

Furness Railway Wagon Co.

Furness Railway/LMS

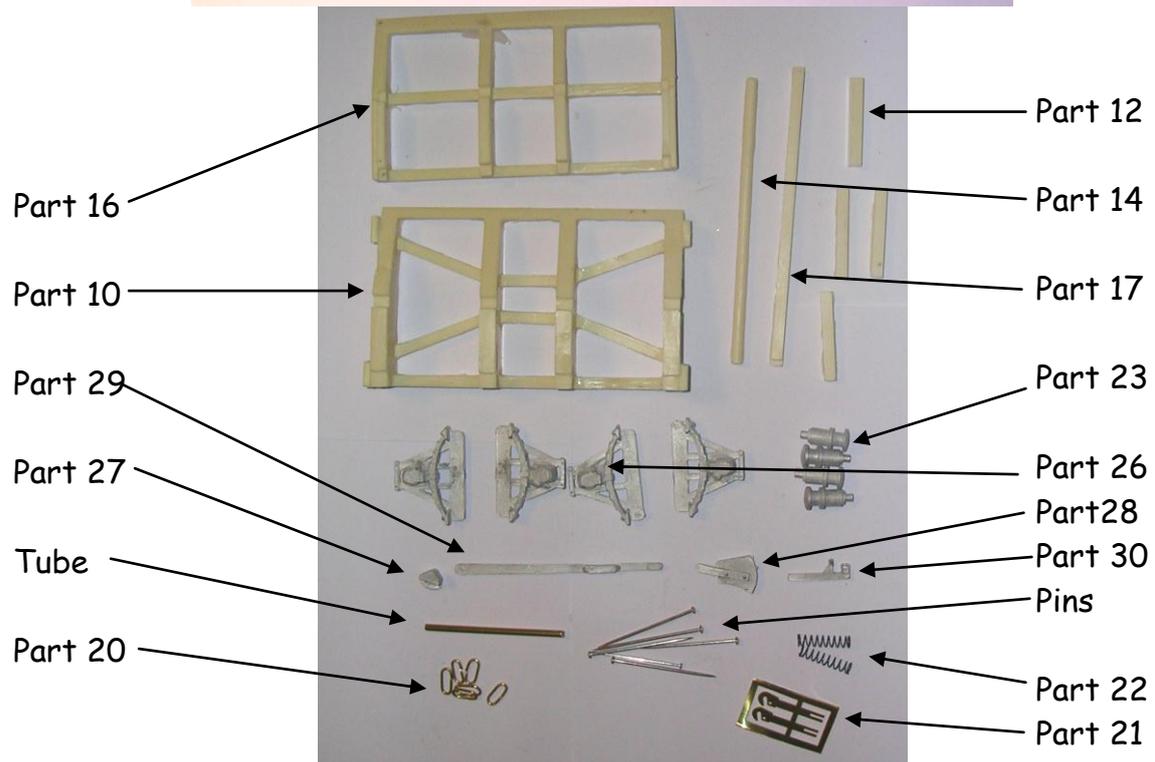
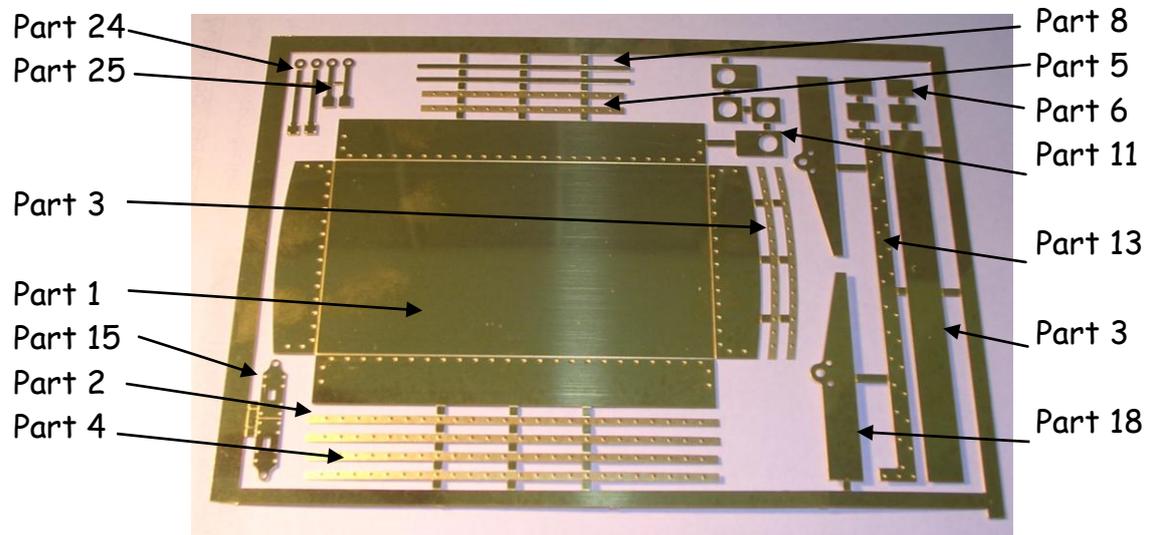
1865 Diagram 33 10ton

