. It will be necessary to file away a short section of the beading on the top edges of the cab sides to fit these pieces.

Two types of upper frame pieces (23) are provided as, unlike the other two locos, **30583 (3488)** retained its original frames. Choose the appropriate pair for your model, and fit them into the slots in the footplate. Take the splasher sides (24) next, and shape the splasher tops (25) to match the sides, and then solder the parts together. Solder the assembled splashers to the footplate, then fit the riveted strips (26) along the base of each splasher, and fix the sandbox filler caps (27) into the holes in the splasher tops. A short section of the

reversing lever (28) is visible between the tank front and splasher on the right hand side of the loco, and this should now be fitted in place.

Turn now to the boiler (29) and bend out the lower part of the firebox sides so that they are a good fit down between the tanks. It will be found that the holes for the boiler handrails have been half-etched on the inside of the boiler, as **30583** had different handrail knob positions on its final boiler to those on the others. For the others, drill out the second and fourth holes with a **0.8mm** drill, and for **30583** with its final boiler, drill out the first, third, and fifth holes. Solder up the seam of the boiler, fit the smokebox inner (30) over the front of the boiler, and then solder the smokebox front (31) in place. It will be found necessary to drill a **4.5mm** hole in the underside of the middle of the smokebox to clear the front fixing nut. After doing this take the riveted smokebox wrapper (32), curve it to match the smokebox front, and solder it to the boiler unit, fitting it over the edge of the front. Fit the boiler bands (33) next, either three or five, depending on whether you are modelling a loco with an Adams or a Drummond boiler. **30582** had a Drummond boiler, **30583** had a Drummond boiler from 1946 to early BR days, after which it had an Adams boiler, and **30584** had an Adams boiler. In both cases the first boiler band goes directly behind the smokebox. On Drummond boilers the second and third bands are **30mm** and **52mm** back from the front of the smokebox, and on Adams boilers they are **23mm**, **36.5mm** (in line with the dome), **50mm**, and **62.5mm** (in line with the centre of the safety valves) back from the smokebox front. The boiler/smokebox/firebox unit can now be soldered to the loco, being careful to make sure that everything is square and level before fixing.

Next form and fit the boiler handrail from the wire (34) and handrail knobs (35) provided. The handrails can also be fitted to the cab entrances, the upper cab sides, and the front of the splashers. Also fit a vertical piece of handrail wire through each of the small holes in the front of the splasher tops, and fix the front ends of the sandbox operating rods (36) to these, the back end of the rods going through the small slots in the tank front edges.

Fit the buffers (37), vacuum pipes (38) and steam heating pipes (39) to the front and rear of the loco, and fit the three lamp brackets to the front edge of the footplate. Make the two toolboxes (40) either side of the smokebox next, curving the corners of the bodies on the half-etched lines, and bending down the catch so that it is flat against the toolbox front, then fixing the lids to the bodies. Slot the assembled toolboxes into the footplate and fix in place, and then fix the small cylinder oilers (41) to the front of each toolbox. Assemble the two parts of each of the cover plates (42) and fix them to the footplate over the half-etched positional guide lines. Bend and fit the three lamp brackets (43) to the front of the smokebox, then fit the clacks (44) to the boiler, with the lower ends of their pipes fitted behind the upper frame pieces.

Turn back to the cab, take the backhead (45), fix the regulator handle (46) to it, and fix the backhead into the cab, then fix the brake handle (47) into its hole in the back of the cab. Curve the cab roof (48) to match the curve of the front and back of the cab, and solder the roof in place, then fix the three rain strips (49) to it.

Next fit the boiler fittings. If modelling an Adams boiler, drill out the rear whistle hole with a 0.8mm drill and fit the whistle (50), then form and fit the two pipes to it from some of the 22g wire. Drill out the hole for the safety valves (51) with a **3/32"** or **2.1mm** drill, and fit the safety valves. Drill out the two small holes either side of the safety valves, fit the small injector valves (52) into these holes, then fit the Adams dome (53) in place. For the Drummond boiler drill out the forward whistle hole, fit the whistle, and make the pipes to it from 22g wire, then fit the Drummond dome. Fit the chimney (54), and fit the two small

displacement lubricators (55) either side of the smokebox. Take the smokebox door (56), fit the door handles (57) to it, and, finally, fit the two water pipes (58) underneath the footplate, behind the cab steps.

