

Railway Accidents

Reports by the Government
Inspectors of Railways of
Inquiries into Accidents

Which occurred during the

Half-year ending the 31st March 1927



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NORTH WESTERN RAILWAY.

**ACCIDENT TO 86 DOWN MAIL TRAIN AT AMRITSAR ON THE
9TH OCTOBER 1926.**

Office of the
Senior Government Inspector of Railways,
Circle No. 4, Lahore.

FROM

MR. W. V. BUTCHER,
SENIOR GOVERNMENT INSPECTOR OF RAILWAYS,
CIRCLE NO. 4, LAHORE.

TO

THE SECRETARY,
RAILWAY BOARD,
DELHI.

Dated the 3rd December 1926.

SIR,

In accordance with Rule (7) of Railway Board's Notification No. 120-T.—18, dated 21st March 1923, I submit herewith report of the enquiry held by Mr. H. Dale Green (late Senior Government Inspector) from 11th to 14th October 1926, at Amritsar, into the circumstances attending the derailment of 86 Down Bombay Mail, at Amritsar on the North Western Railway, on 9th October 1926 at 22-55 hours.

2. The following Officers attended the enquiry:—

- H. F. Lockwood, Esq., Divisional Superintendent, Lahore.
- Mt.-Col. W. Macrae, Deputy Chief Engineer, Special Works, North Western Railway, Lahore.
- W. M. Cargill, Signal Engineer, Lahore.
- J. S. Goss, Divisional Rolling Stock Officer, Lahore.
- B. C. L. Bean, Divisional Transportation Officer, Lahore.
- R. P. Varma, Executive Engineer, No. 2.
- Sirdar Abdul Hussain Khan, Extra Assistant Commissioner and Magistrate, 1st Class, Amritsar.

Description of Accident.

3. This report deals with the derailment of 86 Down Bombay Mail, at Amritsar, at 22-55 hours on 9th October 1926.

4. When entering Amritsar yard the engine left the track at facing points No. 20 which were correctly set and locked for the turnout to No. 3 platform. The engine and two leading bogie coaches were completely derailed, and the leading wheels of the third bogie coach were also derailed. The second bogie on the train which was an intermediate and third class coach telescoped partly into the leading bogie coach which was a 1st and 2nd class composite.

5. Three passengers (Capt. Spencer Cocks, R.A.M.C., Rifleman Duncan and Mussammat Pritam Kour) were slightly injured, and one passenger (Mr. Gian Singh, Sugar merchant, Amritsar) seriously injured. A travelling ticket examiner was also slightly injured. The Engine crew were uninjured.

6. The train travelled a distance of nearly 300 ft. from the point of derailment before it came to a stand. The engine was canted over to the right and the wheels on that side were embedded nearly up to the foot plate. This clearly indicates that the train was travelling at excessive speed. According to Rules the speed for a turnout at facing points should not have exceeded 10 miles per hour.

7. Remodelling is in progress in Amritsar yard but these points and signals were fully cabin interlocked. The points were correctly set and locked and the signals lowered for admission of the train.

8. The undamaged coaches of the mail train were detached and shunted to the station, and a fresh engine and a composite bogie were attached. The train left for Bombay after a detention of one hour and forty minutes.

Description of the Site of the Accident.

9. The derailment took place at facing points No. 20 in the Down main line at the Lahore end of Amritsar. These points are 1,575 ft. from the centre of the present Down main line platform, No. 3.

10. Amritsar Station Yard is undergoing remodelling and before work was taken in hand the down main line ran straight to the passenger platform at the station building. This passenger platform is being widened and has been temporarily closed for the reception of trains, island platform No. 3 being used instead. When this change was carried out Points No. 20 were put into the main line to give the necessary turnout to No. 3 platform. The portion of the old straight main line from Points No. 20 to the station building was retained temporarily as the only connection with the Engine Shed runs into it with a set of trailing points, and as the line would also be required later for work in connection with the dismantlement and rebuilding of the roof spanning tracks at the station building. The interlocking and signals for the reception of trains were altered temporarily but they continued to be worked from West cabin the direct distance of west cabin from Points No. 20 is 953'-9". The home signals in use at this point were a high arm for the line to platform No. 3 and a lower arm to platform No. 5. Both signals were on separate brackets on the same post situated 247' in advance of Points No. 20. Trains to either platforms No. 3 or 5 had to take the turnout at Points 20.

Conclusions.

11. All the evidence shows that the signals were correctly lowered and that Points No. 20 interlocked with them were also correctly set and locked. An examination of points No. 20, and the west cabin after the accident showed that if the switch were gaping even $1/16$ of an inch the locking bar could not be worked and the home signal could not be lowered. The points could not therefore have been gaping and there was nothing to show that any wheel could or did pass between the switch and stock rail. The points however were packed with a mixture of ballast and cinders and had not been sufficiently long in the line to be firmly bedded and it was also noticed that at the toe of the switch the track was about $3/16$ inch lower than the track 5 ft. in advance. I am therefore of opinion that the derailment occurred by the leading wheels of the engine mounting the switch and stock rail, particularly as the wheels of the coaches took the correct road.