Side Tipping Iron Ore Wagon

Wheels, paint and transfers required to complete.

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

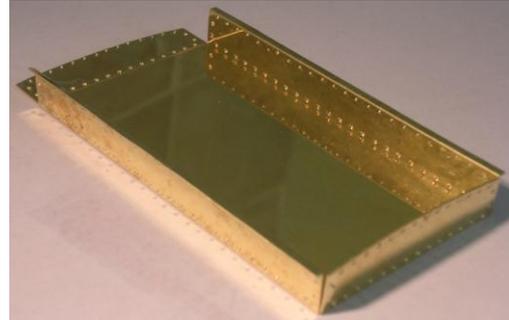
The parts.



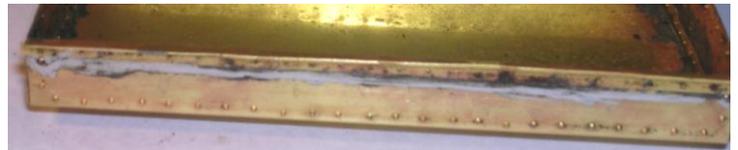
Instructions for the construction of the tank.

1. Remove the tank (part 1) from the etch and punch out the half etched rivets.

2. Now fold up the top edge of the of the tank. Now fold up the four sides of the tank to make a shallow tray.



3. Then sweat the long straight rivet strips (part 2) directly under the folded lip. Note: that there are four rivet

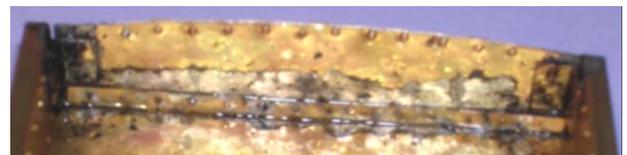


strips that look the same. At this stage use the two strips that are slightly longer. Then sweat the curved rivet



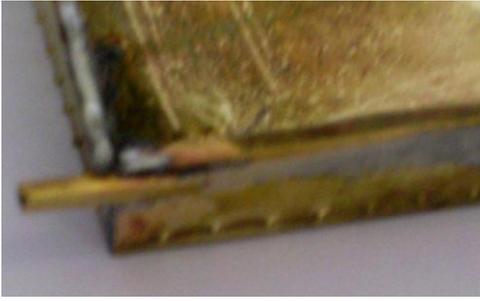
strips (part 3) onto the ends of the tank so that the curves line up.

4. Then sweat the remaining long rivet strips (part4) onto the inside side of the tank. Then sweat on the short rivet strips (part 5) onto the inside end of the tank as shown.



5. Now punch out the rivets and fold corner reinforcing plates (part 6) and solder into the corners of the tank midway between the rivets.





