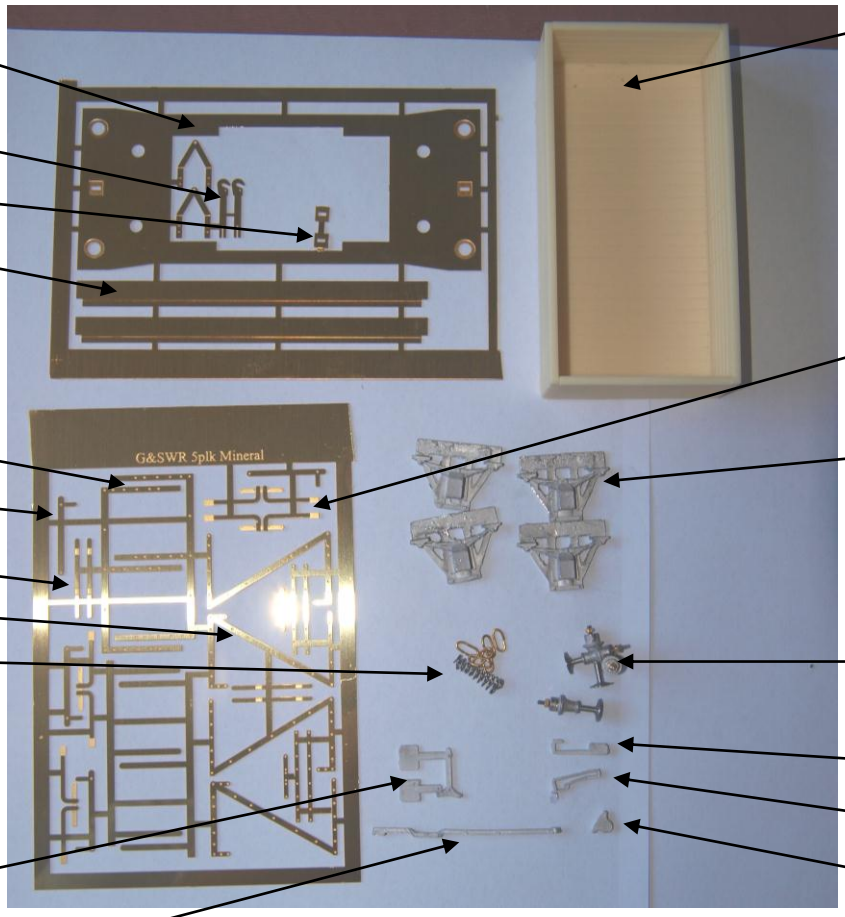
Furness Railway Wagon Co.

Glasgow & South Western Railway/LMS/BR
12ton Mineral Steel Under-Frame

Wheels, paint and transfers required to complete.

Please note that to aid the folding of the various parts score all the halfetched foldlines that are to be folded.

The Parts.

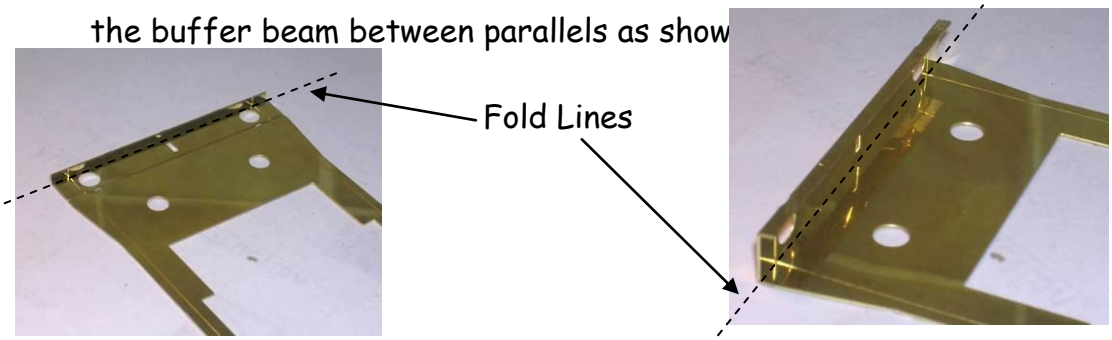


Part 1
Part 14
Part 3
Part 2
Part 5/6
Part 7/8
Part 10
Part 9
Part 13/15
Part 19
Part 21
Part 4
Part 11
Part 17
Part 16
Part 20
Part 22
Part 18

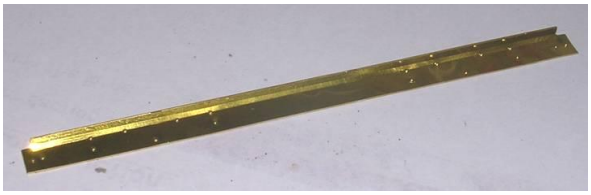
Part 12 split pins are not shown

Chassis Construction.