12. The Driver of the train states that he entered the yard cautiously and must have been travelling at any thing from 15 to 20 miles per hour when the accident took place. But taking into consideration that the engine and two leading coaches were completely derailed, also the leading wheels of the third bogie, and that the train travelled a distance of nearly 300 ft. from the point of the derailment, by which time the engine had embedded itself on one side nearly up to the foot-plate, I am of opinion that the speed must have been about 35 miles an hour.

13. The driver contends that it was permissible for him to enter the yard at any speed up to 60 miles per hour for the following reasons:—

- (a) "The line was governed by the straight line signal" (*i.e.* because the signal arm was higher than the arm on the adjoining bracket).
- (b) "The line was governed by the Main Line Signal" and he "considered it the Mine Line".
- (c) "After the interlocking was completed the Caution Order which was given at Cheharta (the adjoining station) restricting the speed to 10 miles per hour was discontinued".
- (d) That he considered the cancellation of the above Caution Order also cancelled the rule as far as Amritsar was concerned for the restriction of speed to 10 miles per hour when trains are admitted on any lines other than a straight road at facing points.

The rules referred to by the driver is No. (2) on fly page (II) of the Working Time Table for the Lahore Division and is as follows:—

"At stations where points and signals are interlocked speed of trains admitted to or running through on the straight road is only limited by restrictions noted in paragraphs (a) to (d) above. At all interlocked stations when trains are admitted on to any other than a straight road, and at all non-interlocked stations (shown underlined in the Working Time Table) the speed of all trains over facing-points must not exceed 10 miles an hour". *Vide* Appendix (a) for Rules (1) "Speed" and (2) "Speed over Facing Point" of the Working Time Table, Lahore Division, reproduced in full.

14. As regards (a) and (b) above General Rule 27 states "Distinction between Signals. Signals on brackets and bridges shall be distinguished as much as possible by grouping and by making the more important signals higher than the less important signals". In the "North Western State Railway Signal Manual issued for the use of Drivers, Station Masters, etc." it is stated in Chapter I, rule 10, "when a bracket or bridge of signals is used, that signal which refers to the straight road is always placed higher than the others, see (a) in fig. 6-A. If all the semaphores are placed at the same height it means that there is no straight entry to the yard and in accordance with the rule that cross-overs or turnouts are not to be taken at more than 10 miles an hour, the Driver should slow down—where the higher arm [see (a) in fig. 6-A.] is lowered the driver may enter at speed unless specially instructed not to do so"—This point is further emphasized in Chapter II paragraph 2 under the heading "The Routing Bracket Signal"—This signal manual which bears no authority for its publication was issued in 1910. It seems that only a few copies are still in possession of the staff. The rules quoted are still worked to in all cases as regards intermediate crossing stations where the higher arm of bracketed signals invariably relates to the "straight" or "main line," and over which trains may proceed without restriction of speed over interlocked points, but at junction stations the higher arm does not in all cases relate to roads without turnouts. This lack of strict uniformity is misleading unless such departures from the principle followed are specially brought to the notice of the staff in the working time table. The contention of the Driver that the signal was misleading is therefore correct.

15. As regards (c) and (d) above. The Station Superintendent, Amritsar, on 24th September 1926 issued a message No. 81-R. to all the railway officials concerned "No. 3 line brought into use from 8-30 as a caution order to be issued to all drivers of Down Trains to restrict speed to 5 miles an hour over points No. 20 opposite high service water tank in Amritsar Station Yard

till further orders. Permanent Way Inspector, Amritsar, will remove restriction—Trains will work on signals". The Permanent Way Inspector, Amritsar, in his wire No. O. T.—233, dated the 28th September 1926, removed the restriction. As the restriction which was imposed and removed was that of 5 miles per hour when it was removed, the restriction of speed to 10 miles an hour when trains are admitted on to any other than a straight road came into force. [*Vide* appendix A, Rule 2.] The contention of the driver that he could enter the yard at any speed up to 60 miles per hour is therefore, incorrect. As he admits that he knew the road and that he had to take the turnout at points No. 20, he should have exercised greater caution and reduced speed to 10 miles per hour.

16. It is necessary to point out here that on fly leaf page (IX) of the Working Time Table there are "Running Notes and Special Restrictions of Speed". In these restrictions which are imposed where necessary by the Engineering Department there is a restriction against "Over facing points at Amritsar" which is as follows—"10 miles an hour when up trains enter on lines other than up main passenger lines; and when down trains enter other than down main passenger lines". The wording is such that it authorizes a driver entering any main passenger line to travel at a speed exceeding 10 miles an hour and it therefore conflicts with rule (2) for "Speed over Facing Points" on fly leaf page (ii) for any main passenger lines with turnouts.

