

1896
Public Works (190) Department.

RAILWAY BRANCH.

G.O., No. 252 R.

DATED 19-3-1896

[Despatch Abstract.]

Results of the working of automatic vacuum
brakes in use on railways in India
during the six months ending with the
30th June 1895 communicating to

the Consulting Engineer for Railways
Agents Madras, both Indian and
Nizam's Railway and the Engineer in
Chief, Nilgiri Railway

G.O.	No.	Department	Date	G.O.	No.	Department	Date
							2

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

G. C. Press, Simla.—No. 1541 P. W. D.—17-2-96-25.

To
The Joint Secretary to the Government of Madras,
Public Works Department, Railway Branch.

TABLE No. 1.

Statement showing, for the six months ending with the 30th June 1895, the railways on which automatic vacuum brakes were in use, the mileage run by trains fitted with the brakes, the number and proportion of rolling stock fitted, and the progress made in fitting stock since the previous half-year.

Railways (including branch lines worked).	Period.	LOCOMOTIVES.		VEHICLES.*			Number of miles run by trains fitted.	Total number of instances in which the brakes failed to act or caused delay in the working of trains.	PROPORTION PER CENT.		Number of failures as compared with mileage run by trains fitted.
		Fitted.	Not fitted.	Braked.	Piped.	Not fitted.			Of vehicles braked or piped on total.	Of mileage run by trains fitted or partially fitted on total train-mileage.	
1	2	3	4	5	6	7	8	9	10	11	12
STANDARD GAUGE.											
State lines worked by companies.											
East Indian	2nd-half, 1894	62	518	235	178	10,147	538,016	22	3'91	10'14	1 in 24,455
	1st-half, 1895	62	519	317	176	10,351	557,060	10	4'34	9'48	1 in 75,606
Indian Midland	2nd-half, 1894	17	100	33	6	3,495	(a)	.....	1'73	.....	.....
	1st-half, 1895	30	81	79	20	2,435	(a)	.....	3'91	.....	.....
State lines worked by the State.											
North Western (state)	2nd-half, 1894	(b) 337	251	(c) 1,476	150	10,516	1,247,744	12	13'12	27'10	1 in 103,078
	1st-half, 1895	(b) 354	234	(c) 1,431	180	10,490	1,359,656	12	13'31	26'18	1 in 113,305
Oudh and Rohilkhand (state)	2nd-half, 1894	15	141	111	15	4,321	280,003	1	2'54	17'85	1 in 280,003
	1st-half, 1895	15	141	111	15	4,327	146,594	3	2'54	8'62	1 in 48,665
Eastern Bengal (state)	2nd-half, 1894	15	82	104	34	2,438	253,333	.....	5'36	22'70	.....
	1st-half, 1895	15	82	114	41	2,416	245,419	2	6'03	26'39	1 in 122,710
Lines worked by guaranteed companies.											
Great Indian Peninsula	2nd-half, 1894	102	503	325	116	9,140	599,245	13	4'61	15'39	1 in 46,096
	1st-half, 1895	115	470	451	114	8,925	660,114	2	6'21	13'65	1 in 330,057
Bombay, Baroda and Central India	2nd-half, 1894	70	73	410	54	4,057	462,994	6	10'26	39'48	1 in 77,165
	1st-half, 1895	76	73	413	54	4,187	487,359	11	10'05	30'19	1 in 44,487
Madras	2nd-half, 1894	.....	163	6	36	3,425	(a)	.....	1'19	.....	.....
	1st-half, 1895	.....	163	6	36	3,544	(a)	.....	1'17	.....	.....
TOTAL OF ALL RAILWAYS (STANDARD GAUGE)	2nd-half, 1894	615	2,028	2,659	358	52,662	3,381,336	54	5'79	16'12	1 in 62,617
	1st-half, 1895	667	2,006	2,653	636	53,590	3,452,202	40	7'06	14'56	1 in 86,455
METRE GAUGE.											
State lines worked by companies.											
Southern Mahratta	2nd-half, 1894	.....	220	.....	1	5,586	(a)	.....	0'02	.....	.....
	1st-half, 1895	.....	221	.....	(d) 5,587	.....	.....	.....	.....	.....	.....
South Indian	2nd-half, 1894	20	184	44	9	4,176	(a)	.....	1'25	.....	.....
	1st-half, 1895	20	184	59	17	4,169	119,486	.....	1'79	7'08	.....
State line worked by the State.											
Eastern Bengal (State) —	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Northern and Behar sections	2nd-half, 1894	7	63	84	12	2,082	51,583	3	4'41	6'53	1 in 18,294
	1st-half, 1895	11	61	100	17	2,069	110,101	3	5'35	15'81	1 in 36,700
TOTAL OF ALL RAILWAYS (METRE GAUGE)	2nd-half, 1894	27	1,249	129	22	31,157	54,853	3	0'48	0'56	1 in 18,294
	1st-half, 1895	31	1,245	159	34	30,440	229,587	3	3'00	2'13	1 in 76,520

* Excluding cranes.