Chassis Parts List

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| 1. Frames. | 13. Cylinder Fronts. | 27. Crossheads (L/H & R/H). |
| 2. Axle Bushes. | 14. Cylinder Sides. | 28. Piston Rods. |
| 3. Frame Spacers. | 15. Front Guard irons. | 29. Connecting Rods. |
| 4. 8BA Nuts. | 16. Rear Guard Irons. | 30. Bogie. |
| 5. Brake Gear Supports.
(.7mm wire). | 17. Collector Tag. | 31. Dummy Equalising
Beams. |
| 6. Equalising Beam
Brackets. | 18. 8BA Screws. | 32. Axle Washers. |
| 7. Trailing Wheel Bearing
Plates. | 19. Fibre washers - No
Longer Supplied. | 33. Bogie Link & Washer. |
| 8. Cylinder Block. | 20. Brake hangers. | 34. Bogie Pivot. |
| 9. 3/32" Tube. | 21. Brake blocks. | 35. Cylinder Drain Cocks. |
| 10. Slidebars. | 22. Tie Bars. (.7mm wire). | 36. Balance weights. |
| 11. Cylinder Ends. | 23. Brake Pull Rods. | |
| 12. Cylinder End Overlays. | 24. Brake Lever. | |
| | 25. Brake Lever Bar. | |
| | 26. Coupling Rods. | |

Superstructure Parts List

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| 1. Footplate. | 21. Tank Ends. | 40. Toolboxes (2 parts). |
| 2. Valances. | 22. Cab Side Uprights. | 41. Cylinder Oilers. |
| 3. Front Bufferbeam. | 23. Upper Frame Pieces. | 42. Cover Plates (2 parts). |
| 4. Rear Bufferbeam. | 24. Splasher Sides. | 43. Front Lamp Irons. |
| 5. 8BA Nuts. | 25. Splasher Tops. | 44. Clack Valves. |
| 6. Front Step Plates. | 26. Riveted Splasher Strips. | 45. Backhead. |
| 7. Front Steps. | 27. Sandbox Filler Caps. | 46. Regulator Handle. |
| 8. Rear Step Plates. | 28. Reversing Lever. | 47. Brake Handle. |
| 9. Rear Steps. | 29. Boiler. | 48. Cab Roof. |
| 10. Bunker. | 30. Smokebox Inner. | 49. Rain Strips. |
| 11. Lamp Brackets. | 31. Smokebox Front. | 50. Whistle. |
| 12. Coal Plates. | 32. Smokebox Wrapper. | 51. Safety Valves. |
| 13. Cab Rear. | 33. Boiler Bands. | 52. Injector Valves. |
| 14. Coal Door. | 34. Handrail Wire. | 53. Domes (2 types). |
| 15. Tank/Cab Sides. | 35. Handrail Knobs. | 54. Chimney. |
| 16. Cab Front/Tank Tops. | 36. Sandbox Operating
Rods. | 55. Displacement
Lubricators. |
| 17. Tank/Cabside
Overlays. | 37. Buffers. | 56. Smokebox Door. |
| 18. Bunker Beading. | 38. Vacuum Pipes. | 57. Smokebox Door
Handle. |
| 19. Tank Filler. | 39. Steam Heating Pipes. | 58. Water Pipes. |
| 20. Cab Floor. | | |

