

[Enclosure No. 1 to Railway Board's Report, dated the 4th July 1908.]

INDIAN RAILWAYS.

**ABSTRACT RETURNS OF ACCIDENTS DURING THE TWELVE
MONTHS ENDED THE 31st DECEMBER 1907.**

ABSTRACT No. 1.

GENERAL TOTAL.

NUMBER of PERSONS reported, during the TWELVE MONTHS ended the 31st December 1907, as KILLED or INJURED ON ALL RAILWAYS open for TRAFFIC in INDIA, distinguishing between PASSENGERS, RAILWAY SERVANTS and OTHER PERSONS; and distinguishing also, in the case of the two former classes, between ACCIDENTS caused by ACCIDENTS TO TRAINS, ROLLING-STOCK, PERMANENT-WAY, etc., and ACCIDENTS happening otherwise.

	STANDARD GAUGE LINES.		METRE GAUGE LINES.		SPECIAL GAUGE LINES.		TOTAL ALL GAUGES.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
PASSENGERS:—								
From accidents to trains, rolling-stock, permanent-way, etc.	45	136	...	14	...	...	45	150
By accidents from other causes, including accidents from their own want of caution or misconduct	128	330	22	125	...	4	150	459
SERVANTS:—								
From accidents to trains, rolling-stock, permanent-way, etc.	34	85	5	29	1	6	40	120
By accidents from other causes, including accidents from their own want of caution or misconduct	311	411	89	131	5	4	405	546
OTHER PERSONS:—								
Whilst passing over railways at level-crossings	32	27	19	17	...	...	51	44
Trespassers	626	184	290	114	3	5	919	303
Suicides	148	6	40	1	1	...	189	7
Miscellaneous, not included in either of the above	22	16	13	18	...	2	35	36
TOTAL .	1,346	1,195	478	419	10.	21	1,834	1,665

NUMBER OF PERSONS reported, during the TWELVE MONTHS ended the 31st December 1907, as KILLED OR INJURED IN PASSENGERS, RAILWAY SERVANTS AND OTHER PERSONS, and classifying, as follows.

ABSTRACT

Serial Number.	RAILWAY.	PASSENGERS.																											
		FROM CAUSES OTHER THAN ACCIDENTS TO TRAINS, ETC.												TOTAL PASSENGERS.		FROM CAUSES OTHER THAN ACCIDENTS TO TRAINS, ETC.													
		From accidents to trains, etc.—See Abstracts Nos. 3 and 4.		1.—From falling between trains and platforms.		2.—Falling on to the platform, ballast, etc., when getting into or out of trains.		3.—Whilst crossing the line at stations.		4.—By closing of carriage doors.		5.—Falling out of carriages during the travelling of trains.		6.—Other accidents.		Total.		From accidents to trains, etc.—See Abstracts Nos. 3 and 4.		1.—Whilst coupling or uncoupling vehicles.		2.—By coming in contact, whilst riding on vehicles during shunting, with other vehicles, etc., standing on adjacent lines.		3.—Whilst passing over or standing upon buffers during shunting.		4.—When getting on or off, or falling off, engines, wagons, etc., during shunting.		5.—Whilst backing, shunting, or other work.	
Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.						
8' 6" gauge.																													
1	Bengal-Nagpur (a)	2	1	1	...	2	2	5	26	1	1	8	33	8	35	...	7	1	2	...	...	...	4	...		
2	Bombay, Baroda and Central India (b)	2	...	1	4	...	...	4	17	...	...	5	21	5	23	...	...	...	...	...	...	1	2	1	...	
3	Eastern Bengal State	3	...	2	2	...	...	1	8	...	1	8	11	8	14	...	1	3	2	...	...	1	...	...	...	
4	East Indian (c)	9	41	7	10	3	6	6	5	1	23	60	5	6	44	88	53	129	5	24	2	4	1	...	2	2			
5	Great Indian Peninsula	8	...	2	1	1	...	8	24	4	4	15	29	15	37	...	1	...	1	7	...	...	...	2	...	
6	Indian Midland (d)	1	18	...	1	...	...	6	5	...	7	5	8	23	4	6	...	2	...	...	...	...	3	...	...		
7	Madras (e)	9	...	1	2	1	1	2	8	...	4	12	4	21	1	2	1	2	1	...	1	...	3	...	...		
8	Nizam's Guaranteed State (f)	...	...	...	...	...	...	1	...	...	1	...	1	...	1	...	...	...	...	...	...	1	...	...	...	
9	North Western State (g)	35	51	2	5	4	1	1	1	181	94	1	3	89	108	74	154	20	41	13	19	1	6	4	7	13			
10	Oudh and Rohilkhand State (h)	2	2	1	3	1	...	1	21	...	3	26	3	28	2	2	...	...	...	...	2	...	3	...	1	
11	Tapti Valley	...	...	...	...	...	...	1	...	...	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...
TOTAL		45	136	10	15	14	20	12	9	4	91	267	11	15	123	380	173	466	84	85	20	36	3	6	6	11	33	2	3
Previous year		7	126	17	15	16	19	9	9	6	71	196	10	14	123	259	130	385	80	69	15	33	3	3	9	5	24	1	9
8' 3 1/2" gauge.																													
12	Assam-Bengal	...	...	...	2	...	...	2	...	...	4	...	4	1	2	...	...	...	...	1	...	...	...	...	...	...
13	Bengal and North-Western—Tirhoot section, Company's	...	...	...	...	...	...	5	14	...	1	5	15	5	15	...	4	...	1	2	...	1	1	1	...	1
14	Bengal Doars (k)	...	...	...	...	...	...	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
15	Bhavnagar-Gondal-Junagad-Porbandar (l)	...	...	...	...	...	...	3	...	...	3	...	3	...	3	...	1	1	...	...	...	...	...	...	...	...
16	Burma	4	1	1	...	1	...	3	...	3	18	...	4	23	4	27	2	6	3	7	...	1	1	...	...	...
17	Cawnpore-Burhwal	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	
18	Deoghur	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
19	Dibru-Sadiya (m)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	Eastern Bengal State (n)	3	...	1	...	...	...	2	2	...	2	2	...	2	3	2	6	1	1	...	...	...	...	...	...	...
Carried over		7	1	1	...	4	...	3	...	11	39	...	1	12	48	12	55	4	14	4	8	2	1	2	1	2	1		

(a) Including the Jubbulpore-Gondal extension, Mourbhaj, Parlakhed Light, Purulia-Banchi and Kulpur-Dhamtari (3' 6" gauge) railways.
 (b) " Godhra-Bullam-Nagda, Nagda-Ujjain Nagda-Mulita and Pottal-Cambay railways.
 (c) " Delhi-Umballa-Katia, South Bebar and Tarkoner railways.
 (d) " Agra-Delhi (Ford), Bhopal-Itan, Bhopal-Ujjain and Bina-Goonaharan railways.
 (e) " Ashkhal-Managore, Kolar Gold-Fields, Madras (North-East Line) and Nilgiri and Shoranur-Cochin (3' 6" gauge) and Morappur-Dharmapuri and Tirupattur-Krishnagiri (3' 6" gauge) railways.

(f) Including the Bezwada extension railway.
 (g) " Amritsar-Patti, Jammu and Kashmir (Native State section), Ludhiana-Jakhal, Rajpura-Bhatinda and Southern Punjab railway the Khushkhar-Kohat-Thal, Nowshera-Dargal (3' 6" gauge) Dandot Light (3' 6" gauge) railways.

No. 2.
 by the TRAVELLING OF TRAINS or the MOVEMENT OF VEHICLES used exclusively upon RAILWAYS, distinguishing between
 practicable, the nature and causes of the ACCIDENTS occasioning the DEATH or INJURY.

ACIDENTS TO TRAINS, ETC.																OTHERS.						Serial Number.																		
Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Whilist passing over the railway at level-crossings.	Trespassers.	Suicides.	Miscellaneous.	TOTAL OTHERS.	Total all classes.																			
2	6	1	2	...	1	1	...	1	1	...	8	4	1	...	1	...	1	...	19	18	32	4	5	81	22	24	2	2	...	111	29	137	90	1						
...	1	...	...	...	2	1	...	...	...	4	2	3	...	1	...	12	4	24	11	24	11	...	...	21	1	4	...	1	1	20	2	55	30	2				
1	3	1	4	...	1	2	...	1	1	...	12	7	1	1	...	8	6	28	25	29	28	5	3	60	17	2	...	2	...	75	20	107	62	3						
3	8	1	7	1	3	2	15	...	5	7	1	1	19	13	...	8	6	10	6	12	21	61	95	66	119	13	6	157	51	46	8	7	5	223	65	342	313	4		
2	8	6	1	5	1	1	4	5	...	4	2	...	20	9	...	1	...	4	...	3	11	44	54	45	54	2	2	56	17	10	...	1	...	69	19	129	110	5		
2	4	...	1	...	1	2	...	1	...	4	5	...	4	5	...	1	...	1	...	1	2	9	20	13	26	...	2	24	3	7	...	1	...	32	5	53	54	6		
1	1	3	2	3	1	2	...	1	1	...	5	7	2	1	1	...	3	3	5	9	24	39	25	41	2	2	35	5	8	...	8	3	48	10	77	72	7			
...	1	...	...	...	...	...	...	...	...	3	...	...	...	...	1	1	1	1	7	1	7	...	...	1	2	...	...	1	2	...	1	2	2	10	8			
3	1	4	11	...	8	6	1	3	3	2	1	13	21	2	1	1	5	8	5	9	18	94	111	114	152	2	3	119	38	17	...	2	5	140	46	323	352	9		
2	3	...	6	...	2	1	...	1	2	1	...	3	1	1	1	...	1	1	...	1	8	24	10	26	3	3	64	28	29	1	3	2	99	84	112	88	10	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2	...	1	...	4	1	4	2	11	
5	22	84	11	40	3	7	17	38	1	9	13	14	3	2	106	72	9	4	6	13	29	15	52	75	311	411	345	496	32	27	628	184	145	6	22	16	828	233		
1	24	32	6	27	5	5	12	30	1	11	21	12	9	2	57	56	5	3	4	9	19	41	25	56	257	341	287	410	36	13	549	144	121	6	23	17	729	180		
...	
...	
...	
6	2	...	8	1	...	11	13	...	1	3	5	1	7	5	2	5	1	5	15	51	62	55	76	7	10	216	76	21	1	11	11	255	98	322	229

(a) Including the Hardwar-Lehra railway, Bengal Doersu extensions, Dhrangadra, Jamnagar and Jaisalmer-Rajkot railways.

(b) Including the Leda and Titak Margherita Colliery branch railway, Mysenabgh-Jamnagar-Jaganathpur railway (3' 3 1/2" gauge) and the Kharakh-Krishnagar and Jeeeta-Kargram branches, also the British section of the Bantrabari extension (3' 6" gauge) lines.

NUMBER of PERSONS reported, during the TWELVE MONTHS ended the 31st December 1907, as KILLED or INJURED, PASSENGERS, RAILWAY SERVANTS and OTHER PERSONS, and classifying, as follows, according to the CAUSES OF ACCIDENTS.

ABSTRACT

Serial Number.	RAILWAY.	PASSENGERS.														OTHER PERSONS.																	
		From accidents to trains, etc.—See Abstracts Nos. 3 and 4.		FROM CAUSES OTHER THAN ACCIDENTS TO TRAINS, ETC.												TOTAL PASSENGERS.		From accidents to trains, etc.—See Abstracts Nos. 3 and 4.		FROM CAUSES OTHER THAN ACCIDENTS TO TRAINS, ETC.												TOTAL OTHER PERSONS.	
		Killed.	Injured.	1.—From falling between trains and platforms.	2.—Falling on to the platform, ballast, etc., when getting into or out of trains.	3.—Whist crossing the line at stations.	4.—By closing of carriage doors.	5.—Falling out of carriages during the travelling of trains.	6.—Other accidents.	TOTAL.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	1.—Whist coupling or uncoupling vehicles.	2.—By coming in contact, whilst riding on vehicles during shunting, with other vehicles, etc., standing on adjacent lines.	3.—Whist pressing over or standing upon buffers during shunting.	4.—When getting on or off, or falling off, engines, wagons, etc., during shunting.	5.—Whist backing, dragging, or checking wheels.	TOTAL.	Killed.	Injured.							
	Frought forward	7	1	1	4	3	11	39	1	12	48	12	55	4	14	4	8	2	1	2	1	1	1	1	1	1	1	1					
21	3' 3 3/4" gauge—concl.																																
22	Hyderabad-Godavari Valley																																
23	Jodhpur-Bikaner—(a) Jodhpur section	3					1	4	3	1	7	1	10	1		1				1													
24	Bikaner ..																																
25	Morvi																																
26	Rajputana-Malwa (b)	3		1	1	1				2	39		4	40	4	43	1	7	1	2					1	1							
27	Rohilkund and Kumaon Lucknow-Bareilly section, Company's section										1			1		1		6	1							2							
28	South Indian (c)	1	1		3					3	20		4	23	4	24		1	11					1	1								
29	Southern Mahratta (d)									1	6		1	6	1	6	1		6						1		1						
30	Udaipur-Chitor																																
	TOTAL	14	2	1	8	1	18	109	4	22	125	22	139	5	29	7	28	2	1	4	4	5	1	1	1	1	1	1					
	Previous year	2	58	1	4	5	6	4	7	1	19	83	2	4	31	105	33	163	7	60	7	19	1	5	3	9	1	1					
29	Special gauges. Baraset-Basirhat Light (2' 6")										1			1		1																	
30	Barsi Light (2' 6")																																
31	Rukhtargore—Behar Light (2' 6")																																
32	Cooch Behar (2' 6")																																
33	Cutch (2' 6")																																
34	Gaekwar's Dabhoi (2' 6")																																
35	Kalka-Simla (2' 6")									1				1		1		6								1							
36	Powayan Light (2' 6")				1									1		1		1															
37	Rajpipla (2' 6")																																
38	Shahdara (Delhi)—Saharanpur Light (2' 6")																																
39	Tarakeshwar-Mogra Light (2' 6")																																
40	Tezpore-Balipara Light (2' 6")										1			1		1																	
41	Darjeeling-Himalayan (2' 0")																																
42	Gwalior Light (2' 0")																																
43	Howrah-Amta (2' 0")																																
44	Howrah-Sheakhula (2' 0")																																
45	Jorhat (2' 0")																																
46	Matheran Light (2' 0")																																
	TOTAL				1		1	2			4		4	1	6											1							
	Previous year	10			5		1	1			1	4	1	14	2	19		2															
	GRAND TOTAL	45	150	12	16	15	29	13	12	5	99	378	11	19	150	459	195	609	40	120	27	64	5	7	10	15	39	3	4				
	Previous year	9	134	18	19	21	28	13	16	7	91	230	12	18	155	368	164	562	39	148	22	54	3	4	9	14	8	33	1	10			

(a) Including the Jodhpur-Hyderabad railway (British section).
 (b) Ahmedabad-Dholka, Ahmedabad-Parantij, Gaekwar's Mehsena, Jaipur State, Paianpur-Deesa, and Vijapur-Kalol-Kadi railways.
 (c) Tanjore District Board and Tinnevely-Quilon (Travancore) railways.
 (d) Bellary-Rayadrug, Birur-Shimoga, Guntakal-Mysore frontier, Hindupur (Yesvantpur-Mysore frontier), Hospet-Kottur, Mysore-Nanjangud, Mysore section (Southern Mahratta), Bangli State and West of India Portuguese railways.

ABSTRACT No. 3.

ACCIDENTS to TRAINS, ROLLING-STOCK, PERMANENT-WAY, etc., reported during the TWELVE MONTHS ended the 31st December 1907, as having occurred on the several RAILWAYS open for TRAFFIC in INDIA, distinguishing the different CLASSES of ACCIDENTS and the number of PASSENGERS and OTHERS, and of RAILWAY SERVANTS KILLED or INJURED in each class of accident.

Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1900.	BENGAL-NAGPUR. (a)											BOMBAY, BARODA AND CENTRAL INDIA. (b)								EASTERN BENGAL STATES.								EAST INDIAN. (c)								Number of headings.
	Number.	Number of passengers and others.		Number of servants.		Total all classes.		Number.	Number of passengers and others.		Number of servants.		Total all classes.		Number.	Number of passengers and others.		Number of servants.		Total all classes.		Number.	Number of passengers and others.		Number of servants.		Total all classes.									
		Other accidents.	Total.	Killed.	Injured.	Killed.	Injured.		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.						
	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1900.	Other accidents.	Total.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.							
1	1	2	2	2	...	...	...	...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
2	18	6	24	1*	...	...	...	...	...	...	...	...	...	7	7	3	1	2	1	5	12	1	13	10†	41†	2	10	12	51	2
3	4	2	6	...	...	1	...	1	...	2	2	...	...	2	5	7	...	...	1	1	2	2	13	15	...	...	1	...	1	3
4	1	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2	...	...	3	...	4	
5	2	1	3	...	...	...	...	...	5	5	...	...	...	6	6	...	...	...	...	...	10	2	12	...	...	2	...	2	...	5
6	48	24	72	...	...	...	...	...	2	2	...	...	...	...	1	1	...	...	...	...	...	21	21	...	...	...	...	...	...	6
7	17	1	18	...	...	4	...	4	...	...	...	...	...	1	1	...	...	...	...	...	10	34	44	...	...	...	7	...	7	7
8	5	3	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8
9	2	219	221	1*	...	1	1	1	43	43	...	...	...	2	190	192	...	...	...	...	...	311	311	...	...	...	...	...	...	9
10	24	8	32	2*	3*	1	2	4	3	3	...	...	...	3	9	12	1*	1*	...	1	1	...	11	11	...	...	...	...	...	10
11	...	...	...	...	...	...	...	...	1	1	...	...	...	...	4	4	...	...	...	...	...	...	...	...	...	...	...	...	...	11
12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12
12(a)	1	...	1	...	...	...	...	...	14	14	...	...	...	...	4	4	...	...	...	...	...	16	16	...	...	...	...	...	...	13(a)
13	4	...	4	...	...	...	...	...	45	45	...	...	...	...	20	20	...	...	...	...	...	61	61	...	...	...	...	...	...	13
14	1	...	1	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14
15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	15
16	2	1	3	...	...	...	...	...	1	1	...	...	...	...	2	2	...	...	...	...	...	3	3	...	...	...	...	...	...	16
17	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...	...	...	...	...	17
18	32	4	36	...	...	...	...	...	57	57	...	...	...	...	7	7	...	...	...	...	...	78	78	...	...	...	...	...	...	18
19	...	...	...	...	...	...	...	...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	19
20	2	...	2	...	...	...	...	...	7	7	...	...	...	...	19	19	...	...	...	...	...	5	5	...	...	...	...	...	...	20
21	1	...	1	...	...	...	...	...	6	6	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...	...	...	...	...	21
22	4	1	5	...	...	...	...	...	7	7	...	...	...	...	2	2	...	...	...	...	...	4	4	...	...	...	...	...	...	22
23	8	...	8	...	...	...	...	...	2	2	...	...	...	...	1	1	...	...	...	...	...	12	12	...	...	...	...	...	...	23
24	6	1	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	19	13	...	...	...	...	...	...	24
25	18	7	25	16	16	2	4	6	1*	1	11	170	181	...	6*	1	3	1	9	25					
									216	216					208	201	2*	4†	1	3	3	48	709	17	10†	17†	6	24	16	71						

TRAFFIC IN INDIA, distinguishing the different CLASSES of ACCIDENTS and the number of PASSENGERS and OTHERS, and of RAILWAY SERVANTS KILLED or INJURED in each class of accident—contd.

STANDARD GAUGE—contd.

	GREAT INDIAN PENINSULA.							INDIAN MIDLAND (a)							MADRAS (b)							NIRAM'S GUARANTEED STATE (c)							Number of headings.
	Number.		Number of passengers and others.		Number of servants.		Total all classes.	Number.		Number of passengers and others.		Number of servants.		Total all classes.	Number.		Number of passengers and others.		Number of servants.		Total all classes.								
	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1880.	Other accidents.	Total.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1880.	Other accidents.	Total.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.					
1. Collisions between passenger trains or parts of passenger trains	1	...	1	...	4	...	2	...	6	...	1	1	...	1	...	...	...	1				
2. Collisions between passenger trains and goods or mineral trains, engines and vehicles standing foul of the line	...	2	2	...	...	...	...	2	2	...	...	...	...	...	...	...	...	4	4	...	1	...	1	...	4
3. Collisions between goods trains or parts of goods trains	...	2	2	...	...	...	...	2	2	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	2
4. Collisions between light engines	...	2	2	...	...	...	...	1	1	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	3
5. Passenger trains or parts of passenger trains leaving the rails	...	18	18	...	...	...	...	2	2	...	...	...	...	...	...	...	...	5	5	...	...	...	...	...	4
6. Goods trains or parts of goods trains, engines, etc., leaving the rails	...	109	109	...	...	1	1	...	...	...	...	...	...	...	...	...	...	5	5	...	...	1	1	...	5
7. Trains or engines travelling in the wrong direction through points	...	6	6	...	...	...	...	1	1	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	6
8. Trains running into stations or sidings at too high a speed	...	2	2	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7
9. Trains running over cattle on the line	...	153	153	...	...	...	...	213	213	...	...	...	...	...	...	...	...	393	393	...	...	...	...	...	8
10. Ditto over obstructions on the line	...	17	17	1*	1*	...	1	1	10	10	1*	1	1	...	9			
11. Trains running through gates at level-crossings	...	7	7	...	...	...	...	5	5	...	1*	...	...	...	...	...	...	9	9	...	...	...	...	...	10
12. The bursting of boilers of engines	1	1	...	...	...	...	...	...	...	...	9	9	...	...	...	...	...	11				
12(a). Ditto of tubes, etc., of engines	...	44	44	...	...	...	...	15	15	...	...	...	...	...	...	...	...	96	96	...	...	...	...	...	12
13. The failure of machinery, springs, etc., of engines	...	105	105	...	...	...	...	52	52	...	...	...	...	...	...	...	...	56	56	...	1	...	1	...	12(a)
14. The failure of tyres	1	1	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	13				
15. Ditto of wheels	1	1	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	14				
16. Ditto of axles	...	1	1	...	...	...	...	1	1	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	15
17. Ditto of brake apparatus	...	1	1	...	...	...	...	1	1	...	...	...	...	...	...	...	...	2	2	...	...	...	...	...	16
18. Ditto of couplings	...	18	18	...	...	...	...	6	6	...	...	...	...	...	...	...	...	7	7	...	...	...	...	...	17
19. Ditto of tunnels, bridges, viaducts, culverts, etc.	18				
20. Broken rails	...	4	4	...	...	...	...	1	1	...	...	...	...	...	...	...	...	8	8	...	...	...	...	...	19
21. The flooding of portions of permanent-way	...	4	4	...	...	...	...	1	1	...	...	...	...	...	...	...	...	5	5	...	...	...	...	...	20
22. Slips in cuttings or embankments	...	3	3	...	...	...	...	1	1	...	...	...	...	...	...	...	...	9	9	...	...	...	...	...	21
23. Fire in trains	...	67	67	...	...	...	...	33	33	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	22
24. Fire at stations, or involving injury to bridges or viaducts	...	11	11	1*	1*	...	1	1	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	23
25. Other accidents	...	156	156	...	8	...	8	...	45	45	21	21	...	4	4	...	24			
TOTAL ALL CLASSES	...	737	737	2*	10†	1	3	10	3	417	420	1	19‡	4	6	5	25	639	639	10‡	1	2	1	12	3	49	52	25	

(a) Including the Agra-Delhi-Bombay, Bopal-Itarsi, Bhopal-Ujjain and Bina-Goonna-Baran railways.

(b) " Ashikhal-Mangalore, Kolar-Gold-Benda, Madras (North-East line), and the Nilgiri and Shevarner-Cochin (1'31" gauge) and Morappur-Dharmapuri and Tirupattur-Krishna-Siri (2'3" gauge) railways.

(c) " Bezwada extension railway.

* Not (a) passenger(s).

† Of these, two were not passengers.

‡ Of these, one was not a passenger.

ABSTRACT NO. 5.—ACCIDENTS TO TRAINS, ROLLING-STOCK, PERMANENT-WAY, ETC., reported during the TWELVE MONTHS ended the 31st DECEMBER 1907. TRAFFIC IN INDIA, distinguishing the different CLASSES of ACCIDENTS and the number of PASSENGERS and OTHERS, and of RAILWAY SERVANTS KILLED or INJURED in each class of accident.

	BENGAL AND NORTH-WESTERN (TIRHOOT AND COMPANY'S SECTIONS).								BENGAL DOOARS. (a)								BRAHMAPUTRA-GORDAL-JUMAGAD-PORBANDAR. (b)								BURMA.								Number of headings.
	Number.		Number of passengers and others.		Number of servants.		Total all classes.		Number.		Number of passengers and others.		Number of servants.		Total all classes.		Number.		Number of passengers and others.		Number of servants.		Total all classes.										
	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1890.	Other accidents.	Total.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1890.	Other accidents.	Total.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1890.	Other accidents.	Total.	Killed.	Injured.	Killed.	Injured.								
1. Collisions between passenger trains or parts of passenger trains	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1		
2. Collisions between passenger trains and goods or mineral trains, engines and vehicles standing foul of the line	2	10	12	...	...	...	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2		
3. Collisions between goods trains or parts of goods trains	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	
4. Collisions between light engines	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	
5. Passenger trains or parts of passenger trains leaving the rails	...	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	
6. Goods trains or parts of goods trains, engines, etc., leaving the rails	1	1	2	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	
7. Trains or engines travelling in the wrong direction through points	2	11	13	1*	6*	...	1	1	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	
8. Trains running into stations or sidings at too high a speed	...	4	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	
9. Trains running over cattle on the line	...	140	140	...	...	...	...	...	...	...	18	18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	
10. Ditto over obstructions on the line	...	11	11	...	...	...	...	...	...	...	25	25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	
11. Trains running through gates at level-crossings	1	1	2	...	1*	6	11	17	2*	1*	...	2	2	3	10				
12. The bursting of boilers of engines	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11
12(a). Ditto of tubes, etc., of engines	...	11	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12
13. The failure of machinery, springs, etc., of engines	...	23	23	...	...	...	...	...	...	...	3	3	...	...	...	...	...	...	...	1	1	2	...	...	...	1	...	12(a)
14. The failure of tyres	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13
15. Ditto of wheels	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14
16. Ditto of axles	...	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15
17. Ditto of brake apparatus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16
18. Ditto of couplings	1	13	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17
19. Ditto of tunnels, bridges, viaducts, culverts, etc.	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18
20. Broken rails	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	19
21. The flooding of portions of permanent-way	...	9	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	20
22. Slips in cuttings or embankments	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21
23. Fire in trains	...	5	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	22
24. Fire at stations, or involving injury to bridges or viaducts	...	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23
25. Other accidents	3	6	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	24
TOTAL ALL CLASSES	9	259	263	1*	6*	...	4	1	10	...	23	25	...	1*	...	...	...	...	...	3	50	53	...	...	1	...	1	25

(a) Including the Bengal Dooars extensions.
(b) Dibrugarh, Jammagar and Jettakar-Bajkot railways.

* No. (a) passenger(s).
† Of these, one was not a passenger.

ABSTRACT No. 3. — ACCIDENTS TO TRAINS, ROLLING-STOCK, PERMANENT-WAY, etc., reported during the TWELVE MONTHS ended the 31st December 1907, as having occurred on the several RAILWAYS open for TRAFFIC IN INDIA, distinguishing the different CLASSES of ACCIDENTS and the number of PASSENGERS and OTHERS, and of RAILWAY SERVANTS KILLED OR INJURED in each class of accident—contd.

METRE GAUGE—contd.

	CANNON-BURHWAL.							DROGHDA.							DIBRU-SADIYA. (a)							EASTERN BENGAL STATE. (b)							Number of headings.
	Number.		Number of passengers and others.		Number of servants.		Total all classes.		Number.		Number of passengers and others.		Number of servants.		Total all classes.		Number.		Number of passengers and others.		Number of servants.		Total all classes.						
	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1890.	Other accidents.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1890.	Other accidents.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1890.	Other accidents.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.					
1. Collisions between passenger trains or parts of passenger trains	1				
2. Collisions between passenger trains and goods or mineral trains, engines and vehicles standing foul of the line	2				
3. Collisions between goods trains or parts of goods trains	...	2	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
4. Collisions between light engines	4				
5. Passenger trains or parts of passenger trains leaving the rails	5				
6. Goods trains or parts of goods trains, engines, etc., leaving the rails	6				
7. Trains or engines travelling in the wrong direction through points	7				
8. Trains running into stations or sidings at too high a speed	8				
9. Trains running over cattle on the line	9				
10. Ditto over obstructions on the line	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10
11. Trains running through gates at level-crossings	1	...	1	1*	4*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11
12. The bursting of boilers of engines	12				
12(a). Ditto of tubes, etc., of engines	12(a)				
13. The failure of machinery, springs, etc., of engines	13				
14. The failure of tyres	14				
15. Ditto of wheels	15				
16. Ditto of axles	16				
17. Ditto of brake apparatus	17				
18. Ditto of couplings	...	5	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18
19. Ditto of tunnels, bridges, viaducts, culverts, etc.	19				
20. Broken rails	20				
21. The flooding of portions of permanent-way	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	21				
22. Slips in cuttings or embankments	22				
23. Fire in trains	23				
24. Fire at stations, or involving injury to bridges or viaducts	24				
25. Other accidents	25				
TOTAL ALL CLASSES	1	9	10	1*	4*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

ABSTRACT No. 3.— ACCIDENTS TO TRAINS, ROLLING-STOCK, PERMANENT-WAY, etc., reported during the TWELVE MONTHS ended the 31st December 1907, as having occurred on the several railways in INDIA, distinguishing the different CLASSES of ACCIDENTS and the number of PASSENGERS and OTHERS, and of RAILWAY SERVANTS KILLED or INJURED in each class of accident—contd.

METRE GAUGE—contd.

	HYDRABAD-GODAVARI VALLEY.							JODHPUR-BIKANER (JODHPUR AND BIKANER SECTIONS). (a)							MORVI.							RAJPUTANA-MALWA. (b)							Number of headings.
	Number.		Number of passengers and others.		Number of servants.		Total all classes.	Number.		Number of passengers and others.		Number of servants.		Total all classes.	Number.		Number of passengers and others.		Number of servants.		Total all classes.								
	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1890.	Other accidents.	Total.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Total.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Total.	Killed.	Injured.	Killed.	Injured.				
Collisions between passenger trains or parts of passenger trains	1			
Collisions between passenger trains and goods or mineral trains, engines and vehicles standing foul of the line	2			
Collisions between goods trains or parts of goods trains	3			
Collisions between light engines	4			
Passenger trains or parts of passenger trains leaving the rails	5			
Goods trains or parts of goods trains, engines, etc., leaving the rails	6			
Trains or engines travelling in the wrong direction through points	7			
Trains running into stations or sidings at too high a speed	8			
Trains running over cattle on the line.	...	48	48	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9
Ditto over obstructions on the line	10			
Trains running through gates at level-crossings	11			
The bursting of boilers of engines	12			
(a) Ditto of tubes, etc., of engines	12(1)			
The failure of machinery, springs, etc., of engines	13			
The failure of tyres	14			
Ditto of wheels	15			
Ditto of axles	16			
Ditto of brake apparatus	17			
Ditto of couplings	18			
Ditto of tunnels, bridges, viaducts, culverts, etc.	19			
Broken rails	20			
The flooding of portions of permanent-way	21			
Slips in cuttings or embankments	22			
Fire in trains	23			
Fire at stations, or involving injury to bridges or viaducts	24			
Other accidents	25			
TOTAL ALL CLASSES	...	49	49	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7 471 478

(a) Including the J. & H. Hyderabad railway (British section).
 (b) Ahmedabad-Dholka, Ahmedabad-Paranli, Gwalwar's Mchana, Jaipur State, Palampur-Dessa and Vijapur-Kalol-Kadi railways.

ABSTRACT No. 3.— ACCIDENTS TO TRAINS, ROLLING-STOCK, PERMANENT-WAY, etc., reported during the TWELVE MONTHS ended the 31st December 1907, as having occurred on the several RAILWAYS open for TRAFFIC IN INDIA, distinguishing the different CLASSES of ACCIDENTS and the number of PASSENGERS and OTHERS, and of RAILWAY SERVANTS KILLED or INJURED in each class of accident—*contd.*

	METRE GAUGE— <i>concld.</i>																												Number of headings.				
	ROHILKUND AND KUMAON (LUCKNOW-BAREILLY AND COMPANY'S SECTIONS).								SOUTH INDIAN. (a)								SOUTHERN MARRATTA. (b)								UDAIPUR-CHITTOO.								
	Number.		Number of passengers and others.		Number of servants.		Total all classes.		Number.		Number of passengers and others.		Number of servants.		Total all classes.		Number.		Number of passengers and others.		Number of servants.		Total all classes.										
	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1890.	Other accidents.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1890.	Other accidents.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1890.	Other accidents.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.									
1. Collisions between passenger trains or parts of passenger trains	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1						
2. Collisions between passenger trains and goods or mineral trains, engines and vehicles standing foul of the line	1	2	3	...	...	2	2	...	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
3. Collisions between goods trains or parts of goods trains	...	1	1	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
4. Collisions between light engines	4						
5. Passenger trains or parts of passenger trains leaving the rails	1	1	2	...	...	2	2	...	3	3	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	5
6. Goods trains or parts of goods trains, engines, etc., leaving the rails	...	2	2	...	...	...	...	...	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6
7. Trains or engines travelling in the wrong direction through points	...	8	8	...	...	...	...	...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7
8. Trains running into stations or sidings at too high a speed	578	578	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8						
9. Trains running over cattle on the line	1	72	73	...	...	2	2	...	1	318	319	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9
10. Ditto over obstructions on the line	1	2	3	...	1	...	1	...	7	7	...	...	...	...	...	1	3	...	...	...	...	...	...	...	...	...	10
11. Trains running through gates at level-crossings	4	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11						
12. The bursting of boilers of engines	...	28	28	...	...	...	...	...	...	7	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12
13. Ditto of tubes, etc., of engines	12(a)						
14. The failure of machinery, springs, etc., of engines	...	80	80	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13
15. The failure of tyres	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14						
16. Ditto of wheels	12	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15						
17. Ditto of axles	16						
18. Ditto of brake apparatus	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17						
19. Ditto of couplings	...	11	11	...	...	...	...	...	...	14	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18
20. Ditto of tunnels, bridges, viaducts, culverts, etc.	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	19						
21. Broken rails	45	45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	20						
22. The flooding of portions of permanent-way	5	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21						
23. Slips in cuttings or embankments	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	22						
24. Fire in trains	...	10	10	...	...	...	...	...	6	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23
25. Fire at stations, or involving injury to bridges or viaducts	...	4	4	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	24
26. Other accidents	9	9	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25						
	4	171	175	...	1*	...	6	...	7	...	047	147	...	1	...	...	...	11	470	481	1*	2*	...	1	1	4				

ABSTRACT No. 3. — ACCIDENTS TO TRAINS, ROLLING-STOCK, PERMANENT-WAY, etc., reported during the TWELVE MONTHS ended the 31st December 1907, as having occurred on the several RAILWAYS open for TRAFFIC IN INDIA, distinguishing the different CLASSES of ACCIDENTS and the number of PASSENGERS and OTHERS, and of RAILWAY SERVANTS KILLED OR INJURED in each class of accident — contd.

	BARASAT-BASIRHAT LIGHT (2' 6").										SPECIAL GAUGES.								BUKHTIARPOUR-LEHAR LIGHT (2' 6").								Number of headings.
	Number.		Number of passengers and others.		Number of servants.		Total all classes.		Number.		Number of passengers and others.		Number of servants.		Total all classes.		Number.		Number of passengers and others.		Number of servants.		Total all classes.				
	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1880.	Other accidents.	Total.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1880.	Other accidents.	Total.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1880.	Other accidents.	Total.	Killed.	Injured.	Killed.	Injured.		
1. Collisions between passenger trains or parts of passenger trains	1	
2. Ditto ditto and goods or mineral trains, engines and vehicles standing foul of the line.	2	
3. Collisions between goods trains or parts of goods trains	3	
4. Ditto light engines	4	
5. Passenger trains or parts of passenger trains leaving the rails	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
6. Goods trains or parts of goods trains, engines, etc., leaving the rails	6	
7. Trains or engines travelling in the wrong direction through points	7	
8. Trains running into stations or sidings at too high a speed	8	
9. Ditto over cattle on the line	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9
10. Ditto over obstructions on the line	10	
11. Ditto through gates at level-crossings	11	
12. The bursting of boilers of engines	12	
12(a). Ditto of tubes, etc., of engines	12(a)	
13. The failure of machinery, springs, etc., of engines	13	
14. Ditto of tyres	14	
15. Ditto of wheels	15	
16. Ditto of axles	16	
17. Ditto of brake apparatus	17	
18. Ditto of couplings	18	
19. Ditto of tunnels, bridges, viaducts, culverts, etc.	19	
20. Broken rails	20	
21. The flooding of portions of permanent-way	21	
22. Slips in cuttings or embankments	22	
23. Fire in trains	23	
24. Fire at stations, or involving injury to bridges or viaducts	24	
25. Other accidents	25	
TOTAL ALL CLASSES	1	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

ABSTRACT No. 3.—ACCIDENTS TO TRAINS, ROLLING-STOCK, PERMANENT-WAY, etc., reported during the TWELVE MONTHS ended the 31st December 1907, as having occurred on the several RAILWAYS open for TRAFFIC IN INDIA, distinguishing the different CLASSES of ACCIDENTS and the number of PASSENGERS and OTHERS, and of RAILWAY SERVANTS KILLED or INJURED in each class of accident—contd.

SPECIAL GAUGES—contd.

	COOCH BEHAR (3' 6").						CUTTACK (2' 6").						GAWWAN'S DAMBER (3' 6").						KALKA-SIMLA (3' 6").						Number of headings.
	Number.	Number of passengers and others.		Number of servants.		Total all classes.	Number.	Number of passengers and others.		Number of servants.		Total all classes.	Number.	Number of passengers and others.		Number of servants.		Total all classes.							
		Killed.	Injured.	Killed.	Injured.			Killed.	Injured.	Killed.	Injured.			Killed.	Injured.	Killed.	Injured.		Killed.	Injured.					
1. Collisions between passenger trains or parts of passenger trains	1			
2. Collisions between passenger trains and goods or mineral trains, engines and vehicles standing foul of the line	2			
3. Collisions between goods trains or parts of goods trains	3			
4. Collisions between light engines	4			
5. Passenger trains or parts of passenger trains leaving the rails	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
6. Goods trains or parts of goods trains, engines, etc., leaving the rails	6			
7. Trains or engines travelling in the wrong direction through points	7			
8. Trains running into stations or sidings at too high a speed	8			
9. Trains running over cattle on the line	11	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9
10. Ditto over obstructions on the line	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10
11. Trains running through gates at level-crossings	11			
12. The bursting of boilers of engines	12			
13. Ditto of tubes, etc., of engines	12(a)			
14. The failure of machinery, springs, etc., of engines	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13
15. The failure of tyres	14			
16. Ditto of wheels	15			
17. Ditto of axles	16			
18. Ditto of brake apparatus	17			
19. Ditto of couplings	6	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18
20. Ditto of tunnels, bridges, viaducts, culverts, etc.	19			
21. Broken rails	20			
22. The flooding of portions of permanent-way	21			
23. Slips in cuttings or embankments	22			
24. Fire in trains	23			
25. Fire at stations, or involving injury to bridges or viaducts	24			
26. Other accidents	25			

EXTRACT No. 3.— ACCIDENTS TO TRAINS, ROLLING-STOCK, PERMANENT-WAY, etc., reported during the TWELVE MONTHS ended the 31st December 1907, as having occurred in the TRAFFIC IN INDIA, distinguishing the different CLASSES of ACCIDENTS and the number of PASSENGERS and OTHERS, and of RAILWAY SERVAANTS KILLED or INJURED in each class of accident—1907.

	POWATAN LIGHT (3' 6").								SPECIAL GAUGES—contd.								SHARDARA (DABRI)—SARANAPUR LIGHT (3' 6").								TARAKESWAR-MAGRA LIGHT (3' 6").								Number of headings.
	Number.		Number of passengers and others.		Number of servants.		Total all classes.		Number.		Number of passengers and others.		Number of servants.		Total all classes.		Number.		Number of passengers and others.		Number of servants.		Total all classes.										
	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1890.	Other accidents.	Total.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1890.	Other accidents.	Total.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1890.	Other accidents.	Total.	Killed.	Injured.	Killed.	Injured.								
1. Collisions between passenger trains or parts of passenger trains	1							
2. Ditto ditto and goods or mineral trains, engines and vehicles standing foul of the line	2							
3. Collisions between goods trains or parts of goods trains	3							
4. Ditto light engines	4							
5. Passenger trains or parts of passenger trains leaving the rails	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
6. Goods trains or parts of goods trains, engines, etc., leaving the rails	6							
7. Trains or engines travelling in the wrong direction through points	7							
8. Trains running into stations or sidings at too high a speed	8							
9. Ditto over cattle on the line	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9
10. Ditto over obstructions on the line	10							
11. Ditto through gates at level-crossings	11							
12. The bursting of boilers of engines	12							
12(a). Ditto of tubes, etc., of engines	12(a)							
13. The failure of machinery, springs, etc., of engines	...	4	4	...	...	...	...	...	...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13
14. Ditto of tyres	14							
15. Ditto of wheels	15							
16. Ditto of axles	16							
17. Ditto of brake apparatus	17							
18. Ditto of couplings	...	4	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18
19. Ditto of tunnels, bridges, viaducts, culverts, etc.	19							
20. Broken rails	20							
21. The flooding of portions of permanent-way	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21
22. Slips in cuttings or embankments	22							
23. Fire in trains	23							
24. Fire at stations, or involving injury to bridges or viaducts	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	24
25. Other accidents	25							
TOTAL ALL CLASSES	1	11	12	...	...	1	...	1	...	2	2	...	...	...	...	...	...	1	...	1	...	...	...	...	...			

ABSTRACT No. 3.—ACCIDENTS to TRAINS, ROLLING-STOCK, PERMANENT-WAY, etc., reported during the TWELVE MONTHS ended the 31st December 1907, as having occurred on the several RAILWAYS open for TRAFFIC in INDIA, distinguishing the different CLASSES of ACCIDENTS and the number of PASSENGERS and OTHERS, and of RAILWAY SERVANTS KILLED OR INJURED in each class of accident—*contd.*

	SPECIAL GAUGES— <i>contd.</i>																								Number of headings.
	TEZPORE-BALIPARA LIGHT (2' 6").								DARJEELING-HIMALAYAN (2' 0").								GWALIOR LIGHT (2' 0").								
	Number.		Number of passengers and others.		Number of servants.		Total all classes.		Number.		Number of passengers and others.		Number of servants.		Total all classes.		Number.		Number of passengers and others.		Number of servants.		Total all classes.		
Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1890.		Other accidents.		Total.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Total.	Killed.	Injured.	Killed.	Injured.	Total.	Killed.	Injured.	Killed.	Injured.	Total.	Killed.	Injured.		
1. Collisions between passenger trains or parts of passenger trains	1
2. Ditto ditto and goods or mineral trains, engines and vehicles standing foul of the line	2
3. Collisions between goods trains or parts of goods trains	3
4. Ditto light engines	4
5. Passenger trains or parts of passenger trains leaving the rails	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5
6. Goods trains or parts of goods trains, engines, etc., leaving the rails	6
7. Trains or engines travelling in the wrong direction through points	7
8. Trains running into stations or sidings at too high a speed	8
9. Ditto over cattle on the line	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9
10. Ditto over obstructions on the line	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10
11. Ditto through gates at level-crossings	11
12. The bursting of boilers of engines	12
12(a). Ditto of tubes, etc., of engines	12(a)
13. The failure of machinery, springs, etc., of engines	..	2	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	13
14. Ditto of tyres	14
15. Ditto of wheels	15
16. Ditto of axles	16
17. Ditto of brake apparatus	17
18. Ditto of couplings	18
19. Ditto of tunnels, bridges, viaducts, culverts, etc.	19
20. Broken rails	20
21. The flooding of portions of permanent-way	21
22. Slips in cuttings or embankments	22
23. Fire in trains	23
24. Fire at stations, or involving injury to bridges or viaducts	24
25. Other accidents	25

ABSTRACT NO. 3.—ACCIDENTS TO TRAINS, ROLLING-STOCK, PERMANENT-WAY, etc., reported during the TWELVE MONTHS ending 31st DECEMBER 1900.
 TRAFFIC IN INDIA, distinguishing the different CLASSES of ACCIDENTS and the number of PASSENGERS and OTHERS, and OF RAILWAY SERVANTS KILLED OR INJURED IN SUCH ACCIDENTS.

1	HOWRAH-AMELA LIGHT (5' 6").				SPECIAL GAUGES—small.				JOREPAT (5' 6").				MATHERAN LIGHT—(5' 6").				Number of headings.
	Number.	Number of passengers and others.		Number of servants.	Total all classes.	Number.	Number of passengers and others.		Number of servants.	Total all classes.	Number.	Number of passengers and others.		Number of servants.	Total all classes.		
		Killed.	Injured.				Killed.	Injured.				Killed.	Injured.			Killed.		Injured.	Killed.	Injured.
	Accidents reported to Local Governments under section 88 of the Indian Railways Act, No. IX of 1890.	Other accidents.	Total.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.		
	Accidents reported to Local Governments under section 88 of the Indian Railways Act, No. IX of 1890.	Other accidents.	Total.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Accidents reported to Local Governments under section 88 of the Indian Railways Act, No. IX of 1890.	Other accidents.	Total.	Killed.	Injured.	Killed.	Injured.	
	Accidents reported to Local Governments under section 88 of the Indian Railways Act, No. IX of 1890.	Other accidents.	Total.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Accidents reported to Local Governments under section 88 of the Indian Railways Act, No. IX of 1890.	Other accidents.	Total.	Killed.	Injured.	Killed.	Injured.	
1.	Collisions between passenger trains or parts of passenger trains	1	1														1
2.	Collisions between passenger trains and goods or mineral trains, engines and vehicles standing foul of the line																2
3.	Collisions between goods trains or parts of goods trains																3
4.	Collisions between light engines																4
5.	Passenger trains or parts of passenger trains leaving the rails	5	5														5
6.	Goods trains or parts of goods trains, engines, etc., leaving the rails									4	4						6
7.	Trains or engines travelling in the wrong direction through points																7
8.	Trains running into stations or sidings at too high a speed																8
9.	Trains running over cattle on the line	7	7														9
10.	Ditto over obstructions on the line									1	1						10
11.	Ditto through gates at level-crossings									1	1	1					11
12.	The bursting of boilers of engines																12
12(a).	Ditto of tubes, etc., of engines																12(a)
13.	The failure of machinery, springs, etc., of engines																13
14.	The failure of tyres									2	2						14
15.	Ditto of wheels																15
16.	Ditto of axles									1	1						16
17.	Ditto of brake apparatus																17
18.	Ditto of couplings																18
19.	Ditto of tunnels, bridges, viaducts, culverts, etc.																19
20.	Broken rails																20
21.	The flooding of portions of permanent-way																21
22.	Slips in cuttings or embankments																22
23.	Fire in trains																23
24.	Fire at stations, or involving injury to bridges or viaducts																24
25.	Other accidents	1	1														25
	TOTAL ALL CLASSES	6	7	18				5	5	10	10	1			1		81

* Not a passenger.

ACCIDENTS TO TRAINS, ROLLING-STOCK, PERMANENT-WAY, etc., reported during the TWELVE MONTHS ending the 31st DECEMBER 1907, distinguishing the different CLASSES of ACCIDENTS and the number of PASSENGERS.

	STANDARD GAUGE LINES.												METRE GAUGE LINES.					
	Previous year.			TWELVE MONTHS ENDED THE 31st DECEMBER 1907.									Previous year.			TWELVE MONTHS ENDED THE 31st DECEMBER 1907.		
	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1890.		Total.	Number.			Number of passengers and others.		Number of servants.		Total all classes.		Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1890.		Total.	Number.		
	Other accidents.	Other accidents.		Total.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Other accidents.	Other accidents.		Total.		
1. Collisions between passenger trains or parts of passenger trains	2	6	8	4	8	12	15	16	6	6	21	22	3	...	3	2	2	4
2. Collisions between passenger trains and goods or mineral trains, engines, and vehicles standing foul of the line	19	15	34	46	20	66	31*	106	21	30	52	136	17	11	28	9	18	27
3. Collisions between goods trains or parts of goods trains	12	58	70	13	82	95	3†	1†	...	13	3	14	8	13	21	2	24	26
4. Collisions between light engines	1	31	32	6	34	40	...	...	1	12	1	12	...	12	12	...	6	5
5. Passenger trains or parts of passenger trains leaving the rails	15	31	46	27	39	66	...	1	2	1	2	2	34	40	74	21	20	41
6. Goods trains or parts of goods trains, engines, etc., leaving the rails	3	190	293	49	446	495	...	...	1	1	1	1	5	90	95	3	70	73
7. Trains or engines travelling in the wrong direction through points	4	66	70	29	45	74	...	...	2	11	2	11	7	77	84	2	10	108
8. Trains running into stations or sidings at too high a speed	3	15	18	6	18	24	...	...	...	...	...	...	1	9	10	...	9	9
9. Trains running over cattle on the line	1	1756	1,757	5	2,292	2,297	1†	†	...	1	1	2	5	1,837	1,842	8	1,855	1,863
10. Trains running over obstructions on the line	10	90	100	33	92	125	4†	†	...	4	4	17	7	69	76	10	82	92
11. Trains running through gates at level-crossings	...	15	5	...	24	24	...	...	...	...	...	...	...	20	20	1	17	18
12. The bursting of boilers of engines	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12(a). The bursting of tubes, etc., of engines	...	231	231	1	252	253	...	...	...	...	...	...	...	57	57	1	59	60
13. The failure of machinery, springs, etc., of engines	...	489	489	4	647	651	...	...	2	...	2	...	...	246	246	...	210	210
14. The failure of tyres	...	...	...	1	5	6	...	...	...	...	...	...	...	5	5	...	3	3
15. Ditto of wheels	...	15	15	...	4	4	...	...	...	...	...	...	...	1	1	...	1	1
16. Ditto of axles	...	32	32	2	26	28	...	...	...	...	...	...	6	36	42	8	40	48
17. Ditto of brake apparatus	...	3	3	1	6	7	...	...	...	...	...	...	...	3	3	...	2	2
18. Ditto of couplings	2	199	201	32	221	253	...	...	...	...	...	...	3	148	151	2	141	143
19. Ditto of tunnels, bridges, viaducts, culverts, etc.	...	3	3	...	2	2	...	...	...	...	...	...	...	...	...	1	1	2
20. Broken rails	...	67	67	2	165	167	...	...	...	...	...	...	...	63	63	...	102	102
21. The flooding of portions of permanent-way	9	54	63	3	47	50	...	...	...	...	...	...	22	100	124	24	56	78
22. Slips in cuttings or embankments	3	43	46	6	34	40	...	...	...	...	...	...	5	21	26	1	20	21
23. Fire in trains	3	97	100	8	144	152	...	...	...	...	...	...	...	12	62	2	78	80
24. Fire at stations, or involving injury to bridges or viaducts	7	35	42	6	49	55	1†	†	...	1	1	...	2	17	19	...	1	18
25. Other accidents	21	467	488	31	525	556	1†	†	1	4	2	24	8	247	255	12	221	233
TOTAL FOR THE TWELVE MONTHS ENDED THE 31st DECEMBER 1907	...	...	...	815	5,227	5,542	56	169	34	85	90	244	...	...	...	107	3,184	3,291
Previous year	...	...	...	115	4,108	4,223	15	135	30	66	45	204	...	...	...	135	3,174	3,309
Mean mileage worked	16,471												12,292					
Number of servants employed	384,165												129,204					
Train-milage of all descriptions	83,599,000												39,399,000					
Number of passengers carried	196,982,000												103,854,000					
Passenger-milage	7,804,105,000												3,964,803,000					
Per mean mile open—																		
Train-milage of all descriptions	5,076												3,205					
Number of passengers carried	11,959												8,449					
Passenger-milage	474,809												322,535					
Total passengers—																		
Killed per million of passengers	0.228												...					
Injured per million of passengers	0.690												0.135					
Killed per million of passenger-miles	0.006												...					
Injured per million of passenger-miles	0.017												0.004					

* Of these, one was not a passenger.
 † Of these, two were not passengers.
 ‡ Not (a) passenger (s).
 ... Of these, five were not passengers.
 ... Of these, eight were not passengers.
 ... Of these, nine were not passengers.
 †† Of these, eleven were not passengers.
 ††† Of these, twenty-three were not passengers.
 ... Of these, six were not passengers.
 †††† Of these, seventeen were not passengers.
 ††††† Of these, twenty were not passengers.
 ... Of these, three were not passengers.

st December 1907, as having occurred on the several RAILWAYS open for TRAFFIC in INDIA, and of RAILWAY SERVANTS KILLED or INJURED in each class of accident.

Decade.	SPECIAL GAUGE LINES.											TOTAL ALL GAUGES.											number of readings.				
	Previous year.				TWELVE MONTHS ENDED THE 31st DECEMBER 1907.							Previous year.				TWELVE MONTHS ENDED THE 31st DECEMBER 1907.											
	Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1890.		Other accidents.		Number.		Number of passengers and others.		Number of servants.			Total all classes.		Accidents reported to Local Governments under section 83 of the Indian Railways Act, No. IX of 1890.		Other accidents.		Number.		Number of passengers and others.		Number of servants.			Total all classes.		
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.		Killed.	Injured.	Killed.	Injured.
4	...	...	...	1	1	...	...	...	...	...	...	...	...	5	6	11	7	10	17	15	19	6	7	21	20	1
6	4	...	4	...	1	1	...	...	...	...	...	...	...	40	26	66	55	39	94	31*	100	21	35	53	141	2
1	...	...	...	...	...	...	...	...	...	...	...	...	...	20	71	91	15	106	121	3†	1‡	...	14	3	15	3
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	43	44	6	39	45	...	...	1	12	1	12	4
19	25	8	33	25	25	50	...	...	...	...	...	...	...	74	79	153	73	84	157	4	3	7	3	11	5	
11	1	5	6	1	10	11	...	...	...	...	...	...	...	9	385	394	53	526	579	...	...	2	2	2	2	6
18	...	...	...	...	...	...	...	...	...	...	...	...	...	11	143	154	31	151	182	1‡	6‡	2	13	3	10	7
...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	24	28	6	27	33	...	...	...	...	...	...	8
16	...	39	39	2	28	80	...	...	...	...	...	...	...	6	3,632	3,638	15	4,175	4,190	1‡	2‡	1	6	2	8	9
811	1	3	4	4	6	10	1‡	...	...	...	...	...	...	18	162	180	47	180	227	7‡	12	7	7	29	10	
14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	35	35	1	41	42	1‡	4‡	...	...	1	4	11
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12
2	...	...	...	1	2	3	...	...	...	...	...	...	...	...	288	288	3	313	316	...	...	2	...	2	2	12
...	...	21	21	3	34	87	...	...	...	...	...	...	...	...	756	758	7	891	898	...	...	2	...	2	2	13
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	5	1	8	9	...	...	...	...	...	...	14
...	...	...	...	2	12	14	...	...	...	...	...	...	...	...	16	16	2	17	19	...	...	...	...	...	...	15
...	...	3	3	...	7	7	...	...	...	...	...	...	...	...	6	71	77	10	93	103	...	...	...	...	...	16
...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	6	7	1	8	9	...	...	...	...	...	17
...	1	6	7	...	13	13	...	...	...	...	...	...	...	...	6	353	359	34	375	409	...	...	...	...	...	18
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3	3	1	3	4	...	...	...	...	...	19
...	1	...	1	1	15	16	...	...	...	...	...	...	...	...	1	130	131	3	132	286	...	...	...	...	...	20
...	8	...	7	...	1	1	...	...	...	...	...	...	...	...	36	158	194	25	104	129	...	...	...	...	...	21
...	2	...	2	...	5	5	...	...	...	...	...	...	...	...	10	64	74	7	59	66	...	...	...	...	...	22
...	...	1	1	...	2	2	...	...	...	...	...	...	...	...	3	150	153	10	224	231	...	2	...	1	...	23
...	1	...	1	1	1	2	...	...	1	...	1	...	...	...	10	52	62	7	68	75	1‡	1‡	...	2	1	24
226	2	7	9	3	5	8	...	...	6	...	6	...	...	...	31	721	752	48	775	801	1‡	2‡	...	4	30	25
1060	...	...	...	44	167	211	1‡	1	6	1	7	...	...	...	...	...	406	8,578	9,044	61	191	40	120	101	31	
12129	...	...	...	42	97	139	12†	2	19	2	31	...	...	...	...	...	202	7,379	7,671	20	216	39	148	59	30	
...	...	805	...	...	...	...	...	...	...	...	...	...	...	...	...	...	29,568	...	...	...	...	...	...	...	...	...
...	...	3,387	...	...	...	...	...	...	...	...	...	...	...	...	...	...	516,756	...	...	...	...	...	...	...	...	...
...	...	1,788,000	...	...	...	...	...	...	...	...	...	...	...	...	...	...	124,786,000	...	...	...	...	...	...	...	...	...
...	...	5,054,000	...	...	...	...	...	...	...	...	...	...	...	...	...	...	305,890,000	...	...	...	...	...	...	...	...	...
...	...	71,941,000	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11,840,641,000	...	...	...	...	...	...	...	...	...
...	...	2,221	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4,220	...	...	...	...	...	...	...	...	...
...	...	6,278	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10,345	...	...	...	...	...	...	...	...	...
...	...	89,368	...	...	...	...	...	...	...	...	...	...	...	...	...	...	40,455	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0-147	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0-430	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0-004	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0-013	...	...	...	...	...	...	...	...	...

* Of these, sixteen were not passengers.
 † Of these, forty-one were not passengers.
 ‡ Of these, two and two were not passengers.

ABSTRACT No. 5.

PROPORTION OF PASSENGERS KILLED AND INJURED ON THE SEVERAL RAILWAYS OPEN FOR TRAFFIC IN INDIA FROM CAUSES BEYOND THEIR OWN CONTROL IN PASSENGER JOURNEYS FOR THE YEARS 1892 TO 1907

YEAR.	NUMBER OF PASSENGERS KILLED AND INJURED FROM CAUSES BEYOND THEIR OWN CONTROL FROM ACCIDENTS TO TRAINS.		Number of passenger journeys (inclusive of journeys by season ticket-holders).	PROPORTION RETURNED AS KILLED AND INJURED (FROM CAUSES BEYOND THEIR OWN CONTROL) TO NUMBER CARRIED.	
	Killed.	Injured.		Killed.	Injured.
1892	8	42	127,230,914	1 in 15,903,864	1 in 3,029,521
1893	51	84	135,262,950	1 in 2,652,215	1 in 1,610,000
1894	1	85	145,462,546	1 in 145,462,546	1 in 1,710,000
1895	8	37	151,723,981	1 in 18,965,498	1 in 4,100,000
1896	24	93	159,162,589	1 in 6,631,775	1 in 1,710,000
1897	22	128	150,618,092	1 in 6,846,277	1 in 1,100,000
1898	6	66	150,567,899	1 in 25,094,649	1 in 2,200,000
1899	8	89	169,542,715	1 in 23,220,388	1 in 1,800,000
1900	14	85	175,667,916	1 in 12,547,707	1 in 2,000,000
1901	3	47	177,852,204	1 in 59,284,068	1 in 3,700,000
1902	127	184	189,056,511	1 in 1,488,634	1 in 1,000,000
1903	...	116	210,231,000	1 in 4,204,620	1 in 1,000,000
1904	11	83	227,097,000	1 in 20,645,182	1 in 2,000,000
1905	3	140	248,157,000	1 in 82,719,000	1 in 1,000,000
1906	9	194	271,063,000	1 in 30,118,111	1 in 1,000,000
1907	45	150	305,890,500	1 in 6,797,567	1 in 2,000,000

**Appendix I to the abstract return of accidents on Indian railways
for the twelve months ended the 31st December 1907.**

Report of the proceedings of a committee of enquiry (at which a Government Inspector was not present) which assembled at Haur station on the 17th April 1907 to investigate the cause of an accident which occurred at mile 44-18 and 19, between Haur and Panchkura, Bengal-Nagpur railway, to No. 129 down goods train on the 14th April 1907.

The committee was constituted as follows :—

H. G. DUNCAN, District Traffic Superintendent	. . . President.
C. W. BLUETT, Acting District Locomotive Superintendent.	} Members.
D. LESLIE, District Engineer.	

DESCRIPTION.

On the date named 129 down goods left Khargpur at 21-20 hours for Shalimar with 57 vehicles and a brakevan. After passing Haur station, and when running into Panchkura the driver felt a jerk and pulled up. He found that his train had parted, and that covered goods wagon No. 2388C, the 36th from his engine, was lying on the line, without its wheels attached to the rest of the train by its side-chains only. On going further back he discovered eleven other vehicles derailed and badly smashed, the line torn up and the formation surface damaged. The time was then 22-10.

The cause of the accident was found to be that the left hand journal of one pair of wheels of wagon No. 2388C had broken off at the shoulder, in consequence of becoming overheated; this set of wheels ran off the line, got caught in the ballast and was twisted athwart the line; it then ripped the wheels from under four other wagons and the sudden stoppage derailed the rest. A heap of wheels and axles, sufficient for four vehicles, was heaped up in the middle of the track, surrounded by the bodies of their own and other wagons. The pair of wheels which had caused the damage were found a little further on, with one journal broken off about two inches from the shoulder. The latter was "upset" as though it had been heated and struck a heavy endlong blow; the part remaining of the bearing was turned quite round and smooth, all marks of fracture having been obliterated. The whole appearance of this journal pointed to violent overheating, but it had evidently run on for a considerable distance after the end hand broken off. The broken end has not yet been found, so that it is impossible to say how far the wagon had run in this state.

The carrying capacity of the wagon is 367 maunds; it was at the time loaded with 364½ maunds of grain in bags.

As will be seen from the evidence, the station master at Haur saw that one of the axles was overheated, but was unable to draw the attention of the guard or driver to this fact, and could not get a message through to the next station in time, to be of any service, though he seems to have tried to do so.

The marks of derailment commenced about a hundred yards to the south of the point where the heap of wheels was found, and were on the right side of both rails, showing that the broken journal was on the left side of the wagon.

The line, which is double from Khargpur to Shalimar, is straight and level at the site of the accident.

The accident resulted in damages to rolling stock to the aggregate value of Rs. 13,733.

EVIDENCE.

F. R. Sandford, driver.—I was driver of 129 down goods ex Khargpur to Shalimar on the 14th. At mile 44-18, where the accident occurred, I felt a slight jerk as if the guard had applied his brake. I looked back and saw sparks of metal flying, and I immediately applied the vacuum brake and stopped. I then went to the rear of the train to see what had happened, and saw one covered wagon riding on the rails on its frame coupled on by the side chains. I went further to see what had happened to the rear portion of the train and saw eleven wagons derailed and blocking both up and down lines. After seeing that the necessary signals

were exhibited to protect both lines, I proceeded to the station and informed the station master of what had occurred.

Q.—Where was your engine when you brought your train to a stand?

A.—About a telegraph post beyond the home signal.

Q.—Were all signals lowered for your train to run through Panchkura?

A.—Yes.

Q.—Did you exchange signals with the guard of your train when you left Haur?

A.—Yes.

Q.—On which side of the train?
 A.—On the right hand side.
 Q.—Did you notice anything wrong with your train?
 A.—No.
 Q.—What was the next train that came on the up line after the accident?
 A.—I think it was 118 up.
 Q.—Was it stopped at the station Panchkura?
 A.—No.
 Q.—How was it stopped?
 A.—The guard and I exhibited danger signals and placed detonators and so stopped it.
 Q.—Where did it stop?
 A.—About 200 yards from the place where the lines were blocked.
 Q.—When coming round the curve approaching the Cossye bridge did you look back at your train?
 A.—Yes I looked back twice between Haur and the site of the accident.
 Q.—On which side of your train?
 A.—On both sides, left and right.

G. Dench, fireman.—I was fireman of 129 down goods on the 14th. When we passed through Haur we exchanged signals with the guard. This was done by driver Sandford on the right hand side of the train. Between the two bridges between Haur and Panchkura after putting on a fire I looked out on the left hand side of the train, but saw nothing except the light of the brakevan. When we passed the second bridge we saw the signals lowered, I told driver Sandford that the line was clear through. After I passed this remark I felt a slight jerk and I looked back on the left hand side and saw sparks. I called to driver Sandford to come and look. He applied his vacuum and stopped the train. Driver Sandford then took a lamp and went back to see what had happened. He came back and told me that the train was parted.

Q.—When passing through Haur did you look for signals on your side of the train?
 A.—Yes.
 Q.—Did you notice any thing wrong with the train?
 A.—No.

E. L. Rawlins, guard.—I was guard of 129 down goods *ex* Khargpur to Shalimar on the 14th. I left Khargpur at 21-20 hours with a load of 57 vehicles. When approaching Haur I was making out my wagon abstract, and, knowing that I was near the station, I put the papers down and got hold of my lamp. I was then just passing the station platform. I looked out on the left hand side of the train to exchange signals but finding no lights I went to the other side and exchanged signals with the driver. After this I put my lamp down and went on with my abstracts. I felt nothing until my train was brought to a dead halt at the site of the accident. I immediately looked out on both sides but nothing appeared to be wrong. However, I suspected something and got down from my brake with my lamp and went in the direction of the engine. I had gone about the distance of ten vehicles when I saw a number of wagons heaped up blocking the up and down lines. I returned to my brakevan and took out some fog signals from my box and proceeded past the derailed wagons to find my driver, calling out to him the while. After I had gone some distance he answered me, and we met about half-way between the derailed wagons and where his engine had stopped. I asked him to accompany me to the site of the derailment. Whilst counting up the number of vehicles derailed in order to send information regarding the accident, I heard the beats of an approaching train. Knowing it could not be 79 down I decided it was an up train, and ran in the direction of it with my lamp exhibiting red. After I had gone some distance I thought of the detonators in my pocket and put one down. I then ran further with my lamp above my head, but the driver of the approaching train did not appear to notice it. I shouted, but the train passed me; as it did so I noticed the fireman look out. The train came to a stand after it had passed me some distance.

Q.—When passing Haur you looked out on both sides of your train. Did you notice any thing wrong?
 A.—No.

Q.—Did you smell a hot box?
 A.—No.
 Q.—Is your sense of smell defective?
 A.—No.

Q.—When you discovered that the derailed wagons blocked both lines why did you not at once take steps to protect the up line first and then the down line?
 A.—I lost no time.

Additional statement:—

After reporting the accident at the station I returned to the site of the accident, and, instructing a gaugman in the use of the detonators, sent him to protect the rear portion of my train as I knew a relief train would be approaching.

Q.—Is it not the duty of a guard to personally place detonators and take such steps as are necessary to protect his train, both front and rear?
 A.—Yes.

Q.—When you looked out on the left hand side of the train passing the platform and station building at Haur, did you notice anybody on the platform?
 A.—No.

Q.—At what speed was your train travelling when passing Haur?
 A.—Between 18 and 20 miles an hour.

Benwari Lall Chatterjee, relieving assistant station master.—I was on duty from 18 hours on the 14th instant. When I received the out report of 129 down goods from Ballichuk I gave orders to the jemadar to lower all three signals for the train to run through as the section ahead was clear. About 5 or 6 minutes after giving this order I came on to the platform to see if they had been lowered; seeing that they were I returned to the office. When I knew the train was approaching I went out on the platform to see the train in complete, as, is my duty to do. The train had by then come up to the end of the platform. As it passed I noticed that an axle box of one of the wagons was red hot. A pointsman was standing near me with a lamp in his hand and I told him to show a danger signal to the guard and driver. He did so. Instantly the brakevan passed, and I called out to the guard that one wagon was hot, but I do not know whether my voice reached him. I did not notice him on the left hand side of the train. For about a minute I remained on the platform to see whether the train would stop; but it did not. I then came to the office and saw that the time by my office clock was 22-10 hours, and I signalled the out report of 129 down goods to Panchkura, coded 22-9 and told him to receive an XXR message. He replied "wait." I then told him "please stop the train," and, saying this, I signalled "XXR," my intention being to draw his notice in order that he might receive my message at once. It was then 22-12 by my office clock. He then signalled "All right," and, after about a minute or so, he began to receive my message by acknowledging each word, and he gave me the all right signal signifying that he had received my message correctly at 22-16.

The difference of time between my office clock and his was five minutes, *i.e.*, his time was 22-21 when he gave me the all right signal.

Q.—Up to how far away could you notice the hot box?
 A.—I could see it up to the down starter from where I was standing. (A distance of three telegraph posts.)

Q.—On which side of the train was the hot box?
 A.—On the left hand side.

Q.—When you noticed the hot box on the train and that the train did not stop in answer to your "danger signals," why did you not signal the code DRR to attract Panchkura's attention that something was wrong?
 A.—Because "DRR" is usually used in line clear messages and I did not think that an accident would take place between Haur and Panchkura, my supposition being that only the wagon with the hot box would be damaged.

Q.—What is the name of the pointsman who was standing near you and who exhibited the "danger" signals with his lamp?

A.—I think his name is Shreepathy.

T. N. Ghosh, assistant station master.—I came on duty at 18 hours on the 14th instant and left the station to have my meal at about 21-30, leaving B. B. Banerji, assistant station master, in charge. I returned at 22-50 and resumed charge of the station from B. B. Banerji.

Q.—Did you admit 118 up goods.

A.—I came on to the station when 118 up had passed the home signal and noticed that all signals were lowered for it.

Q.—Did you admit 80 up?

A.—No.

Q.—Who did?

A.—B. B. Banerji. I went to see what had happened when I noticed 118 up and 129 down standing.

Q.—Had you taken over charge then?

A.—I told B. B. Banerji to wait at the station until my return after enquiring what had happened.

Bhupati Banerjee, assistant station master.—I relieved assistant master T. N. Ghosh before the accident. I received the out report of 129 down goods from Haur and lowered all three signals. On receipt of the XXR message from Haur I placed the distant and starting signals at "danger" and only kept the home signal lowered. The train stopped for some time between the distant and home signals, and I thought that the driver and guard were examining the hot axle.

I then lowered all signals for 118 up goods. This train passed my station.

Q.—Where was 129 down goods when you put your distant and starting signals to "danger"?

A.—When the train was not in sight.

Q.—Did you see 118 up goods stop?

A.—Yes.

Q.—How long after it passed your station?

A.—Nearly seven or eight minutes.

Q.—Did you give the out report for 118 up goods.

A.—I think I did.

Q.—Where did 118 up goods stop?

A.—At the down distant signal.

Q.—Did you admit 80 up goods?

A.—I did not.

Q.—Did you give in report of 118 up goods to Machada?

A.—Yes.

Q.—Did you give this after 118 up goods had passed your station, or after it came to a stop?

A.—After it passed.

Q.—Did you receive out report of 80 up goods from Machada?

A.—Yes.

Q.—Did you lower signals for 80 up?

A.—No.

Q.—Why?

A.—Because the up line was blocked.

Q.—When did you admit 80 up goods?

A.—I did not admit 80 up as I went to sleep.

Shreepathy Dinabandoo, pointsman.—I was standing in one of the openings in the jaffery of the verandah of the station building and the relieving Baboo was standing in another when the train passed us. About the middle of the train I noticed a vehicle on fire and I drew the attention of the Baboo to it. He ordered me to show a red light to stop the train. I showed a red light but the train did not stop. All signals were lowered for the train.

Q.—Was the fire visible for any distance?

A.—Yes.

Q.—How far?

A.—I could see it till past the starting signal.

Q.—Did you see the guard?

A.—I did not see him.

Q.—Did the Baboo shout out to the guard?

A.—Yes, he shouted "guard", "guard."

E. Gibsert, driver.—I was driver of 118 up goods on the 14th instant. All signals were lowered for me at Panchkura. When passing I noticed a down train standing in the station and immediately after noticed a red light alongside the down train, but did not take it as being for me. I thought it was for shunting on the down train. When I got up to it I heard somebody shout "Ho! Ho!" I instantly shut off and applied my brake. I had my train in absolute control and was steaming at about 20 to 25 miles an hour. I also stood to the reversing gear in case I found it necessary to reverse.

Q.—Did you run over a fog signal?

A.—Yes.

Q.—Where was it placed?

A.—About the rear of the front portion of the disabled train.

A. S. Robb, driver.—I was driver of 80 up on the night of the 14th instant. On approaching Panchkura station I found the home signal lowered, but the other signals at danger. As I came on the home signal was thrown up against me, and then I stopped between the distant and home signals.

As I was detained for a long time I walked into the station to find out what was wrong, and discovered that there had been an accident.

O. W. Stark, assistant carriage examiner.—

Q.—Were you on duty when 129 down goods left Kharapur on the 14th instant?

A.—Yes.

Q.—When you examined 129 down goods did you take any notes of defects?

A.—No, and none were brought to my notice.

Q.—What staff had you to examine this train?

A.—Two wheel tappers, one wheel gauger, two oilers, and one oiler taking signature for the vacuum brakes. Witness here stated that one of the regular oilers did not turn up to duty, so he was replaced by a carriage cleaner who, in witness' opinion, was thoroughly incompetent.

Q.—What particular work was this man put to do?

A.—Examine the axle boxes, journal and brass, and to bring to my notice any defect.

Q.—Whilst this was being done where were you?

A.—I had gone to examine two timber trucks, which, on the previous day, had blue labels fixed on by me and were allowed to run. It was noted on the labels that the trucks were to be worked back to the shops after being unloaded.

Q.—What train were these attached to?

A.—To 129 down goods.

Q.—Which side of the train did the substitute examine?

A.—I don't know.

Q.—Do you consider that the examination of certain axle boxes on the train by this incompetent man was sufficient and satisfactory?

A.—These men are not taken on by us, i.e., assistant carriage examiners, nor are they put to do their particular duties by us. But the men are given us by the carriage examiner.

Q.—Have you ever reported to the carriage examiner that these men that are given you are incompetent?

A.—Yes.

Q.—Did you make any report in this particular case?

A.—No. But I have an entry in my diary.

Q.—Did you report the last case to Mr. Ennis, late carriage examiner or Mr. Espino, the present incumbent?

A.—I have reported two previous cases of neglect of duty on the part of the oilers to Mr. Espino.

Q.—Have you ever reported a case of incompetency on the part of the oilers?

A.—No; this was the first case that has come before me whilst Mr. Espino has been carriage examiner.

Q.—Who is responsible for the examination of a train before it goes out?

A.—The assistant carriage examiner. Witness here wished to add that he is given a fitter who is in charge of the oilers, and, that it was impossible for

an assistant carriage examiner to examine every axle box ; therefore the fitter had to be relied on to a great extent.

Q.—If the axle box arrived in Khargpur heated and had cooled down without anybody noticing it had been hot, would not the outside appearance of the box lead you to suspect something ?

A.—Had the box been heated to any great extent, this is noticeable from the outside ; but on this particular occasion nothing was seen.

Balbadur, assistant carriage examiner.—

Q.—Were you on duty when 111 down arrived at Khargpur ?

A.—Yes.

Q.—Did you notice any defects on the train ?

A.—No.

Q.—Did you examine it ?

A.—Yes.

Q.—Did you examine all the axle boxes ?

A.—Yes.

Q.—How do you examine an axle box ?

A.—In the case of a double box the cover is not taken off ; it is passed by feeling it with the hand. In the case of a single box the face plate is moved aside and the box examined.

Q.—What is the size of the journal in a double box ?

A.—Nine by four inches.

Q.—Did you examine all the axle boxes personally, opening them and looking into them yourself ?

A.—Yes.

Q.—Why don't you remove the covers of the double boxes ?

A.—Because these are the orders issued by Mr. Charleston, late carriage examiner.

Q.—Why do you remove the covers from the single boxes ?

A.—Because it is easy to do so and according to the carriage examiner's orders.

N.B.—The witness in describing the two types of axle boxes as "double" and "single" meant as follows :—

Double box—cover plate fixed by two studs in the same horizontal line.

Single box—cover plate fixed by studs in two opposite corners with slotted holes.

H. L. Sircar, station master, Panchkura.—

Q.—When did you come on duty on the date of the accident ?

A.—About 22-56.

Q.—What did you notice ?

A.—I saw a train standing on the down line and asked assistant station master Bhupati Banerjee what had happened. He replied that 129 down goods had come to a stand and that 118 up had just passed, and that assistant station master T. N. Ghosh had gone to see why 129 down goods had stopped. I also proceeded to find out. On arriving at the engine of 129 down goods I asked for the driver, and was told by the fireman that he had gone to the rear of the train. I went along and met the driver and guard of 129 down, and they told me of the accident and asked me to return to the station to issue an accident message. I asked them to wait till I had seen particulars, but they told me that they could give me these, and as, at that time, assistant station master T. N. Ghosh returned from the site of the accident, I sent him back to ascertain mileage, telegraph post number, and the number of vehicles derailed, and returned to the station with the driver and guard of 129 down goods to issue the accident wires.

Q.—Did you see 118 up goods ?

A.—Yes.

Q.—Where ?

A.—Close to the down distant signal.

Q.—Did you notice any other up train ?

A.—When I returned to the station I noticed 80 up standing outside the up distant signal.

Q.—Were any signals lowered for it ?

A.—No.

Q.—Did you admit 80 up into your station ?

A.—Yes.

Q.—How did you admit it ?

A.—I piloted 118 up back into the station and placed it on the down line at about 0-35 hour. I then sent my jemadar to pilot 80 up and placed it on the centre line at about 1-15 hours.

Q.—Why did you pilot 80 up ?

A.—Because it was standing outside the signals for a long time so I sent my jemadar to pilot it in.

Q.—When you came to the station did you know that 80 up had left Machhada ?

A.—No.

FINDING.

We, the undersigned, are of opinion that—

The cause of accident was due to the journal of an axle becoming red-hot and twisting off.

That no one is directly in fault. Indirectly driver Sandford and guard Rawlins, whom we consider could only have exchanged signals at Haur in a most perfunctory manner, or they would have noticed either the hot axle box or the assistant station master's signals, are at fault. We also consider the same two men to be blame for not taking earlier steps to protect the up line after the accident.

H. G. DUNCAN, *District Traffic Superintendent.*

C. W. BLUETT, *Acting District Locomotive Superintendent.*

D. LESLIE, *District Engineer.*

Remarks by the Government Inspector of Railways.

There can be no doubt as to the cause of the accident, and so far I agree with the finding. I cannot concur in the verdict that no one is to blame. I agree as to this with the opinions of the Agent and the Chief Mechanical Engineer (see Annexure No. 1) that the carriage examining staff at Khargpur are responsible ; the wagon axle must have been in bad order when the wagon arrived from Bilaspur, (which it did at 14-15 on the same day) as it could hardly have got into such a state while running the 27 miles between that station and the point of the accident. There seems to be a difficulty in removing the covers of what are termed "double" axle-boxes which should be obviated.

As to the responsibility of the guard and driver I am not so certain. The driver states in his evidence that he signalled to the guard at Haur from the right side of his engine. This is borne out, firstly, by the guard's statement that he first looked out on the left side, and, not seeing the signal, went to the right, whence he exchanged signals in the usual way ; and,

secondly, by the fact that the line curves to the right coming out of Haur, so that the driver would naturally go to that side so as to have a clear view of the brake. If this be taken as proved, it is evident that neither guard nor driver would be in a position to see any demonstration made by the Haur station master, who would be on the platform or left side of the train. It has been settled that the broken journal was on this side, so that the driver would have no opportunity of seeing that anything was wrong when waving his lamp, and the guard would be prevented by the curve from seeing the axle-box of a wagon 21 vehicles from his brake. He ought to have noticed the smell of burning oil, but may have attributed it to other causes. They both deserve the punishment which has been awarded to them, however, for not protecting their train with more promptitude and attention to rules.

The station master at Haur acted with commendable vigilance, and his failure to make use of the code heading DRR might, I consider, be condoned.

The oil used is, I understand, vacuum or mineral oil. This is not a solitary case of overheating: one occurred shortly after this accident, at Sahdol, on the 11th May 1907; the journal was burnt off in this case also, but the derailment took place in a station. Observations as to the efficiency of this and other oils seem needed.

J. N. D. LATOUCHE,
Government Inspector of Railways.

CALCUTTA:

The 27th June 1907.

Documents accompanying—

Annexure No. 1.—Agent's letter No. 2257, dated 11th May 1907, and enclosures.

Remarks by the Senior Government Inspector of Railways, Calcutta.

I agree with the remarks of the Government Inspector and of the Agent. The efficiency of the carriage examining staff at Khargpur should be enquired into.

J. C. LYLE,
Senior Government Inspector of Railways.

CALCUTTA:

The 1st July 1907.

**Annexure No. 1 in appendix I to the abstract return of accidents
on Indian railways for the twelve months ended the
31st December 1907.**

No. $\frac{2257}{2-316}$, dated Calcutta, the 11th May 1907.

From—Mr. J. MANSON, Agent, Bengal-Nagpur railway,

To—The Junior Consulting Engineer to the Government of India for Railways, Calcutta.

Derailment of 129 down goods between Haur and Panchkura on 14th April 1907.

I have the honour to submit herewith the joint report on the accident to 129 down goods between Haur and Panchkura on 14th April 1907. I disagree with the committee in considering that no one was directly at fault; for my opinion is—and I may state that the Chief Mechanical Engineer agrees with it—that the carriage examining staff at Khargpur is principally to blame in not having properly examined the train on the night of the accident, for it is impossible to believe that the axle journals of wagon No. 2388-C. could have shown no signs of being hot on arrival at Khargpur and have yet got so heated as to be twisted off on the run from Khargpur to Panchkura, a distance of 28 miles. I agree in considering that the driver and the guard are both to blame for the perfunctory manner in which they must have exchanged signals at Haur not to see either the assistant station master's signals or that an axle was very hot. I also consider that the driver and guard should have taken more prompt steps to protect the wrecked train.

The punishment to be inflicted on the driver and guard is still under consideration with the heads of the Locomotive and of the Traffic Departments.

I agree with the recommendation that Bhupati Banerjee should be fined Rs. 2 for inattention, but I have not approved of the proposed punishment of assistant station master B. L. Chatterjee as I consider that he showed considerable sense, and that it is doubtful whether he should have used the code signal DRR.

No. $\frac{T. 12-4991}{24}$, dated the 8th May 1907.

From—The Traffic Manager, 131, Bengal-Nagpur railway,

To—The Agent, Bengal-Nagpur railway.

Derailment of 129 down goods between Haur and Panchkura on 14th April 1907.

I forward herewith the proceedings of joint enquiry held in this case, together with a copy of the covering letter from the District Traffic Superintendent, Khargpur, and a report from the Chief Mechanical Engineer, dated the 26th April 1907.

2. I agree with the punishments recommended by the District Traffic Superintendent, except in the case of B. L. Chatterjee. This man showed considerable presence of mind, and although he failed to use the DRR. code, yet he took prompt action with a view to stopping the train.

3. The guard and driver both showed considerable slackness and failed to carry out G. R. 181 (2), and it is chiefly for this reason I propose to inflict the heavy fine in the case of the guard.

No. C.—141-1501, dated 23rd April 1907.

From—The District Traffic Superintendent, Khargpur,

To—The Traffic Manager, Calcutta.

Panchkura station master's X.—Z. C. S.—43 of 14th April 1907.

I beg to send herewith the proceedings of the joint enquiry held on the above accident.

2. I think you will agree with me that guard Rawlins did not in the first instance pay the attention he should have to his train by keeping a sharp and intelligent look-out between stations and when passing them; because had he done so, he would certainly have noticed the signals exhibited by the assistant station master of Haur; and I have good reason to believe that these signals were exhibited, from the subsequent action taken by the assistant station master, in wiring to the next station.

3. Again, after the accident occurred, he seems to have quite lost his presence of mind, as he failed to take any action to protect the up line against approaching trains, until he actually heard the beats of one steaming up. Driver Sandford, I consider, was equally if not

more to blame in this connection, as he was able to learn the extent of the damage sooner by seeing the wagon without wheels attached to the front portion of his train, which he had dragged for some distance.

4. Rawlins incriminates himself in the additional statement made by him, that he protected the rear portion of his train against approaching relief trains by handing the fog signals and lamp to a gangman. In my opinion he should have placed these fog signals himself and then instructed the gangman to show the red light.

5. Assistant station master B. L. Chatterjee did not realise the danger of allowing a wagon with a hot-axle to continue running and did not appear to be conversant with the true meaning of paragraph 25, Chapter I of Appendix B to W. T. Book.

The evidence of the engine staff and assistant station master B. Banerjee in regard to the lowering of signals for 129 down differs, but I am inclined to think that the assistant station master did give the order for the signals to be placed for a stop out of course, but that they were placed thus, simultaneous with the accident.

According to your instructions, evidence in regard to the admitting of 118 up and 80 up was taken. In the case of 80 up that of driver Robb and the station master, Panchkura, in regard to the lowering of signals differs. Driver Robb found the distant signal at danger and the home signal lowered, so proceeded to come into the station, but was stopped by the home signal being put to "danger" again. Assuming that all signals were lowered for 118 up, is it likely that the assistant station master would place the starter and distant to "danger" and keep the home only lowered for the next train. Moreover, the trains register at Panchkura shows that the train was reported "In" 2 hours and 25 minutes after leaving Machada.

I recommend that guard Rawlins be fined Rs25 and assistant station masters B. Banerjee and B. L. Chatterjee Rs2 each, the former for inattention and the latter for not using the code DRR to draw B. Banerjee's attention.

Before closing, I should like to bring to your notice that I was treated to a gross piece of insolence by the 1st assistant sorter of 4 up Mail of the 14th, when I requested him to assist in transhipping the mail bags. He absolutely refused to assist, and took up a very threatening attitude at the door of the postal van, although the head sorter was hauling the bags out himself. He also tried to incite the other sorters not to help. This man's name is Dijo Podo Ghosal.

I should also like to bring to notice the great assistance rendered by Mr. Bowder, P. W. Inspector, Khargpur, in the transshipment work. His resource in getting labour was unlimited, and he did not spare himself in his efforts to get the work done as quickly and efficiently as possible.

No. A.—283 B., dated 26th April 1907.

From—The Chief Mechanical Engineer, Khargpur,

To—The Superintendent of Transportation, Calcutta.

Accident to 129 down on 14th April 1907 at mile 44—18.

I enclose a copy of the above accident report for your information with the intimation that a further report as to the damages done to the rolling stock in this accident, and the cost thereof will be sent later on.

2. I regret I cannot agree with the finding arrived at by the joint committee in this case.

3. I hold the carriage examining staff at Khargpur primarily to blame in not having properly examined the train, on the night of the accident, and due to their neglect of duty one of the axle journals of wagon No. 2388-C. became so overheated as to twist off the journal.

4. Of course the driver and the guard are indirectly to blame, for not exchanging signals at Haur in accordance with rule, and had they done so, they would then have seen the station master's signals, and thus have been able to avert the accident.

5. I am dealing with the staff concerned, and will let you hear later as to the action taken by me.

Appendix II to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

Report of the proceedings of a committee of enquiry which assembled at Chhindwara station on the 9th December 1907 to investigate the cause of collision between an up coal train and a shunting engine, at mile 781, Bengal-Nagpur railway, on 18th November 1907.

The committee was composed of the following officers :—

C. CARROLL, District Traffic Superintendent		PRESIDENT.
M. H. OLDFIELD, District Locomotive Superintendent	}	MEMBERS.
J. LAW, District Engineer		
H. L. CRUTWELL, Assistant Engineer		PRESENT.

DESCRIPTION.

On the morning of 18th November an up coal train left Jhilmilli at 4-26 hours. At that time the Chhindwara yard was in a congested state and there was no line-clear on which to admit the coal train. From about 3-30 hours, *i.e.*, some little time after the arrival of 66 up mixed and up to the time of the accident, shunting was going on at Chhindwara. When the assistant station master on duty at Chhindwara received the out report of up coal train at 4-28 hours, he instructed the jemadar to clear No. 3 line for the admittance of this train, but beyond giving verbal instructions he, the assistant station master, did not personally take any precautions to protect such shunting, which, in ordinary circumstances, would not or should not have been performed. The assistant station master should have satisfied that this shunting was properly protected. The up coal train made up 10 minutes in the run from Jhilmilli and approached Chhindwara distant signal at about 5-10 hours. The driver seeing the distant signal off, the home signal at danger and also seeing a green light being waved to him at or near the points looked upon the latter hand signal as a signal for him to proceed cautiously up to the facing points; he did so. At this time, however, some wagons, taken from No. 3 line were being backed on to No. 1 line and the green hand signal which the driver of up coal train mistook for himself was being given to the shunter on the shunting engine on which there were no lights. As a certain amount of noise takes place while shunting is going on, none of the station staff observed the approach of the coal train. When the driver of the coal train was not far from the shunting engine he observed a dark object in front and immediately applied his vacuum-brake, but the train could not be pulled up in time to prevent a collision. The impact was slight and the damages *nil*. 66 up mixed was the last up train admitted into Chhindwara previous to the up coal train. After arrival of the mixed train the arm of the distant signal remained down through being out of order, a fact which was not noticed by the assistant station master.

EVIDENCE.

K. S. Srinavain, assistant station master.—I was on duty on the night of the 17th and morning of 18th. Up coal train left Jhilmilli at 4-26 hours and 208 up was formed and kept ready on the platform line to leave for Kheradob. At about 5 hours all station lines were blocked and two shunts were required to admit up coal train in the yard and I instructed the jemadar to finish the two shunts soon and get the line-clear and not to give any signals to allow up coal train in the yard. In the meanwhile I was taking passengers for 208 up, watching the home signal also. At 5-13 or 5-14 one of the pointmen came and informed me that the shunting engine got little bump by engine No. 0035 of up coal train. I at once sent the same man to the station master and I also went to the place after closing the trebel tube. By the time I got there the driver of up coal, Mr. Green, and guard Melder were standing near the site of the accident and the station master also then came up. The driver informed us that the distant signal was lowered and so he entered the yard, but the distant had not been lowered by any of the station staff. After the arrival of 66 up I had noticed that the distant signal was all right. I then gave line-clear for the coal train. No warning or any whistle was given by the driver of up coal train on nearing the station. There were only five empties (open), one covered (empty) and one road-van on up coal train. The guard of this train would therefore have

plainly heard the whistle if the driver had whistled which can be ascertained by the guard. We were not prepared to allow the up coal train into our yard as both side points were fouled.

Q.—How did you see that the distant signal was all right after the admittance of 66 up?

