

## London & Greenwich Railway

The first contract for 12,000 yards of rails went to the British Iron Comp<sup>y</sup> in November 1834: they were parallel 50-lb rail of a type just coming into use, and 12,000 cast iron chairs were required for them.

Many engineers favoured stone (blocks) on the grounds of economy, for granite blocks were virtually indestructible, while the absence of any reliable system of treating timber to prevent decay meant the frequent renewal of wooden sleepers....

...; the LGR paid 12s. 6d. each for Granite blocks 4 cubic feet volume (about 1'6" x 1'6" x 1'6"?) having decided against portland and artificial stone at 5s 4d and 7s per block respectively. The immense quantities required - it was estimated the L&Birmingham stone needed 3/4 million...

On most of the lines where stone blocks had been laid down, they were set in earth; on the L&GR they rested directly on the brickwork of the arches (except where it was necessary to have a layer of sand below to bring them up to the correct level), and all the vibration set up by the trains was transmitted straight to the viaduct. Equally serious was the damage caused to rails, chairs, wheels and axles by the rigidity of the track, and the discomfort caused to the passengers travelling over it. (Loch-1839: '... that thumping which distinguishes the Greenwich as well as the Liverpool Railway')

It was originally thought that the blocks alone, surrounded with ballast, would be sufficient to preserve the gauge, and no transverse ties were provided. This proved not to be the case, however, and on 14/1/37, within a month of the opening, the board ordered that the spaces between the blocks and the parapet wall be filled with concrete, which had the effect of making the p.w. part of the viaduct itself. (Caused vibration of course, affected vdt brickworks - the 6' drain had ~~to~~ seeped into it as well)

In 1838 it was decided that the unfinished part of the line beyond Deptford should be laid on wood, although the Company had already bought the 26,000 granite blocks required for the whole line.

Sales (ECR 1000 in 1838 at half original price) London Br. & Deptford was relaid 1840-42 and stacked up - L SWR bought 20,000 of these delivered 'under the crane at Nine Elms' Some L&G at New Cross Gate? 30

\* road br at platforms?  
Cont on p. 44 →

Reply to Questionnaire to LSWR Engineering Dept 1895

Rail Acceptance Tests: (Bessemer Acid Process)

'12'0" length placed on bearings 3'0" apart must bear a blow from a weight of 1 ton falling from a height of 20'0".  
Permanent set not to be less than  $1\frac{5}{8}$ " or more than  $1\frac{7}{8}$ "  
We endeavour to secure rails which, while being hard (to resist wear) are not brittle.

Fishplate weight: 20lbs

Fishbolt weight:  $\frac{1}{4}$  lbs  $1\frac{3}{16}$ "

Wrought-iron cup headed fishbolts with square shoulder at head end.

Ordinary square iron nut and plain washer

Holes: square in one plate, circular in other

Chairs 46lbs, Base area, 97sq ins, no felting.

3 hollow treenails 6" X  $1\frac{1}{8}$ " and W.I. spikes  $6\frac{1}{8}$ " X  $5\frac{1}{8}$ "

Keys: English oak, compressed, outside placed.

Sleepers: Baltic redwood fir sleepers, creosoted 9' X 10' X 5"  
waney side up.

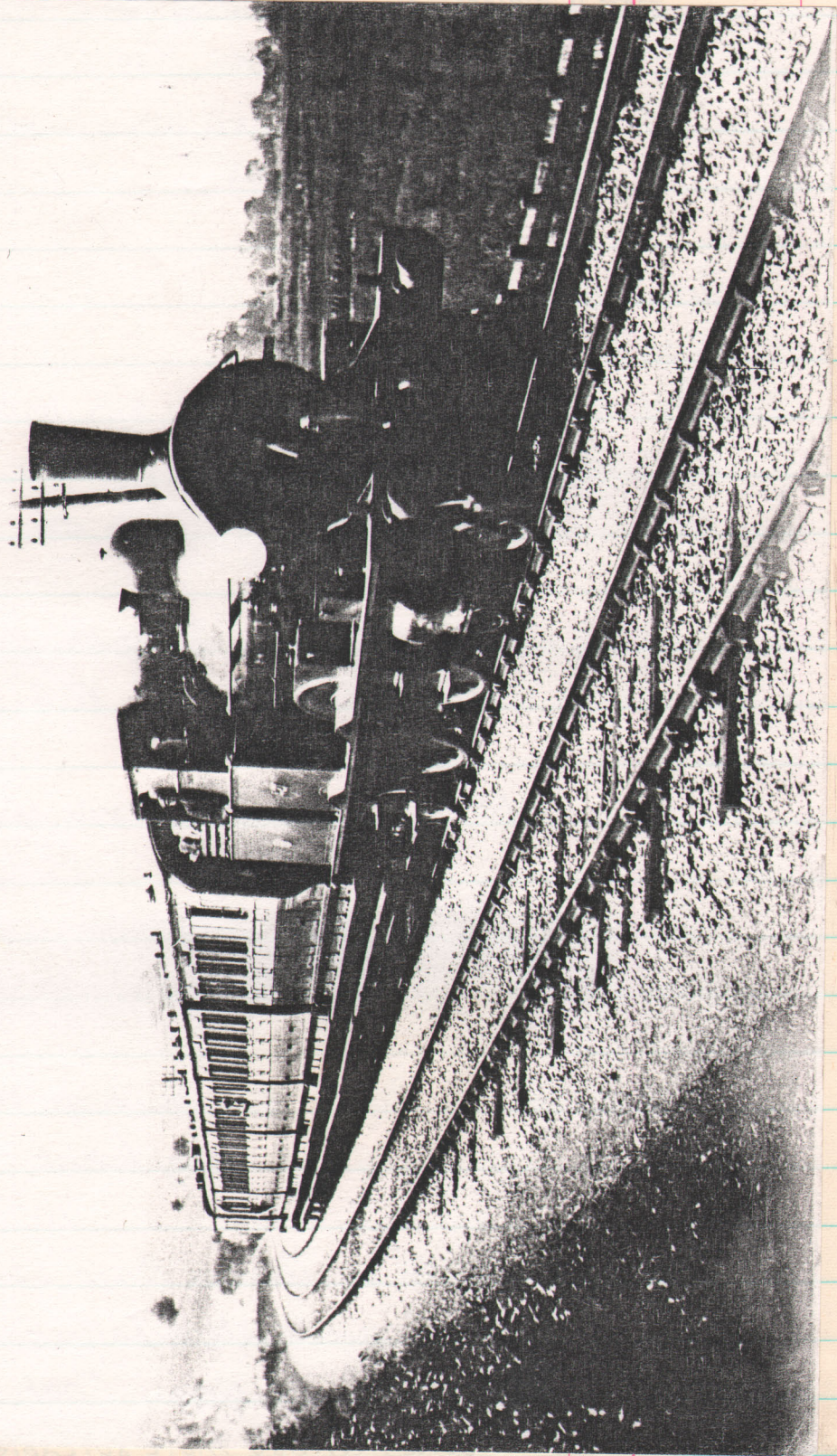
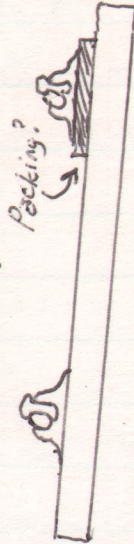
Bottom ballast: Dry lump chalk, rough broken stone, or  
coursed stoney ballast, 9" depth