(a) Brakes not yet brought into use.

(b) Excluding a locomotive sold to the Mushkaf-Rohilkhand railway.

(c) Excluding 47 vehicles sold to the Mushkaf-Rohilkhand railway.

(d) One set of Westinghouse gear fitted to first class carriage shown in the previous half-year was removed during the 1st-half of 1895.

TABLE No. II.

Statement showing, for the six months ending with the 30th June 1895, all cases in which the automatic vacuum brakes failed to act when required to be brought into action, or caused delay in the working of trains.

1	2	3	4	5
Railway.	Name or description of brakes which failed or caused delay in the instances specified in column 4.	Date of failure.	Instances under the three following heads separately, of— (i) Failure or partial failure to act when required in case of an accident to a train, or a collision between trains being imminent. (ii) Failure or partial failure to act under ordinary circumstances to stop a train when required. (iii) Delay in the working of trains in consequence of defects in, or improper action of, the brakes, distinguishing whether they arose from neglect or inexperience of servants, or failure of machinery or material.	Number of miles run by trains fitted with automatic vacuum brakes.
STANDARD GAUGE. East Indian	Vacuum automatic.	10th March 1895 30th March 1895... 27th April 1895 ... 5th May 1895 ... 31st May 1895 ... 26th May 1895 ... 10th June 1895 ... 13th June 1895 ... 21st June 1895 ... 24th June 1895 ...	(i) and (ii).—Nil. (iii) Failure of material.—No. 1 up mail detained 7 minutes at mile 726 between Jhijhak and Phaphund. The train came to a stand owing to the train pipe having broken below the ejector. (iii) Failure of material.—No. 1 up mail detained 7 minutes at Barh. The driver was unable to re-establish vacuum in consequence of leakage in train pipes of two North Western (state) railway carriages. (iii) Failure of machinery.—No. 10 down loop mail detained 4 minutes at Sainthia in releasing brakes in consequence of a defect in ejector. (iii) Neglect of servants.—No. 2 down mail started 12 minutes late from Cawnpore owing to vacuum having failed in consequence of the guard's handle on valve of front brake-van being open. (iii) Failure of machinery.—No. 1 up mail started 8 minutes late from Tundla. The delay was in releasing brakes, owing to a defect in the ejector. (iii) Failure of material.—No. 9 up loop mail lost 5 minutes at Khanyán station yard, in consequence of the train pipe having been damaged by running over a cow. (iii) Neglect of servants.—No. 10 down mail lost 8 minutes between Jamalpur and Sultangunge. The driver was unable to maintain sufficient vacuum, owing to the pipe leading to the gauge in the guard's van having been broken. (ii) Failure of material.—No. 10 down loop mail started 15 minutes late from Jamalpur. The driver was unable to create vacuum in consequence of defective coupling between carriages. (iii) Failure of material.—No. 2 down mail lost 27 minutes at Leonni in releasing carriage brakes, owing to tender hose pipe coupling having been defective. (iii) Failure of machinery.—No. 2 down mail lost 5 minutes at Thanesar in releasing brakes in consequence of a defect in ejector.	557,060

TABLE No. II—contd.

Statement showing, for the six months ending with the 30th June 1895, all cases in which the automatic vacuum brakes failed to act when required to be brought into action, or caused delay in the working of trains—contd.