A.—I noticed the white light on the signal which indicated the arm was at danger.

Q.—Did you see this personally?

A.—Yes.

Q.—How do you know the distant signal was not lowered by any of the staff?

A.—Because they were all engaged on shunting.

Q.—How many men were on duty?

A.—One jemadar and three pointsmen.

Q.—What were they doing?

A.—I cannot say.

Q.—Do you know from your own knowledge whether there was a man at the points or not?

A.—No.

Q.—When you went to the site of the accident did you notice the state of the lines for the distant signal?

A.—Yes, it was in its normal position, *i.e.*, at danger.

Q.—Did you see the distant signal from the points after seeing the condition of the lever?

A.—Yes, I saw the signal arm down.

Q.—What time was this?

A.—About 5-30 or 5-35.

Q.—Are you quite sure you saw the arm down?

A.—Yes, quite sure.

Q.—Have you any idea why the lever was at the danger position and the arm down?

A.—This can be done by pulling the wire and letting it go gently.

Q.—How do you know this?

A.—By experiment after the accident.

Q.—Did you see any light at the signal when you saw the arm down?

A.—No.

Q.—Why didn't you see a light at the signal?

A.—I can't explain but I couldn't see any light.

Q.—Are you quite sure you didn't hear the engine whistle for signals?

A.—Yes. I was busy in the office issuing tickets. There were about fifteen passengers.

Q.—When you went to the site of the accident did you notice whether there were any lights on the shunting engine?

A.—There were no lights on the shunting engine.

Q.—Are you quite sure?

A.—Yes.

Q.—What made you notice this?

A.—If there had been any lights the driver of up coal would have seen the light.

Q.—Were there any lights on the engine of up coal train?

A.—Yes, there were dim lights.

Q.—How many?

A.—Two, one red and one green.

Q.—In what position?

A.—Red light on the right hand side of the engine and the green on the left.

Q.—Why did you disregard the rule prohibiting shunting in the face of an approaching train?

A.—There were only two shunts to be performed to clear a line.

Q.—Why was not this done before the up coal train was due?

A.—I made a mistake.

Q.—Could your shunting have been done before?

A.—No.

Q.—Why?

A.—My yard was completely blocked with about 70 vehicles. 66 up arrived at 2-52. It was about 3-30 or 3-40 before I finished the work connected with the reception of 66 up. I then prepared the summaries of 206 up, and gave line-clear for the up coal train at 3-55. From 3-40 shunting operations commenced.

Q.—What shunting operations?

A.—Forming of 206 up and 65 down.

Q.—When was this work finished?

A.—It was about 4-50 hours.

Q.—Did you receive the out report of up coal train, and at what time?

A.—Yes, at 4-28 hours, time quoted 4-26 (departure from Jhilmilli).

Q.—What is the run for the up coal train from Jhilmilli to Chhindwara?

A.—51 minutes.

Q.—What time was the collision?

A.—Between 5-10 and 5-15.

Q.—Was your home signal burning?

A.—Yes.

Q.—Was the signal at danger?

A.—Yes.

Q.—Was the lamp burning brightly?

A.—Yes.

Q.—Has your yard been in a state of block before?

A.—Yes, often trains have several times had to be kept outside signals, before they could be admitted.

Q.—Knowing that up coal train had left Jhilmilli at 4-26, and your yard was blocked, did you take any special precautions?

A.—I instructed my jemadar to see that no signals were given even if the train whistled, and I told the jemadar that the train would be admitted after it had been stopped at the distant signal and shunting was over.

Q.—Were you in the yard during the night when shunting was being performed?

A.—Yes, twice, but not after the departure of the train (up coal).

Q.—Did you speak to the jemadar after the departure of up coal?

A.—Yes.

Q.—When you were in the yard, when shunting was going on, did you notice the shunting engine had any lights?

A.—No lights at all.

Q.—What lights should a shunting engine carry?

A.—Danger lights at both ends.

Q.—Do you know what your duty is when you see an engine shunting without lights?

A.—I should draw the shunter's attention to this.

Q.—Did you draw the shunter's attention to it?

A.—Yes.

Q.—What did the shunter say?

A.—He said that the passenger driver who arrived by 66 up took the dubbers with him and that he was not supplied with sufficient stock of oil and that he hadn't any spare dubbers.

Q.—You allowed the engine to move about without lamps?

A.—Yes.

Q.—Why?

A.—Because I would not have been able to clear the yard.

Q.—Does the shunting engine move about without a light every night?

A.—Yes.

Q.—Have you ever known the distant signal to be out of order?

A.—No.

Q.—Did you experiment with the distant signal after the accident?

A.—Yes.

Q.—What did you do?

A.—We all pulled the wire and let it go slowly and the signal arm remained down (off), and again when we let the wire go quickly or rather sharply, the arm went up all right.

Q.—Did you make any report that the signal was out of order after the accident?

A.—No. I made no report.

Gulgaon jemadar.—In the morning of the 18th the yard was blocked. The assistant station master told me that up coal train had left Jhilmilli. I told him the line was blocked and he told me to clear the line. I intended clearing the third line. There were 6 open trucks on the third line. The engine was at the Jhilmilli end of the yard. The engine was attached and the 6 trucks were drawn beyond the facing points. We were then shunting back on to No. 1 line, where some vehicles were standing. One pointman was sent abroad to give signals for backing on the vehicles already on No. 1 line. We were shunting back towards the station

and when our wagons had passed No. 1 points, I was near the water column. I heard signalling. At this time two wagons and the engine were on the Jhilmilli side of the facing points when the up coal train collided with the shunting engine. When the collision took place I showed red. The home signal was at danger and also the distant and no line was clear for the train. I then went towards the up coal train to find who the driver was, and I asked him what had happened as no signals were given for the train to come in. The driver did not say anything then. There were two pointsmen near at the time and I sent one to the station to report the accident. The third pointsman came running up also immediately after the collision. I also went to the station and told the assistant. The station master was in the goods office and he was also called. We all went up to the site of collision again. Mr. Green was there and also the guard of up coal. They spoke in English and I do not know what went on. The driver of up coal then asked me if I had thrashed the pointsman for lowering the distant signal. I replied, there was no pointsman at the points and how could any signal be given, and why should I hit him. When this conversation took place the driver of up coal was on the ground on the other side of the points (Jhilmilli end).

Q.—Did the assistant station master tell you the train had left Jhilmilli?

A.—Yes, but I don't know what time the train left, but I was shunting at the time. I had two shunts to perform to clear the line.

Q.—When did you commence shunting after arrival of 66 up?

A.—About half an hour, and we shunted for about an hour, and after this or at this time the assistant told me the up coal train had left.

Q.—Did you receive any instructions from the assistant when he told you the up coal train had left?

A.—No.

Q.—How many men were on duty when shunting was going on?

A.—Three.

Q.—What were they doing?

A.—One man was at the facing points and the second man was at No. 4 points. The third man was at No. 6 points. I was giving signals on the ground. I looked to see if the train was coming, but as I saw no train and heard no whistle I went on with the shunting. I was giving a green signal to the shunter and it is quite possible the driver of the up coal train could have seen it. When we were backing on to No. 1 line the pointsman at No. 2 points was sent back towards the station to show a light for the wagons on No. 1 line. I did not see the other two pointsmen as the vehicles were between us. When the collision took place two pointsmen were on the other side. I could not see what lights they had.

Q.—Were there any lights on the engine of up coal train?

A.—Yes. When I went to the engine immediately after the accident I saw a red and green light.

Q.—Were there any lights on the shunting engine?

A.—No.

Q.—Do you ever have lights on the shunting when performing shunting at night?

A.—No, but since the accident engine lights have been used.

Q.—After the accident could you see the state of the distant signal?

A.—I could not see the arm but saw a white light.

Q.—Who gave the signal (distant) for 66 up?

A.—Pointsman Bhunji lowered the distant signal after I had given the home signal.

Q.—After arrival of 66 up did you see the distant signal?

A.—Yes, I saw the white light.

Q.—As you were giving signals to the shunting engine why didn't you see the up coal train approaching?

A.—If there had been no vehicles in front of me I could have seen the engine, but I could not see far ahead. I was then on the station side of the water column.

Tikam Dass, pointsman.—On the morning of the 18th I was on duty. We were shunting some vehicles from No. 3 line to No. 1 line. I was on No. 2 points at first and then I walked along with the wagons towards the station, to show the position of vehicles on No. 1 line.

At this time the collision took place. I was then four wagon lengths from the points. I had a white light in my hand to show the position of vehicles we were coming on to. I did not hear the train (up coal) coming in. I did not hear any whistle. The other pointsmen were on the other side.

Q.—Could you see the distant signal when the collision took place?

A.—Yes, I saw the white light but could not see the arm of the signal.

Q.—Did you tell the jemadar something about the driver of the train pulling the signal wire?

A.—Yes, I said I saw the driver shaking it (the wire), but I can't say why he was actually doing it.

Q.—Where were you at the time?

A.—At the points.

Q.—Any one else with you at the time?

A.—Yes, Bhunji.

Q.—Where was the driver?

A.—Going towards the brake.

Q.—What happened after the driver came back?

A.—He accused me of having been beaten by the jemadar but I said no I hadn't been beaten.

Q.—Did you see the driver pulling the wire?

A.—I didn't see the driver pulling the wire, but I saw the driver bending down.

Q.—Was the driver alone when he accused you of being beaten?

A.—Yes, the guard came up afterwards.

Bhunji, pointsman.—On the morning of the 18th I was on No. 4 points when they were shunting from No. 3 line to line No. 1. When the vehicles were being backed on to No. 1, a collision took place. I was then on No. 4 points. When I heard the noise I went ahead. When I was on No. 4 points I was showing a green light towards the shunting engine which was then beyond the outer facing point. I remained on the points as the engine had to come back over them to go into shed.

Q.—As you were on No. 4 points why did you not see the coal train approaching?

A.—I did not hear any whistle or noise and did not see anything coming along.

Q.—Did you lower the distant signal for 66 up?

A.—Yes.

Q.—How did you give it?

A.—By pulling the lever and seeing the white light disappear, and when I threw back the lever, after admitting 66 up, I again saw the white light.

Q.—After lowering the distant signal how did you put it to danger again?

A.—By throwing over the lever. I let it go with a jerk.

Recalled.—After the collision I went near points No. 2 where I found Tikam Dass. Then the driver got off the engine and went towards the brake. When he got about two wagons length away I saw the driver bending down over the wire. The driver then came and accused the pointsman Tikam Dass of being beaten by the jemadar and lowering the signal. The driver was accompanied by the guard.

Mool Shunker, station master.—On the 18th morning I was in the goods shed when pointsman Nokhe came and informed me that a collision had

taken place between the shunting engine and up coal train. I left the goods shed office, and on my going to the spot I found home signal was at danger and the lever of the distant signal in its normal position. When I got to the site of the collision there was about 3 or 4 feet between the engines. The driver of up coal train informed me that he had been bumped by the shunting engine. I did not discuss that point then, but as Mr. Green was going to the distant signal I followed him and we saw the arm was lowered when we got there.

On our return about half-way back or more this side of the bridge, Mr. Green, who had a lamp in his hand, brought to my notice and said, "Look here, station master, the wire is being released" meaning the signal is being put to danger. I kept quiet then and came back to the points and we tried the signal which was then in good order. We brought the train into the station and reported the accident. Next day, when the Traffic Inspector came for enquiry, as it was early morning, I asked him to come over to the place and we both went there. I then pulled the wire of the distant signal, lowered the arm and then again very slowly I released the wire and the signal arm did not move at all, but remained in the off position. Then again I let the wire go quickly and the arm went up. This experiment I made twice in his presence.

The assistant station master told me he never ordered the distant signal to be lowered, and the driver informed me that the jemadar abused and assaulted pointsman Tikam Dass for lowering the signal, but on enquiry I found that when the accident took place, this pointsman was not on the points, but that he was sent by the jemadar to show a light on the vehicles standing on No. 1 line on which he was bringing other vehicles with the shunting engine.

Q.—When you got to the site of the accident did you see any head lights on the up coal engine?

A.—I saw the two side lights.

Q.—Were there any lights on the shunting engine?

A.—No, none at all.

Q.—Was it a very dark night?

A.—It was one day before the full moon which was sinking. We could not see the distant signal arm.

Q.—Did you see the light on the distant signal?

A.—No, not from the points as the arm was down; this was immediately after the collision. After returning from the signal with Mr. Green, we saw the white light of the signal. This was after we pulled the wire.

Q.—Are you quite sure you noticed the position of the signal lever when you got to the site of the accident?

A.—Yes, it was in its normal position.

Q.—Did you go straight from the goods shed to the site of the accident?

A.—Yes.

Q.—Was the train between you and the signal lever?

A.—Yes, but one could see the lever by looking through between two wagons.

Q.—When were you actually near the lever?

A.—On my return from the distant signal.

Q.—How far were you from the lever when you first saw it in its normal position before going to the distant signal?

A.—About 10 or 12 feet.

Q.—When you got to the site of the accident how far could you see ahead clearly?

A.—50 or 60 feet. The collision took place 100 feet from the facing points.

Q.—Have you any idea why this signal wire was released?

A.—I am of opinion that the party who lowered the signal released the wire.

Q.—Who, in your opinion, lowered the distant?

A.—I think the driver of the incoming train did so.

Q.—How do you arrive at this opinion?

A.—In the first place I was informed that no whistle was given; secondly, the driver informed me in presence of all that the jemadar abused and assaulted pointsman Tikam Dass; thirdly, the releasing of the wire on our return from the distant signal made me suspicious that the driver was up to some mischief. I was also informed that the driver had walked up towards the brake-van, and I was informed by the pointsman (Tikam Dass) that he saw the driver bending down, but why he could not say.

Q.—When you got to the site of the accident, whom did you see?

A.—I saw the driver, Mr. Green, the guard, and my jemadar. I got to the site of the accident about 15 minutes after the collision.

Q.—When you saw the wire being released did you see any one releasing it?

A.—No, I did not think about this at the time.

Q.—Where were you at the time when the wire was released?

A.—On this side of the 12-foot bridge.

Q.—From your position could you see as far as the lever?

A.—No, the moon had then gone down; it was darker coming back than before.

Q.—When you got back to the lever who were all there?

A.—No one, except a pointsman sitting there.

Q.—What pointsman?

A.—Tikam Dass.

Q.—Did you question him?

A.—I asked him why he lowered the signal. He replied that he had not done so.

Q.—Did you ask him any other questions?

A.—Not at that time, except if he had been assaulted by the jemadar or not. He said he had not.

Q.—Did Tikam Dass say when he saw the driver bending down?

A.—Not at that time, but after carrying out the experiments with the Traffic Inspector, and after he, the Traffic Inspector, had left the jemadar came forward with the statement that Tikam Dass had seen the driver bending down.

Q.—What was the condition of your yard on the morning of the accident?

A.—All lines were blocked, there were nearly 70 wagons in the yard.

Q.—Has your yard often been blocked?

A.—Very often.

Q.—What do you do there?

A.—Trains are detained outside signals and admitted, when a line is clear, for the reception of the train.

Q.—When you noticed the shunting engines working without lights, did you know it was against rules?

A.—Yes.

Q.—Did you report the matter to any one?

A.—No, but the shunter was told about it and he always said the dubbers which come on an engine are locked up by the driver.

Q.—Did you consider the signal to be out of order when the signal lever was put in its normal position and the arm removed down?

A.—The lever should fly into its normal position and not be placed there gently. I did not consider the signal was out of order.

Q.—Was this special case reported to the Permanent-way Inspector?

A.—Yes.

Q.—Is your signal in good working order at present?

A.—Yes.

Q.—What was the position of the shunting engine?

A.—The tender was towards Jhilmilli.

Q.—When did you tell the Permanent-way Inspector about this case after the accident—I mean about the signal?

A.—On the date the Chief Engineer was here.

Khairat Ali, shunter.—After receiving line-clear at Jhilmilli I started my train, and when I got to the cutting at the top of the bank near Chhindwara and I whistled from there I could see the home signal only. When I came a little further, I saw the distant signal which was lowered. I passed the signal and at the facing points I saw a green light, and when I saw this I came along slowly. When I was five or six wagon lengths away from the facing points, I saw something in front which looked like a wagon, and I at once applied vacuum, but a collision took place, and then the jemadar showed a red lamp. After this I went for Mr. Green, and had gone about two wagon lengths when I met Mr. Green and the guard coming along. Mr. Green asked me what had happened, and I informed him. We went to the engine again and examined it, the station master then came up, and held a conversation with Mr. Green and the guard. The station master said the signal had not been lowered, but Mr. Green and the guard said it had. They then went along to the distant signal to see. When they came back I was brought into the station; I then went off duty.

Q.—Were your engine lights burning?

A.—Yes, all three lights.

Q.—How do you know?

A.—At the cutting near Chhindwara I sent the fireman out to see if the lights were all right; and the fireman said that the lamps were burning.

Q.—Were there any lights on the shunting engine?

A.—No.

Q.—When you were shunter here how many lamps did you carry on the shunting engine?

A.—Two. One in front and one in the rear. I got them from the different drivers.

Q.—Where did you shut off steam coming into or near Chhindwara?

A.—In the second cutting about a mile or so from the distant signal.

Q.—When you first saw the distant signal how far were you from it?

A.—100 feet away from it.

Q.—When you first saw the signal how was it?

A.—Showing green.

Q.—How was the home signal?

A.—Showing red.

Q.—When you see a distant signal at "off" and the home signal at danger what do you understand?

A.—That I can proceed cautiously as far as the facing points as the yard is blocked.

Q.—What time did the accident take place?

A.—At 5 hours.

Q.—Was it dark at the time?

A.—Yes.

Q.—How far could you see?

A.—About half a wagon length ahead.

Q.—Was there any moon?

A.—No.

Q.—Was driver Green on your engine at Neinpur?

A.—Yes, he came as far as Seoni.

Q.—Do you know why he left you at Seoni?

A.—No.

Q.—How many green lights did you see coming into Chhindwara?

A.—One green light of the distant signal and one green light at the facing points, the green light at

the facing points was being moved from side to side. This light was on the right hand side of my engine.

Q.—Did you see any other hand signal lights?

A.—No.

Q.—When you got down from the engine after the accident did you go to the distant signal lever?

A.—No.

Q.—Did you look towards it?

A.—No.

Q.—When you stopped where was the man with the green hand signal light?

A.—At the facing points.

Q.—Was he sitting down?

A.—I don't know.

Q.—Do you know his name?

A.—No.

Q.—You stated before that this green light was turned into red as soon as the accident took place. Was this the light at the facing points mentioned above?

A.—Yes.

Q.—When you examined the lever later how did you find it?

A.—In its normal position.

Q.—Did you look towards the distant signal then?

A.—Yes.

Q.—Did you see any light?

A.—No.

Q.—Did you converse with the jemadar after the accident?

A.—No, not till all the others had come up.

Q.—Did you say anything to the jemadar or the jemadar to you?

A.—I said the distant signal was down and the jemadar said no it wasn't.

Q.—Did you say anything to the jemadar about beating some pointsman?

A.—No.

Q.—Was the impact heavy or light?

A.—Very light.

Q.—Do you know how the shunting engine was moving at the time of the accident?

A.—No.

Q.—How many minutes did you make up between Jhilmilli and Chhindwara?

A.—About 10 minutes.

Q.—Did you touch the distant signal wire after arrival?

A.—No, why should I?

Q.—When you first saw the distant signal how fast were you going?

A.—5 miles an hour.

Q.—How fast did you go from the distant to the points?

A.—About the same speed.

Q.—When you first saw the signal how far were you from the distant signal?

A.—About 200 feet from the distant signal.

Q.—How often did you whistle?

A.—Once only.

Axis Khan, cleaner.—I was cleaner on the up coal train on the morning of 18th. At the second cutting from Chhindwara the driver shut off steam. I saw the distant signal lowered from the top of the tender where the driver had sent me to pack up. I also saw one green light at the facing points.

I saw this light from the top of the tender. I fell down when the collision took place. I was on the top of the tender.

Q.—Was it dark at the time?

A.—Yes.

Q.—Could you see anything ahead?

A.—No.

W. Green, driver.—I travelled within up coal leaving Neipur on the night of the 17th. I travelled with the driver from Neipur to Seoni. I was in the brake-van from Seoni. On arriving at Chhindwara I found the driver stopped after passing the distant signal. The guard and I got out of the brake-van and walked up towards the engine. We met the driver about 3 or 4 wagon lengths away from the engine, he was walking up in our direction. He told us that he had collided with the shunting engine. The three of us then walked towards the direction of the station. I found the shunting engine standing a few yards in front of the train engine. The driver informed me that the distant signal had been lowered for him and that he was being signalled into the station with hand signal lamps. I then walked on in advance seeing the station master coming up and at the same time noticed that the lever of the distant signal was in its normal position. The station master and I then walked up to the distant signal. I found the arm properly lowered at an angle of 45 degrees, also showing a proper green light. The station master and I then returned towards the station and got the pointsman to work the signals, we lowered the signal and then we (the guard, station master and self) walked up to the signal again. We then shouted out to the man at the points to release the lever again, but the arm did not rise. We shouted out to the pointsman to jerk the lever and the arm went up to its proper position. We then came back and the train was brought into the station yard.

Q.—How far was the brake-van from the distant signal when you got out?

A.—Some distance away.

Q.—Did you look towards the distant signal?

A.—Yes.

Q.—Did you see any lights there?

A.—No, there was no light there.

Q.—When walking back from the distant signal, with the station master, did you make any remark to him about the wire?

A.—Yes, I mentioned that the wire was moving, but the movement was only slight and sideways, caused through somebody hitting up against the wire. The wire did not move sufficiently to affect the signal.

Q.—When you got out of the brake-van and were walking towards the engine, did you see hand signal lights?

A.—I saw one or two lights and the driver had a light. I cannot remember colour of the lights.

Q.—Did you see any light on the shunting engine?

A.—No.

Q.—Did you see any lights on the coal train engine?

A.—When I first walked up the lights were out, but the jamadar told me he had seen them, and the driver said that the bump had put them out.

Q.—Have you seen any shunting after dark in Chhindwara?

A.—I have seen shunting up to 20 hours only, i.e., to the departure time of down coal train. This shunting has been done by a train engine and they had lamps.

Q.—Did you hear any conversation between the driver and the station staff?

A.—I did not hear any conversation between the driver and the station staff, but the driver told me after our return from the signal that the jamadar had got on to one of the pointsmen for lowering the signal.

Q.—Did you take any action on this?

A.—Yes. I questioned the jamadar after the train had been brought into the yard but he denied it.

Q.—Did you hear your train engine whistling coming into Chhindwara?

A.—No. I was asleep coming into Chhindwara.

Q.—Why were you travelling in this brake-van?

A.—I was sick that night and came out to Chhindwara to bring down a damaged engine.

Q.—Have you any idea as to the cause of the distant signal being down?

A.—I am of opinion that the arm of the distant signal was not working freely.

Q.—Do you think any of the station staff lowered the signal?

A.—No. I don't think any of the station staff lowered the signal.

Q.—When you got out of the brake-van with the guard, how far could you see?

A.—About a wagon length ahead.

T. W. Melder, guard.—I was guard of up coal train on the 17th. I left Jhilmilli 25 minutes late—at 4-26. When we approached Chhindwara the train was going slowly, and when I looked out. I saw the distant signal lowered and the home at danger. The driver went on slowly and stopped all of a sudden. I felt a small bump at the time. I woke Mr. Green and we both went out and walked towards the engine meeting the driver on the way, and he informed me of the collision. I noticed the shunting engine had no lamps, and a few feet separated the two engines. The shunting engine and two open trucks were on the Jhilmilli side of the points. In the meanwhile the station master came. We went up to the distant signal and showed the lowered state of the signal to the station master.

Q.—When you got out of the brake-van what did you see?

A.—I saw a green light waving towards my train and the home signal at danger.

Q.—Did you look towards the distant signal?

A.—Yes.

Q.—What did you see?

A.—I saw the arm lowered.

Q.—How far were you off the distant signal?

A.—Some wagon lengths.

Q.—Are you sure you saw the arm of your signal lowered from your brake-van or as you got out of it?

A.—Yes, quite sure.

Q.—Could you see ahead of you at the time of the collision?

A.—Not very far, one could see about 70 feet ahead. It wasn't very dark at the time.

Q.—Did the driver whistle for signals?

A.—Yes.

Q.—How do you know?

A.—I heard him whistle.

Q.—How many times did he whistle?

A.—I don't remember.

Q.—Could you state whether the whistle was from your own engine?

A.—No.

Q.—Did the sound seem far off?

A.—Yes.

Q.—When did you first look out of your brake-van nearing Chhindwara?

A.—About the distant signal. I saw the distant signal down. The home signal at danger. A green hand signal at the points.

Q.—How fast were you going between the distant signal and the facing points?

A.—About 3 or 6 miles an hour.

Q.—How do you account for a collision taking place when the train was going so slowly, and you could see 70 feet ahead?

A.—I cannot say, that is the driver's look-out.

Q.—In your opinion therefore the train could have been pulled up in time ?

A.—Yes.

Q.—Was it down at the time ?

A.—Yes.

Q.—What time did the accident take place ?

A.—At 5-15.

Q.—How do you know ?

A.—I looked at my watch at the time.

Q.—Was there any moon at the time ?

A.—Yes, it was just going down.

Q.—Where did the driver whistle ?

A.—Far away from the distant signal.

Q.—How far do you think ?

A.—Near the level crossing.

Q.—Did you notice the position of the distant signal lever at all ?

A.—No. I didn't see or notice it.

Q.—You stated before that when you got out of your brake-van you saw a green light waving at the points ?

A.—I did not mean this. I saw no green light. I saw some white lamps moving about.

Q.—*Recalled.*—How long was it after the collision that you got out of your brake ?

A.—At once, after telling Mr. Green.

Q.—When you got out of the brake what did you do ?

A.—I first looked at the distant signals and then Mr. Green and I went towards the engine and we met the driver about half way.

Q.—Are you quite sure you didn't lose any time in getting out of the brake-van after the collision ?

A.—Yes, quite sure.

Q.—When you got to the engine whom did you see ?

A.—I did not take any particular notice.

Q.—Did you hear any conversation about a pointsman being beaten by the jemadar for lowering signals ?

A.—No.

Q.—Have you heard any conversation regarding the signal wire being pulled ?

A.—No.

Dasria, shunter.—On the morning of the 18th I was in charge of the shunting engine. I took six empties from No. 3 line to No. 1 line. I was

getting signals from the jemadar towards whom I was looking. Four wagons had gone over the points when I received a bump. I fell down. So did my fireman, and the driver of up coal train told me I had bumped into him.

When I was coming out of No. 3 line I was looking in the direction the engine was travelling and didn't see anything. And when backing on to No. 1 line I was watching the signals from the jemadar.

Q.—Where was the jemadar ?

A.—About three wagon lengths ahead of my engine.

Q.—How far from the wagons was the jemadar ?

A.—About six feet from the side of the wagons.

Q.—At the time of the accident could you see ?

A.—I could see plainly for about 70 feet ahead.

Q.—Were there any lights on your engine ?

A.—No.

Q.—Why ?

A.—There are no lamps provided.

Q.—Where were the engine lights ?

A.—The driver of my engine took away the duffers.

Q.—Why ?

A.—To save his oil.

Q.—Have you been in the habit of shunting without lights ?

A.—Yes, before the accident but not since.

Q.—How long have you worked at Chhindwara as shunter ?

A.—Two months.

Q.—Do you know the rules regarding lights for shunting engine ?

A.—Yes.

Q.—Why did you break rules then ?

A.—Because drivers wouldn't give me a lamp.

Q.—Did you report the matter to the loco. foreman ?

A.—No.

Q.—Why ?

A.—Because it has always been the custom to work without lights. The old shunters did so.

Q.—Did you hear the engine of up coal whistle at all ?

A.—No.

Q.—Did you not hear it approaching ?

A.—No.

JOINT FINDING.

We, the undersigned, are of opinion that the cause of accident was due to—

- (1) The distant signal being down through being out of order.
- (2) Shunting engine having no lights.

That the persons in fault are—

- (1) The assistant station master, Chhindwara.
- (2) The shunter on the shunting engine.

C. CARROLL, *President.*

M. H. OLDFIELD, *Member.*

J. LAW, *Member.*

Remarks by the Senior Government Inspector of Railways, Calcutta.

I think that the committee have stated correctly the main causes of this accident, *viz.* :—

- (1) The distant signal being down.
- (2) The shunting engine having no lights.

I should like to add that, in my opinion, General Rule No. 110 contributed to the accident as it, or its predecessor, has contributed to many such accidents. The time limit as a fruitful cause of accidents has been inveighed against by myself and other Government Inspectors very many times. I hoped that the recent recasting of the rules would result in its abolition, but it is still there. Bengal-Nagpur railway subsidiary rule No. 110(a) works up to it as follows:—

110(a). Shunting must not be performed over the outer facing points in the face of an approaching train, except under exceptional circumstances.

If such shunting is performed it must be completed or stopped 10 minutes before the approaching train would be due to arrive if running at mail speed.

Before commencing such shunting station masters and guards must consider whether such shunting cannot be performed in such a way as to avoid doing it in the face of an approaching train.

Any one acquainted with the working of the Indian station master must know that whereas this subsidiary rule purports to provide for exceptional circumstances, it is *in its effect* a rule for ordinary use; that is to say as often as ordinary occasion arises to shunt in the face of an approaching train, the provisions of the subsidiary rule would be availed of. Chhindwara station of course requires to be expanded, and in its present state it is a matter of ordinary occurrence to shunt in the face of an approaching train. Consequently we have a continuance of the same old bad possibilities: the shunting train may shunt as far as the distant signal and the approaching train may come up to the distant signal, and the degree of safety measured by distance is the thickness of the signal post. The idea, however, of the existing rule is that the shunting train is protected by a time limit. This precaution has been shown to be unreliable times without number. In the present case it works out in the following way:—the out report was 4-26; the booked time of the fastest train (they are all the same as a matter of fact) is 51 minutes. The station master could count on shunting up to 5-17 less 10 minutes=5-7. He wanted to begin shunting at 5 hours. The driver says that the collision took place at 5 hours; the assistant station master says that it took place between 5-10 and 5-15. It does not matter which we take: they are both possible; in the first case the driver upsets the 10 minutes safety-limit by coming in before he is expected, and in the second case the shunting train upsets the station master's calculations by exceeding the time limit. Another element of doubt is the correctness of the time given in the out report. The whole arrangement is dangerous and should, in my opinion, be altered as soon as possible.

I think that only those railways, or sections of railways, which can afford to forego shunting after giving line-clear to an approaching train should be allowed to do without defined shunting limits outside the facing points. If shunting at all times is necessary then a shunting board or fixed signal should be used at the shunting limit; the space between the distant signal and this shunting board then provides a space limit or sub-section of the block section.

J. E. DALLAS,

*Senior Government Inspector of Railways,
Calcutta, Circle No. 1.*

The 25th February 1908.

**Appendix III to the abstract return of accidents on Indian railways
for the twelve months ended the 31st December 1907.**

Report of the proceedings of a committee of enquiry (at which no Government Inspector was present), which assembled at Dabein station on the 2nd April 1907, to ascertain the cause of a rear collision between a goods train and part of another goods train at mile 24.5 between Tongyi and Dabein stations on the Burma railways on the 28th March 1907.

The committee was composed of the following officers:—

G. T. SCOTT, District Traffic Superintendent	. . . . .	President.
E. BLEECH, District Engineer	. . . . .	} Members.
G. B. CROSBY, Officiating Assistant Locomotive Superintendent	

DESCRIPTION.

At about 0-15 hours on the 28th March 1907 No. 152 down goods train parted between Tongyi and Dabein stations, and the ten rear vehicles of this train were left standing on the line near mile 24.5. This parting was not discovered at Dabein, and the train was permitted to leave that station in its incomplete state at about 0-30 hours. On arrival at Ledaunggan at about 0-56 hours the parting was discovered, and engine returned in search of the missing portion as far as Dabein, which was reached about 2-30. Meanwhile No. 162 down goods train followed and ran into the ten vehicles at about 1-37 hours. Out of the 10 vehicles a brakevan and a small covered goods wagon were badly smashed, another goods vehicle was derailed, and a pony and two syces in the smashed covered goods wagon were slightly bruised; the engine of No. 162 down goods was only slightly damaged. The line was blocked until 9 hours.

At the scene of the accident the line is straight and level.

EVIDENCE.

Mahomed Esoof, driver of No. 152 down.—I was the driver of No. 152 down which left Pyuntaza at 14-35 hours on the 27th March 1907. On coming into Payathonzu station I noticed that only one side lamp of the brakevan was burning; it was the one on my fireman's side, i.e., on the east side of the line. I spoke to the guard about the side lamp being out, and he said that he would light it. On leaving Payathonzu both side lamps were burning. When approaching Tawa and after we had just left the curve, I noticed that both the side lamps had gone out. On arrival at Tawa I spoke to the guard and he said that he could not help the side lamps going out as there was no oil, and that I was to work on, he giving me the signals with his hand lamp. The train from Tawa came along without the side lamps being lit. At Tongyi, while my engine was taking water, the guard came up with the line-clear. He handed me the line-clear ticket and gave me the starting signal. As my train began to move the guard got on my engine, and on remonstrating with him he said that he would travel on the engine up to the next station, and asked me to give him some water to drink, which I did. At Dabein my train was admitted and brought to a stand on the platform line. The guard got off my engine and went in the direction of the station office. To the best of my recollection he returned within four minutes to my engine and handed me the line-clear ticket. He then gave me the starting signal. I put my train in motion, and after it had got outside the outermost points I ordered my fireman to look back for the all right signal. My fireman on receiving my order told me that the guard was again on the engine riding on the foot-board of the tender. On my remonstrating again with the guard he replied "My couplings are all secure, do not be frightened, go

quickly." On arrival at Ledaunggan, while I was attending to my engine the jemadar came up and told me that my train had arrived without a brakevan. The guard had jumped off my engine while it was going past the platform, and he came up to my engine shortly after the jemadar had come up. On receipt of this news my engine was taken on to the second line, and left from there on an "order to proceed," the guard and the jemadar accompanying it. On approaching Dabein south distant signal and finding it at danger I brought my engine to a stand and refused to proceed further. The jemadar and the guard then went off in the direction of the station, and after a short while the jemadar returned, stating there were no signs of the missing brakevan, etc. On his arrival I returned to Ledaunggan. It was about 2-30 hours when I arrived near the Dabein south distant signal, and about 3-10 hours, when I got back to Ledaunggan, I heard that a collision had occurred.

Cross-examined.—I left Pyuntaza with 30 loads. No shunting was performed after leaving Pegu; approximately speaking my load was 40 on leaving Pegu. The guard travelled from Dabein to Ledaunggan on the foot-board of the tender; he never came on the foot plate.

The guard at Tawa asked me for oil and I said that I could not spare him any. When leaving Dabein I noticed the points indicator lamp was burning brightly; there was a man standing alongside the points, but he had no hand signal lamp. I do not know who the man was who stood alongside the points. I am unable to say whether the north points were manned when I was entering Dabein station. The points indicator lamp was burning brightly and the signals were in my favour. I did not stop my engine when my train cleared the outermost points

at Tongyi. I did so for about four minutes when my train cleared the Dabein points and I remonstrated with the guard.

Ghesyath Khan, guard of 152 down goods.—I was guard of 152 down, leaving Pyuntaza on 27th March. I took charge of the train at Pegu, due to Monghi Ram, who was the guard in charge, reporting sick.

I left Pegu with the brakevan lamps which had come in with 152 down. On arrival at Tongyi, I obtained some food and a drink of water from the driver of my train previous to this. I had gone to the station and got the line-clear ticket. I got on the engine, and it was then I got food and water from the driver. I did not jump off and go to my brakevan, as I had not finished. On arrival at Dabein, when the train was passing the platform, I jumped off and went to get line-clear ticket, which was handed to me by the assistant station master. I countersigned it and sent it up to the driver. I do not know who actually took it. As the driver was taking time in watering I went and sat down on the platform bench. Whilst sitting there I became faint and lost consciousness. I do not know when the train left. I gave no starting signal. I regained consciousness about 40 minutes after I had lost it; this was at the time the news had been received that a collision had taken place.

Cross-examined.—I never travelled on the engine from Dabein to Ledaunggan.

The two side lamps were burning brightly when the train left Tongyi, and had burnt so from the time of leaving Pegu. The driver at no time spoke to me about one or both not being alight. Before sending up the line-clear ticket to the driver at Dabein I did not look to see if the brakevan had come in, although I had ridden on the engine. Between Tongyi and Dabein I looked back twice, and found that the tail side lamps were alight. On receipt of the news of the collision at Dabein I was on the platform, and the assistant station master knows that I was being confused. I did not take particular care to call the attention of anybody to the fact that I was on the platform, or draw attention to the fact that I had been left behind. I cannot say if anybody was manning the points when my train came into Dabein. The line-clear ticket was given by me on the platform to a man whom I do not know and whom I would fail to identify now. I had worked 74 down, leaving Pyuntaza at 8 hours and arriving at Rangoon at 14-52. I left Rangoon with 71 up at 18-35 and arrived at Pegu at 20-30 about, and shortly after 21 hours took charge of 152 down.

I was unconscious until aroused by the noise on the platform on the receipt of the news of the collision.

I am well aware of rule No. 137, Subsidiary Rule 2, stating that on the arrival of a train at a station I must see that the rear brakevan is clear of all points and crossings. I am to blame for not observing this rule at Dabein, especially as I had ridden on the engine. I did not examine the couplings at any time; the train only stopped three to four minutes at the intermediate stations, i.e., Payathonzu, Tawa, Kyauktan and Tongyi. At Pegu I did not examine the couplings as the train was waiting.

Golab, 1st fireman.—I was 1st fireman with driver Mahomed Esoof when working 152 down on the 27th March 1907. When the train arrived at Payathonzu my driver asked me to see if my side of the train brakevan lamp was lighted, as his side brakevan lamp had gone out at Payathonzu. The guard came up to the engine, and my driver spoke to him about his brakevan lamps not burning, but he replied, that he could not help it, as there was no oil in the lamps. The brakevan lamps went out after leaving Payathonzu and were not lighted again.

On arrival at Tongyi, after taking water, the guard came up with the line-clear and gave the starting signal. My driver started the train, and, after the train got past the south points, my driver asked me if I had got the all-right signal; I replied, not yet. I then took the hand lamp to take the all-right signal when I found the guard on the tender foot-board. I told this to my driver who came over to my side and told the guard that it was not right to ride on the engine, and that he should go back to the brakevan. The guard replied, "Go on I am in

charge of the train, it has nothing to do with you as to where I ride; the train is all right." The guard came along all the way to Dabein on the tender foot board. When the train arrived at Dabein, it was allowed on the platform line. The guard jumped off the engine, went to the station and brought the line-clear to the engine for Ledaunggan. He gave the starting signal and my driver started the train, and when we got out of the south points, again the guard was on the tender foot board. I told my driver, who again spoke to the guard and shut off steam for the guard to get off. He refused to get off and told my driver, "Do not be frightened, everything is all right; go on." The guard remained on the tender foot-board till the train arrived at Ledaunggan. My driver stopped the engine at the water column to take water at Ledaunggan when the traffic jemadar came up to the engine and told us that the brakevan was not on the train, then the guard came up a little while after and said the same. The engine was detached from the train and brought on to the second line, from where it left as a light engine towards Dabein to look for the parted portion of the train. We came up near the distant signal of Dabein, when the Ledaunggan traffic jemadar and the guard of our train got off the engine and walked into Dabein. After about 15 to 20 minutes the traffic jemadar returned to the engine and told my driver that the parted portion of the train could not be found; so we left for Ledaunggan without the guard, who remained at Dabein.

Questioned.—My driver only gave the guard a drink of water at Tongyi on being asked for it.

Arsudally, 2nd fireman.—I was 2nd fireman, with driver Mahomed Esoof, working 152 down from Pyuntaza on the 27th March 1907. I was all the time breaking coal on the tender. I heard nothing being said between my driver and the guard. I only noticed the guard on the engine from Tongyi to Ledaunggan seated on the tool box on the tender foot plate on the fireman's side.

Questioned.—I did not see the guard eat or drink water. When the light engine came from Ledaunggan to look for the brakevan the traffic jemadar and guard were on the engine. I do not know if the guard and jemadar returned on the light engine to Ledaunggan. I was on the tender breaking coal.

Maung Hpo Hla, assistant station master, Dabein.—On 27th March 1907 at 23-35 hours Tongyi asked me for line-clear for No. 152 down, and I gave the same at 23-37 hours. At 0-0 hours Tongyi gave departure of No. 152 down goods as 23-58 hours.

The train arrived at Dabein at 0-28 hours and was admitted on the platform line.

The guard came into the office and asked me whether the line-clear ticket for him was ready, and I replied in the affirmative. I handed the guard the line-clear ticket, and, after countersigning the same, he took it away himself, remarking to the porter that it was all right. Shortly after the guard left the office the train started off. At 0-30 hours I gave Tongyi the arrival report of No. 152 down, and at 0-38 hours he asked for line-clear for No. 162 down. At 0-40 hours I gave line-clear, and at 1-14 hours I received the departure report as 1-12 hours. At about 2 hours the jemadar of Ledaunggan came into my office and told me that No. 152 down goods had arrived at Ledaunggan without the brakevan, and asked where the brakevan was. I told him that it must be with the train as the guard had left here with the train, and, there being no other place for him to travel in, the brakevan had left this station. On receiving this reply he left my office before I could put him any more questions, and I then sent for the station master. The station master came down and I informed him of what the Ledaunggan jemadar had told me.

The station master and I then went outside the office, and I do not remember seeing anybody about. At 1-15 hours when I went out to see the lights I found nobody except my porter. When 152 down was expected I went outside, and, after satisfying myself that everything was correct, on receipt of a signal from the jemadar, gave orders to the porter to lower the signals.

I did not inspect the train to see whether it arrived intact, because I considered it had arrived thus on seeing the guard come into my office. L:d-

Ledaunggan never gave me in report for No. 152 down and every time I asked him he told me "Wait, train not arrived." He never advised me of 152 down arriving without a brakevan, and I only knew about this when this jamadar came into my office. 152 down left here at 0-32 hours and should have arrived at Ledaunggan by 1-5 hours. As I was busy with line-clear working I failed to go outside and see whether the points, etc., were correctly set for the departure of No. 152 down. The station master and I after a little while came into the office, and shortly afterwards the permanent-way inspector and the guard of No. 162 down arrived. It was then 2-15 hours, after the permanent-way inspector and the guard of No. 162 had down walked into the office. I noticed the guard of No. 152 down also walk in. The permanent-way inspector questioned guard Ghesayath Khan and the latter said "It was due to my fault, my senses left me" and on the permanent-way inspector again remarking that he must have ridden on the engine if he did not know whether his train had parted, to which he replied that it was his fault and that he was to blame for it. At 0-45 hours Ledaunggan asked conditional line-clear for 157 up which left Tewainggyi at 0-30 hours and I gave line-clear for it.

Guard of No. 162 down never mentioned anything about having sent a memo. from site of accident.

On his arrival in the office he sat down and prepared one.

The station master on coming down asked me who it was he had seen running off in the direction of the north end of the yard and I said that I did not know.

Poonnoosawmy, porter at Dabein.—I was the porter on night duty on the date in question. I lowered the signals for the reception of 152 down goods. On arrival of the train I replaced the signal to danger and came into the station office to receive as usual the line-clear ticket and take it to the driver. After I went into the office the guard came in, and after countersigning the line-clear went off with it. I stayed in the office and did not see the train go out; shortly after the assistant station master informed me that a goods train had left Tongyi and ordered me to ring the bell.

For the admission of 152 down the jamadar manned the north points. After 152 down had left the station the jamadar came to the office, but he went back to the north points on being informed of the departure of 162 down goods. After lowering the signals of 162 down I remained at the home signal waiting its arrival. After a considerable time the guard of the train came in and told me to replace the signal at danger and that a collision had taken place. During the time I was waiting I did not see anybody on the platform. The next time I saw the guard of 162 down was at 4 o'clock.

Ganpat Rao, permanent-way inspector, Dabein.—On the morning of 28th March 1907, at about 2 hours, I was in my quarters in the front verandah. On seeing a man going fast with a hand signal lamp and thinking it was the jamadar I shouted out to the man and asked what had happened. The person, who happened to be guard Sher Singh, replied that his train (No. 62) had collided with some wagons at mile 24-3. I asked him to wait, and then accompanied him to the station. We arrived at about 2-15 hours. Just outside the station door I noticed guard Ghesayath Khan standing, and within the telegraph enclosure were the station master, the assistant station master and the signaller.

I asked guard Ghesayath Khan what had happened to his train, and he told me that he had ridden on the engine between Tongyi and Dabein and that at Dabein the driver of his train had started off as soon as he had received the line-clear ticket and left him (the guard) behind. He also stated that he had lost his head and did not therefore inform the assistant station master of the driver having gone off and left him behind, though he found that there was no brakevan.

Samsher, 1st fireman, No. 162 down.—Corroborates the statement of the driver in all material

respects, except that the fireman stated that he walked into the station and made over the memo. to the station master on duty.

Akbar, 2nd fireman of No. 162 down.—Corroborates the statement of the driver in all respects.

Ramat Ali, driver.—I was driver of 162 down on 27th March 1907. I left Tongyi at 1-12 hours on receipt of line-clear and starting signal from the guard. After leaving the south points I got the all-right signal. I was then running about eighteen miles an hour. On leaving the curve on the line at 24-10 (P) I saw the signals were off at the station Dabein. I did not see any wagons on the line till I was within three telegraph posts. I at once shut off steam and applied the steam brake and reversed; the fireman also jumped off and put on the brakes of four goods vehicles. I was probably travelling at 12-15 miles an hour when I struck the wagons.

There were no lamps burning on the wagons. On examining the lamps of the brakevan after the accident I found no wicks in the wick-holders; the burners were off the lamps, but the brakevan had been upset down the brake. When I first saw the wagons I whistled for the guard's brakes. After the accident I put out danger lights with the guard, after which the guard left to report the accident.

The accident occurred at 1-37 A.M.

The guard left at about 2 hours.

The guard of my train sent off a memo, with my second fireman reporting the accident. The second fireman could not have gone more than six telegraph posts when he returned, and told me that he had made over the memo. to the guard of 152 down whom he met coming up towards my train. I also applied the tender brakes.

Bajoo, jamadar, Dabein.—I was jamadar on duty on the night of 27th March. I manned the points for the admission of No. 152 down. After exchanging signals with the assistant station master the home and the outer signals were lowered, and I sat down on the handle of the lever. As my head was aching I rested my forehead on my hand and remained in this position till after the passage of the train. As soon as the train passed I went into my hut, and then after a short interval went to the station. The train had left by this time. The pointsman did not man any points because there was no crossing.

Sher Singh, guard of No. 162 down.—I was the guard in charge of No. 162 down. I left Tongyi at 1-12 hours, and, while my brake-van was passing mile 24-5 I suddenly received a shock and at the same time heard the engine whistle for brakes. I applied my brakes, and, after the train came to a stand, I went in the direction of the engine to find out what had happened. About 8 wagons ahead of my brake-van I noticed a couple of men and a pony alongside the line, and a couple of wagons thrown off the line. After ascertaining what had happened I wrote out a memo and sent it to the station by the second fireman. After protecting my train I went off to the station. On the way, while passing the permanent-way inspector's house I heard a voice shout out to me, and, on asking who it belonged to was informed that it was the permanent-way inspector. The permanent-way inspector asked what had happened, and I told him. I went on to the station and the permanent-way inspector came on after me. On arriving at the station I asked the assistant station master whether he had received my memo. and he replied in the negative. When leaving my train after having protected it, I noticed the second fireman was near the engine, and, on asking him what he had done with my memo, he told me that on his way to the station he met the guard of No. 152 down who took the note from him, promising to make it over to the station master.

While I was speaking to the station master the guard of No. 152 came into the station office. I did not see him before this, and he said "My luck has been bad, I lost your memo." I then gave the station master another memo. When I walked into the

office it was 2-15 hours. When I returned with the permanent-way inspector to the scene of the accident and inspected the wreckage I found two side lamps; their burners had been crushed and there was no trace of a wick in either of them.

Maung Hla Oung, station master, Dabein.—At two hours on 28th March the assistant station master on duty sent for me, and, on my coming down, he told me that the Ledaunggan jemadar had been to him enquiring about some wagons of No. 152 being missed on arrival of the train at Ledaunggan. I then sent the porter to the permanent-way inspector with a memo. as to what was reported and also informed him of No. 162 down having left Tongyi. Shortly after this the permanent-way inspector and the guard of No. 162 down came into the office. When I was coming down from my quarters I saw the guard of No. 152 down going off in the direction of the north points. At the time I saw the guard I did not know who he was, but recognised him when he came into my office immediately after the permanent-way inspector and the guard of No. 162 down did.

I do not remember hearing any conversation take place between the two guards in regard to the memo. alleged to have been sent by the second fireman.

Sookraj Singh, jemadar, Ledaunggan.—On the morning of the 28th of March 1907, while 152 down was passing over the north points I noticed that a

part of the train with the brakeman was missing. I at once went up to the station and informed the station master of the fact. I then returned at once to the north points to be ready in case the detached portions would be coming on. Shortly afterwards the engine was brought on to the second line and an order to proceed was given to the driver. I was told by the station master to accompany the engine; when the engine stopped at the Dabein south distant signal I got off and walked to the station. On arrival there I saw the porter sitting near the home signal and the assistant station master on duty sitting inside the office. There was nobody on the platform; after speaking to the assistant station master I returned to the engine to Ledaunggan.

When I went to the station at Ledaunggan I did not go inside the station office. When going to Dabein I rode on the tender foot-board at the north, and I did not look into the foot plate of the engine. I couldn't say where the guard was. I certainly never saw him on that date and he did not accompany me from the Dabein distant signal to the station.

N. B.—The station master of Ledaunggan stated that he did not see the guard when 152 down arrived at Ledaunggan.

G. B. CROSBY.

N. B.—The foreman, Rangoon, on being questioned stated that he found the burners without wicks. Station master, Pegu, stated to me that he is certain that one of the side lamps was burning brightly when the train left his station.

G. T. SCOTT.

FINDING.

We, the undersigned, having carefully considered all the evidence in this case do find as follows:—

(a) Guard of 152 down (Ghesyath Khan) is guilty of breach of General Rule 137, Subsidiary Rule 2, and 150.

(b) Driver of No. 152 down (Mahomed Esoof) is guilty of breach of General Rules 150 and 121.

(c) Assistant station master, Dabein (Maung Hpo Hla) is guilty of breach of General Rules 136, 149 (g) as amended by C. S. No. 71, dated the 1st August 1903, and 168.

(d) Jemadar of Dabein (Bajoo) is guilty of breach of General Rule 117.

We recommend the guard and the driver be prosecuted, and the assistant station master and the jemadar be dealt with departmentally. The parting was due to defective coupling hook and the Locomotive Department has accepted responsibility.

G. T. SCOTT,

District Traffic Superintendent.

E. BLEECH,

District Engineer.

G. B. CROSBY,

Assistant Locomotive Superintendent.

Remarks by the Agent, Burma Railways Company.

I agree with the finding.

The Locomotive Superintendent to whom I referred the matter regarding the defective coupling states that he carefully examined the hook which caused the parting and is of opinion that there was nothing much the matter with it. The hook is one of the old type without a bay mouth and Locomotive Superintendent considers the parting was due to slack coupling. The jemadar Bajoo has been reduced to pointsman.

I have asked the Superintendent, Railway Police, to personally conduct the prosecution of guard Ghesyath Khan, driver Mahomed Esoof, both of No. 152 down goods, and assistant station master Maung Hpo Hla, Dabein, and have arranged for Mr. Crosby, Assistant Locomotive Superintendent, and Mr. Scott, District Traffic Superintendent, Toungoo, to be present during the trial.

H. B. HUDDLESTON,

Acting Agent.

Remarks by the Senior Government Inspector of Railways, Burma.

The evidence in this case is conflicting, the following points are however clear :—

The guard of 152 travelled on the engine between Tongyi and Dabein in which length the parting took place.

None of the train staff or station staff at Dabein noticed the absence of the brakevan or its lights, and train was permitted to leave that station in its incomplete state. On the arrival of the train at Ledaunggan the parting was discovered and reported to the station master. He however made no report of the occurrence and sent the engine back for the missing portions without announcing its arrival.

The following assumptions are probable :—

Side lights of brakevan of 152 had not been burning for some time before the parting occurred.

Guard of 152 fell asleep on Dabein platform and his train left without him, and without any signals from him.

In any case it is obvious there was a wholesale neglect of the most ordinary and essential rules by all concerned pointing to a very lax state of affairs.

The committee find the driver and guard of train, assistant station master and jemadar of Dabein to blame. I think the station master, Ledaunggan, is also to blame for not at once reporting the accident.

The evidence shows that guard Ghesyath Khan had been on continuous duty from 8 hours on 27th to 0-15 on 28th or over 16 hours, and if the accident had not occurred he would have had to remain on for another 3 hours or so. He apparently took food at Tongyi and subsequently fell asleep on the platform at Dabein, the breaking of rules was wholesale, but if the guard had remained awake it is probable the parting would have been discovered in time to avert the collision. I can find no rule actually limiting the time an employé may be kept on duty, but it seems highly desirable in the safety of the public that except in very exceptional cases none of the staff concerned directly with the movements of trains should be allowed to remain continuously on duty for much over 12 hours, and I think a definite rule to this effect should be laid down.

F. D. COUCHMAN,

Senior Government Inspector.

**Appendix IV to the abstract return of accidents on Indian railways
for the twelve months ended the 31st December 1907.**

Report of the proceedings of a committee of enquiry (at which a Government Inspector was not present), which assembled at Saidpur station on the 9th February 1907, to investigate the cause of a collision between Nos. 3 up and 28 down goods trains at mile 86.6 near Hili station, northern section, Eastern Bengal State railway, on the 7th February 1907.

The committee was composed of the following officers:—

J. TOWNSEND, Executive Engineer	President.
C. D. TAYLOR, District Traffic Superintendent	} Members.
W. F. HARNETT, District Locomotive Superintendent.	
G. K. ROGERS, Signal Engineer	

DESCRIPTION.

On the 7th February 1907, 28 down goods, consisting of 40 loaded wagons and one brake-van with F. class engine No. 79, driver Romon and guard T. U. Robinson, arrived at Chorkai at 15-20 and after watering and attaching a saloon carriage in rear started at 15-30 under tablet No. 19.

On the same date No. 3 up, consisting of 20 wagons and one brake-van (18 wagons being loaded and two empty), with R. class engine No. 160, driver Elahi and guard Stockman, arrived at Hili, at 15-35. Some shunting was done and packages loaded and unloaded. The station master at Hili, not receiving the out report of 28 down for which he had already given a tablet at 15-1, concluded that this train had not started from Chorkai, and in order to prevent detention to 3 up which was already running late asked Chorkai to cancel the tablet for 28 down, and Chorkai permitted Hili to give a tablet to No. 3; this tablet's number was 3. The train started at 15-47.

The collision occurred at $\frac{86 \text{ M.}}{0.7 \text{ P.}}$ at 16 hours. The trains on approaching each other had a curve between them and the driver of 3 up could not get a clear view ahead until he arrived at a point about 3,700 feet from where the engines met.

The view from the engine of 28 down was also obstructed by the curve, but its driver apparently was the first to see the danger as he was the first to whistle and to apply brakes; his load was the heavier. It is believed that at the time of the accident the speed of the down train was about 5 miles, and of the up train about 12 miles, an hour. The engine crews of both trains jumped from the trains just before, and the guards at the time of, the collision.

The District Locomotive Superintendent subsequently ascertained by actual experiment that 28 down would take 2,156 feet before it could pull up dead, and 3 up 1,76½ feet.

Of train 3 up, two loaded four-wheel vehicles and one empty bogie were derailed and the engine 160 R. had its bogie wheels and its tender leading and trailing wheels derailed.

Of 28 down, 6 four-wheelers were badly derailed and two other vehicles slightly derailed.

No one was injured. Damages to locomotives and rolling-stock are estimated at Rs. 5,84½ and to permanent-way at Rs. 1.

EVIDENCE.

Elahi Sheik, driver of 3 up.—I left Sara at 8 hours. I came on the engine at 4 hours 30 minutes. I arrived at Hili at 15 hours 35 or 36 minutes. I left at 15 hours 47 minutes. I cut off 2 wagons. I received tablet "No. 3 C. R. I HL." I received it in the pouch. I received it from the jemadar Mahadeo Dobay. I had about 22 vehicles. The jemadar conducted the shunting and then went to the station and brought me the tablet in pouch. I did not see the station master. I received the starting signal. Guard gave me the "all-right signal" between facing points and outer signal. I first noticed the train about two telegraphs north of L. C. gate 61 by seeing the smoke and then hearing a whistle. The distance between the trains at that time was a little under half a mile, and I expected to be able to pull up before the trains met, but, on getting close I jumped off. On noticing the train I applied the vacuum brake and the fireman the hand

brake. I was going at booked speed before sighting the train.

Romon, driver of 28 down.—I have ten years' service on the Saidpur main line. I came on duty about 10 hours and left Saidpur at 11 hours 20 minutes. I had a full load from Parbatipur. I arrived at Chorkai 15 hours 25 minutes and left at 15 hours 35 minutes. I took water and did no other work. I received a tablet in pouch "No. 19 C. R. I HL." from the *panicāla*. I know him. My engine number was 79 F.

While I was watering and attending to my engine some 3 or 4 minutes after I had arrived the tablet was brought to me. No one came to me to take the tablet away again. As I came into the station I looked at the clock to see the time, and I saw the station master in the station office. I noticed him by his uniform cap. Before starting I whistled

and then received the guard's "all-right" signal. I first saw the approaching train when it was on the curve about half a mile from L. C. No. 62. I whistled and put on the vacuum brake, and the fireman put on the hand brake. At the time of the accident I was going very slowly. The collision occurred just as I was stopping—at 16 hours.

Guard J. Stockman.—I was guard of 3 up on the 7th instant. I left Sara at 5 hours 55 minutes with a load of 21—20 loaded and 1 empty. I arrived at Hili at 15 hours 35 minutes, cut off two wagons there and unloaded and loaded packages in the van. I went to the station master's office and asked for the tablet; he informed me that he was asking "line-clear" for me; this was after loading and unloading the packages; the road van clerk was also with me in the office. I saw the station master take out the tablet; he told me that 28 down was at Chorkai, that he was cancelling its "line-clear" and getting the "line-clear" for 3 up. He then took out the tablet from the box and gave it to me. I took the tablet and gave it to the pointsman to make it over to the driver. I saw the starter signal down, and started and gave the "all-right signal."

I was talking with my road-van clerk when I heard the whistle of the other train. I knew it was another train, as my engine did not whistle like it. I heard it when I was on the curve, about mid-way between the two level-crossing huts. I then applied my brake and took the danger flag out to show the driver. I should say the train was going about 15 miles an hour when the collision occurred. I jumped off after receiving the first shock. Then I went up to the driver to make sure that he was not hurt. It was quite light and clear when it occurred. I left Hili at 15 hours 47 minutes.

Guard Robinson.—I was guard of 28 down on the 7th; load 42 equal to 45 including Executive Engineer's carriage. I arrived at Chorkai at 15-20 and left at 15-30. I went to the station. The station master told me that they were attaching the Executive Engineer's carriage. I saw the station master. I received the tablet. I did not see him take it from the instrument. When I received the tablet I was on the platform. I think he must have received the tablet before I reached the station office. I did not hear any bells. I examined the tablet and handed it back to the station master. I saw the station master hand it to some one in uniform to give it to the driver. I heard my driver whistle first. We were going about 10 miles an hour when the accident occurred. I jumped off after the engines met, but before the shock reached me.

Signaller A. C. Chowdhury, signaller at Chorkai.—I came on duty on 7th at 10 hours, and worked until 18 hours. I did not touch the instruments that day; kindly ask the station master. I cannot work the tablet system. I can give "out-report" three beats. I know everything about the instrument, but it is not my duty to touch it. On receipt of "out-report" from Phulbari the station master asked for "line-clear" from Hili for 28 down. I am unable to say what time the train left Phulbari and he got the tablet, that is, he pulled the drawer out, that is, obtained a full drawer but left the tablet in it. I am unable to say when the tablet was actually removed from the drawer. The station master was in the office all the time from departure from Phulbari to departure from Chorkai. The station master gave the tablet to one of the menial staff to give to the driver; he gave it to Mahadeo Paniwala. The Hili instrument at Chorkai is frequently out of order. Assistant station master has shown me 2 or 3 times how to extract a tablet immediately after issuing one, that is, he can extract a tablet from this end after one has been given out at Hili; the last time this was done was about 15 days ago. On the 5th I was on night duty. I was in the office when Hili asked for "line-clear" for 3 up. On the 7th it was the probationer signaller who gave the "line-clear" for 3 up. The probationer thought the message from Hili cancelling 28 down was the "in-report" of 28 down at Hili; and he gave line-clear for 3 up.

At the time the station master was attending to the out-door work. At other times the probationer has given the "out-report." The station to station wire was out of order that day.

Station master S. C. Banerji of Hili.—I came on duty at 8 hours on the 7th instant. I was on duty when this accident occurred. Chorkai asked for tablet for 28 down at 14 hours 59 minutes on the tablet instrument. I gave "line-clear" at 15 hours. I received tablet out signal at 15 hours 1 minute. "Train entering section" signal was not given. Before this Pauch Bibi at 14-45 asked me for "line-clear" for three up goods. I acknowledged and gave the tablet at 14-46, and No. 3 left Pauch Bibi at 15 hours 10 minutes and arrived at Hili, 15 hours 32 minutes. Some packages were unloaded and loaded and, then all my work in connection with this train was finished. I then waited up to 15 hours 43 minutes for "train entering section" signal of 28 down from Chorkai. I went to the instrument and gave cancelling message to Chorkai for 28 down; this signal is 5 beats, this was acknowledged. I then asked for "line-clear" for 3 up and Chorkai acknowledged two beats, pause two beats. I got the tablet No. 3. The guard of 3 up, road-van clerk and my assistant station master were all present when I took the "line-clear" tablet for 3 up. There was an interruption on the Morse instrument since the previous day. I gave "train on section" signal at 15 hours 47 minutes. I was unable to make any enquiry as to 28 down as the Morse instrument was out of order; then, shortly after I went off duty and while at the goods shed supervising coolies, I heard a noise and, seeing villagers run I ran towards the place and found there had been a collision and that no one was hurt. I noted the number of wagons derailed and returned and gave the accident message. The usual message reporting the Morse instrument as out of order was sent on the 6th instant.

Surendra Nath Banerji, station master, Chorkai.—I was on duty from 9 hours up to 17 hours on the 7th instant. My tablet instruments were in good order. I have no entries in the train signal book in regard to 28 down of the 7th instant. I was too busily engaged in preparing invoices to make any entries in the train signal book. I worked the instruments for all signals connected with 28 down and I kept a note of the time of the signals on a piece of paper, according to which the train left Phulbari at 15 hours 1 minute, and arrived at Chorkai at 15 hours 20 minutes. By the time the Executive Engineer's saloon was attached and the train was ready to start it was 15 hours 30 minutes. I asked Hili for tablet at 15 hours 10 minutes. I received tablet at 15 hours 11 minutes and left in the drawer until it was required. I removed the tablet at about 15 hours 27 or 28 minutes. I put it in the pouch. I handed it to the guard first, but he gave it back to me. I then handed it to waterman Mahadeo. I saw the train start from here. I gave "out report" and it was acknowledged by Hili; I then went to the goods yard. When I left the office there were two signallers and one probationer signaller there. I went back a few minutes after. I cannot say exactly how long (by cross-examination, I was absent about half an hour); all the entries in reference to 3 up were not made by me, except the last, viz., "16 hours 30 minutes cancelled". When I went to the goods yard I took the paper with the entries in reference to 28 down with me, thus the man who wrote the entries in reference to 3 up did not have access to it. I was told that the entries about 3 up were made by probationer signaller Shama Podu Ghoshal, who, on being questioned, admitted this to me. He is in the habit of sometimes working the instrument, though I have forbidden him to do so. He lives in assistant station master's house whose brother-in-law he is. On the 5th afternoon my Hili instrument got out of order after "line-clear" was given and cancelled for 3 up; it was out of order until the 6th.

On the 5th instant Hili asked for line-clear for 3 up. I allowed the tablet; then I cancelled it and asked Hili "line-clear" for 28 down goods. On Hili repeating my enquiry I was only able to get half drawer instead of full drawer. I then wired to block

signal inspector that tablet apparatus was out of order and adopted the ordinary "line-clear" system. The signal mistri arrived by 16 down the same night and opened out the instrument. I don't know what he did to the instrument after this; he said that it was right and took my signature.

After taking my signature he again tried the instrument by manipulating the relay contracts and working the drawer; he then opened out the apparatus again and found two screws broken. My train wire got out of order on the evening of the 6th instant, and I was unable to detect what was wrong with it. In my opinion had the train wire been all right on the 7th the collision might have been avoided, as Hili might have referred to me as to the whereabouts of 28 down before starting 3 up. The train wire communication was restored at 0 hour 30 minutes on the 8th instant.

I made no attempt to get the train signal books from Mr. Lane, neither did I ask my assistant station master to try and get them.

Shama Gopal Ghosal, probationer signaller.—I have been at Chorkai one month and have no other railway service. On the 7th instant I came on duty at 18 hours. I did not come into the station office on the 7th instant until 18 hours. I came on duty on the 6th at 10 hours, also on the 8th at the same hour, and to-day at 12 hours.

I arrived here on the 7th January 1907. I was at work on the 7th from 10 to 12 hours and again from 19 or 20 hours. I do not know anything connected with Tyer's instruments.

Ramzin mistri.—I came here on the 7th by 16 down and noticed the drawer half out with green "Train approaching," and on the 8th by 34 down I went to Hili and noticed the drawer fully out, "Up train on line." I noticed that the boxes at both stations were properly locked, so they could not have been tampered with.

The head mistri told me that when he went to Chorkai to repair the instrument the drawer was fully out, but there was no tablet in it. I am of opinion that the tablet was kept spare outside the instrument and so the accident occurred.

Jeevan mistri.—On the 5th I received a telegram from Chorkai saying that the instrument was out of order; the drawer I noticed was fully out and there was no tablet. Thinking the contacts were not making I pushed the drawer in $\frac{1}{2}$ inch, and then on trying the instrument I found the contacts were made. I then told the station master that the instrument was all right; but when I again tried the drawer it came fully out. Not being satisfied I opened the instrument and found that three screws had been broken. I pointed this out to the station master and mentioned it to block signal inspector who was travelling in down mail. I found it necessary to return to Saidpur to bring tools to effect the necessary repairs. I returned on the 6th and repaired the instrument and handed it over to the station master about 10 hours 15 minutes. I did not report to the block signal inspector that I had not found a tablet though the drawer was fully open on my arrival. Since handing the instrument over to the station master it worked all right until the accident. I noticed the drawer was half open when I came on the 7th by 16 down. On the 8th I noticed the Hili drawer was fully out, and both instruments were right at the time of the accident.

M. N. Mookerji, assistant station master at Chorkai.—I was on duty on the 7th, 3 hours to 9 hours and again 17 hours to 23 hours.

E. Lane, traffic inspector.—I arrived at Chorkai by special goods train at 17 hours 1 minute on the 7th instant. On arrival I immediately commenced checking the train signal books. I commenced checking the books at 17 hours 3 minutes. Just as I started checking I noticed the assistant station master standing near the table. He appeared to have just come into the office. I found the train signal

books on the telegraph table. At this time I was not aware that a collision had taken place or that there was a down train on the line. On receipt of the accident message from Hili, through Jaypur Hnt and Parbatipur, about 19 hours, I took possession of the train signal books. I immediately drew the attention of the station master to the fact that there were no entries in the train signal book in reference to 28 down, but he gave me no answer and appeared dumb-founded. At this time he did not say anything about having made any record on a separate piece of paper in reference to the movements of 28 down. Sometime after the assistant station master came to me and asked to be allowed to take the train signal books to allow of entries being made by the station master for 28 down. I refused, and later the station master came to me and made the same request, but I again refused. In the course of my enquiries the station master gave me no explanation of the accident neither did he defend himself in any way.

On one occasion I was at Parbatipur when Bhowanipur took a tablet for an up train and immediately after Parbatipur took a tablet for a down train; this was done by Mr. Barnard, the signal inspector.

J. W. Barnard, block signal inspector.—I went down on the night of the 5th by 22 down to Calcutta to attend camp and passed Chorkai. At that station my fitter reported to me that the full drawer lock was out of place and the screws broken of the Chorkai-Hili instrument. I have no time to get down. If the full drawer was out then a tablet must have been out and come out with the drawer. I did not enquire from the fitter whether he had found a tablet. When 28 down left Chorkai it must be presumed that the Chorkai drawer was full out and the Hili one half out, and neither drawer could be pulled further out or pushed in without a tablet being put in at either Hili or Chorkai. At the time of the accident I hear that the Hili drawer was full out and the Chorkai half out. This change could not have occurred without a tablet going in at one of the instruments.

The case that occurred in Mr. Lane's presence at Parbatipur was as follows:—One of my men, not a fitter, was ordered to clear the contact points of the screws and also the relay at Parbatipur. He took out the screws, and while replacing them made the screw go in contact with the relay, that is, the screw was pushed in too far back. On Bhowanipur asking "line-clear," (this was a test), Parbatipur or I got full drawer instead of half. Then I gave the beats to Bhowanipur which enabled him to also get full drawer; after that I at once adjusted the relay and asked those present to do what had already been done. This they could not do owing to the relay having been adjusted. Neither could it have been done at all unless I had opened the instruments. This is the fourth occasion on which the full lock has been broken; on each of the previous occasions I attended the failure myself and obtained the tablet that came out with the drawer.

I have a record of the number of tablets in each pair of instruments. On hearing that tablet is lost I check the instrument affected. When I or my men take a tablet from one station to another for equalization purposes I take signatures from station masters at both ends for the number of tablets. In this Chorkai-Hili case it would have been impossible to check the tablets in the instruments without taking them out of both instruments.

Kalibar Ghose, signaller.—On the 5th instant I was at Nattore. I was at Chorkai on the 7th instant. I was in the office when 28 down left. The station master worked the tablet instrument for this train. I saw him draw a tablet for this train; after departure of 28 down station master went with some merchants to the station yard; after some time the Hili tablet instrument called "attention." At that time there were 3 of us in the station room, viz., signaller A. C. Chowdhuri, probationer Shama Gopal Ghosal, and myself. The probationer attended to the instrument; the drawer was half out. Hili gave "in report"; the probationer acknowledged it;

I saw all this myself. At that time I was making a daily statement of messages. I was sitting with my back to the tablet instrument, but I stopped work when the bell rang to see what was done. I always do this no matter what work I am engaged in, even when I am sending a message, as I wish to learn the tablet instrument work. I have read the rules for working the tablet instrument. The station master only is permitted to work the instrument; signallers are not allowed to work the instrument. I did not prevent this probationer from working the instrument because at other times the station master had allowed this man to work it. I don't remember the station master making any entries about 28 down. I do not know who made the entries in the train signal book for No. 3 up.

J. N. Chatterjee, relieving station master.—I went to Chorkai on the 1st instant to act for the assistant station master who was sick. The Chorkai-Hili instrument worked all right until the 5th instant. I do not remember there being any spare tablets during this period. Between 16 and 17 hours on the 5th instant the instrument got out of order. The station master could not get out the drawer at all, not even half out. He sent a wire to the block signal inspector, and we worked the trains on ordinary line-clear system. It was while the station

master was trying to get a tablet out for 28 down that the instrument got out of order. The last signal he gave was two beats, pause two beats; this is "line-clear" inquiry. Although Hili acknowledged this, the station master was still unable to get half drawer out. The mistri arrived by 16 down about midnight the same day and started operations on the instrument before I spoke to him, as I was absent on duty on the platform. When I returned found he had opened out the left hand panel and after adjusting the instrument, he said that it was all right and suggested that I should obtain tablet and run 16 down with it. I said I must first test the instrument myself, and I let the train go. The station master came on duty after departure of 16 down. I told the station master to test it. I did not do so myself. I then went off duty and returned at 3 hours on the 16th instant. The station master then said that the instrument was again out of order. I don't remember what position the drawer was in at that time. The same mistri arrived by 31 down and opened out the instrument. He renewed two or three screws, and made the instrument all right. To test it I gave Hili goods train enquiry. Hili repeated the signal and I obtained a tablet and put it back by the upper drawer, and then sent cancelling signal and then instrument showed "line closed." The signaller occasionally worked the instrument when I was there.

I left Chorkai on the 7th instant by 33 up about 14 hours.

FINDING.

The evidence of the running staff throws no light on the cause of the accident, and that of the station staff at Chorkai is most conflicting and altogether unreliable.

The only possible explanation of the cause of the accident is that either the instrument was out of order or that there was a spare tablet; in either case we believe the cause to have been at Chorkai.

In regard to the former supposition the Hili-Chorkai apparatus at Chorkai has been frequently reported out of order; all of these failures, however, have been on the side of safety, that is, the drawer could not be drawn fully out.

In support of the latter supposition it will be seen that this instrument was out of order two days previously. It was found during repairs that the lock preventing the full withdrawal of the bottom slide had been forced and the screws securing this lock to the machine had been sheared off. This would enable the drawer to be drawn fully out and a tablet to be obtained without the co-operation of the instrument at the other end, *viz.*, at Hili.

It is gathered from the evidence that the station master handed the tablet to the guard of 28 down goods and then went to the goods yard, leaving no record behind him in the train signal book of 28 down. About a quarter of an hour afterwards Hili signalled the message cancelling tablet for 28 down, and it is believed that probationer Shama Gopal Ghosal acknowledged this and, either not knowing of 28 down being on this section as there was no record of it in the train signal book, or forgetting altogether about it, he looked about for the tablet to put in the apparatus to enable him to close the drawer which was fully out, and seeing the spare tablet he used it for this purpose. Hili then asked for tablet for 3 up and the probationer found no difficulty in giving it to him, and thus allowed the collision to occur.

We are of opinion that the station master at Chorkai is to blame, as not only did he neglect to record in the train signal book the movements of 28 down goods as given on the tablet instrument from the time it left Phulbari (the last station it left before arrival at Chorkai) but also for not enforcing the rule that the instrument should only be worked by those authorised to do so. There is no doubt from the evidence that probationer Shama Gopal Ghosal was permitted at times to work the instrument.

We wish to put on record the extremely unsatisfactory way in which the following staff at Chorkai gave their evidence, *viz.*:—

Station master Surendra Nath Banerji.
Assistant station master M. N. Mukherji.
Signaller A. C. Chowdhury.
Signaller Kalibar Ghose.
Probationer Shama Gopal Ghosal.

We make the following recommendations:—

- (1) That in the train signal books it should be recorded, in columns to be provided for the purpose, the numbers of the tablets issued for each train as well as columns for tablets received.
- (2) It would facilitate the work of all departments concerned if telephones were provided; these could be worked on the tablet wire.

Remarks by the Senior Government Inspector of Railways, Calcutta.

There is no doubt in my mind that the instrument at Chorkai was deliberately tampered with by the staff on at least one occasion. No instrument will ever be invented which cannot be tampered with and put out of order by intent. In the present case it may be impossible to prove exactly who forced the instrument, but it can hardly have been done without the knowledge of the station master, who, I consider, has proved himself unworthy of holding a post of responsibility.

J. O. LYLE,
Senior Government Inspector.

CALCUTTA; }
The 14th May 1907. . }
Documents accompanying—
Annexure 1.—Sketch of site of collision

Appendix IV.

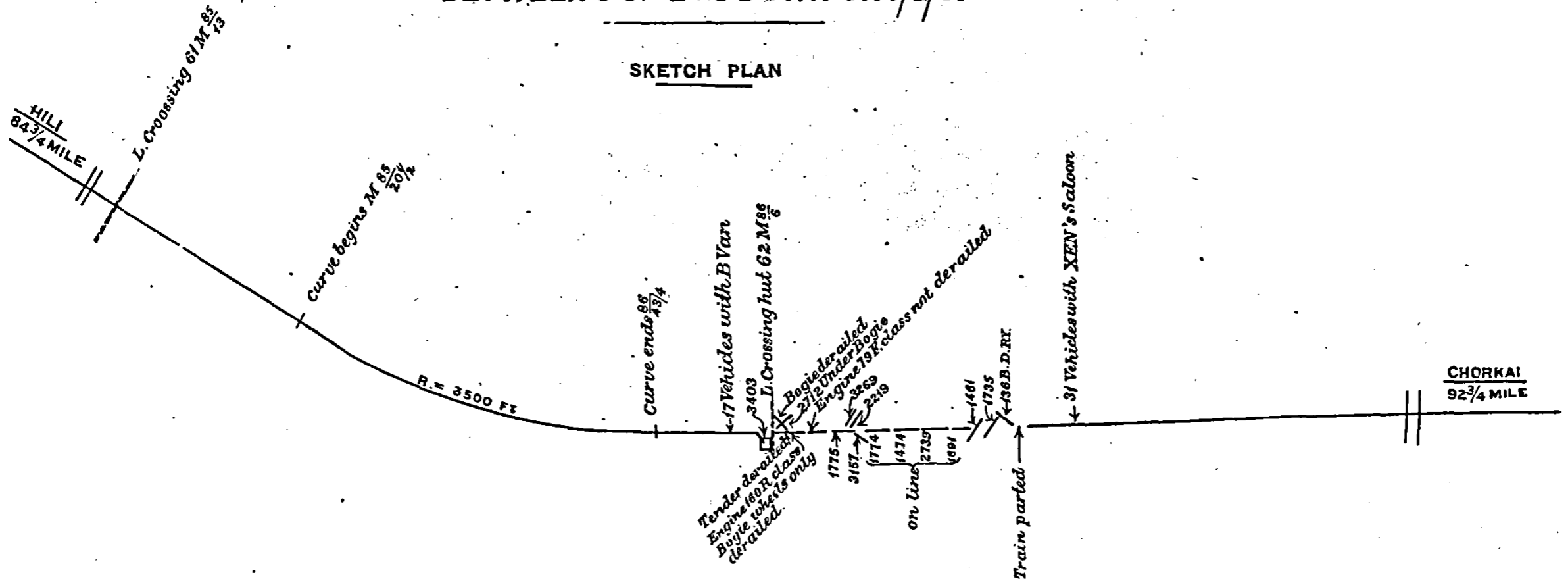
Annexure I in appendix IV to the abstract return of accidents on Indian railways
for the twelve months ended the 31st December 1907.

— E. B. S. R. —

— NORTHERN SECTION —

COLLISSION AT MILE 86/6/
BETWEEN 3 UP & 28 DOWN ON 7/2/07

SKETCH PLAN



Note - 24 Telegraph posts to the mile.
Road Level.

**Appendix V to the abstract return of accidents on Indian railways
for the twelve months ended the 31st December 1907.**

Report of the proceedings of a committee of enquiry which assembled at Atrai station, Eastern Bengal State railway, on the 9th March 1907 to investigate the cause of the derailment of No. 1 B. up mixed train between Atrai and Raninagar stations on the 28th February 1907.

The committee was composed of the following officers:—

J. TOWNSEND, <i>Executive Engineer</i>	. . . . .	<i>President.</i>
W. F. HARNETT, <i>District Locomotive Superintendent</i>	. . . . .	} <i>Members.</i>
S. E. S. WILLIAM, <i>District Traffic Superintendent</i>	
J. H. WHITE, <i>Government Inspector of Railways</i>	. . . . .	} <i>Present.</i>
DR. J. V. RYAN, LL.D., <i>Assistant Inspector General</i>	

DESCRIPTION.

At about one o'clock on the morning of the 28th February 1907, when No. 1 B. up mixed train was travelling between Atrai and Raninagar at about mile 44½ its engine and tender, 15 covered goods and one third class bogie suddenly left the road; there were on the train the following vehicles, four thirds, two intermediates, one composite 1st and 2nd class and one brake-van. The fireman Parbhoo was killed; no passengers were injured.

The permanent-way was considerably damaged for a length of 192 feet. Some of the derailed rolling-stock was also damaged.

The estimated cost of repairs to damaged rolling-stock is Rs. 2,551 and to permanent-way Rs. 150.

The line was blocked until a quarter to 2 p. m. on the 28th February 1907, and 16, 22 and 8 down and 33 up, trains were transhipped.

Plan No. 1401. S. D. P. of the accident accompanies this report.

EVIDENCE.

B. L. Kundu, station master, Raninagar.—My assistant station master gave "line-clear" for 1 B. up on the 28th February 1907 at 0 hour 35 minutes. It left Atrai at 0 hour 42 minutes. At about 1 hour 25 minutes, when the train was overdue, my assistant called me from my lodgings. I came to the station and asked by X. R. message if the train had actually left Atrai. I got reply that the train actually left at 0 hour 42 minutes. I then sent my pointsman who met some passengers at the distant signal. They came to my station. Amongst the passengers was a P. W. mistri, named Jhurulla, working under P. W. Inspector of Sara. They informed me that the engine had been derailed. I at once wired, at 2 hours 10 minutes, my first message:—"Engine derailed; assistance required; details follow." 16 down had arrived at my station at about 2 hours 10 minutes. I asked the driver of it to proceed to the scene of the accident. Guard of 16 down informed the sub-divisional officer, Mr. King, who was in his train, and we all four then went on the engine to the scene of the accident. I then took particulars of the vehicles derailed and we all four returned to Raninagar on the engine of 16 down. I then wired my accident message, at 3 hours 10 minutes, for relief trains and transhipment. I am not sure that the guard of 16 down went on the engine to the scene of the accident. 1 B. up train left Atrai 9 minutes late.

0 hour 40 minutes on the 28th instant. When between Atrai and Raninagar I felt a shock; shortly after the train came to a stand. I left my brake and proceeded towards the engine, and saw that several vehicles and the engine had been derailed and some capsized. When I got to the engine I found the fireman and driver lying on the ground complaining that they were hurt. I assisted them both to sit up. I then protected my train, both in front and in rear, with detonators, and by hand signal lamps. By the P. W. mistri, Jhurulla, I sent a message to the station master, Raninagar, of the accident. The engine of 16 down arrived with station master, Raninagar, and Mr. King, sub-divisional officer. It soon after departed with the driver and fireman of 1 B. up, station master, Raninagar, and Mr. King. I had nine passenger vehicles on the train and one 2nd class passenger, a European doctor, going to Bogra. I enquired from the passengers carefully and found that no one was hurt. They left the train soon after the accident. I saw some P. W. tools lying two telegraph posts away, but no wrenches amongst them. I did not see any villagers or non-passenger people about when I first got out of my brake-van going towards the engine. The driver told me that the six wheels of the engine got over, and that the wagons behind derailed first and caused the engine to derail. There was no specie in my train.

Rajaram Lall, guard.—I was guard of 1 B. up that left Sara on the 27th February 1907. We left Atrai at

Mabu, driver.—I was driver of 1 B. up of the 27th February 1907. When between Atrai and

Raninagar the first sign of the accident I noticed was my engine making a noise—a rattling noise—and then I heard a noise behind and noticed some goods wagons derailed; then my engine derailed and went down the tank on the west side of the tank and I fell off my engine on the east side of it at the top of the tank. I then went down to the engine and found the fireman inside the cab; he then came out with a small cut on his leg; the jack was killed. I saw some P. W. tools, but no wrenches, some five wagons length in the rear of the brake-van. I noticed that where the rails parted there were no fishplates or fishbolts to be found. I saw no people about the line.

Asaf Khan, fireman.—I worked two years as cleaner and one year as second fireman. I was fireman of I B. up on the 27th February 1907. When the accident occurred the driver shut off steam and then looked out, and was then thrown off the engine. I then lost my senses and when I recovered I found the driver with me, at the bottom of the tank. I know nothing further.

Statement read by Mr. King, sub-divisional officer, before the committee of enquiry.—At about 2 hours 15 minutes I was wakened up by driver of 16 down at Raninagar and told that I B. up had met with an accident at mile $\frac{44}{11-12}$. I went down to site on engine of 16 down and found that the engine, tender, all the covered goods and one bogie had derailed, and that the engine, tender and several of the carriages had capsized. I returned immediately and reported the extent of damage to the station master, Raninagar, and told him to wire for relief specials and transhipment. He had already wired for the relief-van from Santabar and on arrival of this Mr. Shore, sub-divisional officer, Mogalhat, who was travelling in 16 down, the Shedman, Santabar, with his relief gang and myself went down to site of accident and found that the engine had run down the bank and been completely overturned, and that the tender, 15 covered goods and one bogie, 3rd class had been derailed as shown in sketch attached. On looking for the cause of the accident, we found that two pairs of fishplates were missing from the pair of joints, 64 feet south of telegraph post $\frac{44}{11-12}$. No broken fishplates or bolts were found. The last rail north of the joint had been dragged 2 feet 9 inches away from the joint and the west rail of this pair of rails 1 foot away. The line north of the joint was completely torn up for 192 feet. The line south of the joint was not disturbed. There was not the least doubt therefore that the fishplates were deliberately removed, but whether by one of the permanent-way men or an outsider is not known. Nobody is suspected so far. The gang state that they worked at mile $\frac{44}{11-12}$ on the previous day, and an examination of this part bears out their statement as the line was found unboxed and had the appearance of having been worked in. The mate, Siboth, admits that he left his tools at mile $\frac{44}{11-12}$, but denies that he had any spanner with him. The keyman, Asmoth, stated that, after walking his length, he coal-tarred 4 pairs of fishplates between mile $\frac{44}{22-23}$ between 10 and 15 hours, and then went and worked in the south end of his length. An examination of mile $\frac{44}{22-23}$ shewed four pairs of fishplates newly coal-tarred there. He also shewed me his pot of tar, which he had hidden in a hollow in the bank there. There were no signs of any fishplates having been lately coal-tarred at site of accident. He produced four spanners, but when asked for his clyburn spanner he stated that it was looked up in the tool box. I sent the assistant permanent-way inspector, Santabar junction, to the gang hut, which is at mile $\frac{44}{11-12}$, and he found that the clyburn spanner was not in the tool box, but that the key man had it in his hut in a neighbouring village. In all probability he had his fishbolt spanner in his hut also on the night of the accident, and I suspect that some malicious person obtained either the ordinary spanner or the clyburn spanner from his hut and with it removed the fishplates at $\frac{44}{11-12}$. Both the mate and keyman should, I consider, be dismissed after the joint enquiry for not safeguarding their tools. The mate's

pay is Rs. 10-8 and the keyman's Rs. 7, plus 8 annas *korakae*. Considering that the men are skilled labourers and have such responsible positions I consider, that they should be paid much higher wages, if we are to get trustworthy men. From the amount of damage done I think that the plates must have been removed before 21 up and 15 up passed over, and these trains helped to widen the distance between the ends of the rails which formed the joints.

A. W. King, sub-divisional officer.—I have been sub-divisional officer on this length about seven years.

By cross-examination.

I did not notice any fishplates missing except the two pairs at the site of the accident. On my arriving by the engine of 16 down at the site of the accident the first time I did not make an examination as to the cause of accident, but on my arrival by the relief train on the second occasion, I immediately investigated as to the cause of the accident. I have enquired from the assistant permanent-way inspector, Muddock, who was then in charge of the length, and I cannot find any cause owing to quarre in the staff of permanent-way men or discontent against the assistant permanent-way inspector that might have led any of the permanent-way men to remove the fishplates.

Assistant permanent-way inspector, Muddock.—I heard at Santabar, at about a quarter to five on the 28th February 1907, of the accident at mile $\frac{44}{11-12}$ from the driver or fireman of 22 down mail. I went by 22 down mail from Santabar to Raninagar and proceeded by engine of the same train to the site of the accident, arriving there about 6 hours 45 minutes or 6 hours 30 minutes. There were some vehicles still derailed on the line, so I could not then get the road in order, but I did attend to the road doing what I could. I investigated as to the cause of the accident and I found at one place both pairs of fishplates deficient at two joints opposite one another. I looked for these, but could not find them. Then I carried out orders of the sub-divisional officer as to getting the material for line and getting the line in order. I consider that the cause of the accident was the malicious removal of the fishplates. The mistri of that length came to the site of the accident at about 7 hours 45 minutes; I am not sure exactly. I enquired from him where he worked last. He told me that it was at mile $\frac{44}{11-12}$ and that he had left his tools there, *viz.*, kodalies, beaters, crowbars, spiking-hammer, ballast rakes, but no wrenches. He brought these to the site of accident for work. The chuttiwallah came to the site of the accident with the mistri. He brought his wrench and his hammer; the mistri sent for the wrenches from the tool box of one of the gangmen. He brought three wrenches. After the line was reopened for traffic, about 14 or 15 hours, I asked the chuttiwallah and the mistri how many wrenches they should have. They said five. Then I asked them where the other was and of what sort. They replied that it was clyburn spanner, and was in the tool box. Then I went with the mistri and keyman to the gang hut at about mile $\frac{44}{11-12}$ where the tool box was. Near the gang hut the keyman told me that the missing spanner was not in the tool box but that in his house. He went towards his village and brought back the spanner from his house, and gave it to me. I saw the marks on it which shewed that it had been worked within the last five days.

I have had no trouble with the gang in whose length the accident happened. I only found fishplates missing at the two joints which caused the accident.

Shebol, line mistri.—I am mistri of the gang 42 miles to 46. I first heard of the accident about 6 hours, just before sunrise. I then collected my men and went to the spot and arrived there about 7 hours 30 minutes. I found that the joints in the two rails were open at one spot on both sides; the fishplates were missing and could not be found. The fishplates have not since been found. I don't know who did it. I have worked on the length for 4½ years. No one in my gang has been fined during the last two or three months. The key of the tool box is kept by the keyman named Asmoth, except one day in the week when Asmoth goes on leave,

when he gives me the key if I want it. It is my duty to keep the key, but for the sake of convenience it was given to the keyman to keep. On stopping work on the night of the accident I did not see Asmoth as he had left work before me, but I know that in the morning of the same day the 27th he took two wrenches out for his work; one for bridge hook bolts and the other for fishplate bolts. On the next day when Mr. King, sub-divisional officer, asked for the wrenches to be produced, I produced three. Asmoth produced a small wrench from where he was working, and then Mr. King made further enquiries about the screw wrench. I remained with the assistant permanent-way inspector and Asmoth went to the village where his house is and brought the wrench apparently from his house. I have no idea or suspicion as to why or how the fishplates were removed. On the 27th evening I did not enquire about the wrenches because Asmoth had left work before me. On the next morning at the scene of the derailment I asked Asmoth about the wrenches and he said then that one of them was in his house. He said he had taken the wrench to secure a bolt in the bridge and as it was late when the work was finished he had taken it to his house. Asmoth sometimes keeps the screw wrench in the tool box and sometimes in his house.