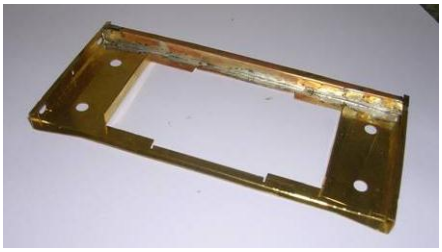
1. Remove chassis (part 1) from the etch and fold up the bottom of the buffer beam between parallels as show



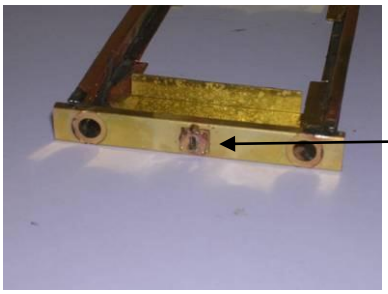
2. Next fold up the buffer beam completely as shown. Make sure that the resulting U shape is square so as to fit the sole bars. Repeat for the other end of the chassis.
3. Remove the sole-bars (part 2) and punch out the rivets. Next fold up the bottom of the sole-bars between two parallels. Make sure that the resulting shape is square.



4. Click one of the sole-bars in to the half etch slot that runs between the two buffer beams. Solder into position using 188C solder. Make sure that the sole-bars are actually soldered inside the buffer beam. Repeat for the other sole-bar.



5. Next remove the buffer beam reinforcing plates (part 3) and punch out the half etched rivets and tin the back of each piece with 188C solder. Now sweat the plates onto the half etched square in the front of the buffer beam.

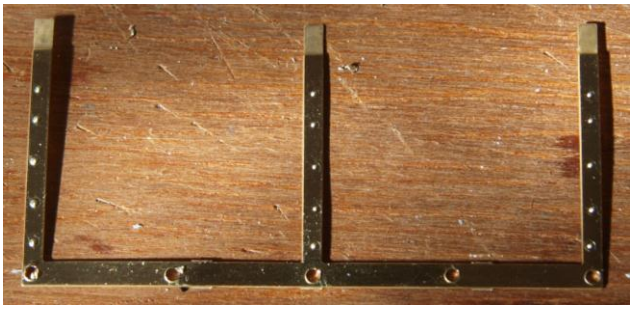


Wagon construction

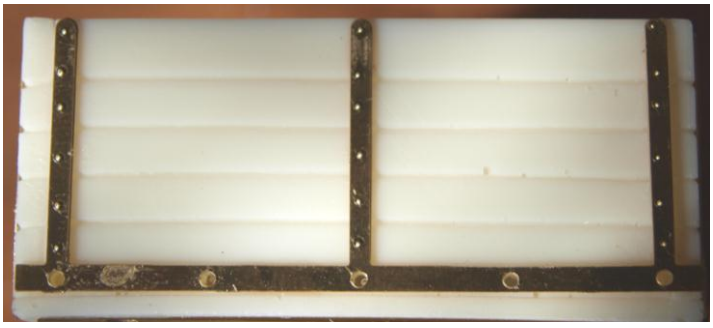
1. Position the top of the wagon (part 4) in the middle of the chassis, glue the chassis to the top.
2. Next, punch out the rivets on the strapping etch and glue to the wagon as follows.

End doors

3. Starting with the M shaped door strapping (parts 5/6) drill out the half etched holes in the cross member.



4. Now fit the strapping (part 5) as shown on the outside of the wagon. Note that the outside etched door is the full width of the wagon and does not have half etched tags on the top of the three uprights.



5. Drill through the holes in the strapping.

6. Fit the strapping (parts 7/8) as shown on the out side of the wagon.
6. Drill through the holes in the strapping.

7. Attach internal door strapping (part 6) and the diagonal bracing (part 9) to the internal sides of the wagon at the end which has the door in it. These will fit right into the corners and you will be aided by pushing some wire through the top holes in the sides of the wagon. Also, make sure that the diagonal bracing runs from the top of the end door to the bottom of the side door and lines up with the bolt heads on the outside of the wagon.
8. Now fold over the tags on the internal door strapping to form the hinge.

Side door

9. Starting with the side door vertical bars (part 10).

10. Next the door hinges, these are formed from two horizontal bars (part 11) with their ends folded around a piece of wire.

11. Now fit the remainder of the strapping to the inside of the side door.
12. Next fit the split pins (part 12) into the holes in the end doors.