17. Considering the extensive nature of the remodelling being carried out at the up end of Amritsar yard, and the large number of workmen including coolies and donkeys employed on the extension of the platform, I am of opinion that a restriction of speed to 10 miles an hour for all Down trains entering the yard should have been imposed.

18. In the evidence of Mr. Harrer, Permanent Way Inspector, it is stated that a broken cast iron treadle bar clamp was found a short distance ahead of the point of derailment. This treadle bar clamp shows no mark or signs of having any connection with the derailment. I attach no importance whatever to this bit of evidence.

19. The wheel flanges of the engine were examined. There were no indications of worn or sharp flanges.

20. Finally as regards the cause of the accident I am of opinion that it was due to the Driver travelling at excessive speed when taking the turnout at points No. 20, which were not truly level and had not been sufficiently long in the line to be firmly packed and bedded.

21. I accept the Driver's contention that the signal was misleading but at the same time as he knew the road and that he had to take the turnout at points No. 20, he should therefore have exercised greater care and judgment and known that Rule 2 of the Working Time Table restricted the speed to 10 miles per hour and reduced speed accordingly.

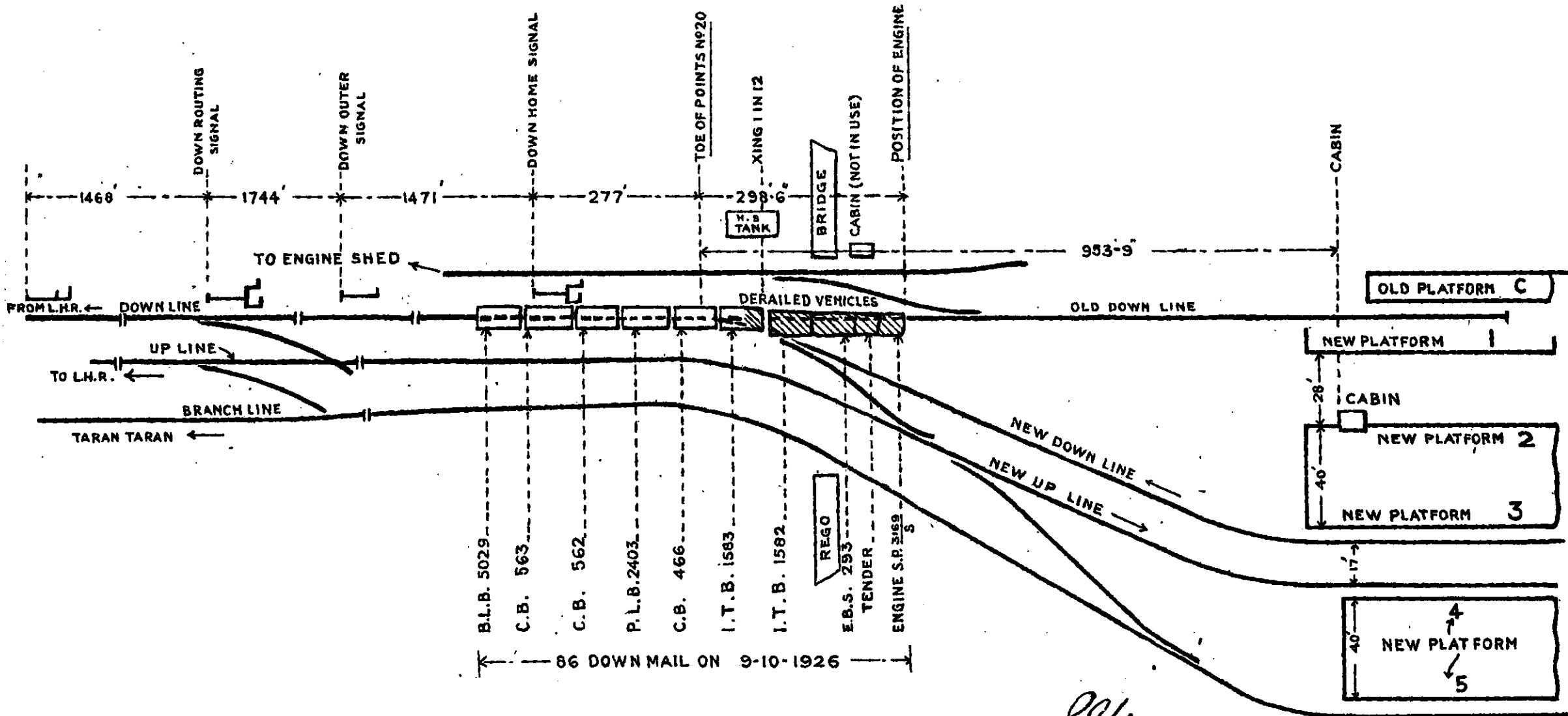
Yours faithfully,

W. V. BUTCHER,
Senior Government Inspector.

D. A.—

(1) Rules regarding "Speed" and "Speeds over Facing Points".

ROUGH SKETCH SHOWING POSITION OF DERAILMENT OF 86 DOWN MAIL OCCURRED ON 9TH OCTOBER 1926 @ 22.55 AT AMRITSAR



R.V. Adams
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APPENDIX 'A.

