

Public Works (1895) Department.

RAILWAY BRANCH.

G.O., No. 413R

DATED 17th June

[Despatch Abstract.]

South Indian Railway. — Government of India
approves to the name Serudamur with the Code
initials S. I. R. being adopted for the newly open-
ed Station at mileage 104 1/3 from Madras on the —
between Villupuram and Pantuti, Communi-
cated to the agent.

Rules regarding brake power in connection with the vacuum brake on passenger trains on the North Western railway—contd.

Proposed rules.			Government Inspector's suggestions.	Manager's Remarks.																																			
3. On gradients of 1 in 100 and steeper the following table shall apply :—			3. The Government Inspector recommends that this rule be altered to read as follows :— “On gradients of $\frac{1}{100}$ and steeper the proportion of vacuum braked vehicles be at least $\frac{2}{3}$ rds of the whole. Of the rest a fraction shall be hand-braked vans in the proportion shown in the following table :—	3. The Manager states that except for the $\frac{1}{100}$ grade he has proposed a very small proportion of unbraked vehicles on mixed trains, but for the reasons given against rule 2, he is unable to agree to only one-third unbraked on $\frac{1}{100}$ grades. He, however, proposes to add the following words after the word “apply,” “To the portion of the train not worked with the vacuum brake.”																																			
<table><tr><th>Gradient.</th><th>Number of loaded 4 wheeled vehicles or their equivalent for every hand-braked vehicle weighing 10 tons.</th><th>Maximum number of unbraked vehicles that may be attached for each engine on the train.</th><th>REMARKS.</th></tr><tr><td>$\frac{1}{100}$</td><td>6</td><td>15</td><td></td></tr><tr><td>$\frac{1}{75}$</td><td>4</td><td>4</td><td></td></tr><tr><td>$\frac{1}{50}$</td><td>3</td><td>3</td><td></td></tr><tr><td>$\frac{1}{25}$</td><td>2</td><td>2</td><td></td></tr></table>			Gradient.	Number of loaded 4 wheeled vehicles or their equivalent for every hand-braked vehicle weighing 10 tons.	Maximum number of unbraked vehicles that may be attached for each engine on the train.	REMARKS.	$\frac{1}{100}$	6	15		$\frac{1}{75}$	4	4		$\frac{1}{50}$	3	3		$\frac{1}{25}$	2	2		<table><tr><th>Gradient.</th><th>Number of loaded 4 wheeled vehicles for which an extra 10 ton hand-brakevan must be provided.</th><th>REMARKS.</th></tr><tr><td>$\frac{1}{100}$</td><td>6</td><td></td></tr><tr><td>$\frac{1}{75}$</td><td>4</td><td></td></tr><tr><td>$\frac{1}{50}$</td><td>3</td><td></td></tr><tr><td>$\frac{1}{25}$</td><td>2</td><td></td></tr></table>	Gradient.	Number of loaded 4 wheeled vehicles for which an extra 10 ton hand-brakevan must be provided.	REMARKS.	$\frac{1}{100}$	6		$\frac{1}{75}$	4		$\frac{1}{50}$	3		$\frac{1}{25}$	2		
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4. On the grade of $\frac{1}{100}$ one brakevan weighing 10 tons will control 6 vehicles and one brakevan weighing 15 tons will control 9 vehicles on all gradients. The brakes referred to in the above table will always be attached immediately in rear of the vehicles which they control.			4. Agreed.																																				
5. Any one of the gradients detailed above may be held to include short lengths of a slightly steeper gradient by special permission of the Government Inspector and Manager.			5. Agreed.																																				
6. The Government Inspector proposes the following additional rule :— In approaching terminal stations, or stations at which other trains may be standing on the same line of rails, the vacuum brake must not be used, except in cases of emergency, but the speed of the train must be so reduced that it may be brought to a stand by means of the hand and steam brakes alone.			6. The Government Inspector proposes the following additional rule :— In approaching terminal stations, or stations at which other trains may be standing on the same line of rails, the vacuum brake must not be used, except in cases of emergency, but the speed of the train must be so reduced that it may be brought to a stand by means of the hand and steam brakes alone.	6. The Manager states that this is already embodied in the drivers instructions for working the Automatic Vacuum Brake.																																			