6. Cut a two pieces of the brass tube (part 7) 10mm long and solder them on to the tank under the lip as shown. So that the end sticks out 5mm beyond

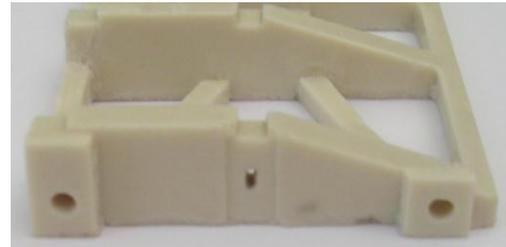
the end of the tank as shown.

7. Next solder on the lip (part 8) at the end of the tank. The best way of doing this is to start at one end not at the middle and work your way along.



Chassis Construction.

1. Clean up the wagon chassis (part 10) removing any excess material. Drill out the holes, both ends, for the buffers and coupling hooks as shown.



2. Glue the buffer plates (part 11) onto the chassis making sure that the ends of the buffer beams plates are square with the ends of the buffer beams.



3. Next glue the chassis beams (part 12) onto the chassis making sure that they are square with the buffer beams and the cross



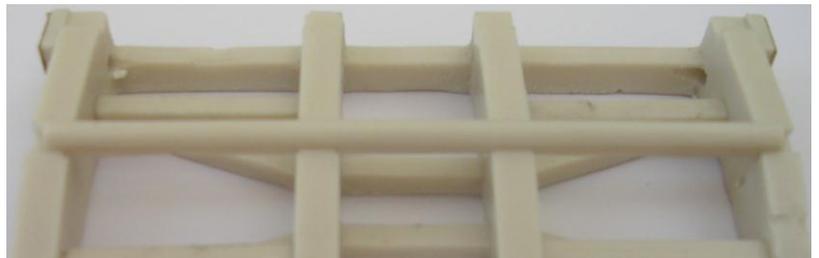
beams of the chassis positioned as shown.

4. Remove the chassis reinforcing plate (part 13) from the etch.



Punch out the half-etched rivets and fit as shown.

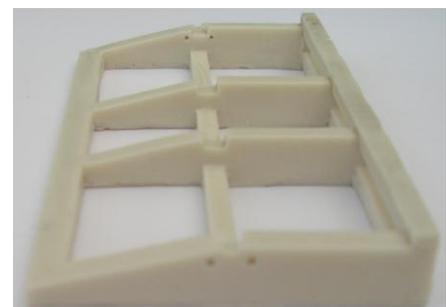
5. Next fit the half-round pivot beam (part 14) into the cut out in the chassis as shown.

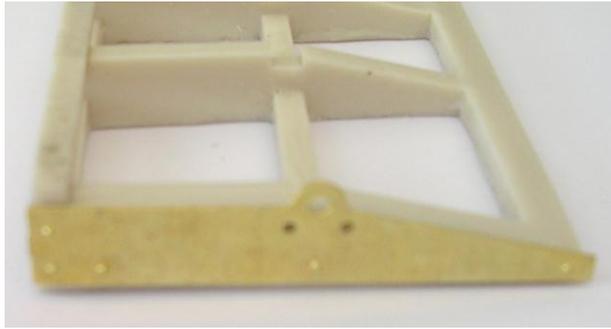


6. Next, take the coupling reinforcing plate (part 15) and punch out the half-etched rivets. Fit into the slot in the chassis as shown.



7. Next take the top casting (part 16) and fit the side reinforcing beam (part 17) into the slot. The slot may require a file running across it to clean up the edge.

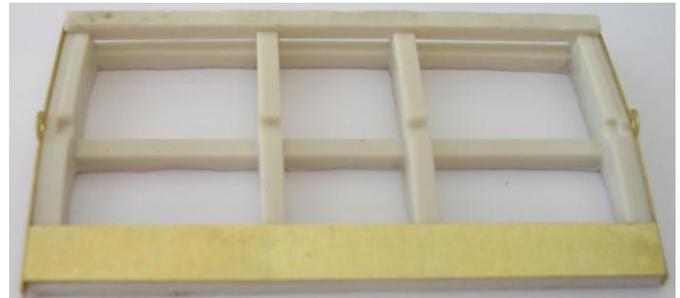




8. Next take the top end plates (parts 18) and fit onto the end of the top casting so that the holes line up. Drill

out these holes, two in each end. The diameter of the holes to suit the six pins, shown on page 1. Then shorten four of the pins and glue into the holes.