I live sometimes in a village about $\frac{1}{4}$ mile from Asmoth's house and sometimes in the gang hut.

Asmoth, keyman.—I have worked for 10 or 12 years as gangman and keyman in my present length 42 to 48 miles. I came on the morning of the accident and saw that the fishplates at the joints in both rails at one place were removed and missing. I have no idea how it was done, and know nothing about it. All the five wrenches are in my care. On the night of the 27th February the five wrenches were in a room in the gang hut where old sleepers are. I locked up the room and then went home to my village. On the next day I produced the five wrenches from that room and shewed them to Mr. King. One of the five produced to Mr. King I got from my house in the village. The reason I took it to my house was that I had used it till late the day before at a bridge and I thought that I might require it in the morning, so I took it to my house. I know it is the order to lock the tools up in the box, but I sometimes keep things in my house and sometimes in the box. The cylinder spanner or screw wrench will turn the hexagonal fishbolt nuts but not the square fishbolt nuts easily. Assistant permanent-way inspector, Muddock, has not fined any of us during the last two or three months.

Certified that this has been read and explained to Asmoth and acknowledged by him as being correct, except that on the night of the 27th February he locked four, and not five, wrenches in the room of the gang hut.

FINDING.

We are of opinion from the evidence that the accident was due to the removal of two pairs of fishplates and bolts at mile 44, between telegraph posts 13 and 14, but there is no indication as to the agency by which they were removed or the motive for their removal.

It is, however, evident that the removal was deliberate on the part of some person or persons unknown, as we are satisfied that it was not due to the negligence of the permanent-way staff. We cannot find from the evidence that there was any ill-feeling amongst the permanent-way staff or that they had been oppressed in any way.

Manager's remarks.

The Manager, Eastern Bengal State railway, agrees with the finding of the committee. The railway police have been requested to trace the person or persons who removed the fishplates and so caused the accident.

Remarks by the Government Inspector of Railways, Calcutta.

I agree with the finding.

J. H. WHITE,

Government Inspector.

CALCUTTA :

The 19th April 1907.

Documents accompanying—Annexure No. 1—Sketch showing the position of vehicles after the accident.

Remarks by the Senior Government Inspector of Railways, Calcutta.

The result of the proceedings is very unsatisfactory: the unravelling of the mystery, however, appears to be a matter for the Police.

J. C. LYLE,

Senior Government Inspector.

CALCUTTA ;

The 15th May 1907.

Annexure I in appendix V to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

COMPOSITION OF I B UP OF 27.2.07

NO. OF VEHICLES	CLASS	RAILWAY	POSITION AFTER DERAILMENT	ACTION TAKEN ON 28.2.07.	
1	2	3	4		
53	ENGINE	F. CLASS	E. B. S. RY	ON BERM UP SIDE DOWN	LEFT AT SITE
	TENDER	"	"	ON SIDE ON BERM	D ²
2068	C. G.	4 WHEELS	"	D ²	D ²
1640	"	"	"	D ² ON SLOPE	D ²
622	"	8 WHEELS	"	ERECT ON SLOPE	D ²
1616	"	4 WHEELS	"	ON SIDE ON SLOPE	D ²
3323	"	"	"	D ²	D ²
2694	"	"	"	TILTED ON EDGE OF BANK	REMOVED TO RANINAGAR
318	"	"	B. D. RY	ON SIDE ON SLOPE	LEFT AT SITE
265	"	"	"	ERECT ON SLOPE	PUSHED ON TO BERM
3198	"	"	E. B. S. RY	DR ON BANK	D ² - DOWN WEST SLOPE OF BANK
3070	"	"	"	D ²	D ² - D ² ON EAST OF BANK
2869	"	"	"	DR	PUSHED DOWN SLOPE
2747	"	"	"	TILTED ON SLOPE	D ²
618	"	6 WHEELS	"	TILTED ON BANK & ON SLOPE	TOPPLED OVER ON TO SLOPE
1583	"	4 WHEELS	"	ERECT ON BANK	DERAILED & TAKEN TO ATRAJ
1383	"	"	"	D ²	D ²
405	3 rd CLASS BOGIE	"	"	D ²	D ²
261	3 rd CLASS	4 WHEELS	"		
258	"	"	"		
254	"	"	"		
229	"	"	"		
161	INFEMALES	"	"	← NOT DERAILED	← TAKEN BACK TO ATRAJ
118	MALES	"	"		
68	COMPO	"	"		
562	BRAYAR	"	"		

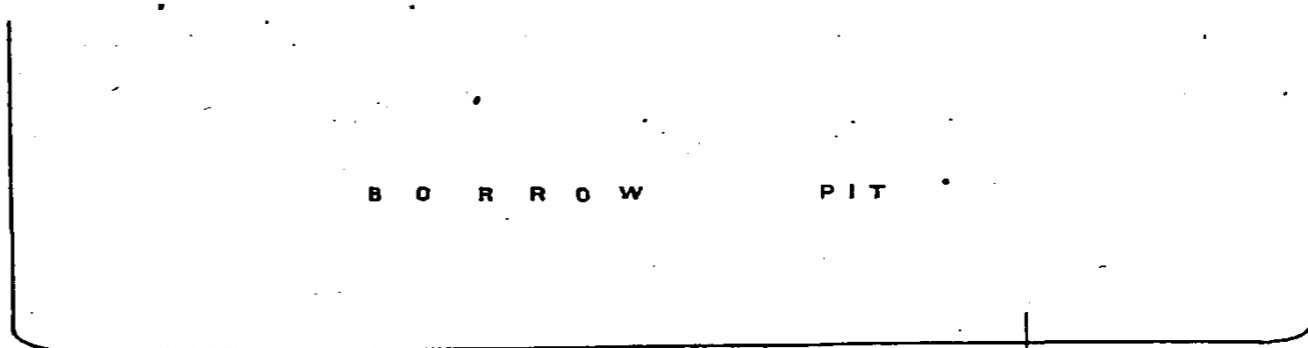
E. B. S. RY - NORTHERN SECTION
 SKETCH SHOWING POSITION OF VEHICLES OF

I B UP OF 27-2-07

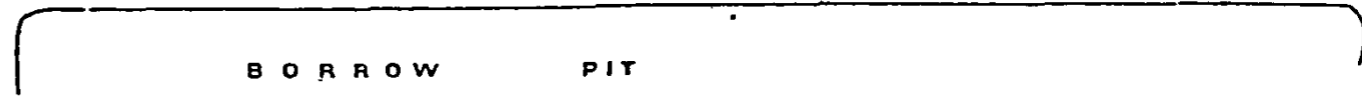
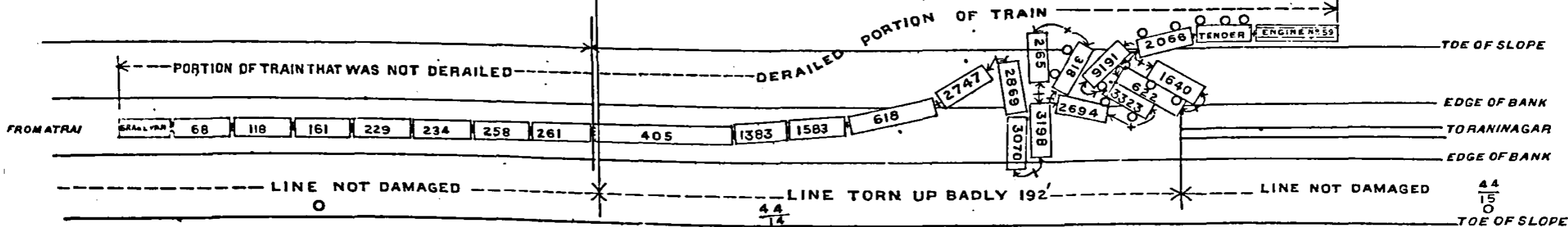
AFTER THE ACCIDENT ON

28-2-07

No. 140 ISDP.



JOINTS FROM WHICH F PLATES WERE REMOVED.



Appendix VI to the Abstract Return of Accidents on Indian Railways for the twelve months ended the 31st December 1907.

Report of the proceedings of a committee of enquiry (at which a Government Inspector was not present) which assembled at Kalighat station, Eastern Bengal State railway, on the 16th May 1907 and at Ballygunge and Majerhat stations on the 22nd May 1907, to investigate the cause of a collision at mile 5-21 near Kalighat station on the 7th idem.

The committee was composed of the following officers:—

- | | |
|---|--------------|
| W. H. JAMES, <i>District Traffic Superintendent, Central District, Eastern Bengal State railway, Sealdah.</i> | } President. |
| J. A. COLLISTER, <i>Assistant District Locomotive Superintendent, East Indian railway, Howrah</i> | } Members. |
| J. D. FLYNN, <i>Assistant Traffic Superintendent, East Indian railway, Howrah</i> | |
| C. J. SILVESTER, <i>District Locomotive Superintendent, Eastern Bengal State railway, Sealdah</i> | |
| R. H. ASERAPPA, <i>Sub-Divisional Officer, II, Eastern Bengal State railway, Sealdah</i> | |

DESCRIPTION.

Ballast train P-2 hauled by an H. class engine fitted with steam and hand brakes, with 35 vehicles attached, in which were some ballast coolies, but which were otherwise empty, ran into a down loaded E. I. railway goods train which was standing at Kalighat within the home signal, causing damage to certain vehicles. The statement in the original message that some coolies were injured is incorrect, as beyond a shaking no one was injured.

Kalighat is approached by a heavy curve and is on a slightly falling gradient. The accident occurred in daylight.

This ballast train has been working for some time and on the date in question the usual message blocking the line was sent by the assistant station master, Ballygunge, on duty to the cabin for transmission to Kalighat and Majerhat, the only difference being that instead of the line being blocked after the arrival of 108 down at Majerhat, the usual procedure, the line was to have been blocked on the 7th instant after the arrival of 62 down E. I. railway goods (which had entered the section) at Majerhat. Kalighat received the message, but Majerhat cabin refused the message from Kalighat, so it was sent from Ballygunge by inter-wire direct to Majerhat. No. 62 down E. I. railway goods left Ballygunge at 9-22 hours, arrived at Kalighat at 9-33 hours and was detained there within the home signal for line-clear from Majerhat which was withheld for Port Trust railway slot to be released. At 9-35 hours Ballygunge asked "line-clear" on the block instrument for ballast train P-2. "Line-clear" was given by Kalighat on the electric block instrument at 9-35 hours. Ballast train left Ballygunge at 9-45 hours before the acknowledgment of the block line message had been given by either Kalighat or Majerhat and ran into No. 62 down East Indian railway goods at Kalighat. The committee discredited the driver's statement that the signals were lowered. What probably occurred was, that the driver had been accustomed to run through Kalighat (which has no crossover from up to down) as his work was between Kalighat and Majerhat, and he thought he was going to do the same on this date; when he saw a train in front of him he was unable to stop in time and ran into the brake-van of No. 62 down East Indian railway goods train. There appears to have been some laxity in the working of this ballast train which is being taken up.

EVIDENCE.

Driver Santoki.—On the 7th instant the line was blocked at 9-30 between Ballygunge and Majerhat. At 9-40 the Ballygunge starter was lowered, the cabin-man and guard signalled to me to start and I started. I then left Ballygunge. I came straight on to Kalighat. The outer and home signals were both lowered. I came on the bridge and saw the line was blocked with wagons. I put my brakes on and tried my best to stop, but could

not, and I collided with the East Indian railway brake-van. I had a load of 35 empties all told.

I saw the outer lowered when I was about a 1,000 feet beyond it. I passed the outer and came on, and I saw the home signal, too, lowered. I put on my brakes at the bridge when I was travelling at about 13 miles an hour, and collided at 2 miles an hour.

I have been working this ballast train for 4 months between Ballygunge and Majerhat, stabling it Ballygunge at night. Prior to the accident it was customary for the outer and the home at Kalighat to be permanently lowered while I was working on the block, but since the accident these signals have been kept at danger, and I am working on hand signals. [On cross-questioning he admits that the signals were lowered only for him to pass and that they were not permanently down.] I returned to Ballygunge from Majerhat on the up line.

I have up to date not received "line-clear" or any written authority from station master or guard. I was simply advised that the section was blocked.

If I had been on single line I would have taken "line-clear."

Guard Francis.—On the 7th May I was guard in charge of material ballast train P.-2 working between Ballygunge and Majerhat. On the date in question I handed station master Chatterjee, Ballygunge, a memo. asking him to block the down line as usual as my train had work to perform between Kalighat and Majerhat. The memo. was submitted at 8.30. At 9.45 the starter at Ballygunge was lowered for me to proceed to Kalighat where I would receive acknowledgment blocking the line. I forthwith gave my driver signal to start. Knowing that I would have work to perform I sat down to my meals and therefore did not see the signals at Kalighat. About a minute or two before the accident my shunting porter informed me of an East Indian railway train being ahead and he applied the brake, but before the driver could stop the ballast train it ran into the East Indian railway goods. I questioned the cabin staff at Kalighat, and was told that the signals were at danger, East Indian railway guard corroborating this statement; and I accordingly wired the accident report in which I stated that the driver disregarded the signals.

Cross-examination.—The custom previous to the accident was to block the line between Ballygunge and Majerhat, but on the day in question the line was not blocked, because 215 up East Indian railway goods had not arrived at Ballygunge. No written intimation is given to the driver when the line is blocked.

Everyday signals were brought into use for my ballast train as in working any other train. After the collision I looked out and saw the home signal at Kalighat at danger. On this day I expected to pick up my block at Kalighat, applicable between Kalighat and Majerhat. As I had no work between Ballygunge and Kalighat, I did not inform the driver that the usual block was not established, but I only asked him to proceed to Kalighat. Ordinarily I do not stop at Kalighat. I had no idea that there was an East Indian railway goods train ahead of me. I got no written intimation that line was clear with the exception of the starter being lowered. On this occasion I received line-clear from Ballygunge to Kalighat as no block was given, but when line is blocked I get written acknowledgment of the block message issued to Kalighat and Majerhat from the station master, Ballygunge. The driver is a very careful man and has worked all along on this section with me without any accident.

[On cross-questioning the guard stated that he had entered in his memo. to the station master, Ballygunge, that his ballast train would work between Kalighat and Majerhat, and that is why he felt justified in leaving Ballygunge for Kalighat on starter being lowered without getting the usual written acknowledgment that the line had been blocked. He had no other reason to give.]

(Q.—Did you consider it necessary to inform the driver that he would get further orders at Kalighat? When I told him to proceed to Kalighat I considered that it was sufficient advice.)

I attached my brake next to the engine to save time in shunting on return trip. I have always

done this. I left Ballygunge at 9.45 and arrived at Kalighat at 10 hours, a distance of about 2½ miles. Wagons were all empty. No real injury was done to any person in the train.

On the day of the accident I simply informed the driver to proceed to Kalighat.

Cabin assistant H. K. Sircar.—Ballygunge gave message to Kalighat and Majerhat: "On arrival of No. 62 down East Indian railway goods at Majerhat, down line will be blocked for ballast train to work on line." No. 62 down arrived at Kalighat at 9.33 and left at 10.58, as the line ahead was not clear. When 62 down arrived at Kalighat I told my jemadar to put all the signals to danger. Then cabin assistant, Ballygunge, asked line-clear for ballast train in double line system by block instrument. I found that my block section was clear and therefore I gave line-clear by block instrument up to down outer signal. Ballast train P.-2 left Ballygunge at 9.45, and at the same time I told my jemadar to show red signal from the line. After a few minutes I heard all line khalassies shouting as well as my jemadar to stop the ballast train, but the driver disregarded the signals and pushed forward over the East Indian railway brake-van. Then the guards of ballast train and East Indian railway goods both sent accident messages that driver had disregarded signals.

When the section between Ballygunge and Majerhat was blocked for ballast working the signals remained at danger and the train passed them daily. On the day of the accident the line was not blocked.

Station master J. N. Banerjee.—Previous to the accident whenever the line was blocked the ballast trains used to pass the signals at Kalighat at danger. Only hand signals were shown.

Station master states:—I saw a man coming back, returning after the accident, with the flag.

B. K. Chatterjee, assistant station master.—Ballast train P.-2 works between Ballygunge and Majerhat daily after departure of 108 down, but on the 7th May after 108 down left Ballygunge I got information through cabin at Ballygunge that 62 down East Indian railway was coming, so I issued a message to Kalighat and Majerhat through cabin that the down line will be blocked for the working of ballast train P.-2 on arrival of 62 down East Indian railway at Majerhat, and I instructed cabin assistant on duty to allow ballast train for working on receipt of acknowledgment from Kalighat and Majerhat of the block message. I then went into my office and as the ballast train was standing in my loop siding, I sent jemadar and pointsman to the cabin to set the points when required by the cabin. After half an hour I came to know through the cabin assistant that a collision had taken place at Kalighat.

Examined.—I did not start the ballast train from Ballygunge. It is not my duty to start the ballast train; it is the cabin assistant's duty to do so.

When an acknowledgment of the block message is received at Ballygunge it is handed over to the guard by the cabin assistant direct; this is always done.

M. N. Banerjee, cabin assistant.—On the 7th instant a message addressed to Kalighat and Majerhat for blocking of down line to work ballast train P.-2 was sent to me by assistant station master on duty, Ballygunge, advising me to send it to Kalighat only and not to Majerhat, as he had direct communication with Majerhat and would do so himself. After a few minutes assistant station master on duty asked me by telephone: "Have you got in report of 62 down East Indian railway from Kalighat?" I answered "Yes." He then asked me to get line-clear for ballast train to Kalighat. I did so. Then I asked assistant station master: "Have you got acknowledgment from Majerhat?" He answered "No matter to you." Acknowledgment is only for adopting single line working by up line, not for allowing ballast train.

After some conversation by telephone regarding this, assistant station master on duty told me: "Wait till I receive acknowledgment from Majerhat. On receipt of my acknowledgment I will advise you by telephone and will send my line jemadar to draw out ballast train from siding." After a few minutes he sent his jemadar and drew out the ballast train from the siding, and told me to allow the ballast train out. When he sent his jemadar from the station I was sure that he had received acknowledgment from Majerhat, as he himself told me to allow the ballast train to start. I accordingly started the train by hand signals.

Cross-examination.—From the 1st to the 4th May I was on duty from 12 hours to 18 hours. From the 5th, hours were changed to 6 hours to 12 hours. On the 6th I received the acknowledgment of the block message from Majerhat through Kalighat. After I had started the ballast train by permission of the assistant station master on the 7th, I fully expected to receive the acknowledgment from Majerhat through Kalighat in the same way as I received it on the 6th, that is, after the ballast train had been started by me by the request of the assistant station master.

FINDING.

We find—

- (1) That cabin assistant M. N. Banerjee of Ballygunge is to blame for this accident, in that he allowed the ballast train No. P.-2 to leave Ballygunge without having received acknowledgment, of block message A. 19 from Kalighat.
- (2) That cabin assistant H. K. Sirkar of cabin at Kalighat is also to blame for contributory neglect and want of judgment, in that he gave "line-clear" to Ballygunge on the electric block instrument having already received a message from Ballygunge to block the line from Ballygunge to Majerhat on arrival of 62 down at Majerhat.
- (3) We think there was contributory negligence on the part of guard Francis of ballast train P.-2, in that he did not satisfy himself that the block had been actually established.
- (4) We exonerate driver Santoki of ballast train P.-2.

RIDER BY MR. R. H. ASERAPPA.

I agree with the above finding, except that I do not think that guard Francis of ballast train P.-2 is to blame. It is admitted on all sides that he was granted permission to start from Ballygunge. I should also like to remark that cabin assistant M. N. Banerjee was on duty in Ballygunge cabin at the time of starting of this ballast train only from the 5th May 1907, and there is evidence that the ballast train was started from Ballygunge on previous occasions on receipt of "line-clear" from Kalighat and before receipt of acknowledgment of block message from Majerhat. His guilt is therefore lessened, as he was following an irregular system inaugurated before his coming to Ballygunge.

Remarks by Mr. J. C. Lyle, Senior Government Inspector of Railways.

No. 4054, dated the 11th July 1907.

From—Mr. J. C. Lyle, Senior Government Inspector of Railways, Calcutta,

To—The Manager, Eastern Bengal State railway.

Collision between an Eastern Bengal State railway ballast train and East Indian railway No. 62 down at Kalighat on 7th May 1907.

I have the honour to return the proceedings of an officers' joint enquiry held at Kalighat on 16th and 22nd May, enquiring into the particulars of the above accident, with the following remarks.

2. The description contains certain opinions of the committee which should have been reserved for the finding. These opinions vary from the results of their enquiry as expressed in the finding, and are not in accordance with the evidence. The committee seem to have started with the idea that there was some laxity in the working of the ballast train and that the driver was the chief cause of the accident, yet in the finding they exonerate the driver and lay the chief blame on the cabin assistant at Ballygunge.

3. The assistant station master on duty at Ballygunge seems to have failed to realize his duties and responsibilities; he is undoubtedly responsible for permitting the departure of the ballast train, and as he gave orders to block the down line to Majerhat, he should have made certain that the line had been blocked and have personally given orders for the departure of the ballast train. The discrepancies between his statement and that of the cabin assistant at Ballygunge should have been investigated at the enquiry.

4. The cabin assistant at Ballygunge seems to have attempted to ascertain if the line had been blocked, yet he asked for and obtained "line-clear" to Kalighat in the usual way for the ballast train. That is, after asking for the down line to be blocked to Majerhat he, without satisfying himself as to what had been done, obtained "line-clear" under open line traffic rules for the ballast train hoping to receive report of the

establishment of the block between Ballygunge and Majerhat after the departure of the ballast train; he also stated that he started the ballast train by permission of the assistant station master on duty, which the assistant station master states he did not do.

5. The *cabin assistant at Kalighat* received orders to block the down line on arrival of No. 62 down at Majerhat, yet he gave "line-clear" for the down ballast train without finding out if the block had been cancelled. He apparently knew that this method of working was wrong, as he states that when the ballast train left Ballygunge he sent his jemadar to show a red flag to the ballast train.

6. The *guard of the ballast train* asked to have the line blocked between Ballygunge and Majerhat, yet he gave his driver the signal to start before the block had been established; he stated that he expected to receive notice of the establishment of the block when he arrived at Kalighat. It is apparently usual to keep all signals at danger when the line is blocked, yet he stated that the driver caused the accident by disregarding signals. He stated that signals are brought into use on blocked sections of the line; this is contradicted by the cabin assistant at Kalighat, who stated that all fixed signals are kept at danger and only hand signals shown when the line is blocked. He did not inform the driver that the usual block was not established.

7. The *driver* stated that before this accident outer and home signals were permanently lowered in the blocked section, but that since this accident these signals have been kept at danger and hand signals used. He was advised that the section had been blocked, and he was signalled by the cabin assistant and guard at Ballygunge to start.

8. The finding is incomplete. Nothing is said about what the assistant station master at Ballygunge ought to have done. The guard knew that the block had not been established, yet he allowed the driver to remain in ignorance of this fact.

The rider by the sub-divisional officer omits the fact that the guard left on "line-clear" after asking for the line to be blocked, and did not explain this to the driver who was under the impression that the line had been blocked to Majerhat.

9. This accident brings to light a deplorable state of traffic working which should be investigated and effective measures taken to prevent any such serious relapses from safe working in the future. The description and finding want remodelling and correction. The contradictory statements in the evidence should be looked into. After a perusal of the contradictory and incomplete evidence and proceedings the impression left on my mind is that the members of the committee failed to realise the seriousness of such a state of affairs as is laid bare in the evidence. Absolute disregard of rules, friction between the junction staff, the staff failing to give necessary information to persons concerned, etc., etc., are all passed over with little or no comment as if they were every-day occurrences. A similar accident might any day be attended with loss of life or serious damage to persons, and it is questionable if a report like the one under reference could not be used as evidence against the officers concerned and they in some measure be held responsible for contributory negligence.

10. Apparently no written intimation is given to the driver when the line is blocked.

Committee's reply received with Manager's letter No. G.-125 S. G. I., dated 1st February 1908.

The committee having carefully considered the various points raised by the Senior Government Inspector of Railways, would beg to remark as follows:—

(I) Paragraph 2 of Senior Government Inspector's letter No. 4054, dated 11th July 1907:—

We agree that the concluding paragraph of the history reading from the word "committee" to the words "good train" in the last line but one, should have been omitted from the same. The committee did, as the Senior Government Inspector alleges, start the enquiry under the impression that the original telegraphic report was correct and that the driver was to blame, but after due deliberation and as the result of a two days' enquiry the committee came to the conclusion as embodied in the finding.

(II) Paragraph 3 of Senior Government Inspector's letter No. 4054, dated 11th July 1907:—

The responsibility or otherwise of the assistant station master at Ballygunge was fully considered, and that official was exonerated on the basis of rule 7 of the "Rules for working Ballygunge Interlocking Cabin," dated 6th October 1904, which rule clearly defines responsibility in the matter of receipt and despatch of trains.

(III) Paragraph 4 of Senior Government Inspector's letter No. 4054, dated 11th July 1907:—

We concur, and on this argument found the cabin assistant at Ballygunge primarily responsible.

- (IV) Paragraph 5 of Senior Government Inspector's letter No. 4054, dated 11th July 1907:—

There again we concur, and hence found the cabin assistant at Kalighat guilty of contributory negligence.

- (V) Paragraphs 6 and 7 of Senior Government Inspector's letter No. 4056, dated 11th July 1907:—

In agreeing generally with these remarks, we would refer to paragraph 3 of the finding wherein guard Francis is held to blame for contributory negligence. In the matter of the working of the signals at Kalighat we accepted that the fixed signals while working under the rules embodied in District Circular No. T. G.-¹⁹⁵/₅₇, dated 18th March 1907, were always kept at danger, and the driver's and guard's statements to the contrary were discredited by us. In this particular case it must be accepted that the cabin assistant at Kalighat would not lower his fixed signals while a train stood blocking the down line, with the vehicles of the same standing flush with his cabin, and in broad daylight. We were therefore of opinion that the driver had proceeded from Ballygunge in all good faith and with the firm belief that the line ahead was clear, and that his endeavours to avert the accident at Kalighat were not due to the fixed signals being either "on" or "off", but solely to the fact that he observed a train fouling the down line.

- (VI) Paragraph 8 of Senior Government Inspector's letter No. 4054, dated 11th July 1907:—

We do not consider that in the finding we should have included any remarks pertaining to the duties of the assistant station master at Ballygunge. We exonerated this official from blame. We agree that the guard knew that the block had not been established and allowed the driver to remain in ignorance of this fact, and so we found the guard guilty.

- (VII) Paragraph 9 of Senior Government Inspector's letter No. 4054, dated 11th July 1907:—

The committee were fully alive to the serious irregularities in the working which this enquiry elicited, and as this was a purely departmental question the committee received an assurance from the district officer concerned that immediate steps would be taken for effectually remedying matters, and this was done. On this score the committee did not consider it necessary to comment on the bad working of the staff. Contradictory evidence is at all such enquiries the rule and not the exception, and from experience the committee realise that evidence must often be disregarded. The committee regret that the Senior Government Inspector should have thought fit to criticise in such severe terms their investigation generally. The committee have no hesitation in asserting that the enquiry was carefully carried through, Kalighat, Ballygunge and Majerhat being severally visited and that enquiry occupying two days.

Manager's remarks (received on the 25th March 1908).

I agree with the committee's final remarks. I am of opinion that there has been some laxity in the working of ballast trains on double lines and special rules are being drawn up to put the matter on a proper footing.

Remarks by the Senior Government Inspector of Railways, Calcutta.

In paragraph 9 *ante*, Mr. J. C. Lyle, when officiating as Senior Government Inspector of this circle, has already noted on the serious irregularities brought to light by this enquiry; his remarks are the more pertinent in that he had a more intimate knowledge of the method of working on the Eastern Bengal State railway.

There is a general tendency amongst the staff to carry out their work perfunctorily and in the same manner as their immediate predecessors irrespective of whether it is in accordance with rules or not: this is generally due to a want of knowledge of rules.

It is noted that the committee fully realised the serious irregularities in the working which were brought to light by this enquiry and that the Manager has stated that special rules are being drawn up to put the matter on a proper footing; it is hoped that the steps taken, and to be taken, will effectually remedy matters.

It is essential for expeditious and safe working on a busy section that the rules should be carefully compiled and clear, and it is the duty of the responsible officials to see that they are invariably obeyed.

The damages to rolling stock is estimated at Rs. 1,200.

J. ADAM,
Senior Government Inspector of Railways,
Circle No. 2.

CALCUTTA:
The 14th April 1908.

**Appendix VII to the abstract return of accidents on Indian railways
for the twelve months ended the 31st December 1907.**

Report of the proceedings of a committee of enquiry which assembled at Shamnagar station on the 14th and 18th and at Sealdah on the 21st November 1907, to investigate the cause of the collisions between the Tittaghur mill up special goods and up Fyzabad troop special trains and subsequently with the Calcutta down special goods train on 10th November 1907, between Ichhapur and Shamnagar stations on the Eastern section of the Eastern Bengal State railway.

The committee was constituted as follows:—

C. V. LLOYD, <i>Executive Engineer</i>	. . . . .	President.
CAPTAIN C. L. MAGNIAC, R.E., <i>District Traffic Superintendent</i>	. . . . .	} Members.
C. J. SILVESTER, <i>District Locomotive Superintendent</i>	
G. K. ROGERS, <i>Signal Engineer</i>	
J. H. WHITE, <i>Government Inspector of Railways</i>	. . . . .	} Present.
J. D. FLYNN, <i>Assistant Traffic Superintendent, East Indian Railway</i>	
J. A. COLLISTER, <i>Assistant Locomotive Superintendent, East Indian Railway.</i>	
M. L. GANGULI, <i>Inspector, Government Railway Police</i>	. . . . .

DESCRIPTION.

The stations referred to in the proceedings are in order of sequence as under:—Palta, Ichhapur, Shamnagar, Jagadal, Kankinara, Naihati.

On November 10th, 1907, at 21-47 hours, Ichhapur asked Shamnagar to give line-clear for the up Tittaghur mill special which was immediately given by Shamnagar.

The mill special left Ichhapur at 21-53 hours and the rear brake had arrived about 1,500 feet beyond Ichhapur up starter when the collision occurred. The cabin assistant at Palta asked Ichhapur at 21-58 hours to give line-clear for an up troop special conveying a detachment of the 2nd Lancers from Baboo Ghât to Fyzabad, which was given at once; this special left Palta at 22-1 hours, passed Ichhapur about 22-4, and collided with the rear brake of the Tittaghur mill special about 22-5 hours, blocking both the up and down lines. Meanwhile Jagadal had asked Shamnagar at 21-48 hours for line-clear for a down goods special, which was given at once by Shamnagar.

Line-clear for the down goods special was received by Shamnagar from Ichhapur at 21-54 hours, and the down goods passed Shamnagar starter about 22-6 hours colliding with the wrecked portion of the up mill special about 22-10 hours and still further blocking both the up and down main lines. Of the up Tittaghur mill special, two covered goods wagons were derailed, two were turned over, three covered goods and two low-sided trucks and one brakevan were capsized and greatly damaged. Of the up troop special no damage was done to engine or train by the first collision. Twelve covered goods, one brakevan, one second class and two third class carriages were derailed and damaged, chiefly in their running gear. This was done by the engine of the down goods special which forced one of the derailed trucks of the up mill special along the whole length of the troop train. The engine of the down goods special which runs between Calcutta and Naihati as a shuttlecock train was running tender foremost because there is no appliance for turning engines at Naihati. The engine of the up mill special was also running tender foremost for the same reason. The tender of the down goods was derailed of all wheels.

The driver of the up troop special was run over and killed by the down goods train when attempting to go forward and show a danger signal on the down line.

One horse of the 2nd Lancers was killed, two horses were seriously injured, and one sowar slightly injured. A report of the accident was received by the assistant station master,

Ichhapur. He walked out to see what had happened; he then returned and wired for assistance to Calcutta and Kanchrapara at about 22-50. The relief train arrived from Kanchrapara at 1-57 on the 11th, and two relief trains were sent from Calcutta, one arriving at 2-40 hours and one at 6-59 at the site of the accident.

The down line was cleared and single line working was introduced at 20 hours on 11th November and the up line was cleared and double line working introduced at 12-13 hours on the 12th November.

The passenger and goods services were completely disorganized. Important through main line trains were diverted *via* Ranaghat and Bongong to and from Calcutta.

Five through trains and certain local trains were transhipped, as they arrived at the scene of the accident on the 11th.

A special local service was introduced between Calcutta and Barrackpore, Calcutta and Ichhapur, and between Shamnagar and Kanchrapara and Shamnagar and Ranaghat.

EVIDENCE.

Guffur, driver of Tittaghur mill special.—On the night of the accident I was driving the Tittaghur up mill special with a load of 57. I left Barrackpore at 21-46 hours and passed through Palta. On approaching Ichhapur I found the warner on, the home signal off, and the starter on. I therefore slowed down with the view of halting at the starter. On approaching it slowly however when near the bridge, it was pulled off, and I therefore proceeded on to Shamnagar. On approaching that station I found all signals against me, and therefore slowed down, intending to halt at the outer. Whilst still proceeding at about 12 miles per hour, I felt a shock and was thrown down. On recovering myself I got up and gave the engine more steam. The train thereupon parted and I went on for about 15 vehicles length with 21 wagons attached, and then drew up; whilst doing so a down train passed and I then heard the sound of another collision. I got down and found a train had run into me from behind and another down train had collided with wreckage on the down line. At the time of the accident my engine lights were burning brightly. After the accident I looked and saw again that all Shamnagar signals were against me, but did not look back at the Ichhapur up starter to see how that stood.

Recalled.—After leaving Palta, through which station I passed at ordinary speed, I shut off steam and began applying my brakes at the outer of Ichhapur and had slowed down to such an extent that, though I was within 3 wagons length of the Ichhapur starter before it was pulled off, I could have pulled up at it if necessary. When it was pulled off I gave the engine steam, and did not slow down again prior to the collision with the troop special, at which time I was travelling at about 12 miles per hour. When the starter dropped I looked at my watch and saw the time was 21-57. I estimate that the accident took place about 5 minutes later. The Shamnagar outer was not pulled off for me, but I did not slow down for it. Before leaving Tittaghur I was ordered by my guard to stop at Shamnagar and detach some wagons. After the accident I went to the rear of my train, and there found my guard standing between the up and down lines, and asked him whether he was hurt. He gave no reply, except that he was too much upset to say anything.

Khoda Bur, 1st fireman, Tittaghur mill special.—Corroborates the statement of his driver in every respect.

Recalled.—After the accident I did not get down from my engine, neither did the 2nd fireman. When parting after the first collision the forward portion of my train went about 2 wagons length. We had no sugarcaue on our engine. I account for having taken 12 minutes from Ichhapur station to the scene of the accident by reason of our having slowed down through Ichhapur to about 10 or 12 miles per hour and then seeing the Shamnagar signals against us which made us slow down again. We therefore ran the whole distance very slowly.

Re-examined, states.—After giving the engine steam subsequent to slowing down through Ichhapur it was never shut off again as I have already stated; we did not slow down on account of Shamnagar signals being against us, although I saw they were against us.

Shisu Khan, 2nd fireman, Tittaghur mill special.—On the night of the accident I was on duty on the Tittaghur mill special. We ran through Palta after leaving Barrackpore. On approaching Ichhapur I saw the warner at danger, the home signal off and the starter at danger. The driver shut off steam and then, as the starter was pulled off, we again proceeded after nearly coming to a halt at it. After going a short distance and whilst sitting on the coal on the tender I felt a shock from behind and was thrown down; the front portion of the train of about 20 wagons went for about 4 wagon lengths and was then stopped; just previously to its stopping and subsequent to the first collision a train passed on the down line and collided with wagons of our train which had been thrown upon it. After the accident I heard no calls for the driver, nor did I subsequently see the guard of my train. After the second collision both my driver and fireman went back to look at the wreck. My driver told me that after the accident he heard the guard of my train shouting out for him by name Guffur.

M. L. Biswas, guard of Tittaghur mill special.—On the night of the accident I was in charge of the up Tittaghur mill special, running from Tittaghur to Naihati. I had on a load of 57 empty wagons. I have lost my train memorandum book. I left Tittaghur at 21-30 hours. I halted 8 minutes at Barrackpore. I saw the Ichhapur warner and outer off and passed them. I next saw the home signal and passed that. On passing the platform I noticed the driver slowed down. I therefore looked out thinking we should have to halt after all, but I then saw that the starter was off and the train proceeded past it. This was at 21-57 hours. A short time afterwards I felt the train slow down again, and on looking out saw all Shamnagar signals against me. Whilst continuing to draw up to the outer at a speed of about 6 miles per hour I felt a violent shock and was thrown down on the floor of my brakevan. At the time I was writing up my journal on the top of the dogbox. I crawled out and found a train had run into mine from the rear. I then returned into the brakevan to look for my hand lamp, but could not find it, so got out again and detached one of my tail lamps which was still burning. With the aid of this I found my hand lamp, and whilst lighting it I heard the sound of another collision. I then got through the East Indian railway train on to the down line, and there found some of the Ichhapur station staff, with whom I went back to Ichhapur station, as I was badly shaken. After the collision I looked at none of the Ichhapur or Shamnagar station signals. I was too confused. Whilst halting in Barrackpore station

I examined my tail lights and found them burning properly.

Recalled on 18th November 1907.—Up to the time of the accident I travelled in my brakevan. I did not get on the engine at any time. From the time the mill special left Barrackpur up to the time the accident took place the train never halted, it only slowed down on passing Ichhapur and when approaching Shamnagar outer. The statement made by me in my first evidence that I lost my train memorandum book when the accident took place is false. I made it through fear. On the night of the accident I had it with me on the brakevan and after the accident I found it in the brake. It was lying on the floor. My train guidance and journal which I had been writing up at the time of the accident, I did not afterwards find. After getting through the East Indian railway train subsequent to the second collision I did not meet the Ichhapur station staff at the scene of the accident as described in my first evidence but met them a few paces from Ichhapur station. I cannot explain why my train took 12 minutes after passing Ichhapur station to run the distance of about $\frac{1}{2}$ mile between Ichhapur and the scene of the accident as cabin train entries show; I believe that the accident took place 4 or 5 minutes after passing through Ichhapur station. I cannot explain the discrepancies between my booked timings and those of the cabins except that on that day I had not checked my watch with any station clock nor did I compare my watch with that of the driver. My home is about 2 miles east of Tittaghur station.

Sadick, 1st fireman, up troop special.—I was working on the above train on the date of the accident. From Canal Junction upwards until the accident occurred, all signals were down and the train ran through them without stopping. When passing the Ichhapur starter we were going at a fair pace, i.e., about 35 miles per hour. The night was fairly clear so that I could see the Ichhapur outer from Palta, and the Ichhapur starter from the Ichhapur outer. When a short distance beyond the Ichhapur starter my driver called out to me that there was a train on the line ahead of him and put on all brakes and reversed; immediately afterwards the collision took place.

The driver made me light my lamp and took it to inspect the train he had struck, at the same time telling me to go back to Ichhapur Cabin to give information that the down line was blocked and to stop all down trains.

I therefore went back towards Ichhapur and know nothing more of what occurred except that I had got back to the bridge, i.e., about 40 yards from the rear of my train when I heard the sound of the second collision. I think about 3 to 4 minutes elapsed between the two collisions. I cannot say personally whether the Tittaghur mill special was moving or standing still when we struck it.

I had been working with driver Clarke for about 7 months and had always found him a careful and steady driver.

Juman, 2nd fireman, up troop special.—I was sitting on my tender after passing Ichhapur station with my back towards the engine when I heard the driver shout out to take care and I jumped down and put on the hand brakes. Immediately afterwards the collision took place. I remained on the footplate and a few minutes afterwards heard a lot of shouting and the second collision took place.

W. C. Boucher, guard, up troop special.—I left Dock Junction in charge of the up troop special at 20-24 hours with a load of 14 goods wagons and 5 coaches. I had several halts outside signals up to Tittaghur. Thence all signals including those of Ichhapur were off and we ran past them up to the time the collision took place. The night was dark through not misty. I looked out for signals at

Ichhapur and they were all off. Shortly after passing Ichhapur station, the train came to a sudden halt having evidently collided with another. I was thrown down and bruised. I then took my lamp and walked up on the left side of the train to the engine; I asked driver Clarke what was the matter and he replied he had run into an Eastern Bengal State railway train without any tail lights. He said he had sent his fireman back to Ichhapur to stop up trains, but I then told him the signals for a down train were off and he then got down to see if the down line was obstructed and I then went on forward. I had gone but a very short distance when I heard a down train approach and collide with the wreckage obstructing the down line. I did not look to see how the Shamnagar signals stood. The first collision occurred at 22-3 hours and the second one, three or four minutes later. I saw the Ichhapur up starter was off both before and after the collision but did not notice when it was eventually thrown up. It appeared to be about 40 or 50 yards from the rear of my train. I did not see the guard of the Tittaghur mill special after the first collision, nor at any time afterwards that night.

Recalled.—I can state definitely that I saw the Ichhapur starter off, but at no time saw the Shamnagar signals and cannot say whether they were on or off when the accident took place. I saw the Ichhapur starter was still off when I went to the rear of my train to protect it after the second collision. At that time all signals up and down were off and the assistant station master of Ichhapur who had come to the site of the accident and whose attention I drew personally to the fact sent word back to the cabin to throw all up and down signals back to danger. The body of driver Clarke was removed from the scene of the accident to Ichhapur station at about 8 hours.

Gunput, brakeman, up troop special.—I was on duty on the up troop special on the day of the accident. On approaching Ichhapur all signals were off and we ran through without check. After passing Ichhapur I did not see how the Shamnagar signals stood. Shortly after leaving Ichhapur I felt a shock and was knocked down. I got out and found we had collided with a train in front. My train was not derailed at that time, but a minute or two afterwards a train approached on the down line and ran into some wagons which had been thrown on to it; these wagons were swept down the line alongside my train and in so doing derailed the latter. I did not see the guard of the train we had collided with.

Rojan, driver, Calcutta down goods special.—After leaving Shamnagar on the night of the accident and on approaching Ichhapur station, I saw the down outer and warning off and therefore proceeded to run past them. Just before reaching them I passed a train on the up line, and immediately afterwards found I had collided with some obstruction. I at once put on all my brakes and brought my train to a standstill. I did not notice how any of the up signals stood before the collision. Just prior to the collision I was running tender foremost at about 15 miles per hour. I had on a load of 12 loaded and empties. After the collision I stayed on the engine but sent my fireman on to Ichhapur to give information of the accident. Prior to the collision of my train I saw no hand signals. When I passed the up train I could not see whether it was running or standing still. I run tender foremost habitually from Naihati to Calcutta, as I run from Calcutta to Naihati and return again to Calcutta without turning my engine, no means of doing so being provided at Naihati. After making a search we found the body of driver Clarke lying under the fourth wagon from my engine.

C. L. Sen, guard, Calcutta down goods special.—I was guard of Calcutta down goods special on the night of the accident and had a load of 62. I passed Shamnagar at 22-1 hours; after doing so I looked

out on approaching Ichhapur and saw all signals off in my favour; at the time when I looked out my engine had not passed the outer; at the same time I noticed a train on the up line; I think it was proceeding slowly; immediately afterwards I heard a crash and was thrown down in my brake-van. After 5 minutes or so of unconsciousness, I got up; I then lit my lamps which had been extinguished and proceeded to the rear of the train to protect it with fog signals. I then went forward and saw that my train was wrecked and found the driver of the up train had been run over and was lying under my train. I did not speak to any one except my driver. I saw a man whom I afterwards found to be the guard of the up mill special standing between tracks near his brake-van. I did not speak to him. I saw about a quarter of an hour after the accident that the Shamnagar outer was at danger. The night was dark but clear.

S. C. Neogy, assistant station master, Ichhapur.—I came on duty at 19 hours on the night of the accident. I saw the Tittaghur mill special pass my station at 21-53. It ran through at full speed without slowing down. I did not notice if the signals were put back to danger, after its passage through. I went into my office and telephoned to the cabin asking where the troop special was. The cabin assistant replied there was no news of it. Two or three minutes later, however, he informed me he had warning of the troop special, but that the line to Shamnagar was blocked. I told him to lower the home signal to admit it to the platform and to let me know when it left Palta so that I should be ready on the platform with a danger signal. He next informed me that the troop special had left Palta at 22-1 hours and that he had got line-clear for Shamnagar and had lowered his up starter. I then came out on the platform and saw that the starter was lowered. The troop special passed shortly after. I returned to the office and after a short interval heard a loud crash. I enquired of the cabin assistant what the matter was. He replied he had heard the sound too, but did not know what it meant as he had got line-clear and in report of mill special from Shamnagar. Whilst conversing with him I heard another loud sound. I came out of the office and saw that the down special had come to a stop near the down outer. I then went straight to the cabin and took possession of the train message book locking it up in the safe and issuing a fresh one. I also examined the Shamnagar block instrument and saw that the needle indicated line-clear. I then went to the site of the accident and saw that the troop special had collided with the rear of the mill special, and that the down special had collided with wagons which had blocked the down road, both lines being blocked thereby. I then came back and met the station master and informed him of all that had occurred.

In conversing with the cabin assistant before the accident I recognised that it was he who was talking to me by his voice. On going to the cabin, after the accident, I found the cabin assistant and the jemadar there. They were both awake. I looked at his book immediately on entering the cabin. The last message was "train entering section" to Shamnagar. I noticed as the Tittaghur special passed that only one side light was burning and that the others were extinguished. I remarked on this to the cabin assistant and told him to wire to Shamnagar to stop the train. The interval between the passage of the mill and the troop special was 11 minutes. The former passed through at 21-53 and the latter at 22-4. I personally noted and remembered this.

Recalled.—As I was walking to the scene of the accident I saw that the up signals were still off, but before I arrived there they had been tarrown up. Guard Boncher said nothing to me about sending a man back to order them to be thrown up as he asserts.

Sewrutton Singh, cabin jemadar, Ichhapur station.—I was in the cabin on the night of the acci-

dent. The cabin assistant told me line was clear for Tittaghur mill special and I lowered all signals. After the special had passed the starter, I put the starter back to danger and called the assistant to witness that I had done so. Shamnagar then acknowledged "train entering section" and the needle was put to "train on line." I then sat down and shortly afterwards the assistant told me to lower the home signal only to admit the troop special to the platform. The cabin assistant got line closed from Shamnagar just as the troop special was leaving Palta and almost immediately he got line-clear from Shamnagar and told me to lower all signals to let it pass through, and I did so. The troop special passed through at full speed. I then raised all signals to danger. The assistant gave the out report which was acknowledged, by Shamnagar putting the instrument to "train on line." When the mill special passed through the left hand tail lamp was burning dimly, whilst the other two were extinguished.

Shortly afterwards I heard a loud sound and afterwards the assistant station master entered the cabin and took away the train message book then in use and issued a new one. The Shamnagar up outer signals cannot be seen from my cabin.

Recalled.—Adheres to his previous statement and states:—I am quite sure that the starter was thrown up immediately after the passage of Tittaghur special and I myself heard the two beats from Shamnagar when he gave line-clear for the troop special. Had Shamnagar not acknowledged the out report of the Tittaghur mill special I could not have thrown my starter to danger, and this I had done before the collision. I cannot account for the Tittaghur mill special being caught up by the troop special, although the former passed through at full speed and the time interval between the two trains when they passed respectively was so considerable.

Kunjoo Behary Khan, cabin assistant, Ichhapur.—On the night of the accident I came on duty at 18 hours. All my signals and instruments were then in good order, except that the telephone connection with Shamnagar was out of order and could not be used. It had been in this condition for two days previously, I was asked for and gave line-clear for Tittaghur mill special at 21-44 to Palta. I then had the home signal pulled off for it. It left Palta at 21-49 hours, I then asked Shamnagar for line-clear for it and he immediately gave it. Then I had all signals pulled off to pass it through the station. This it did at 21-53. I then gave "train entering section" to Shamnagar and "out of section" to Palta at the same time. He acknowledged it. I put the starter back to danger 1 or 2 minutes after the Tittaghur mill special had passed it; I personally saw that the signal was correctly at danger from my cabin. Next, Palta asked line-clear for the up troop special at 21-55. This I immediately gave. I got the "in report" of Tittaghur mill special from Shamnagar at 21-55. I asked line-clear for troop special to Shamnagar at 21-59. He acknowledged and gave line-clear immediately and I pulled all signals off for it. The troop special left Palta at 22-1 and passed Ichhapur at 22-4. I then gave "train entering section" to Shamnagar at that time, i.e., at 22-4; Shamnagar did not acknowledge this at first. I repeated it by the Morse instrument. He did not acknowledge it on the Morse instrument but after 2 or 3 minutes he turned the needle to "train on line" and I put the starter back again to danger. I would note that I had similar trouble previously, when the Tittaghur special passed, in trying to get Shamnagar to take the train number on the Morse instrument and I got no reply message by it in that case either.

When the mill special passed I noticed that only its left hand lamp was burning and the station master also telephoned to that effect to me. I tried to advise Shamnagar on the Morse instrument but I could get no reply in this case either. After the troop special had passed the starter I heard the sound of the collision. The assistant station master enquired over the telephone what the matter was. I replied I did not know, and immediately afterwards he came to the cabin and took away my train message

book. I had previously given line-clear to the Calcutta down special at 21-55 and Shamnagar gave the out report at 22-5 which I acknowledged at the same time. When giving that line-clear, Shamnagar gave the train number over the Morse instrument all right. I did not ask any line-clear for 35 up.

Recalled.—After hearing the sound of the collision I asked Shamnagar cabin what had occurred; he signalled "nothing," and I made no further enquiry of him. After half an hour I heard by telephone from my assistant station master that a collision had taken place. I raised the starter to danger 5 or 6 minutes after the troop special passed on receipt of acknowledgment of "train entering section," from Shamnagar, as I could not do so before. This was after hearing the sound of the collision.

H. K. Liswas, cabin assistant, Shamnagar.—I came on duty on the night of the accident at 17-45. At that time all my signals and instruments were in good order, but the telephone was out of use on account of repairs.

Ichhapur asked line-clear for the Tittaghur mill special at 21-47, and I gave the same immediately. "Train entering section" report I received at 21-52. I lowered my outer and home signals on receipt of the out report for that train, and I personally saw that they came off. The train, however, did not arrive. Prior to giving line-clear for Tittaghur mill special, the last train that had passed through was 39 up passenger which departed at 21-37. Between that time and the giving of line-clear and pulling off of signals for Tittaghur up special no shunting or train movements of any sort had taken place in my station, and there was no reason why the mill special should not have run straight into it. When line-clear had been given for the mill special on the block instrument, I acknowledged the train number signal from Ichhapur on the Morse instrument. After giving line-clear for the mill special I neither received nor made any enquiry as to the troop special, and after the out report was received from Ichhapur, I had no communication of any sort with that station until I asked for line-clear for Calcutta down special at 21-54, and this train passed through at 22-6. At about 22-8, I received a message from Ichhapur on the Morse instrument stating briefly that an accident had occurred. From the time I came on duty up to receipt of that report I had not left my cabin. When I received it I shouted to the assistant station master on duty and he came up to the cabin and tried to get Ichhapur on the Morse instrument but in vain.

Recalled.—I cannot account for the entry in the Kankinara cabin book to the effect that Jagadal asked line-clear for 35 up from Kankinara and afterwards cancelled it, nor do I understand why Kankinara asked line-clear for 35 up from Nainhati as the books there show.

When I gave the back report of the down train to Jagadal and tried on the Morse to get information of the whereabouts of Tittaghur mill special from Ichhapur, the cabin assistant of Jagadal suddenly asked, "A 'any'—is any train expected up?" I replied, "No."

Sukari, cabin jemadar, Shamnagar station.—The statement of the witness was identical in every detail with that of the cabin assistant.

Sho Gobind Singh, gunner, Shamnagar station.—On the night of the accident, I was on duty waiting with my khalassies to shunt the Tittaghur mill special. At about 22 hours I asked the Baboo why it was late. He said it was just coming and on looking I saw both the home and outer signals were off; neither the train nor any portion of it arrived, and shortly afterwards I heard two loud crashes at short intervals.

A. K. Ganguli, assistant station master, Shamnagar.—I came on duty at 9 hours on the date of the accident, the station master being sick. A few minutes before 22 hours the cabin assistant told me by telephone that the Tittaghur mill special was coming. I told the jemadar to put it on the ghat line and came to the end of the platform to shunt it on arrival. The train not arriving I enquired of the cabin concerning it; after some minutes the assistant told me that a collision had taken place; I then went to the cabin to enquire of Ichhapur what had occurred but got no answer. After receiving advice from the cabin assistant of the departure from Ichhapur of the mill special I noticed the outer and home signals and saw they were both lowered. I had no shunting to do in the yard after departure of 39 up and there was no reason why the train should not have been allowed to enter at once without waiting at the outer. When talking with the cabin assistant I recognised him by his voice.

Sewan Nath Upadhaya, platform jemadar, Shamnagar.—On the night of the accident the assistant station master told me that the Tittaghur mill special was coming and to go and sign the guidance. I went on the mill siding near the cabin with my khalasia and we sat and waited but no train came, though the signals were lowered for it. While we were waiting there, a down goods passed. No portion of the Tittaghur mill special came in.

Gopal Chundra Gattak, cabin assistant, Jagadal.—On the night of the accident I was on duty. At 22-5 or 6, I got 2 beats (for an up mail or troop special) from Shamnagar and at once I asked line clear from Kankinara; Kankinara gave it; after that I saw the upper needle (the down line) turn to line closed. Then I asked Shamnagar by Morse for the number of the up train and after a few minutes he signalled "N" "Nothing" and I passed this on to Kankinara. He also closed his line. I then rolled on the Morse for 15 or 20 minutes for Shamnagar but got no answer. I made no entry in my book because I got no train number.

SUMMARY.

Putting aside the evidence at this enquiry as being for the greater part more or less untrustworthy, the only resort is to facts observed on the spot by us. The amount of such tangible evidence obtainable is very scanty, and consists only of the following facts:—

- (a) That the Tittaghur mill special, or, at any rate, the rear portion of it, had got but a very short distance beyond the starter, and but half-a-mile beyond the station in all, before it was run into, the brake-van being found 1,600 feet beyond the Ichhapur up starter and 4,500 feet short of the Shamnagar up outer.
- (b) That the booked timings show that not less than 12 minutes elapsed between the time the mill special engine passed the Ichhapur up starter and the time the train was run into, and that during this interval it had travelled but 3,000 feet.
- (c) That, in the opinion of all who saw the wreck it was an absolute impossibility for the guard to have been in his van when it was struck and to have escaped without serious injury.
- (d) That for some reason he has lied regarding the loss of his train memorandum book which was found in his house on search being made by the police on the night after he had made his first statement.

- (e) That an enquiry for an up mill or troop special was entered in the books of Kankinara and Naihati at 22-6 and 22-7 hours, respectively, though of this there is no entry in Jagadal's book.
- (f) That the East Indian railway up troop special, both engine and stock, was not derailed and was practically undamaged by the first collision.
- (g) That the Shamnagar book showed entries correctly, but only up to "train on line" for the up mill special.

Arguing from these known facts, it may be held therefore that the Tittaghur mill special was greatly delayed in its passage between stations, that the guard was not in his van when the rear portion of his train was struck, and that the train, or, at any rate, its rear portion, was therefore probably at a standstill when so struck. It becomes a question therefore (booked times being accepted as approximately correct) whether the whole train was delayed and was halted when struck, or only the rear portion, *i.e.*, whether the whole train was deliberately halted between stations by the running staff, or whether a breakaway took place.

To decide as to the side on which the probability lies, we can only turn for guidance to the doubtful evidence of the staff. From this evidence, taking it as a whole, and combining it with the abovementioned known facts, two theories can reasonably be postulated:—

- (a) A breakaway of the front portion of the Tittaghur mill special, its arrival at Shamnagar and return back in the Ichhapur direction on the up line, and the collision meanwhile of the up troop special with the portion left standing on the line.
- (b) A deliberate halting of the whole train between stations and a collision between the whole of it and the up troop special.

Of these two theories, (a) appears to us the more probable. All facts, and what we believe to be the truthful portion of the evidence, appear to be compatible with it. The course of events, we should say, was probably as follows:—

A breakaway took place between stations (it may be noted that the train was found to have parted in three places after the collision, but there is no direct evidence as to which took place after and which before); the driver unaware of it, ran into Shamnagar; in the meantime the cabin assistant, having cleared the line and pulled his signals off, either left his cabin or went to sleep, leaving the Jemadar in charge; the latter seeing the front portion of the train come in and supposing it was a complete composition gave the in-report to Ichhapur and threw up his signals; he then acknowledged Ichhapur's line clear enquiry, gave line clear and signalled enquiry on to Jagadal; subsequently, having discovered the breakaway, he, without notifying Ichhapur of the facts, advised the driver to go back and bring his train in; the latter proceeded to do so, but before he could get back to the rear portion of his train, the first collision took place.

This theory would account for everything—the excessive time taken to get a short distance beyond the starter, the escape of the guard (who had discovered that his train had parted, and had left his van before it was struck), the state of the books at Shamnagar and Ichhapur, the failure of Ichhapur and Jagadal to get Shamnagar for some time by rolling on the Morse instrument and the cancelled enquiry by Shamnagar for 35 up, these three latter circumstances being due to the cabin assistant being either absent or asleep. The opposite statements of the Shamnagar cabin staff and the running staff of the mill special as to the Shamnagar signals being off or on for the latter's train when it approached Shamnagar is natural. The cabin staff would want to show that they had performed their duty in pulling them off to admit the train, whilst the train staff would state the contrary, in order to account for the long time taken in running from Ichhapur to the scene of the accident, and as a theoretical reason why it could not have been possible to get the front portion of the train into Shamnagar without running against signals, even if it *had* parted; also, as it is extremely probable that the signals *were* thrown up behind the parted portion and were at danger when the collision took place, the driver would naturally think that all concerned would notice their position after the accident and would give his evidence to accord with theirs on the point.

As regards theory (b), though possible, it seems less probable. We do not regard it as likely that Shamnagar deliberately gave an in-report for the mill special before the arrival of the same, but it is just possible, if booked timings are not strictly accurate, that the following occurred:—

Shamnagar cabin assistant being only half awake, mistook the arrival of the Calcutta down special for that of the Tittaghur special, and gave "train out of section" to Ichhapur and also line clear to the troop special; that Ichhapur received this at 22-3 just as he had lowered his up home signal to admit the troop special on to his platform and thereupon immediately lowered his starter and warner signals. Booked timings, however, if accepted, do not support this theory.

In addition to the two above theories, a third can be formulated, *viz.*, that Ichhapur book was posted up subsequently to the accident, and that its timing cannot be accepted, but that what actually occurred was as follows:—

The cabin assistant, Ichhapur, after lowering signals for Tittaghur mill special to run through did not again put them back to danger, expecting to get the in-report for that train

and line clear for the troop special before it had left Palta. This, however, is not compatible with the entries in the books at Kankinara and Naihati, nor with the excessive time taken by the Tittaghur special as booked in Ichhapur cabin.

On the whole, therefore, we prefer to accept the first theory (a) of the Tittaghur mill special parting as best according with observed facts.

FINDING.

We find :—

- (a) That the accident was caused through the Tittaghur mill special not having cleared the section between Ichhapur up starter and Shamnagar home signal, although signalled as having done so.
- (b) That this was most probably due to the mill special having parted; to the fore portion running into Shamnagar station section, to the "in report" for the train, as if the whole had arrived, being given by the cabin jemadar whilst the cabin assistant was either absent or asleep, and to the cabin assistant not having given the obstruction danger signal to Ichhapur immediately it was discovered that the section was foul.

For this accident we hold the Shamnagar cabin staff and the train staff of the up Tittaghur mill special to be responsible. We recommend that they be not prosecuted but dealt with departmentally.

Our special reasons for arriving at this conclusion are :—

- (a) That the cabin assistant, Ichhapur, gave line clear to Palta for the troop special and was evidently aware of its approach whilst the cabin assistant, Shamnagar, himself states that he made no enquiries about it, thus pointing to the fact that he had forgotten that it was running.
- (b) That the cabin assistant, Shamnagar, is unable to explain the entries in the Kankinara and Naihati books with regard to line clear for an up mail or troop special at 22-6 hours which entries are supported by the evidence of the cabin assistant, Jagadal.
- (c) That the books of Shamnagar, and the evidence of and against, the Shamnagar cabin assistant exactly coincide with what would have been expected supposing him to have been at fault as detailed above.
- (d) That had the cabin assistant at Ichhapur been at fault he would in all probability have wired accusing the driver of the up troop special with having run through signals the more so that the accident message was sent after he knew the latter had been killed.
- (e) That the cabin assistant, Jagadal, supports the cabin assistant at Ichhapur, in his statements that he was for some time unable to get any answer on the Morse instrument from Shamnagar when rolled for.
- (f) That no sufficient explanation can be given by the Tittaghur mill special running staff of the time which elapsed between the passing of the Tittaghur mill special out of the Ichhapur-Palta section and its being run into, in view of the short distance travelled by the rear portion of that train before such collision took place.
- (g) That the escape of the Tittaghur mill special guard from injury is wholly irreconcilable with his having been in his brake-van at the time it was entirely demolished from the floor upwards, pointing to the conclusion that he had descended from the brake-van which had come to a stand-still before the collision with the rear portion of his train.

C. V. LLOYD.

C. L. MAGNIAC, CAPTAIN, R.E.,

C. J. SILVESTER.

RIDER.

We are of opinion that the present incomplete state of the lock and block system on this section of the Eastern Bengal State railway does not afford sufficient protection to the increasingly heavy traffic on it, and we recommend that the arrangements which are now in hand should be pressed to completion without further delay, the first step towards the same being provision for the automatic return of starters to danger whenever passed by a train by means of the treadles for A class stations as laid down in paragraph 13a, Appendix 1, Chapter XII of General Rules and Regulations.

We are also of opinion that the descriptions of the abovementioned treadles, and of their working, in paragraphs 13a, and 47a, Chapter XII, Appendix 1 (as if such treadles were actually provided and in use whereas they are non-existent) tend to mislead the staff. We therefore recommend that the same be expunged in order to bring the subsidiary rules for the

working of trains on the absolute block system on the Eastern Bengal State railway into conformity with the arrangements actually in use on the railway.

C. V. LLOYD.

C. L. MAGNIAC, *Captain, R.E.*

C. J. SILVESTER.

MANAGER'S REMARKS.

Owing to the unreliability of the evidence given at the enquiry, it is impossible to say exactly what took place. I see no other course but to accept the finding, though I am not convinced that the train parting theory is correct. The explanation of the staff of the up mill special is obviously false, and also it is clear that the cabin assistant, Shamnagar, was asleep, or was not in his cabin.

The following, who are to blame for the accident, or for giving false evidence to screen themselves or others, have been summarily dismissed :—

The cabin assistant of Shamnagar ;
 The cabin jemadar of Shamnagar ;
 The guard of the Tittaghur up mill special ;
 The driver " " "
 1st and 2nd firemen of the Tittaghur up mill special.

Remarks by the Government Inspector of Railways.

The evidence given at the enquiry was very unreliable, the staff had made up their various versions and stuck to them. If responsible men such as station masters, cabin assistants, drivers and guards are so untrustworthy as is shewn by this enquiry, it is time that serious efforts be made to get more reliable staff and also to provide such mechanical safeguards as shall make up for the deficiencies of the staff employed.

The question of suitable and reliable staff is a serious one and it gets more so year by year. Concerted action to obtain the right stamp of men and efficient training of them by the railway seems to be the only way to keep the supply up to the increasing demand. Attention was drawn to this in paragraphs 203 to 205 of the last inspection report.

The question of providing more effective safeguards on this busy section of the line calls for immediate action. The completion of the lock and block should be pushed on, the first step being to ensure the correct action of all starting or advance starting signals. Special attention was drawn to the state of the lock and block in paragraph 198 of the last inspection report. A report on the state of the lock and block between Naihati and Majherat on the 31st March 1908, should be furnished as soon as possible after that date.

To include in its subsidiary rules descriptions of the method of working as it should be does not absolve the administration from the responsibility for the method of working as it is. The rules should be corrected so as to be in accordance with facts. It seriously increases the direct responsibility of the administration and lessens the control on the staff to issue rules and instructions which are not in accordance with facts and tends to create a disregard for rules by the staff which is so difficult to contend against.

Under the circumstances it is impossible to assert with conviction that the conclusions and finding arrived at are correct, the committee have done their best and now it remains for the administration to take action.

J. H. WHITE,

Government Inspector of Railways.

CALCUTTA :

The 11th January 1908.

Remarks by the Senior Government Inspector of Railways, Calcutta.

This was a very difficult case, but I believe that the finding is correct.

I agree with the rider and with the remarks made by the Government Inspector and recommend that the administration be urged to push the lock and block to completion with the least possible delay and unless the delay is likely to be of short duration to bring the subsidiary rules for working into conformity with the actual conditions.

F. D. FOWLER,

Senior Government Inspector of Railways.

CALCUTTA :

The 28th January 1908.

Appendix VIII to the abstract return of accidents on Indian railways, for the twelve months ended the 31st December 1907.

Report of the proceedings of a committee of enquiry held at Rasulabad (Bahrapur) station, East Indian railway, on the 18th January 1907, to investigate the circumstances attending the derailment of No. 14 down passenger train at that station on the 7th January 1907.

The committee was composed of the following officers:—

J. YOUNG, Assistant Traffic Superintendent	President.
B. V. RADLEY, District Locomotive Superintendent	} Members.
K. S. LAURIE, Offg. District Engineer	
S. H. CROXFORD, Asst. Carriage and Wagon Superintendent	
H. WRIGHT, Deputy Chief Engineer	} Present.
MAJOR C. S. ROSE, R.E., Government Inspector of Railways	
J. ROBERTSON, Junior Engineer, E. I. railway	

DESCRIPTION.

On the 7th January 1907, at points No. 7 at Rasulabad station (Bahrapur) at 4-56, Bogie thirds Nos. 2034 and 2021, ordinary thirds Nos. 1609, 1326, 1365, 357, and 1607, intermediate No. 1711, 1st class No. 439 and 2nd class No. 59 forming part of the composition of No. 14 down passenger train were derailed. These carriages were marshalled in the middle of the train. There was no loss of life and no passengers complained of any injuries.

Damage to rolling stock to the value of Rs. 2,200.

EVIDENCE.

H. Sinclair, driver.—I was working No. 14 down on the morning of the 7th. We came to a stand at Rasulabad (Bahrapur) after being derailed at 4-56. The distant and main signals were down. The main line indicator was showing white and the other two were green.

The load of the train was 20 equal to 22. We were running about an hour late.

On nearing the distant signal I shut off steam, and from the distant signal applied the vacuum brake.

A couple of carriage lengths before I came to a stand I felt two or three jerks in quick succession and was brought to a stand by the vacuum going down to zero. From the distant signal I reduced my vacuum from 19 to 10 inches, and it was 10 inches when I felt the first jerk. After the first jerk the vacuum fluctuated, and, at about the second jerk, flew to zero. When I felt the first jerk I was travelling at about 10 miles an hour, and I must have been going at that speed over the points. The jerks I felt on the engine were comparatively slight, not sufficient to upset a tea bottle.

I have been running on this section twelve months. I did not notice anything particular coming into this station beyond the ordinary slight shock one gets on taking a crossing, nor have I done so on any former occasion.

On going back to examine the points, I noticed

that the heel block of the tongue rail was broken. The fracture appeared new.

While we were going back to the rear of the train we found a swan neck and coupling hose lying at No. 6 points. (This came off ordinary 3rd class No. 1365 which was the fifth carriage derailed.) All the carriages were lying properly on their wheels, and all the wheels were on the ground.

On re-examination.—I am perfectly certain that as far, as I could judge, the speed was not more than ten miles an hour. At the speed that I was going over the points I would have had to re-create vacuum to bring the train on to the platform.

I made up about five minutes between Cawnpore and Bahrapur. I left Cawnpore at 2-28, exactly one hour late. I had no difficulty with the vacuum from Cawnpore.

W. Anderson, driver.—I was a driver learning the road on the engine of No. 14 down on the morning of the accident. Coming into Rasulabad (Bahrapur) station I felt a slight jerk on the train when the engine was about forty yards from the platform. The train immediately came to a stand. The driver tried to create vacuum, but could not. I got down and went back to see what was wrong, and found the fourth carriage from the engine derailed. I went back and told the driver that the train was derailed. The driver and I then

went back together. On going further back, to points No 7, we found a heel chair and fish plate broken. The tongue rail belonging to the points was locked over. The padlock was on it, but I cannot say whether the nut was tight or not.

The points lever was in the correct position and the cotter in its place. I cannot say whether it was padlocked or not. I noticed this about 15 minutes after we had come to a stand. It was then dark.

There were carriages standing inside points No. 7 not derailed.

We had no trouble with the vacuum on the way from Cawnpore.

The distant and home signals were lowered. The outer points indicator was showing green. No other indicators were visible. I was on the right hand side of the engine.

The driver shut off steam outside the distant signal. Directly he shut off steam he started destroying vacuum. The brakes were off when passing over the points. The speed over the points was between nine and eleven miles an hour.

After passing the facing points the driver never used any brake.

Although we passed over the points at 10 miles an hour, the driver would have had to give more steam to bring the train on to the platform.

On my previous down trip, although we came over the points at the same speed, no extra steam was necessary to bring the train on to the platform.

I was standing with one foot on the engine and one on the tender with my hands in my pockets. I felt two slight jerks which were not enough to make me lose my balance. I am certain that between the distant signal and the facing points the vacuum was not reduced by more than 5 inches. The driver was running with from 18 to 18½ inches of vacuum. He never had more than 18½ inches.

C. Inglis, guard.—I was guard of 14 down and arrived at Rasulabad (Bahrampur) at 4-56. On approaching the station I noticed that the distant and main signals were off. At the distant signal the vacuum indicator in my brake-van showed ten inches. The vacuum maintained during the run from Cawnpore was 18 inches. The vacuum remained at 10 inches after it had come down to that, and when we came to a stop it was at zero.

I noticed the stop was rather more sudden than usual—more sudden than an out of course stop for missing line clear, but not enough to throw me off my feet. Just before the train stopped we must have been going between ten and twelve miles an hour. I got out of my brake-van on the platform side and examined the vacuum pipes thinking that one of them had come undone. I noticed that the seventh vehicle from the brake had left the road. My brake-van and the five vehicles in front of it were on their proper line, i.e., the line leading to the platform. The first derailed vehicle from the brake-van was inside points No. 7 and there were some vehicles on the line inside points No. 7. The only damage I noticed at points No. 7 was a fish plate broken. All the locks were correct, both padlock and safety. The points lever was also locked. I examined the points on my return to the brake-van after meeting the driver.

All the carriage wheels were on the ground; none of them were in the air.

Thakoor Din, jemadar, Rasulabad (Bahrampur).—I was on duty from midnight to 8 hours on the 7th January 1907. I received the orders to set the points, and when I had done so I showed a red light to the station and the signals were lowered. The train came in, as usual, slowly.

I did not know an accident had happened until the guard came and asked me what had happened.

The points were correctly set and all the locks locked. I cannot account for the padlock on points No. 7 being found unlocked by the Deputy Chief Engineer.

Chedi Lall, assistant station master, Rasulabad (Bahrampur).—I was on duty on the morning of the 7th January 1907. When I came on duty I passed two goods trains, one up and one down, before 14 down had to be passed. The train left Fatehpur at 4-29.

I sent my jemadar with keys and clear instructions to set the down line points to admit 14 down passenger. The train left Faizullahpur at 4-45. I personally saw that the points indicator showed that the points had been correctly set and was well satisfied. I then ordered the signaller to lower the signals. I saw a red signal from the points showing that they had been set. The train arrived at the points at 4-56 and was derailed.

I was standing on the platform outside my office and saw the train come to a stand—the engine being near points No. 4. I went out to see why the train had stopped there and found that some vehicles on the train had been derailed.

H. Wright, Deputy Chief Engineer, Calcutta.—I got out of my carriage, which was in the accident, about 15 minutes after it had occurred and went straight to the points and found them all locked except that the hasp of the padlock on No. 7 points was not home. The lever was also padlocked on these points. The first mark of the derailment was the bursting of the tongue rail, at the heel, from the stock rail on the left hand side facing the station. The permanent-way at points No. 7 was in good order. Points No 7 were locked with a padlock and cottered bolt on the right side and with Duttons' Patent key lock on the other side.

The whole of the lead of points No. 6 to the crossing for No. 2 line were torn up and for a few rail lengths within the crossing, then the third line was wrecked for the length of about seven vehicles, after which the second line was again wrecked.

My opinion is that the accident was caused by the train entering the station at a high speed and the sudden application of the brakes, the consequence being that the rear part of the train buckled up and the trailing wheels of the leading bogie struck the inside of the left tongue rail at points No. 7 and burst it open; then, having mounted the abutting rail, eventually became derailed, dragging the rest of the vehicles after it.

Where the first wheel mounted the abutting rail there was an indentation, which could only have been caused by a wheel striking it after the tongue rail had burst away.

About an hour after the accident my attention was called to the fact that the vacuum pipe between bogie carriage No. 2021 and ordinary third class No. 1609 had parted but was not damaged.

S. Beard, fireman.—I was fireman on the engine, No. 859, of 14 down of the 7th January 1907. The driver shut off steam outside the distant signal and applied the brakes. I did not notice how much vacuum was destroyed. We came on the usual way with the brakes on. When the driver was about to release the brakes I felt two sudden jerks and the train came to a dead stop. The jerks were quite slight. I stayed to look after the engine while the driver went back.

K. S. Laurie, District Engineer, Allahabad.—I arrived at the scene of the accident from Allahabad with the material train and at once proceeded to examine the derailed carriages, and the first thing I noticed was that the vacuum pipe between bogie 2021 and ordinary third 1609 had become disengaged and that the pipe contained red *morum* dust which had apparently been drawn into the pipe in considerable quantities. I then called for a rail gauge and, with the Assistant Engineer and Permanent-way Inspector, proceeded to the points No. 7. The left hand switch heel block was broken with the inside fish plate and all fishbolts sheared off. There was no mark of any mounting the rail on either switch which were in their correct position. I had the lock opened and the cotter and bolt taken out, moved the points over, gauged the line both behind and in front of the switch and found nothing wrong.

The left hand switch, had it been subjected to any natural force at the heel, would probably have sprung out, but there was no apparent movement by simply throwing the lever over. There was a distinct mark on the rail behind the left hand switch where the flange of a wheel had ridden along the top of the rail. There were also marks on the rail behind the right switch and several chairs broken.

FINDING.

We, the undersigned, having carefully considered all the evidence, do find—

- (i) That there is no direct evidence as to the actual cause of the accident.
- (ii) Reviewing the evidence and an examination of the permanent-way shows that the first mark of derailment is on the left hand heel block of points No. 7. This heel block was shattered and the interior fishplate broken, the four fishbolts being sheared. The abutting rail showed signs that the wheel had mounted at the end adjoining the switch, and, running along the top, ultimately fell off on the sleepers on the wrong side. The right hand switch had no mark of two roads on it. There were marks traceable on the sleepers inside the straight road, from this point to as far as the crossing all chairs being more or less broken, this showing that the vehicles dropped beyond the heel of the switch after mounting and never actually ran on the straight road.
- (iii) The carriages derailed looked as if they had been arrested in front and pushed behind by the carriages still on the line. The vacuum pipe was broken on the 5th, 8th and 12th vehicles in the train and might have acted on the front part of the train so as to cause this formation, but this would not account for the derailment. The same effect would have been caused had the train been approaching at the excessive speed of twenty-five miles an hour; and if the driver had applied the brake suddenly, this would stop the carriages in the front first and tend to lift one of the carriages coming over the curve of the lead, as the vacuum is not instantaneous in the whole train at once.
- (iv) The accident might also have been caused by some obstruction falling on the heel block and causing one of the wheels to mount the rail at this point, but nothing was found to lead to this supposition.
- (v) Considering the distance (about 600 feet) travelled by the train after the first wheel left the road and the fact that twenty-four pairs of wheels were ploughing through the ballast and permanent-way for the greater part of this distance, we consider that the train must have approached at a high rate of speed, and, for this reason, we have little doubt that the accident was caused as outlined in clause (iii.)

J. YOUNG,

President.

K. S. LAURIE,

Member.

We agree with the above finding, except with regard to the probability of the accident having been caused entirely by excessive speed or a sudden application of the vacuum brake. **Sec. 2.** With reference to the former the distance travelled by the trailing bogie of the first bogie carriage is not sufficient in our opinion to give reason to assume the speed was high. From the condition of the wheels of this bogie truck the trailing bogie was the first to leave the line, and it would seem that this bogie ran with the left hand wheels inside the left hand rail of line No. 3 till the bogie check chains prevented the centre line of the vehicle making any greater angle with the centre line of bogie truck when the wheels of this bogie broke the left hand rail of line No. 3, and probably the second bogie vehicle acted similarly, and these two bogies caused the damage to lines Nos. 2 and 3.

Sec. 3. With regard to the latter, we are of the opinion that the vacuum was destroyed by one of the hose pipes becoming disconnected owing to the derailment, and that the train only travelled a very short distance after the brakes were applied.

4. Though there is nothing to prove it, we consider that the breakage of the heel block and the breaking of the bolts were due to the right hand wheel having crossed the right hand switch of points No. 7, which, acting as a check rail, caused the flange of the left hand wheel to force the heel of the left hand switch out of position, after which the pair of wheels took the straight road.

B. V. RADLEY,

Member.

S. H. CROXFORD,

Member.

Remarks by the Government Inspector of Railways.

At the time of the enquiry the two 3rd class bogies, Nos. 2034 and 2021, which were the first derailed vehicles on the train, were standing on the goods shed line. I inspected them and found some of the wheels of the leading carriage, No. 2034, badly indented and rubbed, while those of No. 2021 were scarcely marked beyond the signs of having run over ballast. As there were no arrangements for lifting the carriage bodies off their bogies, I asked that carriage No. 2034 might be sent into Cawnpore and lifted there for my inspection. I proceeded to Cawnpore on the 20th January and examined the wheels, bogies, frames, axles and springs carefully.

A dimensioned plan and elevation of the wheels and frame of carriage No. 2034 is attached, and, for the sake of easy reference, the wheels are lettered starting with A at the left hand leading wheel of the front bogie. The condition of the wheels was as follows:—

- (a) No indentation marks. Slightly rubbed on the inner face of the flange.
- (b) A deep cut about 4" long diagonally through the flange, followed by a 'flat' about 3" long on the tread of the wheel.
- (c) No indentation marks. Inner face of flange distinctly rubbed but not excessive.

- (d) A few cuts on the flange. No marks on the head or faces of flange.
 (e) Flange scarcely marked. This wheel is the one most cut about by the accident.
 The outer edge of the tread is badly indented and cut in several places.
 There is also some rubbing on the outer face of the flange.
 (f) Some bad indentations in the flange. The outer edge of the tread also scraped.
 (g) } No marks.
 (h) }

In other respects the bogies, frames and pivots, springs, etc., were in good order and there were no wheels with sharp flanges.

Coming now to the cause of the accident. There can be no doubt, from the way in which the different carriages on the train were found after the accident, that the engine, front brake-van and 2 third class carriages took the loop line as intended, that the next 7 or 8 carriages took the straight line through the springing open of points No. 7 and that the points then sprung back again and admitted the remainder of the train on to the loop line again. Judging from the condition of the wheels, as detailed above, I am of opinion that wheels A, B, C, and D took the loop line all right; that when wheels E and F were near the heel of the switch rail, wheel E through some cause (possibly due to sudden kick given to this end of a long bogie carriage in running round the curves entering the loop) bumped heavily against this end of the switch, burst the fishplate of the heel (which after the accident was found lying against the right hand rail) and in doing so sprung the nose of the switch out and allowed wheel K to take the straight line.

The switch was an 18 feet one. The dimensions given in the sketch show that in the normal condition with buffers not compressed the distance from the centre of wheel E to the centre of wheel J is 19 feet. The above assumption is therefore reasonable. The marks on the wheels also fit in with this conclusion thus:—When wheel E arrived at the heel of the switch and burst the switch rail outwards it mounted the abutting rail, fell on to the inside of the straight track and got badly dented in jumping the rail and following chairs. Similarly wheel F was forced to mount the rail and fell outside the rail of the straight track and got indented by the chairs. Meanwhile wheels A, B, C, D were half way between the heel of the switch and nose of crossing, and when E and F mounted the rails they presumably kept the rails till B encountered the crossing and got a deep cut in its flange.

When the proceedings of the committee of enquiry were received with Agent's letter No. 239, dated 6th February 1907, he was again addressed and requested to obtain the further evidence of Mr. Wright on certain points and to submit drawings of the locking bolt in use at points No. 7 where the accident occurred. The reply and drawing were received with Agent's letter No. 565A, dated 28th March 1907, attached.

At the enquiry I noticed that when the nut was not tight up against the web of the rail and the points lever was thrown over, the points could be made to open out about $\frac{1}{4}$ inch. It appears to me that even when the cotter is full home the nut may still not be screwed up tight against the web of the rail and so allow of the point of the switch being opened a considerable amount. Mr. Wright in his evidence stated that he got out 15 minutes after the accident occurred and examined this lock and found the hasp of the padlock not home. It is quite possible that, during these 15 minutes, the pointsman may have tightened up the nut, put the cotter tight home, but had not sufficient time to complete the locking of the padlock. Whether this was the case or not, this type of locking bolt appears to me to be defective and, unless carefully adjusted, to admit of the switch being forced open.

I do not attribute the accident to excessive speed when entering the loop. The position of the derailed vehicles on the straight line gives no idea of 'buckling' up, nor were any of these vehicles turned over as would most probably have occurred had the train been going at any great speed.

In my opinion the accident was caused by some defect at the heel of the left hand switch, and through the points then being forced open due to a defective locking bolt and the train being split on to separate lines.

C. S. ROSE, MAJOR, R. E.,
 Government Inspector.

Documents accompanying.—

- Annexure 1.—Copy of letter from Agent, East Indian railway.
 „ 2.—Sketch of bolt nut and cotter lock.
 „ 3.—Plan and elevation of the wheels and frame of carriage No. 2034.

Remarks by the Senior Government Inspector of Railways, Lucknow.

I am inclined to agree with the Government Inspector that this accident was primarily due to some defect in the heel of the left hand switch; this allowed the points to be forced open and the vehicles were derailed owing to the train splitting on to different lines. The locking bolt also appears to have been defective.

J. E. GABBETT,
 Senior Government Inspector.

The 2nd April 1907.

**Annexure 1 in appendix VIII to the abstract return of accidents
on Indian railways for the twelve months ended the
31st December 1907.**

Copy of a letter No. 565A., dated 28th March 1907, from Mr. W. A. Dring, Agent, East Indian railway, Calcutta, to the Senior Government Inspector of Railways, Lucknow.

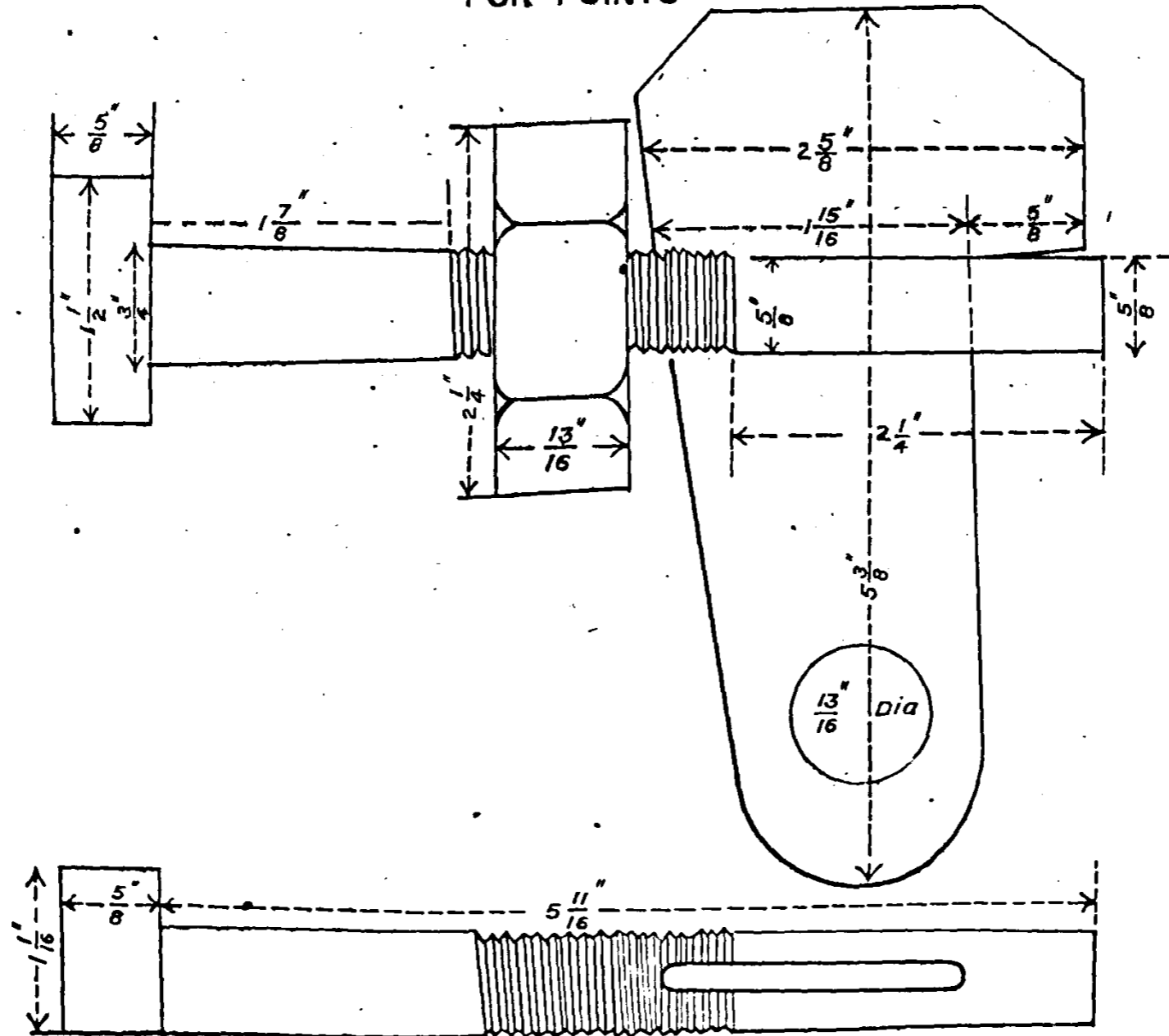
Derailment of No. 14 down passenger at Bahrapur on 7th January 1907.

With reference to the several points raised in your letter No. 904T., of 13th February last, I beg to reply as follows in the serial order stated therein :—

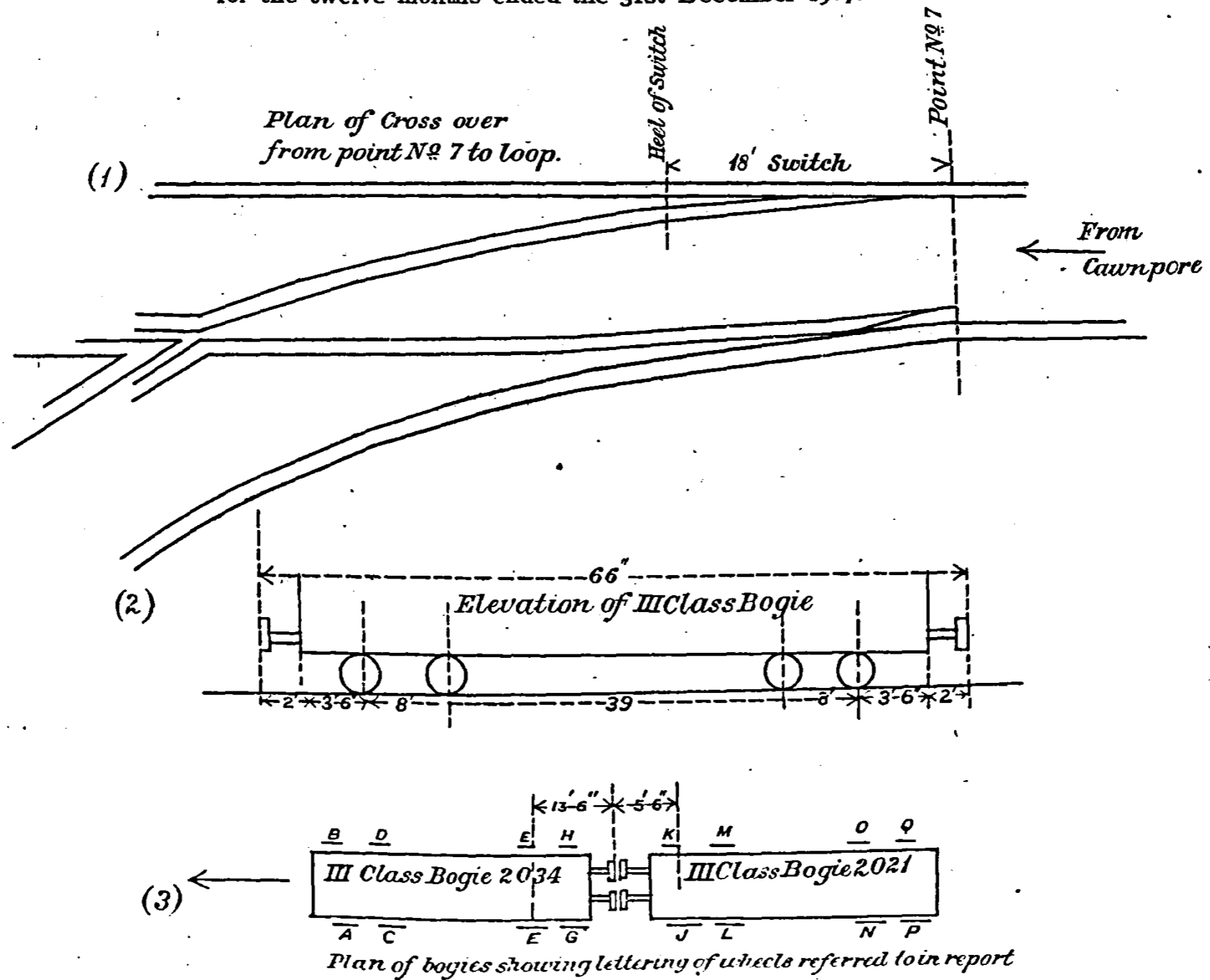
- (a) Sketch No. 39655 of the locking point as was in use at point No. 7 on the night of the accident is herewith enclosed.
There is no play between the web of the rail and the nut when the nut is in proper position with the cotter inserted to its full extremity.
 - (b) Mr. Wright states that when he examined these points the nut on the bolt was tight up against the web of the rail, and the cotter was through the slot on the bolt to its full extremity.
 - (c) When the nut is tight against the cotter instead of the web of the rail *and the lever is padlocked*, the switch cannot be opened at all.
 - (d) A copy of standard drawing No. 23 showing the connections between the two switch rails at points No. 7 is herewith enclosed. The switches were 18'-0".
 - (e) Owing to a good deal of the material having already been changed, I regret that a sketch showing the position of the marks on the sleepers cannot be furnished.
 - (f) Mr. Wright states that he was asleep at the time of the accident and noticed no sudden jerk when the train stopped.
2. My remarks on the accident will follow shortly.