Railway.	Name or description of brakes which failed or caused delay in the instances specified in column 4.	Date of failure.	Instances under the three following heads separately, of— (i) Failure or partial failure to act when required in case of an accident to a train, or a collision between trains being imminent. (ii) Failure or partial failure to act under ordinary circumstances to stop a train when required. (iii) Delay in the working of trains in consequence of defects in, or improper action of, the brakes, distinguishing whether they arose from neglect or inexperience of servants, or failure of machinery or material.	Number of miles run by trains fitted with automatic vacuum brakes.
STANDARD GAUGE. North Western (state)	Vacuum automatic.		(i) and (ii)—Nil. (iii) Neglect of servants.—No. 5 up mail detained 5 minutes at Meerut cantonment, owing to hose pipe having been left off dummy of rear brake. (iii) Neglect of servants.—No. 30 down local detained 34 minutes at Sardhana, owing to brake blocks jamming on wheels of tender which necessitated disconnecting the gearing. (iii) Neglect of servants.—No. 19 up mixed lost 10 minutes at Jullunder city owing to the hose pipe of third class carriage No. 1001 having been left off the dummy. (iii) Neglect of servants.—No. 17 up mixed detained 15 minutes at Saharanpur to cut off reserved carriage No. 57, the vacuum of which was defective. (iii) Failure of machinery.—No. 6 down passenger detained 17 minutes at Ludhiana in disconnecting the gearing of Great Indian Peninsula railway carriage No. 479, the brake blocks on which were taken up too tight in consequence of vacuum piston having got jammed. (iii) Failure of machinery.—No. 6 down passenger detained 12 minutes at Chiwa, owing to brake piston of Great Indian Peninsula railway composite carriage No. 479 having got jammed, which necessitated the disconnecting of the gearing. (iii) Inexperience of servants.—No. 5 up mail detained 30 minutes at Lahore owing to a leakage in the train pipe which the staff had failed to locate. (iii) Neglect of servants.—No. 6 down passenger lost 20 minutes between Ghaziabad and Saharanpur. The brake blocks on second class carriage No. 473 were binding on wheels and in consequence the gearing had to be disconnected. (iii) Neglect of servants.—No. 3 up mail detained 6 minutes at Umballa owing to vacuum and hose pipe not having been properly coupled. (iii) Failure of materials.—East Indian railway intermediate carriage No. 689 on No. 5 up mail was defective, owing to rubber washer having been pulled off when uncoupling the hose pipes to cut off the vehicle next to it. (iii) Neglect of servants.—No. 3 up mail detained 6 minutes at Umballa, owing to vacuum brake and hose pipe not having been properly connected together. (iii) Neglect of servants.—No. 4 down mail had to run from Phillour to Saharanpur without using the vacuum brake, owing to the piston rod of the engine vacuum cylinder having dropped out just as the engine was brought on to the train. The rod got jammed on the sleepers and broke the cylinder trunnion.	1,359,656

TABLE No. II—contd.

Statement showing, for the six months ending with the 30th June 1895, all cases in which the automatic vacuum brakes failed to act when required to be brought into action, or caused delay in the working of trains—contd.

Railways.	Name or description of brakes which failed or caused delay in the instances specified in column 4.	Date of failure.	Instances under the three following heads separately, of— (i) Failure or partial failure to act when required in case of an accident to a train, or a collision between trains being imminent. (ii) Failure or partial failure to act under ordinary circumstances to stop a train when required. (iii) Delay in the working of trains in consequence of defects in, or improper action of, the brakes, distinguishing whether they arose from neglect or inexperience of servants, or failure of machinery or material.	Number of miles run by trains fitted with automatic vacuum brakes.
STANDARD GAUGE. Dun and Rohilkhand (state).	Vacuum automatic.		(i) and (ii)—Nil. (iii) Failure of material.—No. 1 up mail detained 11 minutes at Rajhera between Shahjahanpur and Moradabad. The dummy of brake-van No. 583 was loose and the universal coupling pipe leaked. (iii) Failure of material.—No. 1 up mail detained 10 minutes at Balaiali between Moradabad and Saharanpur. The front plug bracket got bent and the coupling pipe slipped off the plug, owing to the engine having run over a cow. (iii) Failure of material.—No. 1 up mail, Lucknow to Shahjahanpur, delayed 5 minutes at mile 231, owing to ball valve pipe of engine No. 129 D. having been damaged by coming in contact with a cow.	146,594
Eastern Bengal (state) ...	Vacuum automatic.		(i)—Nil. (ii) No. 18 down passenger train.—The engine working this train overshot the platform at Kankinara in consequence of the India rubber ring on vacuum brake piston having been jammed and cut between piston head and cylinders. (iii) Failure of material.—No. 29 up passenger train detained 7 minutes between Belghuriah and Bogoola in consequence of vacuum not having formed owing to the vacuum chamber rubber hose having leaked.	245,419
Great Indian Peninsula ...	Vacuum automatic.		(i) and (ii)—Nil. (iii) Neglect of servants.—No. 87 down passenger detained 5 minutes at Neral station, owing to brake gear of 3rd class carriage No. 122, type F., having been taken up too close which caused the brake blocks to bind on the wheels. (iii) Failure of material.—No. 116 up passenger detained 8 minutes at Dadur station, owing to truss box of 2nd class carriage No. 667 having broken through defective material.	660,114
Bombay, Baroda and Central India.	Vacuum automatic.		(i).—Nil. (ii) Failure of machinery.—The brake on No. 1 down mail train failed to act when applied to stop the train at Church Gate, owing to a piece of dirt getting under one of the valves. (iii) Neglect of servants.—The brake on No. 4 up ordinary train failed to act, owing to vacuum coupling pipes of carriage not having been fitted with a rubber washer. Delay 5 minutes at Ahmedabad. (iii) Neglect of servants.—The driver of No. 5 down ordinary train could not obtain more than 10 lbs. pressure of automatic brake as the vacuum coupling pipes were not coupled together properly. Delay 3 minutes at Amroli. (iii) Failure of material.—The brake on No. 5 down ordinary train failed to act on account of India-rubber connection on cylinder having been destroyed by a spark falling on it when cleaning the fire. Delay 7 minutes at Daman. The train was worked with hand brake from Daman to Amroli.	See page 4