9. Next take the top base plate (part 19) and fit to the underneath of the top casting as shown.



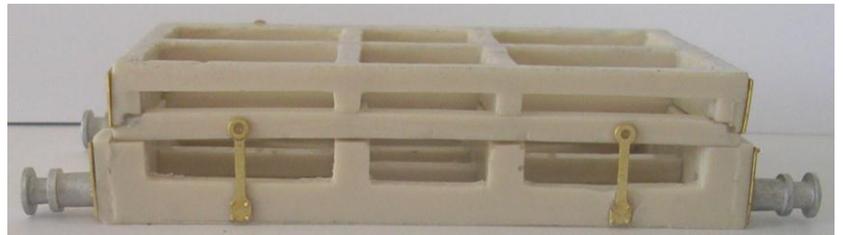
10. Next put the tank support onto the chassis. Line up the corresponding pivot holes, of the top end plates and coupling reinforcing plates. You will have to drill a hole into the half-round pivot beam using the hole in the coupling reinforcing plate as a guide. Next shorten two of the six pins, shown on page 1, to 8mm long and glue into the holes as shown.



11. Next, assemble the links (part 20) on to the coupling hook (part 21) and push through the slot. Now push the spring (part 22) 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 23) into the holes in the buffer beam using two part epoxy as shown. Repeat for the other end.



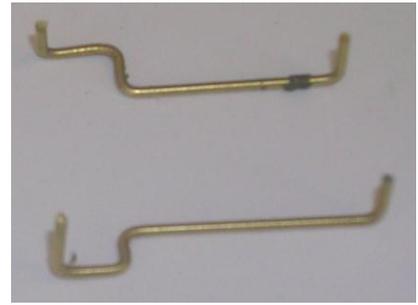
12. Take the long straps (part 24) and punch out the half-etched rivets and bend up and fit. They should fit half way between the buffer beam and the centre beams as shown. Repeat the process for the other side using the shorter straps (part 25) as shown.



13. Now glue the tank to the top of the wagon making sure that the sides are parallel to the top and that the side with the tube should be on the tipping side of the wagon as shown.



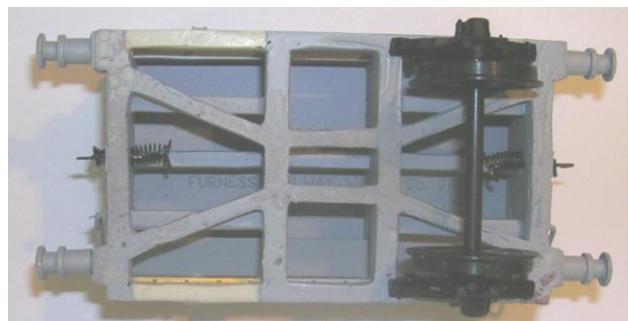
14. Take two pieces of the wire and bend up as shown, use the template sheet to aid this. Note that there is a left hand and a right hand bar.



15. Next fit the bar into the tube on the tank and scribe a curved line on each end of the chassis. 5mm above the bottom of the chassis draw a line to cross the curved line. Where these lines cross drill a hole into the chassis on that line to act as a pivot.

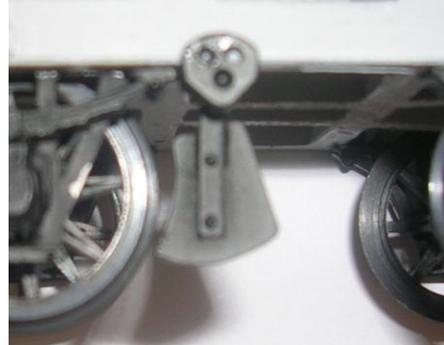
Repeat the process for the other side of the wagon. Once the two holes are drilled you should glue the wire into position as shown. Note that the shorter end of the rod is to the bottom. Repeat this process for the other end of the wagon.