Top ballast Gravel or Thames River ballast, and in West  
of England, stone ballast, broken to pass  
through 2" ring. "not laid <sup>much</sup> above sleeper"  
Stone ballast more suitable than gravel where  
obtainable, as it facilitates drainage.

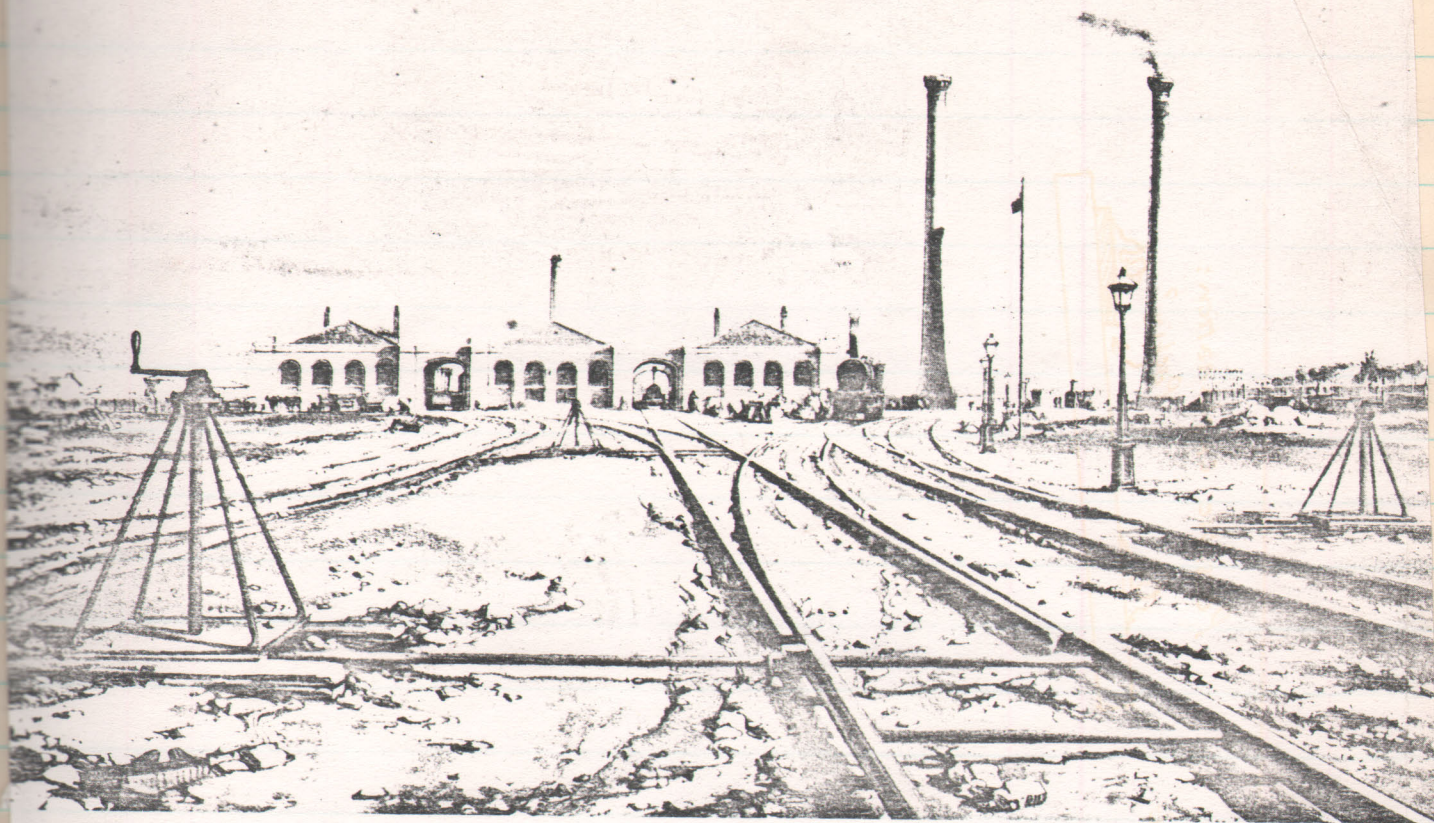
Stockbridge 1900. Large sleepers, chairs either adzed in or less deep,  
at every third

Possibly attempt to keep cross levels intact  
on cant

Possible explanation:

