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London Brighton and South Coast 20T Brake Van

This document was written by 'The Wagon Man' and was written for the FMES on line readership. 'The Wagon Man' is a Committee Member of FMES and has as his speciality producing scratch-built models of Railway Wagons in 5-inch gauge. This series of Articles includes his personal perspective on this fascinating branch of the hobby.

Part 10.

1. The Model, and its Exhibition Description Card of September 2018



This model of an LBSCR 20 Ton Brake van is like the original – completely conventional, other than an ingenious brake system which enabled the brakes to be applied or released from either end.

Thirty-one examples were built to Panter's design at Lancing works in 1922/3. It was the first long wheelbase Brake for the LBSCR, which had only built lightweight vans (typically 9 to 10 tons) up to that time. This necessitated two vans for heavy trains, and hence increased running costs as it also meant two guards.

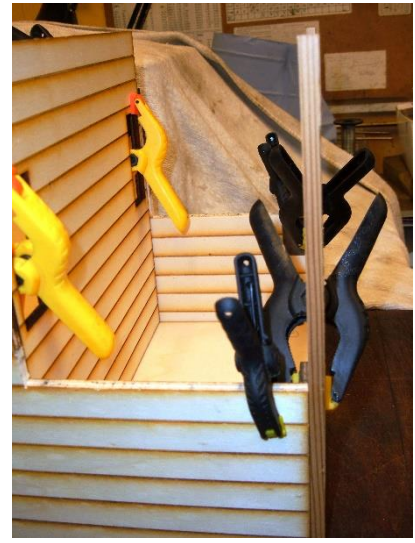
The unusual livery is that of Southern Brake Vans up to the end of the Southern's existence, so could probably be seen in the early days of BR. Photographs are rare (I have only found four, all taken pre 1923), but the example modelled, S 55907, is reported to have been allocated to Three Bridges in 1960 and eventually withdrawn in 1971 after nearly 50 years' service.

2. Supplementary Information

The model was built ordinarily to complete my collection of Southern rolling stock running in the early 1950s, and which now comprises representatives of the three major pre-grouping companies (SECR, LBSCR and the LSWR), the Southern itself, and a Bulleid (wartime austerity) design. These have all been described previously in this series.

The Body.

The Body is completely conventional, and made from 6 mm ply, laser engraved as described in previous articles. The photographs of it in course of construction are included for interest, and they illustrate the method typical of other vehicles. I have also included a photograph of the completed body, showing the detailing.



The Underframes.

In general terms these are also of standard construction, but with the additional fittings required for the unconventional braking system.

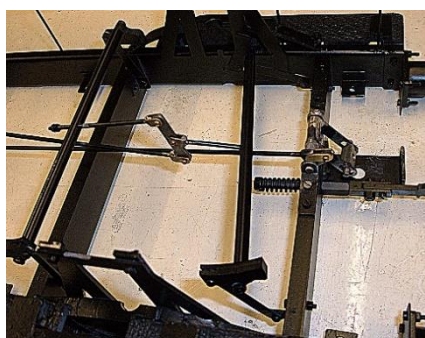
The Braking System

I was intrigued by the Braking System which enabled the Brakes to be applied from either end, but released from the same end or the other end from which they had been put on. The hunt was on for details of the mechanism, which fell at the first post as neither drawings nor photographs showed any evidence of brake rods other than an unconventional arrangement of equalising levers mid ships.

Equalising Arrangements

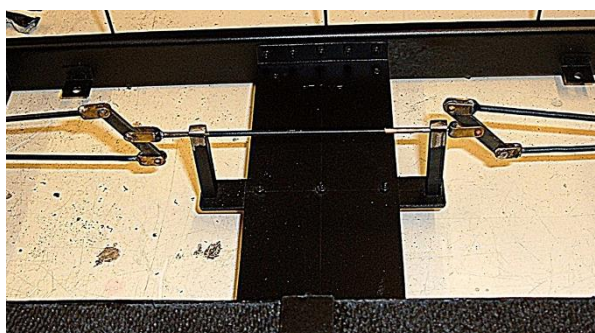
The Brake Blocks on each wheel are equalised such that the pressure on each is made equal, using the conventional mechanism. The photograph shows one end of this, and as is normal the rods disappear towards the other end.

So far so good, but rather than a brake lever, a screw ended shaft goes through the floor to a brake wheel (not from this model, but of a similar arrangement). The photographs also show the screw die nut and bell crank arrangements on this model which transmit pull to each end, and the above floor brake standard and operating wheel.



“Either End” Operation

The penny suddenly dropped what the visible unusual equalising does. The photograph below shows the crucial element to enable either end to apply/release the brakes – the ends work against each other by their own equalising mechanism.



One thing remains a mystery however. It seems to me that if successive applications from one end followed by release from the other were made, however unlikely this may be, it would eventually lead to running out of brake screw travel. I have my own ideas as to how this could be overcome.

Guards were very conscientious and did everything strictly to the book. Could it be that each brake standard had a mid-position pointer, and that one of their many duties when signing on or off was to ensure that both ends were nominally in mid position? I say nominally – one of them would have to be sufficiently tight to prevent runaway. After a century we are unlikely ever to know. I would truly welcome any information or thoughts you may have.

Footnote

An anecdote if I may. My own society put on an exhibition at a local school, and I exhibited an assortment of my wagons including this one. One visitor showed more than a passing interest in the collection, but gave this particular van a lot of attention. He eventually asked me where I had got the basic information, and I replied that this was particularly difficult when it came to underframe details as they were normally in deep shadow in photographs. As the exhibits were largely Southern, I referred to the excellent 4 volume set "Illustrated History of Southern Wagons" as a major source. He then asked to see the underneath of the van, and ever willing to answer visitors questions I showed him. He said that my efforts looked pretty accurate, and went on to say that it used the same principle as some coaches other than the gear being vertical rather than horizontal which is why it was not normally visible. I then asked him his own interest. He just smiled and said "I did the drawings you used in (*Reference 1 below*).". It just shows that you need to be careful what you say to exhibition visitors! I was so surprised at the coincidences – he being at a local exhibition, me having the van there and the connection via the major reference work – that I forgot to ask his name. Such is life, and I will never know unless by further coincidence he reads this article.....

Principal Reference Sources.

1. An Illustrated History of Southern Wagons Volume 2. LBSCR and Minor Companies
Compiled by: G Bixley, A Blackburn, R Chorley, M King, J Newton.
2. A Pictorial Survey of BR Departmental Rolling Stock Author David Larkin.

3. Wider Participation

As was intimated in the Introduction to the series this Section is for your feedback, experiences, what gave you the most satisfaction and anything else to help and encourage the next generation of model engineers of whatever discipline.

We would be extremely interested to receive your reactions and suggestions regarding this Series. As they say, if you like it, tell your friends, and if you don't, tell me. In the latter case your reasons will be of great interest and most useful.

Please submit them via info@fmes.org.uk There is no closing date for submissions.

Many thanks in advance.

The Wagon Man

September 2025.