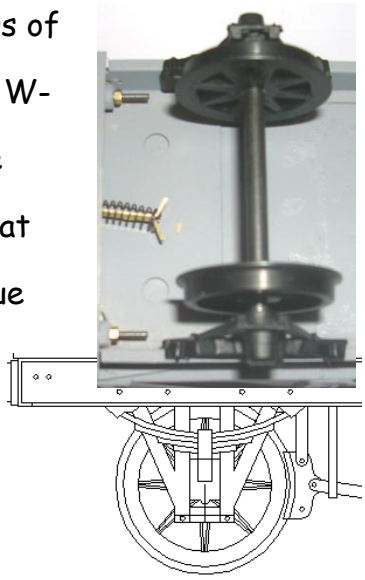
13. Then fit the split pins (part 12) into the holes in the side strapping.

14. Now feed some wire through the

split pins so that it sticks past the sides of the wagon.

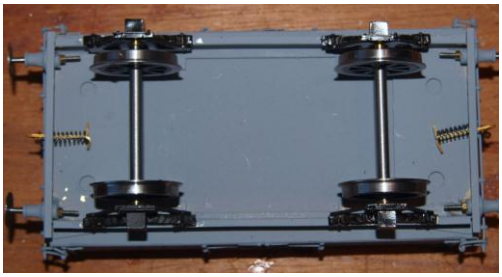
15. Once the wire is secure bend up four wire links that are large enough to fit through the split pin on the side of the wagon and over the wire on the end door.

16. Next, assemble the links (part 13) on to the coupling hook (part 14) and push through the slot. Now push the spring (part 15) over the back of the back of the coupling hook and bend the tags over to secure the spring in place. Then fix the four buffers (part 16) into the holes in the buffer beam using two part epoxy resin.

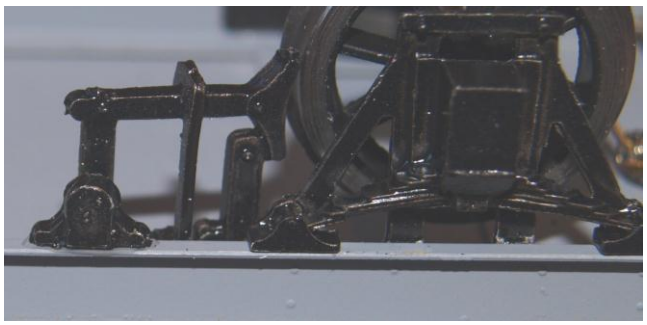


17. Drill out the w-iron castings to suit the bearings of your chosen wheels. Assemble a wheel set, 2 x W-iron's (part 17), 2 x bearings and 1 x wheel/axle unit, do not glue the bearings into the W-irons at this stage. Again using two part epoxy resin, glue the assembled wheel set onto the sole-bars so that they are square and line up with the rivets as shown in the drawing.

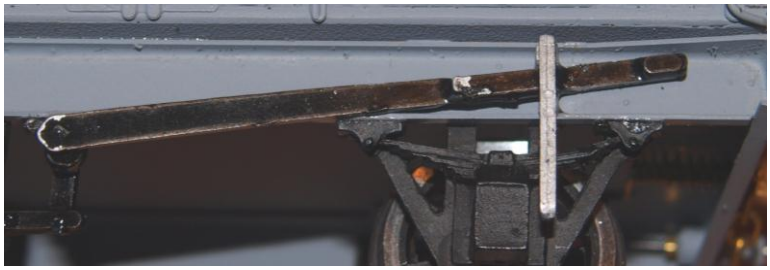
18. Repeat for the other wheel set. Use a straight edge across the back of the wheels to aid getting these parallel and square to the chassis.



19. Glue the brake gear pivot (part 18) on to one side of the wagon only as shown. Then glue the brake block (part 19) to the inside of the sole-bar, making sure that the brake block does not foul the wheels. Then attach the pull rod support bar (Part 20).



20. Next fix the brake lever (part 21) and ratchet casting (part 22) to the sole-bar and to the outside of the brake gear pivot as shown.



21. Finally paint the model in the livery of your choice.

History of the Wagon

G&SWR

The G&SWR ordered 930 steel under-framed versions of their 12t Mineral wagon in 1899 from RY Pickering's. The wagons were slightly longer than the previous 12t minerals, but still retained the cupboard side doors and both end doors. The G&SWR went down the route of having wagons fitted with two end doors because Ayr Docks was not equipped with wagon turntables and wagons pointing in the wrong direction could not be discharged.

Due to the common user policy that had been introduced during World War 1 these wagons would have travelled all over the country as well as in their native Scotland.