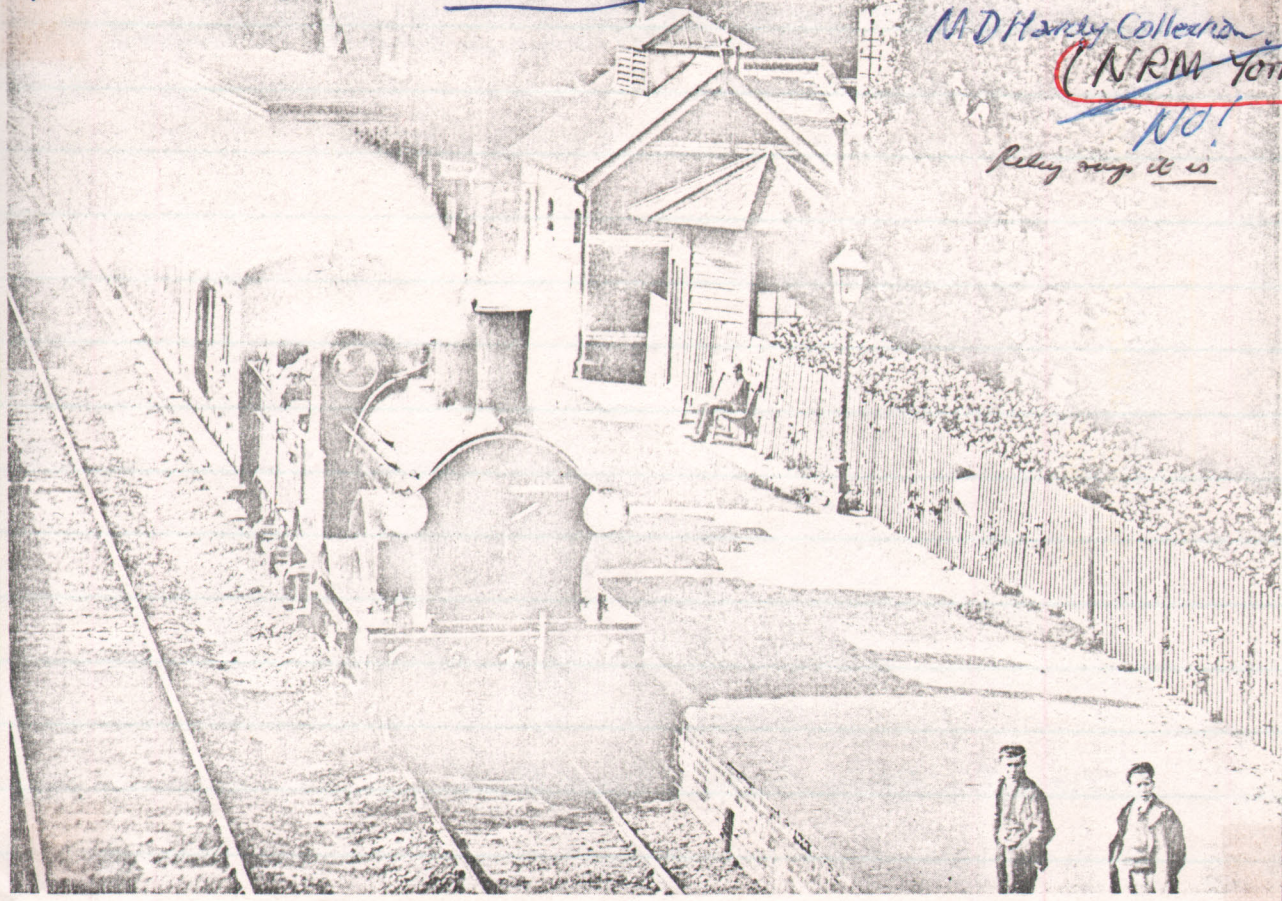


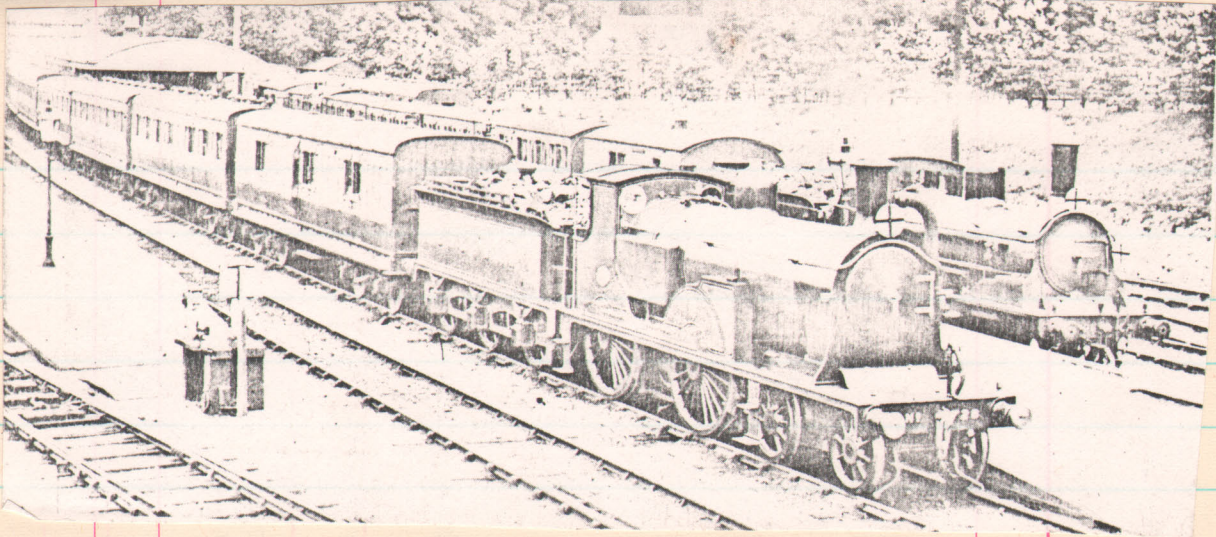
London & Birmingham Railway 1839 J.C. Bourne Camden Town Depot.  
 Note windlass working switches - moveable fronts (?)  
 In USA in late 19th Century, similar switches known as "harps"