Annexure 2 in appendix VIII to the abstract return of accidents on Indian railways
for the twelve months ended the 31st December 1907.

EAST INDIAN RAILWAY FULL SIZE DRAWING OF BOLT NUT & COTTER LOCK FOR POINTS



Annexure 3 in appendix VIII to the abstract return of accidents on Indian railways
 for the twelve months ended the 31st December 1907.



**Appendix IX to the abstract return of accidents on Indian railways
for the twelve months ended the 31st December 1907.**

Report of the proceedings of a committee of enquiry which assembled at Ghaziabad station, East Indian railway, on the 20th February 1907, to investigate the circumstances attending the collision at that station on the 14th February 1907, between No. 29 up Ghaziabad-Moradabad railway mixed train and some wagons standing on No. 7 line.

The committee was composed of the following officers:—

R. RAY,	<i>Assistant Locomotive Superintendent, E. I. ry.</i>	President.
A. J. N. LOWTHER,	<i>District Superintendent,</i>	} Members.
W. A. HUTTON,	<i>Assistant Engineer, E. I. ry.</i>	
M. P. SCHEMBRY,	<i>District Traffic Superintendent, O. & R. ry.</i>	
W. LEACH,	<i>Assistant Locomotive Superintendent,</i>	
C. CHALMERS,	<i>Assistant Engineer, O. & R. ry.</i>	
MAJOR C. S. ROSE,	<i>Government Inspector of Railways</i>	} Present.
R. E.,		
T. G. WAREHAM,	<i>Inspector, Government Railway Police</i>	

DESCRIPTION.

At 20-39 on the 14th February 1907, Ghaziabad-Moradabad railway No. 29 up mixed train was by error admitted on to No. 7 line on which some wagons were standing, instead of on to No. 8 line resulting in a collision and derailment of five vehicles standing on that line.

No one was injured. The rolling stock was considerably damaged.

EVIDENCE.

T. McNaught, officiating second assistant station master, Ghaziabad.—On the 14th I was on duty from 16 hours to 24 hours. On receipt of enquiry for 7 up express East Indian railway and 29 up Ghaziabad-Moradabad railway mixed, I sent out badges Nos. 5 and 8. I gave instructions that No. 5 line was to be blocked for 7 up, and No. 8 for 29 up Ghaziabad-Moradabad railway mixed. On receipt of out report for 7 up from Maripat, I ascertained that No. 5 line was locked over, and, on receiving a white light and on a peon shouting that the line was all right, I lowered the signals for the admission of 7 up East Indian railway.

On receipt of the "out-report" from Dasna the same procedure was followed.

No. 29 up mixed passed the cabin at about 20-37 hours. I was told that the Ghaziabad-Moradabad railway mixed had been allowed to enter on a wrong line. The badge had not been returned to me in accordance with the rules for working Ghaziabad station, dated 21st June 1906, but I relied on the peon having the badges in his possession.

My object in giving orders for the signals to be lowered before I had received the badges was solely to expedite the despatch of the train. I sometimes give the order for the lowering of signals before the receipt of the badge, and sometimes I wait until I have received it; but I never give such an order until the peon has signalled to me by means of hand signals that he has the badge in his possession. On the night in question the peon signalled to me in the usual way that he had received the badge; he also shouted that all was right. The name of the peon in question is Allah Diab.

I was in my office at the time the collision occurred. The Ghaziabad-Moradabad railway mixed had collided with those wagons which were standing on No. 7 line. Three wagons were completely derailed and badly damaged, and the engine of the Ghaziabad-Moradabad railway train was also damaged.

I then ascertained that no passengers had been injured, and gave orders for the train to be backed on to No. 9 line.—No. 8 line being fouled with the derailed wagons.

A statement of jemadar Sham Lal recorded by the police, in which it was stated that after the accident the assistant station masters, etc., wanted to take the badge forcibly from him, has been read out to me.

I know nothing about this having been done. I never saw Sham Lal until after 24 hours.

Sham Lal, jemadar, in his statement to the police mentions that he got information from peon Gopee that the Ghaziabad-Moradabad railway mixed was running late, when he unlocked No. 8 line, returned No. 8 badge to the peon and took his badge back.

I had no occasion to alter my orders as the Ghaziabad-Moradabad railway mixed was running to time, and No. 8 line badge was not returned to me until about 21-45 hours, although Sham Lal states that the peon (Gopee) brought the badge back to me.

J. A. Campion, permanent-way inspector, Ghaziabad.—I arrived at the scene of the accident shortly after 21 hours, and sent for the line jemadar

Sham Lall. When he came to me, about 21-30 hours I asked him what orders he had received from the assistant station master. He stated that he had been instructed to look over No. 8 line for the admission of 29 up Ghaziabad-Moradabad railway mixed. He did this and gave the badge to the peon of the assistant station master. Subsequently he stated that the assistant station master countermanded this order as the Ghaziabad-Moradabad railway train was running late, and the assistant station master returned him his badge.

I questioned the assistant station master on duty, Mr. McNaught; but he denied having countermanded the order and said that the train was running to time.

Sham Lall informed me that when the assistant station master countermanded the original order, he (Sham Lall) unlocked the points for No. 8 line and proceeded to attend to 6 down and 7 up East Indian railway passenger trains. My opinion is that Sham Lall had never locked the points for No. 8 line, but that he had locked the points for No. 7 line in error and, after the accident, he unlocked No. 7 line in order to show that he had not locked either of the lines.

The assistant station master's peon, Allah Diah, who had the badge in his possession at the time, states that jemadar Sham Lall snatched the badge from his hand immediately after the occurrence.

Sham Lall, jemadar, Ghaziabad.—I was line jemadar on duty from 18 to 24 hours on 14th February 1907. About 19-45 hours, assistant station master's peon, Allah Diah, gave me badges for 5 and 8 lines for 7 up and 29 up mixed (Ghaziabad-Moradabad railway).

I locked over No. 5 line for a train from Maripat and No. 8 line for a train from Dasna. After locking over the points I gave over my two incoming badges to Allah Diah peon. This peon then proceeded to the station about 20 hours. About five minutes afterwards Allah Diah returned to me and told me to open No. 8 line as Ghaziabad-Moradabad railway mixed was running late.

Allah Diah returned the incoming Oudh and Pohilkhand badge to me, and I then opened No. 8 line points.

Allah Diah returned to the station. No. 7 up pressed about this time, and I then came to points 38 to lock them over for 6 down passenger which was about to leave the station.

About four or five minutes after this Allah Diah again returned to me. He asked me for the outgoing badge for No. 6 down, which I gave him, and he again returned to the station.

I remained at No. 38 points.

After a few minutes I heard the noise of a collision. I ran out and saw that a collision had occurred. After the accident none of the staff attempted to recover the badges from me.

With reference to a statement recorded by the Police, Gopee (peon) never came to me, nor did Gopee tell me that 29 up Ghaziabad-Moradabad railway mixed was running late. I deny ever having told the Police that the assistant station masters, etc., made any attempt to take the badge from me. I was aware that No. 7 line had some wagons standing on it. After I had taken off the lock from No. 8 line I left the point set for that line, and do not know who afterwards set them for No. 7 line.

Driver Gibbs, Moradabad.—I worked No. 29 up mixed ex-Moradabad on the 14th February 1907. Approaching Ghaziabad all signals were lowered for

me. I was not aware whether I would be admitted on line No. 8 or No. 9, both lines being controlled by the same semaphore signal. The pointsman showed me a green light when approaching points No. 13 to indicate that all was right. When about 30 yards inside the points I noticed some wagons standing on the line on which my train was running. I was then about one wagon's length from them and travelling at about 10 miles per hour. I applied my brake immediately, but it was too late to avert the collision.

The engine was fitted with a vacuum brake, but the train was being worked non-vacuum as there were seven non-vacuum fitted goods wagons in front of the passenger vehicles. After the collision took place I did not notice whether the points were locked or not.

C. E. Easton, leading fireman, Moradabad.—I corroborate the evidence recorded by driver Gibbs. I did not notice whether the points were locked or not.

Allah Diah, badge peon, Ghaziabad.—I was on duty from 16 hours to 24 hours on 14th February 1907. I received No. 5 badge from assistant station master for No. 7 up passenger to be admitted, and on its arrival I was told to bring badge for No. 4 line to despatch No. 6 down passenger and look over No. 8 line. I told Sham Lall to look over No. 8 line for the Dasna mixed. He gave me the inward badge for 7 up passenger, the outward badge for No. 6 down, and inward badge for 8 line.

After receiving these badges I sat down at the Goomtee. I did not return to the station because I had received orders from assistant station master to remain at the points until all trains had been disposed of. I was simply told to wave a white light when all was right, and was told to keep the badges in my possession. When I saw the Dasna mixed in sight at the cabin signals I got up, intending to go to the assistant station master. At this time I had the badge for No. 8 line in my possession. Soon after leaving, the jemadar, Sham Lall came up and assaulted me and took away my line badge for No. 8 line.

The Dasna mixed came in on No. 7 line and collided with some wagons which were standing there. I never received any orders from assistant station master to cancel those he had given me to admit the Dasna mixed on No. 8 line. I do not know how the points came to be set for No. 7 line. I did not personally see which line the points were locked for.

Shahzada Khan, pointsman, Ghaziabad.—On 14th February 1907, when 29 mixed Ghaziabad-Moradabad railway train was approaching the station, I was standing close to points No. 25, which control No. 7 and 8 lines. About 20 minutes after the points had been set I noticed Sham Lall opening the points and asked him why he was doing so. He replied that Ghaziabad-Moradabad railway mixed was running late.

I was asked by the gunner to reverse the points to admit of shunting operations being performed on No. 9 line. The points were not again reset. Suddenly, hearing the Ghaziabad-Moradabad railway mixed approaching and when it was quite close by, I shewed a red light to warn the driver, as I was aware that No. 7 line was blocked by wagons, but it was too late to avert an accident. I do not know of any dispute having taken place between Sham Lall and Allah Diah.

FINDING.

We, the undersigned, having carefully considered all the evidence, do find that Mr. McNaught, officiating 2nd assistant station master, Ghaziabad, is primarily responsible for the accident, in that he set aside the printed rules for the working of the station; and allowed trains to be admitted without being in possession of the necessary badges.

Disobedience of orders in this respect contributed to slack working on the part of the yard staff, and, from the evidence recorded, it is quite clear that there were doubts in their minds as to which trains had to be first admitted or despatched. Sham Lall, jemadar, apparently was more or less in the dark of what was really required, but is none the less to blame

for not making certain. From evidence we learned that, after the accident, he was considerably flustered, and it is quite probable that after the accident he snatched the keys from Allah Diah, badge peon, with a view to exonerating himself.

The driver and cabin staff are in no way to blame.

R. Ray.
A. J. N. LOWTHER.
W. A. HUTTON.

M. P. SCHEMBRY.
C. CHALMERS.
W. LEACH.

Remarks by the Government Inspector of Railways.

I agree with the finding and am of opinion that this station should be interlocked.

C. S. ROSE, MAJOR, R. E.,
Government Inspector.

Documents accompanying—

Annexure 1.—Plan showing site of collision.

Remarks by the Senior Government Inspector of Railways, Lucknow.

The finding of the committee may be accepted.

The question of interlocking Ghaziabad station will no doubt be considered by the Agent, East Indian railway.

J. E. GABBETT,
Senior Government Inspector.

LUCKNOW; }
The 6th March 1907. }

Annexure I in appendix IX to the abstract return of accidents on Indian railways
for the twelve months ended the 31st December 1907.

NR 11

AJ			
BI			
CK			
DL			
EF			

NR 12

AJ			
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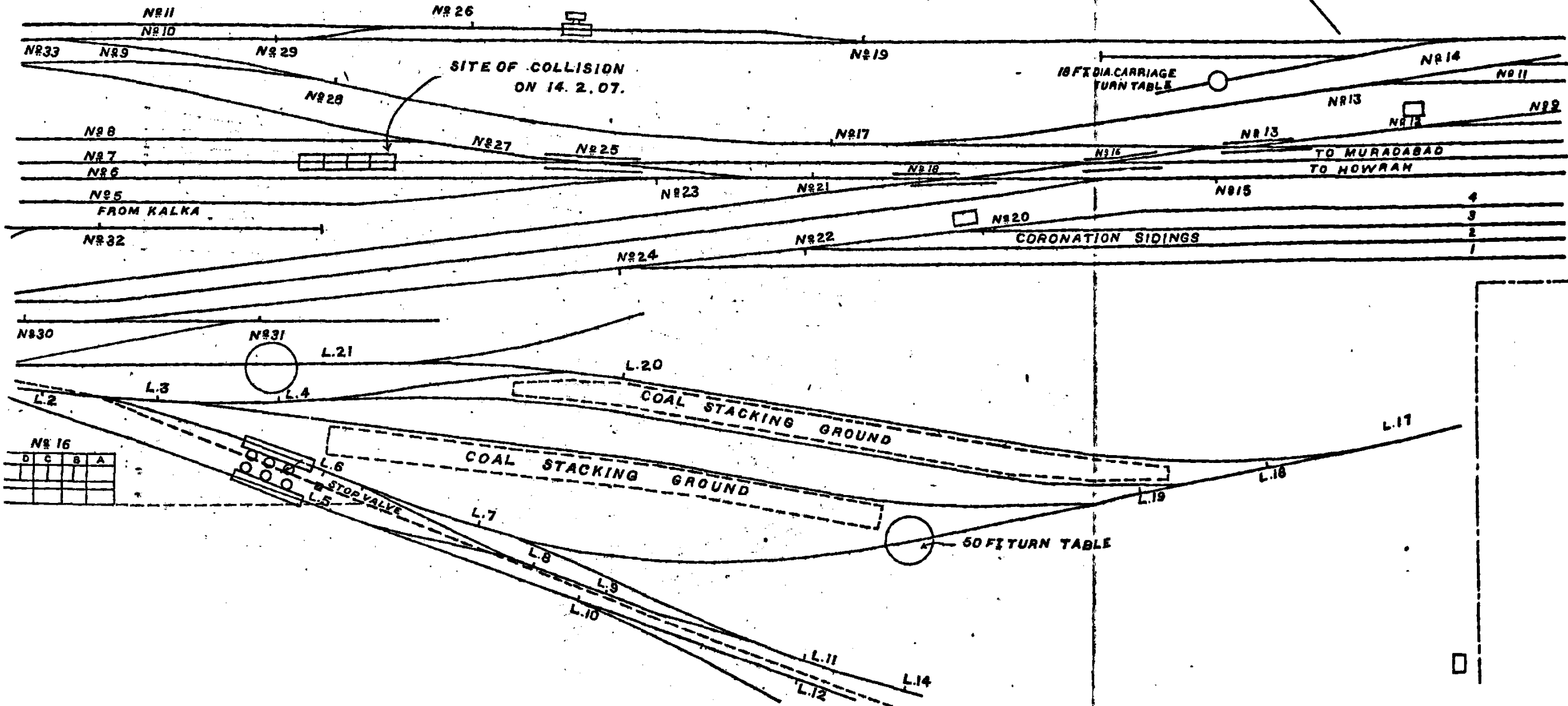
NR 13

AJ			
BI			
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NR 14

AJ			
BI			
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**PLAN SHEWING SITE OF COLLISION
AT GHAZIABAD STATION E. I. RY.
ON 14-2-07.**

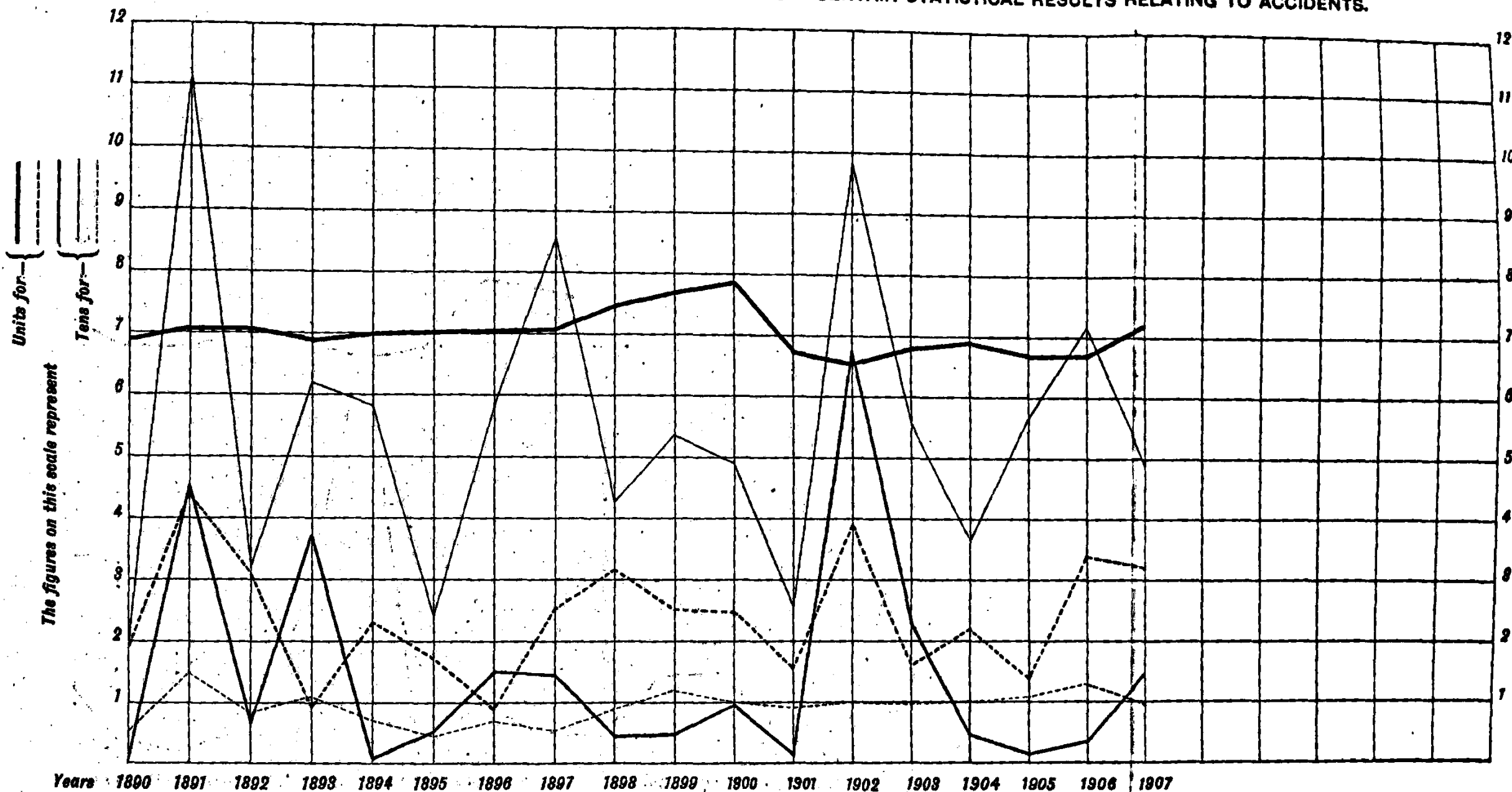


NR 16

D	C	B	A

INDIAN RAILWAYS.

DIAGRAM SHOWING FOR EACH YEAR FROM 1890 TO 1907 CERTAIN STATISTICAL RESULTS RELATING TO ACCIDENTS.



The casualties under the head "Others" were as follows:—

- Accidents per 100,000 train miles.
- Passengers killed by accidents to trains per 100,000,000 carried.
- Passengers injured by accidents to trains per 100,000,000 carried.
- Railway servants killed by accidents to trains per 10,000,000 train miles.
- Railway servants injured by accidents to trains per 10,000,000 train miles.

	Killed.	Injured.
1890	1	6
1891	9	11
1892	2	3
1893	3	—
1894	9	7
1895	5	14
1896	9	12
1897	7	12
1898	7	12
1899	4	9
1900	1	8
1901	13	14
1902	13	13
1903	12	7
1904	6	15
1905	5	15
1906	11	22
1907	16	41

**Appendix X to the abstract return of accidents on Indian railways
for the twelve months ended the 31st December 1907.**

Report of the proceedings of a committee of enquiry which assembled at Dhanbaid station, East Indian railway, on the 18th and 19th March 1907, to investigate the cause of a collision at that station between Lutchipur Raja's special train and the yard pilot engine and some wagons on the 12th idem.

The committee was composed of the following officers:—

W. I. FERRAR, Resident Engineer, Dhanbaid	President.
H. A. WOOD, District Locomotive Superintendent, Asansol	} Members.
G. L. COLVIN, District Traffic Superintendent, Asansol	
R. W. EGBERTON, Senior Government Inspector of Railways, Calcutta	} Present.
R. STRACHEY, Deputy Agent, Calcutta	
G. HUDDLESTON, Chief Superintendent of Transportation, Calcutta	
E. L. TANNER, Sub-Divisional Officer, Gobindpur	
R. B. HYDE, Assistant Inspector-General, Govt. Ry. Police, Howrah	

DESCRIPTION.

On the morning of the 12th March 1907, at about 5-23 hours, the Raja of Lutchipur's special (worked by native driver Ram Diwari), engine No. 891, collided with yard shunting engine No. 6293, (worked by shunter Abdul), which was shunting on the main line about 150 feet inside the down outer signal at Dhanbaid for the Kusunda-Dhanbaid section.

Twenty-two passengers in the Raja's special were more or less seriously injured, one whom has since succumbed to his injuries. Three men of the engine staff also received injuries of a slight nature.

Considerable damage was done to the two engines and rolling-stock.

The line was blocked from the time of the accident up to 11 hours, for which period the Katras mixed passenger trains were sent round *via* Jherriah.

EVIDENCE.

B. F. Rigg, assistant station master, Dhanbaid.—
On the 12th March 1907, I was assistant station master on duty from 0 to 8 hours. After the departure of the Bhaga pilot and 4 D. pilot attached at 4-40, the yard foreman Peters ordered the gunner Sewa to come on to No. 1 line and clear it, as there were 13 Great Indian Peninsula wagons standing on that line. After clearing No. 1 we backed on to No. 2, drew out from that 45 East Indian railway empties and had orders to back them on to Nos. 4 and 8 lines. As the load was 58 we had orders to put as many as possible on No. 4 line and the rest on No. 8.

The pilot drew out at 4-50. I gave "line-clear" for the Raja's special at 5-5, and at this time shunting was still being done.

At 5-15 I received the "out-report". The pilot, as far as I could see from the platform, had not then backed on Nos. 4 and 8 lines as ordered.

At 5-23 I was informed by the west cabin jemadar that a Kusunda pilot had pitched into the yard pilot.

I had not advised the jemadar of the coming of the Raja's special.

I came out on the platform after the accident to see how matters stood. I found that the pilot had not backed and that the tall-tale lights of the signals

showed white. I immediately went to the office, sent out advice and proceeded to the scene of the accident.

I first went to the pilot engine, as that seemed most damaged, and found the shunter slightly injured, and then went to see how the passengers had fared.

The Raja's doctor in the brake-van appeared to be badly injured. I then went along the train taking note of the damages.

I then returned to the station, sent doolies down to the scene of accident, and, after that, I proceeded to Mr. Colvin's carriage and advised him of what had taken place.

The booked run of the train from Katrasgarh to Dhanbaid was 14 minutes. Departure for Kusunda 2-0. Arrival at Dhanbaid 2-14. The train was running late.

The usual practice of this station is not to advise the line or shunting staff till we are prepared to receive the train. I do not lower the signals till I have received advice from the jemadar that the shunting has been stopped and the points set for the incoming train.

Subsidiary rule (1) to General rule 83 has to be disobeyed, because, if it were adhered to strictly, work at this station could not be carried on.

As a matter of fact it is the custom here to trust entirely to the protection of the outer signal, and trains are often kept waiting for some considerable time outside it.

When the down outer signal is lowered the tell-tale light is always obscured.

At the time of the accident it was not light enough to see the signal arms, but a wagon could be seen.

I have often known the outer signal to be cut of order. It was out of order on 27th February 1907 and again on 11th March 1907 at 7 hours. I have never observed the outer arm to be drooping when it is supposed to be on: the difficulty has sometimes been to pull off the signal.

I have been at this station since December last. If I did observe the signal arm to be drooping I would at once report it defective. The signal was working properly on the morning of the 12th March 1907.

I do not recollect the locomotive foreman, Dhanbaid, ever personally speaking to me about the Katras outer signal being defective. He may have brought it to my notice, but I don't recollect it.

The station yard is frequently congested, and on this particular date, the 12th, there were wagons standing on every line. I had to clear No. 1 line for the Lutchipur special and took the opportunity of clearing No. 2 line, but the wagons of these two lines had to be distributed between two other lines as there was not one line that had sufficient room to take them.

I did not hear the driver of the Raja's special whistle as he came along. My chief difficulty at Dhanbaid is to keep the yard free from congestion.

Ram Diwari, native driver, 1st class, Dhanbaid.

—I have been a driver for about 11 years, and, on the 12th March, I was the driver of the Lutchipur Raja's special.

I left Kusunda about 5-15, passing through it without stopping and picking up the tablet in passing.

When I got near the Matkuria nullah bridge between Kusunda and Dhanbaid, I saw the outer signal distinctly showing green, but could not see the home signal from this place on account of the cutting. In fact the home signal cannot be seen anywhere between Kusunda and Dhanbaid until the outer signal is passed.

As I was coming into the cutting approaching the outer signal I saw the lights of an engine in front of me. I whistled and did my utmost to stop by putting on the brakes and reversing.

At Katrasgarh I complained, both to the station master and guard, that, owing to the goods brake next the engine not being a vacuum brake, I could not work my train vacuum. They told me nothing could be done but to go to Dhanbaid and they would make arrangements there to shunt the brake-van off.

There was no jemadar in the front brake.

Between Kusunda and Dhanbaid I was running about 25 miles an hour.

When I struck the engine, after doing my best to stop, I was going at about 10 miles an hour.

To the best of my knowledge the engine was standing still when I struck it. I slackened my speed to pick up "line-clear" at Sijua and tablet at Kusunda.

I left Katras at 5-5.

After I had struck the other engine I saw the home signal was at danger, but very dim.

I had never worked a passenger train fitted with the vacuum brake, with the exception of three or four times when I was being examined for my certificate.

I came on duty at 1 hour on the 12th, after having had 9 hours' rest.

I have not been tested for colour blindness since the last three years.

No one either of the Raja's staff or station master or guard ordered me to go fast.

[Note.—The witness was examined before the committee with different coloured wools in day-light and correctly distinguished the red and green.]

H. Stringer, assistant signal inspector, Dhanbaid.—On the 12th March I reached the scene of

accident about 6-30. I found the signals at danger, both home and outer.

I did not try the signals at all on the 12th. No repairs were done to the signals on the 12th.

On the 11th instant at 8 hours, I received a wire from assistant station master, Dhanbaid, coded 7-30, that the signals were out of order, and when I went to the spot I found the wire of the home signal broken. It was broken between the station and the Goomtie at the west points.

In all the defects of the Kusunda home and outer signals brought to my notice it has, in every case, been due to the wire breaking or some defect of the detectors, and I have never known the arm of the outer signal to droop. It is not at all a troublesome signal.

It shows no back light towards the station when lowered, and it shows a white back light towards the station when at danger. I have personally observed this every night.

I have never observed signals from an engine as I had no engine to pass.

I do not recollect the date on which I last repaired the Kusunda outer signal at Dhanbaid. Since the 11th instant no repairs have been done to this signal. My mistry can do repairs to signals without instructions from me, but he would inform me afterwards.

I am quite aware of all repairs to signals, but as far as ordinary oiling and cleaning are concerned my mistry attends to this. I last inspected the working parts of the outer signal yesterday, about 9 hours with the signal inspector. There were no defects in it. No repairs have been done to the outer signal after the accident.

W. V. Lynch, guard, Asansol.—On the 12th instant I was the guard of the Lutchipur Raja's special.

I left Katrasgarh at 5-0 and passed Kusunda at 5-18 and the accident at Dhanbaid occurred at 5-30.

Between Kusunda and Dhanbaid we were travelling about 25 miles an hour.

I was keeping a look out and saw the outer signal at Dhanbaid at danger; this was just before entering the cutting and I was looking out on the right hand side of my brake. I felt no application of brakes from the driver until just before we struck and I heard no whistling except one whistle just before we struck.

I applied my brake when I saw the outer signal at danger; this was before entering the cutting.

I did not see the home signal until after the accident when I saw it at danger.

After the accident, as soon as I got off my brake, which was inside the outer signal by a few wagon lengths, I looked at the outer signal and saw its white back light and also the arm at danger.

I spoke to the driver about 15 minutes after the accident and he told me that the outer signal was half off and that the home signal was at danger.

The locomotive foreman was the first person not connected with the train that I saw after the accident. The Raja's native doctor was in the brake with me. He was not asleep, but was talking with me all the way from Katras to the time of the accident.

I informed the driver at Katras that this is a non-vacuum train. If he had asked me I would have spoken to the station master and arranged for the oahoose brake in front to be put in the rear in order to make it a vacuum train.

The driver did not ask me to do this; he only said "Kuchh parwa nahin" when I told him that it was non-vacuum.

I did not observe the signals at Sijua or Kusunda. The time of 5-30 given above as the time of the accident was given a few minutes after I got out of my brake.

The witness when cross-examined regarding the signals could not give a clear account of what there was at Dhanbaid.

Abdul, shunter, Dhanbaid.—On the morning of the 12th I was doing shunting work at the west end of Dhanbaid.

I had drawn out on the main line with a full load, and was just backing and had gone about 4 wagon-

lengths when the engine of the Raja's special ran into me.

I did not hear any whistle from the driver of it. I only heard the beats of his engine, but I whistled at the time.

My load was 62 empties. When drawing towards the west end the fireman was putting on the fire.

When drawing my load westward I noticed both the home and outer Katras signals at Dhanbaid at danger. After the collision I went up to the driver and jack of the engine that ran into me and pointed out that these signals were at danger, and asked them why they did not keep a look-out instead of nearly killing me; but the driver only shook and wrung his hands.

At the time of the accident I and my jack were both on the footplate. The fireman was thrown on to the ground, but the jack and I got down by ourselves about 5 minutes afterwards.

I know the outer signal was at danger, because I saw its white back light.

At the time of the accident I could not see the arm of the signal, as it was not light enough.

D. Bell, locomotive foreman, Dhanbaid.—On the morning of the 12th I got to the accident about 6 o'clock. I got no advice of it but heard the smash from my bungalow. When I was going to the accident I met Mr. Rigg, the assistant station master, returning. I asked what trains had collided and he said the Raja's special and the yard pilot.

It was day light then, and I saw by the arm that the down outer signal was at danger; the home signal was also at danger.

I examined the outer signal, and everything appeared to be intact. I have examined it three times since, the first and second time by myself and the third time with Mr. Snaddle, locomotive inspector.

The first time I went to satisfy myself as to how far away the arm could be seen at the time the accident occurred, *viz.*, 5-23. I found the arm could be seen 100 yards away.

The second time I only unwrapped the wires which were twisted.

On the third occasion Mr. Snaddle and I were at the home signal on the 12th at 17-30, and we both noticed that the signal showed a white back light even when the arm was lowered. The arm was visible at this time. It also showed a white light when put to danger.

I again examined the outer signal this morning with Mr. Wood, district locomotive officer, and it seemed to me that there was a good deal more oil on the working parts than the last time I examined it. The chain and the coupling both at the foot of the signal appeared to be new.

There is a groove in the plate at the foot of the signal worn by the coupling referred to catching on it, and if this does catch and remains caught the arm is not at danger.

The outer signal is generally all right, but I have observed it to droop. It is more than a month since I saw it drooping.

It drooped sufficiently to show a green light.

I have drawn the attention of the late station

master, Mr. Egan, on several occasions to the drooping of this signal. The last occasion was about 6 months ago and Mr. Egan acted on the report.

It is possible for the station master to pin the slot for lowering the Katras signals at Dhanbaid at any time, even if the line is not set, leaving the jemadar to pull off the signals when he likes.

I have good reasons for believing that there is enmity between shunter Abdul and driver Ram Diwari because I selected Ram Diwari for main line work in preference to Abdul's father.

I consider that to stop shunting in the face of an incoming train would be impracticable with the present facilities, as it would cause great congestion.

Ram Jattan, fireman, Dhanbaid.—On the 12th instant I was fireman on the engine of the Lutohipur Raja's special, and, before the accident occurred I saw that the outer signal light was showing green. I did not see the home signal.

Mr. Colvin, District Traffic Superintendent.—I have got out particulars regarding the incoming and outgoing trains between Dhanbaid, Kusunda and Jheriah for the week ending the 17th March 1907.

I attach a copy of the statement I have had prepared. It will be seen that the daily total average works out to slightly over 43 trains. Under the present conditions of working I calculate that shunting is stopped for 10 minutes for every incoming or outgoing train. This gives a period of 430 minutes during the 24 hours in which shunting has to be stopped, altogether for 7 hours 10 minutes.

If Subsidiary rule 1 to General rule 85 is to be carried out in the case of incoming goods trains from Kusunda, this period of 7 hours 10 minutes would be increased to one of 10 hours 30 minutes. My calculations are made as follows:—The average number of incoming goods trains from Kusunda is 10 at present; this works out to stopping shunting for 100 minutes. If we are going to stop shunting before we give line-clear we should allow 10 minutes from the time the tablet is received at Kusunda until the train starts, and a further period of 20 minutes until the train has passed the Dhanbaid west end points, or total period of 30 minutes. That is 20 minutes more in the case of each train than under present conditions, making a total of 200 minutes, or 3 hours 20 minutes, to be added to the present time of 7 hours 10 minutes.

B. R. Chuckerbutty, assistant station master, Katrasgarh.—I was on duty from 2 to 10 hours on 12th March 1907.

The stock for the Raja of Lutohipur's special was completed at 2-45, and was drawn up on the platform at that hour. The train did not start until 5 hours. The delay was due to passengers in loading their horses, belongings and palkis. It was raining also, so they took a long time. They seemed in no hurry to get away.

I did not know that the native doctor was going to travel in the brake-van. When the guard gave the whistle to start, the native doctor ran up and jumped into the brake-van.

The driver said nothing to me about the train being non-vacuum, nor did he ask me to cut off the front brake.

FINDING.

(1) A very careful examination of the down outer signal at Dhanbaid was made by all present at the enquiry, with a view to ascertaining:—

(a) If the balance weight lever had been recently repaired and if it was possible for the pin connecting the signal arm rod to the above mentioned lever to catch any part of the signal post and thus prevent the arm going back to danger;

(b) Whether the back light of the signal was visible at all times irrespective of the position of the signal arm.

(2) As regards (a), we are of opinion that in its present condition it would not be possible for the pin referred to to catch any part of the signal post, but consider that the pin had been very recently filed in order to prevent its catching and that there were also very evident traces of other repairs having been done at a very recent date. On these grounds we discredit the statements given by the assistant signal inspector Stringer and his native mistry that no repairs of any kind had been done to the signal since the accident.

(3) As regards (b), we are satisfied that from the spot where the collision occurred close to the outer signal and from the position shunter Abdul probably viewed the signal, the back light of the down outer signal can be seen, whether the signal is on or off, but that from the station the back light is correctly observed when off.

(4) As regards the guard's evidence, we reject *in toto* his statement regarding the signal. We have been informed by the police that in conversation with an inspector of police the guard admitted he had not noticed the position of the signals or applied the brake. Moreover, he contradicted himself badly regarding the side from which he viewed the signal and generally gave his evidence in a very unsatisfactory manner.

(5) Taking all these circumstances into consideration so much doubt has been raised in our minds that we are not prepared to state whether the outer signal was on or off and consider that driver Ram Diwari of the Raja's special is entitled to the benefit of the doubt.

(6) With reference to the disregard of Sub-rule 1 to General rule 85, we are convinced that in the present condition at Dhanbaid and with the present traffic it is impracticable to carry out this rule.

(7) The matter has been considered by successive district officers and they have been unable to alter the practice. In order, however, to prevent the possibility of a similar occurrence we recommend that pending completion of the Dhanbaid yard the outer and home signals for the Dhanbaid-Kusunda section be moved sufficiently far out to enable shunting to be performed within the protection of the home signal and that these two signals be worked from a temporary block hut in telephonic communication with the station.

(8) Until this is provided orders are being issued that all trains from Kusunda are to come to a dead stand at the outer signal and the driver of the leading engine is to sign a book.

(9) We consider that Mr. Bell, locomotive foreman, Dhanbaid, deserves every credit for clearing the road so smartly.

Remarks by the Senior Government Inspector of Railways, Calcutta.

There are several points in this accident, at the joint enquiry into which I was present, which call for some remarks from me. I would first point out that at page 100 of Part II of the working Time Table of the East Indian railway it is laid down that the speed of trains on the Jherriah and Katras branches "is on no account to exceed 30 miles an hour." In spite of this prohibition, the Raja's special was timed in the "advice" to take 14 minutes only between Katras and Dhanbaid (7 miles) although two uninterlocked intermediate stations had to be passed in the run, where of course the speed over facing points should be reduced to a maximum of 10 miles an hour.

The District Traffic Superintendent and the station master both gave evidence to prove that if Subsidiary rule 1 to General rule 85 is observed, it is impossible to deal with the traffic at Dhanbaid, and the station master admitted that it is in consequence disobeyed. The Subsidiary rule referred to lays down that all shunting on a single line in the direction of an approaching train shall cease before permission to allow the approaching train to come on from the next station is given, unless (i) the run from the station is timed to occupy 15 minutes or more, in which case shunting is to be stopped at least 10 minutes before the approaching train is due, or (ii) the approaching train has first been brought to a stand at the outer signal. Now it cannot be denied that observance of the above quoted rule is demanded in the interests of safe working, and no exigencies of traffic working can justify its deliberate infraction. To permit shunting to go on to within 50 yards of a solitary stop signal, up to the time a train is expected to arrive, is practically to court disaster.

The evidence of guard W. Lynch of the Raja's special is incompletely recorded. In cross-examination he stated that he was conversing with the Raja's doctor throughout the journey, and that he saw the signal from the left and not from the right hand side of the brake. His evidence in fact was contradictory and obviously false, and I am in complete agreement with the finding in rejecting it.

Assistant station master Rigg's conduct shewed in my opinion an almost criminal negligence. He received the out report of the Raja's special at 5-15; he saw for himself that the pilot had not then backed into the yard, yet he never apparently took any steps to clear the line for the approaching train although he must have known that it was due in 8 minutes.

I would also point out, that by placing an unmanned goods brake-van next to the locomotive of the special, the vacuum-brake, with which the whole of the rest of the train was fitted, could not be used. We have it from the evidence of the station master at Katrasgarh that the stock for this train was standing at that station from 2-45 till 5 o'clock. The goods brake-van should therefore without doubt have been placed in the rear of the train.

I would suggest in modification of the committee's proposal in paragraph 8 of their finding, that, pending the provision of the signals they have recommended in paragraph 7 all trains should be made to stop dead at the outer signal, and be piloted in, after the signal has been lowered, by one of the traffic staff, who should be in possession of an "authority to proceed," in the form of a written order, or a token of some kind.

R. W. EGERTON,
Senior Government Inspector.

CALCUTTA;

The 8th April 1907.

Documents accompanying—

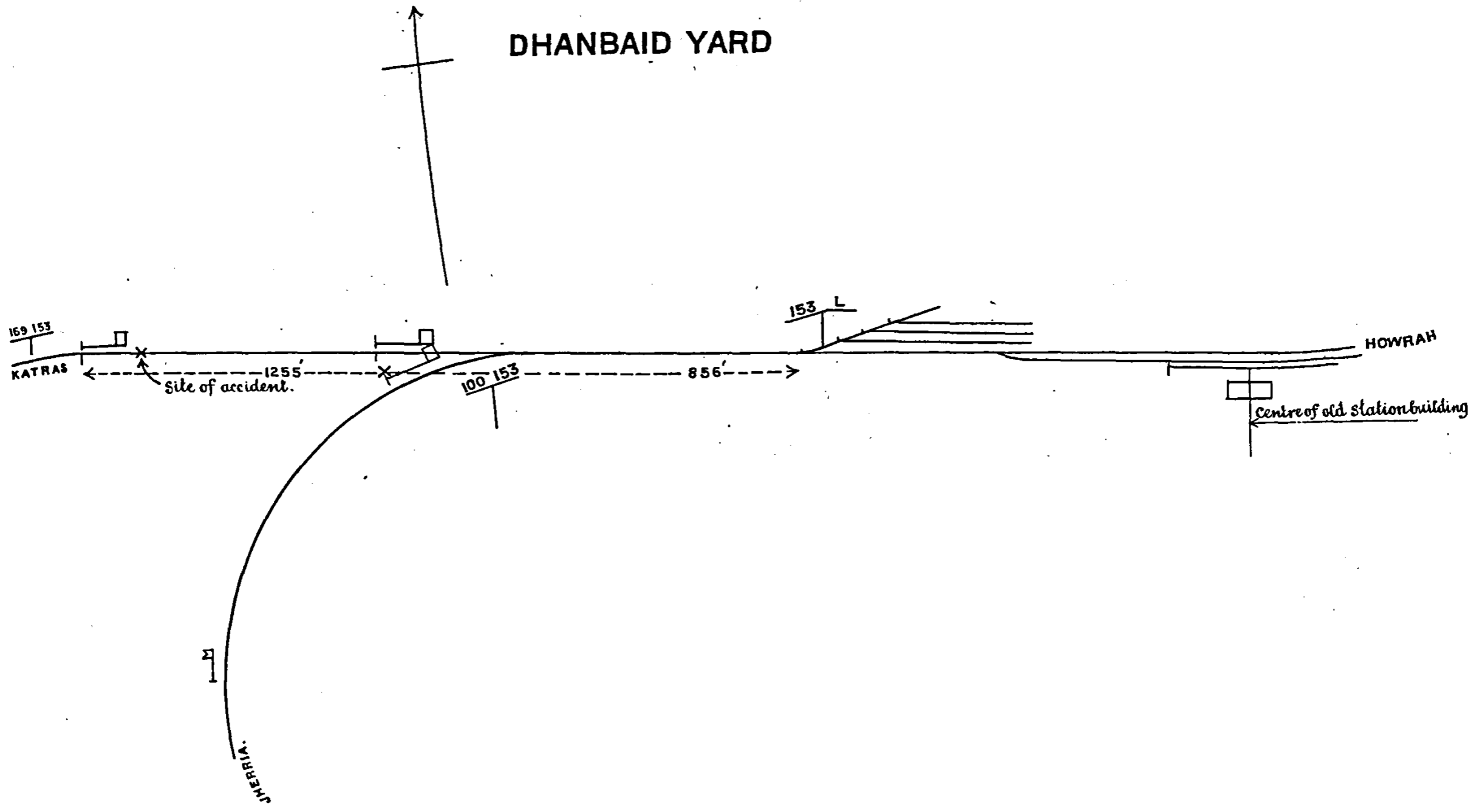
- Annexure 1.—Statement showing number of trains, etc., between Dhanbaid and Kusunda, etc., on 17th March 1907.
" 2.—Plan showing site of accident.

Annexure 1 in appendix X to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

Statement showing number of trains, light engines, etc., between Dhanbaid and Kusunda and Jherriah for week ending 17th March 1907.

11th.	12th.	13th.	14th.	15th.	16th.	17th.	
							INCOMING.
3	4	3	3	3	3	3	Mixed trains <i>ex</i> -Kusunda.
9	9	11	10	10	10	9	Goods trains, ballast trains, light engines, etc., <i>ex</i> -Kusunda.
3	3	3	3	3	3	3	Mixed trains, <i>ex</i> -Jherriah.
7	6	8	6	7	5	7	Goods trains, etc., <i>ex</i> -Jherriah.
							OUTGOING.
3	3	3	3	3	3	3	Mixed trains to Kusunda.
7	5	12	11	12	10	10	Goods trains, ballast trains, light engines to Kusunda.
3	3	3	3	3	3	3	Mixed trains to Jherriah.
5	7	5	5	5	6	5	Goods trains, etc., to Jherriah.
40	39	48	44	46	43	43	TOTAL.

Annexure 2 in appendix X to the abstract return of accidents on Indian railways
for the twelve months ended the 31st December 1907.



Appendix XI to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

Report of the proceedings of the committee of enquiry which assembled at Manoharganj station, East Indian railway, on the 20th and 21st July 1907, to investigate the particulars attending the derailment of No. 7 up express train at that station on the 15th July 1907.

The committee was composed of the following officers :—

S. W. JEWELL,	Officiating Divisional Superintendent	President.
K. S. LAWRIE,	District Engineer	} Members.
G. A. ORMISTON,	District Loco. Superintendent	
S. H. CROXFORD,	Asst. Carr. and Wagon Superintendent	
C. S. RENNICK,	Government Inspector of Railways	} Present.
M. H. EYRE,	Offg. Supdt., Government Railway Police	

DESCRIPTION.

On the 15th July 1907, at about 6-48 hours No. 7 up express passenger train while running through Manoharganj was derailed at the up trailing points. The engine was not derailed; but all the vehicles of the train, except the 7th from the engine were more or less derailed. When the train came to a stand the rear vehicle was about 100 feet beyond the end of the trailing points.

The permanent-way was more or less destroyed for a length of 731 feet and the cost of damage to it and to interlocking was estimated at Rs. 1,568.

The cost of damage to rolling stock was estimated at Rs. 1,500.

EVIDENCE.

John Robertson, officiating resident engineer, Cawnpore.—I arrived at Manoharganj on the morning of the 15th instant, with the material train at about 8-30 and found 7 up almost completely derailed, the rear brakevan approximately one hundred feet beyond the nose of the trailing points. Two gangs were already at work, and had cleared away the permanent-way and interlocking gear which had been entirely ripped up, the crossing alone remaining. Of this the chairs, from the nose of crossing towards the points had been broken, those away from the points were intact. I immediately put a gauge over the crossing and found that the gauge was an eighth of an inch tight both for the straight and for the loop measured at the nose and the heel. The Allahabad District Traffic Superintendent and District Locomotive Superintendent arrived on a light engine some time after, and it was decided that a diversion must be put in. The permanent-way was badly injured under all the carriages up to that next to the engine, where the gauge was correct and the tie bars intact. This would be approximately 731 feet. The rails from the engine to the back of luggage van No. 548 were uninjured, though not to gauge, owing to damage to tie-bars and sleepers. The diversion was put in—total length 900 feet. This was done by extending the loop, and putting in an S curve approximately 1,000 feet radius at the other end—the Kalka end. Before this had been done 4 bogie vehicles had been rerailed and taken away to Bharwari with the engine of 7 up. From one length of rail behind the crossing to 30 feet beyond the stock rail of the switches was 75 lbs. material. The switches and crossing were laid on wooden sleepers. The material of the rest of the main line was 85 lbs. The leads of both roads, main and loop, were Denham and Olpherts' sleepers. The

junction fish plates at the back of the crossing were uninjured and are now in the road. The crossing was a 75 lb. built up steel crossing. The crossing was removed to enable me to lay in a through temporary road by which to draw off the derailed vehicles. The check rail was fixed in chairs, and fastened with wooden keys. I did not check the clearance between the check rail and the running rail. The check rail was properly keyed up, with its full complement of keys. Distance blocks are not used as the chairs from the spacing. There was no damage to the check rail. There was a dent at the elbow of the wing rail about 18 inches from the actual nose of the crossing but no mark across the table of the rail. With the exception of this one mark, I could find no other mark on any other part of the crossing whatsoever. I have no recollection of having seen any marks of wheels on the crossing timbers. The same timbers are now in the road. Some portions of bolster hangers were picked up on the site of the accident, but I cannot say when or at what spot. The elliptical spring on the left hand leading bogie truck of carriage No. 2049 had fallen down, and was lying on the ballast rail under the carriage. It was detached on one side but hanging on the other side by one bolster hanger. The bogie truck was not derailed. A portion of the bolster hanger broken off from carriage No. 2049, was missing. I saw the train before any portion of the derailed train had been removed; and it had not parted. All couplings were intact. In my opinion the cause of the accident is to be found in the falling off of an elliptical spring in vehicle No. 2049—the preceding vehicles being derailed by a sudden jerk—falling on the tie-bars, and bending them. Tightening of gauge under carriage No. 1753 was from 1½ to 3 inches.

John Scourfield, driver.—I was driver of 7 up express passenger from Moghal Sarai on the 15th instant. Passing through Manoharganj, after passing over the trailing points, by about 3 or 4 carriage lengths, I felt a pull on my train, shut off steam, and went to the vacuum and found it was falling. I tried to recreate vacuum. At that time 10 inches of vacuum had been destroyed. Shortly after the train came to a stand. I got off my engine and walked back to see what had happened. I found the front brakevan with the trailing wheels of the trailing bogie had dropped off on the left side of the rail looking towards Delhi. There were no couplings broken and no vacuum pipes had parted. The permanent-way was torn up from the crossing of the trailing points to the luggage van. Running through Manoharganj I was travelling at about 35 miles an hour. The first man to arrive to render assistance in clearing the road was the mistry (Ram Yad). When walking back to see what had happened I noticed that all but one vehicle was more or less off the road. The one on the road was, I should say, the 7th from the engine. I saw two chairs of the crossing beyond the nose broken, the rest were all right. I did not notice any damage done to the left hand check rail. In my opinion the rear portion of my train was the first to become derailed, and the front portion was thrown off the road by the sudden pull back of the vehicles in rear. When passing over the crossing, I felt nothing unusual. When I walked back to examine the train I noticed one carriage had a plate of one of the bogie trucks badly bent, but no portion of the plate was touching the ballast. This plate supported the elliptical spring, which was in position.

Edward William Baldon, guard.—I was guard of No. 7 up express passenger from Allahabad on 15th instant. On passing the facing points at Manoharganj I exchanged the all right signal with my driver. When nearing the trailing points about 4 carriage lengths before reaching the crossing I noticed an abatement of speed and that the vacuum was falling. I was under the impression that the driver had either missed the line-clear message or had been given a wrong line-clear. I got up from my seat to see what had happened, and was chucked from one side of the lobby to the other. My compartment was in the extreme rear of the train. I was thrown from right to left. I did not look at the vacuum gauge, but knew from the abatement of speed and the brakes jarring that the vacuum was falling. After seeing that there were no passengers injured, I looked at the crossing and saw the right hand wing rail dented on the inner side. The train had not parted. All the vehicles on the train except one were more or less derailed. The one on the rails was the 7th from the engine, bogie 3rd No. 1805.

Charles Mitchell, fireman.—I was fireman of No. 7 up express passenger from Moghal Sarai. A few carriages beyond the trailing points at Manoharganj I felt a peculiar jerk. My driver told me to look at the back of the train at once. I could not see anything owing to the dust. In the meantime the driver had shut off steam and the train came to a stand. After that I was left in charge of the engine while my driver and the native fireman went to examine the train.

Ram Kishore, brakeman.—I was brakeman of 7 up passenger on 15th instant. When half my train had passed over the trailing points at Manoharganj I noticed that there was a pull against my train from the rear; and that the vacuum was falling, but I cannot say whether the vacuum brake was applied by the guard or the driver. I went back and saw the train was derailed.

Arthur Wordsworth, assistant permanent-way Inspector.—On the morning of the 15th instant at

about a quarter to 8, I received advice from the station master, Allahabad, that 7 up was derailed at Manoharganj. I collected as many men as I could, one gang of 20 men and another of 15 men; and went with the relief train with these men to Manoharganj. I arrived at Manoharganj at about 9 hours. I looked at the crossing of the trailing points, and found that 2 chairs of the trailing points were broken, the broken chairs were G. and H. and a slight mark on the right wing rail at the knuckle of the wing rail. The wing rail was bulging out towards the right. The keys and chairs J and K were still in position. The crossing in other respects was complete. I did not notice any marks on the sleepers of the crossing. Four of the sleepers are now in the track and have not been removed. They have not been inverted, the other two are lying at Manoharganj, near the site of the accident. These two are scarfed sleepers. I examined the check rail and found it all right, in position, keyed up and no marks on the chairs. The chairs were properly spiked down. The rail adjoining the right hand wing rail was bulging out to the right. There were no Denham and Olpherts plates under it. They had been removed before I got there. The two check rails belonging to this crossing are now at Manoharganj lying alongside the track with the crossing. The check rails are I am certain those that were in the crossing at the time of the accident. There were no other check rails there. We had to make fresh check rails to replace those taken out and kept for inspection. The permanent-way material between the crossing and points had been removed; and I did not examine the portion under the vehicles. I did not take particular notice of the running rail connected with the left hand check rail. I think that rail is still in the road in its original position. There was no damage to the track behind the crossing. I did not gauge the road after the accident, nor did I check the clearance between the check rail and the running rail. I did not find any obstruction on any part of the crossing.

Arthur Wordsworth, recalled, stated.—In reply to question by committee, why he did not report that a third chair in the crossing was broken:—

A.—I said yesterday that two chairs were broken because I thought you wanted to know what material was broken through the accident.

I thought the third broken chair was broken before the accident because it looked like an old break. I did not consider this broken chair was the cause of the accident seeing that the chair in front of it was whole. The third broken chair was K. The condition of the spike holes under chair K was good. The nose of the crossing was right home to the end of the casting on chair J. This chair was also well spiked down. I consider the two scarfed sleepers removed from the crossing were quite fit for use before the accident happened. I have received orders not to use scarfed sleepers in crossings.

Ram Yad, sub-inspector of permanent-way.—On the 15th instant I received advice of an accident at Manoharganj, and went by trolley with about 8 men to the site of the accident, arranging for about 24 more men to follow on by first train. When I arrived at Manoharganj I found a train had got derailed. The train was about a hundred feet beyond the trailing points. I examined the crossing and found it exact to gauge. Two chairs were broken in the right wing rail beyond the nose of the crossing. The rail beyond this was thrown outwards to the right; all other rails to the left. The Denham and Olpherts plates followed the direction of the rails. The fish plate bolts being broken and the fish plates slightly bent. Beyond the breakages already mentioned in the crossing everything belonging to it was in good order, and I saw no marks on the left hand check rail and running rail. The wooden sleepers were unmarked. Of the 7 wooden sleepers in the crossing 5 are still there and two have been replaced as they are scarfed. The sleepers have not been turned. The road beyond the points was not so badly damaged. The rails were bent and the gauge was tight owing to the damage done to the tie bars.

Ram Yad recalled stated.—The keys of the crossing were changed about a month ago. The keys in the broken chairs were broken to pieces when I saw them after the accident. I do not know what kind of wood they were made of.

Richmond Edmund Belletty, carriage foreman.—I went with the relief train from Allahabad to Manoharganj on the 15th instant. We left Allahabad at 8-15 and arrived at Manoharganj at about 8-50. I walked to the scene of the accident and the first thing I saw was the trailing crossing marked as if the flange of a wheel had ridden over it. The mark was about 10 inches behind the nose of the crossing. I did not notice anything else damaged in the crossing. The road from about 15 feet beyond the crossing was entirely uprooted up to where the rear brakevan stood. After that I took a sketch plan of the derailed carriages shewing the position of the vehicles. We then set to work to rerail the vehicles and to restore the road. I did not notice any marks on the sleepers of the crossing, nor did I see any mark on the check rail. I noticed that none of the couplings and vacuum hose pipes were damaged. I only made a general examination of the derailed vehicles. I found no portion of any of the bogie trucks touching the track. The elliptical springs were on the spring bearing plate of the bogie truck which had the bearing plate badly bent and the springs were not touching the rails nor was the plate.

Bishwanath Doobay, station master, Manoharganj.—On the 15th July 1907 I was in my quarters when 7 up came into the station. I was called by the assistant station master on duty at about 8-50 and was informed by him that No. 7 up had got derailed near the crossing of the up trailing points. I went to the scene of the accident, and found that the whole train had become derailed beyond the crossing. On examining the train and the crossing I noticed that the line was broken beyond the crossing. The crossing was all right, the keys all in the chairs. I then came to the station and wired for relief and sent the usual accident message. The jemadar was at the facing points at the other end of the station.

Garib, trolleyman.—I came on the 15th instant with the misty from Bharwari to see about the

accident at Manoharganj. I went with the misty and looked at the up trailing points crossing. I saw the right wing rail lying to the north side of the crossing outside the chairs. The keys were broken to pieces.

Stanley Baldwin, permanent-way inspector.—I have been in charge of the length in which Manoharganj is included, for about 3½ months. I examined the points and crossings at Manoharganj on the 13th instant. I found the points all right, also examined the crossings and found them all right also. The two scarfed sleepers taken out of the crossing since the accident I consider had quite 6 months of life in them before the accident of the 15th instant. I removed the sleepers now because I had an opportunity to do so; and there is an order to remove all scarfed sleepers. I was able to see these sleepers on my inspections of the crossing as these sleepers are not covered with ballast. I am quite sure that only those two scarfed sleepers have been taken out of the crossing since the accident, those remaining in now, except the two which replaced the scarfed sleepers are the same as where in the crossing before the accident on the 15th instant. Since I took charge of my present section, I have made no critical examination to see whether the spikes at the Manoharganj crossing were holding down the chairs properly. With a hole 1½" x 1½" above and 2½" x 1½" below the sleeper spikes or coach screws would not hold down a chair securely. I am quite certain all the keys were in, but I cannot say whether they were all of full section. If the keyman had attended to the keys on the 14th instant I do not think it at all likely that the keys would all fall out of the crossing by the time 7 up came along. Assuming that the keyman had not examined them again on the morning of the 15th instant I cannot say when the turn-out was last examined at Manoharganj before the derailment; but this examination is always made once in 3 months when the gangs go through. When Mr. Jewell arrived at Manoharganj on the morning of the 26th he saw the crossing himself and remarked that the sleepers appeared good. The sleepers Mr. Jewell saw then are the same as were in at the time of the accident and are still in, with the exception of the two scarfed sleepers since removed. The crossing was not attended to till the afternoon of the 18th instant owing to the Carriage and Wagon Department staff blocking the crossing.

FINDING.

We, the undersigned, having carefully considered all the evidence, do find:—

(i) That the first sign of any disturbance to the road occurred 7 inches behind the nose of the crossing of the trailing points. At this point instead of the tread of the wheel having gradually taken the wing rail it appears to have suddenly attempted to mount to the right, scoring the wing rail for 2' 3½" (*vide* Annexure No. 2). This wheel then dropped between the wing rails. From the marks on the first 3 right hand wheels of leading bogie carriage No. 1866 which correspond with the mark of the right hand wing rail of the crossing we are of opinion that these wheels forced the wing rail outwards allowing the fourth right hand wheel of the bogie to drop between the wing rails, breaking two cast-iron chairs. This could only have happened by the wing rail having become displaced owing to some of the keys of the chairs having fallen out.

(ii) With regard to the crossing. It is an old type and steps had already been taken to replace it, most of the material for this and the lead and switches being on the ground. This type of crossing is not now being put in the main line. The two scarfed sleepers removed from the crossing were, in our opinion, unserviceable. The Permanent-way Inspector is responsible for not having examined the road properly, previous to the accident, but the Sub-Inspector, Ram Yad, who is daily over this section should certainly have reported to him that the sleepers required attention, and is, therefore, most to blame.

Note made by committee after special examination of bogie brake-van and third class No. 1866.

Left hand trailing wheel of trailing bogie, flange badly cut in one place; moderately cut in three places and grazed in two or three other places. The three other right hand wheels had graze marks on the outer face of the type on the extreme edge.

In forwarding these proceedings the Agent, East Indian railway, remarks that he accepts the finding and the Chief Engineer's Report (see Annexure No. 1).

Prior to proceeding on transfer Mr. Rennick, Government Inspector, who attended the enquiry, left the following remarks on record:—

This enquiry lasted two whole days, due chiefly to the fact that a portion of the derailed vehicles had been removed after re-railment to the next station (Bharwari) to which station the committee paid three separate visits, by train or trolley, in order to inspect the wheels, etc., of the damaged stock.

I agree with the finding of the committee; there is no doubt whatever that the accident is directly attributable to some or all of the wooden chair keys, intended to hold the right wing rail in position, having fallen out of the chairs, prior to or at the time of the passage of the engine of 7 up passenger.

With the exception of the fine cut on the left upper edge of the right hand wing rail of the crossing, about 18" long, commencing 7" behind the nose of the crossing, and a heavier cut at the knuckle or bend of the wing rail where a wheel had evidently half mounted, the wing rail was absolutely undamaged. The marks on the three right hand wheels of bogie third and brake-van combined, No. 1866, which were not derailed, agreed exactly with the first mark on the wing rail, the fourth wheel was derailed; there is no doubt this was the first wheel to leave the track.

The Sub Permanent-way Inspector, Ram Yad, who was the first man to make any critical examination of the crossing after the accident, stated that the wing rail was in position and properly keyed up; this statement cannot be correct, as careful measurements clearly showed that, had this been the case, the tread of the wheel would have passed correctly on to the wing rail much further back than the commencement of the first mark on it. That the wing rail entirely fell out of the chairs as stated by Garib, trolleyman, who accompanied the Sub Permanent-way Inspector at the time, appears improbable, as chair J was not damaged; I can, however, conceive no reason why an uneducated and uninterested witness should invent such an improbable story, and in consequence I believe that this actually did happen. Only four chairs hold the wing rail and of them three were admittedly broken, J, the chair supporting the crossing nose was the only one unbroken. Chairs H and G were broken by the first derailed wheel; chair K was, as stated by the permanent-way staff, broken prior to the accident. In this connection it may be noted that both Mr. Wordsworth, Sub Permanent-way Inspector, and Ram Yad made no mention of this in their first examination; it was only after the committee had discovered this for themselves that they admitted the fact and that they were both aware of it. This was a clear attempt on their part to suppress important information with a view to prevent the committee from discovering the cause of the accident.

An examination of the two scarfed crossing sleepers removed from the line showed that they were quite unfit for the position they occupied and should have been removed long ago, they were badly spliced, one was split in half and the holes much enlarged affording no hold to the chair spikes or coach-screws; similar long sleepers were removed from under the switches, thus clearly showing that the maintenance of this set of points and crossings over which trains are allowed to run through at high speeds, had been badly neglected.

Apparently the permanent-way staff knowing that new points and crossings were to be substituted in this particular turn-out, did not consider it necessary to pay any attention to it, for the time being.

The committee state that the type of crossing on which this derailment occurred are no longer laid in the main line; from the fact that the wing rails have nothing to keep them in place except the wooden keys, it is clear that they are a source of danger, more especially when trains pass at high speeds, they could, however, be rendered perfectly safe by connecting the wing rails by means of bolts, there should be no difficulty in placing these clear of the chairs, and the cost would be trifling.

The leads of this turn-out were laid entirely with Denham and Olpherts plates, had timber sleepers been employed, the destruction of permanent-way would have been very much less. I do not consider that metal sleepers are suitable for such positions, wood only should be used.

I consider that Ram Yad, Sub Permanent-way Inspector, was not justified in clearing away the remains of the turnout without orders from his superior officer; he apparently made no attempt to discover the cause of the accident, and, by his hasty action, rendered this task extremely difficult for others. Mr. Robertson, Assistant Engineer, who also arrived very shortly after the accident, should, I consider, have made every endeavour to trace the wheel marks, etc., before the permanent-way was disturbed.

Remarks by the Senior Government Inspector of Railways, Lucknow.

I agree with the finding of the committee.

There was considerable difficulty experienced in finding the real cause of the accident and credit is due to the committee for the care they took to ascertain what actually happened.

Doubtless the East Indian railway administration will take steps to see that the orders conveyed to the staff in Engineering Department Circular No. 1 of April 1905, are properly carried out in future.

J. E. GABBETT,
Senior Government Inspector.

Documents accompanying:—

- Annexure 1.*—Letter from the Chief Engineer, East Indian railway.
Annexure 2.—Sketch referred to in the finding.

Annexure 1 in Appendix XI to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

Copy of letter No. 12625, dated 29th July 1907, from the Chief Engineer, East Indian railway, to the Agent, East Indian railway.

Accident at Manoharganj on 16th instant.

Having personally enquired into this and after a careful examination of the permanent-way materials which were taken out of the road I am of opinion that the accident was due to the causes ascribed in paragraph 1 of the finding of the official committee. In the first line of this paragraph the word "road" should be substituted for "train" and in the last sentence the word "displaced" for "dispensed," but the latter is probably only a clerical error in my copy.

2. The crossing is of a pattern which has since been improved on by the addition of a cast-iron distance piece at the throat and two cast-iron packing pieces between the splice and the wing rails, but without these additions, the crossing is quite capable of doing its work if properly maintained and, as a matter of fact, there are still others of the same pattern in the road.

3. In the second paragraph of the finding it is stated that steps had already been taken to replace this crossing, but the reason for this is that the road on both sides has lately been relaid with 85-lbs. rails and consequently it is necessary to relay the points and crossings with materials of the same section. But for this the crossing might have remained in the road for some time as it is still in serviceable condition; but where there are others of the same pattern in the main line steps will be taken to put in cast-iron distance pieces as are now being supplied with the standard pattern.

4. Apparently there were two reasons for the wing rail spreading, viz., (a) it was badly keyed on the right hand side or perhaps the keys had worked out, and (b) the two sleepers immediately beyond the throat of the crossing, where the wheel passes from the splice to the wing rail and at which point the shock is consequently severe, were in a somewhat rotten condition and the spikes had not sufficient holding power.

5. The persons responsible for the defective maintenance are the Permanent-way Inspector, S. Baldwin and the Sub-Inspector, Ram Yad. The former has only been in charge for 3½ months and without having had the road opened out he was not in a position to know that some of the sleepers were unserviceable. It is not usual to open out ballast and make a thorough examination oftener than once every three or four months, and more than this is not necessary; but the condition of the keys can be detected without opening out the ballast, and although Mr. Baldwin admits having examined this particular crossing on the 13th (three days before the accident) I think it is evident that he did not do this in a very careful manner.

6. The Sub-Inspector, Ram Yad, has been in charge of this sub-division for 15 years and must have a very good knowledge of the condition of the wooden sleepers on his length; but more especially in regard to this particular turn-out, seeing there was a derailment at the same place on the 20th of February 1906 due to the carelessness of a pointsman when the permanent-way should have been thoroughly overhauled. The repairs at that time appear to have been carried out in a hasty and indifferent manner for which the then Permanent-way Inspector, Mr. Vanderbeck, and Sub-Inspector, Ram Yad, are responsible, but this does not appear to have been brought to Mr. Baldwin's notice until after the accident on the 16th instant.

7. I do not, therefore, think that Mr. Baldwin can be blamed for the poor condition of some of the sleepers, but if he really made a careful examination of the crossing on the 13th, which I very much doubt, he should have noticed that the keys were defective. The Sub-Inspector, Ram Yad, is nearly 65 years of age and is physically incapable of being in charge of a section of open line. The District Medical Officer reports that his left eye is practically useless and that the right one is also defective so he ought to have been discharged long ago. Considering that he has served the Company for nearly 50 years I do not propose to inflict any punishment beyond insisting that he leaves the service at once.

To show that the attention of the staff has been drawn to the necessity for maintaining main line points and crossings up to a high standard I beg to attach a copy of my Circular No. 1 of April 1905 and to say that every possible effort is being made to replace the less efficient materials with others of a pattern more suited to the higher speeds that trains now run through stations since the interlocking was introduced.

R. S. HIGHET,

Chief Engineer.

ENCLOSURE :
Circular No. 1 of 1905.

Maintenance of running lines through station yards.

It was noticed at last inspection that, where the train ran through stations at speed, the road was not always up to the mark, and there was evidence that the maintenance in some cases was being neglected. With the accelerated mail service and interlocking of road side stations on the single line, trains are now running through stations at much higher speeds than formerly, and it is necessary that closer attention should be paid to the maintenance of running lines through stations and also of those points and crossings over which trains run at speed. There is a disinclination on the part of the permanent-way staff to open out road in station yards, because it necessitates the removal of more ballast than is the case outside stations and to properly pack the sleepers at points and crossings, the wooden kerbing has to be removed and replaced: but these difficulties must not be allowed to interfere with the efficient maintenance of the line.

2. In many station yards I am afraid there is a want of the good stone ballast under running lines, and too much of what may once have been laterite or budgree, but is now little better than mud. This should be dug out and a layer of good stone ballast placed under the road which will not only make a good bed for the sleepers, but will materially assist in keeping the road bed properly drained.

3. The budgree or laterite taken out should be screened and what is suitable may be put in again to smooth ballast the 6-ft. way, but for running lines there is no necessity to smooth ballast the tracks as guards and station staff do not require to walk there.

4. Level crossings also appear to require more frequent examination than is being paid to them at present, as in many cases these were found to bump and ride hard. These should invariably be opened out and the road examined, sleepers carefully packed and road levelled each time the gang goes through the road: but I question if this is always done at present.

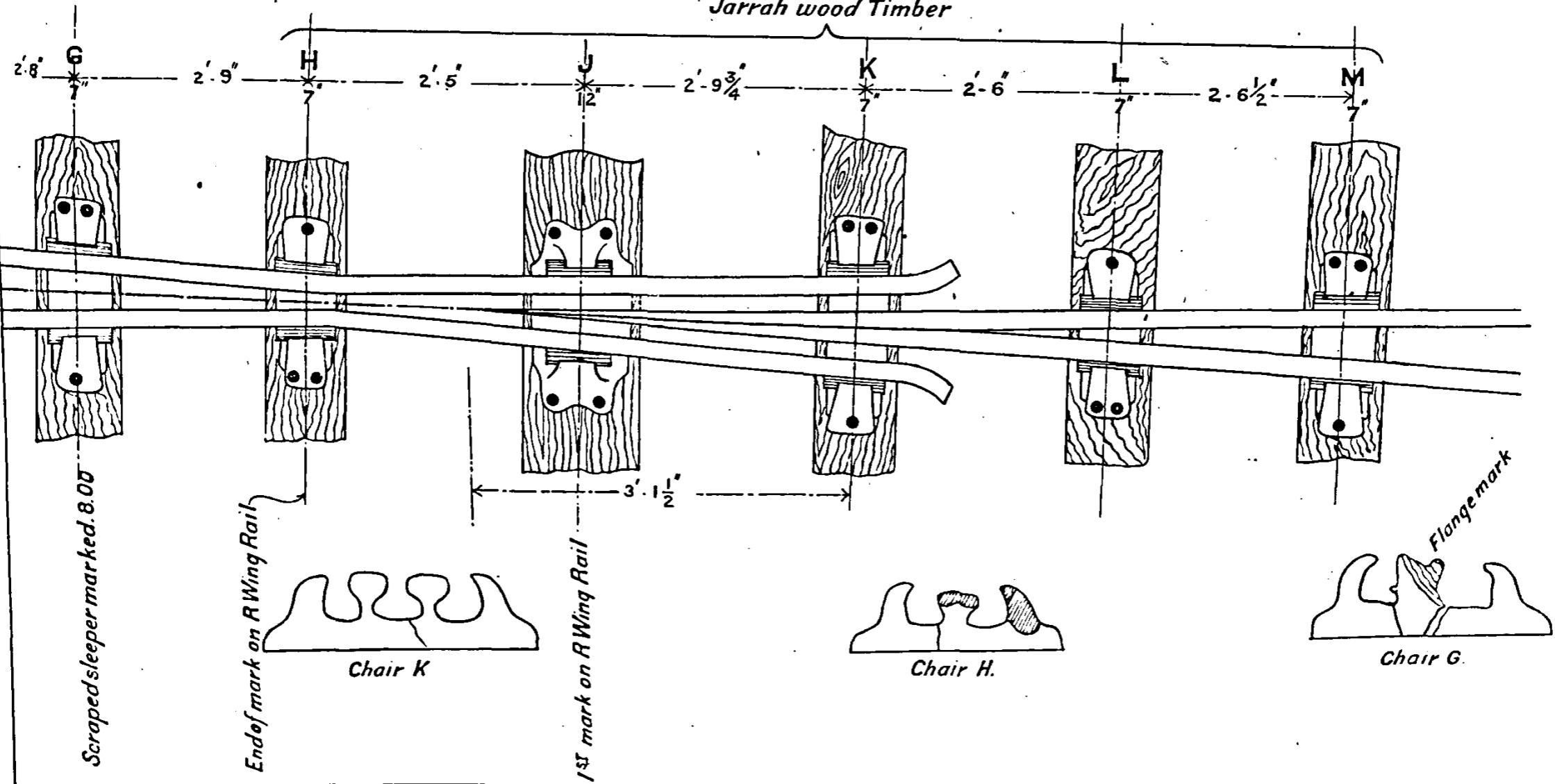
R. S. HIGHET,

Chief Engineer.

Crossing chairs marked 75-1 in 12

Crossing Darlington steel & Iron Co L^{td} E.I.R. 575,1898
Splice and point fastened with 3 bolts 1"

Jarrah wood Timber



**Appendix XII to the abstract return of accidents on Indian railways
for the twelve months ending the 31st December 1907.**

Report of the proceedings of a committee of enquiry which assembled at Jhajha station on the 21st December 1907 to investigate the cause of a collision between Nos. 18 down passenger and 61 up goods trains at miles 231½ between Jhajha and Gidhaur stations, East Indian railway, on the 17th December 1907.

The committee was constituted as follows :—

J. LEITCH, <i>Acting Resident Engineer, Madhupore.</i>	President.
J. F. RICHEY, <i>District Locomotive Superintendent, Dinapore.</i>	} Members.
B. F. HIGMAN, <i>District Superintendent, Dinapore.</i>	
F. FROOM, <i>Chief Superintendent, Calcutta.</i>	} Present.
F. D. FOWLER, <i>Senior Government Inspector of Railways, Calcutta.</i>	
H. H. HEARD, <i>Sub-Divisional Officer, Jamoee.</i>	
R. HYDE, <i>Superintendent of Government Railway Police, Howrah.</i>	

DESCRIPTION.

At 16-5 hours on the 17th December 1907, No. 61 up goods left Jhajha with a load of 50 loaded wagons and brakevan.

Single line working was introduced between a temporary block hut at miles 230-6½ furlongs and Dadpur at 9-45 hours on the 17th for the reordering of two bridges on the down line.

At 16-7 temporary block hut gave a line-clear to Dadpur for 18 down passenger, and when this train was mid-way between the two block huts, No. 61 up goods, which had not been able to stop at the temporary block hut signals ran into it. The driver of 18 down only observed the up goods train when it was a short distance from him; he immediately destroyed his vacuum and had restored it to 11 inches when the goods train collided with his engine and by breaking the engine front house, again destroyed the vacuum with the result that a II Class four-wheeled carriage telescoped into a bogie III Class in rear, resulting in six native III Class passengers being killed and 17 wounded of whom two died subsequently. The line from Jhajha to the up outer signal of temporary block hut is on a falling grade of 1 in 200 on the straight.

The advice of the accident was received at Jhajha at 17-10 and the station master and locomotive foreman went to the scene of accident at once by light engine and the relief train followed at 18-40 with the assistant surgeon, after the return of the station master. Medical assistance was rendered on the spot and all the injured were removed to the hospital at Jhajha at 21-20.

Another relief train with the divisional superintendent and the district medical officer left Dinapore at 19-45, and on reaching Mokameh, hearing that no further assistance was required, it returned to Dinapore.

Previous to the 1st December it has been the custom on the double line for green printed notices, signed by the Locomotive Superintendent and General Traffic Manager, to be issued for all such work, but with effect from the 1st December, *vide* paragraph 540 of Weekly Gazette, Part II, dated 23rd November 1907, it was arranged to discontinue the green printed notice and insert in the Weekly Gazette all notices regarding restrictions or special circumstances of working on the double line, and at the same time to issue a caution order T. 550 to drivers passing over that section.

On this occasion the Weekly Gazette notifying the single line working was received by the station master of Jhajha on the morning of 16th instant, but the locomotive foreman did not receive his copies until the afternoon of the 17th; although there is evidence to show that the bundle addressed to the locomotive foreman arrived at Jhajha station by 17 up on the morning of the 16th instant.

The driver of 61 up goods was not advised previous to leaving Jhajha of the single line working and was consequently unable to stop his train at the temporary block hut signals.

No caution order was issued to the driver of 61 up because the station staff at Jhajha misunderstood the purport of Weekly Gazette, paragraph 540, referred to above.

In August last the girders of the same bridges on the up line were renewed, when similar conditions of working prevailed excepting that at that time green printed notices were issued.

No. 18 down passenger train was marshalled as follows :—

Engine No. 766.	B. III. 2115.
Front brakevan 160.	B. III. 1824.
O. III. 978.	B. 2134.
B. T. I. 1832.	B. L. V. 2079.
B. T. I. 1848.	C. T. 511.
O. I. 1707.	H. P. O. van 1303.
O. II. 1262.	R. B. Van 165.

The estimated cost of damage to rolling stock is Rs 11,065 and to locomotives Rs. 1,200. The damage to the permanent way was trivial.

EVIDENCE.

Ismail, driver—On the 17th December at 14 o'clock I was called to work a train. I went to the locomotive foreman's office. I opened the notice book, and after seeing no new notices had been recorded, I took out my engine and attached to my train. The guard was standing by my engine and he told me no vehicle was to be out off on the road, the train was going through to Mokameh. At 16 o'clock I left Jhajha. About 30 vehicles off the temporary outer signal I first noticed the signal and there was no cross signifying the signal was out of use. I also saw a man on the signal beside the arm. I do not know what he was doing. I was about 15 wagons off when I first noticed there was no cross on the signal arm. I reversed my lever, applied the steam brake and whistled. When I was opposite the temporary block hut I saw 18 down passenger. When the collision took place I was going about 10 miles an hour and I noticed 18 down passenger when my engine collided was at a standstill. The passenger was at bridge No. 719 when I first saw it. I received no information that single line working had been introduced. I saw the temporary signals crossed out from the date they were erected. The timbers put up at first for crossing out the signals were thin. They were about an inch wide. The timbers that I saw this morning are much thicker and bigger than the original ones. Had I got a caution order at Jhajha, I could have stopped my train at the outer signal. Without a caution order I could not stop my train even though I saw the outer signal showing danger from a mile away. On previous occasions when single line working was in force at the same place by down line I used to get a caution order and pin down brakes before starting. The caution order was on green paper and in a book; when I first saw the temporary signal my train was going at 15 or 16 miles an hour. I whistled for brakes.

E. W. Bond, driver—I was driver of 18 down passenger on 17th December 1907. On arrival at Dadpur block hut, I stopped at the inner signal and received line-clear message, and starting signal from the guard, I then proceeded on the up line. I saw that the temporary outer signal of the temporary block hut was lowered. 61 up goods was about 50 yards off when I first noticed it. I immediately applied all my brakes fully and brought my train to a stop. Before I could gain sufficient vacuum to back my train, the collision occurred. I got no information at Kiul that single line working was in force. I saw the Gazette notice on the 16th at Asansol. On previous occasion when single line working was in force at same place by the down line, the Gazette notice was the only information given, and I never received any caution at Kiul on these occasions. I remember that before the new rules came into force I used to get green notices in addition to the notice in the Weekly Gazette.

J. D. Comyn, assistant station master—I came on duty at 14 o'clock. At 15-55 I asked line-clear for 61 up and received line-clear from temporary block hut at 15-58. The train left at 16 o'clock. I did not issue any special caution order to the driver, as Rule 173 of T. W. O. exempted my station. I received a copy of the Gazette on the 16th evening. I knew that single line working had been introduced when 61 up goods left the station. The only information I received of single line working was what I saw in the Gazette. I did not issue caution order to drivers in August when the up line of the same bridges was under renewal. I remember a green notice was issued to the staff in August. I assumed that because I received the green notice that drivers had also received them on that occasion. Line-clear was asked for on the Mores instrument.

Md. Shamsuddin, relieving clerk—I was on duty at the temporary block at time of accident. I

came on duty at 12 hours and was on duty up to 20 hours. I had 14 hours rest before leaving Mokameh. I gave line-clear for 18 down at 16-7 hours; 18 down left Dadpur at 16-23, but according to my watch it was 16-21. I gave line-clear for 61 up at 16-7. I received the out report at 16-15 shewing that 61 up had left Jhajha at 16-5. There must have been considerable difference between the times of Jhajha and temporary block hut. The up goods arrived at my distant signal at 16-22 and passed my block hut at 16-24. The guard jumped off nearly opposite my block hut. He fell at the side of the line. He came to my block hut and informed me he was injured. After taking a drink of water he went to site of accident. I did not see the driver jump down. The Jemadar and myself exhibited danger signals to the up goods and I saw the men at the bridge exhibiting danger signals.

On the 17th three up goods trains were received at the temporary block hut of which 61 up was the third. On the 18th fourteen up goods trains were received. All those trains came to a dead stand before passing over points "B" at the temporary block hut. I saw that the points had been burst open.

R. Forster, locomotive foreman—On the 17th instant I left Jhajha about 4 in the morning by a down goods to attend a joint enquiry at Simultala. Before leaving I handed over charge to Mr. Anderson, the assistant foreman. I returned by an up goods train and arrived at my office at 15-45. When the Weekly Gazette is received one copy is put on my office table, is perused by me and anything therein referring to the native staff is copied into the notice book in the vernacular by the schoolmaster. All native drivers and firemen who are at home are called and the reference read and explained to them by the schoolmaster and their signatures are obtained in the notice book. I saw the notice when I returned. It was being copied at the time I returned. The notice paragraph 575, Weekly Gazette, No. 50, was posted in the vernacular at 16 hours on the 17th. The driver of 61 up was booked out, i.e., went on his engine, at 15-15 for duty.

W. Anderson, assistant locomotive foreman—On the 17th I took over charge from Mr. Forster at 4 in the morning. I saw the Gazette for the first time on the office table at 15-30 on the 17th. I do not know when it was received. The store clerk went to the station and asked for the Gazette between 8 and 9 in the morning of the 17th. The first driver (Greig) who signed on 17th for the Gazette did so at 15 hours. I instructed the clerk to copy the notice regarding single line working between temporary block hut and Dadpur into the notice book in the vernacular. All the native staff that could be found were called about 16 o'clock and the schoolmaster read over and explained the notice to them. The store clerk generally goes without being specially instructed and gets the Gazette from the station. This clerk is supposed to go twice a day. The Gazette does not come regularly on any particular day. I have read paragraph 540 of Weekly Gazette, Part II of 23rd November, and I should (as a driver) expect to get T. 550 from the station master, Jhajha, for single line working between temporary block hut and Dadpur.

W. C. Arber, station master—When unbooked covers arrive by each train they are taken into the parcel and booking office and placed on a shelf there and the departments concerned go and take possession of them. I received a cover containing Gazette No. 50 by 17 up on the 16th. I always receive 10 copies. I receive them regularly on Monday. In my opinion the rules in paragraph 520 of Weekly Gazette No. 47 of 23rd November 1907, do not apply to the case in question, and I do not consider it necessary to issue the caution order. I consider

the issue of the caution order is only necessary in the case of an obstruction occurring on double line working.

C. A. Reid, P. W. inspector.—The temporary signals and semaphores were in place about one week before the work started at bridges Nos. 717 and 719. The crosses used are 4 feet long by 4 inches broad and I am positive that those now in use are the same as those in use before the accident. I erected the signals in accordance with the instructions of the Engineer.

I do not get my copies of the Gazette regularly on any particular day. I got the Gazette on the 17th instant between 11 and 12 o'clock.

Kissun Lall, peon, station Jhajha.—I know the Gazette and recognise it. It is received for the station masters, guards, office clerks, locomotive foreman, permanent-way inspector and assistant surgeon. It arrives on Monday by 17 up. Once or twice it has come on Tuesday. Some times only three bundles are received in which case the fourth generally follows by a later train. I distribute the station copies and give the others for permanent-way inspector, locomotive foreman and assistant surgeon to the booking clerk. I remember that on Monday the 16th there were four bundles and the locomotive foreman's was one of them. I do not know whether the locomotive foreman's peon came on Monday or not.

V. Newton, district inspector.—I received orders from the District Traffic Superintendent on the 16th to proceed to Dadpur and open single line working between the temporary block hut and Dadpur on the morning of the 17th. I put an assistant station master in each block hut with the necessary points and signal staff. I then telephoned to Jhajha that single line working would be introduced about 9 o'clock. I personally advised the station master of Gidhaur about single line working being introduced between the temporary block hut and Dadpur and also sent advice under cover by 17 up to the District Traffic Superintendent, Dinapur. I advised the station master who took charge of Dadpur to send the necessary wire to Jhajha, Gidhaur, and copy to District Traffic Superintendent that single line working was introduced. I was returning to my head-quarters, but on reaching Bankipur, I received news of the accident.

Mohamed Raza, locomotive store clerk.—I know and recognise the Weekly Gazette. I go twice a day to the booking office and take the Gazette from the shelf over the cash box. On the morning of the 16th and the afternoon of same day, I called at the station but did not receive the Gazette. I looked for it but did not see it. On the morning of the 17th about 8 o'clock I called but did not receive it. I did not ask anyone on the 16th. On the 17th I intended to do so, but found no one there.

H. N. Dutta, booking clerk.—I was on duty on the 16th at the time of 17 up. I do not remember that any bundles of Gazettes were received by that train on that day. It is no one's special duty to take them from the table and place them on the shelf for custody. Before I leave duty I see that they are put on the shelf.

A. L. Mitra, assistant surgeon.—I have seen the district medical officer's statement which agrees with mine, except that one passenger who accompanied me from the scene of accident, told me late on the evening of the 18th instant that he had a slight abrasion at the back of the left knee joint. It was $1\frac{1}{2}$ inch long by $\frac{1}{2}$ inch broad and was not at all serious. I dressed the wound, it was not at all serious.

A. S. Richards, relieving guard.—I was on duty on the 17th December 1907 when No. 18 down passed Kiul. I did not issue any caution order to the driver as I did not think it necessary in accordance with any existing orders or rules.

I had received Gazette, dated 14th December 1907, but I had not seen or been served with Gazette No. 47, dated 23rd November, until the receipt of Mr. Cowley's message, dated the 19th instant, and which then could not be readily obtained, as it was not on the file, but obtained the loan of the one for Mr. Bennett's use.

Not having noticed that Gazette was No. 47 I did not issue the necessary caution, but as already stated did so on looking up the same after receipt of Mr. Cowley's message.

Recalled.—I was on duty on the 17th December 1907, when No. 18 down passenger passed Kiul. I did not issue any caution order to the driver as I did not think it necessary and at the time was not aware of any order intimating that I should do so.

I received Gazette, dated 14th December 1907, but I had not seen Gazette No. 47, dated 23rd November, and was not aware how it referred to the one, dated the 14th December 1907. On receipt of the divisional superintendent's wire, dated 19th instant, I went over the Gazette file which is kept in Mr. Bennett's office, and for the first time saw the rule abolishing the green notice, and introducing the new system.

Since reading over the rules I have issued the caution order to down trains.

Dr. A. D. MacLeod, district medical officer.—

The following are the injuries sustained by passengers and guard Anthony.

Six 3rd class passengers were killed at the time and one died while being removed to hospital.

Khoda Bux.—Age about 50 years sustained (a) compound comminuted fracture of left tibia simple fracture of right humerus (upper third) (e) fracture of 3rd and 4th left ribs near heart. This man died on evening of 18th.

Jamaheer.—Age about 24 years—(a) incised wound "V" shaped, $6\frac{1}{2}$ " long $\frac{1}{2}$ " deep, over right occipital region, (b) incised wound "L" shaped, $3\frac{1}{2}$ " long, muscle deep over right frontal region, (c) fracture of left clavicle near acromion process, (d) some emphysema of right side of chest, (e) slight abrasions.

Lalljee Ram.—Age about 50 years. Minor abrasions on right knee, complaints of loss of power in lifting right arm, no apparent injury to the arm.

Saub Lall.—Age about 20 years—(a) lacerated wound, $1\frac{1}{2} \times \frac{1}{2}$ ", down to bone above right eyebrow, (b) lacerated wound $1 \times \frac{1}{2}$ ", down to bone under right inferior maxillary bone, (c) lacerated wound, $1\frac{1}{2} \times \frac{1}{2}$ ", muscle deep under chin, (d) lacerated wound, $1\frac{1}{2} \times \frac{1}{2}$ ", through whole thickness of right side of upper lip, (e) minor abrasions over right eyelid and face.

Gopes.—Age about 60 years—(a) abrasion, $1 \times \frac{1}{2}$ " on right eyelid, (b) small abrasion on right temple, (c) small abrasion over inner end of right clavicle.

Ramlagan.—Age about 42 years, contusion of right hip and over lower end of spine.

Ram Lall.—Age about 60 years—(a) contusion of right eyelids, (b) abrasion on left frontal region.

Gunis Nath.—Age about 20 years—(a) lacerated wound, $2 \times \frac{1}{2}$ ", on right leg down to bone, (b) abrasion on left shoulder.

All above suffering more or less from shock.

The following passengers proceeded to their destination or homes by their own desire, after being attended to.

Hafiz Abdul Rashid.—Simple fracture of left upper arm and some minor abrasion.

Sarif.—No external sign of injury, complained of pain only.

Ship Dhin.—Simple fracture of one rib.

Kabal.—No external evidence of injury.

Chattoraas.—Two small punctured wounds over right eyebrow and slight abrasion of upper eyelid.

Meher Chand.—Few punctured wounds and some minor abrasions.

Sofati.—No external evidence of injury.

Bachoo.—Lacerated wound 1" x 1". It is not known to us when or how he went away.

Mr. Hardless.—A second class passenger, sustained some slight abrasions on left side of face.

Guard Anthony.—Guard of 61 up goods—(a) abrasions on right side of face, (b) lacerated wound of ball of left thumb, $\frac{3}{4}$ " x 1-6", (c) small abrasion on left knee, (d) contusion of right side.

The driver and fireman of both trains and the guard of the passenger train sustained no injuries.

The brakeman of 18 down came to the hospital last evening complaining of pain in the chest. I have seen him this morning and do not find anything the matter with him.