These wagons would have spent the majority of their lives painted grey above the sole bars and black below. Between 1898 and 1935 the only difference in livery would have been the lettering, and when originally built the iron work above the sole bars would have been painted black. As these wagons would have been only repainted just before the G&SWR were taken over by the LMS at the grouping, there is a very good chance that they would have been some of the last wagons to have been repainted in their new livery and as such these wagons could well be seen into the early 1930's still carrying the G&SWR lettering.

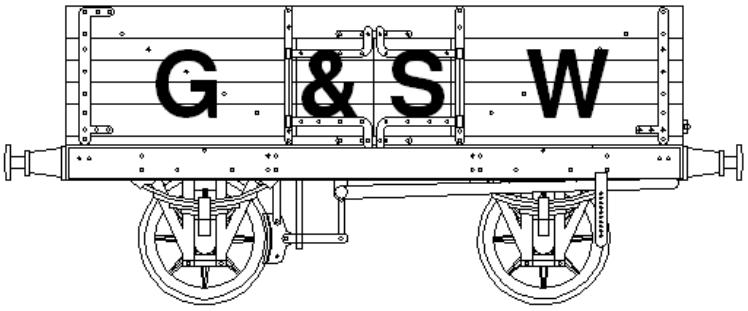
From 1935 onwards these wagons would have been gradually repainted in a bauxite livery as they were unfitted stock. Post World War 2 these wagons should have been repainted yet again, this time returning to a grey livery. However, there is a good chance that most did not receive this livery as most wagons would have only been repainted when called in

for overhaul and many would have been withdrawn from service before being overhauled.

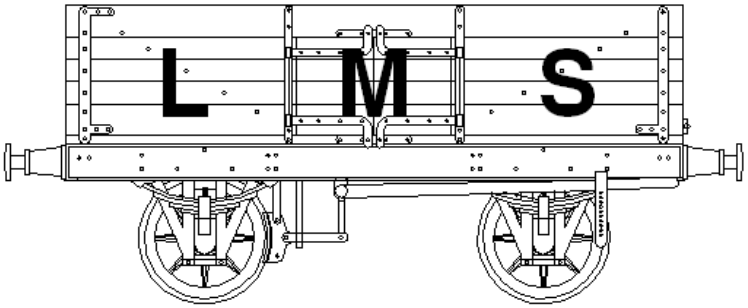
The only known running G&SWR number is 16410. This would have had 17,000 added in 1923 by the LMS. It is not known how many of these wagons made it to 1947.

Liveries

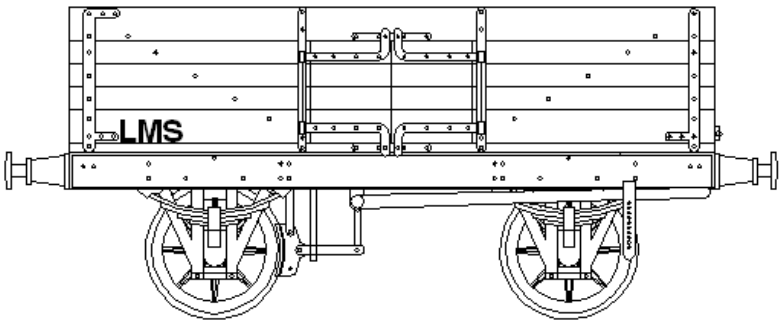
G&SWR
Circ 1900



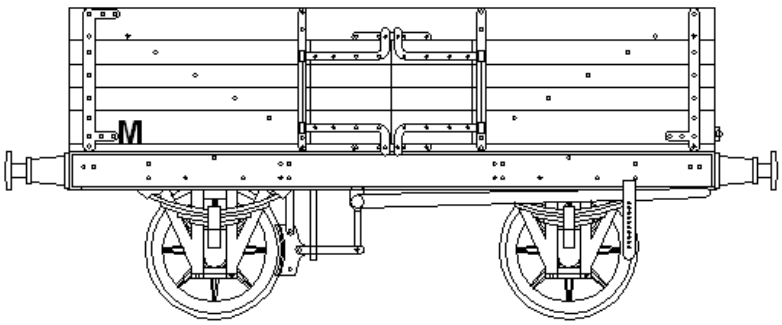
LMS early
Circ 1923-36



LMS Late
Circ 1936-47



BR early
Circ 1947-57



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12ton Mineral Steel Under-Frame

1. Construction Manual,
2. One Brass chassis etch,
3. One Brass Strapping etch
4. One brake gear casting,
5. One brake lever casting,
6. One brake pivot casting,
7. One brake ratchet casting,
8. One brake gear safety bar casting,
9. Four W-iron/axle box castings,
10. One wagon body Casting (resin),
11. Four buffer assemblies,
12. Two coupling hook springs,
13. Six coupling hook links.
14. One length of brass wire.

We recommend Slaters 3'1" split spoke wheels
Transfers are available from HMRS.