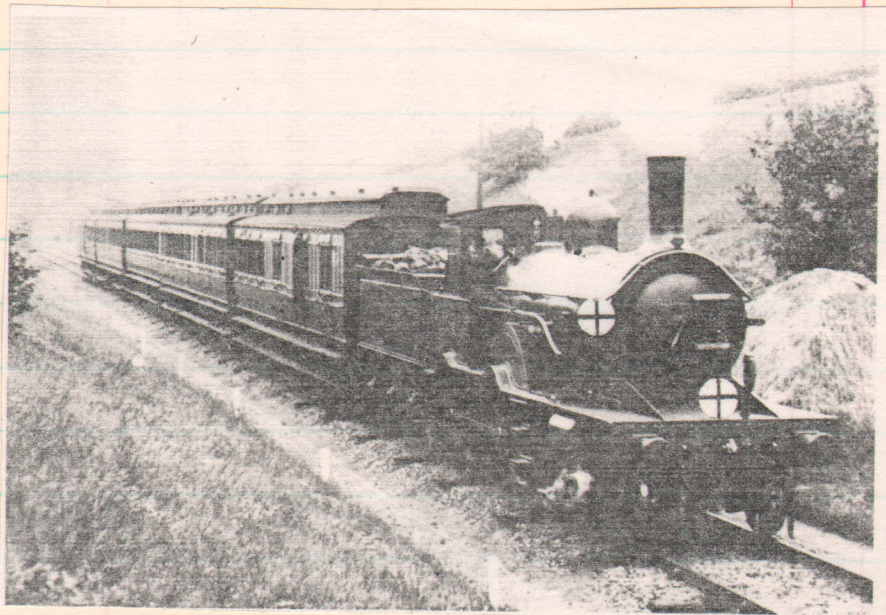
PARKSTONE 1890s. Gravel Ballast (Deathe 2-4-0 Engine)

M.D. Hardy Collection  
 (NRM York)  
 No!  
 Pelly says it is

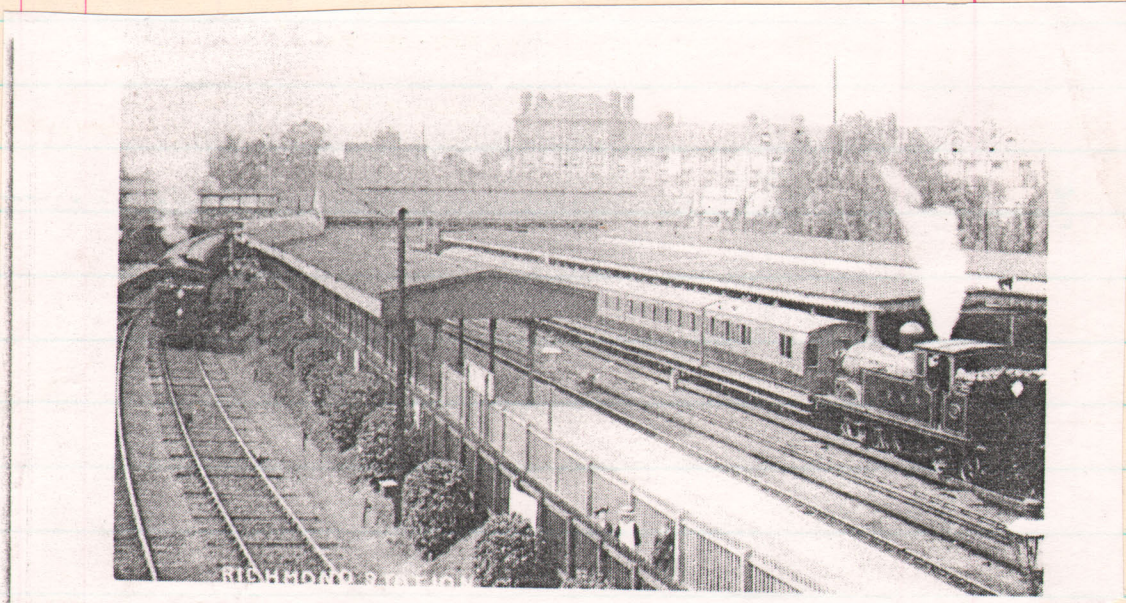




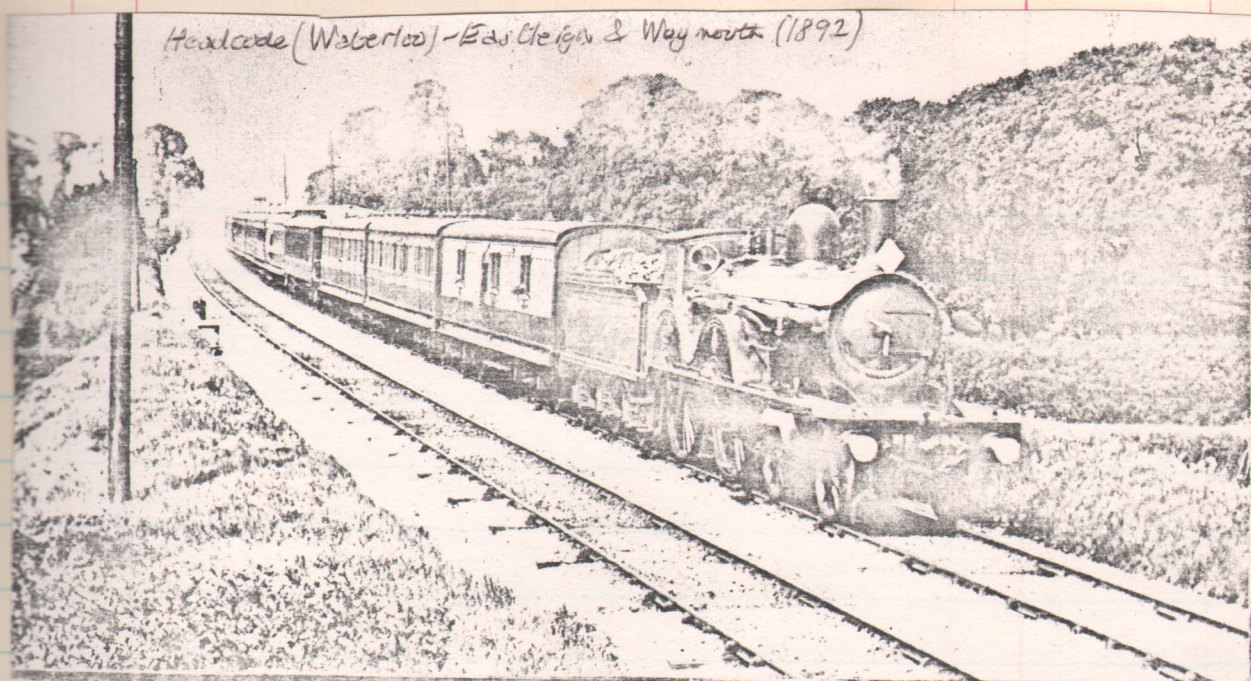
Brockenbury July 1901. 9:30 Waterloo - Bournemouth (T9 No. 728)  
 (Headcode 1892 - W'loo - Southampton (non-stop) (Eden)