16. Assemble a wheel set, 2 x W-iron's (part 26), 2 x bearing's 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 as shown. 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.

17. Glue the brake gear castings (parts 27 and 28) on to one side only of the wagon only as shown.



18. Next take the brake lever (part 29) and ratchet (part 30) and glue into position as shown.

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



History of the Wagon

In between 1850 and 1910 the Furness Railway company ordered several batches of side tipping discharge iron ore wagons. The first batches were dumb buffered and rated at 6tons. Over time batches of wagons were built with higher ratings and sprung buffers. In total the Furness Railway ordered over 2000 of this type of wagon.

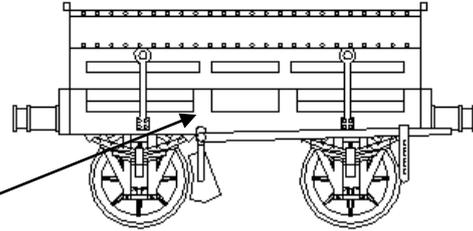
The wagons were mainly used to convey iron ore from the Furness and West Cumberland ore fields to the steel works in what was Cumberland and North Lancashire. However, it is very possible they ventured away from the Furness system as ore was shipped to Scotland and the north of England.

This kit represents one of the 300 wagons built in 1865. The Furness Railway started to sell this type of wagon out of service about 1900.

However, some of the wagons of this batch were absorbed into the LMS. These wagons would have been probably replaced by 1930 but in private ownership these wagons lasted until 1968 when the last of south Cumbria's iron ore mines shut. In Furness Railway days the wagons would have been painted grey. There is no specific shade of grey mentioned by the Furness Railway Company but, as its headquarters were at Barrow-in-Furness, home to Vickers, Son & Maxim's, Naval Shipyard, battleship grey would be a good guess. The wagons would however not been grey for very long as they would have become stained dark red from the iron ore. The wagons should have also been painted LMS wagon grey from 1923 to 1935.

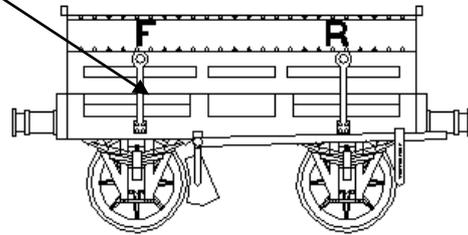
Liveries

Furness Railway
Livery Circ 1865

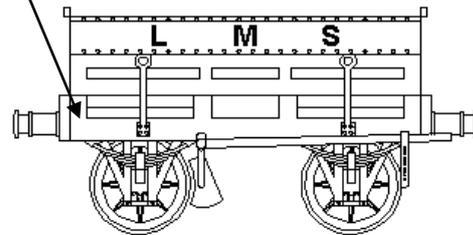


Numbers

Furness Railway
Livery Circ 1910



L.M.S. Livery
Circ 1923



Furness Railway Wagon Co.

Check list for Furness Railway/LMS 1903 Diagram 33 20ton Absolute Discharge Iron Ore Hopper Wagon Steel Under-Frame

1. Construction Manual,
2. One etch,
3. One chassis Casting (Resin),
4. One tank support casting (Resin),
5. Four short under-frame beam castings (Resin),
6. One long under-frame beam casting (Resin),
7. One long under-frame pivot beam casting (Resin),
8. One brake lever casting,
9. One brake block casting,
10. One brake hanger casting
11. One brake ratchet casting,
12. Four W-iron/axle box castings,
13. Four cast buffers,
14. Two coupling hook springs,
15. Six coupling hook links.

We recommend Haywood Railway's 3'1" split spoke wheels.

Transfers are available on the HMRS LMS pre-grouping sheet.