Rules regarding Speed and Speed over Facing Points.

1. *Speed.*—Any restriction of speed or other instructions noted in the Working Instructions or in the Working Time Table, or notified from time to time by special advice or in the Weekly Gazette, must be strictly observed.

- (a) Unless instructions not to exceed a lower speed are shown in the Working Time Table the Speed of mail and other trains fitted with the automatic-brake throughout the train must not exceed 60 miles an hour, and the speed of all other trains must not exceed 30 miles an hour.
- (b) The speed of passenger or mixed trains running with engines tender foremost is not to exceed 15 miles an hour, or such higher speed, not exceeding 25 miles an hour, as may be specially authorised.
- (c) The speed of goods and ballast trains running with engines tender foremost is not to exceed 25 miles an hour, except where instructions not to exceed a lower speed are shown at the foot of the Working Time Table or in other special instructions.
- (d) These maxima apply also to light engines when running tender foremost.

2. *Speed over facing Points.*—At stations where points and signals are interlocked, the speed of trains admitted to, or running through, on the straight road is only limited by restrictions noted in paragraphs (a) to (d) above. At all interlocked stations when trains are admitted on to any line other than a straight road, and at all non-interlocked stations (shown underlined in the Working Time Table), the speed of all trains over facing-points must not exceed 10 miles an hour.

- (a) The speed of trains through stations where the main line is not isolated is restricted to 30 miles an hour.

MADRAS AND SOUTHERN MAHRATTA RAILWAY.

**ACCIDENT TO 93 UP GOODS TRAIN OVER MALAPRABHA
BRIDGE ON THE 5TH NOVEMBER 1926.**

No. 26/383.

Office of the
Senior Government Inspector of Railways,
Circle No. 7.

To

THE SECRETARY,
RAILWAY BOARD,
DELHI.

Dated Ootacamund, the 31st January 1927.

SIR,

I have the honour to forward my report on the accident to 93 Up Goods at the Malaprabha bridge near Khanapur (Londa-Belgaum Section), Madras and Southern Mahratta Railway, which occurred on 5th November 1926.

Previous correspondence is my telegram 69-G. of 6th November 1926, and my letter No. 26/383, dated 12th November 1926.

This, the final report, has been delayed as some of the witnesses thinking they would be inculpated concocted an unnecessary and false story to cover any blame that might be imputed to them, and I arranged with the police to make further investigations. The police, however, while agreeing that false evidence had been given, were not able to extract sufficient proof to convict, and their report did not reach me until the 19th instant while I was on tour.

The accident was not one that called for the Government Inspector's investigation, but I was induced to hold an enquiry myself owing to one or two accident of a similar nature having occurred lately in which the actual cause of the accident has remained doubtful.

I have the honour to be,

SIR,

Your most obedient servant,

H. E. C. COWIE,
Senior Government Inspector.

Report on the accident to 93 Up Goods at the Malaprabha Bridge near Khanapur (Londa-Felgaum Section), Madras and Southern Mahratta Railway, on 5th November 1926.

Brief Description.

93 Up Goods left Hubli at 15-35 hours on November 4th, 1926. Shunting was carried out at Amargol, Dharwar, Alnavar and Londa. It left Gunji, mile 8½, at 0-47 hours composed as follows:—

Serial No.	Type of Wagon.	Number of wagon.	Four or eight wheeler.	Load.	Actual Load.	Carrying capacity.	Examination dates.	Gross load.	Tare.	Remarks.
Engine	G. S.	No. 410						Tons.	T. Cwt.	
1	H. W.	4685	4 wheeler	Loaded	8	...	} 135 Tons.
2	M. C. I.	11292	"	Coal . . . . .	...	...	.....	15	...
3	P. T. L.	8475	"	Bamboos . . . . .	...	...	.....	13	...
4	C. G.	3595	"	General goods . . . . .	...	...	.....	7	...
5	C. G. N.	4411	"	548 Packages . . . . .	...	...	.....	14	4 8
6	C. G.	206	4 wheeler 8' wheel base	Grain 95 bags of Jowri Jowri 48 bags	237 mds. 129 mds.	11½ Tons. 190 mds.	..... P. 5-5-26 R. U. B. L. 4-11-26 O. U. B. L. 4-11-26 P. D. M. M. 14-5-25 R. B. G. M. 18-5-26 O. G. D. G. 9-10-26 P. U. B. L. 4-12-25 R. N. D. L. 11-10-26 O. G. T. L. 29-10-26 P. 21-7-25 R. U. B. L. 9-10-26 O. N. D. L. 26-10-26 P. U. B. L. 11-7-26 R. U. B. L. 14-7-26 O. U. B. L. 4-11-26 P. H. S. 22-6-25 R. G. D. G. 25-8-26 O. B. G. M. 22-10-26 P. H. S. 23-6-25 R. C. L. R. 18-6-25 O. G. D. G. 24-10-26	11	3 13
7	C. G.	8298	4 wheeler 8' wheel base	Jowri 63 bags	6 Tons.	...	.....	10	4 0
8	C. G. N.	6560	4 wheeler 9' wheel base	Jowri and wheat 85 bags	8 Tons.	...	.....	16	8 0
9	G. G.	303	4 wheeler 8' wheel base	Coal	T. Cwt. 6 19	...	.....	11	3 0
10	C. G.	438	4 wheeler 8' wheel base	Copra 100 bags	3 Tons.	...	.....	7	...
11	M. A. I.	10038	4 wheeler 10' wheel base	Pressed cotton 50 bales	151 mds.	...	.....	14	8 0
12	C. G.	3032	4 wheeler 8' wheel base	Jowri 58 bags	6 Tons.	...	.....	9	3 0
13 and 14	Two	wagons	11	...	} 258 Tons.
15	B. V. G.	...	...	...	...	...	.....	...	...
16 to 34	Nineteen	wagons.	...	...	...	...	.....	...	...
35	B. V. G.	...	...	...	...	...	.....	16	...