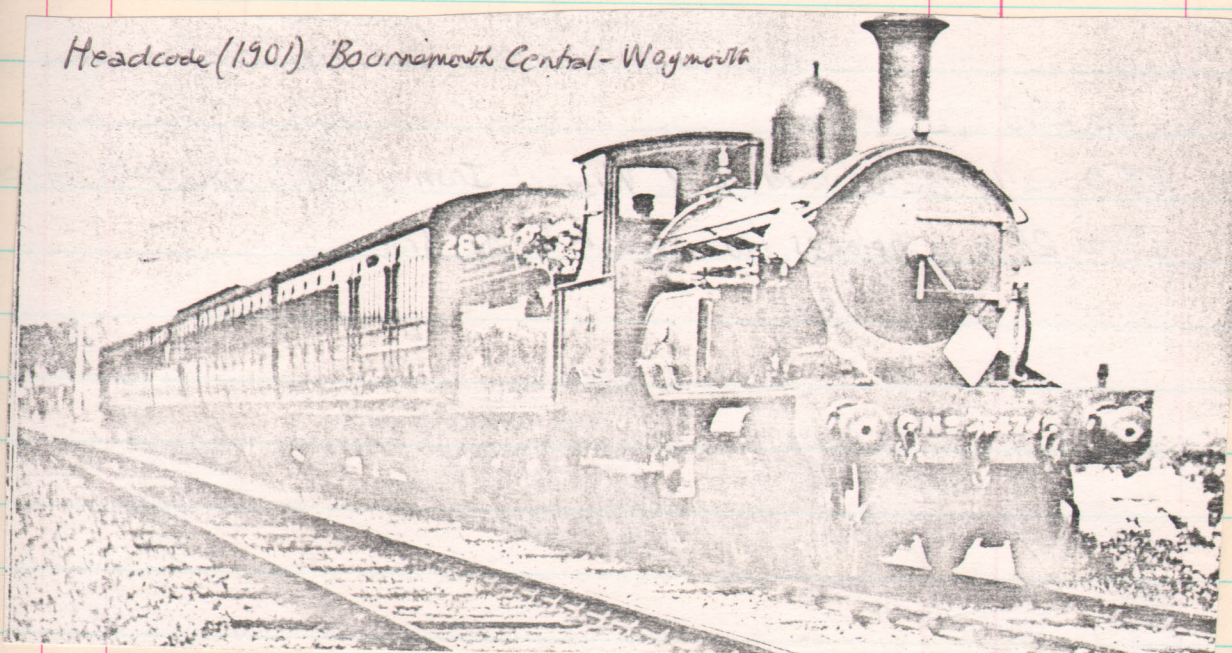
445 Class No 446 1900 (nr Winchester (LSW - to Chesil)  
 Headcode 1892 - Winchester (Didcot Rly - Southampton)  
 Every fourth sleeper bared.



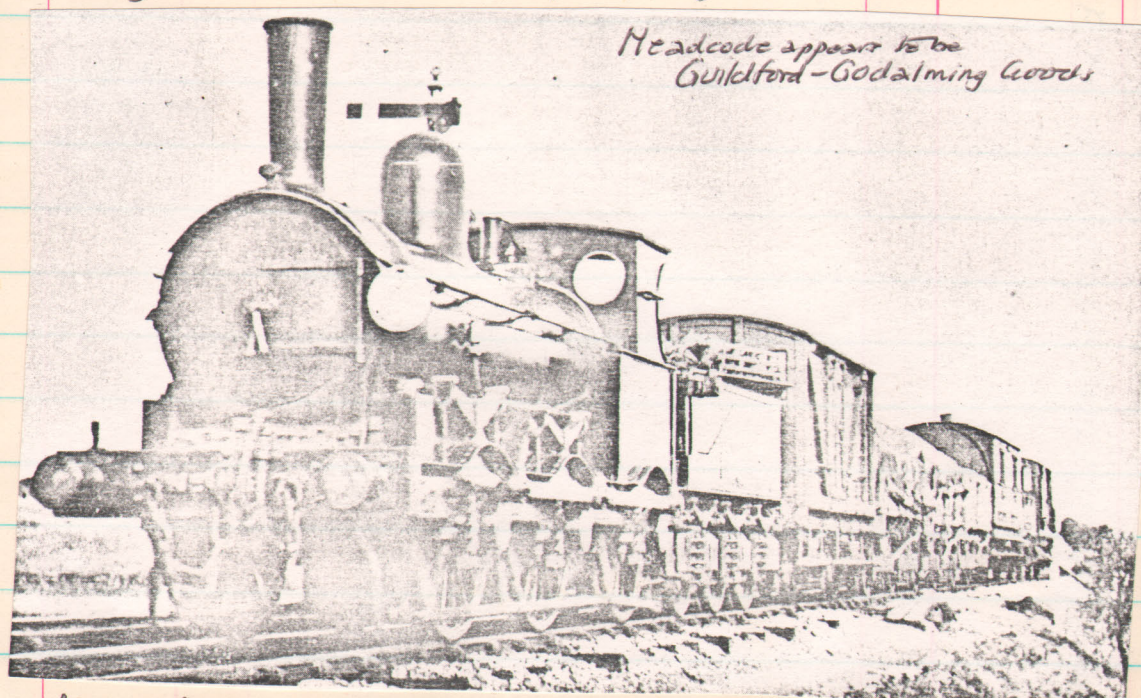
Richmond. - Every fourth sleeper bared.