P. D. K. MODELS.

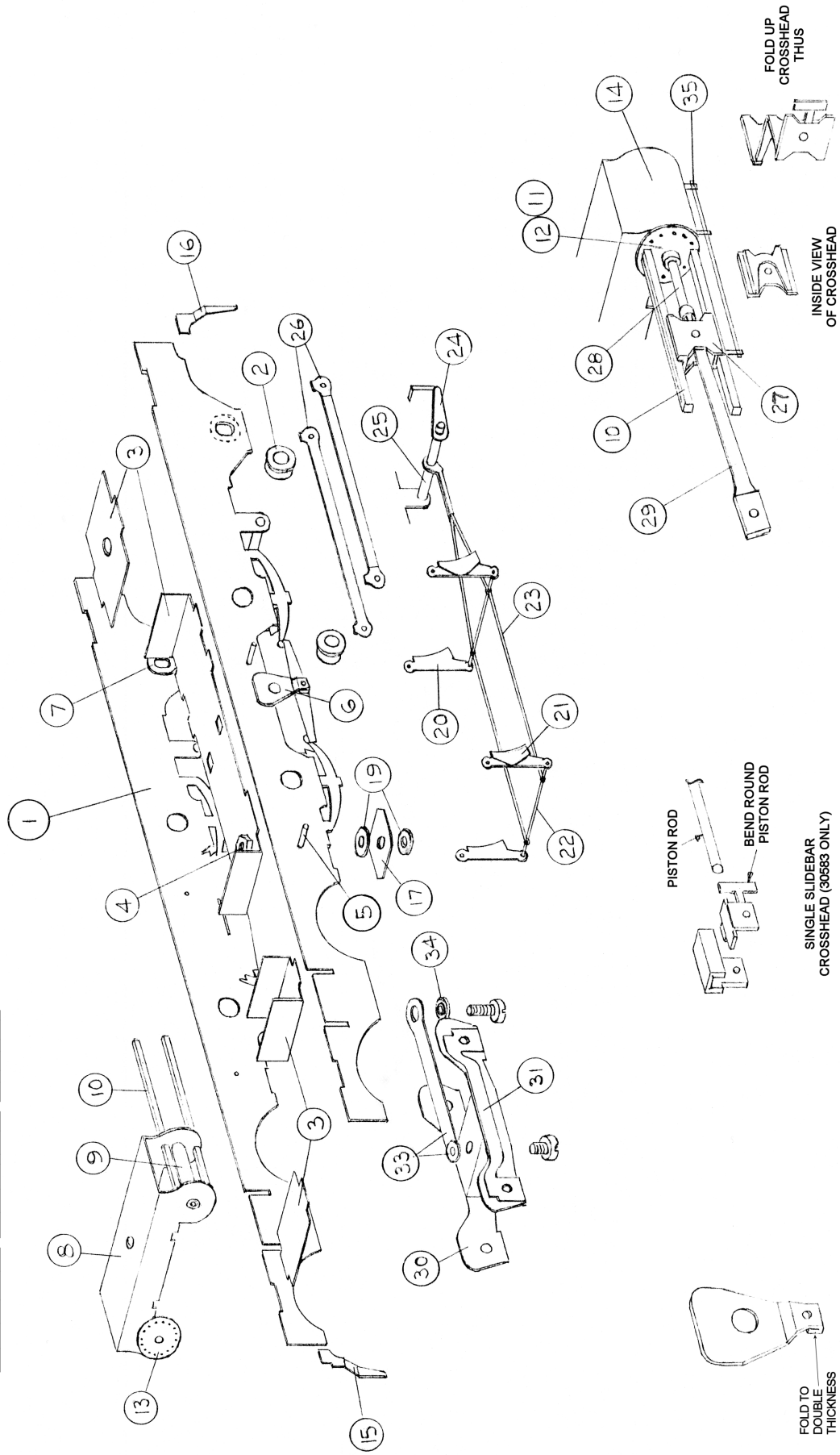
**HILLTOP BUNGALOW.
CARNKIE
HELSTON
TR13 0DZ**

07732213251

E-Mail: pdkmodels@hotmail.co.uk

www.pdkmodels.co.uk

ADAMS RADIAL 4-4-2t



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REMOVE THIS SECTION
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TANK FRONTS
30583 (3488) ONLY

TRIM BEADING TO LENGTH
AND FIT HANDRAIL