Memorandum by Senior Government Inspector on the rules regarding brake power in connection with the vacuum brake on trains carrying passengers received with letter No. 144 I. O., dated 3rd December 1895, from the Manager, North Western railway.

Rule 1. Fast Passenger Trains.—The only point which appears to need consideration in this rule is that no limit is fixed to the number of vehicles piped but not braked, which may be attached. As it stands there might be a minimum of unbraked vehicles or none at all and yet the brake power might be insufficient. The following addition to the rule would meet the case:—

“The proportion of vehicles fitted with continuous pipes only shall not exceed one such vehicle to four vehicles fitted with the brake, and the former should always have two braked vehicles behind them.”

Rule 2. Mixed Trains.—The rule as drafted would permit of the use of the vacuum brake being dispensed with where shunting of goods wagons has to be done on the road, and in such cases the goods vehicles would be placed in front and coaching vehicles behind, and applies to mixed trains run at speeds not exceeding 30 miles an hour. On page 66 of the working instructions, paragraph 4, it is laid down that mixed trains should not as a rule exceed a maximum speed of 35 miles an hour between stations, and when making up time a maximum speed of 40 miles an hour must on no account be exceeded. The foot note on same page limits the driver of a mixed train to 35 miles an hour. These rules appear to require modification before they can apply to the rules under discussion.

The latter part of rule 2 would permit of coaching vehicles fitted presumably with the vacuum brake, being placed next the engine and connected with it by the brake pipe and unbraked goods vehicles placed in rear to the extent of two-thirds of the total vehicles in the train or two unbraked goods to one braked vehicle but limits the number of unbraked vehicles to fifteen with a brakevan in rear of the train.

In cases where goods vehicles are in front of coaching vehicles, it appears desirable to fix the maximum speed at 25 miles an hour and perhaps 30 miles an hour when making up time, but no more under any circumstances.

The maximum load allowed for mixed trains shown on page 65 of the working instructions, is 25 vehicles; and if 15 goods vehicles as proposed by the rule were permitted, these would constitute three-fifths of the vehicles which might prove most dangerous if the vacuum brake were suddenly applied, especially if the heavy goods vehicles were fully loaded and the passenger carriages only partially so.

The proportion of unbraked goods vehicles proposed by this rule is therefore considered excessive, and it is suggested that the latter part of rule should be altered to read as follows:—

“Unbraked goods vehicles may be placed in rear of such vehicles to the extent of *one-third* of the total number of vehicles in the train, that is, *one* unbraked goods vehicle for every *two* braked vehicles provided, provided that not more than *eight* unbraked goods vehicles shall be attached in all and that there shall be one brakevan in rear of the train.”

Rule 3.—It is recommended that this be altered to read as follows:—

“On gradients of $\frac{1}{100}$ and steeper the proportion of vacuum braked vehicles shall be at least $\frac{2}{3}$ of the whole; of the rest, a fraction shall be hand braked vans, in the proportion shown in following table:—

GRADIENT.	Number of loaded four-wheeled vehicles for which an extra 10-ton hand brakevan must be provided.
$\frac{1}{100}$	6
$\frac{1}{75}$	4
$\frac{1}{50}$	3
$\frac{1}{40}$	2

Rules 4 and 5.—Agreed.

In addition it is recommended that the following should be added.

Rule 6.—In approaching terminal stations or stations at which other trains may be standing on the same line of rails, the vacuum brake must not be used except in cases of emergency but the speed of the train must be so reduced that it may be brought to a stand by means of the hand and steam brakes alone.