All wagons and brakes non-vacuum. Engine and tender Vacuum braked.

When nearing the Malaprabha bridge mile $15\frac{1}{2}$ at about 1-30 it appears an axle box of wagon 8298 broke and this wagon derailed 5' 9" inside the end of the coping of the bridge abutment. The sleepers showed that other wagons derailed between this point and the end post of the 100' girder. 8298 struck the end post of the 100' girder on the right side (looking towards Khanapur) jammed across the bridge a few feet farther on. The engine with the first five wagons and No. 206 with rear wheels derailed shot on a distance of 416 feet before stopping. 6560, 303, 438 and 10088 capsized and bunched on to 8298. 3032 derailed. The remaining wagons serial numbers 13 to 35 remained on the rails being subsequently removed on their own wheels to Gunji. The engine and the 6 leading wagons also ran on their own wheels to Khanapur after the rear wheels of 206 were rerailed.

Nobody was injured; the Castle Rock relief train arrived at 8-30 at the south end, and the Belgaum train at Khanapur at 5-50. The District Traffic Superintendent was on the spot at 6 hours; through communication was restored at 15-30 hours.

The line from Gunji is up and down as far as mile $14\frac{1}{6}$. At $14\frac{1}{8}$ a 1 in 100 falling gradient starts and ends at $14\frac{1}{17\frac{1}{2}}$ from which point to the bridge and across the bridge the track is on the level, so that there is 1760' of level before reaching the bridge. There is a deep cutting from $14\frac{1}{3}$ to $14\frac{1}{16}$ and a driver gets a clear view of the Khanapur Up outer at $14\frac{1}{17}$, though perhaps on account of the curve the signal light at night would not focus on him until $14\frac{1}{18}$ or $14\frac{1}{19}$.

The track is 50 lb. FF₂ 30' rails on 11 wooden sleepers with deep flanged fish plates and 4 bolts.

Conclusions.

From the driver's evidence who found an axle box, a spring brass and cotton waste 10 yards to the south of the end of the coping and from the marks of derailments which began 5' 9" to the north, it is, I think, clear that a broken axle box was the direct cause of the accident. What caused the axle box to break must remain a mystery. There is nothing to show that the driver applied his brakes suddenly. The Up outer signal was against him, the rule being that when shunting is to be done in the brewery siding the up outer signal must not be taken off until the train has come to a stand; warning is generally given at Gunji when shunting has to be done at the brewery siding and on this occasion it was not given, but there is nothing to show that the speed was in any way excessive.

The box found by the driver has been indentified as belonging to wagon 8298. This wagon has shoe bearing springs so also wagons 206, 303, 438 and 3032, and this accident must increase the unpopularity of this already condemned type.

The District Traffic Superintendent and I examined the sealed cards together and could not find any case of overload. After the accident uneven loading was impossible to detect.

The story of broken wagon parts in the cutting at $14\frac{1}{10}$ must be taken as a pure fabrication. The story was started by witness No. 9, by name Pasco, the gang mate, and the two bridge chowkidars were in league with him. The police who made certain investigations at my request agree that the story is false, but were unable to obtain sufficient evidence to convict the men. The story was unnecessary as I saw no indications that the derailment was due to the track and the fact that the engine and 6 vehicles passed over the spot safely is proof that nothing much was wrong. The rear wheels of 206 were derailed, I consider, when 8298 jammed up against the bridge girders. The end plate of 8298 was hanging on to the chains of 206, though the draw bar of this latter wagon was broken.

My recommendations are as follows:—

(1) That all shoe bearing springs should be eliminated as soon as possible.

(2) That the gangman Pasco be severely punished for not proceeding to the spot on first news of the accident and for giving false evidence.

(3) That the bridge chowkidars be suitably punished for giving false evidence.

Yours faithfully,

H. E. C. COWIE,
Senior Government Inspector.

EAST INDIAN RAILWAY.