F. H. E. Anthony, guard.—I was guard in charge of 61 up goods leaving Jhajha 16 hours on 17th December 1907. I previously arrived at Jhajha at 9-10 hours on the 17th instant in charge of 62 down goods. Single line working between Dadpur block hut and temporary block hut had not then been introduced, and in consequence I did not think it would be taken in hand on the 17th instant and took no special steps to warn my driver, besides which the assistant station master, Jhajha, did not issue any caution order, and I was totally in the dark when I left Jhajha that single line working

had been introduced. I first observed the up outer signal of the temporary block but when I was about 100 yards away and I could not then see whether it was crossed or not. On approaching closer I saw the signal was not crossed and was at danger. I immediately put my brake hard on. I did not hear the driver whistle for my brake. When my train was passing the temporary block hut, there were a number of danger signals being exhibited about that time. The train was travelling at the rate of 8 or 10 miles an hour, the driver having considerably slackened speed. I was standing on the foot-board of my brakevan on the right hand side facing the west and fell off about 30 yards beyond the temporary block hut owing to a jerk. I did not jump off my brake and it was a pure accident that I fell after losing my footing. I was only holding on with the left hand at the time. The staff picked me up, as for the moment I was stunned. They gave me some water and I tried to walk to the scene of the accident; but as my ankle hurt me I went back and protected the train. I saw the collision take place, there was not a very loud report. I do not remember now when I saw Weekly Gazette No. 50 of 14th December 1907. I however saw it somewhere. I did not see it at Jhajha but I knew the work was going to be taken in hand. I saw the order in Weekly Gazette No. 47 of 23rd November 1907 and understand the orders about Caution Orders on form T. 550. I was not badly injured, only a few bruises but no bones were broken.

FINDING.

We, having carefully considered all the evidence, do find that the immediate cause of the accident was due to the failure on the part of the assistant station master J. D. Comyn on duty at Jhajha to issue a caution order to the driver of 61 up goods in terms of the instructions laid down in paragraph 540 of Weekly Gazette No. 47 of 23rd November 1907, and Weekly Gazette No. 50, Part II, paragraph 568, of 14th December 1907.

Station master Arber of Jhajha is to blame for not satisfying himself that the orders aforesaid had been understood and were being acted up to by his staff.

The composition of the train, *i.e.*, having light stock in the centre of heavy bogie stock contributed mainly to the casualties.

We exonerate both drivers from any blame. The driver of 61 up with a full load and no advise of single line working could not possibly draw up his train on a 1 in 200 falling grade to avoid the accident. From the amount of damage to stock we are satisfied that the driver of 61 up was not travelling at excessive speed, and that he made every attempt to avoid the collision. The driver of 18 down passenger took prompt measures to stop his train before the collision occurred but had not sufficient time to back and thus lessen the effects of the collision.

An important factor in contributing to the accident was the late receipt of the Weekly Gazette, and apart from the non-issue of a caution order, the present want of a reliable system of distributing it from the station to the responsible subordinate officers concerned in sufficient time to warn the staff was the cause of their being unaware that single line working was in force; but Mr. Higman considers that the locomotive foreman, Jhajha, should have made it his business to enquire from the station master, Jhajha, when he found that Gazette No. 50 of 14th December was not in his possession on the morning of the 16th instant, and that had he made enquiries he would have found that the station master had the Gazette in question in his possession and in the ordinary course would naturally borrow a copy and issue his instructions to his staff, and that such action would have been the means of averting an accident.

Prompt measures were taken to render assistance to the injured passengers and there was no avoidable delay in clearing the line.

Remarks by the Senior Government Inspector of Railways, Calcutta, Circle No. 2.

The accident was caused first by the neglect of General Rule 161 by reason of which neglect the driver of No. 61 up goods started from Jhajha without knowing that single line working was in force on the section which he was entering.

Secondly by the erection about a week before the accident of temporary signals with arms crossed off, and to the impossibility of discerning the absence of these crosses at an adequate distance on the day of the accident.

To the breach of rule 173 of the East Indian railway traffic working orders. The correct marshalling of the train, though it would not have averted the collision, would have minimised its effects and serious injury to persons would have been avoided.

As regards paragraph 1, the change in procedure with regard to caution notices was issued during the recent strike and probably escaped the attention of most of the staff on the line. The order contained in paragraph 540 of the Gazette of November 23rd was issued to correct rule 173 of the traffic working orders which is not in harmony with General Rule 161. Rule 173 of the traffic working orders should be cancelled and a corrigendum slip issued and attention should be drawn to the latter in the Weekly Gazette.

By the introduction of the new procedure prescribed in Gazette of November 23rd, it was obviously of the first importance for the safe working of the line that every member of the staff should have a copy of the Gazette. It appeared from the evidence given at the enquiry that it was nobody's business to see that the Gazette found its way to the employes concerned, nor did the latter appear to recognise its importance. Steps should be taken at once to ensure that copies shall be in the hands of all members of the staff who ought to get them, on a fixed day of each week.

A contributing cause of the accident was the neglect of rule 303 of the traffic working orders which prescribes that a book shall be maintained in which orders for the information of guards shall be posted, which book they are required to initial before starting on their trip. There is such a book properly kept up in the locomotive office at Jhajha, but not in the station master's office. A notice board was seen in another room exhibiting a few old notices but evidently not kept up to date.

The neglect of rules referred to in this and in the previous paragraph show a lack of supervision on the part of the traffic staff.

The notice in the Gazette of December 14th is incorrectly worded. It gives advice of single working between Dadpur Block Hut and Jhajha instead of between Dadpur Block Hut and temporary block hut. The context shows clearly that the latter is intended but the wording may have induced the station master and assistant station master to quibble in order to screen the latter from the consequences of his neglect in not issuing a caution order.

A similar notice to the one of December 14th was issued in August 1907, when girders were under renewal on the up line, and no accident occurred. But seeing that there is a falling grade of 1 in 200 from Jhajha to the outer signal of temporary block hut, a distance of about $2\frac{1}{2}$ miles, it would have been safer to specify that up goods trains should pin down a sufficient number of brakes to keep the train under control.

The erroneous procedure adopted in the erection of the temporary signals appears to have been due to the misinterpretation of General Rule 22. This is surprising seeing that in the inspection report of the Delhi-Umballa-Kalka railway for half-year ending December 1906, paragraph 192, the practice of putting up new signals and crossing them off was condemned, and orders were issued to have the arms taken off until the whole arrangements at the station were ready to be brought into use. But as it seems that General Rule 22 is liable to be misinterpreted, it might be advisable to amplify it by prohibiting the practice alluded to above, and if this were done opportunity might be taken to revise the diagram which shows far too small and narrow a cross. The cross should be at least half as wide as the semaphore and should be painted red.

The staff who were to blame for the incorrect marshalling of down passenger should be suitably dealt with.

F. D. FOWLER,

Senior Government Inspector.

CALCUTTA:

The 15th January 1908.

Documents accompanying.

Annexure No. 1.—Agent's remarks (Extract paragraph 14 from Agent's letter No. 3, dated 9th January 1903, to Board of Directors).

Annexure 1 in Appendix XII to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

Extract paragraph 14 from letter No. 3, dated 9th January 1908, from the Agent, East Indian railway, to the Board of Directors.

14. Collision near Dadpur block hut on 17th December 1907.—In continuation of para-

1. Proceedings of the committee of enquiry.
2. Letter No. 4628, dated 21st December 1907, from Chief Medical Officer to Agent, and enclosure.—(Not printed.)

3. Letter No. 3, dated 2nd January 1908, from General Traffic Manager, to Agent.—(Not printed.)

4. Extract paragraph 540 of Weekly Gazette, Part II, dated 23rd November 1907.—(Not printed.)

5. Extract paragraph 575 of Weekly Gazette, Part II, dated 14th December 1907.—(Not printed.)

graph 20 of Agent's letter No. 175 of 1907, I beg to forward, herewith, copies of the documents and correspondence mentioned in the margin for the Board's information. The damage to the permanent way was trivial but to locomotives and rolling stock it is estimated at Rs. 1,200 and Rs. 11,065, respectively.

It will be observed that the accident was due to the driver of No. 61 up goods train running past signals at the temporary block hut, put in on account of the single line working between Dadpur block hut and Jhajha. The driver of the goods train was unaware that single line working was in force or that the temporary block hut had been opened and responsibility for this lies principally with the Traffic Department.

It is necessary to explain here the system under which the staff are advised of alterations in the system of working. It was previously the custom to issue separate printed notices on green paper, notifying restrictions of speed or cautions as to running, to the staff concerned and when these notices were not issued for stations to issue caution order form T. 550. From the 1st December 1907 the procedure was altered—it was arranged that whenever it was necessary to notify any restriction of speed, repairs to bridges, relaying, etc., this would be done in the Weekly Gazette, instead of as before by separate green notices, and that in addition a caution order on form T. 550 would be handed to the drivers and guards of trains at the specified station nearest to where the work was being carried out—and this alteration in procedure was published in paragraph 540 of the Weekly Gazette, Part II, dated 23rd November 1907.

In paragraph 575 of the Weekly Gazette, Part II, dated 14th December 1907, (received at Jhajha on the 16th idem) the staff were advised of the introduction of single line working between Dadpur block hut and a temporary block hut put in at the east, or Jhajha station, end of bridge No. 717 with effect from the 17th December 1907. Single line working in accordance therewith was introduced from 9-45 hours on the 17th but the station staff at Jhajha failed to issue caution orders on form T. 550. The assistant station master advances the excuse that there was no need to do so under rule 173 of the Traffic Working Orders but this is clearly untenable as the Gazette notification, dated 23rd November 1907, obviously superseded that rule; neither can the station master's plea that he considered the issue of a caution order was only necessary in the case of an obstruction occurring on the line, be accepted. The assistant station master and the station master at Jhajha have been fined.

The District Inspector, Traffic Department, is also to blame. He was deputed to open the temporary block hut and introduce single line working but failed to advise all concerned of its opening and to proceed to Jhajha to see that his instructions had been received and that the work was being conducted properly. He has been reverted to his substantive appointment as a station master.

It is stated that the locomotive foreman at Jhajha received his copy of the Weekly Gazette, dated 14th December 1907, so shortly before the departure of No. 61 up goods train that there was hardly sufficient time to warn the driver. Further enquiries are being made on this point but in the meanwhile arrangements have been made for the despatch without fail of the Weekly Gazette on fixed dates, for a sufficient interval to elapse between its receipt at a station and the commencement of any alteration in the system of working, so that the staff can be advised beforehand and for its prompt delivery to the persons to whom it is addressed.

No blame can, I think, reasonably be attached to the driver of the goods train. In the absence of any information he was not prepared to come to a stop at the temporary block hut which is situated on a decline of 1 in 200, but as soon as he became aware that a collision was inevitable he appears to have done his utmost to control his load. It should be explained that a temporary block hut was put in with a view to save detentions to trains, as the time taken by a down goods train from Dadpur to Jhajha, a distance of 4½ miles only, is no less than 40 minutes owing to the rising gradient up to the latter station.

I regret to have to report that two of the wounded passengers have since succumbed to their injuries. This brings up the total of casualties to 8 killed. Of the rest, 7 were detained in hospital and 10, including the guard of the goods train, proceeded to their homes, at their own desire, after being attended to.

**Appendix XIII to the abstract return of accidents on Indian railways
for the twelve months ended the 31st December 1907.**

Report of the proceedings of a committee of enquiry which assembled at Bina station, Indian Midland railway, to investigate the circumstances attending the collision between No. 6 up mail train and a shunting engine at that station on the 18th February 1907.

The committee was composed of the following officers:—

A. P. GOLDNEY,	District Traffic Superintendent	. . .	President.
G. A. GIBSON,	„ Locomotive Superintendent	}	Members.
H. G. RUSHTON,	„ Engineer		
T. W. BONNER,	„ Locomotive Superintendent	}	Present.
MAJOR C. S. ROSE, R. E.,	Government Inspector of Railways		
W. BAGLEY,	1st Class Magistrate		

DESCRIPTION.

The collision occurred 67 feet from and outside the facing points on the main line which, for nearly a mile outside the facing points in the direction of Agasod, is on the level. For an up train approaching Bina station a clear view of the up distant signal is obtainable for a distance of over two miles. The home signal, however, is not clearly visible, owing to a 3,000 feet radius curve which starts from the facing points, until it is approached to within about three-quarters of a mile. The Guna line runs parallel with the main line for a distance of about two miles. Three railway servants were killed and three passengers and four railway servants injured.

The permanent way and rolling stock were damaged to the extent of Rs. 33,271.

EVIDENCE.

E. J. Lamhorne, acting assistant station master, Bina.—I was on duty in Bina as assistant station master on the night of the 18th February 1907, from 18 hours to 7-30 hours on the 19th. At 23-17 hours I accepted warning for 6 up mail from Agasod and immediately made out the line book for the signature of my two shunting masters, Kalayandas and Hardas, and sent the book out by signalman Abdul. At the time the station or first line was occupied by a load which I ordered to be cleared by shunting master Kalayandas, sending this order by signalman Abdul. As the load was not cleared quickly I sent guard C. Krishnaje, who was acting yard foreman, to hurry up Kalayandas. Shortly after Agasod blocked for the mail, and I heard the departure beats on the bell of the block instrument; almost at the same time signalman Abdul informed me that shunting master Hardas had moved off with his pilot engine when asked for signature in the line book. I sent signalman Abdul back for signature and proceeded towards the overbridge. On the platform I met guard Sorabjee, whom I asked to accompany me to the bridge to watch the approach of the mail. From the overbridge I saw the mail running round the curve from Agasod, about a mile-and-a-half distant from my distant signal, approaching at high speed.

I fully expected the mail to pull up, but was surprised to see her pass the signal, and a few seconds after I heard the crash of the collision. I immediately ran down from the bridge and showed Guard Sorabjee my signal levers which were up against the wall. He then ran towards the station office and seeing ticket collector Wilson near the passenger gate, took him along to the office, where I showed Sorabjee and Wilson my four signal badges which were as usual in their glass case. The three of us then proceeded towards the signal levers where

I drew the attention of both to my levers and the tell-tale lights of my home signals, all of which could be plainly seen. We continued on our way towards the facing points and met driver Adams who was running towards us. In reply to my question as to how many were injured, driver Adams said "They are all dead." I immediately sent Wilson off to the dispensary for the doctor and went towards the scene of the accident; finding here abundant help for the injured, I returned to the station and sent out the *doolies* with the station coolies. When I gave signalman Abdul the line book for the first time I also gave him badge No. 1 to give the point locker, Walli Mohammed, after obtaining both shunting masters' signatures. Abdul kept this badge in his possession and refused to return it till after the enquiry. Driver Hind-hough, who was killed in the mail accident, was notorious for hard running. While working the mail on the 18th February he missed line clear at Karanda, and, I submit, he was attempting to make up the time lost at Karanda. When the accident occurred he was trying to make up the time. It had just stopped raining when the accident occurred. It was dark but clear. I also want to point out that cold weather greatly affects the wires of the signals. I mean that when it is very cold the signal levers when pulled back do not lower the home signals. I have frequently reported this as an occurrence of signals out of order. I have known trains detained outside signals owing to this. I do not say that the signal was out of order on the night of the accident. The signals worked all right for the up special goods that arrived 30 minutes before the mail. When on the bridge watching the mail approach, I saw the tell-tale lights of all the home signals, but did not mark the distant signals. I had not at that time called guard Sorabjee's attention to the back lights

of the home signal. I cannot say whether the distant signal was on or off at the time the mail passed it. There are only four signal badges. I have only four signal badges and pointed them out to Sorabjee and Wilson to prove that the signalman had not been authorized by me to lower the home signal. The badge retained by Abdul is the one he would have given the point locker if the line book had been signed by both the shunting masters. I went to the office instead of to the scene of the collision, and took two witnesses to save myself in the event of the responsibility for the accident being thrown on me. The message of Kalayandas to clear the load from the station line was sent by Abdul when he took the line book to both shunting masters. I saw from the overbridge the shunting engine of Hardas going towards the north end of the yard at the same time as the mail was approaching the distant signal; I did not know what that shunting engine was going to do, nor did I expect shunting master Hardas to foul the facing points for the mail as he was aware line had been cleared. Abdul came and told me just prior to my going on the bridge that Hardas had refused to sign the line book. I then sent Abdul off after Hardas to get his signature before I had gone on the bridge. After the collision, when showing Sorabjee the signal levers, I did so from off the last step, Sorabjee standing alongside of me. I went on the bridge to be able to note the time the mail (would have been) was detained at the distant signal. I had not received the "brass" line clear badge from the point locker. The mail warned at 23-17, and blocked, approximately, at 23-30 and departure received 23-42. I then at once went on the bridge. I heard the departure beats myself. On seeing the mail passing the distant signal I was surprised and was expecting a collision on the station line. I think that Sorabjee had his lamp with him on the bridge. I did nothing to stop the mail at this stage, as all action would have been futile. I sent Abdul out with the line book about 23-30. I found Abdul, in order to give him the book, somewhere beyond the bridge. I had seen him about ten minutes previously, when giving him the badge to lower the home signal for the up special goods. I gave him the badge in the office, and I did not see him again till I gave him the line book. I will not certify that the home signal was raised after the arrival of the up special goods. I certify that the home signal was at danger at the time of the collision. I mean that I cannot certify that the signalman raised the signal immediately on arrival of the up goods. I received the signal badge from the signalman when I gave him the line book for the mail. I was on the overbridge for about two or three minutes before the accident happened. I noticed no pointsman displaying any hand signals at any of the points on the station line between the bridge and the facing points. Hardas' shunting engine came from somewhere about the fifth or sixth line, and I did not know what he was shunting. The engine was going at a little above shunting speed. Hardas was to do the shunting for the Barau 503 down and Katni 551 down goods trains. I did not know which train he was forming. The load standing on the station line was coal wagons from Katni-Marwara; it had eventually to be sorted out. I do not know on what line the train from Katni-Marwara with these coal wagons had been received. They were standing on the station line when I came on duty.

I was appointed in June 1902. I had no previous railway experience. I have been acting as an assistant station master on and off since January (about) 1904. I have not passed the assistant station master's examination, but I have frequently been specially selected for night duty. I have never appeared for the assistant station master's examination.

A. Gibbs, guard, 6 up mail.—After passing the gate lodge I looked out on the left side of my brake and I saw the distant signal lowered showing green and burning brightly. I observed every signal at all stations. I did not then observe the home signal owing to the curve. I was busy arranging my papers when the collision occurred, I got out of my brake and went to the engine. I took no notice of the home signal before reaching the engine. The

engine was on the station side of the home signal. Driver Porrett drew my attention to the home signal, which was between a quarter and a-half way down. I did not take any notice of the signal light. I heard Lieutenant Duff speaking to Mr. Gallagher and saying something about the home signal being slightly lowered. I did not look again at the distant signal. I heard some one say that they had pulled mail brakesman Mata Gulam out of the brake-van. I saw several passengers who had got off the train before I reached them. I have been on the mail and passenger service over 12 years. I did not hear the driver whistle. I felt the vacuum going on before the collision. I cannot say whether the brake was put on extra hard.

H. H. Porrett, driver, stationed at Bina.—At the time of the collision I was in the shed talking to the night foreman between 23 and 24 hours on 18th February 1907. We all heard a crash in the shed, and the night foreman and myself ran out to the back of the shed. One of the shed staff told me that the mail had been derailed. We immediately went to the spot. The night foreman separated from me there; I went to the left side of the engine. The first thing I did was to look up at the home signal and the arm was lowered. I did not notice the signal light then. I called an European passenger's attention to the signal and he said the signal arm is lowered. I believe the passenger's name is Lieutenant Duff. I observed the signal before the guard of the train came up. About half an hour afterwards I noticed that the signal arm was only half lowered, which I pointed out to the Loco. Foreman. I did not notice the distant signal. About five or ten minutes after first seeing the signal I pointed it out to guard Gibbs, but the signal then was only half lowered. I helped to pull the brakesman out of the brake-van.

Subhan Khan, fireman of 6 up mail on 18th February 1907.—Before getting to the distant signal I noticed the green light. After passing it I noticed the green light of the home signal. There are two distant signals close together. I know the difference between them. The Jhansi distant signal was showing a green light. Before the collision the driver said nothing. Just as I saw the home signal the driver put on the vacuum brake and the collision occurred. I fell and became unconscious. After pulling down the lever of the vacuum brake the driver was in the act of reversing the gear when the accident occurred. I noticed nothing moving towards the mail. The driver shut off steam two miles from Bina at the top of a decline, he then whistled, and on his doing so I saw the red light on the distant signal changed to green and at the same time noticed the green light of the home signal.

Munna, fireman of 6 up mail.—I am an Agwala and was on 6 up mail on the night of the 18th. When we got to the top of the decline I got off the tender on the foot plate of the engine, and, holding on the stanchion, looked out for the signal. I saw that both distant and home signals were down, and the driver then whistled. He then told me to get out some oil, which I had just placed on the plate of the tender when I saw the driver pull down the lever of the vacuum brake. He then put his hand on the reversing wheel, but before he could turn it we dashed into something. I fell with the coal on top of me and became unconscious. I calculate that I came to my senses in about ten minutes, and I then saw the driver in a sitting position on the foot-plate of the engine with his head thrown back. I saw nothing approaching the mail before the collision.

Mata Gulam, brakesman of 6 up mail.—I was brakesman of 6 up mail on the 18th. My brake was immediately behind the engine. About three miles out, at the beginning of the decline, the driver whistled as usual. I then began to collect my letters, summaries, etc. for Bina, and when we arrived on

the bridge I looked out for the signal. I saw both distant signals and noticed that the one connected with the Guna line was showing red light, while the other showed the green one. I remained in that position and the train passed the distant signal. Then, when we arrived at the gate-lodge, I saw the green light of the home signal. Two minutes after that occurred the collision. I fell in the brakevan unconscious. I was in the telegraph office on coming to my senses.

C. D. Wilson, ticket collector.—I was at the passenger gate about 23-30. While passing passengers through the gate I heard a bang, but did not take much notice of it. I thought it was shunting. Just then Lamborne came running from the direction of the bridge towards ticket collector Reilly (on duty), guard Sorabjee and myself. We three were talking together there for a long time before. Lamborne told us that the mail had collided with the shunting engine. Then he took us into the station master's office and, showing us what was in the glass case, said "I want two witnesses." My attention was not called to any particular badge or badges. I did not count the number of badges in the case. I do not know how many there were or how many there should be. I think that there were about four badges on the top row. Reilly did not go into the station master's office. After this Lamborne took us and showed us the home signal levers quite close. The levers were all towards the wall that is "off". Sorabjee was with me up to that time. Then we walked towards the mail and met driver Adams who said that the driver was killed. Lamborne sent me to call the doctor. After seeing the signal levers Sorabjee called my attention to the back lights of several signals, one of which I know was the Jhansi home signal. When Lamborne first spoke to me he did not say that the mail had run against signals. There were coal trucks on the station line before the collision. On hearing the hand bell rung I went to the gate from the ticket collector's office. Sorabjee joined us at the gate and we stood talking. I do not know where he came from. When Lamborne ran up Sorabjee was with us.

F. Motivala Sorabjee, guard.—On the night of the 18th February 1907 I arrived by 503 up mixed at 20 hours. I walked up and down the platform talking to several people and went to the number taker's office. I came from there opposite the refreshment room, where I met Mr. Lamborne who asked me to go on the bridge "to have a look at the mail coming in." We went immediately on the bridge; it was then 23-30 to 23-38. Shortly after going on the bridge, I heard a big crash. I did not see the mail coming in, although I was looking towards the facing points for it. When I went on the bridge I did not know whether the mail had left Agasod or not. When the crash came, Lamborne called out the mail had collided, and caught hold of my sleeve, saying, "come down, I want to show you something." I did not go down with him at once but argued the point, saying "the mail is whistling, how can it collide?" Then I came down the steps just behind him, Lamborne running. Lamborne, reaching the bottom, took a couple of steps away from the stairs, and turning towards the levers, told me to look at them. I went up along side of him. I saw all the four levers up against the wall, so that the signals were at danger. It was dark, but there was a Kitson lamp. I saw the levers distinctly. When on the bridge I did not notice the back lights of the home signals. Then Lamborne took me to the station master's office and showed me the badges in the glass case. He showed the badges to me and to no one else at that time. I am not sure whether ticket collector Wilson was in the office. I did not notice him until I went outside the office. I cannot tell anything about the numbers of the badges or which they were. On coming out of the office Lamborne said, "come and let us have a look at the accident place." After passing the levers Lamborne said, "can you see the home signal tail lights?" I said "yes, I can see three white lights."

I did not know which they were at all, nor can I describe their position. When I said to Lamborne on the bridge "how can it collide" I thought it was whistling for signals, but I did not have the curiosity to look for the back lights of the signals. I heard no whistle before the crash. After Lamborne asked me about the back lights of the signals I asked Wilson if he could see them; he said that he could. A driver, whose name I do not know and whom I cannot identify, spoke to an European passenger in my hearing, drawing his attention to the position of the arm of the home signal, which was slightly lowered. I also spoke to the passenger and showed him the red lights from the front and white light from behind. I am quite sure I did not speak to ticket collector Wilson at the gate that night, nor did I notice him at the gate. I saw a small Goanese boy standing near Wilson outside the station master's office door. I do not know how he was dressed, but I could recognize him again. On the night of the accident I was dressed in dark uniform.

G. H. Ellwood, locomotive foreman.—At about 22-40 hours I had seen Lamborne, going on the over-bridge by himself, but at the time mentioned I saw him running down the steps with another man. I could not see who the other man was; they went straight to the office; they did not stop to look at the levers; a minute or so afterwards, Lamborne and two others ran shouting for hand lamps. I do not know who Lamborne's companions were. I asked them what was up, but they did not reply. I followed them up, walking, and, when I was close to the name board, I met Wilson coming the opposite way and he told me that driver Hindhough was killed. I asked him how, and he said that the mail and shunting engine had collided, I then went down to the scene of accident and saw the driver being taken down from the engine. I got on the engine to see if the brake had been applied. It was hard on, the reversing lever was reversed and the regulator slightly open. I then got down, looked at the home signal and found that the arm was lowered about 20 degrees from the horizontal. I drew Mr. Runcorn's attention to the position of the signal. When going towards the scene of accident it did not occur to me to look for the back light of the home signal. I heard no collision whatever. It was thundering and lightning at the time, but I heard the escape of steam and the whistle which I found was that of the shunting engine. It was not Sorabjee who ran down off the bridge with Lamborne. Sorabjee was standing at the time with several others talking near the station master's office. There was a load standing on the station line at the time. The man who ran down from the bridge with Lamborne was dressed in darkish clothes. Sorabjee was dressed in white uniform.

E. W. Christian, station master, Bina.—On the night of the 18th February 1907 I turned up on the platform at about 0-30, and went on to the scene of accident. There were a number of wagons—some loaded, with engine attached, at south end on the station line. On the way to the accident I saw three back lights which belong to the three home signals. I saw three distinctly and I am sure of them. I particularly noticed that all the home signal levers were in their normal positions. About 1-40 I noticed that the home signal arm was properly raised. When Lamborne called he said that the mail had collided with the shunting engine, and that the mail had come in against signals. He volunteered this information. No repairs have been made to the signals since the accident, and they are working properly. Sorabjee was at the scene of accident and in blue uniform.

Wali Mohammad, points locker, Bina.—On Monday, the 18th, I was on duty from 6 P.M. till 6 A.M. on the 19th, and had seen the mixed train in from Saugor on the station line. Prior to that had arrived a goods train from Saugor which was on the next line. The mixed came in at about 11 o'clock. Then I saw the pilot (shunting) engine go on to the line on which the goods train from Saugor was standing and take it away on the Saugor line. Then

the engine of the Sangor mixed train was cut off from its train and, backing it on the next line, went off to shed. After this the pilot engine with the Sangor goods train brought this train to the station line near the main platform and, leaving it there, went off. Then the signalman from the station came with the badge for me saying that line clear had been given for the mail and enquiring where the shunting master, Hardas, was. The signalman's name is Abdulla. He had in his hand the book in which he was required to obtain the signature of the shunting master before he could deliver the badge to me. The book was meant to inform the shunting master that the train was coming and that he should not go in this direction. I told Abdulla that the shunting master and pilot had gone towards the goods shed on the 7th line. He went off in that direction and then, in from 5 to 10 minutes, I saw the pilot engine and some wagons coming from the 7th line, and heard Hardas calling out "Jhansi line," his intention apparently being to go up that line and then back on to the goods train which was standing on the main platform line and remove it to the Sangor line. I could not see, but I judge that he had gone beyond the first set of points that a train coming from Jhansi has to go over, when I heard the sound of the collision and, running up to the spot, saw that the engine of the mail train was on top of the pilot engine.

I am positive that I did not take the station badge from Abdulla or give him mine in exchange, and that I did not lock the facing points for the mail train. When I got to the scene of the collision, and not before, I said to myself "I wonder how the mail came to pass the signal," and on looking towards both the distant and home signals noticed that both were fully up. It was from 7 to 10 minutes between the time of the collision and the time when I looked at the two signals. A goods train came from Jhansi $\frac{1}{2}$ or $\frac{3}{4}$ of an hour before the mail, and the signals for it were worked by another man. As I was inside the cabin I cannot say whether the signals were put back to danger after arrival of the goods.

Signalman Sheikh Abdul, Bina.—I was on duty from 6 P.M. on the 18th instant till 6 A.M. on the 19th. After the mixed train arrived from Sangor the assistant station master, Mr. Lamborne sent me to fetch three coolies to fill gas into the carriages of that train. The gas Babu accompanied me and on getting the coolies I made them over to him, and as I got to the waterstand saw Mr. Lamborne standing there. Giving me the book and badge he told me that line clear had been given for the mail and that I was to obtain the signatures of the shunting masters and then make over the badge to the Jemadar. I had no time to ring the line clear bell and went off towards the down end of the yard (Kethora end), and meeting Kalayandass told him that line clear had been given for the mail. He signed the book and told me to tell Hardas (the other shunting master) that if there were any carriages on the station line he should run on them at once. I then proceeded to the up end of the station but did not meet Hardas' pilot engine. I went to the Jemadar, Walli Mohamed, who was in a cabin (of which I do not know the number) and saw with him Jemadar Laltu Pershad and a pointsman whose name I am not acquainted with. I asked him where Hardas' engine was and he told me that it had gone towards the goods shed on the 7th line. I proceeded in this direction and meeting him in the goods shed told him that line clear for the mail had been given, and presenting the book asked him to sign it. He refused to sign, saying he would not do so until he had cleared the line. He said he was going to clear the station line, and I saw him start in the up (Jhansi) direction with two horse-boxes and a ballast wagon. His engine was facing in the Kethora direction and the three carriages were attached to the front of the engine which went backwards. I returned to the platform at the Kethora end, and as I got there I heard a great noise in the Jhansi direction which I attributed to the striking of the pilot engine against the goods train which it had gone off to remove from the station line. I saw Mr. Lamborne looking at the badges on the wall in

his office and told him that Hardas had refused to sign the book. He told me not to make a noise and informed me that the mail train and pilot engine had collided. When I met Hardas' engine on the siding I saw Kalayandass' engine in the siding also, and it was not till after the collision that it came into the station line to take away the goods train from there. When I got to Mr. Lamborne to report what Hardas had said I saw guard Sorabjee, ticket collector Wilson and some other *sahibs* with him. About half an hour previous to the time when Mr. Lamborne handed me the book and badge in connection with the expected arrival of the mail, a goods train had arrived from Jhansi and had gone on the 4th line. After its arrival I had raised the home and distant signals by reversing the lever and had returned my badge to Mr. Lamborne. When he told me of the collision he walked off towards the lever to see whether the signal was down, and I followed him at a distance of 3 $\frac{1}{2}$ poles. We found the lever in the position in which it is when the signal is up. The platform was bright with the usual lamps, and I am sure Mr. Lamborne did not come to his office from the opposite direction to myself when I approached it from the Kethora end of the platform. I was under the impression till yesterday that the lever on being released affected only the home signal and threw it back into the danger position. I was then shown by the Inspector of Police that home and distant signals were raised by the one motion of the lever. Ever since I have been doing my present work at Bina it has been the practice for the assistant station master on duty to hand the badges and the book to me together. I was lamp-lighter at Katni for three years, and was then transferred to this place, where I was in the pointmen's training class for 8 days till the 1st current when I was appointed to my present post. I did not lower the signal for the mail. I lowered it for the goods that arrived half-an-hour before the mail. I received a badge from the assistant station master before I lowered the signal. I returned it after the goods train had passed on to the 4th line, and I had raised the signal again. This I did as soon as the train got on to the 4th line. The passenger train from Sangor arrived after the goods train from Jhansi, and I lowered the signals for it. The goods I am sure arrived about half an hour before the Sangor mixed. I did not see Mr. Lamborne on the bridge that night. I gave him the badge after arrival of the special goods in his office.

Henry Davis, Sergeant, Government railway police, Bina.—I went into the police office, after seeing the Sangor mixed in, a few minutes after 23 hours. I heard the hand bell indicating that line clear had been given; shortly after I heard the hanging bell rung. It was about time for the mail to arrive when I heard a crash in the direction of the facing points; barely a minute after that I heard the signal lever released. I walked out of the office with the moharrir and saw Lamborne and a Parsi guard going north on the lever side of the steps of the overbridge, being myself on the opposite side of the steps. After the first bell was rung I heard a man shout "*dak gari chora*;" it was a few minutes after the first bell. The Parsi guard was dressed in black. I know the difference between the sound made when the lever is released and when it is pulled forward. I heard the lever released with a bang as is usual.

Kalayandass, shunting master, Bina.—I was on duty from 7 P.M. on the 18th till 7 A.M. on the 19th. My engine was on the 3rd line when Abdulla, signalman, came to me with the book which I was required to sign in token of the fact that the station line was clear on the up side of the yard. I signed it and told Abdulla that Hardas, if he had any *obstruction* (the word used is *Jamb*), in his sight on the line should clear it with his engine. I then took my engine to the 3rd siding to make up local Guna train, 505 down. While I was there Hardas' engine came to take away two horse-boxes and a ballast wagon, and went off with them in the Jhansi direction. At the same time arrived Chintaman, yard Foreman, (I cannot say whether he came on Hardas' engine or on foot) and told me to clear the

station line for the mail. I said that I had cleared it, and he then informed me that another train had been backed on to that line from the Saugor line. I said that my engine will not be able to run on that train in the Kethora direction, but that I could take it on to the Saugor line. He got on to my engine, which then proceeded to the up end of the station line and was attached to the goods train standing there. Chintaman, my hookman Ram Lall and I then went to the other (or Jhansi) end of the train to instruct the pointsman to let us on the Saugor line. I called out "station line or Saugor line," but received neither verbal answer nor signal. All three of us then backed to the points but found no pointsman there, and at the same time noticed a disturbance ahead. We went to that spot and saw that a collision had occurred, and that the mail engine was on top of the pilot engine. We came back to my engine and stopped there till the head station master ordered me to make up another train, into which the passengers of the mail were to be transhipped. While on the way to the collision I did not look at the signal, but after getting there I heard some one in the crowd say "*dekh lo signal 'ko,*" and on looking at the home signal noticed the small white light which indicates that the red light is showing in the opposite side. I did not look at the distant signal at all. I removed a load from the station line to the main line at 10 P.M. that night. The load was on the station line when I came on duty at 7 P.M. I say it was 10 or half past 10 because line clear had been given for the Saugor 2nd line for a goods train, and I had signed the book for it before I removed the load from the station line.

Waman Govind, pointsman, Bina.—I was pointsman on the facing points when the up mail arrived on the 18th February 1907. Hardas' engine came with two horse-boxes and an open truck, he shouted to me for the Jhansi line and I put him on it. After all had passed my points I looked up at the home and distant signals, perceived two white lights. Both were alike showing small white lights. The home signal is two or three yards away from my points. After the arrival of the up goods, shortly before the mail, the home and distant signals were raised immediately the goods train passed.

Hookman, Pochi, Bina.—On the 18th February I was in a horse-box which was attached to Hardas' shunting engine; next that horse-box was a ballast truck and then another horse box; we went from the 8th line on to the Jhansi line, and the engine, my horse-box and the ballast truck had passed the points and the other horse-box was going over them when, from the east window of the horse-box, I noticed the white and red lights of the mail engine. I immediately showed red light and saw Hardas, who was on the engine, doing the same. We both shouted at the same time and then occurred the collision. When first I noticed the lights of the mail engine I looked up and saw the red light of the home signal. I did not look towards the distant signals. My horse-box was smashed, but beyond a bruise on the back I had no injuries. I got carefully out of the wreckage, and going into the pointsman's cabin fell asleep there. I awoke after some time and went home.

Lalta Pershad, jemadar, Bina.—On the night of the 18th instant I received a goods train from Agasod on the 4th line. Having unlocked the points after the passing of that train I proceeded to the station master and, exchanging badges, went to the cabin at the 4th line points facing Jhansi. It was dark and raining. I sat in the cabin with the points-locker Walli Mohammed and pointsman Lachman. About half an hour after I got there, Abdul, signalman, came and enquired for Hardas, shunter. Both Walli M. bamed and I told him that he had gone with his pilot engine on the 7th line towards the goods shed. He said that line clear had been given for the mail and that the line was blocked (jammed) and then rushed off in the direction indicated by us to get the book signed by Hardas. About 5 or 10 minutes later Hardas came on the

pilot engine from the direction of the goods shed shouting "*sat line se Jhansi line.*" He must have passed the first facing points (in the Jhansi direction) when we heard a great noise in that direction. We got out of the cabin and went up to the spot, taking our hand lamps with us. When we reached the place I saw that the mail had collided with the pilot engine and that the engine of the train was on top of the other. After getting up to the wreck I saw two *sahibs* looking up at the home and distant signals, and, looking at these myself, perceived that they showed me a white light. When I looked at the signal I was standing at a spot away from, and to the south-west of, the pilot engine where there is a *nullah* or drain. Walli Mohammed, the pointsman, and I were seated outside the door of the cabin waiting for the badge which we expected to receive as soon as the station line had been cleared. The practice at night is for Walli Mohammed to proceed with the locking of the facing points as soon as he receives the badge. Then he remains near the first of these points, when the signalman shouts from the platform that the train has left the last station and at the same time shows a red light, the pointsman at the 4th line cabin responds by showing a red light and also shows a similar light to Walli Mohammed; then when Walli Mohammed sees the train he waves a green light in the direction of the platform and the three pointsmen do the same. The signalman lowers the home signal and the pointsman at the signal lowers the distant signal. Walli Mohammed then walks up to me and, standing there till the train has gone on to its proper line, gives me the keys of the points and goes off himself with the badge to the station master, and then on to the other side of the yard in readiness to see the train leave the station. I then unlock the points and go about my own business. Both home and distant signals are visible from the 4th line points. A train coming from Agasod (or rather its lights) does not become visible until the engine gets up to the distant signal, and then, too, only if there are no carriages on the Guna line. I have never heard a noise of an incoming train from the 4th line points. On the night of the collision I neither heard the mail train nor saw the lights of the engine. I did not notice whether the front of the pilot engine was towards Jhansi or Kethora.

Chintaman Krishnajes, guard, acting as yard foreman.—At 23-30 on the 18th I went to Mr. Lamborne, who was on the platform, and asked him whether an engine might be brought out of shed to take away the up special goods so as to clear the 3rd line. He said that line clear for the mail had been given and that I had better clear the station line on which a train load was standing; then I went to the goods shed siding where both pilot engines were working. I returned with Kalayandas' engine which was then attached to the south end of the load on the station line. Then, while I was enquiring in the number taker's office whether the mail had left, Kalayandas went forward and called for Saugor line; he got no reply, therefore he shouted to me that an accident had taken place. Assistant station master, did not say, specially, where I was to take this load. I intended putting it on the Saugor line. I told Hardas, when on the goods shed line, that line clear had been given.

Hookman, Surajbali, Bina.—On the night of the 18th, I was on duty on Hardas shunting master's engine on which the driver was Amir Khan. At 9 or 10 P.M. the number-taker had told Hardas that two horse-boxes were to be sent to Saugor. Then after the arrival of the Saugor passenger we went to the old first siding near the goods shed. At that time there was a horse-box attached to the engine, and going along the 8th line we got a ballast truck and a second horse-box on the siding. The engine proceeded backward towards the Jhansi line, on the 8th line, and the engine and three vehicles went beyond the points on to the Jhansi line. We stopped, and I saw the points reversed. Then, before we could start towards the station, occurred the collision. I was riding on the foot-board on the

last vehicle which was a horse-box, and on the west side of it I had a hand lamp and the light was turned to white. I did not hear Hardas or any one else ask for the Jhansi line when going, or when about to return towards the station. I had my face towards the station when we stopped to go back in that direction and so did not see anything of the mail. When going out on to the Jhansi line I had my face in the Jhansi direction, but did not see the

lights of the approaching mail. When the collision occurred I was thrown off towards the Guna line. I did not go near the engine, and so cannot say whether Abdul, signalman, came anywhere to get Hardas' signature on the book. I did not know that line clear had been given for the mail, for I heard nobody say so, and did not happen to hear the line clear bell either. I did not notice the position of the signals, home or distant.

FINDING.

We find that, at the time of arrival of 6 up mail on 18th February 1907, the signals, governing the approach of up trains from Agasod were "off," or lowered, and that Hardas shunting master, was performing shunting in the face of the in-coming mail.

From the evidence before us we are of opinion that the signals had not been put to danger after the arrival of up special goods train from Agasod, at 23-15, for which E. J. Lamborne, acting assistant station master, and Sheikh Abdul, signalman, are responsible.

A. P. GOLDNEY.

G. A. GIBSON.

H. G. RUSHTON.

Remarks by the Government Inspector of Railways.

I agree with the finding of the committee of enquiry.

The following important defects were brought to notice during the enquiry in connection with the working of Bina station yard :—

- (a) For want of sufficient siding accommodation traffic is considerably congested at this station. During the 36 hours I was at Bina attending the enquiry, the main platform line was being used almost without cessation for shunting wagons on. Three out of the four lines between the main and island platforms were similarly continuously blocked.
- (b) The control of the "outer" signals is nominally in the hands of the station master, in that, it is assumed, the "outer" cannot be pulled off by the pointsmen at the facing points till the station master has lowered the corresponding "home" signal by means of the lever on the platform. For such control to be effective it should be quite impossible, or at least difficult, for any one to lower the signals from the facing points without the authority and knowledge of the station master on duty. Here such control does not exist. The counterweight of the "home" signal arm is some two or three feet above the ground only, and it is quite a simple and easy matter to raise it and lower the home signal without the lever on the platform being first pulled. At the same time by raising, by hand, the counterweight attachment by means of which a "catch" engages the outer signal wire and which counterweight ordinarily is raised by pulling the lever on the platform to lower the "home," the outer signal can be pulled off from the facing points without the "home" being lowered first. In other words, any cooly can lower both the "home" and "outer" signals from the facing points without the knowledge and consent of the station master on duty.
- (c) Bina is one of the stations included in para. 2, Rule 3, Working Time Table Part II, where shunting is permitted to be carried on within the home signal or points facing to an incoming train after "line clear" has been given. If the rule is allowed to remain in force in a congested yard such as this, it is necessary that the safety of passengers should be guarded, and when shunting operations are undertaken without the knowledge or authority of the station master on duty, it should be so arranged that the engine or vehicle so shunted should be run into a dead-end siding the points of which are interlocked with the home signal.
- (d) The evidence elicited the fact that the working of this important and busy station was entrusted to an acting assistant station master whose normal duties were those of a guard, and whose service sheet shows him to have been employed as an acting assistant station master for 106 days only at different times between July 1905 and February 1907, and who has not yet passed or been examined in the duties of an assistant station master.

In my opinion, in view of the defects noted above, no shunting should be permitted at this station after "line clear" has been given for a passenger train until the yard has been properly interlocked, or till the main line is protected against unauthorised or rash shunting operations over the facing points (once the "home" and "outer" signals have been lowered) by means of dead-end trap sidings at either end of the yard.

On returning to Lucknow after the enquiry I wrote to Lieutenant Duff, 1st Gurkhas, who was a passenger in 6 up mail on the 18th February, and obtained his evidence regarding the position of the signal arms. A copy of his statement is attached.

The remarks of the Agent, Great Indian Peninsula railway, on the proceedings have not yet been received.

C. S. ROSE, MAJOR, R.E.,
Government Inspector.

Documents accompanying—

- Annexure No. 1.—Sketch showing site of accident at Bina.
,, No. 2.—Statement of Lieutenant Duff.

Remarks by Senior Government Inspector.

I agree with the "finding" of the committee that Mr. Lamborne, acting assistant station master, and Sheikh Abdul, signalman, are responsible for the accident.

The Bina yard is evidently much too small for the work it has now to perform, and the necessary siding accommodation should be provided as soon as possible.

The interlocking of the signals at this busy station should also be immediately put in hand.

LUCKNOW; }
The 10th March 1907. }

J. E. GABBETT,
Senior Government Inspector.

Annexure 2 in appendix XIII to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

Written statement of Lieutenant B. Duff, 1st Gurkha Rifles, dated 27th February 1907.

I received your letter to-day asking me to give any information I can about the accident at Bina on the night of 18th. I give all the evidence I can below in answer to your questions which I have written out.

QUESTION.

Before the accident, did you by any chance, notice the distant and home signals, and were they both or either at danger or lowered?

Immediately after the accident did you meet a European at the site of the accident, and did he call your attention to the state of the signal or signals?

Was the home signal at danger or lowered?

Was your attention called to the distant signal, and if so, did you notice one or two small white lights in that direction?

Did your train engine whistle before or some little time before the collision?

Did you hear any remarks made by any of the railway officials as to the cause of the accident or the condition of the signals?

Do you know any other European passenger who was in the train and who could give evidence in this case? If so, who or where is he likely to be found?

ANSWER.

Before the accident I did not observe any of the signals.

Yes, I met a European near the wrecked engine immediately after the collision who asked me to look at the home signal.

The arm of the home signal was lowered. I was looking at it from within a few yards and from the Bina station side. There was no bright light showing on that side but a very faint light which I believe was red. The arm lowered was what I saw clearly, the light I did not think of at the time.

My attention was not called to the distant signal and I noticed nothing.

I heard no whistling before the collision.

Some $\frac{3}{4}$ of an hour after the collision an official asked me if I was the person who had been up near the engine soon after the collision, and had been asked by a European to observe the signal. He took my name and address, asked me to repeat what I had seen *re* the signal, which I did. He said the "signal is up now;" about a minute later when passing the signal I noticed it was up. In Bina station a considerable time after the collision I was talking to several other persons when an official, who was I believe the station master, joined us; he heard me say I had seen the signal down and at once said that it was not so, that the signal was against the mail train and that the lights from the Bina side must have appeared as they did at that moment, namely, bright white. He pointed out the light showing as he described it. He added that there was no doubt that the mail train driver has run past his signals and that he—the driver—was well known on the line for running in excess of the regulation speeds.

One man told me he also had seen the arm of the signal down or $\frac{3}{4}$ down, but I do not know who he was. It might have been one of four officers of the 26th Cavalry who were travelling on the train. Of the other passengers I know of none who could give evidence.

Other information—speed of train and state of night

Speed of train.—I believed I was dozing at the moment of collision and cannot speak definitely *re* speed. Up to a very few moments before we were running I should say at a good 40 miles an hour.

State of night.—It was not raining at the time but a very dark night with heavy clouds about, though not foggy.

I do not think there is anything else I can add.

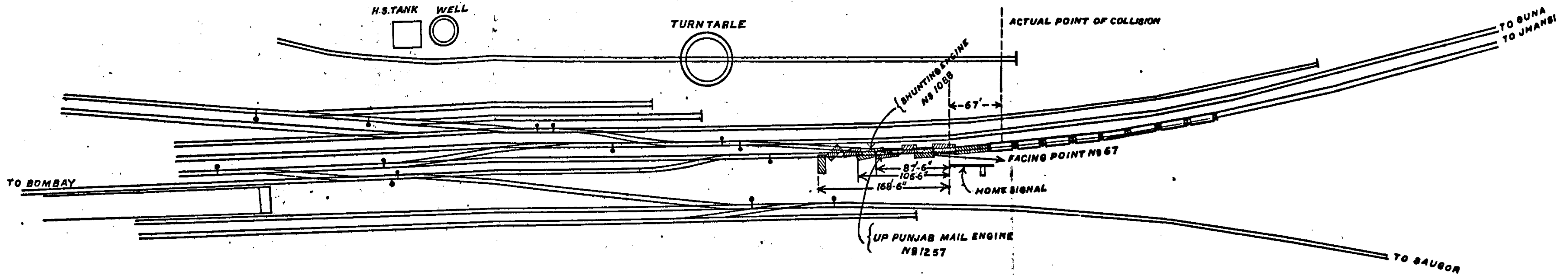
Appendix XIII.

Annexure I in appendix XIII to the abstract return of accidents on Indian railways
for the twelve months ended the 31st December 1907.

SKETCH SHOWING SITE OF ACCIDENT

AT BINA

SCALE 100 FT. 1 INCH



Appendix XIV to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

Report of the proceedings of a committee of enquiry which assembled at Antri station, India Midland railway, on the 31st October 1907, to investigate the circumstances attending the collision between No. 14 up passenger and His Highness the Maharajah Scindia's down special train, at that station on 26th October 1907.

The committee was composed of the following officers :—

J. S. LAMBERT,	<i>District Traffic Superintendent</i>	. . .	<i>President.</i>
T. W. BONNER,	<i>Deputy Locomotive Superintendent</i>	. . .	} <i>Members.</i>
R. C. H. BARNARD,	<i>District Engineer</i>	. . .	
MAJOR C. S. ROSE, R.E.,	<i>Government Inspector of Railways, Lucknow,</i>		<i>Present.</i>

DESCRIPTION.

On the night of the 26th October 1907, at about 23-30 o'clock, No. 14 up passenger was admitted on to the loop siding of Antri station. Within two or three minutes, a down special train conveying His Highness the Maharajah Scindia, entered the same siding from the south end and a collision occurred.

No. 14 up consisted of the following vehicles :—

Front brake-van, one postal-third, three third class, one first, one second, five third class two composites and rear brake-van.

The special of the Maharajah consisted of the engine; next to it was the saloon occupied by His Highness and party, and an ambulance third conveying followers having a guard's compartment with hand brake. This vehicle though automatically braked had no guard's valve.

The Maharajah has reported that no one in his party was injured.

In No. 14 up passenger six persons were injured of whom one subsequently died.

The evidence shows that the down special entered the station against signals and probably at the speed of 20 to 25 miles an hour, and owing to the down facing points being set for the loop, instead of for the main line in accordance with instructions in order 26 (slip 6) Working Time Table, Part II, it ran on to the loop and into No. 14 up which, by the force of the impact, was pushed back 45 feet. The tender of the special mounted the verandah of the Maharajah's saloon and the front brake buffers of No. 14 up were driven into the third class compartment of the vehicle next behind it, *viz.*, postal composite, in which the muccadam and the *batragi* were seated.

The damage to locomotives is estimated at Rs. 6,745 and to rolling-stock at Rs. 3,255-8-0.

LOCALITY OF ACCIDENT.

Antri station has one loop 1,800 feet long in the clear with a short dead end at each end. The platform is on the loop. The line is straight through the station. The signals consist of a main or home signal in the middle of the platform, and an up and down single-armed outer. The main signal carries four arms—two facing each way. The upper arms refer to the main or through line and the lower ones to the loop. The outer signals are worked from the foot of the home. The points and signals are interlocked with Wrench's patent interlocking.

The collision took place on the loop about 250 feet on the Jhansi side of the home signal.

EVIDENCE.

H. McMullin, driver of No. 14 up passenger.—I left Gwalior on 26th with No. 14 up Passenger at 22-50, reached Antri 23-29, all signals were given for me to come in on the loop line and I came in and stopped close to the end of the platform.

I did not notice at the time how the dead-end siding points, Jhansi side, were set.

I was not taking water at Antri. After stopping I, with my fireman, started attending to the fire and while I was doing so heard the special coming over the points and I looked out and saw it coming

in on the loop, and there was no time to do any thing, so I shouted to the staff to get off the engine, and we did. The collision took place about two minutes after I came to stop.

After the collision I went back to see if any of my staff were injured, and then looked at the main signals and found them at danger showing red. It was within 4 minutes of the collision that I saw the signals.

During the interval I saw nobody at the signals. I did not look at the back light of the distant signal.

I mean I saw the down signals (main signal) both loop and main line at danger.

E. Shannahan, guard of No. 14 up.—I was in charge of No. 14 up passenger. We arrived at Antri at 23-29; the signals were given for us to come in on the loop. On arrival I just alighted from my brake and walked the distance of my brake and one-third class when the collision occurred. I then looked again at the signals and saw the up loop line main signal was lowered at the time the collision occurred.

The assistant station master on duty came out of the office and told me that the special driver had run against signals, and asked me to look at the position of the signals.

I did not see the signals put back to danger, nor did I notice any one standing at the signal post.

Mahadeo Pershad, brakesman of No. 14 up passenger.—I was brakesman of No. 14 up passenger. I was in the front brake. I gave the driver the line-clear ball voucher at Sithouli; on nearing Antri I saw the signals given for the loop line.

On reaching the station I got down and was coming to the station and had got about half way between my brake and the main signal when I heard a loud noise as though two trains had collided.

My signals were up to then lowered. I went into the office and found the station master was there opening the pouch. At that moment the guard arrived and we asked how the special had come in when the up signals were still down.

As I came up there was a man at the signals, a pointsman, who put it up to danger after the guard and station master had seen the signal was down for the up train.

S. J. Watson, driver of down special.—I was driver of the Maharajah Scindia's down special on the 26th instant; we ran right through all stations and on nearing Antri I remember now having seen the home and distant signal lowered. On the main or platform signal I could only see one light and that was green.

After passing the distant signal I shut off steam, and I observed a hand signal on the points—it was green, and my man fixed the line-clear pole on the engine bracket to pick up line-clear, handing to me, at the same time, the hoop and pouch to throw out.

I first applied the brake about 30 yards outside the facing points; I took the brake off again while running over the facing points, I did this as I expected to run through.

After coming on to the loop, and about 50 yards from the 14 up engine, I made an emergency stop.

I was running between 15 and 20 miles an hour.

I saw the head lights of the up passenger engine standing in the station; at the distant signal I could not say on what line the train was standing; only when I came on the loop I discovered she was standing on the loop.

I saw from the points indicator about 30 yards outside, that the points were set for the loop, as I said above I did not know the up passenger was on the loop.

I did not look again at the home signal after passing the points.

After the collision I called upon driver McMullin and guard Shannahan if they had noted my signals and both of them said no, that is, I asked them if they had seen if they were lowered for me and they said they had not noticed them at all. I did not question the station master about the signals.

I have no evidence about the state of the signals. My guard and brakesman know nothing about them, how they stood.

I know the signals at Antri and how they are worked.

If I were running through, the signals that would be given me would be the top arm of the main signal, and the distant signal* and the disc at the facing points would show white.*

NOTE by committee.—*“This is not a fact.”

J. S. L.

Re-called.—The vacuum brake on my train was in good order.

Ramcharan Kalka, fireman of down special.—On approaching Antri distant signal it was showing green and the driver shut down the regulator. I did not see the home signal.

The driver ordered me to get ready the line-clear picking-up pole. I saw a green signal on the facing points and it was that that caused the driver to order me to put out the line-clear picking-up stick.

Some 5 yards from the facing points I saw no line-clear put up. I put aside the pick-up pole and I said “Ho Ho” to the driver and put on the hand brake. I said this because I felt we took the loop and I saw the passenger head lights.

I admit I told the Foreman *Sahib* that I saw the distant signal at half read half green, and that is how I saw it. I did not see the home, I did not tell the Foreman I did see it.

There was nothing the matter with the driver.

Oilman Deen Mahammad on engine of down Scindia special.—On approaching Antri I was on the tender breaking coal. I did not notice the signals.

On getting close to the points I got an order to go forward and oil. I went forward, and as I did so the engine took the loop, and I saw another engine on the loop and I called out to the driver. On getting on the straight I shouted out again to the driver, and as he put his hand on the vacuum the collision occurred.

After the collision I noticed the signals for the own direction were at danger.

Assistant station master Durgapershad Sagar Chand.—I was aware that the down Scindia special was running on the 26th instant. The No. 14 up is a daily passenger train. Scindia's special was running late but I enquired from Dabra after giving line-clear to No. 14 up and was told that it was leaving Sonagir.

I gave Sithouli line-clear for No. 14 up at 23-50 and I gave Dabra line-clear at 23-0 for the down special. It is 12½ miles from Dabra to Antri and 8½ miles from Sithouli to Antri. No. 14 up left Sithouli at 23-5 as I received the signals, and the down special left Dabra at 23-10.

I arranged to receive No. 14 up on the loop and pass the down special through on the main line and made preparation by giving up and down main line keys to the mucadam to set the loop line points for turn-out on to the main at each end. He did this and brought the loop line keys back to me leaving the main line keys in the points lock.

I turned the points at the Jhansi end of the station to connect with main line in order to keep the section clear up to the out-going trailing points, *vide* order 3 of Working Time Table, Part II.

There were no signals given for the down special; signals were lowered for the up passenger and she came in and I was on the platform. As the driver threw down the hoop and pouch with ball voucher, Sithouli to Antri, I picked it up and went into the office to clear the section.

I had no time to send for the keys to the points before I heard the noise of the collision. When I heard the noise I came outside and the guard of No. 14 up was coming up. I showed him that the signals of up loop only were lowered to receive No. 14 up; then I took the keys from the up loop signal lock and the up loop signal was put to danger.—then the key was sent to the points.

The collision occurred at 23-31.

I had no conversation with the driver of the down special about signals.

When the signals were lowered for the up train I noticed the back light of the down distant signal showed a white light.

In regard to my statement above as to raising the up loop signal, I mean that the signal was raised first and then I took the key out.

James F. Wright, guard of H. H. Maharajah special.—We ran through all stations, up to and including Dabra which we passed at 23-12.

I did not see the Antri down signals. There was only one brake which was crowded with followers and I could not move about freely.

After the collision I went up to the driver, who was standing with the Maharajah and took the line-clear pouch and hoop from him—he was dazed and stupid-like—and brought the line-clear up to the station master on duty. I did not think of looking at the signals to see how they stood, until the assistant station master asked me to see them—this was about ten minutes after the collision; they were then all at danger for both up and down.

I did not look back to see the back light of the distant signal as we passed; I should think we were going 20 to 25 miles an hour when we passed the facing points.

I felt the brake slightly as we got on the points—it was not put on after that.

The driver was only dazed from the shock, not sleepy nor from any other influence.

Kachu, pointsman on the south or down facing points.—On the night of the collision, I went on the down facing points when the up passenger left Sithouli; the Babu (assistant station master) had sent me there.

He told me “the special has left from Dabra, you go to the points and show a red light towards the in-coming train.”

The points were set for the main line for the mail; then the muccadam set the points both sides for the tranship, and they remained so for the next train, a goods from Jhansi; and after that they remained set for the station line until No. 14 up came in.

I was on the points when the special came. I showed a red light and as she came on the points I called out to the driver; I saw the driver as the train passed, he was sitting.

I could see the distant signal white back light from the points.

The station signal was red.

Krishna Brikhan, assistant muccadam, Antri.—When the up passenger left Sithouli the Babu gave the keys (main line) of both the facing points and told me to turn the points at both ends to the loop. I did so and brought back the ‘loop line locked’ keys to the Babu, the Nos. of the keys were 3 and 4. I gave them to the Babu.

Then the passenger left Sithouli and the Babu gave the key (No. 4) to the signalman and told him to lower the up signals. Chandi, pointsman, was on the points, Sithouli side.

The down special had also left and there was a pointsman on the Dabra side facing points. The passenger came into the station on the platform line; and had stood about 2 minutes, and Babu had taken the signal key out, having put the signal to danger first and sent the key by the signalman to the Sithouli side points to have them set for the main line; then the Babu went inside and the special ran in and struck the up passengers.

I was then on the platform near the office waiting for the assistant station master to give me the key to go to the Dabra side points, and set them for the main line.

The signals were all burning, those on the main showing red lights to Dabra, and I could see the white back light of the down distant signal.

FINDING.

We find that the driver is responsible for the accident in that he ran against signals, and that the assistant station master contributed to the accident by breach of order 23 (slip 6) of Working Time Table, Part 11.

J. S. LAMBERT,
President.

T. W. BONNER,
Member.

R. C. H. BARNARD,
Member.

Remarks by the Government Inspector of Railways.

I agree with the finding.

As there was some question and doubt about driver Watson's eyesight being good and whether he was colour-blind or not, I called for a medical certificate on this matter, a copy of which is attached as Annexure No 1.

Whether the assistant station master was further guilty of a breach of rules in giving line-clear for the down special, depends on whether stations on the Great Indian Peninsula Railway (or this station in particular) are class 'A' or class 'B' stations under Chapter V, General Rules for open lines, 1906. In paragraph 3 of the preface issued with the Company's General Rules it is stated that the system under which all trains on the Great Indian Peninsula Railway are worked is the absolute block system as described in Chapter V, Rules 92 to 114. It is important that this sub-division of all stations into classes should be duly notified.

C. S. ROSE, MAJOR, R.E.,
Government Inspector.

Documents accompanying:—

Annexure No. 1.—Certificate granted by the District Surgeon, Great Indian Peninsula Railway, Jhansi, to Mr. S. J. Watson, driver.

Remarks by the Senior Government Inspector of Railways, Lucknow.

I concur.

C. F. SYKES,
Senior Government Inspector

The 3rd December 1907.

Appendix XV to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

Report of the proceedings of a committee of enquiry which assembled at Shivani station, Mysore State railway, to investigate the circumstances under which a collision was averted between Nos. 23 up and 200 down goods trains at mile 66 between Ajjampur and Shivani stations during the early hours of the 16th September 1908.

The committee was composed of the following officers:—

R. BERRY, *District Engineer.* *President.*
 S. J. MERCER, *District Traffic Superintendent* } *Members.*
 C. P. MOLLOY, *District Locomotive Superintendent* }

DESCRIPTION.

In this case No. 200 down goods train, which had left Shivani, mile 61½, at 0-8 hours, was brought to a stand at mile 66-7, the driver having noticed the head lights of No. 23 up goods train, which had left Ajjampur, mile 68½, at 0-14 hours and which train was similarly brought to a stand at mile 66-13—the distance between the two trains when both were brought to a stand being about 500 yards. The line at the place where the drivers saw each other's lights was fortunately straight.

EVIDENCE.

H. Adams, driver.—I was driver of 23 up on 16th September 1907. I left Ajjampur at 0-14 hours or 4 minutes late. I received the line-clear ticket produced. After having gone about 1½ mile I noticed a white light and 2 red lights, so I knew it was a train. I then stopped. When the train stopped I got down to place fog signals to protect my train. I then heard the driver of the other train whistling for brakes. On my line-clear ticket the station master of Ajjampur had endorsed that 200 down was running late.

When I saw that 200 down had come to a stand and that the driver of 200 down had got down (by seeing lights leave the engine) then I went forward to meet him. He told me that he had a line-clear and I told him that I had one too.

He asked me to show him my line-clear and I asked him to show me his; the line-clear tickets appeared to be correct.

Both trains then went to Ajjampur.

On my first arrival at Ajjampur from Birur I saw the assistant station master who was properly dressed. I was not delayed for signals when approaching Ajjampur from the south. I arrived at Ajjampur from Birur at 0-14 hours. I arrived back at Ajjampur at about 1-20 hours and I saw the same assistant station master there whom I had seen before. I asked him to explain, and he said, "I never gave line-clear to Shivani for 200 down."

Antony, 1st fireman of 200 down.—I was first fireman of 200 down, the driver of which is on leave. We received a line-clear ticket at Shivani and left for Ajjampur. After travelling about 5 miles we noticed the lights of a train. We immediately took steps to stop the train and pulled up at mile 66-7. Meanwhile the other train, which turned out to be 23 up, had also stopped.

After some discussion we followed the other train into Ajjampur.

Fize Ahmed, guard of 200 down.—I was guard of 200 down and arrived at Shivani at right time and left 2 minutes late, 0-8.

I got the line-clear ticket from the assistant station master and gave it personally to the driver.

On arrival at Shivani I went into the office and found the assistant station master at his instrument.

I then went out to attend to some shunting, and on my return the assistant station master was still at his instrument, but had just received line-clear from Ajjampur. He complained that there had been delay in getting line-clear. He told me that he had tried to get line-clear "vid" (*i. e.*, vid Hoedurga road and Birur), but I understand that after all he had obtained it direct. The assistant station master, Shivani, filled up the line-clear ticket in my presence.

On arrival at Ajjampur the station master denied that he had given line-clear for 200 down.

While discussing the occurrence when the 2 trains were standing facing each other, I saw the line-clear ticket of 23 up and it was endorsed that 200 down was running late.

Nagarathnam, guard of 23 up.—I was guard of No. 23 up. I left 4 minutes late from Birur at 23-18 and arrived at 0-14 at Ajjampur still 4 minutes late. At Ajjampur I went and got line-clear from the assistant station master, who had it ready and was awake and sitting at the table. I asked the assistant station master "Where is 200 down." He replied, "I have already endorsed that 200 down is running late." I had no conversation with the assistant station master, but took the line-clear ticket and handed it over personally to the driver.

After the averted collision had occurred and after we returned to Ajjampur, I questioned the assistant station master and he told me that he had not given line-clear for 200 down, but said he had received private No. 14 for 23 up line-clear.

Winckler, traffic inspector.—I am the traffic inspector of this section. I inspected the line-clear books of Shivani after the accident. I found that while full entries are made in Ajjampur's book for 23 up, there are no corresponding entries whatever in the books at Shivani, and similarly while Shivani has complete entries for 200 down there are no corresponding entries at Ajjampur.

The private No. on the line-clear for 23 up is No. 14, but from an inspection of Shivani private No. sheet No. 2 should have been the number.

Similarly the private No. on the line-clear ticket of 200 down is No. 14, while it should have been No. 8.

T. Ramaswamy Iyer, assistant station master, Shivani.—Train No. 200 down left Hoedurga Road

at 23-39, and I applied for line-clear for it to Ajjampur at 23-45.

From the time I applied I was calling without receiving any reply. I was calling him for 5 minutes. I then applied *via* Hosdurga Road. My message attached, marked A, is the one I sent.

Hosdurga Road replied to me "try again for 5 minutes and if you cannot get Ajjampur I shall take *via*." Then I again called Ajjampur. Still no answer.

Then I called Hosdurga road and signalled my message (line clear enquiry message marked A).

Again I called Ajjampur—by this time the train 200 down goods had arrived—and after the arrival of the train Ajjampur answered.

I signalled my line-clear enquiry at 0-1 hours and he gave me a reply at 0-3 hours and 200 down started at 0-4. I gave him out report at 0-6. Then I lay down.

About 10 or 12 minutes after Ajjampur called me and offered me train out. I was bothered and said, "why did you not clear section and ask line-clear of me". He replied, "I forgot".

I at once sent for station master and permanent way inspector and sent men behind the train to call out, and sent my accident message to all concerned.

Afterwards I heard from Ajjampur that the trains had arrived safely.

Cross-examined by District Traffic Superintendent.—I commenced to call Ajjampur for line-clear at 23-45—the time entered in my book. I called him for 5 minutes (this brings us to 23-50).

I then wrote out the message, this occupied 2 minutes (up to 23-52). Hosdurga Road said, "Try again"—this conversation took 2 minutes (23-54). Then I tried again for 5 minutes, *i. e.*, up to 23-59—then I wired this message which took about 1 minute, *i. e.*, (24-00).

On my record I have booked 23-55. Hosdurga's record shows 0-1 to 0-2—a discrepancy of 6 minutes.

In my original statement I said, I finally asked line-clear from Ajjampur at 0-1 and received his reply at 0-3. According to Hosdurga this was the time I was wiring to him.

I signalled the "out report" at 0-5, which is 11 minutes before the alleged departure of 23 up from Ajjampur.

I signalled every word using abbreviations in the line-clear message, taking down the words from the instrument. For "down" I use Dn. For "Line-clear" I use L. C.

My reason for using these abbreviations is to save time. It is impossible to signal in full and not delay trains when there is a crossing.

Recalled.—I gave no line-clear for 23 up.

I received no application for line-clear for it and I gave no private No.

I know that 23 up was running.

When acknowledging private numbers I repeat them as acknowledgment.

Question by assistant station master, Ajjampur.—Did I tell you or not that 23 up left at 23-18 from Birur?

Answer.—No. I was not informed that 23 up left at 23-18 from Birur.

Question by assistant station master, Ajjampur.—Is it true or not that you asked me at about 23-39 "where is 23 up"?

Answer.—No. I did not ask you.

Question by assistant station master, Ajjampur.—Do you or have you ever deputed any one to do your work in signalling line-clear?

Answer.—No.

Question by assistant station master, Ajjampur.—Does your brother-in-law, who was under guard of 200 down on that date, know signalling?

Answer.—Yes. He knows it a little.

Statement by assistant station master, Ajjampur.—On a former occasion this same brother-in-law, B. Subbiah, talked from the Ajjampur instrument to Shivani, so I know that he can signal quite well.

Statement of assistant station master, Shivani.
—continued.

I was employed on the Southern Mahratta railway before my present engagement. I first joined as signaller on the Mysore State railway about 20 years ago. I commenced at Closepet station on Rs. 12 per month. I have been at both Paschimavahini and French Rocks as signaller. I admit I was also

station master at Hirehalli. I left Hirehalli on account of sickness. My sickness was fever and cold. I went to Hospital for it—the Hospital at Bangalore.

Mr. Putana Chetty was the District Traffic Superintendent when I was station master at Hirehalli. I was sick for more than a year and that is why I left the service. I received no leaving certificate, but was advised that, owing to my long sickness, my place had been filled up.

I was doing private work for 10 or 12 years.

When I applied for work on the railway again I did not state that I had already been employed. I went to the signalling class at Bellary for 3 months as I had forgotten everything.

My reason for not stating that I was an old servant of the railway when I rejoined was that I had forgotten my work.

I was pleader's clerk to Mr. Raghavacharlu on Rs. 10 a month before I was re-engaged.

My brother-in-law, under guard Subbiah, as soon as he came to station, was ordered by the chief guard to attend shunting. He never came into Telegraph office.

Dattatraya Bhaskar, assistant station master of Ajjampur.—I am the assistant station master of Ajjampur.

I knew that 200 down ran every day unless cancelled.

I also knew that 23 up was running—it is not a regular train and has only run once before since I have been at Ajjampur, on which occasion it crossed 200 down at my station.

I was rather confused on that day as to whether these two trains were to cross at Ajjampur or at Shivani.

The reason for my confusion was that the time table for the manganese special conflicts with the working time table, in that 23 up is shown as due to leave at 0-14 and 200 down manganese special to arrive at 0-23, the crossing being marked at my station.

23 up left Birur at 23-18 and after 10 minutes I told Shivani that No. 23 up left Birur at that time. After waiting 10 minutes I told him "if 200 down be late give me line-clear for 23 up".—He said "wait". After a few minutes I wrote out line-clear enquiry and offered him R. R. R., but he said "wait". After a while I went out to tell the porters and told the jemadar to man the points. I was waiting on the platform to see if I could see the train.

I returned to the office at exactly midnight. Then I called Shivani and told him "train arriving, give line-clear soon if 200 down be late."

He gave me line-clear under his private No. 14. I repeated it again—he said "yes".

Then I wrote out the line-clear ticket; in the meanwhile the train No. 23 up arrived and the guard and driver both came inside.

I gave line-clear ticket to the guard and made remark that 200 down was running late.

The guard insisted on my initialling the remark, but I told him that the whole line-clear ticket was signed and so there was no necessity for initialling the remark.

He asked me, "Is 200 down running late?"

I told him unless it be late he would not have given line-clear. Then he handed over the line-clear ticket to the driver and the train started.

Then I came to the office and called Shivani and offered the "out report."

He asked me "what train have you started." I told him what wonderful question is this? "No. 23 up, just you gave line-clear for." Then he said, "No. 200 down had left. I asked him, 'who gave you line-clear and when did you ask.'" "It is you that gave line-clear (he said) under private No. 14." I told him "there is no such number in my sheet and I have not given you line-clear."

Then I went out, called porters to run behind the train exhibiting danger signal as Shivani had started a train. I ran beyond the facing points and my porters went up to the place where the train was standing.

While I was asking Shivani for line-clear I heard Birur instrument offering some R. R. R. message. I thought it to be a common message, and so I told him to wait.

Then I asked for line-clear and got it from Shivani.

Cross-examination.—At about 23-45 I first asked Shivani for line-clear for 23 up. I cannot say what put the idea in my head that 200 down might run late.

I had not noticed the errors in the time tables till the 15th when looking at it after 23 up had left Birur. I am on duty all day at Ajjampur on coaching work.

I signalled every word of the line-clear enquiry to Shivani and wrote down direct from the instrument every word of his reply. The abbreviations were "From" and "To station master" omitted: "Words" and "Time" I received: I received "Dn" for "Down"—"L. C." for "Line clear".

I have never found out up to date what Birur wanted to ask in the R. R. R. message.

I was told by brakeman Govindappa of 3 up that perhaps it was the brother of the assistant station master, Shivani, who signalled the message.

I know that assistant station master, Shivani, is subject to fits of madness and has on this account been to Hospital.

He was station master at, I think, Hirehalli and ran away in a mad fit from the office, and on this account he was reduced to the post of assistant station master. I hear that this man has about 20 years' service and that he has been frequently reduced.

I received no application for line-clear for 200 down goods, gave no reply and received no "out report."

It is my custom to repeat the private numbers back to the station, sending them by way of acknowledgment.

Question by assistant station master, Shivani.—From what time to what time on the date in question were you at the instrument?

Answer.—I was in the office up to 23-45; then I went out and returned at midnight, and while I was in the office I was attending the instrument.

Question by assistant station master, Shivani.—Were you asked line-clear for 200 down at 0-0 hours?

Answer.—No. You did not ask me.

Question 3.—Did you receive "out report" for 200 down?

Answer.—I heard nothing of 200 down till I gave "out report" for 23 up.

Question 4.—Why did you not receive the X. R. R. R. message from Birur?

Answer.—I did not hear X. R. R. R., but only R. R. R. and as I was asking for line-clear I said "wait".

Question 5.—You endorsed on the line-clear ticket of 23 up that 200 down was running late. How did you ascertain this?

Answer.—You did not tell me that it was running late but I assumed it on getting line-clear from you.

Statement of driver Wakefield taken at Bangalore on 23rd September 1907.—I was driver of No. 200 down of 15th September from Harihar to Arsikere. I reached Shivani about right time and left two minutes late. I have heard the statement of driver Adams of 23 up and agree with what he says.

Before I left Shivani, I received the line-clear ticket from Subbiah, the under guard of my train. I never heard there was any difficulty in getting the line-clear. The jamadar attended to the shunting, and I never saw the assistant station master of Shivani.

On arrival at Ajjampur I got off the engine and went to the station master's office and asked the assistant station master why he had given line-clear for my train. He replied that he had not given line-clear for 200 down, but had applied and got line-clear for 23 up, and he also told us that the private No. 14 was not on his sheet. The under guard Subbiah, who was present at this conversation, then stated that he was in the Shivani station office and heard Ajjampur giving line-clear and private No. 14 for 200 down. (I understand that under guard Subbiah understands signalling.) When Subbiah said to the assistant station master, Ajjampur, "I heard you give 14 as private No." the assistant station master replied "No. 14 was the Number I repeated when receiving line-clear for 23 up."

Brakeman Subbiah.—I was brakeman of 200 down goods from Harihar to Arsikere on 15th September. On arrival at Shivani my guard told me to go and attach one empty which was booked to Birur, and to attend to the shunting. During shunting operations he came to help me. After shunting was over I checked the couplings of the train; while I was doing this the guard went to the station office and returned with the line-clear ticket. We then both went together to the engine and my guard handed over the line-clear ticket to the driver. I cannot say whether the line-clear ticket was signed by the guard or not. The train was started.

I did not go into the office at Shivani at all.

I did not hear the line-clear for 200 down being given by Ajjampur.

I know the alphabet in Morse signalling.

I have never signalled a message on the Morse instrument.

My brother-in-law, who is the assistant station master at Shivani, taught me signalling.

I learnt signalling on a Dummy instrument which I lost at Nanjangud about 3 years ago, when my brother-in-law was signaller there.

Note.—This witness has made up his mind that he was occupied in shunting and knows nothing of what happened at Shivani.

When questioned about what actually occurred on arrival of his train at Ajjampur he first denied all knowledge of any conversation, and then admitted he did hear the whole of the staff concerned discussing the averted collision.

Summary of the evidence.

The evidence of the assistant station masters of the two stations is conflicting; so they were called together and questioned each other but without being able to make their statements agree. The only other information that was elicited was that assistant station master, Shivani, has served on this railway before—a fact which he had suppressed—and that his health had been the cause of his leaving. The assistant station master, Ajjampur, asserts that this ill-health on the part of the assistant station master, Shivani, had been mental; but the assistant station master, Shivani, denies this and states that it was fever he suffered from. In any case we have no further information on this subject and assistant station master, Shivani, appears to be sane now.

S. J. MERCER,

District Traffic Superintendent, Bangalore.

C. P. MOLLOY,

District Loco. Superintendent, Bangalore.

R. BERRY,

District Engineer, Bangalore.

Finding.

We find that this accident occurred owing to the assistant station masters at Ajjampur and Shivani having failed to observe the rules in force for line-clear messages laid down in Appendix D, Part I, Chapter 4 of the General Regulations.

The line-clear books of Ajjampur show that he applied for line-clear for 23 up goods and received it from Shivani with P. N. 14. The books of Shivani with regard to this train contain no entries whatever. Similarly the line-clear books of Shivani show that he applied for line-clear for 200 down goods and received it from Ajjampur with P. N. 14. The books of Ajjampur with regard to this train contain no entries whatever.

We are of opinion that instead of applying for and receiving line-clear messages as laid down in the rules, the messages have gradually been so abbreviated as to consist of a few letters only—for example "L. C.," "P. N.," instead of the full message. With regard to these trains Ajjampur's books show that he received line-clear for 23 up goods at 0-3 hours, and the books of Shivani show that he received line-clear for 200 down also at 0-3 hours, *i.e.*, at the same minute, and we are of opinion that these very much abbreviated and irregular line-clears were misunderstood by both assistant station masters, Shivani being under the impression that he had received line-clear for 200 down, whereas the message he received was really an application for line-clear for 23 up, and *vice versa*.

We recommend that both assistant station masters be summarily dismissed.

We are of opinion that the present system of signalling by Morse instruments is unsatisfactory, and we consider that the time has arrived when this system should be superseded by a staff line-clear system such as Robert's key staff when such accidents could not occur.

S. J. MERCER,

District Traffic Superintendent, Bangalore.

C. P. MOLLOY,

District Locomotive Superintendent, Bangalore.

R. BERRY,

District Engineer, Bangalore.

Remarks by the Government Inspector of Railways.

I agree with the finding which was arrived at in consultation with me. The cause of this averted collision is remarkable in that both stations endeavoured to obtain line-clear, and but for apparently the absolutely simultaneous transmission of the very abbreviated ("L. C.") enquiry message, nothing untoward would have occurred.

There is no doubt each station master took the other's enquiry to be the reply to his; and this is corroborated by the private number 14.

This averted accident is another proof of the necessity for supplanting the Morse by Automatic instruments. Up to date 10 Robert's key instruments have been supplied to the stations from Londa to Hubli, while arrangements are being made for further supply to release all the Morse instruments.

The Agent has written as follows:—

"I have the honour to state that both the assistant station masters to blame will be dismissed the Company's service.

"2. With regard to the concluding paragraph of the finding, I beg to state that the necessity for the introduction of an approved type of instrument for signalling trains has already received attention, and the fitting of Robert's key staff block instrument is now in progress between Poona and Bangalore."

I am further of opinion that these lengthy telegraph messages necessitated by the Morse code should be abolished. These messages take some 4 minutes to transmit if signalled as directed in the Rules, and it is unfair to expect station masters to waste this amount of time especially when crossing trains. As a matter of fact the messages are always abbreviated as pointed out by the committee in their finding. I consider all line-clear messages should be compulsorily transmitted by Bell code.

C. T. R. SCOVELL,

Government Inspector of Railways.

Dharwar, 18th October 1907.

Remarks by the Senior Government Inspector of Railways, Bombay.

I agree with the finding and the remarks of the Government Inspector.

J. S. BROWN,

Senior Government Inspector.

Bombay, 8th November 1907.

Appendix XVI to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

Report of the proceedings of a committee of enquiry which assembled at Sarai Banjara station, North Western railway, on the 23th May 1907, to investigate the cause of the collision at that station on the 25th May 1907, between No. 12 down passenger and an up special goods train.

The committee was composed of the following officers :—

E. J. VERRIERES, <i>Executive Engineer</i>	. . . . .	President
K. M. KIRKHOPE, <i>District Locomotive Superintendent</i>	. . . . .	} Members.
U. C. SANDYS, <i>Officiating District Traffic Superintendent</i>	
C. S. RENNICK, <i>Government Inspector of Railways</i>	. . . . .	} Present.
CAMPLING, <i>Inspector, Government Railway Police</i>	

DESCRIPTION.

At about 4-20 hours on the morning of 25th May 1907, at Sarai Banjara, No. 12 down, while being backed on to the loop line in order to allow No. 4 down mail to pass, collided with an up special goods which had been received on the loop line and which, for some reason, backed at the same time, thus the two brakevans of the two trains met, causing damage to ten vehicles of 12 down and seven vehicles of the up special goods amounting, approximately, to Rs 3,000, slight injuries to two or three passengers and severe injuries to the guard of the up special goods which necessitated his removal to hospital. A sketch of the site of the accident is attached.

In the confusion resulting from this accident, in which 12 down passenger fouled the up facing points, the line-clears for 4 down mail were sent out and another serious accident was only just averted by the signals having been put up against 4 down mail in time.

EVIDENCE.

E. E. Humphries, Traffic Inspector.—I was a passenger in 12 down of May 25th. At Sarai Banjara I was awakened by a severe shock. I got up at once out of the carriage and proceeded towards the engine. On enquiring from the fireman what was the matter he informed me that the train had collided with a goods train which was also backing. I then went off to see what had happened. I noticed that line-clear clips were being held for a train to run through. Knowing that the engine of 12 down was fouling the trailing points I asked the assistant station master why the man was standing with the line-clear hoops; he informed me that No. 4 down had left Sədho Garh. I then asked him if he was aware that 12 down was fouling the trailing points; at the same time I called to the man holding the hoops to bring them back and ordered the assistant station master to at once raise the home signal, which was down to danger. On seeing that the main line was clear for the reception of 4 down and satisfying myself that she had come to a stand outside the outer home, I ordered signals to be lowered for her reception and stopped her opposite the station building. Up special goods was run forward and 12 down was backed to clear the trailing points for 4 down. After satisfying myself that trailing points were clear I ordered line-clear to be given to the guard of 4 down.

the south end of the main line the assistant station master on duty came up and told me to draw out and back on to the loop line, as 4 down mail was expected. The assistant station master came to me about 5 minutes after I stopped. Both the assistant station master and the pointsman gave me hand signals to go ahead, then to stop and again to back. Both these men were on the side of the main line away from the station platform. I backed my train under these signals, and when the brakevan next to my engine was entering the points I experienced a severe shock. I was on the side of my engine towards the station building, and my fireman was on the other side. I could see no hand signals. It was my fireman who was watching the signals from the assistant station master and pointsman. There were 19 vehicles on my train including the brakevans, and I could not see the up special goods approaching me. Up to the time of the collision I could see no hand signals. After the collision I looked out on the opposite side of the line to the station, and the only signal I observed was a green one given me by the pointsman to back. At the time of the accident I was fouling the main line with my engine and brakevan. I remained there about 15 minutes, after which I went round my train to see the extent of the damage done. When I returned to my engine, prior to moving, I saw that 4 down mail was standing on the main line. I did not notice her coming in. I did not notice the position of any of the fixed signals. I then backed my train on to the loop and cleared the main line.

R. Birch, driver.—I was the driver of 12 down on the 25th instant. My train arrived at Sarai Banjara to time. When my train was stopped at

Driver Middleton was on my engine with me learning the road. Immediately after the collision

he got off to examine the damage done, and returned and told me the details about 15 minutes after.

Rahim Bur, fireman of 12 down on the morning of the 25th instant. The statement of this man corresponds exactly with that of his driver, Birch.

Mulloo, pointsman.—I went on duty at midnight on 24th and was on duty till 6 hours on 25th. On arrival of up special goods from Rajpura, the station master sent me to the north facing points with the key to admit 12 down. I travelled on the foot-board of the engine of the up special goods up to the point where she stopped. I then got down and set the north facing points and locked them for the reception of 12 down on the main line. When the station master lowered the home signal I lowered the distant signal for 12 down. After 12 down had passed me and come to a stand on the main line, I raised the distant signal and showed a red light to the station master to let him know that the incoming arm had not been raised. When he saw this he called out to me to leave the points looked as 4 down mail was expected. I kept the red hand signal lamp towards the station, and, after a while I noticed 12 down backing towards the station; at the same time the up special goods which was on loop backed away from me towards the station. Up to the time that these two trains collided I did not notice any red or green hand signals being given to either of them. I noticed that there were three red lights on the brakevan of 12 down. I did not see Rahmat, nor any other person, near the up special engine. After the accident I showed my red hand signal lamp towards Sadhoo Garh and the incoming arm for 4 down mail was raised almost at the same time. After a short time this arm was again lowered to admit 4 down, but the outgoing arm for 4 down was not lowered, and she was brought to a standstill on the main line opposite the station. After the arrival of 4 down the incoming arm was raised from the station, and I reversed the points and lowered the outgoing arm for the up special goods. When the main line was cleared after the accident and the station master for the second time lowered the incoming arm for 4 down mail, I also lowered the distant signal arm. 4 down was just then in sight.

The line-clear for 4 down mail is always given by the pointsman at the north facing points, and by the watchman opposite the station building. On the morning in question no line-clear was sent out and 4 down mail was made to wait.

J. O'Brien, guard.—I was guard of 12 down passenger on the morning of the 25th instant. My train arrived at Sarai Banjara to time and was received on the main line and stopped with the brakevan about opposite the station building. On arrival I came into the assistant station master's office to sign the "in report" and enquire about the onward journey. I was informed by the signaller on duty (Amarnath, son of Kashi Ram) that 4 down mail would cross my train at this station. I then left the station and found that my train had been drawn out towards Rajpura. This was done without my knowledge, and I cannot say under whose directions it was done. I saw my train then being backed on to the loop line. I could not see any signals under which this was being done. I could not see any signals which might have been given from the side of the line away from the station building, as I was standing on the platform. I could see three red tail lights of my brakevan. On looking towards Sadhoo Garh at the same time I noticed the up special goods, which had been standing on the loop line, also backing towards my train (12 down). I did not see any signals being given to this train either under which it was backing. I was standing on the platform, about opposite the station building, and when the brakevan of the up special goods passed me I noticed that the guard (Ram Sarup) was standing in his brake showing a red light towards his driver. My second guard (Devi Dayal), who was also on the platform with me at the time, and I both showed our red lights to the driver of up special goods. While these two trains were approaching no green lights to my knowledge were

shown to either of them from the platform side of the line. After the collision I went up and examined the damage done; then went on and asked the driver of my train whether he could clear the main line. I found the assistant station master (Amarnath, son of Gooranditta) near the engine of my train. The engine and front brakevan were fouling the main line. We cleared the main line, and only after the passage of 3 up and 4 down we removed the damaged vehicles. I was too much taken up with my own train to notice any operations which were carried out in connection with the signals for 4 down mail. I know that 4 down was brought to a stand on the main line. I think she must have stopped about 10 or 12 minutes while the main line at the south end was being cleared.

Devi Dayal.—I was second guard of 12 down on the morning of the 25th instant. When 12 down and the up special goods were backing on to each other I saw a green signal being given to 12 down from the station side of the line, but I saw no signal being given to the up special goods for her to back. Before the collision took place Mr. O'Brien and I both showed red lights to 12 down when we saw what was going to happen.

Amarnath.—I am assistant station master at Sarai Banjara. I was on duty at the time of the accident on the morning of the 25th instant. I came on duty at 1 a. m. and went off at 10 hours. Umballa up special goods arrived at my station at 3-55 hours and was received on the platform loop. The engine stopped near the north fouling point. The brakevan stopped near the dead buffer at the north end of the passenger platform. The train contained 23 vehicles including the brakevan. No. 4 down mail is booked to pass 12 down passenger at Sadhoo Garh, but on this day 4 down was running late and 12 down arrived at my station at 4-15 hours before 4 down.

12 down left Sadhoo Garh at 4-5 hours according to the "out report." At 4-6 hours Sadhoo Garh asked me for "on arrival" line-clear for 4 down mail, which he then reported was running 25 minutes late. According to this 4 down should have run through my station at 4-25 hours. At 3-54 hours I asked for "on arrival" line-clear for 12 down from Rajpura. At 3-58 I received this line-clear. When I learned that 4 down mail would pass my station at 4-25 hours I cancelled this line-clear. At about 4-7 hours, on arrival of 12 down, both the guards of that train came to my office. I told them both that their train would not proceed to Rajpura until after the passage of 4 down mail and that I was going to put their train on to the loop line. 12 down was received on the main line; the engine was near the south crossing and the brakevan was standing about opposite the centre of the station building. I went out with a signal lamp to the driver of 12 down. I stood near the engine and told him to pull out his train and to back it on to the loop line. I showed him a green light from where I was standing between the tracks near his engine. I also exchanged a (green) signal with the head guard of 12 down, who was at the time standing on the platform opposite his brakevan. He also gave a green signal at the same time to his driver to pull his train out. Before I gave the signal to the driver to go ahead I informed the pointsman at the south points that 12 down was to be pulled ahead and backed on to the loop. The pointsman then gave a signal to the driver of 12 down to go ahead, while I was talking to the driver of 12 down and exchanging signals with the guard and the pointsman. I did not observe any signals from either the driver or the guard of the up special goods. When I left the station the guard of the up special goods had gone off towards his train. I don't know where he was while I was signalling to the staff of 12 down.