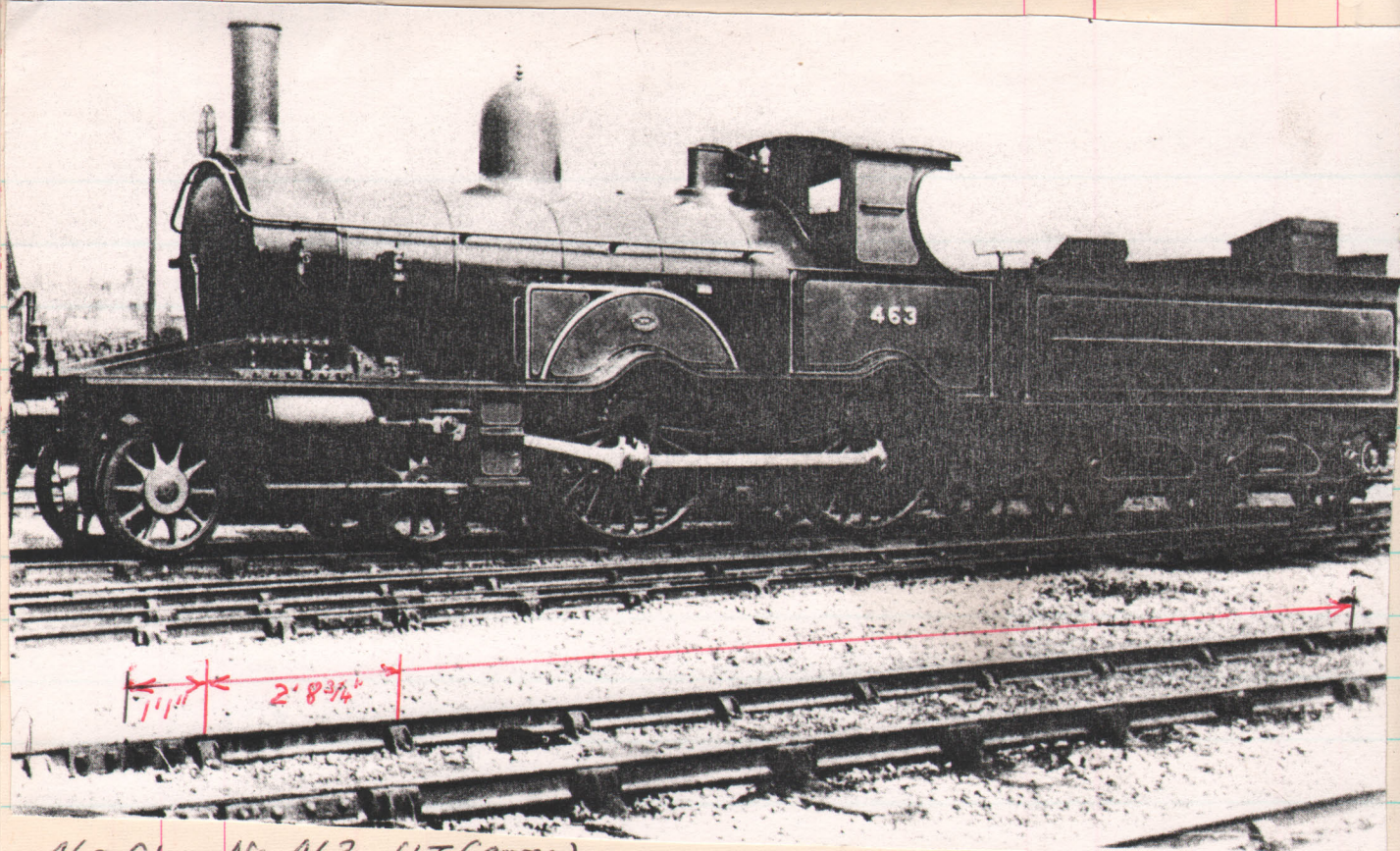
St Cross. '400' T6 Class No. 680 on Bournemouth Express August 1901 (Eden)  
cf. previous Stockbridge scene - every fourth sleeper (9'6" sleeper)?



'460' Class No. 474 between Poole and ~~Waterloo~~ Parkstone September 1903 (Eden)  
Again note extra long sleeper, every fourth.



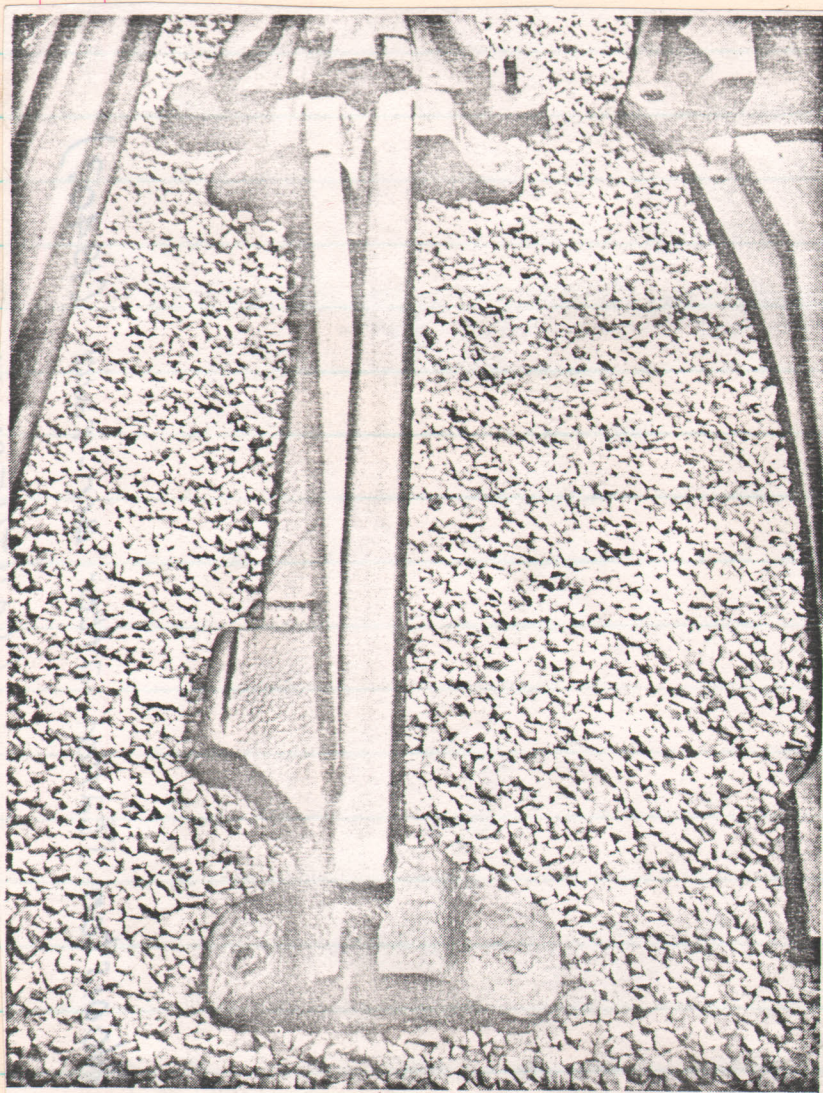
Near Peterfield 1908. 0-6-0 No 0287. Longer sleepers  
and exposed ends. (D. Bradley's Colln.)  
Built Feb 1873. (0287 from 1900) 35