ACCIDENT TO 89 UP PASSENGER TRAIN AT GATE LODGE,
NO. 87, MILE 100, NEAR ALIGARH, ON THE 22ND NOVEMBER
1926.

No. 1271.

FROM

LT.-COL. C. J. CLARKE, D.S.O.,
SENIOR GOVERNMENT INSPECTOR OF RAILWAYS,
CIRCLE No. 1, CALCUTTA.

To

THE SECRETARY,
RAILWAY BOARD,
DELHI.

Dated the 9th December 1926.

*Collision between No. 89, Up Passenger train and a Camel cart at Gate
Lodge No. 87, Mile 100, near Aligarh, on the 22nd November 1926.*

DEAR SIR,

In continuation of my telegram No. 1201, dated the 23rd November 1926, I beg to forward herewith a report of enquiry into the above accident together with my remarks thereon.

Yours faithfully,

C. J. CLARKE,
Lt.-Col.
Senior Government Inspector.

D. A.—

Report referred to.

No. 482-T.

FROM

MR. R. R. BYRON,

DEPUTY SENIOR GOVERNMENT INSPECTOR OF RAILWAYS,

CIRCLE NO. 1, LUCKNOW.

To

THE SECRETARY,

RAILWAY BOARD,

RAISINA, DELHI.

(Through the Senior Government Inspector of Railways, Circle No. 1, Calcutta.)

Dated Lucknow, the 29th November 1926.

DEAR SIR,

In accordance with Rule (7) of Railway Board's Notification No. 120-T.-18, dated 21st March 1923, I submit herewith my report of the enquiry held by me into the circumstances attending the collision of 89 Up Passenger train *ex.* Aligarh to Bareilly, with a camel cart at Level crossing No. 87—Aligarh-Bareilly Branch.

2. I held my enquiry at Aligarh on 24th November 1926, in the presence of the following Officers:—

Mr. G. C. A. Cox, Superintendent of Works, E. I. Railway, Moradabad.

Mr. H. M. Kitchen, Assistant Superintendent, Transportation, E. I. Railway, Moradabad.

Mr. D. Bell, Superintendent, Power, E. I. Railway, Moradabad.

Mr. Sheo Prasad, Railway Magistrate.

Mr. C. E. Cearns, Divisional Inspector, Government Railway Police.

Description of Accident.

3. At about 1-15 on the morning of 22nd November, No. 89 Up Passenger while proceeding from Aligarh to Bareilly ran into a camel cart, containing twelve passengers, on level crossing at gate No. 87, mile 100. As a result of the collision four of the occupants of the cart were killed outright and eight were seriously injured, two of whom subsequently died in hospital. The cart was completely destroyed.

None of the train crew or passengers were injured. With the exception of trifling damage to the cow catcher and buffer lamp of the locomotive, there was no damage either to rolling-stock or permanent-way. The injured persons were picked up and placed in the train which was then backed into Aligarh where the injured persons were sent to hospital. After the necessary reports had been made the train was restarted on its journey.

Description of the Locality of the Accident.

4. The accident occurred on Level crossing No. 87 which is situated at mile 100 about $3\frac{1}{2}$ miles out of Aligarh. The line is straight for more than a mile on either side of the crossing.

There are no steep gradients in the vicinity of the crossing.

The gate lodge is situated on the right hand side of the track when proceeding in the Up direction. This is a second class crossing equipped with double iron gates which are coupled to open and close across the road and not across the track.

Two lamps are provided one on the right hand pair of gates and one on the left hand pair of gates to show green to an approaching train when gates are closed across the road and red when the gates are open for road traffic. The lamp on the right hand pair of gates is obscured from approaching up trains by the gate lodge. But the lamp on the left hand pair of gates can be seen from a distance of at least half a mile. Chains and padlocks are supplied for securing the gates.

Conclusions.

5. The accident was due to the gates being open to the road and the absence of the lamps.

The gate-keeper Gafoor admitted that he left the gates unattended during the night, that he did not light and place the lamps in position for fear they would be stolen in his absence. He did not lock the gates because the keys supplied to him did not fit the locks.

This man is being prosecuted by the police; although Gafoor is primarily responsible for the accident, there is contributory negligence on the part of the Permanent-Way Staff. He was not the permanent gate-keeper but a gangman who had recently been placed in charge of the gate. It is admitted that he reported to the gang mate that the keys supplied to him did not fit the locks. The gang mate reported the matter to the sub-platelayer who seems to have taken no action. Unfortunately the sub-platelayer was not available to give evidence, being away sick at the time. Had the gateman been able to lock his gates before leaving, the accident could not have occurred but road traffic would have been obstructed.

This being a "second class gate" there should have been two gatemen, but for some reason, which was not discovered at the enquiry, one gateman was withdrawn some months ago and although the Permanent-Way Inspector had asked for another man from 1st September sanction to appoint him was not received until 5th November and even then he was not appointed until after the accident. The Permanent-Way Inspector's explanation that this was due to the absence of the Sub-Plate Layer is not satisfactory.