When 12 down was pulled out beyond the south points she stopped. The points were set for the loop, and both the pointsman and myself gave hand signals to the driver to back on to the loop. The pointsman was standing on the side of the main line away from the station, and I was on the station side of the loop. The guard of 12 down was not

in his brake at the time. I was standing about 100 feet away from the pointsman when we were both signalling to the driver of 12 down. I did not observe that the driver of 12 down acknowledged our signal. I did not look towards the station while I was signalling to the driver of 12 down, and cannot say, therefore, whether any signals were being given him from there. When the brakevan of 12 down had backed up to me I turned towards the station and observed the brakevan of the up special goods backing towards 12 down. I did not observe any signals being given from the platform to either of the approaching trains. The brakevan of the up special goods was showing two side red lights. The brakevan of 12 down was showing two or three red lights, I don't remember exactly which. Before the brakevan of 12 down came up to me I got across between the tracks. I there noticed the pointsman at the south facing points waving a green hand signal lamp to the driver of 12 down. I was between the pointsman and the driver of the up special goods, and although I could see this signal, I cannot say whether the driver of the up special goods could see it. When I got between the tracks I showed a red light to the pointsman at the south points and at the same time called out to him to stop 12 down. I then turned the red light towards the approaching up special goods and ran towards it calling out to the driver to stop; but before I got up to the engine the two trains collided. Before the collision the up special goods must have been travelling about 12 miles per hour. The collision occurred about 4-20 hours. The mail train arrived at my station at 4-46 and left at 4-49. When I got up to the engine of the up special goods after the collision the driver told me he had moved because a pointsman had given him the signal. When I asked where the pointsman was he asked me to come round on the station side of the engine and see. When I came round on that side I saw only a red light being shown from the platform. I went up to the light and found it was being shown by Devi Dayal, second guard of 12 down, who was standing on the platform near the signal levers.

Roori.—I was on duty as pointsman from midnight of 24th till 6 hours on 25th. The up special goods from Umballa arrived first and was received on the loop line. I was at the points and let it in. After its arrival the home signal arms were raised from the station and I brought away the points key and gave it to the station master. The station master then told me that a passenger train was coming from Sadhoo Garh and sent me out to the south facing points. I waited there until the passenger train arrived and stopped on the main line. The station master came out with a green signal lamp to where the driver of 12 down was and said something to him which I did not hear. He then came up to the crossing and called out to me that 12 down had to be backed into the loop as the down mail train had left the last station. The points at the time were set for the main line, and both the station master and I showed a green light to the driver of 12 down. The train (12 down) was then drawn out beyond the facing points. The points were reversed for the loop, and 12 down was signalled back by the assistant station master and myself. The assistant station master was standing on the station side of the loop line and I was at the points at the opposite side of the main line. I did not notice what tail lights the brakevan of 12 down carried. When 12 down was backing on to the loop I did not see any signals being given towards it from the station. I did not look towards the station till after the collision, as my attention was fixed on the driver of 12 down.

Mohamed.—I was driver in charge of up special goods of 25th instant. My train arrived at Sarai Banjara at about 3-50 hours and was received on the loop line. The engine was stopped a short distance away from the north fouling point. About a quarter of an hour after my arrival 12 down came in and was stopped on the main line south of my train. After waiting there for a few minutes she proceeded in the direction of Rajpura. I was not told, nor

did I enquire, whether she was proceeding to Rajpura, or only shunting in the yard. I did not notice the position of the signals referring to 12 down. A few minutes after I noticed 12 down leaving, a pointsman came to my engine with a green lamp and said that the station master had ordered my train to be backed in the direction of Rajpura. I can recognise this man, but do not know his name. He told me he was a pointsman, (*Rahmat, Dhisti of this station, was here pointed out by Mohamed as the man referred to*). Before moving, however, I looked towards the station and saw a green hand signal being waved in my direction, it appeared to be about opposite the centre of the station building. A second man came up (*identified as Mulloo, pointsman*) and got on to the foot-board of the engine; these two were talking between themselves, but I did not hear what they said. I whistled before starting, and while moving kept a look-out towards the station. I noticed the green signal being given me on the platform up to the moment the collision occurred. My fireman was looking out on the opposite side to the station, and neither he nor I noticed any danger signal being exhibited up to the time of the collision. After the collision I saw a red signal exhibited in my direction from the station.

The evidence given by driver Mahomed of up special goods was corroborated in detail by Gulzar, fireman of the same train.

N.B.—This witness also selected from the whole of the station staff the two pointsman (sic) referred to by Mahomed as the men who signalled him back before accident.

Ram Sarup, guard of up special goods from Umballa on the 25th May 1907.—At Sarai Banjara my train was near the points leading to dead siding from loop line. I was in the body of the brakevan, and was surprised to find my train backing after being put into position for the crossing of 12 down and 4 down. On looking out of the window I observed that 12 down was also backing on the same line. I exhibited danger signal to the driver of my train, but he paid no heed; failing this I applied my hand-brake hard, when a severe bump with 12 down took place. After this I am not aware of what occurred. Mr. O'Brien, guard, was also exhibiting danger signal to my train from the platform, and also a pointsman came running from 12 down direction showing a danger signal.

F. J. Gardener, boiler maker foreman.—I was a passenger by 12 down of 25th instant. I was aroused at Sarai Banjara by the shock of the collision and know only the result of the accident. I found that the brakevans of 12 down and up special goods had collided on the loop line, about half way between the station building and the south end of the platform. The traffic inspector and myself got out on to the platform at the south end. The assistant station master on duty, Amarnath, came up and told us that he had signalled 12 down to back on to the loop, whereas up special goods was to back on to the loop, whereas up special goods was to stand clear to allow 4 down to pass, and that he showed a danger hand signal to the driver of up special goods who, however, disregarded the signal and backed and thus caused the accident.

The traffic inspector asked the assistant station master, about five minutes after the accident, about the passage of No. 4 down mail. It then transpired that the assistant station master had already sent out the line-clear to the facing points for 4 down to run through. When the traffic inspector pointed out that the main line was blocked, the line-clear was brought back and the assistant station master ran towards the station, I presume with the object of raising the signals against 4 down. I did not notice whether these signals were down when the traffic inspector told the assistant station master to raise them against 4 down.

About three or four minutes after this conversation No. 4 down mail arrived and stopped on the main line opposite the station. I did not notice even then how the signals stood.

FINDING.

We, the undersigned, having carefully considered all the evidence, do find that this accident was due to the assistant station master, Amarnath, losing his presence of mind under circumstances explained elsewhere, and issuing instructions and giving signals in a manner which misled the staff.

That the driver of up special goods, Mohamed Khan, did not satisfy himself before moving that the signals given referred to his train.

That guard O'Brien, when he found that his train was being shunted, should have immediately ascertained what was required and superintended the movements of his train.

We also find that the assistant station master, Amarnath, is responsible for bringing about a state of affairs which, but for the prompt action taken by Mr. Humphries, Traffic Inspector, would have resulted in another serious accident between 4 down mail and 12 down passenger.

E. J. VERRIERES.

K. M. KIRKHOPE.

U. C. SANDYS.

Note by committee of enquiry.

We think it should be explained that the late running of No. 4 down mail, and the arrangements made for her to cross 12 down passenger first at Rajpura and then at Sarai Banjara, delayed the issuing, in time by the assistant station master, Sarai Banjara, of instructions to the guards of 12 down and up special goods about the movements of their trains at this station.

That, after receipt and despatch of all the messages in connection with the first and subsequent arrangements, the assistant station master, when he realized that 12 down had arrived at his station at 4-15 hours, that 4 down was due at 4-25 and that the running time of the latter from Sadhoo Garh to his station was only 8 minutes, probably lost his presence of mind, and, with a view to save time, ran into the yard shouting instructions and waving signals to 12 down in a manner which was misunderstood by the drivers of the two trains and by the station staff.

E. J. VERRIERES.

K. M. KIRKHOPE.

U. C. SANDYS.

In submitting these proceedings the Manager, North Western railway, remarks that "the finding of the committee is accepted as regards the culpability of the assistant station master," and that "the matter is still under investigation and the staff to blame will be dealt with."

Remarks by the Government Inspector of Railways.

The accident was undoubtedly caused by the driver of the up special goods backing his train without having received proper instructions to do so. According to his own statement he had received no instructions from his guard or the assistant station master on duty to move his train, and, consequently, he was not justified in doing so even if, as he alleges, two pointsmen gave him such instructions, which seems improbable. He appears to have mistaken the assistant station master's signals to 12 down as referring to his train and to have backed his train in consequence.

Amarnath, assistant station master, is to blame for not having issued proper instructions to the guard of 12 down and for breach of General Rules 85 (b), 91 (2) and 92; his action on this occasion goes to show that he is quite unfitted for his post.

Both driver Birch and guard O'Brien of 12 down are also blame-worthy, the former for disregarding General Rule 173 and the latter for failing to conduct the shunting of his train under Rule 129, North Western railway Traffic Manual.

I agree with the remarks of the committee that a more serious accident was, in all probability, only prevented by the prompt action of Mr. Humphries, Traffic Inspector, in stopping 4 down.

CHARLES S. RENNICK,
Government Inspector.

Documents accompanying.—

Annexure No. 1.—Sketch showing site of collision.

Remarks by the Senior Government Inspector of Railways.

I agree with the 'finding' of the committee of enquiry and with the conclusions of the Government Inspector.

2. The evidence of Rahmat, Bhisty, should have been recorded.

LUCKNOW;
The 3rd July 1907. }

J. E. GABBETT,
Senior Government Inspector.

Annexure 1 in appendix XVI to the abstract return of accidents on Indian railways
for the twelve months ended the 31st December 1907.

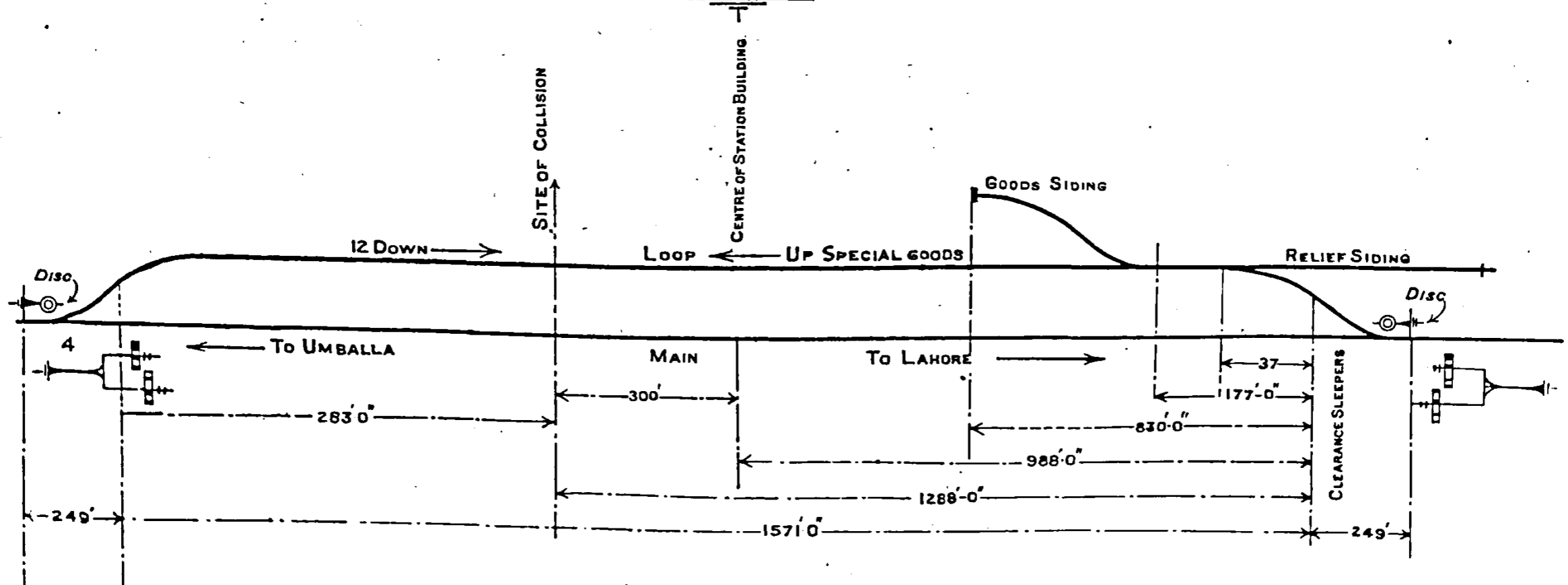
Rough Sketch of Sarai Banjara Yard Shewing

Site of Collision

Between

12 Down and Up Special goods

on 25.5.07



Appendix XVII to the abstract return of accidents on Indian rail ways for the twelve months ended the 31st December 1907.

Report of the proceedings of a joint committee of enquiry (at which a Government Inspector was not present) which assembled at Sarsawa and Saharanpur stations, North Western railway, on the 17th, 18th, 19th, 20th, 22nd, 25th and 26th July 1907, to investigate the circumstances attending the collision between Nos. 91 up and 180 down goods trains at mile 1048/9 between Kalanour and Sarsawa stations on the 14th July 1907.

The committee was composed of the following officers:—

E. J. VERRIERES, <i>Executive Engineer</i>	President.
K. M. KIRKHOPE, <i>Dist. Loco. Supdt.</i> (attended on 18th, 19th, 20th and 22nd).	} Member.
E. L. SCOTT <i>Asst. Loco. Supdt.</i> (attended on 17th only) ...	
U. C. SANDYS, <i>Asst. Traffic Supdt.</i>	
E. J. W. BELLAIRS, <i>Supdt., Govt. Ry. Police</i> (attended on 17th, 18th and 19th only)	Present.

DESCRIPTION.

The telegraph line between Sarsawa and Kalanour was interrupted between about 18-40 hours on the 13th instant and 7-15 hours on the 14th instant. Between about 18-40 hours and 21 hours the interruption was removed on occasions, but after 21 hours it was absolute up to 7-15 hours the following morning. After the first interruption at 18-40 hours and up to 7-15 hours on the 14th the following trains went over the section Kalanour to Sarsawa:—

No. of train.	Departure from	Time.	Arrival at	Time.	REMARKS.
18 down	Kalanour	20-8	Sarsawa	20-20	On line-clear.
2 down	"	21-15	"	21-25	Permission to proceed.
5 up	Sarsawa	21-50	Kalanour	22-9	On line-clear.
Engine of P. spl.	"	0-33	"	2-15	To open communication.
28 down	Kalanour	2-25	Sarsawa	2-50	Engine of P. spl. returned with this train.
Postal special	Sarsawa	3-0	Kalanour	...	} On permission to proceed.
3 up mail	"	3-55	"	4-11	
1 up mail	"	4-43	"	5-8	
27 up passenger	"	5-15	"	5-29	
4 down mail	Kalanour	6-49	Sarsawa	Ran through	
180 down goods	"	7-15	} Collided		
91 up goods	Sarsawa	7-23			

By No. 27 up the station master, Sarsawa, sent a programme for the following trains in the order named, viz.:—

No. 4 down mail to leave Kalanour on arrival there of 27 up passenger, 91 up goods to leave Sarsawa on arrival there of 4 down mail. This memo. was received by the assistant station master (Gulam Sabir) on duty at Kalanour who signed for it in the book of the guard of 27 up.

This assistant station master now states that he gave a memo. to the guard of 4 down for the station master, Sarsawa, to the effect that, on arrival there of 4 down mail, he (Kalanour) would start No. 180 down goods and that 91 up goods was not to be started from Sarsawa, as previously arranged, on arrival of 4 down mail, but that it was to start from Sarsawa on arrival of 12 down passenger which was to follow 150 down goods. This memo.

Gulam Sabir states was given to Guard Newby of 4 down mail and he says that the guard signed for it in the office copy of the memo. book. Guard Newby denies having received this memo., and, as no memo. was given to the station master, Sarsawa, by the guard, the station master, Sarsawa, started No. 91 up goods from his station as previously arranged on the arrival there of 4 down mail at 7-23 hours. At the same time the station master, Kalanour (according to the programme he says was sent to the station master, Sarsawa, by guard of 4 down mail), started 180 down 26 minutes after the departure from there of 4 down mail, *i.e.*, at 7-15 hours. The result was that these two goods trains, 91 up and 180 down, met at miles 1,043-9. The line at the spot is on a curve and the view is interrupted by a gate-lodge on the inside of the curve. There was a thick haze where the accident happened, probably due to the proximity of the Jumna river.

EVIDENCE.

Gulam Sabir.—I am assistant station master, Kalanour, and have been at that station for the last ten months. I came on duty at 2 hours on 14th July, relieving Sabir Hussain; but I was at the station the whole night previous owing to interruption to telegraphic communication, and the working of trains was carried on by either the station master, 2nd assistant station master or myself. No. 3 up mail was the first train which I received over the section Sarsawa to Kalanour. The guard of 3 up gave me a memo. from the station master, Sarsawa, saying:—"On arrival of 3 up at yours, you can send 6 down passenger, and on arrival of 6 down here I will send 1 up and 27 up. Don't start any down train from yours after 6 down." No. 1 up arrived at about 5-10 and left at 5-16, and then 27 up came in at about 5-40 and the guard of this train gave me a memo. stating "On arrival of 27 up at yours, you can start 4 down mail from yours. No train will be started from here till 4 down arrives here, and on arrival of 4 down mail here I will start 91 up goods. You don't start any down train from yours till 91 up arrives at yours, and on arrival of 91 up at yours you can start any down train from yours. I will not start any till arrival of down train from yours." I gave the guard of 4 down a memo. to station master, Sarsawa, saying—"Don't start 91 up goods from yours till arrival of 12 down passenger, I will start 180 down van goods on arrival of 4 down mail at yours. I have got no room in my yard."

I cannot now produce a copy of this memo. as I lost it on the evening of 17th July, but I can produce witnesses of my having given a copy of this message to the guard and of his having signed my copy.

The following men are witnesses:—guard Kharak Singh of 180 down goods, Sabir Hussain, assistant station master, Kalanour, Girdhari Lall, station master, Kalanour, Durga Pershad, guard of 180 down goods, Jaggannath, package-in-charge guard of 180 down. Out of these Durga Pershad wrote part of the memo. both on the original and in the copy.

Besides this, two signallers of Saharanpur are witnesses (namely, Permanand and Mangath Rai) that the guard of 4 down immediately went to the telegraph office to instruct the station master, Sarsawa, through Pilkhani, not to start 91 up goods as the guard had forgotten to give up a memo. from station master, Kalanour, to station master, Sarsawa. The assistant station master, Pilkhani, is also witness that this information was signalled to him from Saharanpur and he in turn signalled it to Sarsawa.

The memo. was shown to the inspector of railway police at Kalanour on the date of the accident. The inspector signed this memo. on the back, and the memo. was also shown to the District Traffic Superintendent.

When 4 down mail left Jagadhri I started writing the "permission to proceed" for her from Kalanour to Sarsawa, and I ordered the guard of 180 down (Durga Pershad) to write a memo. for the guard of 4 down. I filled in the heading of this memo. myself in the foil, but wrote nothing in the counterfoil. In the foil I also entered the number of this memo. as "4." In the counterfoil I entered no number. When I completed the "order to proceed" for No. 4 down mail and saw that the memo. which was to have been given to the guard of that train had not been completed I completed it myself in both the foil and the counterfoil. This was done

on the platform. When No. 4 down mail came in the guard came on to the platform, received the memo. and signed the office copy for it. I remember that when this was done the office copy was numbered as "4," but I cannot say whether the copy given to the guard was numbered or not. I then went across the station loop with "order to proceed" book and got the signature of the driver in my book for the original which was given to him. I merely told the guard and driver that there was a telegraphic interruption with Sarsawa and did not explain to them the programme for the movements of 4 down, 91 up and 180 down. This was all written in the memo.

The reasons why I altered the programme made by Sarsawa regarding the departure of 91 up from there on the arrival of 4 down were—first, both the down trains in my yard were van goods which should have had precedence of 91 up; second, the driver of van goods pointed out that he had been nearly 8 hours at my station and there was fear of his engine failing; third, I wanted to clear my yard of the two van goods in order to facilitate the passage of 12 down and 17 up.

After departure of 4 down I took the "order to proceed" book and the memo. book and put them on the table in front of my office, and in about 20 minutes I wrote out the "order to proceed" and the memo. (Annexure No. 1). The former I gave to Durga Pershad (guard of 180 down) and obtained his signature for it, and the latter I gave to Kharak Singh who signed the foil. Both the foil and the counterfoil of the memo. were written by me; the numbers were also filled in by me. When filling in the numbers I looked at what I thought was the last previous one (3) and entered "4" on both copies. After the collision on looking up the memo. book again I found that 4 was also the number of the memo. I had given the guard of No. 4 down mail, I, therefore, altered the number of this memo. in the office copy to "5." I then also tore out of the memo. book the office copy of the memo. (4) which I had given to the guard of 4 down mail. I did this in order to keep it safely with me as it was a very important document. I showed this to several persons at Kalanour and Sarsawa before I lost it on the evening of the 17th instant.

Recalled.—Q.—What special instructions did you issue to the driver of 4 down mail to stop at Sarsawa before he left Kalanour?

A.—I gave no instructions to the driver of 4 down mail.

Q.—Are you aware that No. 4 down mail is booked to run through Sarsawa?

A.—Yes.

Q.—Are you aware that if the memo. said to have been sent by 4 down was not delivered at Sarsawa a serious accident might happen.

A.—Yes.

Q.—Why did you not give special instructions to the driver of 4 down to stop at Sarsawa?

A.—There is no rule stating that I should do so, and it was the guard's duty to do this.

Q.—Taking into consideration the memo. you received with 27 up, did you think it likely that 4 down mail might run through Sarsawa?

A.—No.

When I tore out the counterfoil of the memo. I gave to the guard of 4 down, the memo. in the book now numbered 5, altered from 4, also came partly out, the sewing in the centre becoming quite loose and the memo. separating from it, the sewing at the

top becoming a little loose and the sewing at the bottom remaining intact, I, therefore, gummed in the memo. now numbered 5.

Added.—I cannot quite remember this.

The office copy of the memo. which I said in my previous statement had been lost was found on 25th July 1907 by Abdulla Khan in presence of Shah Mohamed Khan somewhere in the station yard of Kalanour. I was not at Kalanour at the time; the memo. was handed to me by Malawa Ram, relieving assistant station master, Kalanour. This memo. is now attached to the case. It was given to me in the torn condition it is now in; the guard's signature was on the missing piece in the position shown by a cross on the tracing cloth.

Sabir Hussain.—I was assistant station master on duty at Kalanour from 14 to 24 hours on the 13th instant. After the departure of 11 up at about 18-10 hours the telegraphic communication became imperfect with Sarsawa. Sarsawa could occasionally be got, and I got line-clear for 18 down at 20-6 hours. After starting I signalled "on arrival enquiry" to Sarsawa for 2 down at 20-12, but after that I could not get Sarsawa. I, therefore, detained 2 down at mine for about 36 minutes and tried to get line-clear through Jagadhri, but could not, as there was contact on the intermediate wire, so I started 2 down on "order to proceed without line-clear" as she was due to cross 5 up at Sarsawa, and I sent a memo. by 2 down to Sarsawa giving permission for 5 up to proceed to mine. After arrival of 2 down at Sarsawa he asked line-clear for 5 up on the instrument, contact having somehow been removed and I gave it to him, so he started 5 up on line-clear. By 5 up he sent me a memo. to start 180 down, but I did not start 180 down and intended to give preference to 23 down because she was a passenger train and running late. After this Sarsawa asked line-clear for 91 up, contact having again been removed, and I gave him line-clear at 22-40 accordingly. About 25 minutes afterwards, at 23-5, he wired to me that 91 up had been detained at his and that I could start any down train. Still I used my discretion and did not start a goods train as 28 down was expected; 28 down arrived at my station at 23-50 hours. The message I received from Sarsawa at 23-5, saying 91 up had been detained there, was the last communication I had with Sarsawa on the wire. I sent my enquiry for 28 down through Jagadhri, but I could not get any reply. Jagadhri informed me that his wire to Saharanpur was also in contact. I tried to get line-clear for some time and in the meantime I expected the postal special. I asked Jagadhri what timing the postal special was running to. He replied to me that she was running to "N" timing, which would have made her cross 28 down at my station, so I kept 23 down at mine. The station master, Sarsawa, next came into Kalanour with the engine of the postal special in order to open communication. 23 down was then attached to the postal special engine and taken to Sarsawa on "permission to proceed without line-clear," and I gave a memo. to the guard of 28 down for the station master, Sarsawa, to the effect that he should start the postal special from his on arrival of 28 down there. The postal special was despatched as arranged, and with it I received a memo. from the station master, Sarsawa, to the effect that I should not start any down train till arrival of 3 up at mine. After this I made over charge to Gulam Sabir and I went off to my quarters. It was arranged overnight that, as I was off duty, I should go out the first thing in the morning to rectify the interruption. Accordingly, at about 6 hours on the 14th, I set out along the line and examined the wires up to a couple of posts beyond the Jumna bridge, but found no contact, and returned back to Kalanour. On my way back I met the station master, Girdhari Lal, who asked me if I had seen any contact. I replied in the negative, and we returned together to the station, where I saw the 4 down was standing and Gulam Sabir was giving "permission to proceed without line-clear" to the guard and driver of 4 down. I informed him that I could not see any fault on the line and then went home. I do not know what happened afterwards. When I arrived at the station, Gulam Sabir was writing something in a memo. book. I saw two lines

were written in the memo. book and Gulam Sabir asked me for a loan of my fountain pen. I gave it to him and then went home. My pen contained purple ink, while the two lines I saw written in the memo. book were written in blue-black ink. I am sure that this memo. was written by Gulam Sabir in the book, shown to me here (Kalanour memo. book), about 6-15 hours on 14th. I did not read the memo., but am certain that there were two lines written on the counterfoil. The "order to proceed" book and the memo. book were close together in front of Gulam Sabir. I did not notice in which book Gulam Sabir was writing at the time he asked me for my fountain pen. I did not see Gulam Sabir give any memo. to the guard of 4 down. I next saw Gulam Sabir when he returned from the accident about 9 hours. During this interval I did not look at the memo. book, but when Gulam Sabir returned he showed me and several others the office copy of the memo., which he said he had given to the guard of 4 down; this memo. was then in the memo. book. I did not notice the number of it. The wording was to this effect—"Do not start 91 up on arrival of 4 down at yours. I will start 180 down." The first two lines were written in blue-black ink, apparently not by Gulam Sabir. The remaining two or three lines were written in purple ink by Gulam Sabir. Certain initials in black ink which, I am unable to identify, were on this memo. I next saw this memo. with Gulam Sabir when he had torn it out of the book and was showing it to the police inspector, and in my presence Durga Porshad, guard of 180 down, told the inspector that the two lines at the top in black ink had been written by him. Gulam Sabir kept this memo. in his possession, and I do not know what happened to it subsequently.

Girdhari Lal.—I am station master of Kalanour, and was on duty from 6 to 18 hours on 13th and 14th instant as usual.

At 18-30 hours on 13th the assistant station master on duty reported contact on the wires. I immediately came to the station and tested the wires, and found there was contact on the Sarsawa-Kalanour train wires and the intermediate wire. From this time up to about 2 a.m. communication was broken and re-established several times. At 2-25 hours, when 28 down left for Sarsawa and thus established communication by train, I left the office and went to my quarters. At 6 hours on 14th I again came on duty and found that contact still existed. I went towards the Jumna bridge and met Sabir Hussain returning. He told me that he had been across the bridge but had not discovered the cause of contact. I returned to the station in company with Sabir Hussain, but stopped at the up facing points to examine them and while I was there No. 4 down mail passed me. I then went on towards the station and heard the departure whistle of 180 down sounding and saw the guard going towards his brake-van. I proceeded towards the office and was about half way between it and the platform when 180 down started. This was about 15 or 20 minutes after the departure of 4 down. On reaching the station I again tried the train wire instrument, and after calling Sarsawa for about 12 minutes I got a reply from him. I immediately told Sarsawa that 180 down had left for his station and he replied that 91 up had left for Kalanour. With this I heard a whistle from the direction of the Jumna bridge and immediately I left the instrument and proceeded in that direction. I went right up to the site of the accident where I remained till about ten o'clock.

On going towards the accident I met Gulam Sabir on the platform and he accompanied me to the site of the accident. I did not question him about the cause of the accident until we returned to the station at about 10 o'clock. I then asked him about the cause and he told me that he had sent a memo. by the guard of 4 down mail asking Sarsawa to detain 91 up at his station until the arrival there of 180 down. The memo. book was at the time in his possession; but he would not show me the memo. saying he would show it to an officer on being asked for it.

I subsequently saw this memo. in his possession when he had torn it out of the book and was showing it to the inspector, railway police. I did not

read it and can not say what the contents of it were. The relations between us are somewhat strained, and he did not show me the memo. as he was afraid I would do away with it and thereby get him into trouble. He told me that he had torn the memo. out of the book as his safety depended upon it, and he would look after it himself. When I next looked at the memo. book I saw that the office copy of memo. No. 4 had been torn out, because Nos. 3 and 5 were in the book. The reason why I did not insist on looking at the memo. even in the presence of the inspector, railway police, although I am aware that I could have done so in my capacity of station master, is that there is enmity between Gulam Sabir and myself and he would not trust me with the document. The reason why I did not report Gulam Sabir for having extracted an important document from one of the station books is that I intended to bring the fact to notice on the day of the enquiry.

I did not see if any memo. was given to the guard of 4 down.

Sant Lal, assistant station master, Sarsawa.—My duty hours are from midnight to 10 hours. On 14th July I came on duty at 0 hours and assistant station master, Shib Chand, whom I was relieving informed me that there was total interruption between Sarsawa and Kalanour and that he had started 5 up on "permission to proceed without line-clear," and had given Kalanour permission by 5 up to start No. 180 down goods on arrival of 5 up at his. Shib Chand also made over the Up Enquiry Book in which he had obtained line-clear for 91 up goods, but he had cancelled this as he feared that there might have been a mistake in it due to contact. Shib Chand then left me and Pilkhani asked me for line-clear for "N" up postal special. I gave line-clear for the postal special, and when she arrived at Sarsawa I called the station master. The station master cut off the engine of up postal special and proceeded on "permission to proceed without line-clear" to Kalanour to open up communication. On arrival at Kalanour the engine of up postal special was attached to 28 down passenger and returned to Sarsawa with a memo. from station master, Kalanour, for the postal special to proceed to Kalanour. The postal special then left for Kalanour at 3-hours with a "permission to proceed without line-clear" and a memo. from station master, Sarsawa, blocking the section for 3 up mail. No. 3 up mail left Sarsawa at 3-55 with a memo. blocking the section for trains in the following order:—6 down, 1 up and 27 up, and also telling Kalanour to start no down train till arrival of 27 up. These trains then went over the section on "permission to proceed without line-clear" in the order arranged. By 27 up I sent a memo. to Kalanour, authorizing him to start 4 down mail and stating that, on arrival of 4 down mail at Sarsawa, I would start 91 up goods. I also added that on arrival of 91 up goods at his, he could despatch any down train, particularly adding that no train was to leave his till No. 91 up arrived at his. No. 4 down mail ran through Sarsawa, and, as no memo. from Kalanour was handed to me, I concluded that my programme had been accepted, and I accordingly started 91 up goods. By 91 up I despatched a memo. arranging for 12 down and then 17 up to run over the section; the reason why I arranged for this programme was to clear my yard for the crossing of 12 down and 17 up at my station. At 0-40 hours I sent a wire to Pilkhani trying to get line-clear from Kalanour through Saharanpur and Jagadhri and at the same time sent another message to Sub-Assistant Superintendent, Telegraphs, Inspector, Telegraph Department, and Line-man that there was still contact on the Sarsawa-Kalanour train wire.

Added.—I made a mistake in saying that 5 up left from Sarsawa on "permission to proceed without line-clear." As a matter of fact 5 up travelled on line-clear.

Guard E. A. Newby.—I was guard in charge of 4 down mail leaving Lahore at 22-50 hours on 13th July. No. 4 down arrived at Kalanour at 6-44 hours on 14th. In the ordinary course of

events No. 4 down would run through Kalanour, but on this occasion it was stopped on account of interruption of telegraphic communication. At 6-49 hours I was given a "permission to proceed without line-clear" to Sarsawa.

The assistant station master at Kalanour, did not give me any memo. to the station master, Sarsawa. I accordingly ran through Sarsawa and on to Saharanpur.

I absolutely deny having received any memo. from the assistant station master, Kalanour, to the address of station master, Sarsawa. On arrival at Saharanpur, I went to the assistant station master's office, signed the "in report," gave up my papers at the train clerk's office and, after obtaining station master's permission, I went to the running room. I did not go into the telegraph office at Saharanpur.

When 4 down arrived in Kalanour and came to a stand the assistant station master, Gulam Sabir, was standing near my brake-van. There were two other men with him but I did not recognize them. Gulam Sabir had only the "permission to proceed" book in his hands with both forms filled in. I got down immediately and signed both copies. Gulam Sabir then took the book away to the driver and I presume got his signature and gave one copy to him. I remained close to my brake-van. Gulam Sabir said nothing to me about stopping at Sarsawa or Pilkhani, and, as far as I remember, did not speak to me at all before or after signing the permission book. I did not know what he said to my driver. The driver whistled on receipt of the permission and I gave him a hand signal.

As far as I remember I did not go into the telegraph office at Saharanpur on arrival there.

I do not know which the Pilkhani instrument is in the Saharanpur telegraph office. The second guard of my train is Neave. I left the Saharanpur station in his company before the departure of 4 down mail.

Guard L. E. Holmes.—I was luggage-in-charge guard of 4 down mail of 14th instant.

The train was stopped at Kalanour, but I did not get out of the brake-van to see why it had stopped, nor did I enquire from guard Newby why the train had been stopped. I did not see any memo. handed to guard Newby at Kalanour. Guard Newby's behaviour was not unusual at Kalanour, Sarsawa or Pilkhani. He said nothing to me about having received a memo. from Kalanour for Sarsawa, nor did he make any effort to apply the brakes at Sarsawa. On arrival at Saharanpur I attended to my packages and saw guard Newby leave his brake-van. I did not see him for the rest of the day.

I was not aware of any thing unusual in the running of our train, and guard Newby and I did not discuss any matter bearing upon this case.

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90. book to Pershad, guard.—I was guard in charge of given to the goods which arrived in Kalanour at 5-44 to Kalanour 14th instant. On arrival at Kalanour the station master told me that my train would be amalgamated with Rajpura down van goods. These two trains, were amalgamated before the arrival of 4 down mail; No. 27 up was standing in Kalanour when I arrived. After my arrival 4 down mail came in on the main line. On arrival I went into the telegraph office and signed the arrival book. The signaller of Kalanour, the assistant station master, Gulam Sabir, and the guard of Rajpura van goods were there. Gulam Sabir informed me of the telegraphic interruption between Sarsawa and Kalanour and told me that my train, combined with the Rajpura van goods, was to proceed to Sarsawa after the arrival there of 4 down mail. I then went out on to the platform and was there when 4 down mail came in. I know nothing of the programme that was sent by 27 up from Sarsawa to station master, Kalanour, regarding the working of trains. When 4 down mail arrived the guard (Newby) came on to the platform and the assistant station master (Gulam Sabir) brought the book of "permission to proceed" and a large memo. book and put them down on a bench some distance away from where I was. After this all I noticed was that Gulam

Sabir handed the "permission to proceed" and a memo. to the guard (Newby) and that they both went off to the driver of 4 down.

I did not see the "permission to proceed" neither did I see the memo. that was given to guard Newby. I did not see guard Newby sign for either of the two documents. I did not hear any conversation that went on between Gulam Sabir and guard Newby. When 4 down mail had left I saw Gulam Sabir return and take the memo. book and "permission to proceed" book back to the station. I did not inspect these books then, nor have I examined them since. About 15 minutes after the departure of 4 down mail I went to Gulam Sabir and asked him for permission to proceed. He told me I would be allowed to proceed at 7-15.

When I arrived at Kalanour I was given a memo. book in which a blank form was addressed by Gulam Sabir to the station master, Sarsawa. On this form, at the request of Gulam Sabir, I entered:—"Don't start 91 up goods till the arrival of 12 down passenger at yours." When I went to Gulam Sabir to get permission to proceed for my own train he told me that on the above memo. he had added:—"On arrival of 4 down mail at yours I will start 180 down goods," and that he had given that memo. to the guard (Newby) of 4 down mail for the station master, Sarsawa. He did not at the time show me the counterfoil of this memo., nor have I seen it since. At 7-15 hours Gulam Sabir gave me the "permission to proceed" together with a memo. (Annexure No. 1). The permission to proceed and the memo. were both given to me by Gulam Sabir; the former was signed for on the counterfoil by me and the latter was signed for by Kharak Singh, guard of Rajpura van goods. The memo. has been in my possession since I received it, and the correction in the number must have been made before it was given to me.

The portion written by me on the memo. which is said to have been given to guard Newby of 4 down mail was written on the foil only. I did not see any number on that foil; the heading only had been written by Gulam Sabir. I saw Gulam Sabir start copying the counterfoil which he said he gave to guard Newby. I did not see him complete it nor am I certain that he gave it to guard Newby. All I know is that a memo. was given by Gulam Sabir to guard Newby. I did not see guard Newby sign an acknowledgment for it. I did not see the office copy of that memo. in Gulam Sabir's book.

Jaggan Nath, guard.—I was guard-in-charge of packages on 180 down van goods which left Phillour at 6-45 hours on the 13th July 1907. My train arrived at Kalanour at 5-41 hours on the 14th instant. No. 27 up was standing in the yard on the main line when we arrived; we were received on the loop line. On arrival I went into the telegraph office and asked Gulam Sabir, assistant station master on duty, about packages. I was told by Gulam Sabir that, on arrival of 4 down mail at Sarsawa, my train would leave, and consequently when 4 down left Kalanour I went from the station to my brake-van. I must have been sitting in the telegraph office for about one hour. The other men there were Girdhari Lal, station master, Kalanour, Durga Pershad and Kharak Singh, guards, and Gulam Sabir, assistant station master on duty. During the time I was in the telegraph office I heard Girdhari Lal mention that there had been an interruption in the telegraph wire with Sarsawa since the previous evening; during the time I was in the telegraph office I heard no conversation between the other men who were there about the programme for running trains over the blocked section. I asked no questions about the programme. I was in the office when 4 down mail arrived and was there when she left about 15 minutes later. After she arrived I saw Gulam Sabir leave the office with the memo. book and the "permission to proceed" book and go up to the platform. I do not know what was written in either of these books and I did not ask. As Gulam Sabir and the guard and driver of 4 down were on the platform or near No. 4 down, I did not see what any of them did in connection with the giving or receiving of orders for 4 down. No. 4 down left Kalanour at 6-49 hours and Gulam Sabir returned to the telegraph office with both the

above mentioned books. I was when Gulam Sabir had started 4 down mail and was returning from the platform to the station, and when I was returning to my brake-van, that we met on the road and he told me that my train would leave Kalanour on arrival of 4 down mail at Sarsawa. He did not, as I stated at first, tell me this when I went into the telegraph office originally. I saw neither the orders to proceed nor the memos. that were given to 4 down mail or to my train (180 down). I did not see any of these four documents being given to the guards or drivers, and I saw no signatures being given for them. Durga Pershad and I left Kalanour at 7-15 hours by 180 down in the same brakevan. From the time we left Kalanour up to the time of the accident we did not speak to each other at all. We were both engaged in our own particular work. After passing the Jumna Bridge the driver whistled twice—the second time with the danger whistle. After the second whistle the train began to slow down and Durga Pershad, after looking out, applied the hand brake. Our train had come to a stand when No. 91 up ran into us. Immediately after the accident we both got down and went towards the engine. The three drivers and four guards all met near the engines and discussed only the amount of damage done. I did not hear any discussion about their orders to proceed or memos. Within half-an-hour after the accident the station master and assistant station master of Kalanour (Girdhari Lal and Gulam Sabir) with two pointsmen arrived. We all met near the engines and inspected the amount of damage done. I remember that no conversation took place about the authorities or memos. given to the two trains.

About 10 hours I returned with part of my train to Kalanour. Girdhari Lal had returned from the accident to Kalanour and brought out the engine of 12 down to take away the undamaged portion of 180 down into Kalanour. When we returned to Kalanour, about 10 hours, Girdhari Lal, Gulam Sabir, Sabir Hussain, Kharak Singh, Durga Pershad and myself met together in the telegraph office and began discussing the cause of the accident.

Gulam Sabir explained that station master, Sarsawa, had sent, by a passenger train, a memo. to him to say that on arrival at Sarsawa of 4 down mail No. 91 up would be started from Sarsawa to Kalanour. This memo. he did not produce at the discussion and nobody asked to see it. He (Gulam Sabir) continued that he himself had sent by the guard of 4 down mail a memo. to the station master, Sarsawa, to tell him to detain 91 up goods at his station and that, on arrival there (Sarsawa) of 4 down mail, No. 180 down goods would be despatched from Kalanour. Gulam Sabir did not then show this memo. nor the book in which it had been written, to any one, and no one asked to see the memo. or the book. As far as I know no one looked at the office copy of this memo. at the time, or examined the book in which it was said to have been written. I noticed that the "permission to proceed" book was lying at the time on the office table, but I did not particularly notice the memo. book. I did not notice any one examine either of these two books. About half-an-hour after I left the office I went to my brake. I did not then see, and have not since seen, the office copy of the memo. which Gulam Sabir said he had given the guard of 4 down mail.

Abdul Sattar, assistant station master.—I was assistant station master on duty at Pilkhani on 14th July 1907. When 4 down mail arrived in Saharanpur I was told by the signaller at 7-25 hours to send word at once to Sarsawa to detain 91 up goods there. No particulars were given of the time this train was to be detained, and no reasons were given for the detention. Within 4 minutes I had sent this message to Sarsawa, and about 10 minutes after Saharanpur asked me to get an acknowledgment from Sarsawa. I told him that his message had been transmitted to Sarsawa, but had not been acknowledged. I despatched the message to Sarsawa as I received it, without putting anything down in writing. I know that Sarsawa received my message as he tapped in reply. It is not the custom to send messages about the movement of trains without putting them down in writing, and I have

never sent such a message before. The actual words used were:—"Tell Sarsawa not to start 91 up." Saharanpur did not tell me this was an urgent message, and did not impress upon me the necessity of despatching it immediately.

Mr. Galvin, inspector of railway police.—I happened to be in Jagadhri on 14th July and heard of the accident between Kalanour and Sarsawa about 9 hours. I went out with the relief train. After visiting the scene of the accident I went on to Kalanour to continue my enquiry. I then saw a memo. in the possession of the assistant station master, Gulam Sabir, a copy of which is attached (Annexure No. 2). He said he had given a copy of this memo. to the guard of 4 down. He told me that the copy he showed me had been initialled by the guard in token of his having received the duplicate. I could not identify the initials. I initialled and dated this memo. to prevent substitution. The first line and a half were written in one ink and the rest in another, and the handwriting in the two portions was different. The memo. had been torn out of a book, and the assistant station master seemed to be anxious to retain possession of it.

Permanand, signaller.—I am signaller in Saharanpur and I was on duty from 1 to 9 hours on the 14th instant. I work the up block instrument communicating direct with Rajpura, Ludhiana and Amritsar. All the time I was on duty there was no interruption on my wire. I was in the office when 4 down mail arrived. I was then assisting the signaller in charge of the local wire. Mangath Rai was working with Pilkhani and I was working with the Depot wire. A man came into the office (guard Newby here identified) and said he was the guard of 4 down mail. He asked me to tell Pilkhani to tell Sarsawa at once to stop No. 91 up goods. I told him that as soon as Mangath Rai had done with Pilkhani he would send the message. As soon as Mangath Rai had finished the message in hand he told Pilkhani what the guard had told him. I heard Mangath Rai tell Pilkhani this. The guard did not appear to be agitated. I had no conversation with the guard about putting this message down in writing, and I did not hear any such conversation between Mangath Rai and the guard. The guard remained about 15 or 20 minutes in the office and then left. As soon as Mangath Rai despatched the message I went back to the block instrument about 3 yards away. Up to the time the guard left the office I did not notice him writing any message. No one asked the guard the reason why he wanted No. 91 up stopped, and he did not volunteer any information on the subject.

Fakir Chand, signaller, Saharanpur.—I was on duty from 1 to 9 hours on 14th instant. I work the up intermediate wire which communicates with Jagadhari, Barara and Umbal la Cantonment. From the time I came on duty up to 6-30 hours I could not hold any communication with any of these three stations. No. 4 down mail arrived at Saharanpur at 7-14 hours. On her arrival a gentleman came into the telegraph office (guard Newby here identified as the gentleman referred to) and asked Permanand, signaller, whether he could get Sarsawa direct, when Permanand said he could get only Pilkhani, he (guard Newby) asked that a message be sent to Sarsawa, through Pilkhani, at once to detain the goods train (No. 91 up I think) which was standing there. I know that Permanand asked guard Newby to give this message in writing which guard Newby promised to do, asking at the same time that the message be sent in anticipation. I do not know whether the message was signalled or whether it was given in writing to Permanand. The above is the only conversation that I overheard. The guard must have remained 15 or 20 minutes in the office. I went on with my work and did not notice when he left. I did not hear any more conversation in the office on this subject.

Mangath Rai, signaller.—I am signaller at Saharanpur. I was on duty from 1 to 9 hours on the 14th instant. I work three instruments (local)—Tapri, Pilkhani and Locomotive Depot. I was working with Pilkhani when 4 down mail arrived at about 7-14 hours. Guard Newby (of 4 down) came in to the telegraph office and said something to Permanand which I did not overhear. When I had done working with Pilkhani, Permanand told me to listen to what guard Newby had to say. Guard Newby then asked me to tell Pilkhani to tell Sarsawa not to start 91 up goods which was waiting there. I told Pilkhani this at once and told the guard that I had done so, but added I could not answer for Pilkhani forwarding the message. I asked guard Newby to give me this message in writing, but he said there was no necessity of doing so, and although I repeated the request he did not write the message. I did not ask the guard why he was sending this message and he gave me no reason for it. The guard remained at my instrument about 15 or 20 minutes and asked me whether Pilkhani had acknowledged the message. Pilkhani informed me that he could not get Sarsawa and I told the guard this, on hearing which he left the office. As long as the guard was in my office Babu Permanand remained near my instrument, and he heard all the conversation that went on between the guard and myself. After the guard left the office I had no conversation with any one on the subject of the message sent by the guard. I heard of the accident only the following morning, about 1 hour, when I came on duty.

The actual words of the message transmitted were:—"Guard of 4 down says, tell Sarsawa not to start 91 up goods waiting."

I did not tell Pilkhani this was very urgent and to transmit it immediately. The guard did not seem agitated when he asked me to transmit this message.

G. Messan, assistant station master.—I was assistant station master on duty at Saharanpur. On the arrival of 4 down mail at 7-14 hours on 14th instant guard Newby was guard in charge of 4 down mail. Immediately on arrival he came into my office and signed his arrival 7-13. As soon as he had done this he then went into the telegraph office. There is a large aperture between the telegraph office and my office which is used for communicating with the signallers.

Guard Newby sat on the bench along with the signaller who was working the Pilkhani instrument. In this position guard Newby was facing the aperture and was constantly under my observation. He stayed there till the departure of the mail, which train stopped twenty-seven minutes. I did not overhear any conversation that went on between guard Newby and the signaller. Guard Newby did not appear to be at all agitated when he came into my office, and I did not notice anything unusual in his behaviour. He did not say anything to me about stopping any trains between Sarsawa and Kalanour.

I went off duty at 8 hours and did not hear of the accident till I came on duty again. None of the signallers said anything to me about the message that guard Newby is supposed to have sent.

I do not know guard Newby except in his official capacity. I do not remember that there was anybody else in my office when guard Newby came in, nor can I say who went in and out of my office during the time guard Newby was in the telegraph office.

Kharak Singh.—I was guard of 160 down Rajpura van goods which arrived at Kalanour at 23-13 hours on the 13th instant. On arrival at Kalanour the assistant station master, Sabir Hussain, put my train into the relief siding and told me that, as there was a telegraphic interruption with Sarsawa, I could not proceed. He told me he would allow my train to go on when the line would be available. On arrival at Kalanour I remained about half-an-hour in the telegraph office and then went off to my brake-van. There was no train in Kalanour when I arrived. When I next went into the telegraph office, at about 5 hours on the 14th, No. 27 up

was on her way from Sarsawa and 180 down was coming from Jagadhri. No. 27 first came in and then 180 down. I know nothing about the memo. said to have been brought from station master Sarsawa by 27 up. On arrival of 180 down, Gulam Sabir told me that he intended to join the two van goods trains and run them as one train. He gave orders to the pointsman to carry out this operation, which was done after the departure of 27 up. I superintended this work and then returned to the telegraph office, where I remained until the departure of my train. On arrival of 4 down mail Gulam Sabir took the "order to proceed" book and the memo. book up to the platform. I remained in the verandah of the station building. After the departure of 4 down Gulam Sabir came back to the telegraph office with these two books. I did not examine them then, nor have I done so since. Only once before the departure of my train I signed the memo. book in acknowledgment of a memo. given me for guard Durga Pershad of my train. When Gulam Sabir returned to the station with the books he told the 3 guards who were going with 180 down (Durga Pershad, Jaggan Nath and myself) that, on arrival of 4 down in Sarsawa, 180 down would be sent from Kalanour, and that he had advised the station master, Sarsawa, accordingly, through a memo. sent by guard of 4 down. At 7-15 hours Gulam Sabir, assistant station master, gave Durga Pershad (head guard of our train) the "order to proceed" for our train. Durga Pershad signed the book in acknowledgment of this and took it to the driver to be signed by him. The memo. (Annexure No. 1) was then written out by Gulam Sabir, and when it was completed one copy was handed to me and I signed the office copy in acknowledgment of it. The office copy and original shown me here are the correct and original ones. I read the two copies and saw that the contents of the two were in substance the same, they were not compared word for word. I noticed, however, that the two copies were both numbered "4." The correction of this number to "5" on the office copy must have been made after I signed it. I did not notice any of the other memos. in the book. After giving order to 4 down to proceed, Gulam Sabir told Durga Pershad, in my presence, that Sarsawa had at first arranged for 91 up to leave Sarsawa on the arrival there of 4 down, but that he (Gulam Sabir) had cancelled this arrangement by sending a memo. by guard of 4 down at Sarsawa to say that, on arrival of 4 down at Sarsawa, No. 180 down would be despatched from Kalanour. I did not see the office copy of this memo. and I cannot say whether it was shown to any one else.

When I had signed for the memo. (Annexure No. 1) I took it to my train and handed it over to guard Durga Pershad, who signed for it in my rough journal book. Our train (180 down) then started at 7-15 hours. Between the departure of our train and the time of the accident I heard the driver whistle three times on the road. The last time it was the danger whistle that was blown, and at the same time the train was slowed down. I applied my hand brake on hearing the whistle. My brake-van was in the centre of the train. I looked out and saw another train approaching from the opposite direction. The engines must then have been 7 or 8 telegraph posts apart. I saw the gateman exhibiting a red flag. As my train came to a stand-still I felt the shock of the other train running into us.

About 30 minutes after the collision the station master, Girdhari Lal, the assistant station master, Gulam Sabir, and two menials arrived from Kalanour.

J. Edwards, guard.—I was guard in charge of 91 up goods which arrived in Sarsawa at 22-34 hours on the 13th July 1907. I did not receive line-clear to proceed, but stayed in the yard all night on account of a telegraphic interruption. On the morning of 14th, after the passage of 4 down mail, I was given a "permission to proceed without line-clear" at 7-23. I gave the driver this permission to proceed and he started. For a while before the collision took place I was in the body of the brake writing up my train papers. I did not, therefore, notice any signals or see the approaching train. I did not hear any whistle and I did not feel the train

slacken speed. I was aware of nothing unusual until the actual collision took place.

The atmosphere was very hazy, and one could not see more than seven telegraph posts ahead. Owing to the up grade we must have been travelling between ten and twelve miles an hour when the accident took place. It is quite possible that the driver did whistle and that I did not hear him as there was a strong breeze blowing and I had forty vehicles on.

Binda, driver.—My train started from Rajpara on the 13th instant as No. 180 down at about 13 hours. I arrived at Kalanour about 23-13 hours. I was put into the dead-end and told I could not proceed until morning. My train, the next morning, was combined with 108 down and we proceeded as 180 down, driver Mahomed Khan, of the leading engine, being in charge. After passing the Jumna Bridge I heard the leading driver whistle and I immediately applied my brakes. Our train had just come to a stand when a train from the opposite direction ran into us.

Mahomed Khan.—I was driver of the leading engine (472) of No. 180 down goods on the 14th instant. I arrived at Kalanour about 5-45 hours. I had to wait there about 1½ hours. I came from Phillour as 108 down up to Kalanour, where my train combined with No. 180 down, and we proceeded from there with this latter number (180 down). At Kalanour the station master told me that the telegraph line to Sarsawa was interrupted. He gave me a red "permission to proceed without line-clear" and told me I would have to go cautiously. He also explained the meaning of the permission to me fully. Driver Binda was in charge of the second engine on our train. The train left at 7-15 hours and travelled at about 10 miles an hour. From the time we left Kalanour up to the time of the accident I whistled several times. On coming round the curve on the south of the Jumna Bridge I suddenly observed a red flag being exhibited by a gateman about half a telegraph post length ahead. At the same moment I saw another train approaching from the opposite direction. It must then have been about 8 or 10 telegraph posts away. It was a hazy morning, and objects at that distance could not be clearly discerned. On seeing the red flag I immediately opened my whistle and applied both my vacuum and hand brakes. My vacuum brake worked that on the trailing engine as well. My train was on the point of coming to a stand-still when the opposite train ran into us. I cannot say whether the driver of that train saw the signal or what he was doing when the accident happened. There were about 63 wagons on our train (180 down). After the accident, when I got off my engine, I found that the hand and vacuum brakes on the engine of 91 up were both down.

O. J. Dowering, permanent-way inspector, Sarsawa.—At about 5-30, when I was going to my trolley, I saw guard Edwards strolling about between my trolley and the end of the platform, and seeing no train about on the main or loop line I asked him what he was doing. He informed me that he had been there all night waiting for line-clear as there was an interruption between Kalanour and Sarsawa, so I started off on my inspection keeping a look-out on the wires. At about mile 1,019-4 I took my trolley off, as a clear view for more than a ¼ mile could not be got and 4 down mail was expected; so I continued my inspection by foot. On reaching mile 1,017 I found that the wires were in contact, which I released. It was then about 6-30; so I walked back to my trolley and, after allowing 4 down mail to pass (6-55), I left at 7-0 for Sarsawa to inform the station master about the interruption being removed. He was on the platform and informed me that there were two trains on the road. So I returned with station master to do our best; but on arriving at miles 1,019-9 we found that the two trains had collided.

On my way up I saw a lineman between the distant signal and the facing points on his way to Kalanour, and on my way back 91 up crossed me about $\frac{1}{2}$ mile out of the station. The driver was on the left side of his boiler inspecting his machinery.

Murad Khan, gate-keeper, at mile 1,048-8 and 9.—I saw both trains coming and put up my red flag. They were about $\frac{1}{4}$ a mile apart. The down train driver noticed my signal and stopped in time, the engine and two trucks passing my gate-lodge; but the up train driver noticed my signal too late, tried his best to stop but could not do so. Owing to the heavy dust further view than a $\frac{1}{4}$ mile could not be had. I can't say what speed the up train was coming at, as it did not pass my gate-lodge; but I could see the driver was trying to stop as he had shut off steam.

G. Shields, driver.—I was the driver of 91 up goods, which left Saharanpur on the 13th instant

at 21.55 hours. I arrived in Sarsawa at 22.43 and had to wait there until 7.20 hours the following morning. The station master told me there was a telegraphic interruption between Sarsawa and Kalanour. At 7.20 hours on the 14th I received a "permission to proceed without line-clear." I understand this permission allows the train to proceed at booked speed. I left Sarsawa after the passage of 4 down mail, which ran through from Kalanour to Pilkhani. On entering the curve south of the Jumna Bridge I suddenly saw a train approach from the opposite direction. There is a gate-lodge on the inside of the curve at this place, and, as it was a hazy morning, I could not see the approaching train until it was about 4 telegraph posts away. I first saw a red flag exhibited and almost immediately after saw the engine of 180 down, and after that I heard the driver of that engine whistle. When I saw the red flag I must have been travelling at about 16 miles an hour.

I immediately shut off steam and put down both my brakes. My engine and tender only are provided with vacuum brakes. I had 40 vehicles on my train. Train No. 180 down had stopped at almost the same moment that I ran into her.

FINDING.

We, the undersigned, having carefully considered all the evidence, do find that this accident was caused through the carelessness of the assistant station master, Kalanour (Gulam Sabir), in permitting No. 180 down goods to proceed on the blocked section without first cancelling the programme made by the station master, Sarsawa, for the departure from Sarsawa of 91 up goods on the arrival there of 4 down mail. We are of opinion that no memo. was given by Gulam Sabir to the guard of 4 down mail cancelling the previous programme made by the station master, Sarsawa. That Gulam Sabir on hearing of the accident wrote out a memo. the mutilated office copy of which he has now produced. We believe that he at first forged the signature of guard Newby on the office copy and showed the document to a number of people, intending at the time to produce it in his defence at the enquiry; that, later on, fearing that the forgery would be discovered, he deliberately destroyed that part of the document on which the signature was forged, at the same time taking care that the body of the document was not destroyed. This memo. he has held back to the end of the enquiry, not knowing exactly what use to make of it in his defence.

We believe that the first part of the memo. written in black ink (by Durga Pershad) was written with the object of its being sent by Durga Pershad, guard of 180 down. That Gulam Sabir, not being satisfied with the wording of it, another memo. in duplicate was then written and sent by 180 down, and, after the accident, the office copy of the first memo. was filled in, in purple ink, by Gulam Sabir and put forward by him as the office copy of the one said to have been sent by 4 down mail. The fact that both these memos. bear the same No. (4) supports the above belief.

We are of opinion that, owing to the locality on the curve where the trains met, the obstruction caused to the view by a gate-hut on the inside of the curve and the hazy atmosphere at the time, the result of the accident could not have been lessened.

We cannot assign any reason for guard Newby having gone into the telegraph office at Saharanpur on the arrival there of his train (4 down mail), and we do not believe the statement of the signallers of Saharanpur and Pilkhani who say they wired to Sarsawa to stop 91 up goods on the mere verbal request of a guard.

We find from the statement of Mr. Bowering, permanent-way inspector, Sarsawa, that telegraphic communication had actually been restored before either 91 up or 180 down had left Sarsawa and Kalanour, but apparently the signallers at these stations had not taken the trouble to ascertain the fact.

E. J. VERRIERES,

President.

U. C. SANDYS,

Member.

K. M. KIRKHOPE,

Member.

In forwarding these proceedings the Manager, North Western railway, states that "the assistant station master at fault in this case is being prosecuted and the result will be intimated as soon as known."

Remarks by the Senior Government Inspector of Railways, Lucknow.

I agree with the "finding" of the committee that the assistant station master, Kalanour, was responsible for the accident, as he should not have permitted 180 down goods to proceed until he was certain that the station master at Sarsawa had received his memo. cancelling the programme made by the Sarsawa station master.—*Vide* General Regulations (14 b) in the working time tables.

Documents accompanying—

J. E. GABBETT,

Senior Government Inspector.

Annexure No. 1.—Memo. dated 14th July 1907, from the station master, Kalanour, to the station master, Sarsawa.

Annexure No. 2.—Memo. dated 14th July 1907, from the station master, Kalanour, to the station master, Sarsawa.

Appendix XVII.

Annexure 1 in appendix XVII to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

Memo. No. 4, from Station Master, Kalanour, to Station Master, Sarsawa, dated 14th July 1907.

Do not start 91 up goods till arrival of 12 down at yours. I will start 180 down goods on arrival of 4 down mail at yours, detain 91 up goods at yours till arrival of 12 down passenger, you can start 17 up and 91 up on arrival of 12 down at yours, no train will be started from here.

Memo. given by Guard Durga Parshad, of 180 down goods, dated 14th July 1907.

From Station Master, Kalanour, to Station Master, Sarsawa.

No. 4 please cancel your memo. 50S detain 91 up goods at yours till arrival of 12 down passenger at yours, on arrival of 12 down passenger at yours you can start 17 up passenger, and 91 up. No train will be started from here till arrival of 91 up here.

Annexure 2 in appendix XVII to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

Memo. No. 4, dated 14th July 1907, from Station Master, Kalanour, to Station Master, Sarsawa.

Do not start 91 up goods till arrival of 12 down at yours. I will start 180 down goods on arrival of 4 down mail at yours, detain 91 up goods at yours till arrival of 12 down passenger, you can start 17 up and 91 up on arrival of 12 down at yours, no train will be started from here.

Appendix XVIII to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

Report of the proceedings of a committee of enquiry which assembled at Begmanji station, North Western State railway, on the 9th and 10th October 1907 to enquire into the circumstances attending a collision between No. 129 up and No. 144 down goods trains at mile 294—18 about midway between Rohri and Begmanji stations, early on the morning of the 6th October 1907.

The committee was composed of the following officers :—

A. T. STOWELL,	District Traffic Superintendent	. . .	President.
C. BRICO-OWEN,	Officiating Executive Engineer	. . .	} Members.
T. W. WRENCH,	Assistant Locomotive Superintendent	. . .	

DESCRIPTION.

Between midnight and 1 A. M., on the morning of the 6th October 1907, Nos. 166 down goods and 129 up goods trains were due to cross at Begmanji station.

No. 166 down goods left Rohri at 0-23 and arrived at Begmanji at 0-58. No. 129 up goods left Khairpur at 0-40 and arrived at Begmanji at 1-8 hours.

When No. 129 up left Khairpur the assistant station master, Begmanji, asked Rohri for line-clear first on arrival of No. 166 down, but Rohri refused and asked for preference for No. 126 down goods. When No. 136 down arrived, therefore, assistant station master, Begmanji, detained No. 129 up and gave Rohri line-clear for No. 126 down.

No. 126 down left Rohri at 1-10, and at 1-16 Begmanji again asked for line-clear for No. 129 up, but Rohri again detained No. 129 up and asked for line-clear for No. 144 down goods.

In the meantime, assistant station master, Bhag Singh, had obtained line-clear for No. 126 down goods from Khairpur, the next onward station in the down direction. This line-clear was copied out by Bhag Singh and given to Safal (a waterman) to take out to the driver of No. 126 down goods. This train arrived at 1-52 and the line-clear was sent out at 1-55. No. 126 down was standing on the loop line and No. 129 up goods, which had been delayed was standing on the station or main line.

After sending this line-clear out the assistant station master received the out report of No. 144 down goods from Rohri and began asking Rohri to give line-clear for No. 129 up goods on arrival of No. 144 down. In the meantime, the line-clear intended for No. 126 down, which he had sent out by Safal was wrongly delivered to the driver of No. 129 up goods, who started his train on it at about 2 o'clock. No. 144 down had left Rohri at 1-58 and the two trains collided at mile 294—18 about half way between the two stations.

Damage to rolling stock and permanent-way is estimated at Rs. 1,571. Nobody was killed and the engine crew of both trains only received slight personal injuries.

EVIDENCE.

Bhag Singh, assistant station master, Begmanji.

—I came on duty at 24 hours on night of 5th October. Line-clear had been given to Khairpur for 129 up goods by the assistant station master whom I relieved. Train left Khairpur at 0-40 and arrived at Begmanji at 1-8 on 6th. Train No. 166 down goods left Rohri at 0-23 and arrived Begmanji at 0-58. On arrival of No. 129 up from Khairpur, I started No. 166 down for Khairpur at 1-10. I then asked Rohri for line-clear for No. 129 up for the second time, having previously asked for line-clear at 0-42 when she left Khairpur. This was refused and preference given to No. 126 down goods. Rohri detention message was received by me at 0-58. At 1-0 Rohri asked me if on arrival of No. 166 down line would be clear for No. 126 down goods. I replied to this at 1-4 giving line-clear for No. 126 down. No. 126 down left Rohri at 1-10 and then I asked Khairpur at 1-15 if on arrival of No. 166 down line would be

clear for No. 126 down. This message was signalled at 1-20. At 1-16 I asked Rohri if on arrival of No. 126 down goods, line would be clear for No. 129 up goods. At 1-27 I received a message from Rohri again detaining No. 129 up goods to give preference to No. 144 down goods which was running to time. At 1-28 Rohri asked me if on arrival of No. 126 down goods at mine line would be clear for No. 144 down goods. No. 126 down arrived here at 1-52. At 1-54 I replied Rohri giving line-clear for No. 144 down goods. At the same time I received line-clear from Khairpur for No. 126 down goods. This I copied out and gave it to Safal, waterman, at 1-56 to give to driver of No. 126 down. I carefully told Safal to give this line-clear to the driver of the train which was going to Khairpur, and was standing on 2nd line. At 1-59 I received out-report of No. 144 down goods from Rohri. At 2-0 I began to ask Rohri for line-clear for No. 129 up on arrival of No. 144 down. I

had only signalled a few words when I noticed No. 129 up was starting for Rohri at a fair speed. I ran out of my office with red signal and blew a whistle and shouted as loudly as I could. I saw pointsman Ali Bux giving danger signals to the driver. I also noticed that the starting signal was at danger. Finding I was unable to attract the driver's attention, I returned to my office and wired Rohri to stop No. 144 down goods as No. 129 up had left for Rohri on wrong line-clear; this was at 2-7. Rohri replied at 2-20, "No. 144 down goods left for Begmanji at 1-58."

(By examination.)

(1) The starting signal is lowered by pointsman after he gets signal from the station master or assistant station master on duty.

(2) The pointsman does not lower the starting signal if an engine whistles, unless he has had signal from the station master or assistant station master on duty, to do so.

(3) I did not hear engine of No. 129 up goods whistle before starting.

(4) After No. 129 up had started, I asked Safal why he had given the line-clear to the wrong driver. He told me that he met a driver on the way out, who took the line-clear from him.

(5) On arrival of No. 129 up goods I saw the guard, Hussain Mahomed, but did not see him again.

Safal.—I came on duty at 24 hours on night of 5th October. There were two trains in the station when assistant station master called me and gave me a line-clear form and told me to give it to the driver of the train which was going to Khairpur and which was standing on the second line. When I had received the line-clear I took it and went towards the engine of the Khairpur train. On my way I met a driver who took the line-clear from me. I do not know what colour the line-clear was on that night as I did not look at it. I know the difference between an up and a down line-clear. (NOTE.—Witness was shown up and down line-clear books and was able to distinguish them correctly.) After I had given the line-clear to the driver I came back to the office and told the assistant station master. When the train started assistant station master asked me which train is going. I told him the Rohri train. The assistant station master then ran out and showed a red signal.

Abdullah, driver.—I was the driver of No. 129 up goods of 5th and 6th October and arrived at Begmanji at about 1-0 hours on the morning of the 6th. I got down to examine my engine and found my little end bolts loose and one of the driving boxes was running hot. I tightened up the little end bolts and poured some oil and tallow into the hot box. I was still working at my engine when one of the station staff came up to my engine with a line-clear and I told him to wait a bit as I had not quite finished my work. The porter told me that I was to start at once so I said all right. I took the line-clear and without looking at it put it in my pocket. I then got on to the foot plate and seeing the starting signal was lowered I blew the engine whistle and started. After passing over the points I got all right signals from the guard, but did not get any signal at starting. When I had gone about four miles I saw a white light twinkling on the line ahead. I then saw a green light, I thought it must be something on the line so I shut off steam and applied the vacuum brake, opened the whistle and reversed my lever. It was, however, of no avail and after a short time there was a severe smash.

(By examination.)

(1) I know the difference between an up and a down line-clear as the up line-clear has two red lines on it and the down line-clear is plain.

(2) I did not look at the line-clear as I had been waiting some time at Begmanji and having crossed another train I thought it was all right, especially as the starting signal had been lowered.

(3) During the whole time my train was standing at Begmanji, I did not leave my engine.

(4) I cannot read but am able to distinguish figures when clearly written.

(On examination it was found that the driver could not recognize figures.)

Said Ali, fireman.—I was the fireman of No. 129 up goods on the morning of the 6th October. My train arrived at Begmanji and was received on the station line. As one of the driving boxes was running hot the driver went underneath to oil it and I was sitting on the foot-plate holding a lamp for him to see by. We were still occupied with this when the line-clear was brought up to the engine by one of the station staff. The driver came out from under the engine and took the line-clear. I went on to the foot-plate and started getting the fire ready. The driver whistled and after the signal had been lowered started the train. After the train had left the station the driver exchanged signals with the guard. After we had been running for sometime the driver pointed out a light in front. He opened the whistle and then shut off steam and when he saw that it was another train in front, he applied the vacuum brake and reversed the lever but did not open steam. The two trains collided shortly after.

Ruttha, khallasi.—On the night of the accident I was the fireman of No. 129 up goods and was breaking coal on the top of the tender. When the driver and the fireman were working at a hot axle, I heard a man asking the driver to take the line-clear. The driver took it, got on to his engine, blew the whistle, the signal was lowered and the train started. I again started to break coal on the tender and I heard the driver say he saw a light ahead and we all thought it was a train. The driver shut off steam, put on his brake and reversed the lever and the collision occurred.

Hussain Mahomed, guard.—I was the guard of No. 129 up goods of 5th and 6th October. My train arrived at Begmanji at 1-16 on morning of the 6th. On arrival at station I went to the assistant station master's office. I saw that the assistant station master was engaged in his work, and as I smelt some burning oil, I went up towards the engine and felt all the axle boxes of the train as I thought one of them must be hot. I, however, found them all cool and on enquiry from the driver, I was told that one of the engine boxes was running hot. I then went back towards the brake, on the other side of my train and when I got to the brake I went round it and stood on the platform. (Train No. 126 down goods which had been standing on the loop line had, in the meantime, left for Khairpur, and after some time No. 126 down goods arrived from Rohri and was received on the loop line. My train stood on the platform line, and my brakevan was about two or three vehicles away from the platform on the Khairpur side. This is about 300 feet from the station building.) After the arrival of 126 down I was standing on the platform, near the brake, when the driver of my train whistled and started. Before the driver started the starting signal was at danger but after he had whistled the starter was lowered. I then got into the brakevan and gave the driver all right signals after my brake had passed over the points. When I had gone some distance I heard the driver whistle and noticed the speed of the train was being reduced. I stood on the footboard of the brake and looked ahead. As soon as I looked ahead the collision occurred and I fell off the brakevan. After a short time I got up and noticed that 6 vehicles of my train had been badly smashed.

I wish to further state that when 23 up passenger of 6th arrived at Begmanji, to which station I had returned from the scene of the accident, in the presence of guard Noor Din who was running spare with that train, the assistant station master told me to make a statement that the driver of No. 129 up goods had taken the line-clear from Safal on the platform, and that the starter was at danger. I replied "I have already made my statement to the police of what actually occurred."

(By examination.)

(1) My usual practice when running with a goods train is to exchange "all right" signals with the driver after the train has passed over the points.

(2) I never get permission from the station master on duty to start my train.

(3) On this particular day I did not get any permission from the station master to start my train.

(4) The engine whistled before starting.

(5) When the engine whistled I did not ask the station master if I could start my train.

(6) When the engine whistled I did not give any starting signal.

(7) At the time the train started I was standing on the platform two or three vehicle lengths from the Khairpur end of the platform.

(8) At that time I did not see any of the station staff.

(9) When I was standing on the platform all signals were at danger.

(10) The starting signal was lowered after the driver had whistled and started.

(11) When the brakevan passed the office I was inside the brakevan.

(12) After the train had started I did not see any one on the platform, there was, however, one man at the starting signal.

(13) I did not speak to the driver at Begmanji.

(14) After the accident I did not have much conversation with the driver; I only asked him if he had been hurt.

Ali Bux pointsman.—I came on duty at 24 hours on night of 5th October. I got orders from assistant station master that two trains were to cross at this station. I got the loop line key and went out to the points at the Rohri end of the station. The train from Khairpur (No. 129 up goods) arrived first and the engine came to a stand 5 or 6 wagon lengths from the crossing on the station line. The Rohri train was received on the loop line. After it was received I set the points for the station line but again hearing the Rohri bell and seeing that the Khairpur train had started from the loop line, I again set the points for the loop line and admitted the second train from Rohri on that line. After this train arrived from Rohri I again set the points for the station line as I expected the up train would be starting for Rohri in a short time. I did not, however, lower the starting signal as I had not received any signal from the station to do so. Three or four minutes after the arrival of the second train from Rohri, I saw the train which was standing on the station line start towards Rohri. I still kept the starting signal at danger. The driver of this train did not whistle before starting. As starting signal was at danger I showed a red signal to the driver. He did not stop and as the engine passed the starting signal, some one on the engine called out "why haven't you lowered the signal," I replied because I have no orders to do so. When about half the train had passed over the points I saw a red signal from the station. I again showed red signal in direction of train and blew my whistle which is always in my possession, but the driver took no notice. I ran after the train till the lights of the brakevan disappeared round the curve. I then returned to the station and was informed by the assistant station master that the train had left for Rohri on a wrong line-clear. I did not see any guard in the brakevan and as the train was going too fast I was unable to jump into the brakevan when it passed the points.

Ram Dass, (guard of 126 down).—On the night of the accident we entered Begmanji station and we were admitted on the 2nd line. As I left my brake I heard the engine of the up train which was standing on the station line blow its whistle. I turned round and saw that the signal was lowered for the train; then the train started and as the brake passed the place where I was standing I went on to the platform and went into the station master's office and asked him for the line-clear for my train which he said he had sent up; then I asked him what time he had booked "in" and what time "out" and he said 52 and 55. After that I came out on the platform,

but as my train did not start though the signal was lowered, I asked the assistant station master that if he had sent up the line-clear how was it that my train did not start; then the assistant station master came out on to the platform and turned round and asked me where the up train was. I told him that the up train had gone out and that we could just see its lights in the distance. The assistant station master said "show your red light" which I did and so did the assistant station master; but the train could not be stopped. After that when the porter was returning from the Rohri side, the assistant station master asked the former why he had given the line-clear to the Rohri train which he had sent out for the Khairpur train. He struck the porter, but the porter said "you did not tell me which train the line-clear was for, so I gave it to the train which had been standing here some time." After this I asked the assistant station master for a copy of my line-clear which he gave me. I then proceeded to Khairpur.

Jewara, driver.—I was the driver of No. 126 down of 6th October. I arrived from Rohri at Begmanji at about 1-45 and my train was received on the loop line. There was an up train standing on the station line and after I had been standing for a minute or two I heard the engine of this train whistle and train started. By this time my signal had been lowered and as I had not received a line-clear I looked in the direction of the station to see if anyone was bringing it to me. At this time I noticed that the starting signal for the up train had been lowered. I got my line-clear after about 15 minutes and started for Khairpur. I asked the porter who brought me the line-clear why he had been so long about it. He told me that a mistake had been made and that my line-clear had been given to the driver of the up train and that this was a fresh copy.

Soomar driver.—I was the driver of No. 144 down goods on the morning of 6th October. I left Rohri at 2-3 (by my watch). After I had gone some few miles, I saw a white light ahead. I thought first of all it was the light of a gate house. I then saw a red light and thought it was a trolley so opened the whistle. Directly I had done this I discovered it was a train and that it was quite near. I applied the vacuum brake and shut off steam. I then ran to the hand brake and put it on. I then went back to the lever and was about to reverse it when the collision took place. The tender capsized. I got off my engine and met the driver of No. 129 up and he said "this is the result of a mistake on the part of assistant station master, Begmanji." He also told me that his signals were all properly lowered and that he had exchanged signals with the guard, but on looking at the line-clear now he found that he had been given a down line-clear instead of an up one.

Further statement of driver Soomar.—I asked the driver of No. 129 up goods why he had not looked at his line-clear before starting, and he told me that one of his engine boxes had been running warm and that he was oiling it when the line-clear was brought up to him.

Noor Din, guard.—I was running spare with train No. 23 up on 6th October. When the train arrived at Begmanji I saw guard Hussain Mohamed and Bhag Singh, assistant station master, talking together on the platform. I went up to the guard to ask him how the collision occurred. I heard Bhag Singh say that it would be to their advantage if their statements agreed "you had better say that the starting signal was not lowered for 129 up." Hussain Mohamed said he could not promise to make such a statement and he would think about what he would say. The assistant station master then said that if he would not make that statement he (the assistant station master) would prove that the guard was asleep in his brakevan.

I did not hear any more but Hussain Mohamed asked me to witness this statement.

Chander Bhan, station master, Begmanji.—On the morning of 6th October I had been informed by

Safal at my house that line-clear for down train had been given by him to the up train by mistake. On the day that the new line-clears were received I instructed my staff in the difference between an up and a down line-clear.

Note.— One of the station menials, a waterman, was taken at random and asked which was an up line-clear form and which a down form. He answered correctly.

FINDING.

The assistant station master, Bhag Singh, in his statement says that he gave the line-clear to Safal and carefully explained to him that it was for the train going to Khairpur, which was standing on the loop line. Safal is illiterate, but is able to distinguish an up from a down line-clear. He says, however, he did not look at the line-clear on this occasion. The assistant station master also says that while he was signalling the enquiry to Rohri he noticed "that No. 129 up goods train was starting at a good speed" and he ran out and tried to stop it.

On the other hand, Safal says that "on his way" to the Khairpur train he was met by a driver who took the line-clear from him. Under cross-examination he pointed out a spot on the platform about 50 ft. from the office, as the place where the line-clear was taken from him. He further states that after this he returned to the office and told the assistant station master that he had given the line-clear.

Now No. 129 up was going to Rohri. It had a load of 44 wagons and this with the length of the engine and tender makes the total length of train about 1,150 feet. The distance from the clearance mark on the Rohri side to the station building is 900 feet. The pointsman, Ali Bux says the engine of No. 129 up came to a stand about 5 or 6 vehicle lengths from the crossing, which is equivalent to say 125 feet. Assuming that this was correct it would bring the brakevan about 375 feet on the Khairpur side of the station building or beyond the end of the platform. This is where the guard Hussain Mohamed says it actually stood and we have no doubt this is correct.

We consider the exact position of the train important, because as it stood, if the statement of Safal is correct, there would have been ample time after he returned to the office for the assistant station master to question him and see that the line-clear had been correctly delivered, as the driver after taking the line-clear would have had over 700 feet to walk up to his engine. Again if the statement of Bhag Singh that, while he was working he himself noticed the up train starting, is correct there would still have been ample time for him to have stopped the train or at all events warned the guard, the brakevan being 12 or 15 vehicle lengths in rear of his office. The guard says there was nobody on the platform when his brakevan passed the station building.

Further, Ram Dass, the guard of No. 126 down, says that after the arrival of his train on the loop line, he saw No. 129 up start and waited for it to pass him before he could get on to the platform. He then went and asked the assistant station master for his line-clear and was told it had been sent to the driver. It was only when he asked a second time and said his train was not starting that the assistant station master came out of the office and discovered that the up train had started instead of 126 down.

From the statement of Ram Dass, which we consider quite reliable, together with the evidence of the engine staff and circumstances detailed above, it is proved that the line-clear intended for No. 126 down was by mistake taken to the engine of No. 129 up which had been standing some time in the station, and handed to the driver by Safal.

As regards the starting signal the pointsman Ali Bux did not get clear orders from the assistant station master that No. 129 up was to be detained for two trains coming from Rohri and when, therefore, after the arrival of No. 126 down the engine of No. 129 up whistled, the pointsman assuming that that train was to start lowered the starting signal after setting the points correctly. That the signal was lowered is proved by the statements of the engine staff and guards of both 126 down and 129 up goods trains.

In the circumstances detailed above and after careful consideration of all evidence we are of opinion that the assistant station master, Bhag Singh, did not take sufficient measures to see that the line-clear for No. 126 down was correctly delivered to that train and he did not go out to see the train started. Nor did he inform the pointsman that No. 129 up was detained and two down trains were expected to arrive before No. 129 up was to start. For this he is held to blame. The driver Abdullah of No. 129 up is to blame for not looking at his line-clear before starting. He is illiterate but knows the difference between an up and a down line-clear.

The guard, Hussain Mohamed, of No. 129 up, is also to blame for not having asked the assistant station master's permission to start his train, even after the engine whistled, in accordance with rule 269, subsidiary rule (c) of the Rules and Regulations. Had he done this the accident could have been avoided.

A. T. STOWELL,

President.

C. BRICO-OWEN,

Member.

T. W. WRENCH,

Member.

Remarks by the Manager.

In forwarding copy of the above proceedings, the Manager forwards copies of the under-mentioned letters in regard to this accident and the said proceedings of enquiry.

Letter No. $\frac{1563T-15-07}{3132}$, dated $\frac{28th}{29th}$ October 1907, from the Traffic Superintendent, North Western railway, Lahore, to the Manager, North Western railway, Lahore.

COLLISION BETWEEN NOS. 129 UP AND 144 DOWN GOODS.

Your No. 3946, dated 23rd instant.

I beg to send herewith the proceedings of the officers' joint enquiry held in this case.

The driver is mainly responsible for the collision, for starting his train on a line-clear which did not apply to it, thus breaking general rules 223 and subsidiary rules 8a and 8b, Appendix 2 of Chapter 13 of the general and subsidiary rules. Again under general rules 297 and 297a, he started his train without the guard's signal.

I recommend he be prosecuted.

The assistant station master is only to blame to the extent that he failed to correctly advise and exchange signals with the points staff as required under the general and subsidiary rules 247 and for not satisfying himself, under rule 269c, that the correct train was being started.

I propose to reduce him to a signaller for one year.

The pointsman is responsible for lowering the starter without the permission of the station master under general rule 49 (2) and I propose to fine him Rs. 5.

The guard is in no way responsible for the accident; he gave no starting signal and is not responsible for the correct delivery of the line-clear to his driver.

Letter No. 4105-T. S., dated 1st November 1907, from the Manager, North Western railway, Lahore, to the Traffic Superintendent, North Western railway, Lahore.

In reply to your letter No. $\frac{1563-15-07}{3132}$, dated 29th October 1907, I beg to state that the driver should be prosecuted. I agree also with your other recommendations in the letter except as regards the guard. The driver should not, it appears, have started the train without a signal from him, *vide* rules 297, 297 (a) and 269 (c), and under the rules the guard should not have given this signal until he had received permission from the station master. Both these rules were broken and yet the guard subsequently exchanged "all right" signals with the driver. In his evidence the guard also states that he habitually disregards these rules.

I shall be glad to have your further remarks regarding the guard.

Remarks by the Government Inspector of Railways.

The causes which led to and the circumstances attending this collision are almost precisely similar to those which caused the more recent and more serious collision at Kot Lakhpat station on the North Western railway, on the 24th October 1907, the proceedings of the joint enquiry into which, together with my own remarks, have already been submitted.

It appears that the sequence of events which led to the present accident was as follows:—

A line-clear for a down train (No. 126) was carelessly handed over by the station master on duty without sufficiently explicit instructions to an illiterate and probably unintelligent menial and handed by him to the driver of an up train (No. 129) who in turn started his train without satisfying himself that the line-clear was correct and in order (granting that he was capable of this) and without getting his guard's signal to start. The assistant station master on duty failed to correctly advise his points staff and see that the signals were correctly set, and, from the manner in which the train was started and the signals were worked, does not appear to grasp the responsibility of his position as laid down in rule No. 244 *et sequentia* of the general rules.

The pointsman at the trailing points, over which No. 129 up passed, appears to have lowered the starting signal without any orders. And the guard of No. 129 up was either ignorant of, or tacitly ignored, the existence of rules 269 (1) and subsidiary rule (c) and rules 297 and subsidiary rule (a) which his driver broke in starting without his, the guard's, permission and which he states in his evidence he habitually disregards.

The driver, in this case, could not read or write English; it was, therefore, not possible for him to fully comply with the requirements of general rule 223 (1) and (2), but it was

quite possible for him, had he looked at his line-clear before starting his train, to have satisfied himself that he had received an up and not a down line-clear.

I am, therefore, of opinion that in order that the conditions laid down in rule 223 (1) and (2) may be fully complied with, all drivers should be called upon to pass a strict examination in reading and writing English; but as the immediate enforcement of such a regulation would entail the retirement of a large number of the native drivers, I would suggest a time limit of 3 or 5 years after which all drivers must be fully qualified in the above respect.

As a safeguard, in the meantime, I would recommend that all line-clears for stopping goods trains should be handed to the driver by the guard of the train and that in the case of running-through trains crossing other trains, the line-clear shall be personally handed in the clip to the driver of the running-through train by the station master on duty at the facing points.

It is perhaps open to question whether it is necessary to legislate for such gross carelessness as the case of a driver not opening his line-clear in order to ascertain whether it is for his train or for one in the opposite direction, but it should ensure the right line-clear being delivered were the forms for up and down trains, respectively, printed on entirely distinct coloured papers.

In conclusion, it may be remarked that since the introduction of the new general rules a new form of line-clear has been brought into use on the North Western railway on which the signature of the guard of the train to which it refers is not taken as was previously required on the old line-clear forms, and such safeguard as this may have constituted is thus omitted. Further it may be noted that the List and Morse system of interlocking does not permit of the starting signals being under direct control of the station master, and it is very necessary that it should be firmly impressed on all pointsmen that on no account are any signals to be lowered without the orders of the station master on duty.

In fact this accident points to a general disregard of rules essential to safe working and a very reprehensible slackness of discipline due, apparently, to insufficient practical supervision.

W. D. WAGHORN, MAJOR, R.E.,
Government Inspector.

Remarks by the Senior Government Inspector of Railways, Lucknow.

This accident report discloses a lamentable disregard of rules by at least three responsible railway servants. The assistant station master, with two trains in his yard, writes out a line-clear and sends it without taking any steps to ensure its being given to the driver for whom it was intended. The driver of No. 129 up takes the wrong line-clear, never looks to see if it is correct and starts off without receiving the starting signal from the guard, and the guard gets into the train and lets it start without obtaining permission from the station master on duty to do so.

This general apathetic indifference to rules indicates a laxity of discipline that evidently requires the immediate serious attention of the North Western railway administration. There is absolutely no use in formulating rules for the safe working of railways unless care is taken to ensure these rules being carried out.

Having the up and down line-clears printed on different coloured paper would at least assist illiterate drivers and station menials to distinguish the direction for which the line-clear was intended. The recommendation of the Government Inspector that, all line-clears for stopping goods trains should be handed to the driver by the guard and that in the case of running-through trains crossing other trains, the line-clear should be personally handed by the station master on duty to the driver at the facing points, should be adopted.

J. E. GABBETT,

Senior Government Inspector.

9th November 1907.

Appendix XIX to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

Report of the proceedings of a committee of enquiry which assembled at Kot Lakhpat Station, North Western railway, on the 25th October 1907, to investigate the circumstances attending the collision between No. 9 up passenger and No. 154 down goods at that station on the 24th October 1907.

The committee was composed of the following officers :—

E. C. LISTER, <i>Executive Engineer</i>	. . . . .	<i>President.</i>
J. J. INGLIS, <i>Dist. Loco. Supdt.</i>	. . . . .	} <i>Members.</i>
C. E. HOLLOWAY, <i>Dist. Traffic Supdt.</i>	
S. E. WALLACE, <i>Deputy Inspector-General, Railway Police</i>	. . . . .	} <i>Present.</i>
E. R. ANDERSON, <i>City Magistrate, Lahore</i>	
W. D. WAGHORN, MAJOR, R. E., <i>Government Inspector of Railways</i>	

DESCRIPTION.

On the morning of the 24th October 1907 No. 154 down goods left Lahore for Bhatinda at about 4-45 hours, or 1 hour 41 minutes late, and proceeded as far as Kot Lakhpat station where it arrived at about 6 hours, or a few minutes over 2 hours late. This train was admitted into Kot Lakhpat station on the platform loop and brought to a stand clearing the points leading to the main line at either end.

The train stood thus for some minutes whilst the assistant station master, having obtained line-clear for No. 9 up passenger which was due to arrive from Kana Kacha and was running through to Lahore Cantonment West, prepared and endorsed the line-clear form in duplicate for the up passenger, and handed one copy to the station waterman to be delivered by the pointsman at the up facing points to the driver of No. 9 up as he ran through. The duplicate copy he took himself to hand to the driver opposite the station in the event of his failing to pick up the line-clear at the points.

Signals were lowered for the up passenger to run through, when, just as it was approaching, the goods train started and moved forward, and, taking the cross-over road on to the main line, collided with the passenger train about 75 feet inside the tongue rails of the up facing points.

No. 9 up passenger must have been running at a speed of about 30 miles an hour, and the force of the collision drove the goods engine and its train, which was only moving slowly forward, back a distance of about 70 feet.

The two leading bogies on No. 9 up were completely telescoped and it was in these two carriages that all the serious casualties occurred. Altogether 11 passengers were killed and 25 passengers and 4 of the train staff more or less seriously injured. Both engines were very badly damaged, the above two bogie carriages—the leading one a 3rd class with guard's compartment at one end—and the second, a composite intermediate and 3rd class, were completely smashed, and the five leading goods wagons on No. 154 down goods were also very badly damaged.

The estimated cost of damage to rolling-stock is about Rs. 55,000 and to permanent-way about Rs. 372.

EVIDENCE.

N. C. Haldar, District Traffic Superintendent, Bhatinda.—I was travelling back to Bhatinda on 154 down goods. My carriage was inside the rear brake-van and I was asleep when I heard the crash. This was followed by another crash.

Looking out on the station side I saw that my train was backing on the loop line, and, by the name plates on the lamps, I saw the station was Kot Lakhpat.

It was just twilight, and, though the station platform lamps were not burning, I could read the name

Whilst running towards the engines I looked at the signals. The lamps were still burning, but I could also see the up distant signal arm. Both up distant and home signals were down. I looked behind at the same time, and, as far as I can remember, both the starters were showing red. I did not

attach much importance to the starters and cannot, therefore, definitely say that they showed red.

I went up to the telescoped carriages. I heard groans and saw some blood stained faces and limbs. The work of rescuing passengers started, and we dragged out a few dead and badly injured. I saw a few injured people trying to crawl away from the damaged carriages.

The end of the telescoped carriages was projecting and had damaged the end of the third bogie on the train. From this corner of the telescoped bogies I heard continuous groaning. There was a buffer and a pile of splinters over the body, but I could just see a portion of a leg. I went back to the rear brake-van and uncoupled it and got some passengers to shunt it back a few yards. This had to be done to all the carriages, and I at last got the end of the telescoped carriage free.

Eventually, after sawing through some woodwork, we rescued the man who was groaning and who, with the exception of a few scratches, was unburnt.

I went to the station and tendered an urgent telegram giving details of the accident. At the same time I took possession of all the line-clear books, and the line-clear clip with the "line-clear" attached to it. According to my watch the collision had occurred at 6-27 exactly.

This would make the actual time of collision, according to station time 6-18.

About this time I looked to see the head lights of the engines. I counted all the six lamps of the engines. The right hand buffer lamp of the goods engine was wrenched off and lying on the ballast. I touched one of them and found it quite cold; they were of course all out. I cannot say if they were alight when the collision occurred.