460 Class No. 463 (LT George)

P.W. 24'0" rails 82lb/yard D.M. Wrought Iron. 40lb CI chairs (3 hole)

23 or 28lb fishplates (but appear to be brackets)



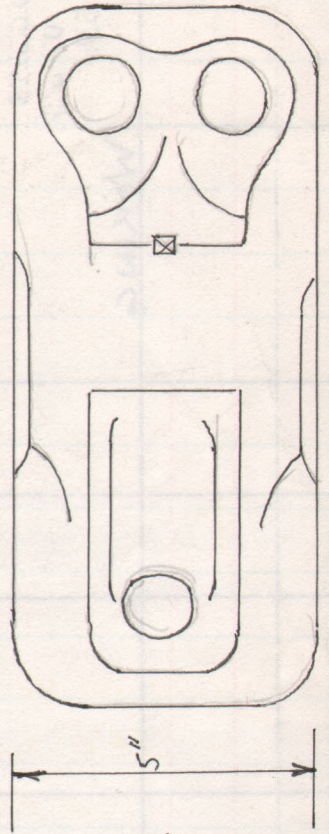
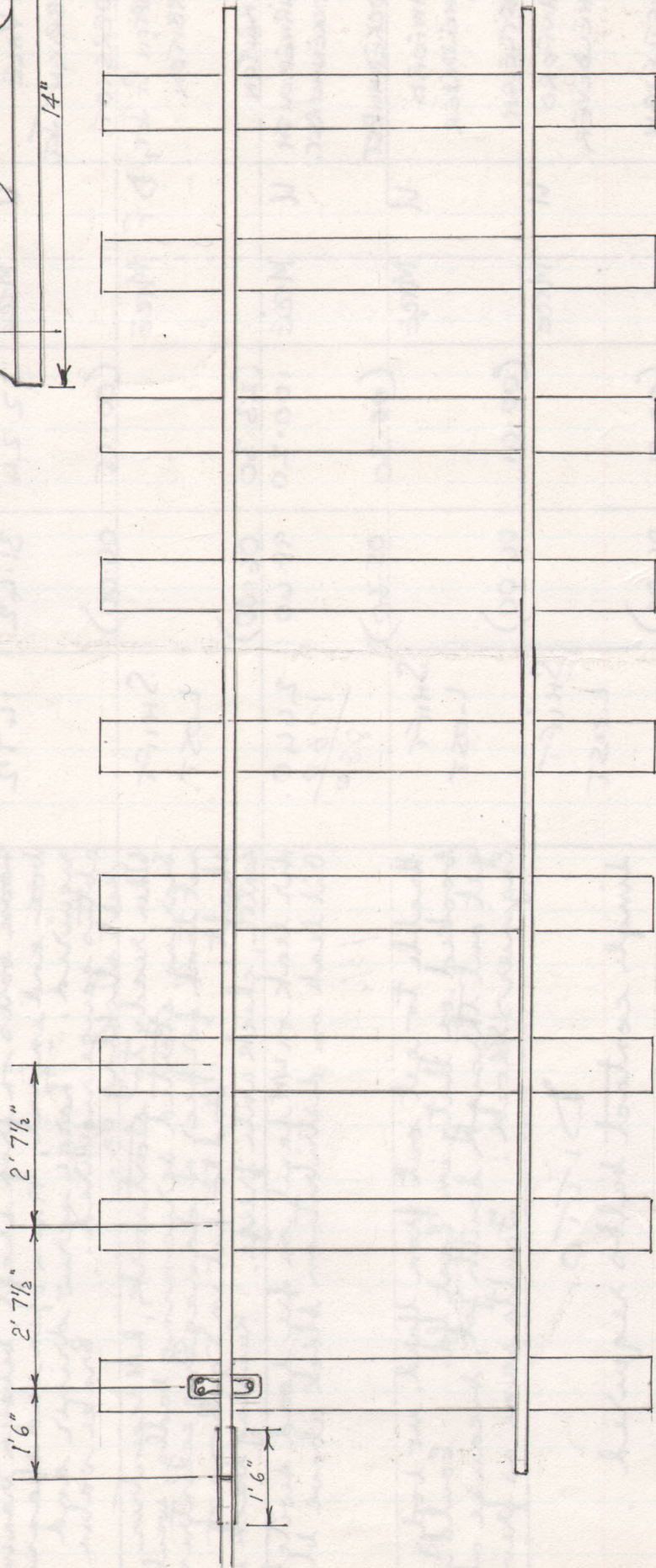
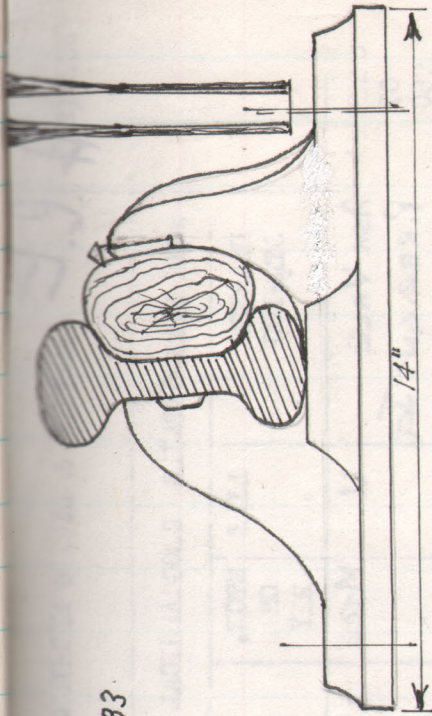
# HOLTON HEATH

10/1983

L.S.W.R. Track: 82lb/yard rail (W.I. or Steel)

1884 40lb chairs (C.I.)