TABLE NO. II—concl.

Statement showing, for the six months ending with the 30th June 1895, all cases in which the automatic vacuum brakes failed to act when required to be brought into action, or caused delay in the working of trains—concl.

Railways.	Name or description of brakes which failed or caused delay in the instance specified in column 4.	Date of failure.	Instances under the three following heads separately, viz— (i) Failure or partial failure to act when required in case of an accident to train, or a collision between trains being imminent. (ii) Failure or partial failure to act under ordinary circumstances to stop a train when required. (iii) Delay in the working of trains in consequence of defect in, or improper action of, the brakes, distinguishing whether they arose from neglect or inspecience of servants, or failure of machinery or material.	Number of miles run by trains acted with automatic vacuum brake.
STANDARD GAUGE. Bombay, Baroda and Central India—concl.	Vacuum automatic.	2nd April 1895	(iii) Failure of material.—The brake on No. 4 up ordinary train failed to act owing to engine vacuum pipe leaking. The train was worked with hand brake from Pálghar to Colába.	
		2nd April 1895	(iii) Neglect of servants.—The brake on No. 8 up ordinary train failed to act on account of a right hand shield having been put on the engine instead of a left hand one. The train was worked with hand brake.	29.2.5
		17th April 1895	(iii) Failure of machinery.—The brake on engine which worked No. 1 down and No. 2 up mail between Ahmedabad and Wadhwan, failed to act owing to the vacuum leaking in consequence of a piece of dirt getting in the ejector. The train was worked with hand brake.	
		23rd April 1895	(iii) Failure of material.—The engine vacuum on No. 4 up ordinary train was leaking badly on account of small ejector bush being broken. The train was worked with hand brake.	489.359
		24th April 1895	(iii) Failure of material.—The engine vacuum on No. 1 down mail train was leaking badly on account of small ejector bush being broken. The train was worked with hand brake.	
		27th May 1895	(iii) Failure of material.—The brake on No. 5 down ordinary train failed to act on account of release ball valve seating having broken. Delay 7 minutes at Sáyan.	
		30th May 1895	(iii) Failure of material.—The vacuum on No. 102 up Virár local was found leaking on account of washer of the brake-van coupling pipe being worn out. Delay 14 minutes at Borivli. The train was worked with hand brake from Borivli to Colába.	
MATRA GAUGE. Eastern Bengal (state)— Northern and Behar sections.	Vacuum automatic.		(i) and (ii) Nil.	
		23rd February 1895	(iii) Neglect of servants.—No. 21 up mail detained 15 minutes at Nattore in releasing brakes of all vehicles, owing to the non-working of the vacuum brake in consequence of two pieces of cinders having got into drip trap.	
		24th February 1895	(iii) Neglect of servants.—No. 22 down mail detained 5 minutes at Saidpur, owing to the engine brakes not releasing in consequence of the rear pipe not having been put on the plug properly.	110.101
		28th February 1895	(iii) Neglect of servants.—No. 21 up mail failed at Domár, owing to the engine brakes not releasing in consequence of the cylinders having been rusty and rings turned.	

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following

From the Govt. of India } H.E. No. 26 R. dated 5 July 96
 P.W. Deptt. }

Communicated
 to the Agents Messrs. South
 Indian & the Mysore Ry
 and the Enquiries in Chief
 of the Railway for in-
 formation in continuation
 of G.O. No. 542 R. of 23 Aug.
 1895.

4/11/96
 14/3

To the Agents Messrs. S. & Ry ✓
 - Agent S. & Ry ✓
 - Agent Messrs. Mysore Ry ✓
 - Enq. in Ch. Mysore Ry ✓
 Desd
 19/3/96

14/11/96

By
No 252. D. dated 19.3.96

22/03 21/3