I am also of the opinion that the Driver, Husain Bux, was not keeping as sharp a look out as he should have been. His statement, that he shut off steam about half a mile from the gate, and that on approaching the crossing he applied his "vacuum" and stopped his train when the engine and one coach only had passed the gate, is not borne out by the evidence which shows that brakes were suddenly applied and the whole train passed over the crossing before coming to a standstill. A dead body was taken out from underneath the rear brakevan which was nearly 100 feet beyond the crossing after the train came to a standstill which tends to prove that he did not see the obstruction until just before the collision. It was a bright moonlight night and nothing to obscure the view and the fact that the cart involved in the accident was the last of three carts to cross the line also tends to prove a sharp look out was not being kept. He cannot be wholly exonerated even though the gate lamps were not lit.

No blame whatsoever can be attached to the camel cart driver who found the gate open and nothing to indicate to him that a train was approaching.

Recommendations.

6. All second class gate lodges should be immediately provided with two men. It is unreasonable to expect any man to be continuously present for twenty-four hours every day at his gate.

The provision of searchlights on engines of all trains.

Yours faithfully,

R. R. BYRON,

Deputy Senior Government Inspector.

Remarks by the Senior Government Inspector.

I agree with the conclusions and recommendations of the Deputy Senior Government Inspector.

Yours faithfully,

C. J. CLARKE,

Lt.-Col.,

Senior Government Inspector.

BENGAL-NAGPUR RAILWAY.**ACCIDENT TO 4 UP MADRAS MAIL TRAIN AT BHADRAK ON THE
13TH MARCH 1927.**

FROM

Lt.-Col. C. J. CLARKE, D.S.O.,
SENIOR GOVERNMENT INSPECTOR OF RAILWAYS,
CIRCLE No. 1, CALCUTTA.

To

THE SECRETARY,
RAILWAY BOARD,
SIMLA.

Dated the 5th April 1927.

SIR,

1. In accordance with Rule (7) of Railway Board's Notification No. 120-T./18, dated 21st March 1923, I submit herewith my report on the enquiry into the circumstances attending the collision of 4 Up Madras Mail and a shunting engine attached to wagons at Bhadrak station on 13th March 1927.

2. I left Calcutta by special train at 9 hours on the 14th March and arrived at the site of the accident at 13 hours. All seriously injured persons had been removed to Hospital at Khargpur and only a few slightly injured remained at the station. Immediately on arrival, I examined the facing points and found them in order with no sign of damage, leaving no doubt that they were set for the turn out to the Goods Lines instead of for the straight and wrong setting of points was the cause of the accident. An investigation had been made by the police before my arrival as a result of which three members of the station staff had been taken into custody. The statements taken in this connection were read but I decided to take the evidence over again and accordingly held an enquiry at which the following were present:—

- Mr. L. Greenham, Agent, Bengal-Nagpur Railway.
- Mr. V. E. D. Jarrad, Transportation Manager, Bengal-Nagpur Railway.
- Mr. C. E. Chase, Superintendent, Running Section, Bengal-Nagpur Railway.
- Mr. R. D. T. Alexander, Chief Engineer, Bengal-Nagpur Railway.
- Mr. F. R. Ezechiél, Deputy Inspector General of Police.
- Mr. W. Magraths, Superintendent, Government Railway Police, Khargpur.
- Mr. J. Johnston, District Magistrate, Balasore.
- Mr. D. Leslie, Superintendent, Maintenance, Bengal-Nagpur Railway.
- Mr. C. V. N. Shortland, District Engineer, Khargpur, Bengal-Nagpur Railway.

3. *Description of the Locality of the Accident.*—Bhadrak is a station on the East Coast Section of the Bengal-Nagpur Railway, 183 miles south of Calcutta. Approaching Bhadrak from Markona, the next station $8\frac{1}{2}$ miles distant on the North, signals, consisting of a single Home at the points and, 1,730 feet from them, an outer with a fixed Warner beneath it, are clearly visible. Traversing the Main Line (No. 2), which runs straight through the station the first points encountered are the facing points of the gathering line of three goods lines, Nos. 3, 4, 5, which take off to the *right*; the second points, 223 feet further on, are the facing points of the cross-over leading to the Platform Line No. 1, to the left. The Centre of the platform is 1,290 feet from the first facing points and the total length of the station is 2,540 feet between facing points.

4. *Description of the Working of the Station.*—There is no interlocking between signals and points which are secured with padlocks only. Working is by the Badge System, which has been in force for many years. The object of this system is to prevent verbal orders from being misunderstood. The Assistant Station Master on duty keeps in a lock-up case a Badge for each line with the number engraved on it in English and in Vernacular. The Points Locker on duty is provided with Line Clear Badge bearing a legend in English and in Vernacular indicating that the line is clear and points locked. There are four such Badges of different shapes for Inwards and Outwards trains. When Line Clear is given for an incoming train the Assistant Station Master on duty personally instructs the Points Locker of the line on which the train is to be admitted, and at the same time gives him the Badge bearing the number of the Line. The Points Locker then warns all the staff concerned, locks the necessary points and makes over to the Assistant Station Master the proper Line Clear Badge applying to the train for which the points have been locked. The Points Locker, after parting with the Line Clear Badge, is held personally responsible for seeing that the lines are kept clear till the train has been admitted. The Assistant Station Master also retains in his possession two Shunting Badges. One authorising the shunting engine driver to shunt, and one "Stop Shunting" badge.

