



This article is provided by FMES for your interest thanks to the kindness of the original publishers. FMES makes no representations or warranties of any kind, express or implied about the completeness, accuracy or reliability with respect to this document and any sentiments expressed are not necessarily supported by FMES. Any reliance you place on this document is therefore strictly at your own risk

LMS 8F Modifications

This document was written by Geoff King and was originally published by The Colchester Society of Model and Experimental Engineers in Autumn 2019

When I had completed my loco Virginia, and had run it successfully for a few hundred miles, I looked for a next project. As it happened Martin Evans had started to draw up the LMS 8f, which he called Euston. It was just what I was looking for, a 2-8-0 loco in 3 ½" gauge, which would be all adhesive weight on track. My Virginia was light in weight, and rather prone to slip if the track was damp or had steep hills to climb.

Work started on the new loco and progress went well. There were no real problems with the design at first, building the frames and cylinders. I decided to make the valves the same as the prototype, with piston rings on the valves. I used cast iron for the piston rings and cylinders, which went well being easy to make. There were no problems with the valve gear and the chassis ran well when given its first air test.

We next came to making the smoke box. Martin Evens had designed the smoke box to be made in two parts with a top and bottom split horizontally down each side with a row of counter sunk screws to keep the smoke box top on. I thought this looked awful and decided to change this to make the loco look right. I made the smoke box in two halves split vertically under the chimney, and spigoted into each other. This has worked out very well, as I can now take the front part of the smoke box off the loco, leaving all the pipe work connected. All I have to do is unscrew four screws from the saddle on each side and two nuts from inside the smoke box holding the chimney on, whereby the front part of the smoke box can be lifted off leaving all pipework and super heaters in their working state. To this date NO one has noticed the split line down the smoke box below the chimney.

With the frames and cylinders ready for the boiler I started work on the tender. The frames were straight forward and I acquired some needle rollers from some obsolete stock in the Company stores, which I was given the OK to have. These were fitted into the tender axle boxes and have now run many miles trouble free. I then turned to the tender body and decided to build this with a drop down extra tank between the frames to hold more water.

A square hole was cut into the tender sole plate which was covered with a fine stainless steel gauze to filter all of the water for the engine. All water for the injectors and axle and hand pumps are taken from this tank between the tender frames, and this greatly simplified the pipe work on the tender.

Next was to make the boiler which was a straight forward thing to do. Except that the Stanier boiler barrel is tapered in all directions. The firebox tapers from the throat plate on the sides and top back into the cab. The boiler barrel is parallel on the bottom and tapered on the top and 5 sides. This means that you have to make it all from flat sheet copper. I had to do some development of the flat sheet copper to get the correct shape and then cut it out in cardboard to prove that I had got it right before cutting out the copper using the card as a template. Eventually I did get it right and the boiler was completed OK. There was one part of the boiler which was a problem. Stanier used a

top feed to put water into the boiler. Try as I might, I could not get this to look right when the clack valves were on top of the boiler. I made two pipes pass down the boiler to between the frames, which were close to the correct scale, and the clack valves are under the boiler mounted on a crossbar between the wheels.

This has been a great success as the valves are easy to get to and you do not have to remove any boiler cladding for access to the valves. These clack valves are for the hand pump and axle pump, the injector clack being on the back of the boiler. In this position they have been trouble free, possibly because they only have cold water passing through them from the pumps and are not subject to steam temperatures and possible scaling up.

In the tender of my 8F I made the same changes to the hand pump as I had done previously on my Virginia (described in edition 54 of LINK). I have never had to attend to any problems with the tender since building it. After twelve years use and 453 miles running the loco was put into the workshop for some TLC. The piston valves had become leaky which on dismantling proved to be from rusting of the cast iron cylinders. The valves were changed over to the PTFE design which I had done on my other locos, and is published in Model Engineer (vol. 203 page 415). With bronze valve liners there will not be a repeat of the rusting problem in the future. When I next have the 8F out on the track, if any of you would like to see the changes to the design I will be pleased to show them to you, if it is possible to see them. At this moment it time (Jan 2019) I have now completed 600 miles on the track with my 8F and it is great to drive, as many of you will have experienced.