I found the line-clear books and clip, with line-clear attached, in the station master's office. I cannot say who gave it to me.

I asked for the other copy of the line-clear and was told by the station master that it was with the driver. I did not enquire which driver he meant.

I saw the driver of No. 154 down goods whilst I was attending the injured, but as he was himself badly injured I did not ask him any question.

At the time of the accident it was sufficiently clear to see an approaching train well beyond the distant signal.

Assistant station master Jaggu Nath.—I came on duty at midnight.

Line-clear for No. 154 down was asked for at about 4 hours by Lahore Cantonment West. I gave line-clear about 4-15 and it left Lahore Cantonment West at 5-30.

At that time I enquired from Kana Kacha about up passenger trains; he replied "No. 9 up which runs through this station is coming first." I gave Kana Kacha line-clear for No. 9 up at 5-40 and then called both the pointsmen, Bawa and Munshi, and in each others presence instructed them that passenger train is dak train coming from Kana Kacha and the goods train is coming from Lahore Cantonment West. I gave Bawa down loop key and up main key to Munshi and told them to go to their points. The down goods, which was due here before No. 9 up passenger, was given signal as soon as it was in sight. The goods train entered the yard and stopped, clearing both side points; she was standing on the loop line. The engine was standing about 20 yards inside the clearance points.

I asked for a conditional line-clear from Lahore Cantonment West for No. 9 up passenger on arrival of No. 154 down goods; I got line-clear at about 5-50 and prepared two copies and kept them in my possession to fill in endorsement.

After this the guard of No. 154 down goods came to me to ask if line-clear for his train was ready, and to report his arrival.

I replied, "No. 9 up passenger is coming," and endorsed line-clear for that train.

I called to watchman Asa and placed one copy of line-clear for No. 9 up in the socket of clip and handed it to him telling him "this line-clear is intended for dak; go to points No. 2 and give it to pointsman for dak; the second copy of line-clear I myself held in front of station between the two tracks; I passed under the wagons of the goods train to get there.

I had in my hand a hand signal lamp and clip with line-clear tied. I also had a torch ready to light in my hand. It was not clear daylight at that time. After 3 or 4 minutes I saw the goods train was moving and immediately shouted to the guard of goods train, "why is your train moving." He was standing opposite me on the platform. We both ran towards the driver of the goods train shouting "ho ho," and showing danger signal. I was running on the main line but had not gone far when the collision occurred.

The driver of the goods train did not whistle before starting.

When the goods train had arrived and come to a stand I lowered the outer and home signals for the up passenger train. I lowered the starter for No. 9 up when I went out to hand line-clear. I did not lower it myself but signalled to Bawa, pointsman, to lower it.

Line-clear for No. 154 down goods had not even been asked for at that time, as No. 43 up passenger was behind No. 9 up at Kana Kacha.

Some 5 or 6 minutes after the collision I saw Asa and asked him what happened to cause the collision. He said "I had the clip in my arm and as I passed the engine of No. 154 down goods the driver, or some one else, took the clip from me." I told him "this clip is for dak, it is not for you." After that the goods train started and I shouted out.

I could see No. 9 up approaching quite clearly when the goods train started, and the head lights of the engine were burning. No one was present in the office when I gave the line-clear clip to Asa.

Waterman Asa.—After the arrival of the goods train the assistant station master sent for me to the office, and before me put the line-clear into the clip and said it was for the dak and told me to take it to the pointsman. As I was walking along the platform I passed close to the goods engine; some one on the goods engine pulled the line-clear clip from under my arm. I said "this line-clear is not for you; it is for the dak." He took no notice and said nothing, but started the train and threw the clip on the ground. I could not recognise the man who took the clip. I picked up the clip and brought it back to the verandah of the station. I could not see what was done with the line-clear.

Munshi, pointsman.—Some short time before the arrival 154 down goods the assistant station master called me and Bawa, and gave me the up main key and Bawa the down loop key and sent us to our posts, and told us "when the goods train arrives I will give you the signals for No. 9 up. When the time comes I will send the line-clear for No. 9 up to you at the points if I can, if not, I will give line-clear here." I went to points (No. 2) and all the signals for the up passenger train were lowered.

In the meantime the goods train had arrived and was standing in the station.

The up train was approaching when, suddenly, the goods train gave a short whistle and started. I shewed a red light and ran down towards the goods train and tried to stop it. I also shewed the red light to No. 9 up but nobody appeared to see it; then the collision occurred. No line-clear ever reached me. I had a torch but I do not light it until the line-clear arrives.

I saw nothing of Asa with the line-clear clip.

When collision occurred the goods train was still moving ahead but had slowed down.

Adul Aziz, guard.—I was guard in charge of No. 154 down. My train arrived at Kot Lakhpat at 5-54 and was brought in on the loop line. I went to the assistant station master's office to ask for line-clear. The assistant station master told me that an up passenger train was coming first. I looked at the line-clear book and found no enquiry for my train. After a few minutes I saw my train moving. I ran out from the office and heard a noise and found there had been a collision.

Immediately after answering my questions the assistant station master left the office and I did not see him again until I ran out on seeing my train moving; he was then on the far side of my train running along the line.

The line-clear for No. 9 up had been taken out of the line-clear book when I looked at it. I did not see the station master give any order or hand the line-clear to any one.

A. Jennings, guard.—I was guard in charge of No. 9 up passenger. I left Kana Kacha at 5-58 to time; we ran through the station. On approaching Kot Lakhpat I looked out and saw all signals lowered to run through. The signal lamps were all burning. I was looking out of the left hand side of my brake-van so could not see anything of No. 154 down.

I was sitting in my brake-van when the collision occurred.

I looked at my watch when my driver whistled at the outer signal, and it was then 6-8.

Sukha, 2nd fireman.—I was khallassi on the engine of No. 9 up passenger. Just before the collision I saw the driver pull down the vacuum brake handle and immediately after this I was buried in coal.

(This witness can give no coherent account of what happened after this.)

Ralla Ram, 2nd guard.—I was 2nd guard of No. 9 up passenger. On approaching Kot Lakhpat I looked out of my brake-van on the right hand side and saw all my signals down. I did not see the goods train.

C. E. Holloway, District Traffic Superintendent. stated that, when enquiring yesterday on the spot at about 8-45 A.M. how the driver of No. 154 down goods came to be in possession of the line-clear intended for No. 9 up, the waterman Asa told him that the line-clear was handed to him in the clip by the assistant station master with instructions to give it to the driver. The station master was present when he made this statement. The assistant station master was then sent for and questioned, and Asa then flatly denied his previous statement and made practically the statement he had made before this enquiry.

Mangal Das, station master.—The above statement by Mr. Holloway was read out and corroborated by this witness.

The following evidence of the 1st fireman of No. 9 up passenger and of the engine staff of No. 154 down goods was taken on the 29th October 1907 at Lahore.

Both the 1st fireman of No. 9 up and the driver of No. 154 down were too much shaken and damaged to give their evidence at Kot Lakhpat station on the 25th October, and the 1st fireman of No. 154 down had absconded and was not at the time to be found.

Fireman Uttar Din.—I was 1st fireman of No. 9 up passenger; all three signals were lowered for us on approaching Kot Lakhpat. My driver told me to "fire up" and not let the steam fall. I fired and closed the door and cleaned the footplate,

as I was shovelling loose coal back on the tender; the collision occurred and I know nothing more.

My driver was outside the cab on the right hand, and the 2nd fireman was also outside the cab.

Shahab Din, shunter and acting driver.—I was driver of No. 154 down. As I approached Kot Lakhpat station my signals were at danger, and on my whistling they were lowered and I entered the station. When I got opposite the station and was travelling at about 3 miles an hour some station manial handed me the line-clear in a clip tied with a bit of string. I told my fireman "we are running through, fire up," and untied the line-clear and looked at it. I then saw it was marked with two red lines and knew that it was not for me. I tried to stop my train but was already foul of the crossing when No. 9 up ran into me.

My train never came to a stand in the station but was travelling slowly.

I took the line-clear clip myself on the left hand side of the engine.

As I entered the station my starting signal was lowered, but when I looked at it after opening my line-clear it was at danger.

I have worked as driver on the Lahore section since the beginning of September.

(This man actually did 11 days in September and 12 days in October as driver.) I cannot read English; I was passed as a driver on 3rd May 1907.

I did not see the passenger train approaching when I got the line-clear. I first saw it just as I got on the crossing. All three head lights on the passenger engine were burning. Directly I saw the passenger engine I reversed my lever and had completely reversed before the collision occurred. When the collision occurred my train had come to a stand.

I have frequently picked up line-clear running slowly through a station which has been handed to me on the platform on a clip. I have never had a line-clear handed me in a clip at the facing points when running through.

I passed the test for eyesight and colour blindness some 2 years ago.

Mahomed Din, fireman.—I was 1st fireman of No. 154 down goods.

(This man corroborates his driver's statement but states that the line-clear was handed to the driver from between the tracks on the right hand side of the engines. Below is a summary of the statement this man made to the police immediately after the accident.)

"My train was standing about 15 minutes on the station line when a station porter arrived with a line-clear for a passenger train and gave it to me. I handed it to the driver who started immediately, examined the line-clear, and, finding it was not in order, reversed, but it was too late; the collision occurred."

Karam Chand, 2nd fireman.—I was 2nd fireman on No. 154 down goods. As we approached Kot Lakhpat station both outer and home signals were lowered for us, my driver whistled, we entered the station on the platform loop and came to a stand clear of the points.

After waiting 5 or 6 minutes some man came up and handed the fireman the line-clear in a clip; the fireman, Mahomed Din, took the line-clear out of the clip and handed it to the driver who whistled and started his engine. I did not see the starting signal.

SUMMARY.

From an analysis of the above evidence, and taking into consideration the system (List and Morse) under which the signals and points at this station are interlocked, there is little doubt that No. 154 down goods, having duly arrived at Kot Lakhpat station and been admitted on the loop line, came to a stand there at about 6 hours, probably a few minutes before 6.

The assistant station master on duty then endorsed the line-clear in duplicate for No. 9 up passenger running through, lowered the home, outer, and starter signals for No. 9 up and handed one copy of the line-clear in a clip to waterman Asa, to take out to the up facing points to be there handed by the pointsman to the driver of No. 9 up. He himself took the duplicate

copy of the line-clear, and passing under No. 154 down goods, standing on the loop line, waited opposite the station, between tracks, for No. 9 up to arrive in order to hand the driver the duplicate copy of the line-clear should he fail to pick up that at the points.

In the meantime, however, waterman Asa, through not having had it sufficiently clearly explained to him, or through forgetfulness, handed the line-clear intended for No. 9 up in the clip to the fireman of No. 154 down on the engine of that train, and the latter took it out of the clip and handed it to the driver Shahab Din. This man without first satisfying himself that the line-clear was correct, without seeing that the starting signal was lowered for him, and without obtaining his guard's right away signal, started his train in the face of the approaching up passenger which, had he only taken the trouble to look ahead, he must have clearly seen at that time.

It may be mentioned that the reversing motion of the engine of No. 154 down was, after the accident, found in midgear, shewing that, the driver realising his mistake, had attempted to reverse his engine, but too late.

The vacuum brake had also been applied on the engine of 9 up, shewing that the driver of that train had at the last moment, seeing the engine approaching ahead of him, attempted to stop his train.

The evidence of driver O'Brien of No. 9 up passenger has not been taken, as he was still in hospital under treatment though progressing favourably, and it was not considered that any evidence that he could give would be very pertinent to the points in question.

The statement of driver Shahab Din of No. 154 down, and corroborated by his 1st fireman, that he never actually came to a stand but proceeded slowly through the loop line picking up line-clear on his way, may at once be dismissed as a fabrication, for there is no doubt that the outer and home signals were lowered for No. 9 up passenger, and it would have been quite impossible for the starter to have been thrown to danger, the points reversed and locked and the outer and home signals for No. 9 up to have been lowered, all in the time between his picking up line-clear and the moment of the collision, not to mention the mass of contrary evidence showing that No. 154 down goods stopped some minutes in the loop siding.

Below is a statement showing the hours of duty for the previous 48 hours of driver Shahab Din.

Left Lahore at 16-55 on 21st October 1907, with No. 180 down goods; arrived Phillour at 12-47 on 22nd October 1907.

Left Phillour at 21-55 on 22nd October 1907, with No. 81 up goods; arrived Lahore at 18-6 on 23rd October 1907.

Left Lahore at 3-4 on 24th October 1907, with 154 down goods.

This shews 19-52 hours duty on 21st and 22nd with 9-8 hours rest at Phillour on 22nd, followed by 20-11 hours duty on 22nd and 23rd, with 8-58 hours rest at Lahore before going on duty with No. 154 down goods at 3-4 in the morning, and he had only been on duty a little over 3 hours when this accident occurred.

FINDING.

After a careful consideration of the above evidence, we are of opinion that No. 154 down goods arrived at Kot Lakhpat station at or about 6 o'clock and came to a stand on the loop line clear of the fouling marks. After standing there for about 10 minutes the assistant station master on duty handed the line-clear for No. 9 up passenger in a clip to Asa, waterman, to take out without sufficiently clearly specifying for what train this line-clear was intended.

Asa, waterman, took this line-clear and wrongly handed it to the fireman of No. 154 down goods, who took it out of the clip and handed it to the driver.

The duplicate copy of this line-clear, the assistant station master tied to a clip and passing through the goods train stood between the tracks ready to hand it to the driver of No. 9 up.

These line-clears have both been recovered—the original in the possession of the native driver of No. 154 down, and the latter still tied to the clip in the station office.

In the meantime the driver of No. 154 down goods, on receiving the line-clear, started his engine immediately after having given a short whistle, and thus brought about the collision.

We are, therefore, of opinion that Shahab Din the driver of No. 154 down, is solely and entirely to blame for this accident, in that he started his train without satisfying himself that his line-clear was in order in accordance with General Rule 223 (1), and (2) further that he did not comply with General Rule No. 299 in that he started his train without seeing if his starting signal was lowered, nor did he observe that the home signal was lowered for an incoming up train.

J. J. INGLIS.

C. E. HOLLOWAY.

E. C. LISTER.

Remarks by the Government Inspector of Railways.

I entirely agree with the above finding. There is no doubt that driver Shahab Din of No. 154 down goods was entirely responsible for this accident as pointed out.

Assuming also, as there is no room to doubt, that he had actually brought his train to a stand on the platform loop line, he broke General Rule No. 297 in that he started his train without obtaining the requisite starting signal from the guard in charge of the train. The up and down line-clear forms in use on the North Western railway are readily distinguishable, the up line-clear form having two broad vertical red lines down the face whilst the down line-clear form has none.

It is obvious, therefore, that the driver of No. 154 down goods did not comply with General Rule 223 (1) and, consequently, disobeyed General Rule 223 (2).

I would, however, recommend for consideration the advisability of printing up and down line-clear forms on entirely different coloured paper, red and white or red and green, the driver could then tell at a glance whether he was being handed the correct line clear form.

It may here be remarked that driver Shahab Din, though a passed driver, was unable to read or write English, and in this respect he is by no means peculiar, as there are, I understand, many other native drivers on the North Western railway who cannot read and write English.

It is, therefore, obvious that these men cannot comply with the orders laid down in General Rule 223 (1) unless they get some one to read over their line-clears to them, a practical impossibility. Such a case as a cancelled or incomplete line-clear being handed to such a native driver, by mistake, might easily occur and thus lead to a very serious accident.

To avoid any possibility of this, and in order that native drivers shall be in a position to comply with General Rule 223 (1), I would recommend that after a limited number of years, say 3 or 5, no drivers shall be allowed to work trains on the open line unless they can read and write English fluently, and have passed a thoroughly sound examination in these respects.

In the meantime, until such regulations can be brought into force, and in order to ensure that the provisions of General Rule 223 (1) are correctly carried out, I recommend that in all cases where any train running through a station has to cross another train standing in the station yard, the station master on duty must, personally, hand the line-clear at the outer facing points to the driver of the running-through train, and that in all cases where the driver is a native and unable to read English, it shall be the duty of the guard of the train to personally receive the line-clear from the station master and deliver and explain it to his driver.

It may here be remarked that the assistant station master on duty at Kot Lakhpat failed to carry out the orders conveyed in General Rules 219 and 220, but it is difficult to see how, under the rules in force on the North Western railway system, *vide* Appendix 119 (b) to Chapter XIII of the General Rules wherein the words "some railway servant appointed in his behalf by special instructions" in General Rule 221 are interpreted to signify "any one of the station staff (other than the sweeper) being at the time in uniform," he can be held responsible.

W. D. WAGHORN, MAJOR, R. E.,
Government Inspector of Railways.

Remarks by the Senior Government Inspector of Railways, Lucknow.

I agree with the finding that driver Shahab Din must be held responsible for the accident.

He started his train with a wrong line-clear disregarding General Rule 223 (1) and (2), and also ran against signals as the starting signal was not lowered for him (General Rule 299).

This is by no means the first time drivers have started with wrong line-clears.

The best way to prevent this is to have line-clear forms printed on different coloured paper, and this has been recommended before (*vide* report on the accident at Pali, East Indian railway, on 31st January 1906), so that not only an illiterate driver but also "any railway servant appointed by special instructions" may have a chance of knowing whether the line-clear is right or wrong. Another point that may be noticed is the long hours on duty Shahab Din had on the two days previous to the accident. The fact is that the traffic on various busy sections is fast approaching (if it has not exceeded) the capabilities of a single line, and the necessity for doubling these sections is becoming most urgent.

LUCKNOW:
5th November 1907.

Appendix XIX.

J. E. GABBETT,
Senior Government Inspector.

**Appendix XX to the abstract return of accidents on Indian railways
for the 12 months ended the 31st December 1907.**

Report of the proceedings of a committee of enquiry which assembled at Jagadhri station, North Western railway, on the 31st October and 1st November 1907, to investigate the circumstances under which No. 3rd Rajpura down special goods collided with No. 27 up passenger at mile $\frac{1042}{18}$ between Jagadhri and Kalanour stations at about 5-46 hours on the morning of the 29th October 1907.

The committee was composed of the following officers:—

E. VERRIERES,	Executive Engineer	President,
K. M. KIRKHOPE,	District Locomotive Superintendent	}	Members.
U. C. SANDYS,	District Traffic Superintendent		
T. REHILL,	Superintendent, Railway Police		
G. CAMPLIN,	Inspector, Railway Police	}	Present.
MAHMOOD ALI	Magistrate, 1st class, Umballa		
W. D. WAGHORN, MAJOR, R.E.,	Government Inspector of Railways		

DESCRIPTION.

On the morning of the 29th October 1907, third down special goods from Rajpura ran through Jagadhri station yard (on the loop line), without line-clear and against signals, and collided with No. 27 up passenger train at mile $\frac{1042}{18}$, about a mile south of Jagadhri station, at about 5-46 hours.

Unfortunately this accident was attended with considerable loss of life and injury to both passengers and train staff.

The drivers of both engines, and both firemen and second guard of No. 27 up passenger, were killed, and the 1st fireman of the down goods was severely injured. The 2nd fireman was thrown off and escaped without injury.

Altogether nine passengers and thirteen railway servants were killed and six passengers and six railway servants injured.

The collision took place on an embankment some 10 feet high, and in consequence the line was blocked for about 30 hours whilst a diversion was being put in.

The estimated cost of damage to rolling stock is Rs. 1,50,000 and to permanent-way Rs. 362.

EVIDENCE.

K. S. Baness, Locomotive Foreman, Rajpura.—Nelson came into Rajpura on the 28th instant with 75 up goods, booking in at 10-50 hours. Allowing the usual 15 minutes for making over his engine, he was free of duty at 11-5. He was warned for duty at 19 hours, which meant that he should have been at the shed at 18-15 hours; this would have given him a clear 7 hours 10 minutes rest. He did not come to the shed until a few minutes after 19 hours; this gave him actually about 8 hours rest.

I sent out Subrati as fireman and Ahasin Singh as khalasi with driver Nelson on engine No. 35 P. of Rajpura down special goods.

As far as I know, Subrati had never worked before with driver Nelson. From what I know of Subrati I consider that he would know how to act with an engine in perfect working order to stop it in an emergency.

All petty repairs only within the scope of a running shed are carried out by me. No engine is allowed to leave my shed to work a train unless it is in perfect working order.

The repair book produced shows that no repairs were booked for this engine at Rajpura on its arrival there on the 28th.

Engine No. P. 35 was brought into the Rajpura shed by driver Nelson on the 28th, and he worked it out with the down special goods the same evening. He did not book any repairs required during this period, nor did he mention any defects of the engine in coming in or going out.

Re-called.—I am of opinion that driver Nelson probably came into Jagadhri without vacuum and that he lost time in creating vacuum before he could get his train under control, and that he did not reverse his engine until the last moment. The effect of reversing with the brakes hard on would be nil as far as the stopping power of it is concerned.

On engine No. P. 35 after the collision there was still about 2½ inches of the vacuum put on which had not been used.

Karam Dia.—I was station master on duty at Jagadhri on the morning of the 29th instant. At 5-10 hours I received an enquiry message from Kalanour for 27 up passenger train, and at 5-13 I

replied giving the line clear. There were no restrictions imposed with this line-clear and no special instructions were given for the driver of 27 up. 27 up left Kalanour at 5-40 hours and was therefore due at Jagadhri at 5-48 hours.

The station master, Darazpur, asked me for line-clear for Rajpura down special goods at 5-12 and I gave the line-clear at 5-15. There were no special instructions or restrictions of speed issued with this line-clear; the word 'sharp' entered on the line-clear was to inform the station master, Darazpur, that the down goods was not to be unnecessarily delayed. There is a restriction of speed of 10 miles imposed by the permanent-way inspector at mile 1,040 between Jagadhri and Darazpur, and it is the duty of the station master at the station of starting to give the proper caution ticket with this information. There is also a restriction of five miles in the Jagadhri yard imposed by the engineering department for trains entering the main line, and it is the duty of the station master of the station from which a train is coming into Jagadhri to also enter this information on the line-clear or caution ticket. Information about these restrictions is not repeated with each line-clear, but the station masters concerned (Kalanour or Darazpur) enter it on each line-clear until the restriction is removed by the engineering department. The down special goods left Darazpur at 5-21 and was therefore due at Jagadhri at 5-48. As both these trains (27 up and the down special goods) were due at Jagadhri at the same time, I did not lower any signals. I instructed both pointsmen (Kanhaiya and Ram Chandar) about the reception of these two trains. The former went to the south points and locked them for the reception of 27 up on the main line and the latter (Ram Chandar) went to the north points and locked them for the reception of the down special goods on the loop. When both these men had locked their points they hand-signalled to me with lamps to indicate they had done so. They then put down their hand signal lamps near their points showing red towards the station. I did not lower the inner signals from the station, and therefore the pointsmen could not lower the outer signals.

While I was walking about on the platform, the man at the home signal levers on the platform told me that the down special goods had suddenly arrived at the north points. When the engine of the down special goods was quite close to the north points the driver started whistling and he kept it up until the whole train had passed out beyond the south points. As soon as I saw the engine of the down special goods near the north points I showed a red hand signal towards the engine, and pointsman Karam Bux, who was near me did the same. The train passed through the yard on the loop at about 40 miles an hour. From the sound of the steam I gather that the vacuum brake was being applied. There was a lamp inside the cab and the door of the fire-box was open; the cab was therefore brightly lighted up. In this light I could discern the driver with one hand on the whistle and the other I fancy on the vacuum brake; another man near the driver was applying the tender hand brake. I was standing on the platform when I saw all this. I did not notice a third man on the engine. I am certain the door of the fire-box was open. Karam Bux, pointsman, Bhoole, porter, myself and several passengers on the platform shouted out to the engine staff of the down special goods to stop as she ran through on the loop, but we did not hear anything they may have said. The guard in the rear brakevan was standing on his foot-board on the station side and was showing a red hand signal lamp towards his driver.

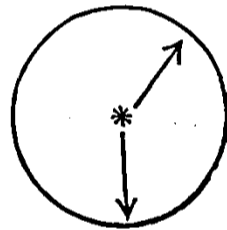
After the down special goods had passed out of my yard I went to the south points, and Kanhaiya, pointsman, told me that when he realized that it could not be stopped he unlocked the points, reversed them and let the train run out.

I just saw the down special goods when it was approaching near the north points, and I heard the whistle almost at the same time.

Subrati, fireman, special down goods.—I started as fireman from Rajpura with driver Nelson, but at

Sambhu he made me change places with his khalasi and the khalasi did the firing while I broke the coal. Between Rajpura and Darazpur we stopped at all stations, except one where we picked up line-clear. There appeared to be no difficulty in stopping at any of the stations. In stopping at all stations the driver used his vacuum brake, and Ahasin Singh used the tender brake. I did not hear any remarks on the road regarding any defect on the engine. When we left Darazpur we all knew that we had to stop at Jagadhri. The train did not slow down anywhere between Darazpur and Jagadhri, and I saw no caution signals exhibited. I did not notice the condition of any of the signals and I did not hear any conversation between the driver and fireman about the signals. When we got opposite the station the driver suddenly whistled and called hurriedly to his fireman to apply the hand brake; the driver had his hand on the vacuum brake. At this time I was shovelling coal to the fireman and did not notice any signals, hand or other, as we ran through Jagadhri. In a short while the driver called to me to assist the fireman in putting on the tender screw brake, and, when I came down to do this, the collision happened. The engine had got over the bridge before I was called down to assist in screwing on the hand brake. The train travelled through the yard at Jagadhri at about the same pace as we had maintained between stations. The driver did not go to sleep anywhere on the road and was working the engine himself the whole way. There was no quarrel between the driver and the fireman on the road.

Recalled.—We ran through Jagadhri station at a great speed, the driver whistled when we came within the facing points and called to me to assist in putting on the hand brake. The driver was sitting on the right hand side of the engine and had his hand on the vacuum handle, and the vacuum needles showed as in this sketch. The train did not appear to slacken speed; just before the collision the driver reversed. The driver, who was sitting, got up with a start on passing over the facing points and remained standing until the collision occurred. I did not notice if the driver removed his vacuum relief cock. I did not notice the driver blow off his vacuum at Darazpur: on receiving line-clear we started off immediately.



Durga Pershad, guard.—I was guard in charge of Rajpura down special. We left Rajpura at 22-45 on 28th instant. We stopped at Barara to take water and ran through Mustafabad at 4-25 hours, arriving at Darazpur at 4-42 and crossed 1 up and 3 up mailtrains there. Between Rajpura and Darazpur my train stopped at all stations except two, viz., Kesri and Mustafabad. I did not notice any difficulty in the stopping of the train at any of the stations between Rajpura and Umballa. The load of the train was 35, including the brakevan, and from Umballa Cantonment on the load was only 19 vehicles.

NOTE.—(The average speed between stations from Umballa to Jagadhri works out to 17 miles an hour and between Darazpur and Jagadhri to 15 miles). At Darazpur I personally took the caution ticket from the station master to the driver and I told the driver that there were restrictions of speed between Darazpur and Jagadhri. On the road where the green signal (mile 1,040) was exhibited the driver did not slacken speed, but I applied my brake. The driver correctly observed all signals up to and including Darazpur. Immediately I opened my brake after the restriction the speed of the train gradually increased. By the time we were up to the distant signal the speed was, in my opinion, about 30 or 35 miles per hour. On approaching the distant signal, when I saw it was at danger, I again applied my brake, but this did not seem to effect the speed of the train. After the whole train had passed the distant signal the

driver whistled twice in the ordinary way and went on at the same speed. On approaching the home signal I reversed my brakevan light and tightened my brake still more; this even did not seem to effect the speed. We ran through on the loop at between 30 and 35 miles per hour. A man was exhibiting a danger signal and several people on the platform were shouting to warn us of danger. After passing the home signal on the Darazpur side the driver whistled frequently at short intervals up to the moment of the collision. From the lights shown by the disc attached to the south facing points I could see that the points had originally been set for the main line and that they were reversed at the last moment to allow my train to run through. From the time that the train first got up a speed of 30 to 35 miles beyond the north distant signal of Jagadhri up to the moment of the collision the speed did not appear to me to slacken in the least. I put the brake hard on and waited developments.

The composition of the train was a first class and a second class next to the engine up to the Umballa Cantonment. After shunting at Umballa two non-vacuum wagons were attached next to the engine.

Ram Chandor, pointsman.—On the morning of the 29th October the station master, Karam Din, told me that line-clears had been given to the down special goods from Darazpur and 27 up from Kalanour. He gave me the down loop key and told me to set and lock my points for the reception of the down special on the loop. He told me that the two trains would cross here. I went and set the points for the loop and locked them. The station master (from the platform) and I then exchanged green signals. I then put my hand signal lamp down near the points, showing red towards the station. The station master did not then lower the incoming loop arm for the entrance of the down special goods. I suddenly heard the whistle of that train and on looking up saw that it had passed within the distant signal. From the sound of the whistle and the manner in which it was blown I do not think that it indicated an urgent call for the brakes; it was blown in the ordinary way. I saw that the engine had one red head light and one red side light. I do not remember exactly on which side the buffer light was. The train came in at a not very excessive speed. As neither the home nor the outer signals had been put down, I went out towards the approaching train showing my red hand signal lamp. When near the engine I also called out to the driver, but the train went past me on the loop. I saw only one man standing in the engine cab, but cannot say who he was nor what he was doing. The train ran through the loop and out into the main line.

All the signal lamps of Jagadhri station were lighted. After the engine of the down special goods had passed the north points, the driver whistled up to the time he had gone beyond the south points. All signals on the Darazpur side were at danger when the down special goods ran through.

G. Searchfield, driver.—I drove engine No. P. 35 (of Rajpura down special goods) for about four months up to within 10 days of the accident. The vacuum brakes are taken up usually about every second or third trip, and this is all that has been done to the vacuum brakes of this engine during the time I have driven it. No. P. 35 is a goods engine and the load for it is 35 vehicles loaded. I have worked it between Ghaziabad and Phillour. I have always found the vacuum brakes to act well and the train has always been well under control. I have never overshot signals or points with P. 35. The hand screw brake on the tender has always been in good working order and the only repairs to it have been those necessitated by the wearing away of the brake blocks. These repairs are also required about every third trip. (NOTE.—From the Saharanpur shed repair book it is found that the vacuum and screw brake blocks on this engine were adjusted on the 24th and the 27th October).—When the adjusting gear has been tightened up as far as possible, new brake-blocks have got to be provided. This is done usually once every two months and was

done once during the time the engine was in my charge. As a rule I maintain 23 inches of vacuum in this engine, which means that the brakes are very powerful. The brake-blocks on this engine did not require more frequent changing than on other engines. I consider that the brake power was very good. I never found the brakes leak off and the chamber needle always stood. The screw reversing gear worked very easily and I had no trouble with it. I booked my regulator "grinding in" twice during the period I have had the engine. There has never been any difficulty in working the regulator lever. The tendency of it is to close if kept open, and I always used a wooden wedge to keep it open. In my opinion the engine was in perfect working order when I gave it over.

H. S. Lenehan, guard.—I was head guard of 27 up which left Saharanpur on the 29th October. I was in the rear brakevan, and Kup Chand in the front one immediately behind the tender. At Sarsawa my train got a caution order to Kalanour, where the line-clear was to be picked up by the driver for Jagadhri. This is the usual procedure, as 27 up does not stop at Kalanour. At Sarsawa I signed the caution order and sent it to the driver by the second guard as usual.

On passing through Kalanour I saw some one on the engine of my train pick up the line-clear clip at the facing points. It was quite dark at the time and I saw this because the torch was held up near the clip. After picking up the clip the driver did not exchange the usual signal with me. It was 5-40 when we ran through Kalanour. I did not stop my train because the driver did not give me the signal, as it is a common thing for drivers to omit the giving of this signal. The collision occurred at 5-47. We must have been travelling at over 30 miles an hour at the time. There was no slackening of speed immediately before the collision. Driver Roberts was alive when I went to him on his engine. He did not make any statement to me with regard to the accident. He died about 10 minutes after the collision.

Fireman Lobo, who was badly injured and who has since died, made a statement to me in the presence of Mr. G. S. Ingram, (R. A. M. C., Muttra) immediately after the accident. He said the only light that was burning on the engine of the down special goods was the right hand buffer light and that it was burning very dimly. He saw this light only when the engines were about 20 yards apart.

I searched the engine of my train for the line-clears but could not find them on account of the debris.

K. M. Kirkhope, District Locomotive Superintendent, Saharanpur.—I find from the service sheet and personal cases of shedman W. M. Nelson that he was first engaged as a fireman, on 28th July 1905. The engagement order showed that he had passed the shunter's examination. He passed the driver's examination before Mr. H. H. Buckland, in July 1906.

He has had censures and punishments on several occasions since November 1905 for various offences, including neglect of duty, striking the staff and bursting points. He has never been punished for drink and I have every reason to believe he was a perfectly sober man.

I think he was quite competent as a driver, but I do not think he was a first class man.

From examination of the wreck after the accident, I am of opinion that all the gear for controlling the engine was in perfect working order before the accident. I consider that the brake blocks would not have had to be changed for about another three weeks had the accident not occurred. I am quite convinced from examination of the parts that the vacuum brake apparatus was in good working order, and that the brakes were hard on for at least a few seconds before the collision.

Karam Buz, pointsman.—When the down special goods ran through Jagadhri on the morning of the 29th October, I was standing on the platform. No signal arms had been lowered for her to run through. Both the assistant station master

and I went and stood down between the tracks and showed red lights to her to stop. The engine was showing a red head light, a green buffer light on the left and a red one on the right. I first heard a whistle when the engine was near the north facing points, and the whistling continued until the engine had gone up to the south points. She ran through the yard on the loop at about the speed of a mail train, and I could not discern any of the engine staff on account of the dust. Both the station master and I called out to the engine staff to stop, but we got no reply.

Kanhaiya, pointsman.—On the morning of the 29th instant I was sent out to the south points before the arrival of No. 27 up and the down special goods. The points were set, but not locked, for the main line, and all signals were at danger. The station master told me that these two trains would cross here. He told me not to lock my points until I received a signal from him. While I was standing at the points I suddenly heard the whistle of the down special goods from about opposite the station. The engine had no lights whatever, and I did not see it until it was close upon me. When I saw that she could not stop, I reversed the points to let her out on to the main line. She ran out at about the speed of a mail train. It was quite dark, and as I was close to the points I did not observe any of the engine staff. The driver whistled from about opposite the station up to the time he passed my points, after which he stopped. All signal lights in Jagadhri were lighted and were at danger when the down special goods ran through.

T.E. Collins, locomotive foreman, Saharanpur.—I have known engine No. P. 35 for some time. It has worked passenger and goods trains. I don't remember having had any complaints against it from drivers. I cannot give the details of the petty repairs that were carried out when the engine was last in shed. I cannot say when last the brake-blocks were renewed, but from inspection of them I should say they could be used yet for about two months.

I arrived at the scene of the accident about two hours after it occurred. I found the vacuum brake-blocks on the engine hard on and I could not shake them; the vacuum piston was up and projecting

about 6 inches of the portion that could rise; the mechanical gearing of the brakes was practically undamaged. I saw the blocks blue and skid marks on the wheels (driving and trailing); the brakes could not have been put on as they were, except by actual application of the vacuum apparatus.

In my opinion the inability of driver Nelson to stop his train when required is due to his probably having arrived in Jagadhri station without vacuum and at a high speed. It requires about 1½ or 2 minutes to create vacuum, and this would account for the delay in his getting his train under control.

Loboo Ram, mistri.—When engine No. P. 35 came into shed the driver booked "brake tie rods to be taken off." On examining the engine the defect found was that the piston had too great a stroke, the head of the piston rod jamming the head of the cylinder, so the brake could get no power. To correct this I tightened up the central rod three threads, that is about ¾th of an inch. I could have tightened it up another inch or inch-and-a-half if necessary.

In the course of a day I have to adjust five and six engines, and it is possible my statement is inaccurate.

C. H. Hill, fitter.—With regard to the following remark—"Both whistle cocks grinding, both injector steam cocks grinding, blower steam cock grinding, engine brake tie rods adjusting, brake power useless"—made by driver Nelson in the Saharanpur shed repair book on the 27th October regarding engine No. P. 35, I would explain that I did this by screwing up the central pull rod about half an inch. I could have screwed it up another thread in addition to this. By this means I reduced the stroke of the piston about four to five inches. The rule in the shed is that "the stroke of a piston should not go to six inches," as if they go to six inches it will touch top cover of the cylinder. I made no other adjustment in regard to the brakes. I renewed the brake-blocks of engine No. P. 35 about two months ago. These brake-blocks on goods engines generally last from four to five months.

When asking me to adjust his brake-blocks, driver Nelson told me that they wouldn't grip properly.

FINDING.

We, the undersigned, having carefully considered the evidence at our disposal, are of opinion that driver Nelson, either from sleep or mental aberration or some other cause, was not on the alert when he arrived at the usual place for shutting off steam, that is, at mile $\frac{1039}{13}$, and that he ran over the restriction at mile 1,040 at a speed far over 10 miles an hour; that he only became aware of his position when in Jagadhri yard, probably when passing over the facing points; that he then took a second or two to gather his wits; that he wasted time in opening and shutting his whistle and did not call for his hand brakes till he was well through Jagadhri yard. We believe the vacuum brake was applied and acted, but that it was applied too late.

We consider that the staff at Darazpur, Jagadhri and Kalanour are in no way to blame, and that the sole blame rests with driver Nelson.

U. C. SANDYS,

Member.

K. M. KIRKHOPE,

Member.

Having carefully considered all the evidence and examined the station books in this case, I am of opinion that none of the station staff at Darazpur, Jagadhri or Kalanour are to blame for this accident. The train staff of No. 27 up are also in no way to blame. I believe that driver Nelson, and probably also his fireman, Ahasin Singh, of the Rajpura down special goods, because they had been nearly 11 hours on duty, went to sleep some time after leaving Darazpur; that, owing to the long falling grade into Jagadhri their train gathered speed and entered the yard against all signals; that on account of the jolt the engine got on entering the curve at the facing points they were suddenly roused up to a sense of their dangerous position; and that the brakes when they were applied did not bite properly, which prevented them from stopping the train in time to avert the collision which took place at one mile from the centre of the station.

It is probable that driver Nelson when he came into Jagadhri was running without vacuum, and that he lost time in creating it before getting his engine under control; but even

then, had the brake-power been adequate, I am of opinion that he would have stopped his train in less than one mile from the station. I believe, therefore, that the principal causes of this accident were the overwork of the engine staff and the inadequacy of, or defects in, the brake-apparatus.

E. VERRIERES,
President.

As the members of the above committee were not agreed in their finding and in order to elucidate the question of the working of the vacuum brake on engine P. 35 of the down special goods, the Manager, North Western Railway, ordered a further enquiry to be held by Deputy Heads of Departments. This further enquiry was held at Jagadhri station on the 7th November 1907.

For the purposes of this enquiry the vacuum brake gear of engine No. P. 35 had been re-assembled on the engine, and this was thoroughly inspected, and the stroke of the piston in the vacuum cylinder tested by applying a lever under the piston rod and seeing how far it could be forced up into the cylinder. The evidence already taken was then read over and considered, and the following finding arrived at.

FINDING.

We have inspected the vacuum brake of engine No. P. 35, which worked the down Rajpura special goods, and have carefully considered the whole of the evidence taken at the enquiry held into this accident by the district officers, and are of opinion that driver W. M. Nelson is solely responsible.

Our reasons for arriving at this conclusion are :—

- (a) that driver W. M. Nelson made no report at Rajpura after the previous trip that his brakes were out of order; it must, therefore, be assumed that they were in proper working order when he left Rajpura.
- (b) that driver W. M. Nelson had no difficulty in pulling up his train throughout the journey, even when the load behind the engine was 35 vehicles, which was the case from Rajpura to Umballa Cantonment, the number of vehicles from that station onwards, and at the time of the accident, being only 19.
- (c) that our inspection of the vacuum brake, the parts of which have been assembled for our inspection, shows it to be in working order.

We believe the accident was brought about by driver W. M. Nelson's not being on the alert, possibly asleep, when entering Jagadhri yard, and that he was probably working his engine without vacuum.

We consider that driver W. M. Nelson was not overworked.

H. A. CAMERON, CAPT., R. E.
Member.

A. C. CRIGHTON,
Member.

E. W. WALTON, LIEUT.-COLONEL, R. E.,
President.

Remarks by the Manager, North Western railway.

In forwarding copies of the above enquiries and findings the Manager remarks that he agrees with the finding of the Deputy Heads of Departments and with the finding of the majority in the first enquiry. The second enquiry was convened chiefly to elucidate the question regarding the working of the vacuum brake.

Summary by the Government Inspector of Railways.

Briefly summarising certain points which have not been explained in the above proceedings; it may be stated that :—

The line from some three miles north of Jagadhri right up to the site of this collision, is practically level.

Thus, beginning at mile $\frac{1038}{16-17}$ there is a falling gradient of about 1 in 1,000 for two and a half miles, followed by a stretch of level for 1,456 feet; there is then a short length of falling grade of 1 in 287 feet for 1,500 feet which ends 372 feet inside the facing points. From this point on through the station yard, for a distance of 3,500 feet, there is a very slight falling gradient of 1 in 1,129 and for the remaining 2,500 feet up to the site of the accident the line is level.

There is a slight curve just outside the north end of Jagadhri station yard, and near the south outer home signals there is another slight curve, beyond this the line is perfectly straight for some miles.

The total fall over these four miles amounts to 21.29 feet, or an average gradient of about 1 in 1,000 throughout. The bridge referred to in the evidence is that over the Jumna canal about 200 yards outside the south facing points of Jagadhri station yard.

An examination of the track between Jagadhri station and the site of the collision showed, first distinct signs of skidding 330 feet from the site of the accident.

An examination of the wheels of engine No. P. 35 also showed signs of skidding on them. The engine and tender and brakevan brake-blocks all showed signs of having been applied, though not for a lengthened period, or as though they had been very powerfully applied.

There was plenty of metal in all the actual brake-blocks, and especially in the case of the tender brakes which were practically new.

There were slightly blued patches in places on the engine wheels and on two of the engine brake-blocks.

Immediately after the accident the regulator of engine No. P. 35 was found bent and jammed over in the full open position, the engine was in full reverse gear and the vacuum brake-blocks were clutching the engine wheels.

After having re-assembled the vacuum brake gear (which was practically undamaged) on engine No. P. 35 it was found, on applying a lever consisting of a short length of rail under the piston of the vacuum cylinders, that the throw of the piston rod was almost five inches. The pressure actually applied on the piston in this case must have approximated one ton.

The actual throw allowed for the piston rods in the vacuum cylinders is six and a half inches. An examination of the engine brake adjusting rods showed that the centre adjusting rod, referred to in the evidence of fitter C. H. Hill and mistri Loooo Ram, had been shortened to its utmost limit, in so far as was possible by turning the adjusting nut.

And an examination of the Saharanpur shed repair book showed the following entries against engine No. P. 35 as having been made by driver Nelson, with the attached remarks.

Engine.	Date.	Repairs required.	REMARKS.
P. 35	24-10-07	Engine and tender brakes taking up and adjusting.	} Taken up.
P. 35	27-10-07	Engine brake tie-rods adjusting, brake power useless.	

Remarks by the Government Inspector of Railways.

Having carefully considered all the above points, together with the evidence taken, I am of opinion that driver Nelson of the down special goods train from Rajpura must be held primarily responsible for this accident.

I am further of opinion that at the time of the collision the down special goods train was still travelling at a speed of 15 to 20 miles an hour, and that the engine was only reversed just a few seconds before the collision.

Driver Nelson must be held primarily responsible in that he failed to keep his train under proper control when approaching Jagadhri station, and not only passed the outer and home signals at danger but ran through the yard at such a speed (not less than 30 miles an hour) that he had not brought his train to a stand even at the time of the collision, about 1 mile beyond the centre of Jagadhri station yard.

The points, therefore, which require consideration are the possible causes which led to driver Nelson thus losing control of his train.

There is one point on which all members of both committees are agreed, namely, that driver Nelson entered Jagadhri yard against signals owing to not being on the alert and possibly asleep, and that he was first aroused to his dangerous position by feeling the lurch as his engine entered the facing points and was turned on to the loop line; and in this opinion I concur.

Accepting this, there still remains to be considered how it was possible for driver Nelson to have proceeded with his train for a mile further without having brought it to a stand, for even allowing for damp and slippery rails, had his engine vacuum brake been in working order and efficient, it should have been possible for him to have brought his train to a stand within 800 to 1,000 yards or in little more than half the distance he actually ran.

It is I think obvious that his failure to do this must be attributed to one of two causes, namely:—

Either (i) he was working without vacuum, or (ii) the brakes were for some reason ineffective and did not grip properly.

In either case he did not find out what was the matter soon enough to take the necessary steps to avert the collision.

In regard to the reasons given by the committee of Deputy Heads of Departments for concluding that driver Nelson was working without vacuum, I am unable to see that there is any force in (a) and (b), but I agree with their remarks under (c) in so far as was possible to judge from an inspection of the re-assembled parts of the vacuum brake gear of engine No. P. 35.

In regard to (a) I regard it as an assumption, carrying no great weight, and in regard to (b) it may be noticed that though the load behind the engine from Rajpura to Umballa consisted of 35 vehicles, two of these next the engine were a first and a second class coaching vehicle, probably fitted with a vacuum brake and connected with the engine vacuum pipe, whilst it is not clear that there were no other vacuum braked vehicles on this train during this portion of the run connected with the engine vacuum pipe; in any case two vacuum braked passenger coaches would have given the driver a considerable additional brake power.

As opposed to the conclusion that the driver was working without vacuum, or as affording reasonable grounds for assuming that the brakes may not have been working effectively, we have:—

(i) The evidence of fireman Subrati of engine No. P. 35.

(ii) The entries made by driver Nelson on the 24th and 27th October, respectively, in the Saharanpur shed repair book and between which dates he ran a total out and home run of about 196 miles only.

And (iii) the fact that the central brake rod had been shortened as far as was permissible by the adjusting nut which was the method of adjustment made according to the evidence of the fitter and mistri in the Saharanpur shops.

I am, therefore, I regret, unable to express any definite opinion as to whether driver Nelson was unable to stop his train within a mile of Jagadhri station yard owing to his working without a vacuum or owing to a partial failure of the vacuum brake.

It may be remarked that this most reprehensible practice of drivers of working without vacuum, brought to light at this enquiry, can only be due to two causes: firstly, with a view to saving steam and thereby coal with the object of increasing their coal premium, and, secondly, possibly with a view to saving wear and tear on brake gear and jarring the machinery of their engines. In neither case is the object to be attained deserving of a moment's consideration, and steps should be taken to put a stop to this practice. Two minor points which, though not directly the cause of this accident, would no doubt have materially lessened the force of the collision, if not permitting its being entirely averted, are:—

(i) That though there were four vacuum braked vehicles on the down special goods, not one was next the engine at the time of the collision and the additional brake power thus available was entirely useless.

(ii) That there was only one dim red buffer light on the engine No. P. 35 burning at the time of the collision, and possibly a dim green one. To be effective at a distance, a really powerful head light is required on all engines. Whether electricity, gas, or oil is the illuminant is immaterial so long as it throws a powerful light. The head and buffer lights on many of the North Western railway engines cannot be distinguished for more than 200 to 300 yards on a dark night.

The omission of the guard and driver of No. 27 up passenger to exchange signals on passing Kalanour station may be noted, and the evidence of the guard of this train, in which he admits that such omission is customary, may be noted for necessary action by the proper authorities.

In conclusion, I would add that I do not consider that driver Nelson had been overworked, or that his duty hours were unduly long, nor does it appear that the station staff at Darazpur, Jagadhri or Kalanour were in any way responsible for this accident.

W. D. WAGHORN, MAJOR, R. E.,
Government Inspector of Railways.

Remarks by the Senior Government Inspector of Railways, Lahore.

I agree with the finding recorded by the Deputy Heads of Departments, and am of opinion that driver W. M. Nelson is solely responsible for the accident.

LAHORE;
18th November 1907.

H. SAVORY,
Senior Government Inspector.

Appendix XXI to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

Report of the proceedings of committee of enquiry which assembled at Ludhiana station, North Western railway, on the 27th, 28th and 29th December 1907, to enquire into the circumstances attending a collision between No. 5 up and No. 12 down passenger trains at mile 935-2, between Ludhiana and Ladhawal, at about 4-5 hours, on the 25th December 1907, an accident unfortunately attended by a large loss of life.

The committee was composed of the following officers :—

K. M. KIRKHOPE,	District Locomotive Superintendent	. . . . .	President.
U. C. SANDYS,	District Traffic Superintendent	. . . . .	} Members.
B. E. LAWRENCE,	Assistant Engineer	
P. J. FAGAN,	Deputy Commissioner	. . . . .	} Present.
J. F. REHILL,	Superintendent, Railway Police	

On the 28th and 29th Mr. Lawrence's place was taken by Mr. E. J. Verrieres, Executive Engineer.

DESCRIPTION.

3. On the morning of December 25th, 1907, at mile 935-2, between Ludhiana and Ladhawal, a collision occurred between 5 up passenger and 12 down passenger trains, both carrying line-clears, at about 4 hours, resulting in serious loss of life and of railway property.

The casualties were as follows :—Killed 20 (including 6 of the train staff), injured 8 (including 4 of the train staff); of these 8 injured, one passenger is since dead.

The damages to rolling stock are estimated at about 1½ lakhs of rupees. The damages to the permanent-way were trifling. The line was blocked and transshipment was carried out for a period of about 40 hours. Telegraphic communication was interrupted for about 9 hours.

The line at the site of the accident is on a curve and on a bank of about 15 feet and there is a good view along the line in either direction.

EVIDENCE.

Nur Ahmad, signaller, Ludhiana.—Ladhawal made line-clear enquiry for 12 down. I received his enquiry, and having written it out made it over to the A. S. M. (assistant station master). Reply was given to him according to the written instructions of the assistant station master. Then I was called by Dhandari Kalan for enquiry of 5 up passenger and I took down his enquiry in writing and made it over to the assistant station master. The written reply of the assistant station master was signalled to Dhandari Kalan by me. I then attended to other instruments. I got departure of 5 up from Dhandari Kalan. After this the assistant station master gave me written cancellation enquiry for Ladhawal to detain 12 down, which I signalled. Reply was received from Ladhawal that 12 down would be detained at his and the line was clear for 5 up. This message I made over to the assistant station master. In three or four minutes the assistant station master gave me written "out report" of 5 up from Ludhiana for Ladhawal. I signalled this "out report" to Ladhawal at 3-52. Ladhawal acknowledged the "out report" in the usual way. On receipt of the "out report" of 5 up at Ladhawal, he asked me for "on arrival line-clear" for 12 down. I received this fully and made it over to the assistant station master in writing. Reply was given to Ladhawal as written out by the assistant station master. I went on with other work. No "out report" was received from Ladhawal for 12 down, and at about 4 hours there was a contact on Ladhawal train wire and Phillour through wire. I am quite sure Ladhawal asked for "on arrival of 5 up line-clear for 12 down."

I sent no message, practice or otherwise, to Ladhawal after the "out report" of 5 up. On the night in question Naubria Ram did not send me any messages regarding 5 up and 12 down.

Shiv Chand, relieving station master, Ludhiana.—I came on duty at 0 hours on the 25th. Line-clear enquiry was tendered to this station by Ladhawal for 12 down passenger, received by the signaller and given to me. Reply was given that line was clear for 12 down passenger. Line-clear had been given to Dhandari Kalan for 5 up passenger. I had arranged to cross these two trains at my station, but in the meanwhile 5 up left Dhandari Kalan and arrived at my station; no departure of 12 down from Ladhawal had been received here, and 5 up was waiting at my station. I therefore wrote out cancellation enquiry for 5 up and gave it to the signaller. A reply was received from Ladhawal that 12 down would be detained there and line was clear for 5 up passenger. I then issued the line-clear and started 5 up passenger on the proper authority. I received no "out report" for 12 down from Ladhawal. On starting 5 up I came into the office and wrote out departure of 5 up in my book and gave it to my signaller to send on to Ladhawal. After this the signaller received an enquiry from Ladhawal and gave it to me. This enquiry was for 12 down passenger and asked if line would be clear for 12 down passenger on arrival of 5 up passenger at his, to which I replied in the affirmative.

Naubria Ram, signaller, Ladhawal.—I was on duty from 2 hours to 8 hours on the 25th. I was

working on the Phillour instrument, and with reference to 12 down I neither received nor sent any line-clears. The assistant station master was working on the Ludhiana instrument. When 12 down arrived at Ladhawal the assistant station master said "I have received a reply from Ludhiana, regarding my request to detain 5 up at his and to let 12 down come on." He said he had filled in the private number and asked me to fill in the rest of the form. I said when he had already received the "out report" of 5 up from Ludhiana "Why should I do as you request." He replied that the Ludhiana signaller had informed him that 5 up had not yet left and to fill in the form quickly, so that the guard should not see the blank form. I then filled in the form except the figures of the private number and the signature, which were written by the assistant station master. I neither received nor sent any message to Ludhiana regarding 12 down or 5 up. At the time I filled up No. 56 B. (reply from Ludhiana to cancellation message 56 A.) the line-clear for 12 down had been torn out.

Muhammad Rashid, assistant station master, Ladhawal.—I came on duty at 0 hours on 25th. At about 3-12 hours, Phillour made an enquiry for 12 down on arrival of 77 up goods. I gave him conditional reply and at the same time I turned to make an enquiry for 12 down from Ludhiana, who gave me line-clear. After about half an hour Phillour had not started 12 down from his. Then Ludhiana made cancellation enquiry and asked me to detain 12 down at mine, which my signaller (Naurhia Ram) received after writing line-clear for 5 up. I gave up the reply book to my signaller to despatch it to Ludhiana. Ludhiana gave departure of 5 up at 3-47, on which I at once sent my enquiry to Phillour. Then I went out to stop 12 down, and having done so by means of hand signal, lamps and whistle, I went into the office when signaller Naurhia Ram informed me that Ludhiana had not started 5 up. I instructed him to ask Ludhiana if 5 up had not left from his. The signaller replied that signaller Nur of Ludhiana had told him to cancel the line-clear Ladhawal had given for 5 up and to apply for a fresh line-clear for 12 down. This request was made to Naurhia Ram on the instrument, but not recorded. I then wrote my cancellation enquiry (No. 56 A) and gave it to my signaller. Then I went out to see to the passengers and when I returned to the office Naurhia Ram told me that line-clear had been received for 12 down and 5 up had been detained at Ludhiana. I then wrote the outer foil of line-clear for 12 down and gave it to the 1st guard. 12 down left at 4 hours and I gave "out report" immediately on its departure. Ludhiana did not reply. I then gave the written "out report" to Naurhia Ram to transmit it to Ludhiana *via* Phillour. I received out report of 5 up from Ludhiana (No. 18 C.) at 3-48. The station books were now examined.

Q.—Why did you despatch No. 56 A. at 3-55 after having received No. 18 C. at 3-48?

A.—Because I had heard from Naurhia Ram that Nur, a signaller of Ludhiana, had told him that 5 up had not left Ludhiana. I did not test this information, but sent 56 A. which I considered sufficient. This was despatched at 3-57, though given to the signaller by me at 3-55.

Q.—Having received an "out report" and a line-clear from Ludhiana, both bearing the same No. 11, why did you not refer the matter?

A.—I was attending to a passenger train and I was under the impression that his No. 11 had been cancelled.

Q.—Who wrote the reply received from Ludhiana, that is, 56 B?

A.—Signaller Naurhia Ram wrote it all including the private number 22. I signed only.

Samuel Bull, guard, 5 up passenger.—I was in charge of No. 5 up Hardwar-Lahore passenger, which left Saharanpur on December 24th, 1907, at 20-59 hours or 34 minutes late. At 3-42 we arrived at Ludhiana and while on the platform, after finishing my work at the brake van, the assistant station master, Shiv Chand, brought the line-clear and

handed it to my second guard, Ram Chander. I did not see the line-clear myself, but saw the assistant station master hand a slip of paper that looked like the ordinary line-clear form in use to the second guard, but the driver did not start off immediately from some causes unknown; 5 minutes were lost at Ludhiana and booked to "Waiting for driver to start." The driver was on the engine, for I walked up to see what was the delay. I did not speak to him at the time. There is no refreshment room at Ludhiana. After starting and giving the "all right" signal I started filling up my train papers. On the spring of the curve I felt the vacuum brakes being applied with full force and heard the danger whistle sounded. I looked out and saw one red light. Thinking it was the distant signal of Ladhawal, I resumed my work of filling up my papers, when I heard a dreadful crash and was knocked down on my right side. The train I was in did not come to a stand, but was moving very slowly, in fact on the point of coming to a stand-still. When I came to after a few minutes, I found all lamps out. I got down and went to see what had taken place and found that a train had run into mine (No. 5 up Hardwar passenger). A telegram was at once sent to Ladhawal by relieving station master, Diwan Chand, who was a passenger in my train. I did all I could to assist those in difficulty until assistance arrived.

W. O'Connor, driver.—I was the driver of 5 up from Saharanpur to Phillour on the 24th with a load of about 17. My train was running late, leaving Ludhiana at 3-52 on the 25th with "clear" line-clear for Ladhawal. When about 150 yards from Ladhawal outer signal, I noticed a red light which I took to be the outer signal and I shut off steam. I opened the whistle and immediately afterwards saw 3 head lamps, I applied the vacuum brake, pulling the handle "full on." It immediately occurred to me it was 12 down approaching and I lent out between the stanchions of engine and tender to see whether the train had drawn up. While in this position the collision occurred, and I was thrown out down the embankment. At the time of the collision my train was travelling at about 10 miles per hour. I heard no whistling and nothing to indicate the approach of 12 down. The outer signal was against me, and I did not see the home signal.

I have all my line-clears with me and now hand them over; 23 in all. I personally examined my head lamps before leaving Ludhiana and they were all burning brightly. When I applied the vacuum only the train pipe needle dropped; my vacuum was in perfect order. From the time I applied the vacuum, I am of the opinion my engine wheels skidded. There were no decorations on my engine.

Valentine Baxter, guard, 12 down passenger.—I came on duty about 2 hours, on morning of December 25th, at Phillour, to work 12 down passenger to Saharanpur. 12 down left Phillour at 3-45 and came to a stand at Ladhawal outer signal for about 5 minutes. The outer signal was then lowered and my train drawn into the station on the main line. I got out of my brake and ran to the offices and there met the driver and second guard. The assistant station master was just coming out of the door of the office as I came up. I said "What about line-clear, Babu?" He said "I have got line-clear now. I first gave line-clear to 5 up, but I have now detained her." I booked 8 minutes for line-clear, i.e., 5 minutes at outer signal and 3 minutes at station. When I first came up to the office the assistant station master handed over the line-clear and I gave it to the driver, and as soon as the starting signal was lowered the driver got on his engine and started. We left Ladhawal at 4 hours exactly by my timing and the accident must have occurred 4 or 5 minutes later. I was knocked insensible in my brake van, and when I came to I immediately got out and went back and protected my train.

William Michael Fogg; 1st fireman of 12 down.—Our train left Phillour late. I attended to my head lamps before starting and they were all burning brightly.

FINDING.

We, the undersigned, having carefully considered all the evidence given in this case, and having examined the books of the stations concerned, are of opinion that this accident was brought about by the assistant station master of Ladhawal (Sheikh Muhammad Rashid) permitting No. 12 down passenger to proceed towards Ludhiana, while No. 5 up passenger was still on the section; this permission was given by the assistant station master of Ladhawal after he had received the "out report" from Ludhiana of 5 up passenger and before that train had arrived at Ladhawal. We believe that the station staff of Ludhiana, the staff of No. 5 up, and the staff of No. 12 down are in no way to blame for this accident, that the line-clear books of Ludhiana are correctly and properly written up, that in their anxiety to prevent any delay to No. 12 down passenger the assistant station master (Sheikh Muhammad Rashid) and signaller (Nauhria Ram) of Ladhawal between them confused an "on arrival" for a "simple" line-clear, the former having been actually signalled from Ludhiana. (The driver of 12 down on receipt of this simple line-clear left Ladhawal immediately for Ludhiana.) We also believe that when the mistake was discovered by Sheikh Muhammad Rashid and Nauhria Ram, they between them filled in the details on page No. 56 of the Ladhawal enquiry book.

The assistant station master of Ladhawal (Sheikh Muhammad Rashid) is guilty of having broken Rule No. 92 (a), Chapter V, of the General Rules for Indian Railways.

Remarks by the Manager.

I agree generally with the finding of the Committee, in that the assistant station master Sheikh Muhammad Rashid, of Ladhawal, was mainly responsible for the accident, and he is being prosecuted.

I am further of opinion that Nauhria Ram, signaller of Ladhawal, is also seriously to blame by reason of his filling up what was really a fictitious line-clear, on the orders of the assistant station master, without first satisfying himself that the message had been properly received and recorded, and I have little doubt that he afterwards with the assistant station master concocted the messages which were alleged to have been received from Ludhiana. This man is also being prosecuted.

I do not find anything definite to support the Committee's opinion that a conditional line-clear may have been taken for an absolute one.

Every endeavour is being made for the early introduction of the Tyer's Tablet Instruments, which have only recently been received from England on the busy sections of line between Amritsar, Sabaranpur and Ghaziabad.

Remarks by the Senior Government Inspector of Railways, Lahore.

5 up passenger, due at Ludhiana at 2-44 hours, and 12 down passenger due at 1-47, were running late, and calculating that the crossing would take place at Ludhiana, Ludhiana gave Ladhawal line-clear for 12 down. Later on, finding that time would be saved by the crossing being made at Ladhawal, Ludhiana cancelled its line-clear for 12 down and got a line-clear for 5 up: 5 up arrived at Ludhiana, the line-clear was given to the driver, and the "out report" sent to Ladhawal.

After the "out report" was despatched, 5 up was delayed at Ludhiana, and the signaller, stopping an enquiry message from Ladhawal, stated the fact. The station master on duty at Ladhawal, ignoring the "out report" which could only be cancelled by Ludhiana and prior to the cancellation of which no action could be taken, told his signaller to get line-clear for 12 down, went out, busied himself with the train, and when he went back to the office assuming a line-clear had been obtained, called for the line-clear book, wrote up or completed an unconditional line-clear for 12 down and started the train which ran into 5 up about a mile outside his station.

Owing to the heavy traffic on the single line between Amritsar and Sabaranpur, which always heavy, was at the date of the accident further increased by the movement of food stuffs to the famine districts of the United Provinces, every effort was being made to work trains through as rapidly as possible and fear of punishment for avoidable delays was possibly another factor helping to cause this accident.

The tablet system of working is being installed and is nearly ready for use on this section, and, when in working order, will prevent an accident of this description, but the line-clear system in use at the time of the accident should, with the most ordinary attention to its well-known rules, have rendered the accident impossible.

I have taken up the question of the possibility of the conditional and unconditional line-clear forms being mistaken for one another, but I do not consider that there was any mistake made between the two in this accident—the man who writes up the line-clear cannot mistake the one for the other.

There can be but little doubt that after the accident the Ladhwal books were tampered with, and in the Ludhiana books the out-report timing was, I think, altered.

Summing up.

I find that the station master on duty, assistant station master Sheikh Muhammad Rashid, Ladhwal, is responsible for the accident and that his signaller, Nauhria Ram, shared in the issue of the false line-clear.

LAHORE;
The 17th January 1908.

H. SAVORY,
Senior Government Inspector.

Appendix XXII to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

Report of the proceedings of a committee of a enquiry which assembled at Fyzabad station, Oudh and Rohilkhand railway, on 15th January 1907, to enquire into the accident to No. 10 down fast passenger train on the night previous.

The committee was composed of the following officers:—

F. D. FOWLER, <i>Engineer-in-Chief, O. and R. ry.</i>	. . . . .	... President.
P. RAINIER, <i>Traffic Superintendent</i>	. . . . .	} Members.
H. M. CARDEW, <i>Locomotive Superintendent</i>	
MAJOR C. S. ROSE, R. E., <i>Government Inspector of Railways</i>		. Present.

DESCRIPTION.

No. 10 down fast passenger, consisting of 8 coaches and 2 brakes, marshalled as under—

- (i) engine and tender, class H. P., No. 245 ;
- (ii) brake-van ;
- (iii) 3rd class ;
- (iv) through carriage, 1st and 2nd class composite ;
- (v) two 3rd class ;
- (vi) 3rd class postal composite ;
- (vii) intermediate ;
- (viii) two 3rd class ;
- (ix) rear brake-van ;

arrived at Fyzabad at 23-15 and was received on platform No. 1.

Line-clear for Ranapali was given at 23-23 and the train left the station at the same time. The starting signal was duly lowered and the train passed the advanced starter which was at danger and took the cross-over road 8-11, on plan, to the dead-end at the east end of the station, and ran through the buffer stop, over the road and into the gate-lodge on the far side of the road, demolishing the gate-lodge and burying in the ruins two gatemen who were killed instantaneously. The engine tender and the leading brake-van were badly derailed, but no serious damage was done to either permanent-way, engine or rolling stock. The driver, fireman and guard were uninjured, and no passenger was hurt.

EVIDENCE.

B. M. Shaw, driver.—I was driver of No. 10 down passenger on the night of the 14th. After receiving line-clear, the starter at the end of the platform was lowered and I started my train. I exchanged signals with the guard and while engaged in setting my lever properly, I suddenly felt a shock. I saw danger signals ahead after passing the starter but did not know that any of them referred to me, and I was not looking out for any other signals. I was under the impression that the starter was the only signal I had to work to. I did not hear the east cabin signal man shout out to me. I saw a green light shown towards me from the east cabin. This light is always shown. The level-crossing gate was open for my train. I knew this by seeing a white light by the side of the gate.

Q.—How were you instructed in the signalling of the yard?

A.—I have seen no rules regarding the signalling of Fyzabad station, nor have I received any instructions on the point. I get orders and circulars when such are issued from the locomotive foreman, Lucknow. I always sign for such orders when I get them. I am sure I have not signed for any orders

respecting the working of Fyzabad yard. I have got a book of working instructions, but not with me.

Note.—The book of working instructions, was issued on 1st January 1904. The addendum "Rules for working Fyzabad station interlocked yard" was issued on 18th September 1905.

(On being shown the addendum.) I do not think I have ever seen it before.

Ever since I have been fireman, I have constantly run over the loop. I have driven 10 down several times. When the station was first interlocked I made no enquiry as to what the new signals meant nor did any one instruct me except the station master, who told me about the starter. The station master said nothing about any other signals. The station master or the assistant station master has told me from time to time that I am to start when the starting signal is lowered.

I did not notice the engine taking the cross-over road to the dead-end, being busy with my lever at the time.

I closed my regulator when I felt the shock. I had no time to put on my vacuum brake. I was

going from 15 to 20 miles an hour. I received no injury from the accident.

Re-called.—I came on duty about 18-50 on the 14th. I came off duty at 16-0 on the same day. I left Lucknow at 7 A.M. on the 14th to work a troop special to Cawnpore, and before that I was off duty from 24-0 on the 13th to 7 A.M. on the 14th.

Cross-examined.—The plan of Fyzabad yard was shown to me by the committee, and I was requested to point out the positions of the starter and advanced starter. I was unable to point out these or any other signals on the plan. I was also shown, by the committee, the instructions for down main line trains to passenger yard, on page 4 of the rules for working Fyzabad yard, and I understand now that there is a starter near the platform and an advanced starter further on, but I did not understand this at the time of the accident.

I received the book of Working Instructions from the locomotive foreman (Mr. Leach, I think) some three or four years ago.

I do not remember any occasion on which the locomotive foreman's peon has asked me to send in my book.

I have received a copy of the General Rules, but I have not read Rule No. 147. I sometimes take the book of Working Instructions with me on the train, but I usually leave it at home. I left it at home on the 14th January.

I received notices affecting the working of the line in the notice book, which is shown to me by the peon. I always sign the book after reading the notice. I received the *Gazette* every week. I read the notices of cautious driving, but I do not remember reading para. 639 of *Gazette* No. 4 of 1905.

I understand the expression "knowing the road" to mean that I know the distant and home signals, and the home starter.

I was passed as a driver by Mr. Dudgeon, district locomotive superintendent.

About a year ago I was asked if I knew the road between Lucknow and Moghal Serai. I certified that I did know the road.

Further cross-examination.—I did not understand when I stated on the 14th, that I had seen no rules regarding the signalling of Fyzabad station that the question referred to *addendum* No. 15 of 1905. I have received the *addendum* No. 15 of 1905 called "Rules for working Fyzabad interlocked station" containing the diagram of the yard.

C. McEnnis, locomotive foreman, Lucknow.—The *addendum* to the Working Instructions, dated 1st January 1904—"Rules for working Fyzabad station interlocked yard"—were received by me on the night of the 28th September 1905.

On receipt of these rules I caused one copy to be pasted into the "drivers' notice book." B. M. Shaw was under my orders on this date. B. M. Shaw signed the "drivers' notice book," and received a copy of the rules for working Fyzabad station, but I cannot say on what particular date he received it.

I received a notice from Running Superintendent, dated 29th September 1905. On receipt of this, I prepared a manuscript form "We do certify that we are acquainted with the road on the sections mentioned below." I obtained B. M. Shaw's signature to the run "Lucknow to Mogal Serai, *via* loop and chord." "Knowing the road" is a technical term used in the locomotive department, and includes a knowledge of the significance of the different signals which the driver will have to pass.

I received a copy of No. 40, of the Oudh and Rohilkhand railway *Weekly Gazette* of 1905. I issued a copy of this *Gazette* to all drivers under my orders, including B. M. Shaw. A receipt book is kept up in my office in which drivers sign when receiving *Gazettes*.

The "drivers' notice book" and the peon book in which receipts are taken for the *Weekly Gazette* are both missing for the year 1905. I have got the "drivers' notice books" from September 1902 to February 1904, and from the 9th November 1905 to

the 10th March 1906. I have not got the peon book for 1905. We do not keep these more than three months.

About 8 A.M., on the 16th January 1907, I was sent for by the assistant locomotive superintendent who ordered me to go down to B. M. Shaw's house and to bring him with me, with his book of Working Instructions. He accompanied me to the office with his book. It had no name on it and it contains no correction slips except those issued with the book. The book appears to me to be a new one. Before the books are issued to the drivers it is customary for the clerk to write their names on them. (Several drivers' books were shown to the committee containing the *addenda* for Fyzabad as well as other *addenda*, and the names on them appeared to be all in the same handwriting.) Exhibit E* contains B. M. Shaw's signature for a book of Revised Working Instructions. This exhibit is dated 11th March 1904.

The usual procedure, when receiving *addenda* or *corrigenda* to the General Rules or Working Instructions, is to send a peon with a memo. to the different drivers calling in their books. On receipt of the books, the rules are pasted in them and the books are then returned to the drivers. No receipt is obtained from them. In the case of the rules for working Fyzabad interlocked station this procedure was not followed because it was necessary to communicate the rules to the drivers at once. In the case of European drivers I do not explain to them the rules for signalling of stations. I expect them to understand them from the descriptions and plans. In the case of drivers who cannot read English, there is a native school master who translates the rules, and I myself instruct them in the signalling with the aid of the plans.

Driver B. M. Shaw, before starting on the Cawnpore troop special, requested that, on his return to Lucknow, he might be permitted to work No. 6 down (fast passenger *via* chord). I had to arrange for two of my drivers to attend the Ambulance class at Charbagh on the 15th. Driver Sharp was booked to drive 10 down, but I had to keep him back for the Ambulance class and send B. M. Shaw with 10 down. No. 6 down leaves Lucknow at 19-40, and No. 10 down at 19-50.

B. M. Shaw signed the notice for driving 10 down without remark. When drivers require a rest they endorse the fact on the notice, and rest is usually allowed to them when asked for. (Several notices were shown to the committee with "rest" endorsements on them as well as the notice given to B. M. Shaw, on which no request for rest was made.)

Imam Bux, fireman of 10 down passenger.—At the time the engine left the main line, I was firing and did not notice the fact. I knew nothing of anything being wrong till the accident happened.

Surjoo, cabin porter, Fyzabad.—I worked on the 14th from 12 to 18 hours. From 18 to 24 hours I was off duty. I was asleep in the cabin at the time of the accident, and I woke after the accident occurred. When I woke, Muthra was standing at the window and shouting.

Mahomed Husain, assistant station master.—I have been assistant station master, Fyzabad, about five years.

I was on duty from 22-0 on the night of the 14th January. Before I gave line-clear for 10 down some shunting was going on at the east end of the yard. The shunting was finished before I gave line-clear for 10 down. I know this because I was in the yard and saw for myself that shunting was finished.

I received No. 10 down on No. 1 platform, and immediately on her arrival I pulled the starting lever in my office. After doing this I asked cabin jemadar of east central cabin if he had received the key, and he gave me an answer in the affirmative.

The telephone instrument in my office is connected with both the cabins. I got no answer from the jemadar of east cabin, and I attributed this to a defect in the instrument, because the instrument is

often defective. Formerly there was one telephone for each cabin, but some four or five months ago the third instrument was removed, and now there is one telephone to west cabin and one which serves east cabin and east central.

When I could get no answer from east cabin, I asked jemadar of east central if he had given slot to east cabin, and if he had been assured that advance started was lowered. He replied that he had given slot to east cabin and that everything was right. I then came out of my office and found that the starter was lowered. I also wished to see if advanced starter was lowered, but I could not see because the engine of 10 down was smoking, and there were about 15 or 16 wagons in the north goods shed which obscured my view. I had line-clear written ready and gave it to the head guard, Green, and started the train.

We always ask east cabin, but it often happens that we get no reply and in those cases we then ask east central if he has heard from east cabin that the advance starter has been taken off, and then we are satisfied. We make these enquiries after pulling the lever in the station master's office. I understand that my responsibilities end on seeing that the starter signal is lowered, and I only look for the advance starter as an additional precaution.

I have never given any instructions about signals to driver Shaw, or to any other driver.

Bhuggoo, gunner, Fyzabad.—I was on duty at 10 o'clock on the night of the 14th. I came off duty at 7 o'clock in the morning of the 14th. At about 10 P.M. I came on the pilot along the main line past the east cabin and stopped beyond points No. 8. There were two wagons attached. I shouted to Mathra (east cabin signalman) to set points 7 and 8 as I wanted to go to the south goods yard. The cabinman set the points and I took the wagons and attached them to 125 up goods on No. 4 line.

After this, I attached a brake-van which was standing on line No. 3, and shunted it on to the rear of an up Allahabad special standing on No. 2 line. I then took the pilot engine via line No. 3 to the west end of the yard. After this I attached two officers' carriages to No. 10 down. I told the cabinman that after attaching the trucks to the goods train standing on No. 4 line south goods yard, I will go away by line No. 3 as I have some carriages to attach to No. 10 down. The cabinman replied "you can go away, all right."

Budal, shunting driver on pilot engine.—I came on duty at 10 P.M. The gunner came on to my engine and told me to attach two wagons and bring them on to the main line to the east cabin. I attached the wagons and came to the east cabin about 22-20. The gunner shouted to the cabinman to set points 7 and 8 for goods yards. After receiving a green signal from the cabin I took my engine and the two wagons to the goods yard and attached the wagons to 125 up goods. I did not again return to the east cabin, but went to the west end of the yard.

Baldeo Tewari, east central cabin jemadar.—I came on duty at 10 o'clock on the night of the 14th, and I received the key for the starting signal No. 1 from the station master's office at about 5 minutes to 11. After receiving key I pulled levers Nos. 10 and 11 and next No. 1 and finally No. 4. After pulling off the slot No. 4 I did not see the advanced signal lowered. I then called up east cabin on the telephone but got no reply, and immediately after I had pulled off my signal the train started. I then telephoned to the station master but got no reply.

It has never happened before that the advanced starter has not come off after pulling my slot.

After the train had left Sohwal, the station master asked me if all was right, and I said yes. I then got the key for starting signal. I received no further enquiry from the station master on the telephone.

My telephone was in good order; it sometimes gets out of order.

After the train had passed my cabin, I saw a green light in front of east cabin, but no red light waved nor did I hear any shouting.

Muthra Pershad, east cabin jemadar.—I came on duty at 18 hours on the 14th January. My hours of duty are from 6 A.M. to 10 A.M. and from 6 P.M. to 10 P.M. My relief came late on the 14th, and I was on duty till 24 hours instead of 22 hours on the 14th.

At about 10-30 on the 14th the gunner on the pilot engine passed my cabin on the main line. He shouted out that he wanted me to set points 7 and 8 for the south goods yard. I set these points, and when passing my cabin going to the goods yard the gunner called out to leave points 7 and 8 as they were, as he was coming back to do a shunt over the main line. I accordingly left levers 7 and 8 in this position. My telephone is out of order, and does not always work. Neither the station master nor the east central cabin jemadar called me up on the telephone, and told me that 10 down was about to start. The first I knew of its coming was when I saw it approaching about a chain's length from points No. 8. I then ran to my window and shouted to the driver of 10 down that the line was not set correctly for him and showed him a red light also from my cabin. I knew it was No. 10 down and not the shunting engine by the noise it made. I told the station master on duty, Khuda Bux, on the 13th, that my telephone was out of order.

I received no intimation either from the station master or from east central cabin about the arrival or departure of No. 10 down.

I know that No. 10 down is due after 22 hours 20 minutes, and I asked east central at that time if there was any news of her and received a reply that there was none.

I received the slot when the train had arrived at point 9-8 opposite the advanced starter.

Surjoo, khallasi, was in the cabin with me but not on duty, he was asleep at the time.

There was no time to put back the levers 7 and 8 before the train came on to the cross-over road as I was sitting at the time.

FINDING.

We find that the accident was caused by the driver disregarding the advanced starting signal which was at danger. He was duly supplied with a copy of the printed instructions, No. 15 of 1905, for the working of the Fyzabad interlocked station. He also certified that he knew the road before being allowed to drive an engine on it.

We consider him to be a man of limited intelligence, and though we believe that his professed inability to identify the signals shown on the diagram attached to the rules for the working of the station was mainly assumed, we think it possible that he was not aware that the advanced starting signal referred to the road on which he was travelling.

We do not consider that this circumstance (assuming it to be a fact) is a valid excuse for his ignorance: for the functions of the different signals are clearly explained in the rules for working the station, and in the plan attached to them, and, if the driver had any doubt in his mind as to the meaning of the rule, it was his duty to ask the locomotive foreman to explain the plan and rules before he signed the statement that he knew the road.

We do not believe that the book of Working Instructions, produced by the driver, was the same book that was issued to him: had this been the case, his name would have been written on the cover and the book would have contained the various *addenda* and *corrigenda* which have been issued since the date on which he received the book. We believe that the book produced by him was a new one, obtained by him after the accident. We entirely disbelieve his assertion that he was at no time asked to send in his book of Working Instructions to the locomotive foreman's office.

Although the accident was caused, as stated above, by the driver's disregard of the advanced starting signal which was at danger, we find that Muthra Pershad, jemadar of east cabin, contributed to the accident by not setting points 7 and 8 for the main line when Baldeo Tewari, jemadar of east central cabin, pulled off the slot on the advanced starter.

We believe that the slot was pulled off by Baldeo Tewari immediately after he had pulled off the starting signal. When the slot was pulled off, a disc appears in east cabin, and a clicking noise is made. If Muthra Pershad had been on the alert, he would have heard the click and seen the disc appear and would have had ample time (probably 3 or 4 minutes) to set the points of the cross-over for the main line and pull off the advanced starter before the train arrived at his cabin. It would have taken a few seconds only to put back the levers 7 and 8 to their normal position, and thus avert the accident; points 7 and 8 are quite close to east cabin. The train was driven by a heavy engine and made a loud noise, and, had he been on the alert, he must have heard it long before it got to the cross-over. We entirely disbelieve his assertion that the gunner asked him to leave points 7 and 8 as they were, because the gunner knew that there was no reason for him to come back to the east end of the yard.

The telephone was working on the night of the 14th, though not well, and we believe that Baldeo Tewari did call up east cabin on the telephone, as stated in his evidence, and that he received no reply because Muthra Pershad was not on the alert.

F. D. FOWLER.

P. RAINIER.

H. M. CARDEW.

 RIDER.

We think that, owing to the rapid introduction of interlocking at large stations, the system now in force for ascertaining that the drivers are thoroughly acquainted with the significance of the signals at large interlocked stations is capable of improvement, and we recommend that the locomotive superintendent be asked to draft rules for improving our procedure.

In view of the evidence given as to the condition of the telephones, we recommend that the railway telephones at all interlocked stations shall be under the control of the signal engineer.

F. D. FOWLER.

P. RAINIER.

H. M. CARDEW.

Addition to Rider by Locomotive Superintendent.

In order to prevent similar accidents at this place in future, it seems to me that something ought to be done to make the signalling more perfect. At present no train can be started from any platform unless the station master, driver and guard see that the starter for the particular platform the train is to start from is lowered, but no notice whatever is taken of the advance starter, and it may be at danger when the train is started, as it was on date of accident. I suggest two ways of doing this:—

- 1st. By interlocking the advance starter with the starter, so that it must be lowered before any of the three starters can be lowered.
- 2nd. Make the station master, guard and driver responsible that a train is not started from the platform until the starter and advance starter are both lowered. This plan will ensure 3 people seeing that the advance starter is lowered instead of leaving it to one man (the driver) only.

The "line-clear" is the permission to proceed from the distant signal of one station to distant signal of the next station. It does not ensure that all points at the station the train is leaving are correctly set. The station staff are, therefore, by various devices, made to see that all points are set right for a departing train. In the case of the advance starter at Fyzabad no certain device is in force to ensure that the points it governs are correctly set before the train leaves the station, whereas all sorts of devices are used to ensure the same thing at the "starter" where a driver is really not so likely to go wrong.

H. M. CARDEW,
Locomotive Superintendent.

 ADDENDUM.

We recommend that driver B. M. Shaw be prosecuted, and that jemadar Muthra Pershad be dealt with departmentally.

F. D. FOWLER.

P. RAINIER.

H. M. CARDEW.

Remarks by the Government Inspector of Railways.

This accident was clearly due to driver B. M. Shaw running past the advance starting signal at danger.

The evidence shows the driver to be guilty of an absolute criminal indifference to the significance and object of the various signals in a station yard and thereby unfitted to be a driver.

Even supposing he had never taken the trouble to read the rules for working Fyzabad yard, it might have occurred to him during the 16 months he has been running through this yard since the interlocking was introduced, to ascertain what the different signals referred to. Moreover, since the interlocking had been introduced, every time the driver left Fyzabad for Moghal Serai, which on his own statement had been on several occasions, he must have passed the advance starting signal lowered and it is hard to believe he could have passed it for 16 months without noticing it.

I agree with the finding, rider and addendum to the rider. With reference to the addendum the rules proposed in paragraph 14 should be made applicable to all stations where advance starting signals are used and not only apply to Fyzabad.

Incidentally the question of the necessity of retaining cross-over road 8-11 might be taken up by the Manager. All shunting operations between the north and south goods yards have to be done over cross-over road 7-8 and for this the cross-over 14-14 should suffice. If the advance starting signal is interlocked with the starting signal as proposed in paragraph 14 of the addendum to the rider, no useful purpose can be gained by retaining the cross-over 8-11, and in my opinion it should be removed.

C. S. ROSE, MAJOR, R. E.,
Government Inspector.

Documents accompanying—

Annexure No. 1.—Sketch showing site of accident.

Remarks by the Senior Government Inspector of Railways, Lucknow.

The finding of the committee may be accepted. The Manager has ordered the prosecution of the driver. The remarks of the Manager, especially on the "rider," are awaited.

J. E. GABBETT,
Senior Government Inspector.

LUCKNOW ;
The 4th February 1907 .

Appendix XXIII to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

Report of the proceedings of a committee of enquiry which assembled at Amausi station, Oudh and Rohilkhand railway, on the 12th June 1907, to investigate the circumstances attending the collision between No. 601 down, Great Indian Peninsula railway, mail train and No. 225 up, Oudh and Rohilkhand railway, goods train at that station on the 5th June 1907.

The committee was composed of the following officers :—

H. M. CARDEW, <i>Locomotive Superintendent, Oudh and Rohilkhand railway.</i>	}	President.
W. A. JOHN, <i>Engineer-in-Chief, Oudh and Rohilkhand railway</i>		
A. R. JACOBSON, <i>Officiating Deputy Traffic Superintendent, Oudh and Rohilkhand railway.</i>	}	Members.
D. A. FENTON, <i>District Locomotive Superintendent, Great Indian Peninsula railway.</i>		
D. S. BURN, <i>District Traffic Superintendent, Great Indian Peninsula railway.</i>		
E. J. W. BELLAIRS, <i>Superintendent, Government Railway Police</i>		
J. E. GABBETT, <i>Senior Government Inspector of Railways</i>		Present.

DESCRIPTION.

On the 5th June 1907 No. 601 down Great Indian Peninsula railway mail train, consisting of engine No. 1260, running chimney foremost, fitted with the vacuum brake and with the hand brake on the tender, and nine coaching vehicles (21 axles) without the continuous brake, in charge of driver D. Edulji and guard Brounson, left Harauni at 19-45 hours.

No. 225 up Oudh and Rohilkhand railway goods train, consisting of engine No. 194, running chimney foremost, fitted with the vacuum brake and with the hand brake on the tender, and 46 vehicles and a brakevan (weight about 800 tons) in charge of driver Diawal and guard Grant, left Lucknow at 19-30 hours.

The latter (goods) train arrived at the up distant signal of Amausi at 19-50 hours and came to a stand. The former (mail) train arrived at the outer signals of Amausi at about 19-54 hours, passed through the station at 19-56 hours and collided with the goods train at a point 686 feet outside the up facing points (Lucknow end). The driver of the mail train was without a "line-clear," as this document was still in the possession of the station master and had not been detached from the "line-clear" book.

The collision resulted in the death of the brakeman of the mail train, and subsequently of one Indian 3rd class passenger who died in the Bulrampur Hospital from injuries received; several other passengers received serious injuries.

The damage to rolling stock and permanent way is estimated at Rs. 8,304.

The line between Lucknow and Amausi was blocked from 19-56 on the 15th June 1907 to 18 hours on the 6th June 1907; all trains meanwhile had to be transhipped.

The station Amausi six-and-a-half miles from Lucknow, is interlocked with Mr. Wrench's system of interlocking.

EVIDENCE.

Durga Persad Misser, assistant station master, Amausi.—I was on duty at Amausi from 8 A.M. to 8 P.M. on 5th June 1907. At 19-2 hours I gave "line-clear" for 601 down mail (Great Indian Peninsula railway) to Harauni. After giving "line-clear" I went to my quarters for some business and I told the station master, "Lucknow is rolling at the telegraph instrument, please see what he wants." When I returned after 20 or 25 minutes, the station master told me in the office, "I have given 'line-clear' for 225 up goods from Lucknow." The station master was walking on the platform and I was busy at the instruments. The goods train left Lucknow at 19-25. I asked the pointsman to let me know when the train came in sight. When it came in sight, I gave the key to the pointsman, Adhin, and told him to lower the up loop home signal. Up to this time there was no trace of the mail train, and

the signals for the mail train were kept at danger. I did not order the points for the goods train to be set.

When I came back from my quarters, I was told by the pointsman, Adhin, that the train was in sight. I told him to lower the loop home signal to admit the goods train. I saw the signal lowered, the same pointsman then lowered the outer signal. I don't know whether the goods train came to a stand outside the outer signal or not as I was busy at the instruments. I was in the office when the pointsman informed me that the goods train was in sight, I came out immediately and saw the signals lowered.

In the meantime the Great Indian Peninsula railway mail came in sight, and it did not stop at outer signal or at the "line-clear" post. There was no "line-clear" at the post because I would not give a "line-clear" until my yard was clear.

Both the signals for the Great Indian Peninsula railway mail were at danger. The Great Indian Peninsula railway train came through my station on main line.

I shouted as loud as I could to the Great Indian Peninsula railway train to stop. The station master and Chedi, pointsman, gave red signals from their hand lamps (they were on the platform), but the driver did not stop. He was running at about 45 miles an hour when he passed the platform. The Great Indian Peninsula railway train went on through the station and burst the trailing points and collided with the goods train. The engine of the goods train whistled and, about 2 seconds after, the trains collided. I did not hear the Great Indian Peninsula railway engine whistle at all. He was going on just as if he had got "line-clear" and all was as usual. The station master and I went immediately towards the scene of the accident and we met the guard of the mail on the way. The guard was shouting that there had been a collision.

Questioned.—I always give "line-clear" at the "line-clear" post.

If a "line-clear" is late I stop the train outside the outer signal, and I then send the "line-clear" when it is ready with the pointsman and have it put in the "line-clear" post.

Questioned.—I don't remember whether I was on duty the previous day when the Great Indian Peninsula railway mail passed.

Questioned.—I have never known a goods train to come past the distant signal when the signal was at danger at this station.

I gave orders for the setting of the points for Great Indian Peninsula railway mail at the Cawnpore end of the station. As soon as I gave "line-clear" for it, Chedi pointsman locked the points. I said the "line-clear" for mail has been given to Harauni; set the points for the main line for the mail train." I told him nothing about signals; time was about 19-3. The "line-clear" for the mail (Great Indian Peninsula railway) to Lucknow was written out by me and is still in the book—not torn out.

Recalled.—

Q.—Why did you detain No. 225 up goods train at the up distant signal?

A.—The up facing points were first set for the main line, then I had to send the key to the points for them to be altered to the loop line, and the key had to be brought back to enable me to lower the signals for the up goods train.

Q.—Why did you not change the points when you got the "out-report" of the up goods train from Lucknow.

A.—I did so.

Recalled again.—States that though he ordered the signals to be lowered for No. 225 up goods train he cannot remember when, or by whom, the signals were replaced at danger after the collision occurred, as it was "confusion time."

C. S. Sharma, station master, Amausi.—I was present at Amausi station on the night of the accident, but not on duty. The assistant station master told me that he was sick and wanted to go to his quarters for a short time. He went to his quarters. He told me that Lucknow Telegraph instrument was rolling and that I was to see what was wanted. He also told me that he had given "line-clear" for Great Indian Peninsula railway mail. I then gave "line-clear" to Lucknow for No. 225 up goods; in the meantime the assistant station master returned from his quarters and I told him that I had given "line-clear" to the goods. The assistant station master was away for 10 or 15 minutes. The assistant station master gave orders about admission of the goods. I gave no orders about it. I walked on the platform after the assistant station master returned. I heard the goods train whistle, and after that the signals were lowered for it. I don't know whether the goods train was stopped outside the distant signal. I saw the engine lights of the goods train, 3 white ones.