5. *Description of the Accident.*—On the night of the 13th March 1927, 6 Up Puri Passenger was received at Bhadrak on the platform line (No. 1) at 21-54 and the train left at 22-7. Markona asked Line Clear from Bhadrak for 4 Up Madras Mail at 21-58 and Line Clear was given at 22 hours. The train ran through Markona at 22-18, and at 22-30 at Bhadrak collided with a shunting engine (tender foremost attached to wagons on Goods Line No. 5 at a point 575 feet from the facing points. The composition of the 4 Up was one luggage van, 7 bogie vehicles, and two horse boxes. The luggage van, the whole of the body of the second vehicle, and half the body of the third both 3rd class carriages, were smashed to pieces in the telescoping that followed the collision and one Upper Class Composite carriage was derailed. 14 passengers were killed and 66 injured. One Pointsman, standing near the shunting engine was killed, the Drivers of both engines and one fireman were injured. The damage done to rolling stock is estimated at Rs. 75,000 approximately. Shortly after the accident the points were found set and locked for the correct line.

Conclusions.

6. The Assistant Station Master, T. R. Soori, relied on having the correct badge in his possession, and on receiving correct hand signals from the points before lowering signals. He stated at first that badges were not exchanged with the Points Locker between the arrival of the 6 Up and 4 Up. He subsequently withdrew this and said that badges were exchanged for the 6 Up, and again for the 4 Up, when the Points Locker was returning from the trailing points after despatching the 6 Up, *i.e.*, before the Points Locker had been again to the facing points. I consider that he was justified according to the Rules in assuming that the points were correctly set when he held the correct badge, but whichever of the two statements is correct regarding the exchange of badges the procedure was irregular and should not have been allowed.

7. The Points Locker, K. Surya Narayana, stated that after receiving the 6 Up on the platform line No. 1 he did not alter the points for the 4 Up. He admitted having received the badge ordering him to lock points for No. 1 line and further stated that after seeing the points set and locked for No. 1 line, he had handed the Line Clear Badge to the Assistant Station Master. He admitted his responsibility for keeping the points locked till the arrival of the 4 Up and said he was quite sure he did so and made no mistake. He evidently thought the points were correctly set. After passing the 6 Up he may have altered them himself and forgotten, or given the keys to some one else who altered them. In either case he was responsible.

8. The evidence as to whether any shunting took place between the arrival of the 6 Up and 4 Up was not conclusive. All the station staff denied that there was any shunting except Vasir, a Khalasi on the shunting engine, who stated that shunting had been performed for 10 minutes after the arrival of the 6 Up. The Loco. Foreman thought from the position of the lever on the shunting engine, inspected shortly after the accident, that there had been shunting, and I think it probable that there was over points No. 2, or if none actually took place that there was an intention to shunt, which would account for the points being set for line No. 5 on which the shunting engine was working.

On the question of how points No. 2 were found set and locked for the correct line immediately after the accident the Guard of the mail train stated that he had seen a man in a long blue coat locking the points with a padlock but the man ran away and he was unable to identify him as the Points Locker or any other member of the staff.

9. As regards the speed of the 4 Up, I am of opinion from the damage done to the engines that it was about 25 miles an hour at the point of impact. The estimate of the speed when passing over the facing points as given by the train staff varied from 10 to 15 miles an hour. It is difficult to state what the actual speed was but there is no doubt it was considerably higher than the 10 miles laid down for un-interlocked stations. The Driver was badly served in being switched to the right when he was expecting to take the second cross over to the left, 223 feet further on, and come to a stand at the station platform, which he would have done safely even if the speed had been 30 miles at the first points.

10. I am of opinion that the wrong setting of facing points No. 2 was the cause of the accident, and for this, Points Locker Surya Narayana was responsible.

11. I consider also that the Assistant Station Master, T. R. Soori, is to blame to some extent for allowing an irregularity in the exchange of badges, a thing about which he should have been most careful.

Recommendations.

12. (a) The remodelling of Bhadrak Station, which has been under consideration for some time, should be expedited and should include the isolation of the Passenger Lines from the Goods.

(b) The observance of the 10-mile restriction, which is the principal safeguard at un-interlocked stations, should be more rigidly enforced at all such stations.

Yours faithfully,
C. J. CLARKE,
Lt.-Col.,
Senior Government Inspector.

B. N. RY.

PLAN SHOWING SITE OF ACCIDENT AT BHADRAK STN ON 13-3-27