Fishplates: 4-hole bracket (1'6" x 28lb)



24' length(s) : 9 sleepers

Scale: 1" = 3/8"  
(Plan)

DJW  
Nov. 1983



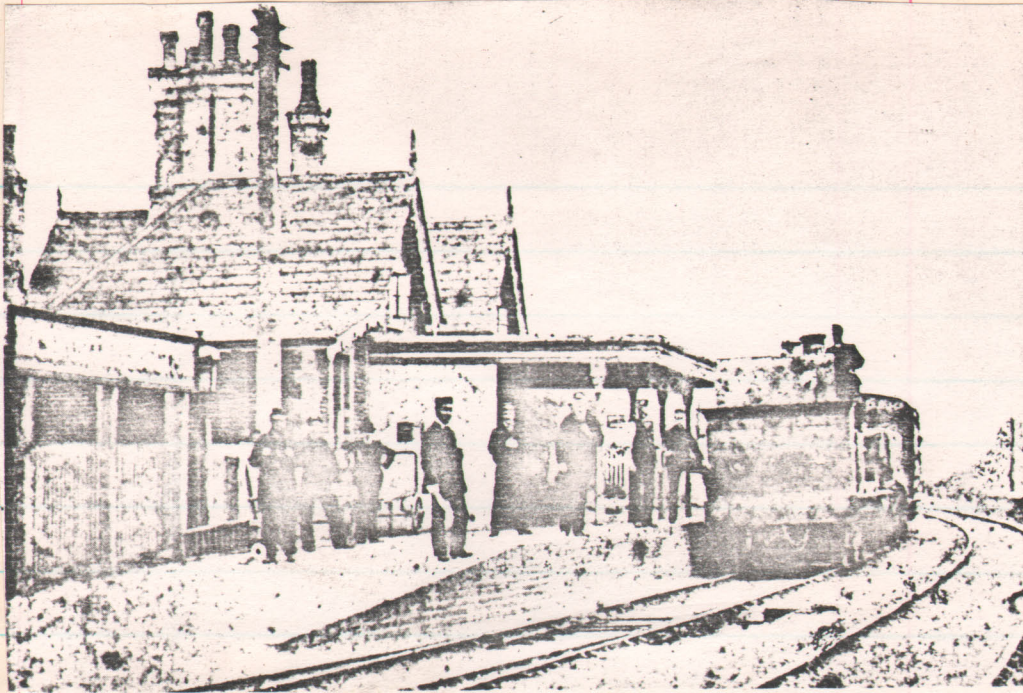
15962 LGRP  
 Crediton 1880 Mixed gauges remaining after GWR (B&E)  
 lease of N. Devon Railway. Broad gauge goods trains ran until 1892



Crediton 1892. Ballasting over sleepers. (NRM Collection) 594/63

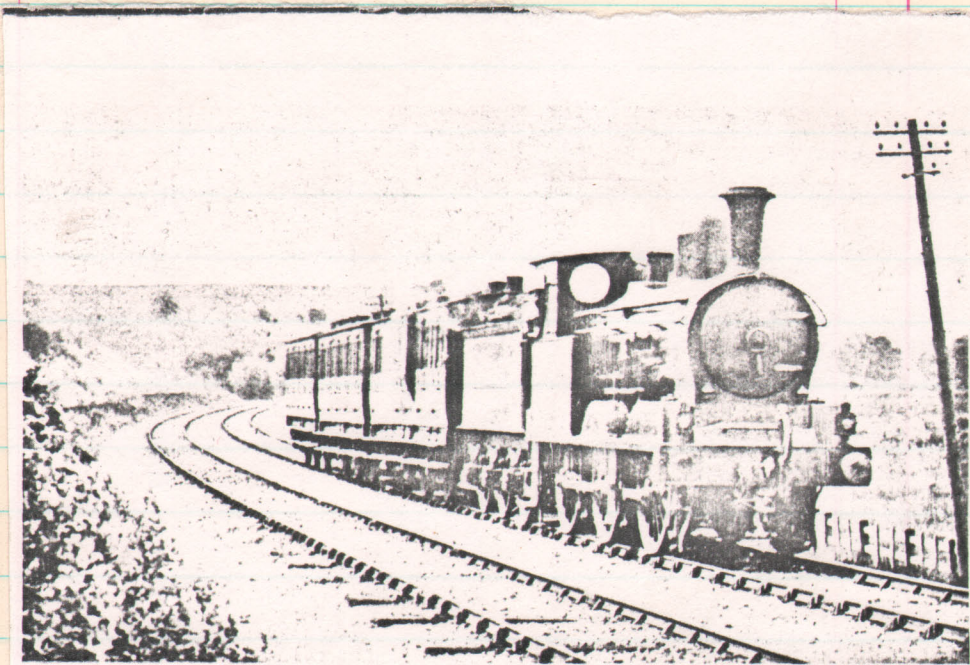


Romsey c1880s  
 1'9" high platforms  
 (at 2'2" from r.o.)  
 (NRM)



Hamworthy Junction c. 1880 (2-4-0 No. 186)

R. C. Riley



One of the 0-6-0's which were built by Beyer, Peacock between 1899 and 1902, on a passenger train near Stockbridge. Note the missing buffer. The coaching livery was lake.

M&SWJR Train on LSWR line. Every 4th Sleeper



Wanborough (Guildford-Farnham). Bored sleepers (every 5th crib) possibly for track drainage to six feet.