I was on the platform and saw the mail a long way off. Neither signal was lowered for it. It did not stop at the distant signal, nor at the "line-clear" post. The train was about the distant signal when I thought it was coming in too fast, so I gave a red hand-signal. I had a lamp in my hand at the time. As the train did not come to a stop I shouted, but still the driver took no notice. The assistant station master was near me as the train came through, and I said to him "have you given the line-clear to the mail?" and he said "no". I asked him where the "line-clear" books were, and he said "here they are, in the office," as by that time he and I had got into the office. I took the "line-clear" books and locked them up in my box before I went to see the accident. I heard the collision and went to the scene of accident by myself. I saw the guard of the mail and he said that there had been a collision. As I passed the trailing points I saw that they had been burst. I saw that both the home and distant signals were lowered for the goods to come in.

I then spoke to the goods train driver and he said that he had stopped about 4 minutes outside the distant signal. I saw the main signal was still lowered for the goods train.

I don't know who put the signals back to danger after the accident, as I was busy arranging to tranship the passengers from the mail to the 2 down metre gauge passenger. The metre gauge train came in about 20 minutes after the accident.

Questioned.—I always stop a train if the "line-clear" is not ready outside the distant signal, and when it is ready I send it to the "line-clear" post.

Questioned.—Myself, 2 assistants, 4 pointsmen, 1 porter and 1 sweeper.

The mail ran through at about 40 miles an hour.

The keys of the points generally remain in the box in the office, that is, one from each end of the station.

Questioned.—55 up passenger was the last train that passed my station before the accident. It was admitted on the platform line.

Questioned.—I did not notice whether the keys were in the box during the time I was acting for the assistant station master when he went to his quarters.

Questioned.—The custom of this station is that when the "out-report" is given, the pointsman goes to the facing points.

Questioned.—The assistant station master had no lamp with him. I had the lamp.

Questioned.—I do not remember whether the assistant station master went with me to the scene of the accident, or not.

Questioned.—The normal positions of the points at both ends are set for loop line. When I have to cross trains then I set one set of points for the main line and the other for the loop.

Recalled.—I did not hear the driver of the Great Indian Peninsula railway mail train sound his engine whistle when he approached, or ran through, my station.

Again recalled.—Stated he did not know why No. 225 up goods was detained at the distant signal. He was on the platform but did not attend to the train—the assistant station master would know. He was in the office when the assistant station master returned and he at once told him that he had given "line-clear" to No. 225 up goods. This would be at 19-15 or 19-17 hours.

After the accident he took the "line-clear" for the Great Indian Peninsula railway mail from the assistant station master and locked it up. He denies the conversation mentioned by guard Bronson to have taken place between the guard, pointsman Chedi, and himself.

He also stated that when he went to the scene of the accident and picked up the driver off the *Lunkur*, he drew his attention to the fact that the signals had been lowered for his (No. 225 up) train.

When the assistant station master asked me to relieve him (when he went to his quarters,) I gave

no orders for the reception of the Great Indian Peninsula railway mail. I gave "line-clear" for No. 225 up goods train but gave no orders for its reception because, shortly after I gave "line-clear" the assistant station master returned to duty. I did not hear the assistant station master give any orders for the reception of these trains.

Adhin, pointsman, Amausi.—I was on the station on duty on the night of the accident and it was dark. I got an order from Durga Pershad, assistant station master, that "line-clear" had been given for a goods train and that it had left Lucknow. He ordered me to make the road for the loop line. I did so, and gave the key to the assistant station master. The assistant station master, whose duty it was, gave me the key and I took it to the points. The line was set for the main line and it had to be altered for the loop. I then came back and was standing on the platform. The assistant station master came out of the office, and when he saw the goods train quite close he said to me, "give the signal for the train (goods)." Accordingly I lowered the home and distant signals. He then said "now go to the points" (up facing), and I did so. When I went to the points I heard the noise of the Great Indian Peninsula railway mail. I also heard a noise of the station staff from the station and gave a red signal. The mail train came on; there was a great noise, and there was a collision; my points got broken.

Questioned.—When I returned from setting the points I saw the station master near the well.

Before there was any word of the goods train from Lucknow I saw the station master in the verandah.

Questioned.—When I lowered the signals Durga Pershad was beside me.

Owing to giving "line-clear" to both trains at this time, the goods train was stopped outside the distant signal. I don't know how long it stopped there, but it was 3 or 4 minutes.

Questioned.—After returning from the points and giving the key to the assistant station master it was 2 or 3 minutes before I lowered the signal for the goods train. I heard no order given by the assistant station master to Chedi pointsman about setting points for the mail.

Questioned.—After the passenger passed, I went to the Lucknow end to set the points and Chedi went to the other.

Chedi, pointsman, Amausi.—I was called on duty by the station master at about 6-45 or 7-15 P. M. He told me that "line-clear" had been given for the Great Indian Peninsula railway mail from Harau, also to a goods train from Lucknow. He said "the goods will come in first, set the down points for the mail."

The assistant station master took the key from the box in the station and gave it to me. I went to the points and, having set them for the main line, returned the key to the assistant station master. I was told to wait as the signals had been lowered for the goods train from Lucknow and that when the goods had arrived I was to take a torch and the "line-clear" to the "line-clear" post. Both the assistant station master and the station master gave me these orders. I saw the mail approaching, and told the assistant station master about it, but he said "never mind; the train will come to a stand still there." The train came on, and when it came near the points I had run close to the end of the platform. I showed a red light to the mail and shouted and on the platform the station master made a noise to try and stop the train.

The signals were not lowered for the mail; I never hand over "line-clear" on the platform, but always at the "line-clear" post—even for goods trains which run through.

D. Edulji, driver.—I was driver of 601 down mail on Wednesday, 5th June. On approaching Unao I observed my vacuum gauge falling, so I looked back to see if the guard was putting on the brake. I could see no one, so I shut off steam

and came to a stand outside the distant signal on the Cawnpore side. My staff, guard and brakemen all jumped down and searched for the leak. We found 2 or 3 places in the hose pipe between different vehicles leaking, and at one place a piece of zinc or iron sticking in the pipe. The guard and my fireman found and took it out. We tried to stop the leak by lapping it round with a piece of waste. I managed to get into Unao by keeping the large ejector open with great difficulty. I saw the guard and told him I could not maintain a vacuum as there was a great leak somewhere. Thinking it would take a long time to make defects good we decided to stop working the vacuum and pulled the wires. I left the vacuum on the engine and tender as that was all right.

I left Unao, working without the vacuum brake on the train, and on approaching Amausi, as I was not working the vacuum, I shut off steam a mile and a half or two miles from the distant signal, and on approaching the distant signal, as usual, I whistled, and found the distant signal was lowered; the signal had been lowered before I whistled. Coming past the distant signal I saw the home signal was lowered and a man was waving me on from the platform with a green light. As I was coming along cautiously and approaching the facing points, I could not see the "line-clear" post or any one there to give "line-clear." I whistled a short whistle to make sure whether I was to get the "line-clear" handed to me at the station platform. A man still waved me on with a green light. I was under the impression that I would get the "line-clear" at the platform. When I came close to the station building a man ran out of the building with a red light; then at once my fireman put on the hand brake; and I put on the vacuum brake and whistled for brakes and as I was still running on I reversed the engine and gave her steam. I found the trailing points were against me. I knew this by the light in the points indicator which was green. I then looked ahead and saw the distant signal was on from seeing the white light at back of it. I also saw some white lights as it might have been an engine coming towards me, so I pointed out to my fireman and told him, "do you see this distant signal?" he said "yes" and when we got on a bit I could plainly see that it was an engine in front. I tried my best to stop my train, and if I had half of one wagon length more I should have done so. My engine and the goods train engine collided. I was thrown off my engine on to the ground. I was knocked senseless, that is dazed.

Questioned.—I have been working on this run since February 1907, and I come up about 3 to 4 times, more or less, a month. I have picked up "line-clear" at the platform as Amausi once or twice. I pick up "line-clear" from the centre of the platform on my own line (the Great Indian Peninsula railway).

I was running 20 miles an hour inside the distant signal and 15 miles an hour at the facing points. I could have reduced my speed below 15 miles an hour if the man had not kept waving me on with a green light. The first red light I saw was when opposite the station, and my speed was then about 15 miles an hour.

Questioned.—When I take a "line-clear" at the platform the man shows it to me by a hand light or a torch.

Questioned.—I can see the light of the man who is going to give me the "line-clear" from the facing points.

Questioned.—I did not see any white light or torch on this night shown on the platform.

Questioned.—The distant and home signals were burning brightly on my approach.

Questioned.—I was 30 or 35 minutes late in leaving Cawnpore. When I first sighted the distant signal it was showing green.

Questioned.—I saw a man sitting down at the facing points; as I passed he had a green light.

Questioned.—Once I was stopped outside Amausi station for the signal.

Questioned.—The first real trouble I had with the vacuum brake was at Unao. I had a little trouble with the brake block sticking on the front van, which I rectified by pulling the release wire at Ait.

I have not been supplied with the subsidiary rules or the working instructions of the Oudh and Rohilkhand railway.

I have never been examined in the rules of the Oudh and Rohilkhand railway.

Note.—Supplement to working Time-Table, Part I, Great Indian Peninsula railway, was produced, and shown to the driver, who states that he can't say definitely if he has been supplied with it or not.

William Brounson, guard, Great Indian Peninsula railway.—I was guard of 601 down, Great Indian Peninsula railway, mail from Jhansi. The load of the train was 9 vehicles (21 axles all vacuum brake).

After leaving Cownpore Fridge, and on coming near the distant signal, Unao, the vacuum needle of the gauge in my van fell nearly to zero and the train came to a stand. I examined the train, and, on the 4th vehicle from the rear brake, which was a single composite, I found the outside cover of what appeared to be the fittings of a *khushkhus tattis* belonging to a carriage jammed on top of the front vacuum pipe at the outside end of the carriage. It had completely cut through the hose pipe, thus admitting air to the train pipe and putting on the brakes. I took the obstruction to Unao with me. We lapped the hose with waste to try and stop leak and then we went on to the station of Unao. The driver came and told me that he could not work any more vacuum brake and so we released all the brakes by pulling the wires. We started from Unao without the vacuum brake, having first informed the station master of the fact. We passed Aigain and Haranni safely, and, when about half-a-mile off the distant signal of Amausi, my driver opened his shrill whistle. I put my head out of the brakevan and saw that both the home and distant signals were in his favour. After passing over the facing points at Amausi my driver gave two short shrill whistles, which I took to be an indication, that he was in possession of the line-clear. Immediately after I heard the deep whistle blown but only very short, and this is all I can recollect till the collision occurred. The train passed over the facing points at about 15 miles an hour. I got knocked from back to front of my van when the collision occurred. I then got out and walked up to my engine, and when I found that neither the driver nor the fireman was killed, I walked to the Oudh and Rohilkhand engine and saw no one there. I crossed over the engine footplate, Oudh and Rohilkhand railway, and got on to the other side. I made enquiries among the passengers if any one was killed, and found that there were none. I then went to the station and saw the station master and one old man, pointsman or jemadar. I said to the jemadar "why did you give the signal for my train," and he replied "as I got the order so I acted." I drew the attention of the station master, my driver and fireman to the remark. The station master said "Oh! that man is mad." I did not look at the signals at the down end of the yard and I don't know how they were.

The "line-clear" has been several times handed to drivers from the platform, and recently.

[Rule 27 (c) was shewn to him and he said that he knew it].

I have booked in my journal an instance when a driver has picked up the hoop at the "line-clear" post without the message in it, and the "line-clear" has been picked up at the station afterwards (at Amausi) I have never reported any instance of a driver having picked up a "line-clear" at the platform.

I have never received any rules and regulations or working instructions belonging to the Oudh and Rohilkhand railway, nor have I been examined in their rules; but I have been supplied with the supplement to the Great Indian Peninsula railway Time Table, Part I, Jhansi district.

The conversation with the station master and the jemadar took place in front of the station. I am sure of this. I drew the station master's attention to the time, which was 8-5 P. M.

I did not make any allusion to the state of the signals to the station master.

George McMullen, fireman of the mail engine.—I was fireman of the mail engine. After leaving Unao we ran through 2 stations and arrived near the distant signal, Amausi. My driver whistled; the signals were already lowered, but when he came near the points there was no "line-clear" at the post. My driver gave a sharp whistle, and, on getting in front of the station, a man ran out from the office with a red light. I got to my brake and screwed it hard on; my driver clapped down his engine automatic and reversed the lever and opened steam. He originally shut off steam a mile-and-a-half outside the distant signal. We were going about 20 miles an hour when we passed over the facing points; there was a man there with a green light. There was also a man on the platform waving a green light. After he had reversed he opened the danger whistle, and small whistle, but he found he could not control the train and we ran on and collided with the other engine. The driver remarked to me that the up distant signal was not lowered. I looked and saw it was not. I knew it was not lowered because I could see the back light. I was on the down side, i. e., right hand side. When we passed the trailing points we had no idea that we were going to run into an engine. I saw three white lights, one the back light of the signal and the other two I didn't know what they belonged to. When the collision occurred I was on the left side of the engine and I got thrown off on to the ground, and then came to the station with my driver and guard. The guard spoke to the man who lowered the signal as to why he had done so, and he said "what can I do; the station master gave me orders." The station master was not there when Brounson spoke to the jemadar. He drew his attention to what was said to the station master and he said "don't listen to him, he is mad." I have never picked up the "line-clear" at the station as I have only been 4 to 5 times down this road.

Ram Diawal, driver of No. 225 up goods train.—I was driver of the engine of No. 225 up goods train on the 5th June 1907. My engine was running funnel foremost and was fitted with the vacuum and the hand brake on the tender. I left Lucknow at 19-30 hours, and when I came to Amausi I saw the signals at danger and came to a stand 5 or 6 yards from the signal. Six minutes after, the signals were lowered I blew my whistle and started. I passed the signal by two telegraph posts and shut off steam, as I thought a train was coming in the opposite direction. When that train was about opposite the station I opened both my whistles, because I thought it was coming quickly. I applied both brakes and made every endeavour to stop my train. The train collided with mine, and I fell off the engine on the right hand side, the fireman on the left, and the coal breaker on to the tender. I laid where I fell till the station master came and picked me up. I remained by my engine for about an hour, drawing fire and doing other duties.

Q.—When the distant signal is at danger do you ever pass it?

A.—No.

When the collision occurred my home signal was lowered; after the collision I did not look to the state of the signal.

I had 3 white lights on my engine and they were all burning brightly.

I have received no Working Time Table since I ran on this subject (*sic*). I cannot read English.

Nunda, fireman of engine of No. 225 up goods train.—I was fireman of engine No. 194 of No. 225 up goods train on 5th June 1907. When we arrived at Amausi the signals were at danger and the driver came to a stand about 5 or 6 yards outside the distant signal. (The rest of this witness' evidence was similar to that of the driver).

S. C. Bose, assistant station master, Amausi.—On the 5th June 1907, I came on duty at 20-15

hours. The station master told me to look to the "line-clear" work as he was going to the scene of the accident. The assistant station master was sitting in the office. I did not notice the position of the signal when I came on duty. I did not give any orders about the raising or the lowering of signals. I did not notice the position of the points keys. I took over charge at 20-40 hours; all signals were then at danger. I think when I came on duty all signals were at danger.

I gave order for the metre gauge train to be allowed into the station by lowering the signal for it at about 20-23 hours.

George Grant, guard of 225 up goods.—I was guard of No. 225 up goods on the 5th June 1907; the load of my train was about 800 tons (my journal has been lost). I left Lucknow at 19-30; at 19-50 on approaching Amausi I saw the distant signal at danger. My driver stopped the train, and after 3 or 4 minutes' detention the signal was lowered (I also saw the home signal was lowered). My driver whistled and started, and, as my brake passed the distant signal, a collision occurred. I had no idea that a collision was going to occur; I heard no whistling. I left my brake and came up. I saw my driver near his engine and asked if he was hurt. He said "no." I then saw the Great Indian Peninsula railway guard near the engine and asked him how he was, and then went back to protect my train. The station master and assistant station master, Amausi, were also near the engine. I waited at the back of my train. On my way back to protect my train I noticed the up distant signal at danger. I don't know when it was put back to danger. I have been running for 6 months on the Cawnpore branch. I have passed the Great Indian Peninsula railway mail only once here (Amausi).

I don't know why I was kept outside the distant signal at Amausi, but I know the Great Indian Peninsula railway mail was running late.

I am positive the signals were lowered for my train at Amausi.

J. Phillip, sub-permanent way inspector.—I arrived at Amausi on 5th June 1907 at 20-23 hours by metre gauge, and heard of the collision. I saw the up facing points damaged, and one key in the points lock. I obtained the other key and repaired the points.

Budloo, porter, Amausi.—On the 5th June 1907, I lit the up distant signal; the sweeper lit the down distant signal; and the pointsman, Adhin, lit the home signal. I then lit the station lamps for the metre gauge and came back to the station. About 10 or 15 minutes after the collision one of the assistant station masters inside the office told me to raise the up signals to danger, and I did so. Then I went in to the office and the Great Indian Peninsula railway guard came and said something about the time in English to the assistant station master, (Bengali Babu S. C. Bose) but I don't know what it was.

Recalled.—Says the driver of the mail train ran through the station at a high speed. Red lights were shown him at the station and he was shouted to stop, but he did not. The said driver did not whistle.

A. Watson, district traffic superintendent, Oudh and Rohilkhand railway.—I arrived at the scene of the accident by a special from Lucknow between 21 and 22 hours. The first man I met was the guard of the goods train, who was standing by his fog signals 500 or 600 yards in rear of his train. I asked him what had taken place, and he said that on approaching Amausi, the distant signal was at danger, his train came to a stand outside the distant signal, and, after a few minutes, the signal was lowered and his driver whistled and he drew inside. The guard gave me this statement in the train. I was in as he got into it at the spot I met him at. I saw the brakeman lying dead alongside his brake, I saw no one else thereabouts. The Great Indian Peninsula railway train was absolutely empty. I went on to the station with the police inspector and doctor and met all the train and engine staff there.

Appendix XXIII.

I questioned guard Brounson about the accident and he told me that he had seen the signals were lower red for his train when he was about a mile outside the distant signal. After seeing the signals he busied himself getting ready to get out at Lucknow. He also stated that he left his van and went towards the engine, that he found his brakeman lying on the ground, that he asked him if he was hurt and the man said he was dying. He knelt down and took the brakeman's head on his knee and tried to give him some water, and the man died shortly after. He made no mention to me at this time of the conversation he told the committee he had with pointsman Chedi. I then took down the statement of the staff which I herewith produce as follows:—

Station master,	C. S. Sharma.
Assistant station master,	Durga Pershad Misser.
Pointsman,	Adhin.
"	Chedi.
Driver,	Edulji.
Guard,	Grant.
	Brounson.

The last named (guard Brounson's) statement I took down the next day, before he left with the mail at 14-15.

I tested the signals for the down train, distant and home, by putting in the key and lowering the signals, and found them in perfect working order. I could not test the up signals as the keys were locked in the box at the points. I asked why the key was not there, (at the station) and I was informed that it had gone down to the points for repairs of the latter.

STATEMENTS REFERRED TO IN MR. WATSON'S EVIDENCE ANTE.

C. S. Sharma, station master, Amausi.—I came on duty at 7 hours on the 5th, and was present when the mail train was expected.

The assistant station master gave "line-clear" for the mail, and I gave "line-clear" for the goods train as the assistant station master had gone to the engine.

When the assistant station master came back after about 15 minutes I told him I had given "line-clear" for the goods train.

I gave no orders to any of the staff about admitting the trains.

When the mail came in sight I was on the platform opposite the office.

Both signals were at danger, and, as the mail was coming into the station, I shewed a red light towards it.

Porter Budloo was on the platform and shewed a red light.

Pointsman Chedi was at his points (down facing) and not on the platform.

The assistant station master was in the office but came out when he heard the shouting. He did not shew a red light.

The mail was going at about 45 miles an hour.

I do not know who lowered the signals for the goods train but I saw that they were lowered.

The mail did not whistle till it got near the trailing points, and did not open the bass whistle.

Durga Pershad Misser, assistant station master, Amausi.—I was assistant station master on duty at Amausi on the 5th June 1907, and came on duty at 8 hours in the morning.

At 19-2 hours I gave "line-clear" to Harauni for No. 601 up Great Indian Peninsula railway mail and then, not feeling well, I went to the latrine having first told the station master to attend the Lucknow instrument as the Lucknow signaller was rolling.

I did not know what the signaller wanted, and had no knowledge that a goods train was coming.

I returned to the station in about half an hour and the station master told me that "line-clear" had been given to Lucknow for No. 225 up goods.

I told the pointsman, Adhin, to let me know which train came in sight first; shortly afterwards he came and told me that the goods train was at the distant signal. The train stopped for a minute or so at the distant signal and then the signal was lowered.

Pointsman Adhin lowered the signal for the goods train under my orders.

When the signals were lowered for the goods train the mail train was not in sight.

The goods train did not start directly the signal was lowered, and before I knew what was happening the mail train came in sight and ran through the station.

I was standing on the platform with the station master, and when we heard the rumble of the mail we both exhibited red signals towards it, but the driver took no notice.

The signals were never lowered for the mail train.

Pointsman Chedi was at the down end of the yard manning the facing points for the mail.

Pointsman Adhin was on duty at the facing points for the goods train.

In my opinion the speed of the mail was about 40 miles an hour.

There were no green lights on the platform.

After the accident, I went to the spot and saw what had happened; one man was lying on the ground.

Adhin, pointsman, Amausi.—I was pointsman on duty at Amausi on 5th June.

When I saw the goods train approaching, I told the assistant station master and said it was whistling. The assistant station master gave me the key of the loop line signal and told me to lower it. I then lowered both signals for the goods train. I then went towards the up facing points as the assistant station master told me to do so.

As I was nearing the points I heard the mail coming.

When I saw the mail coming into the station I shewed a red lamp towards it. It did not stop and ran into the goods.

As the signal was lowered for the goods train they were at danger for the mail.

The signals were never lowered for the mail.

Chedi, pointsman, Amausi.—I was on duty at Amausi on the 5th June. At about the time the mail was expected the station master told me that a goods train was coming and that, on its arrival, I was to take "line-clear" for the mail to the points.

Before the goods train came into the station the mail came and ran through. All signals were against the mail and they were lowered for the goods train.

The station master, when he saw the mail coming, told me to run towards it and shew a red light, which I did, and got to the end of the platform.

The assistant station master was also on the platform.

When I first saw the mail she was outside the distant signal and all the staff on duty saw it at the same time.

I saw Adhin, pointsman, lower signals for the goods train and then go towards the points, (up facing).

D. Edulji, driver, Great Indian Peninsula railway.—I was driver on No. 601 up, Great Indian Peninsula railway, mail *ex* Jhansi to Lucknow on the 5th June.

On approaching Amausi, I whistled outside the distant signal; both home and distant signals were lowered, and one green light was being waved on the platform. I got no "line-clear" at the points so I told my mate that we might get "line-clear" at the station. When we came on to the platform some one ran out from the office and shewed a red light and the home signal was immediately thrown to danger and the staff shouted. I told my mate to put on the hand brakes and whistled for guard's brakes. I put on my engine vacuum brake as the train pipes were out of order.

I was passing the station at about 10 or 12 miles an hour.

I could not stop my train and ran into the goods train.

I saw a green light shewing at the points indicator.

There was a green light at the facing points. I do not know if there was any one at the trailing points.

When I came towards the platform there was one man on the platform waving a green light, but as I was passing the office another man ran out of the office shewing a red light and the first man turned his light to red.

My vacuum got out of order just before I reached Unao. Something cut the pipe and the train came to a stand by itself; a piece of iron was found between the rails and this apparently cut the pipe. This happened about 2 miles before Unao.

Statement of guard Brounson taken on 6th June 1907.—I was guard in charge of No. 601 down Bombay mail on the 5th June *ex* Jhansi to Lucknow. I looked out of my brake at about a mile from the distant signal at Amausi as the driver had been whistling, and saw both signals lowered. After we had passed the facing points, the driver gave two shrill whistles and then one short danger whistle. I applied my brake at once and whilst doing so the collision occurred.

I did not see the signal for the goods train and cannot say if the signals for my train were thrown to danger or not.

We passed Amausi at exactly 19-56 and we were travelling at from 15 to 20 miles an hour and not more.

Guard Grant of goods train.—I was guard in charge of No. 225 up goods *ex* Lucknow to Cawnpore on the 5th June 1907. On approaching Amausi my train came to a stand outside the distant signal and I saw that the signals were at danger.

After waiting a minute or so the signals were lowered and the driver whistled and started the train. He moved slowly forward, and when my brake van was just by the distant signal I felt a shock and the train came to a stand.

I discovered that a collision had occurred and I immediately proceeded to protect my train with fog signals.

FINDING.

The evidence in the case as to the position of the signals at both ends is very conflicting. The driver, fireman and guard of No. 601 down Great Indian Peninsula railway mail all say that the distant and home signals were off for their train; on the other hand the driver fireman and guard of No. 225 up goods say that the distant and home signals were off for

them. The station staff also state that the signals were off for the goods train, and there is no way of directly proving which story is correct.

If the signals were off for the goods train it is impossible that the signals could have been off for the mail, as the interlocking of the signals will not permit of both sets of signals being lowered at the same time.

It is difficult to believe that an experienced driver like the driver on the mail can have run past two signals at danger and into the station yard against them. On the other hand we are met with the fact that he ran into the station at such a speed that he over-ran the down trailing points by 686 feet before he stopped, as it was at this point where he collided with the engine of No. 225 up goods train.

There is another factor which contributed to the accident, which was that the mail was running without the vacuum brake, as owing to a defect it had to be disconnected at Unao and, consequently, the train was running non-vacuum.

Under Rule 27 (s) of Oudh and Rohilkhand railway subsidiary rules, when two run-through trains (as in this present case) have to cross at a station out of course, both trains must be brought to a stand outside their respective distant signals and subsequently admitted. The station staff allege that the signals for both ends were kept at danger, and on arrival of the Oudh and Rohilkhand railway goods (which came first,) the signals for that train were lowered for its admission.

The evidence of the staff of the Oudh and Rohilkhand railway goods train goes to corroborate the evidence of the station staff; on the other hand the staff of the Great Indian Peninsula railway train allege that both signals were lowered for their admission, in which case the signals could not have been lowered for the goods train.

Assuming that the latter statement is correct, under rule 27 (o) of Oudh and Rohilkhand railway subsidiary rules, the driver should have been prepared to pick up "line-clear" at the "line-clear" post fixed at the down facing points. That he did not receive it there is proved by the fact that the "line-clear" is still in the book.

In such case the driver of the mail should have been prepared to stop at the station. He did not stop, but ran past the station a distance of close on 1,750 feet beyond the centre of the station. The driver, in explanation of the fact that he ran 1,750 feet from the centre of the station before colliding with the engine of the goods, states that he was waved on by a green signal on the platform, from which he understood that a "line-clear" would be handed to him on the platform, (which he states has been handed to him there on two previous occasions) and is in accordance with the practice at interlocked stations on his own railway.

It was only on his arrival at the centre of the station building, when a red light was shown him, that he took steps to bring his train to a stand; but as he had not picked up the "line-clear" at the facing points, he should not have paid any attention to the green signal on the platform and should have taken steps to stop there when he passed the facing points. Had he stopped then, this accident would not have occurred.

On the other hand, if the signals were not lowered for the mail train, we must assume that the driver came on expecting to get the signals lowered for him, or lost control of his train, in either of which cases he would also be to blame.

We attribute the accident to a combination of the causes mentioned in the last paragraph and believe that the Great Indian Peninsula railway mail driver entered the station against signals, expecting to get them altered in his favour and to obtain his "line-clear" first of all at the points and afterwards at the station building; and that, when it was too late he discovered that, in consequence of his train being non-vacuum, it was out of control.

Our reasons for arriving at this conclusion are mainly as follows:—

It should be borne in mind that the crossing at Amausi was an unusual one and that the mail was forty minutes late. We consider it proved beyond doubt that the mail train since leaving Unao was non-vacuum, except on the engine and tender. We also believe that in the first instance the through road was made for the mail, and that this was done subsequent to the passage of No. 55 up passengers which was received on and despatched from the loop. That the signals were lowered by the assistant station master for the receipt of the mail, after giving "line-clear" for it to Harauni and before he went to his quarters (which he did owing to a temporary indisposition); we consider very doubtful. It is not customary to do so till the "out-report" from the station in rear has been received, except where the distances are short and a delay to a run-through train would result.

On his, the assistant station master's, return to the station, (the exact time of which cannot be precisely ascertained) he learned from the station master, who had been attending to the instrument in his absence, that "line-clear" had been given to a goods train from Lucknow. He had, therefore, to arrange to cross two non-stopping trains at his station. Not knowing which train would arrive first he had, for obvious reasons and also in accordance with the rules, to keep all signals at danger and bring the train which first arrived to a standstill outside the station. In the present case he had, therefore, to replace all signals at danger (if not already there), and then re-make the road for the loop at the Lucknow end of the yard in order to receive the goods train. This latter operation would take some time as a man would have to walk with the key to the facing points at the Lucknow end of the yard, insert it into the points lock, throw the points over, and, return to the station with the loop key.

There is no doubt in our minds that these operations were carried out (the evidence in this respect of the pointsman, Adhin, and porter, Budloo, was given in a straightforward manner) and that the goods train was brought to a standstill at, or near, the distant signal, where it remained for some minutes.

We attach great weight to evidence obtained immediately after an accident while the facts are fresh in the minds of the actors, and there has been no time for them to concoct their stories; and in this connection we lay great stress on the statements of the guard and driver of the goods train made to the District Traffic Superintendent at Amausi a couple of hours after the collision (and more particularly to the guard's) that the signals were first on and afterwards lowered for the goods train.

The reasons that lead us to attach special weight to statements recorded immediately after the occurrence, also lead us to disbelieve the evidence of the guard of the Great Indian Peninsula railway mail as to his conversation with pointsman, Chedi, after the accident. If any such conclusive conversation had occurred it would have been mentioned in the early statements of the Great Indian Peninsula railway staff; moreover there were such discrepancies in the Great Indian Peninsula railway guard's statement, before the committee, that we can attach no weight to his evidence in this matter.

As regards the statements of both the Great Indian Peninsula railway driver and the fireman, that they commented to each other on the indication of the back light of the north distant signal, and that, therefore, the goods train must have been coming in against signals, we are doubtful if any credence at all can be given to them. A back light, *viz.*, that of the metre gauge north distant signal, would have been visible at the time; but in view of the fact that it is stated in evidence that, at the time when the exchange of remarks is stated to have taken place, they were not aware that a collision was impending, it seems scarcely probable that, in the flurry of stopping a train and obtaining (as they hoped) their "line-clear," they would have any attention to spare for back lights with which they were not concerned.

We would conclude by observing that the interlocking may be accepted to have been in order as no statement to the contrary has been made. On the night of the accident, the Engineer-in-Chief and the Manager inspected the signals and noted that when at danger they all showed red properly.

H. M. CARDEW,

President.

D. A. FENTON,

Member.

A. R. JACOBSON,

Member.

W. A. JOHNS,

Member.

D. S. BURN,

Member.

In submitting the above proceedings, under date the 9th July 1907, the Manager, Oudh and Rohilkhand railway, remarks that he "accepts the finding," and that the driver of the Great Indian Peninsula railway mail is being prosecuted under section 101 of the Railways Act and section 324 (a) of the Indian Penal Code.

Remarks by the Senior Government Inspector of Railways, Lucknow.

I concur in the finding of the committee that the driver of the Great Indian Peninsula railway mail train ran against signals, and so must be held directly responsible for the accident.

The enquiry also shows that the working of Amausi station is lamentably slack. If accidents are to be avoided rules must be strictly and invariably acted up to.

Steps should also be taken to ascertain that all drivers and guards, before running over foreign lines, are acquainted with the rules there in force.

J. E. GABBETT,

Senior Government Inspector.

Appendix XXIV to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

Report of the proceedings of a committee of enquiry which assembled at Lucknow station, Oudh and Rohilkhand railway, on the 14th August 1907, to investigate the circumstances attending the accident to No. 211 up goods train at that station on the 12th August 1907.

The committee was composed of the following officers:—

F. W. ROBERTS,	<i>Executive Engineer</i>	. . . . .	<i>President.</i>
T. GREGSON,	<i>District Locomotive Superintendent</i>	. . . . .	} <i>Members.</i>
A. WATSON,	<i>District Traffic Superintendent</i>	
J. E. GABBETT,	<i>Senior Government Inspector of Railways</i>	. . . . .	} <i>Present.</i>
E. J. W. BELLAIRS,	<i>Superintendent, Govt. Railway Police</i>	

DESCRIPTION.

At about 0-50 hours on the 12th August 1907, while No. 131 up goods was passing the West Cabin, Lucknow, en route to Shahjahanpur, No. 211 up goods started and entered the Alamnagar siding in which ballast train No. 1 was stabled for the night.

The ballast train coolies were sleeping on the track and four were run over and injured, three of whom eventually died.

There was no damage to rolling-stock or permanent-way.

The ballast train was split up, two vehicles being on the Alamnagar side of the foot-path to the carriage shops and the remainder on the Lucknow side.

EVIDENCE.

Dummo, driver.—I was driver of No. 211 up goods ex-Lucknow to Cawnpore on the 12th August 1907.

I attached my engine to the train about twenty minutes before starting time. After I had been attached to the train for a short time I noticed the starting signal lowered for me, and soon afterwards the guard and assistant station master came to my foot-plate. They had an argument as to whether the train was to be booked outright time or not. The guard said that he was 20 minutes late, but the assistant station master said "book out right time."

I looked at the line-clear and saw it was correct, and opened my whistle. The assistant station master told me that I could start; so I opened my whistle again and started.

I started off very slowly, and when I came to the signal bridge I felt something was wrong as my engine was taking the straight line instead of the curve for the Cawnpore line. I applied my brakes at once and stopped my train as quickly as possible. Before I came to a stand my engine struck a train standing on the line on which my engine was, and I afterwards found out that it was a ballast train.

I got off my engine and went to see what had happened, and found that the train I had collided with had run back over the crossing to the shops, had injured some men and almost collided with some more wagons standing in the dead-end.

There was no light on the ballast train.

The only light between me and the ballast train was the gate light.

When I first walked down the ballast train no brakes were put on on any of the wagons; the

brake of the brakevan too was not on; but when I went back to my engine I met a man who said the brakes were all on. I should know the man if I saw him again.

My engine was No. 196 B-3.

Recalled.—I know the road well and I have run to Cawnpore many times.

Recalled on 2nd September 1907.—Mr. Walsh, sub-assistant station master, signed the line-clear in my presence and made it over to the guard, who also signed it and then made it over to me. I signed the counterfoil. The assistant station master told the guard in Hindustani to take out right time, and the guard refused. They were both on the right side of my engine. I then whistled and started, as I got the "all-right" signal from the cabin and the guard showed me a white light and told me to start. I noticed the 2nd signal from the right, which is the correct signal, was lowered for my train. After the accident I noticed 131 up leaving the yard. My engine was standing opposite the gas works before I started.

Jacob, fireman.—I was fireman of No. 211 up goods of the 12th August 1907.

Shortly after my engine had been attached to the train the guard and assistant station master came up to the engine and gave my driver the line-clear. He read it and whistled; the assistant station master told him to start and he started.

The assistant station master gave no starting signal.

The train started and I began to put on coal when the driver suddenly called my attention to

the fact that we were on the wrong line. He put on all his brakes and brought the train to a stand as quickly as possible, but before stopping we collided slightly with a train standing in the dead-end in which we were.

We were just beyond the cabin when the driver said we were on the wrong line.

The guard and assistant station master had no conversation near the engine.

I saw no lights of any sort ahead of me.

I did not notice the brakes on the ballast train vehicles.

I did not see any other goods train leaving Lucknow at that time.

Mr. T. Walsh, sub-assistant station master.—I was working as sub-assistant station master on the 11th August at 22-30 hours.

At about 22-30 I informed the assistant station master that I was going to the north yard to see the goods trains, and asked him to send on the line-clears when they were ready.

As I could do no more with No. 100 down, I went to see No. 211 up on the 10th line in the north yard. I reached there sometime between 0-20 and 0-25. The guard told me that she was not ready as the couplings were slack and side chains not on. I told him to hurry on with his work whilst I went to the south yard to see how 131 up was getting on.

Whilst crossing the yard I noticed that the starting signal was lowered for 131 up and not for 211 up, and concluded from that that the assistant station master had ascertained from the central cabinman that 211 up was not ready and that he had decided to start 131 up first instead.

I found the guard of No. 131 up, who told me that his train was ready, and I gave him the line-clear as soon as it arrived from the office.

When I found out that all was ready for him to proceed I told him to start his train.

The train started at 0-30 (right time).

Shortly after No. 131 up started I noticed the driver slow down, and he appeared to come to a halt for a few moments when he was near the west cabin; he then went on again. Seeing that, I went up the passenger line, as I thought something might be wrong. The driver of 131 up appeared to me to slow down a second time, but eventually went on before I came up with him; so I concluded that everything was all right.

I then crossed the yard to No. 211 up, and when I arrived at the train I found that the guard had signed his line-clear, giving her "out-report" at 0-46, as per his statement to me, and I saw the counterfoil in the book. I then was about to proceed towards the engine to see that all was ready for the train to start, when the fireman came to the brakevan and told me that something was wrong in front. On being questioned he said that the engine had bumped against something in front. I then noticed for the first time that No. 211 up had been moved from its original position, and asked him how it was that it had been moved and by whose orders as the signals were against it. The guard denied giving any order and the fireman could give no answer at all.

The brakevan was standing about 100 yards on the station side of the starting signals, and the engine was well beyond them.

I immediately went forward with the guard to find out what had happened, and when I arrived at the engine I saw the brakevan of the ballast train about 4 wagon lengths ahead.

Previous to this, when I first met the guard on my return from the south yard and found the train had moved, the guard told me that he had given line-clear to the driver but had not told him to start.

When I reached the engine I asked the driver why he moved without orders. He said that he had his line-clear and that there was a green signal in front, and asked what the cabin jemadar was doing that he did not stop him when he saw him going wrong.

I then went on to the ballast train to give assistance to the injured. I found three men under the

wagons dangerously injured and set to work, with the assistance of the ballast train Munshi, to put tourniquets on them and lifted them out on to the side of the track. There was also a boy outside the wagons with one hand smashed.

After attending to the injured I went to the west cabin and telephoned for assistance to convey them to the hospital, which I eventually reached at about 4 o'clock.

When I met the guard of No. 211 up on my return to the north yard he made no mention of the train having started; he was standing by his brake.

I did not see the driver at all till after the accident had occurred.

The bodies of the injured men were lying on the crossing—two under one wagon and the other under the next wagon.

When I reached the scene of the accident the engine and seven vehicles had crossed the Cawnpore level-crossing.

As soon as I reached the brakevan of the ballast train a man drew my attention to the brakes on the brakevan which were screwed on. This would be about 15 minutes after the accident occurred.

Recalled—(guard Andrews's statement read to Mr. Walsh).—I deny having gone to the engine of No. 211 up, nor did I give any order to start it. I always go to the driver of a goods train to start it.

Recalled on 2nd September 1907.—My duties are to supervise the making up of goods trains and to inform the station master on duty when the trains are ready for despatch, and also to arrange for the reception of trains in the north and south goods yard. On intimating to the station master that a train is ready to start, the line-clear book is sent to me by a khalasi. On most occasions I take possession of the line-clear books, but I did not do so on the night in question. The line-clear of 131 up was brought to me by khalasi Juggi, and was sent on to the guard who was informed that he might start his train. After the departure of 131 up I went across to see if 211 up was ready, and I found the guard of 211 up and the khalasi, Ram Antar, were standing by the rear brakevan. Before I went across to 211 up I waited to see 131 up pass to make sure that the train had left complete. I neither gave the line-clear nor permission for 211 up to start. I gave no instructions to the khalasi to make over the line-clear to the guard or driver of 211 up. He had the line-clear book in his possession when I went across to start 131 up. Both line-clears were sent out signed by Mr. Forrester, assistant station master on duty at the time. When working in the yard attending to the despatch of trains it is not my duty to sign line-clears; the assistant station master on duty at the station does this. When the line-clear book for 211 up arrived the guard (Andrews) was present; he made no mention to me regarding the starting signal not being lowered as the train was not ready to start. On seeing the counterfoil of 211 up signed, I ordered the khalasi to telephone the departure of the train to the assistant station master on duty, not knowing at the time that an accident had occurred. It is my duty to read endorsements to native drivers. After telling the khalasi to telephone the out-report it was my intention to go up to the driver and ascertain whether he understood the endorsement on the line-clear and, if not, to explain it to him. As I was about to start for this purpose the engine khalasi turned up and told us about the accident.

Recalled.—After the departure of 131 up I met the guard of 211 up at the rear of the brakevan on the right hand side and the station master's khalasi, who had the line-clear book, a few paces away from him. I then walked down the right hand side of the train with the guard and engine khalasi to ascertain what had gone wrong in front.

S. F. Andrews, guard.—I was guard in charge of 211 up goods of the 12th August 1907, Lucknow to Cawnpore.

After departure of No. 100 down goods for Partabgarh there were six more wagons to be attached in the rear of my train.

Mr. Walsh, sub-assistant station master, told me to come and get line-clear after my train was ready.

At about 0-40 my train was ready to start, and Mr. Walsh and I, with the station khalasi, went to the engine with the line-clear. Mr. Walsh told me to sign the line-clear and give it to the driver. I took out my watch and saw it was 0-45, when the assistant station master asked me if I could book out right time. I said "no, it is already twenty minutes late." Mr. Walsh took the driver's signature for the restriction noted in the line-clear ticket. After that Mr. Walsh told the driver to start the train as everything was all right.

The starting signal for my train was not lowered and I pointed it out to Mr. Walsh who said, "so soon as the driver whistles, the signal will be lowered." At the same time a green signal was shown from the cabin. I do not know if it was for my train or not.

I did not see the signals lowered for any other train. I saw no other train leave the station.

After the train started at 0-50 I jumped into my brake and almost immediately the driver stopped.

The starting signals were never lowered for my train.

When the train stopped I jumped out of my van to see what had happened, and I then noticed the train for Shahjatanpur was passing. Mr. Walsh came up to my brakevan and asked what had happened. I told him that I did not know.

We both went up to the cabin and the cabinman told us that the train had run into the Alamnagar dead siding.

As we were going to the scene of the accident the fireman of my train came running up and said that some coolies had been injured. After giving line-clear to the driver the sub-assistant station master walked towards the station.

It is not the rule for a station master on duty to start a train, but as Mr. Walsh was by the engine it was unnecessary for him to order me to start the train which he did himself.

I felt a slight shock from the collision.

The driver did not whistle for my brake, nor did he whistle at all after the first whistle he gave when starting.

There were no lights on the ballast train. I did not examine the brakes.

The driver did not go up with me to see the damage to the ballast train and coolies.

It did not strike me as strange that 131 up started, and I did not mention it to Mr. Walsh.

No. 131 up stopped as it came to the cabin, when the cabinman shouted out that it was all right and the train went on again.

Recalled on 2nd September 1907.—After shunting was finished, Mr. Walsh, sub-assistant station master, came up to me and said "come and take the line-clear", which was in possession of the khalasi who was with Mr. Walsh at the time. I, the sub-assistant station master and the khalasi then walked up to the driver with the line-clear. Mr. Walsh told me to sign and hand over line-clear to the driver, which I did; it was then 0-45. The train started 5 minutes after line-clear had been handed over. After I had passed 15 wagons the driver started, and after 2 or 3 minutes the collision occurred. There were 49 vehicles on the train. I was in my brake when the collision took place. The signal was not lowered for my train to start. I did not show a red light when I saw he was going against signals. After the collision took place I saw 131 up leaving the yard. I was in my brakevan 3 or 4 minutes before the collision took place. I was on the right side of my train and could not see signals, I did not satisfy myself that signals were lowered when my train started. Mr. Walsh read the endorsement on the line-clear to the driver; sometimes I read it and sometimes the assistant station master. I jumped out of my brakevan on the left hand side after the collision.

Cross-questioned.—When the sub-assistant station master told me to take out right time and whilst I was making over line-clear to the driver, he spoke in English.

Babu Pershad Gantain, guard.—I was guard in charge of No. 131 up goods of 12th August, ex-Lucknow to Shahjatanpur.

My train left Lucknow at 0-30. I started the train with the permission of Mr. Walsh, who was standing opposite the central cabin. My engine was a little in advance of the central cabin.

After my train started and my brakevan reached opposite the west central cabin, the driver slowed down. I called to the cabinman and asked if there was anything wrong: he said "all signals are right for your train".

The signals for my train were correct and the train proceeded.

I noticed nothing wrong at the west cabin.

When my brakevan passed the central cabin I saw Mr. Walsh standing there. He called out to me, "did you book out right time?" Mr. Walsh did not go to the engine of my train but was about two wagon lengths from it.

W. Forrester, assistant station master.—I came on duty at 20-30 at Lucknow on the 11th August 1907.

At about 20-30 Mr. Walsh, who was my sub-assistant station master, took a note of what goods trains were running and went down to the goods yard and asked me to send the line-clears when they were ready.

No. 211 up was the first train due to leave. I therefore sent that line-clear first. At about 0-22 I received a telephone message from the central cabin that there was still some shunting to be done on No. 211 up in rear, and, as the engine of 131 up was on, I sent out that line-clear at about 0-23 and gave No. 33 transmitter to west cabin to enable him to lower signals for that train.

At 0-30 the central cabin jemadar intimated to me on the telephone that the train had left right time, and I gave "out-report" to Alamnagar.

At about 0-43 lever No. 33 was released and reversed. I then gave lever No. 22 at about 0-44, and went across to platform No. 3 to start No. 8 down passenger.

At about 0-50 the west cabin jemadar telephoned that an accident had occurred, viz., that the goods train, No. 211 up, had entered the Alamnagar siding and later on he telephoned that it had bumped against the ballast train.

J. M. Herbert, ballast guard.—I am guard of No. 1 ballast train. At about 18-15 hours I stabled my train in the Alamnagar siding, Lucknow, on the 11th August 1907.

I left the train at 18-30 and went home.

I cut off the rear brake and one wagon from the train to clear the foot-path to the shops; the other 33 vehicles were on the Lucknow side of the foot-path.

The brakes in both brakevans were hard on and about eight brakes on trucks were pinned down. These trucks were next my brake at the Lucknow end of the train.

There were no lights on the train, nor were any wheels spragged or chained to the line. I have no sprags or safety chains.

I could not look any points to isolate my train without interfering with the interlocking.

I have oil and lamps, but did not put the lamps on my train because it was standing parallel to the main line.

Ram Outar, khalasi.—I was on duty at Lucknow on the 11th August 1907.

(2) At 0-5 I took line-clear for the Cawnpore goods train to the north yard by the order of the assistant station master.

(3) When I reached the train I found Mr. Walsh and the guard near the ten lever frame. They told me that shunting was not finished on the train and that I was to wait.

(4) Mr. Walsh waited till the shunting was finished and then went to the brakevan with the guard, and we all then went to the engine and, on arrival there, the guard signed the line-clear and the assistant station master told the driver to start.

(Note.—This man first stated that the assistant station master and guard stayed at the brakevan

and sent him to the engine with the line-clear, and afterwards corrected himself and made the statement in para. 4.)

Recalled on 2nd September 1907.—Mr. Forrester, assistant station master, gave me the line-clear book for 211 up and told me to give it to Mr. Walsh, sub-assistant station master. I did so, and Mr. Walsh told me to wait as shunting was still being done on 211 up. I and the sub-assistant station master then went to the guard's brake. The sub-assistant station master told me to take the line-clear book to the driver. The guard said "I will book out time at the engine". We then all 3 went to the engine. Mr. Walsh then gave the line-clear book to the guard, who, having booked the time, handed it to the driver, and then Mr. Walsh said to the driver in Hindustani "it is all right; you can go on." There was no discussion about booking out right time or not. I told the west central cabin jemadar, Pershadi, that the guard had booked out 0-45. I knew 0-45 had been booked out, because 20 minutes had been lost in shunting, and I knew that 0-25 was the correct departure. I did not see 131 up leaving the yard. The brakevan of 211 up was standing opposite the centre of the coal bin; the engine of the train was about 40 feet from the starting signal.

Burma Din, cabin jemadar.—I was cabinman on duty in the west cabin on the night of the 11th August.

After No. 211 up had collided with the ballast train, No. 131 up came opposite my cabin. The train slowed down and the driver asked me if anything was wrong. I shouted back that everything was all right for him, and he went on.

When No. 131 up had passed my cabin and was out of the station, the guard of No. 211 up and the assistant station master came to my cabin.

The assistant station master asked me why I did not stop the train, and I said I tried to do so by showing a red light and asking him what he meant by going into the dead-end in which the ballast train was standing, but he did not stop.

I did not talk to any one else.

Rahim-ul-Ullah, ballast train Munshi.—At the time No. 211 up collided with my brakevan on the 12th August 1907 I was in my brakevan at Alamnagar end of the ballast train.

When the collision occurred I got out of the brakevan and saw No. 131 up goods passing.

About 15 minutes after the accident occurred Mr. Walsh came to the scene of the accident.

The guard of the goods train came up just behind the assistant station master.

I asked the driver of the goods train what he had done, and he said "it is Kismet"!

In the first conversation I had with the driver he told me that he had received line-clear and saw signals lowered, so he started. He further stated that he was new on the Cawnpore run.

Statement of central cabin jemadar, Pershadi, taken on 2nd September 1907.—The train engine of 211 up was attached about 0-25, and the shunting jemadar informed me that the train was not ready to start. I telephoned to the assistant station master that shunting was not finished on 211 up, and he asked me after how long it would be ready. I replied "in about 15 minutes." Then the assistant station master asked me if the train engine for 131 up had been attached; if so, he would despatch 131 up to Shahjahanpur, as its departure time was 0-30, and

that he was sending down the line-clear for this train by a station khallasi, and that I was to tell the sub-assistant station master that line-clear for 131 up was being sent down. The line-clear was taken by the khallasi to the sub-assistant station master who was standing by the 10 lever frame in the goods yard, and he issued orders for the train to start. The khallasi came and informed that the train had started right time; signals were lowered for 131 up and it started. As the brakevan came opposite my cabin the driver slowed down. When I noticed this I telephoned to the west cabin to know the reason why, and was told that 211 up had run into the ballast train. Ram Autar, khallasi, came to me and told me to telephone to the assistant station master to book out 0-45 for 211 up, and I replied, "how can that be, as the train has run into the ballast train." I did not telephone the departure of 211 up to the assistant station master, as I knew it had not started, but I telephoned to the assistant station master that 211 up had run into the ballast train.

Statement taken on 2nd September 1907 of Moti Lal, driver of 131 up goods.—I was working 131 up goods on the 11th August 1907, from Lucknow to Shahjahanpur. After attaching on to the train I had to wait about 10 minutes for line-clear. When the guard and khallasi brought me the line-clear token I opened my whistle. The starting signal was lowered for my train when I started. On reaching the crossing I saw a train standing on the dead-end siding, and, thinking that I may be running into it, I slowed down.

The west cabin jemadar shouted out to me that the train was on the other line, and asked me why I had slowed down and told me to go on. I slowed down further on as relaying was going on between the distant signal and the level crossing.

The guard of my train explained the restriction of speed for the relaying, and I signed the notice book for the same.

I saw no signals lowered for an out-going train during the time I was waiting for my line-clear.

I did not notice 211 up goods train moving out from the north yard.

Statement taken on 2nd September 1907 of Mr. Taylor, station master, Lucknow.—*Questioned.*—Regarding the statement made by ballast guard Herbert to Mr. Roberts, Executive Engineer, that on the issue of the new General Rule book he had gone to you to point out that, under Rule 77-(o), he should be supplied with safety chains for the protection of his train and that you had told him that it was not necessary; and further that, after the accident, you had issued a safety chain to him of your own accord, what have you got to say?

Answered.—No application was made to me by Guard Herbert for a safety chain until after the accident had occurred. The exact date I do not remember, but it was the day on which the enquiry into this accident was held. Guard Herbert showed me his Rule book on or about the 25th August, when he brought his equipment for inspection. This is the only occasion on which guard Herbert has ever brought his Rule book to me. A safety chain was lent to guard Herbert by me from my stock, on the distinct understanding that he should return it when leaving Lucknow. He could always have the use of a safety chain when stabling in Lucknow, until such time as he received one which would form part of his equipment. All guards equipment have to be inspected by me once a month. This guard had never brought his equipment to me before for inspection. This inspection does not refer to brakevan equipment.

FINDING.

Having carefully considered the evidence we are of opinion that No. 211 up goods of the 12th August 1907 entered the Alamnagar siding at the west end of Lucknow yard and collided with the ballast train, which was stabled there for the night, because the driver of that train (No. 211 up) started against the starting signal.

That the starting signal was against the driver of No. 211 up goods has been proved by the fact that signals were lowered for No. 131 up goods to proceed to Shahjahanpur and was at the time of the accident passing the west cabin.

As the signals are interlocked they could only be lowered for one of these trains at a time. We do not consider that the guard of the ballast train had sufficiently secured his train in the siding. Had he acted up to Rule 77 (0) there would probably have been no loss of life.

F. W. ROBERTS,
President.

A. WATSON,
Member.

T. GREGSON,
Member.

Further remarks by the committee which assembled on the 2nd September 1907.

The caution ticket made over to the driver of 211 up was not signed by the sub-assistant station master, Mr. Walsh.

It is not the duty of the sub-assistant to sign line-clears; this is done by the assistant station master on duty at the station, who asks for line-clear from the next station. It was, on this occasion, signed by Mr. Forrester who was assistant station master on duty at the station at the time.

Driver Moti Lal of No. 131 up goods states that he slowed down on reaching the crossing because he thought his train was running into a train which was standing on the dead-end siding.

We do not believe he thought that his train would collide with the train he saw standing in the dead-end siding, as the starting signal was lowered for his train, which indicated that all points had been correctly set for him.

The question as to whether 211 up was moving at the time driver Moti Lal came up to the west cabin is not cleared up, and there is nothing on record to prove this, although there is no doubt that 211 up must have moved out from the north yard while 131 up was moving out of the station yard, from the fact that 131 up is stated to have started at 0-30 and the departure time for 211 up being 0-45 (according to the line-clear) and the collision having taken place at 0-50.

It would take 131 up at least 15 minutes to start and come out from the south yard up to the west cabin; it would appear the collision took place a few minutes before Moti Lal slowed down.

FURTHER FINDING.

As directed, the enquiry into the above accident was reopened, and further evidence of the following witnesses was taken. Mr. Walsh, sub-assistant station master, guard Andrews of 211 up, driver Dummoo of 211 up, khallasi Ram Autar, Mr. Taylor, station master, and jemadar Purshadi of the central cabin.

On the present occasion Mr. Walsh was cross-examined on his previous statement. His replies agreed with what he had stated before, and we are disposed to believe his version of the case. From his cross-examination it appeared that while Mr. Walsh was attending to 131 up, the line-clear of 211 up was in Ram Autar's possession, but no orders had been given him to make it over to guard Andrews. The evidence on this point is against Mr. Walsh; but the statements of guard Andrews, driver Dummoo, and khallasi Ram Autar were given in such a manner as to lead us to conclude that reliance could not be placed on them.

For example (1) driver Dummoo, and khallasi Ram Autar state that Mr. Walsh conversed with the guard and driver in Hindustani; the guard says it was in English.

ii.—Guard Andrews in his first statement says that the starting signal for his train was not lowered, and that he pointed this out to Mr. Walsh. Now he says that he was on the right side of his train and could not see signals, and that he did not satisfy himself that the signal was lowered when the train started.

iii.—The driver in his former statement says that the assistant station master told him to start. Now he states the sub-assistant station master signed the line-clear and made it over to the guard who signed it and gave it to him and that he got the all right signal from the cabin, and that the guard showed him a white signal and told him to start.

iv.—The driver further now states that he noticed the starting signal for his train had been lowered—a statement obviously untrue.

v.—He further commits himself by his statement that the engine of his train was opposite the gas works before he started. The station khallasi, Ram Autar, says that it was about 40 feet from the starting signal. We consider the latter statement to be the correct one.

Mr. Walsh was undoubtedly to blame for not keeping the line-clear book in his possession until 211 up was ready to start, but it appears that it is not an invariable practice for sub-assistant station masters to keep the line-clear book in their possession until trains are ready to start. It is not possible to say how the line clear came to be in the driver's possession.

As regards the responsibility of the ballast train guard, Herbert, we did not consider that any further evidence was necessary to prove that the wheel of the vehicle nearest to the points had been secured by a safety chain, as he stated that he had no safety chain with him,

and we consider that, on the issue of the new rules, he should have made himself acquainted with those pertaining to the working of ballast trains and taken proper steps to obtain sprags and safety chains.

F. W. ROBERTS,
President.

T. GREGSON,
Member.

R. T. COLLETT-WHITE,
Offg. District Traffic Superintendent,
Member.

In submitting the proceedings and the foregoing further remarks and finding of the second committee, the Manager, Oudh and Rohilkhand railway, remarks as under:—

In this case I have no doubt that the driver was solely responsible for the accident, which was due to his running against signals. The fact that he entered the ballast siding, the signals being interlocked so that they cannot be lowered while the points are set for the siding, proves this incontestably. That he had a line-clear in his possession is no defence whatever. The very first rule of the "Working Instructions" lays down that the possession of the line-clear does not entitle a driver to start, but that he must wait for signals. So far then the cause of the accident is to my mind perfectly clear, and the driver is being prosecuted.

At the first enquiry the part played by the assistant station master, Mr. Walsh, who was on duty in the yard was by no means clear. His own statement was that, finding that No. 211 up was not ready, he left the part of the yard in which she was being prepared to look after 131 up, and, finding that this train was ready and that the signals for her departure had been lowered, he allowed her to go; he denies that he gave line-clear for 211 up which, he states, was started without his knowledge or permission.

The guard and driver of 211 up state that Mr. Walsh gave them the line-clear and told them to start. The driver further stated that Mr. Walsh signed the line-clear. As it is in evidence that this line-clear was not signed, the driver's evidence cannot be accepted.

The guard in his first statement said that the signals were not lowered for his train and that he pointed this out to Mr. Walsh. In his second statement he stated that he could not see the signals.

The evidence of the driver and the guard is thus throughout discredited, and I do not believe it. It is clear that Walsh was on the alert as regards the despatch of 131 up. His statement that No. 211 up was not ready to start is substantiated by the fact that the assistant station master on duty, on information furnished through the telephone by the cabinman, decided to start No. 131 up first.

I therefore accept his statement. What I believe happened is that the work having been completed on 211 up, the guard and driver thought they might as well get away and took possession of the line-clear and started; and that the khallasi, having permitted the guard to take the line-clear, in self defence, backed up the statement that Walsh had given the line-clear.

Remarks by the Senior Government Inspector of Railways, Lucknow.

According to paragraph 1 of the "working instructions" and subsidiary rule 297 (a), having the line-clear does not permit the driver to start.

It is clear that the driver of 211 up started against the starting signal.

It was to my mind fully proved that Mr. Walsh did not give permission to start, as he was, when No. 211 up started, engaged in starting 131 up. He should, however, have retained possession of the line-clear until ready to start No. 211 up.

With regard to the guard of the ballast train not taking proper precautions, it must be noted that he was unable to carry out rule 77 (0) because the points to the siding on which the ballast train was stabled must be set normally for that siding and if they had been set against it the working of that end of the yard would have been interfered with as the main line would have been blocked. The siding is really a trap for the north goods yard and should not have been used for stabling a ballast train, or if this was absolutely necessary owing to no other siding being available (accommodation in the Lucknow yard is limited.) extraordinary precautions should have been taken, more especially as this ballast train could not be protected by a red light at the end because the siding on which it was stabled is parallel and adjoining the main line.

J. E. GABBETT,

Senior Government Inspector.

Appendix XXV to the abstract return of accidents on Indian railways
for the twelve months ended the 31st December 1907.

Report of the proceedings of a committee of enquiry which assembled at Rewari station, Rajputana-Malwa railway, to investigate the cause of the derailment of the engine, and the capsizing of the tender and leading bogie composite third class and brake, of 27 up mail train at that station on the 21st May 1907.

The committee was composed of the following officers:—

C. R. SCOTT,	<i>District Traffic Superintendent</i>	...	... President.
W. S. FRASER,	<i>District Loco. Superintendent</i>	...	... } Members.
W. HALL,	<i>Executive Engineer</i>	...	
C. S. RENNICK,	<i>Government Inspector of Railways...</i>	...	... Present.

DESCRIPTION.

No. 27 up mail train while entering Rewari station yard on the night of the 21st May 1907 was derailed at the crossing of points No. 16. The engine was derailed, travelled 106 feet from the point of derailment and finally coming to a stand, overturned the tender and bogie third class 1582, causing damage to permanent-way and rolling-stock. One third class passenger was slightly hurt and the engine Khallasie injured. A sketch of the site of the accident is attached. (*Vide Annexure No. 1.*)

EVIDENCE.

R. M. Crichton, assistant engineer, Rewari.—I was on the site of the accident at 0-20 hours, and the plan I deposit shows the state of affairs at that time. Engine 537 (O), with tender and bogie third class 1582 being derailed, the latter lying on its side.

Q.—Was there any evidence to show which wheels left the road first?

A.—The engine wheels, but whether leading or trailing I can't say.

Q.—Was there any evidence or mark to show at what point the wheels left the road?

A.—Yes, about 7 feet in front of the nose of the crossing there was a mark on the track caused by the flange of a wheel, and between that point and the nose of the crossing 2 bolts were broken.

Q.—Was there any evidence to lead you to the conclusion that the road at the curve of the crossing was imperfectly spiked?

A.—I examined the road after the train had been drawn back and found the road a 16th to an 8th slack.

Recalled.—Q.—How long have you been in Rewari?

A.—About 6 months.

I have observed passenger trains entering Rewari yard at excessive speed. I should say 3 up enters the yard frequently at 25 miles an hour, and I have reported such to my Executive Engineer verbally.

J. W. Smith.—I was 2nd guard of 27 up mail and was riding in the derailed bogie third class. I felt a shock and was knocked on one side and gripped my brake which then capsized. The speed of the train was about 8 or 9 miles an hour. I felt no application of brakes. The driver used vacuum on the journey.

Q.—Where does the driver usually put on vacuum coming into Rewari yard?

A.—At points No. 16.

Budha, fireman.—I was fireman of 27 up mail and on arrival at the auxiliary signal the tender brake was put on by the khallasie. When we got on to the facing points the driver ordered the brake

to be taken off. We got up to the crossing of points No. 16 when the train left the rails. No more brakes were applied.

Q.—Where does the driver usually put on his brakes with 27 up?

A.—When he gets to the platform, if slow. If he comes fast then he puts it on earlier. It is never put on at the crossing because it gives a jerk.

Q.—Did the driver fall?

A.—No, he held on to the reversing lever.

Q.—Did the driver try to put on brakes after the engine was derailed?

A.—I did not see him do so.

Sukhia, khallasie.—I was khallasie of 27 up and put on the tender brake when we arrived at the auxiliary signal; I took it off at the facing points No. 5. When we got to the second crossing I felt the engine give a jerk and after that I know nothing.

Q.—Did the driver put on his brakes?

A.—No.

Khub Ram, jemadar.—I was jemadar on duty, and, after locking all points for reception of 27 up mail, I went to the facing points No. 5. The driver came in at the usual speed.

Q.—Were brakes on or not?

A.—I do not know.

Bhodan, pointman.—I was manning points No. 16, my jemadar having gone to points No. 5. As the train struck the crossing the engine left the rails. The speed of the train was as usual. As the driver was striking the points I saw him putting on his brake.

Q.—Did you hear as well as see him do this?

A.—I both heard and saw. I heard the brake working about 5 yards beyond the points.

Mr. Deck, assistant carriage examiner.—I was standing on the spot where the bogie third class was derailed. The pointman was at points No. 16 and signals were given for 27 up. After the train had

got a yard or so past points No. 16 the engine appeared to have got derailed. Two or three seconds after the bogie third class got capsized where I was standing. I jumped back just in time. About a minute after I saw the assistant station master, Mr. De Linares, who took away the keys from the jemadar. Some ladders were brought and we assisted to extricate the passengers. Afterwards the assistant station master, driver and I went to the points to see if they were locked and found they were. We then inspected the road to see where the first marks were. I pegged off the first marks in front of the station master and foreman. The distance between this derailed mark and the derailed engine was 95 feet 6 inches, and from points No. 16 it was 58 feet 6 inches. The train was travelling at about 6 miles an hour.

Q.—What is the average speed of 3 up entering Rewari?

A.—Seven miles an hour. Consequently 27 up on this night came in a little slower than 3 up comes in as a rule.

Q.—Did you see any sparks as the engine came on the cross-over road?

A.—Yes, a few which appeared to be from the wheels. I saw these before the engine passed me. The engine was near the crossing of points 16 when sparks were emitted.

Q.—When did you notice the sparks?

A.—At the same time as I saw the engine lurch.

G. Davey, driver.—On signals being lowered, I gave my whistle approaching the level-crossing gate. I passed the facing points at 10 miles an hour. I had my tender hand-brake on, which my khallasie quickly released on striking the facing points. I took the first crossing at 9 miles an hour, and when coming on to the second crossing I was running at 8 or 9 miles an hour. As I struck this crossing my engine gave a lurch which threw me back. On picking myself up I tried to apply the vacuum brake, but the vacuum had already been destroyed. My engine left the road to the right, pulling along with it the tender and bogie third class 1582, both of which capsized. I ran back to inspect points No. 16, and found they were correctly locked for the station line. We then looked for the first mark of derailment and found it at the crossing a little away from the nose. I thought there was some foul play, but could find nothing suspicious.

Q.—Did you have any particular reason for suspecting foul play?

A.—No.

Recalled.—Q.—When did you examine the points?

A.—Immediately after I got derailed, and a second time with assistant station master and assistant carriage examiner.

G. DeLinares, assistant station master.—I saw 27 up mail entering the yard as she struck the level-crossing. I was standing in front of the first class gentleman's waiting room. When the mail was passing the crossing of points No. 16 I heard a noise and I saw a shower of sparks flying from the wheels of the engine. I proceeded to the spot and found that the engine, tender and the leading bogie third class had capsized. I went to see if my points were locked and found they were and took the keys. The driver and assistant carriage examiner were with me. I then examined the road and found that the engine had left the rails at the crossing of points No. 16. There was a mark on the rail. In the morning I measured this with the station master and it was 7 feet from the nose of the cross-over. The train struck the crossing of points No. 16 at 6 to 7 miles an hour.

Q.—What was your object in taking the keys?

A.—To satisfy myself that the points were locked.

Mr. Dunne, guard.—Whilst entering the Rewari yard I felt 3 jolts and the trains came to a dead stand. I ran up to the front and discovered that the front bogie third class 1582 had capsized and the engine tender was on its side. We got ladders and rescued the passengers from the bogie third class, 17 in number and the train constable. Two passengers were injured; one had a slight cut above the eye and the other got his leg hurt. I calculate the speed we were going at at from 8 to 10 miles an hour. We were using vacuum on the road, but the driver had not started applying the vacuum coming into Rewari yard.

Q.—What time did the accident occur?

A.—At 23-28.

Q.—What time did you leave Jatusana?

A.—Right time.

Q.—Did you feel any slowing down of the train before you felt the shocks?

A.—The driver had already shut off at the distant signal.

Q.—Have you felt a jerk before coming over this crossing?

A.—Yes, but I made no report to this effect.

FINDING.

From the evidence before us we are of opinion that the witnesses have underestimated the speed of the train at the time of the accident, which was in all probability travelling considerably in excess of the prescribed limit of 10 miles an hour.

We attribute the accident partly to this and partly to the fact that the cross-over road was not in a very good condition, and the curve of the crossing (1 in 7) is too sharp for the traffic passing over it. We suggest that a speed limit of 5 miles an hour be put on all cross-over roads less than 1 in 12.

We recommend that the Locomotive and Engineering staff to blame be dealt with departmentally.

C. R. SCOTT,
President.

W. S. FRASER,
Member.

W. HALL,
Member.

The Agent, Bombay, Baroda and Central India railway, in forwarding these proceedings remarks as follows:—"I consider the accident was primarily due to the defective condition of the yard. On receipt of the Government Inspector's telegram of the 25th May 1907 instructions were at once issued to put in easier curves and crossings and to have the whole yard put into thorough good order so as to be fit for fast traffic. It is not, I think, established that the speed of the train exceeded the limit of 10 miles an hour, and in this connection I forward copy of letter No. R/1040, dated 4th June 1907, from the Locomotive Superintendent, Rajputana-Malwa railway" (see Annexure No. 2) "from which it will be seen that that officer finds it impossible to agree with the committee's finding that the driver contributed to the accident. I would add that the salary of the Permanent-way Inspector has been reduced by Rs. 25 per mensem for 6 months, the Sub-Inspector has been fined Rs. 10 and

the mate in charge of the yard has been reduced to keyman. I much regret that the yard was allowed to fall into such bad order and have taken up the matter with the Engineer-in-Chief."

Remarks by the Government Inspector of Railways.

I agree with the finding of the committee; crossings of 1 in 7 are quite unsuitable for turn-outs and cross-over roads for fast passenger traffic. In this instance the conditions had been aggravated by lengthening the lead of the crossing, thus sharpening the curve in front of the crossing; at the point of derailment I found the radius of the curve to be only 200 feet, the minimum permissible under the schedule of standard dimensions being 330 feet. There are other 1 in 7 cross-overs in the Rewari yard used by passenger trains; these should be removed and easier crossings laid in.

I do not consider that the conditions of the cross-over 16 to 19 alone accounts for the accident; many trains must have been passed over this cross-over without derailment, hence I am of opinion that the driver of 27 up was running very considerably faster than the regulation 10 miles per hour; and, from the fact that sparks were seen coming from the wheel while the engine was on the cross-over I conclude that he applied his vacuum brake suddenly as he passed the points.

Immediately after the enquiry the following telegram was despatched to the Agent, Bombay, Baroda and Central India railway:—

"Investigated accident to 27 up at Rewari on 21st instant, cause sharp curve on cross-over sixteen-nineteen and excess speed. Cross-over fourteen-fifteen and sixteen-nineteen have crossings angle 1 in 7 turn-out 43 has curve less than three hundred feet radius. Speed over all the above should be restricted to five miles an hour and use of vacuum brake in Rewari yard prohibited until easier crossings and curves have been laid in, otherwise nothing to prevent similar accident again. Please issue instructions accordingly."

CHARLES S. RENNICK,

Documents accompanying.—

Government Inspector.

Annexure No. 1.—Sketch showing site of the accident.

Annexure No. 2.—Copy of a letter No. R 1040, dated 4th June 1907, from the Locomotive Superintendent, Rajputana-Malwa railway, to the Agent, Bombay, Baroda and Central India railway.

Remarks by the Senior Government Inspector of Railways, Lucknow.

The lead at both the crossings 16 and 19 was too long; this had the effect of sharpening the curve near the crossing. At the point of derailment the curve was found by the Government Inspector to be only 200 feet instead of 476 feet the standard radius. This, no doubt, was the direct cause of the accident.

That such a state of things should have been allowed indicates bad maintenance and defective supervision.

I see no reason for supposing that the speed was excessive.

J. E. GABBETT,

Senior Government Inspector.

The 1st July 1907.

Annexure No. 2 in appendix XXV to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

Copy of a letter No. R-1040, dated 4th June 1907, from the Locomotive Superintendent, Rajputana-Malwa railway, Ajmer, to the Agent, Bombay, Baroda and Central India railway, Bombay.

I have read the evidence taken before the joint committee and their report on the derailment of engine and tender and bogie third class on 27 up mail at Rewari on 21st May 1907.

The verdict is that the witnesses underestimated the speed at which the train entered the yard, and that the committee deem the speed to have been in excess of 10 miles an hour and that the angle of the crossing was too sharp. To the high speed, sharp angle of crossing and the state of the permanent-way, the accident is attributed.

With regard to the question of speed, the evidence shows that the driver shut off steam at the distant signal and the hand brakes were then applied, but that shortly after the driver ordered them to be taken off. This is the driver's statement and is confirmed by the fireman and khallasie. No further application of the brakes was made, and the driver states that the vacuum brake was not used; and this is confirmed by the head guard. This certainly indicates that the driver did not consider the train was entering at an excessive speed, but that in his opinion the train would not have reached its usual halting place if the brakes had remained "on." Then there is the evidence of the jemadar pointsman with 10 years' railway service. The 2nd guard T. W. Smith, 4 years' service, a pointsman with 10 years' service; Mr. Beck, carriage examiner, 2½ years' service (who was so close he had a narrow escape from the derailed vehicles); Mr. DeLinares, assistant station master, with 10 years' service; Mr. Dunne, head guard, service not mentioned, who all state that the speed when the accident took place was considerably under 10 miles an hour. These employes are men of considerable experience and should be well able to estimate the speed of a train; moreover it is to be noted they belong to different departments, and there appears to be no reason why their opinions should be biased towards underestimating the speed of this particular train. The circumstantial evidence is that after the derailment the engine ran on 35½ yards before coming to a stand, that is to say, a little over 2½ engine lengths. It may here be noted that from the point of derailment to the site on the platform where the train should have stopped was about 150 yards. The approximate weight of the train behind the engine would be 170 to 200 tons; and according to the statement of the driver and his staff there were no brakes on at the time; yet the engine with this load behind her, only proceeded 35½ yards after leaving the rails and only one vehicle besides the engine and tender was derailed; the remainder of the vehicles remained standing on the rails and did not even become detached from the overturned carriage. The head guard only felt a jolt. I submit that this circumstantial evidence is proof positive that the speed was not excessive and confirms the opinion expressed by all the witnesses that it did not exceed 6 or 8 miles an hour.

With regard to the driver, he has about 6 years' service. His record is a good one and he was one of the men whose services during the heavy work of the Delhi Durbar, were especially commended for excellent work. I am of opinion that the evidence of the witnesses and the circumstantial evidence confirm his statement that he entered Rewari yard at the usual rate of speed. The crossing at which the derailment took place is 1 in 7; and I believe I am correct in saying that such a sharp angle is not used except in dead-end sidings and outside lines where only hand shunting is usual and the angle recommended is 1 in 12 and that 1 in 10 is generally used as a minimum.

No evidence was taken from any permanent-way subordinate as to the state of the road and this seems unsatisfactory and it is difficult to see what grounds the committee have for their finding that the state of the permanent-way contributed to the accident without having enquired in this matter at all.

To sum up the case solely from the evidence and records:—

The angle of the crossing at which the derailment took place is 1 in 7 while the general practice is an angle of 1 in 10.

The speed according to all the witnesses did not exceed 10 miles an hour, and several estimated it at 6 to 8 miles.

The engine ran only 35 yards or 2½ engine lengths after derailment.

The only derailed vehicles were the engine and tender and one bogie third class. The remainder of the train did not leave the rails, nor did it disconnect from the derailed vehicles.

In the face of this evidence I find it impossible to agree with the committee's finding that the driver contributed to the accident.

Annexure I in appendix ~~XIV~~ to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

B. B. & C. I. RLY REWARI ACCIDENT TO 27 UP MAIL ON 21-5-07

— Plan showing site of accident and derailed —

— Vehicles —

— Scale 40' = 1 inch —



Distances (see diagram)

From P# 5 to P# 16 = 1038 feet

" " 5 " " 14 = 475 " From Delhi & Sirsa

" " 14 " " 18 = 563 "

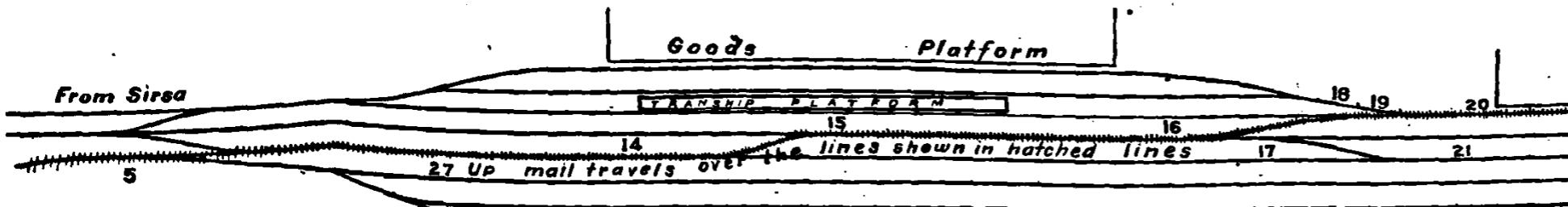
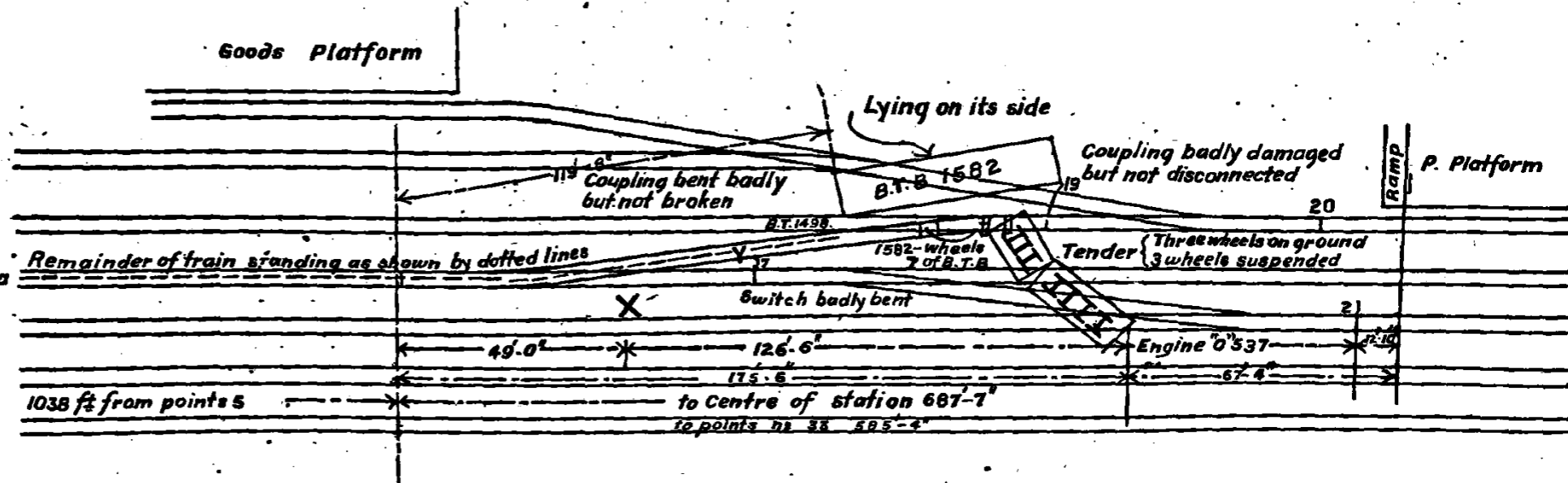


Diagram of lines

(X = Point of Derailment)

(Y = Broken rails)

(Z = Top flange of rail fractured in three places.)

Appendix XXVI to the abstract return of accidents on Indian railways for the twelve months ended the 31st December 1907.

Report of the proceedings of a committee of enquiry (at which a Government Inspector was not present) which assembled at Hubli on the 15th April 1907 to enquire into the cause of the derailment of a goods train which occurred at mile 5—17 on the Harihar branch of the Southern Mahratta railway between Hubli and Kundgol stations on the 10th idem.

The committee was composed of the following officers :—

G. VIBART, District Engineer	President.
S. J. MERCER, District Traffic Superintendent	} Members.
M. C. CLARKE, District Locomotive Superintendent	

LOCALITY.

The accident took place at mile 5—17, Harihar branch. There is a slight rise from mile 8 to mile 7, thence falling grades of 1 in 100 for half a mile and 1 in 300 for half a mile followed by 1 in 125 to the scene of accident at mile 5—17.

DESCRIPTION.

Nineteen vehicles of No. 21 up goods train, Harihar to Hubli, were capsized and derailed at mile 5—17 between Kundgol and Hubli at 13-10 hours on the 10th April 1907. No. 21 up goods consisted of 31 vehicles, total load 298 tons.

The accident resulted in damages to permanent-way and rolling-stock to the aggregate value of Rs. 6,468.

EVIDENCE.

Govind Balvant, permanent-way inspector Hubli.—I am not in charge of the section where the accident took place; but, occurring near Hubli, I proceeded at once to the scene, with material, etc.

On arrival at the spot, about 16 hours, I made a sketch of the derailed vehicles which, as far as I am aware, represents their actual position after the derailment. I found a broken axle with one wheel in the position noted in the sketch.*

*Not appended. This had a flaw.

Driver B. Sorabji.—I was driver of No. 21 up goods from Harihar to Hubli on the 10th April 1907. I left Kundgol at 12-53 with a full load.

When I came to mile 5—18 I felt a little jerk and looked behind and saw a wheel coming from under one of the wagons and rolling down the bank. I then whistled for guard's brake, and put on my steam and hand brake and stopped the train. My engine and wagons attached were about $\frac{1}{2}$ telegraph post in advance of the derailed wagons. There were only two wagons attached to my engine when I pulled up—a C. G., which had not left the rails and M. S. No. 2192, of which an axle had broken. I saw the guard and two brakemen and asked if they were hurt; they replied no. The guard sent me with light engine to Hubli for assistance.

Immediately the accident occurred I looked at my watch. The time was 13-10. The speed of the train when the accident occurred was about 15 miles an hour.

Guard Mukund Rau.—I was guard of No. 21 up goods of 10th April 1907 from Harihar to Hubli.

My train was full load of 32 vehicles including brake=300 tons.

The train left Kundgol at right time, 12-53. When we arrived at about 5—17 miles the driver whistled for brakes; I applied these and looked out. I saw dust flying and wagons falling over, and then

the train came to a stand. I got out of my brake and went to where the derailed wagons were lying. I found the engine with one wagon attached on the metals, and a second wagon attached (M. S. No. 2192) with the front wheels on the rails and the rear axle broken. The engine and these two wagons were about half a telegraph post in front of the derailed vehicles. I examined the derailed vehicles and found 19 in all capsized and derailed. The rear portion of the train consisting of 11 vehicles remained on the road. I sent the driver into Hubli for assistance and protected my train, as per rules, with detonators and flags. I looked at my watch after the accident had happened and it was 13-10 hours. The speed was about 15 miles an hour when the accident occurred.

I asked the two brakemen whether they were injured and they replied no.

Fernandez, permanent-way inspector.—I am the permanent-way inspector in charge of the section. I received notice of the accident at 16-40 hours and proceeded at once to the spot.

On arriving I found that 18 wagons and a 8rd class brake had been derailed at mile 5—17. Mr. Govind Balvant, the Hubli permanent-way inspector, had arrived earlier and had made a sketch of the derailed vehicles and handed the same to me. They were in much the same position when I arrived. I examined the road and found at mile 5—18 marks of a wheel on the sleepers and that one wheel had been dragged 180 feet to where all the vehicles derailed. All the derailed vehicles (with the exception of one C. G. and M. S. 2192) occupied a space of about 120 feet. The engine and one C. G. wagon were on the rails about 168 feet in front of the derailed wagons.

I understood the cause of the derailment was a broken axle, but I did not examine this. The road was in good running order. Damages done to

6. Thus the total number of persons reported to have been killed and injured during the twelve months amounted to 2,217 and 2,211 respectively.

IV.—Number of persons killed and injured in accidents to trains, rolling stock, etc., during the year 1908.

7. The following is a summary of the number of accidents, as classified in Abstract No. 4, which occurred on the several railways and which resulted in loss of life or injury to persons:—

Railway.	Number of accidents reported during the year 1908.	PASSENGERS AND OTHERS.		SERVANTS.		TOTAL. ^{second pattern} just	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
5' 6" GAUGE.							
Bengal-Nagpur	10	2	3	1	6	3	9
Bombay, Baroda and Central India	5	24	34	3	9	27	43
Eastern Bengal State	4	1	10	1	4	2	14
East Indian	39	9	32	10	53	19	85
Great Indian Peninsula	11	...	8	4	12	4	20
Indian Midland	3	1	2	...	3	1	5
Madras and Southern Mahratta	8	1	17	1	5	2	22
His Highness the Nizam's Guaranteed State	2	...	...	1	2	1	2
North Western State	22	17	31	9	33	26	64
Oudh and Rohilkhand State	7	73	126	7	17	80	143
South Indian	2	...	8	1	5	1	13
3' 3½" GAUGE.							
Assam-Bengal	1	...	...	1	2	1	2
Bengal and North-Western	6	...	5	1	5	1	10
Bhavnagar-Gondal-Junagad-Porbandar	2	...	2	...	...	...	2
Burma	9	...	5	2	9	2	14
Dibru-Sadiya	1	...	1	...	...	...	1
Eastern Bengal State	3	...	6	...	1	...	7
Madras and Southern Mahratta	2	...	4	...	...	...	4
Rajputana-Malwa	8	3	3	...	6	3	9
Rohilkund and Kumaon	2	...	1	...	3	...	4
South Indian	4	...	14	...	...	...	14
SPECIAL GAUGES.							
Cooch Behar (2' 6")	1	...	1	...	...	...	1
Jorhat (2' 0")	1	...	...	1	...	1	...
TOTAL	153	131	313	43	175	174	488
Previous year	139	61	198	40	120	101	311

8. With an increase of 1,049 miles, or 3.55 per cent. in the mean mileage worked, and of 3,095,000 miles, or 2.48 per cent. in the train-mileage run, the number of train accidents increased by 767.

The total number of persons of all classes killed by causes beyond their control was 174 against 101 and the number injured 488 against 311. Out of a total of 321.17 millions

against 305·89 millions of passengers travelling, and of 12,102·93 millions of miles against 11,840·65 millions of miles travelled; 121 passengers were killed and 284 injured against 45 killed and 150 injured. This gives an average of one fatal casualty in 2·65 millions against one in 6·80 millions of persons travelling, and an average of one in 100·02 millions against one in 263·13 millions of miles travelled in 1908 and 1907 respectively.

9. A brief description of some of the accidents resulting in loss of life, injury to persons, or serious damage to rolling-stock, is given below:—

(i) *Bombay, Baroda and Central India Railway*.—On the 26th June 1908, No. 5 down express train collided with No. 47 down goods train at Itola station, due to the driver of No. 5 down train having run against signals and to the disregard of rules by the station staff. Twenty-four passengers and two railway servants were killed and thirty-four passengers and five railway servants injured. The rolling-stock was considerably damaged.

(ii) *Eastern Bengal State Railway*.—On the 10th January 1908, No. 119 up mail train was derailed on the platform loop of Magra Hat station, due to excessive speed over the loop cross-over. One passenger and one railway servant were killed and three passengers injured. The rolling-stock and permanent-way were considerably damaged.

(iii) *East Indian Railway*.—On the 7th March 1908, an up goods train collided with a down goods train between Worsleyganj and Kashi-chak owing to false line clears having been given to the drivers of both trains. One railway servant was killed and six injured. The rolling-stock was considerably damaged.

(iv) On the 8th March 1908, an up express passenger train collided with an up van goods train at Somna station, due to disregard of rules, whereby line clear was given for the up passenger train before the line was actually clear. Two railway servants were killed and six injured. The rolling-stock was considerably damaged.

(v) On the 30th March 1908, a down goods train collided with an up goods train at Patna station, due to disregard of rules by the Station Staff. Certain wagons on the up train which were loaded with kerosine oil, caught fire, and the blazing oil having splashed on to the engine of the down train burnt three of the engine crew who subsequently succumbed to their injuries. The permanent-way and rolling-stock were considerably damaged.

(vi) On the 21st June 1908, an up passenger train collided with a down express passenger train at Rasulabad station owing to the points having been wrongly set. Four passengers were killed and fourteen passengers and five railway servants were injured. The rolling-stock was considerably damaged.

(vii) *Great Indian Peninsula Railway*.—On the 5th August 1908, No. 172 up goods train collided with No. 137 down goods train at mile 347 between Savalji and Gulbarga stations, owing to line clears having been wrongly given to both trains. The driver and fireman of the down train were killed and the driver and fireman of the up train injured. The rolling-stock was considerably damaged.

(viii) *North Western State Railway*.—On the 4th August 1908, No. 34 down passenger train was derailed at mile 725—15 between Pacca Anna and Gojra stations, owing to the line having been breached through heavy rain. One passenger was killed and two passengers injured. The rolling-stock and permanent-way were considerably damaged.

(ix) On the 26th September 1908, No. 88 down goods train collided with a shunting engine with 29 vehicles attached, at Phillour station, owing to the carelessness of the loco. and traffic staff. Four wagons were derailed. The shunter and fireman were killed and the guard and driver slightly injured. The rolling-stock was seriously damaged.

(x) On the 3rd December 1908, No. 3 up mail train collided with No. 4 down mail at mile 1029 between Mustafabad and Barara stations due to line clear having been given for 4 down mail after permission had been given for No. 3 up mail to proceed in the opposite direction. Fifteen passengers and seven railway servants were killed and twenty passengers and four railway servants injured. The rolling-stock was seriously damaged.

(xi) On the 30th December 1908, No. 7 up passenger train collided with a ballast train at Jagraon station, due to disregard of rules. Three passengers were injured one of whom died subsequently. The rolling-stock was seriously damaged.

(xii) *Oudh and Rohilkhand State Railway*.—On the 6th May 1908, No. 23 up passenger train collided with No. 25 down passenger at mile 84·7 between Dasna and Ghaziabad, owing to both trains having been allowed on to the same block section at one time. Seventy-two passengers and seven railway servants were killed and one hundred and eighteen passengers and one railway servant injured. The rolling-stock was seriously damaged.

(xiii) *South Indian Railway (5' 6" Gauge)*.—On the 29th June 1908, No. 87 mail train collided with No. 30 mixed train at Tirupattur station, due to the carelessness of the station

staff in admitting the mail on the wrong line. Eight passengers and five railway servants were slightly injured.

(xiv) *Bengal and North-Western Railway*.—On the 12th January 1908, No. 20 down mixed train collided with an up goods special train between Kanti and Muzaffarpur, due to the latter having started without a line clear. One servant was killed and three injured.

(xv) *South Indian Railway (3' 3 $\frac{1}{2}$ " Gauge)*.—On the 20th June 1908, while No. 40 mixed train was running between Valavanur and Kandamangalam stations it parted owing to the coupling not having been properly secured and the two parting portions collided. Ten passengers were slightly injured.

R. C. F. VOLKERS,

Secretary, Railway Board.

SIMLA;

Dated the 8th July 1909. }

Documents accompanying.

1. Abstract return of accidents for the twelve months ended the 31st December 1908, with appendices thereto.

2. Diagram showing for each year from 1890 to 1908 certain statistical results relating to accidents.