



REPORT
OF THE
EAST INDIAN RAILWAY ACCIDENTS TRIBUNAL
1939

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TABLE OF CONTENTS.

	PAGE.
Report of the Tribunal	1—10
Appendix I	20
Appendix II	21 & 22
Appendix III	23 & 24
Appendix IV	25 & 26
Appendix V	27
Explanatory note by the Railway Board on Appendix V	28

Report of the East Indian Railway Accidents Tribunal.

1. This Tribunal consisting of Mr. Justice Broomfield, Judge, High Court, Bombay (President), Diwan Bahadur M. V. Vellodi, Collector, South Kanara, Madras (Member), Khan Bahadur Sheikh Din Muhammad, Sessions Judge, Punjab (Member) with Messrs. R. Lean, Chief Mechanical Engineer, M. and S. M. Railway, and A. M. Sims, Deputy General Manager, N. W. Railway, to assist in technical matters, was set up as stated in *Gazette of India* Notification No. E. 39 C 01, dated 18th March 1939, to inquire into a series of derailments and attempted derailments on the East Indian Railway and to report as to the causes of and the circumstances leading up to these incidents. The Notification is given in full in Appendix I.

2. The following is a brief account of the incidents referred to us for inquiry. On the 7th of June 1938 at 23-23 hours 5 Up Mail was derailed between Muthroopore and Sankarpur at mile 191. The engine and five bogies plunged down the bank which was 20 to 25 feet high, one vehicle, a postal van, being badly smashed. The casualties were the engine driver and a mail sorter killed and 39 injured, including 13 of the postal staff.

On the 16th of October 1938 at 3-58 hours approximately 18 Down Punjab Express was derailed near Bhadaura between Buxar and Moghalsarai, 428 miles from Calcutta. The driver applied the brakes and brought the train to a stand-still. The engine was partly derailed, the next seven coaches remained on the rails, the 8th coach was completely derailed, and the 9th totally wrecked, having been dragged along on its side. The casualties, which were all among the number of about 60 persons in the last coach, were 1 killed, 2 died of injuries and 38 injured. The embankment at this place was 2 feet high.

On the 12th of January 1939 at about 3-01 or 3-02 hours 9 Up Dehra Dun Express was derailed between Chichaki and Hazaribagh Road at mile 210/3, on the section of the line known as the Grand Chord. In this case also the driver applied the brakes and stopped the train in 680 feet. The engine was intact on the rails but all the wheels of the tender were derailed to the right. The two leading coaches were completely derailed but upright, the next five coaches were completely derailed and capsized. The last two bogies were derailed but upright, the trailing bogie of the end coach being still with all four wheels on the line (*i.e.*, it had stopped before the place of derailment). As some of the derailed coaches caught fire shortly after the accident it was difficult to ascertain the exact number of casualties. The official figures ultimately given were 21 killed and 79 injured. At this place there was an embankment of about 24 feet over an arched opening of 15 ft. span.

Early on the morning of the 23rd of January 1939 it was reported by the guard of 14 Down that fish plates had been disconnected on the Up line at mile 236/11 and 12 near Jamocee.

On the 15th of February 1939 gangmen proceeding to their work in the morning discovered that the line had been tampered with at mile 432/19 between Kylahat and Chunar. The 3 Up Bombay Mail was brought to a stand-still by detonators.

3. As was only to be expected the occurrence of 3 serious accidents on the same line within a few months, followed by what appeared to be further attempts at train wrecking, caused grave apprehension and a general feeling of insecurity in the public mind. In the Press, in the Council of State and the Legislative Assembly, New Delhi, and elsewhere there was a demand for a judicial inquiry into the circumstances. On the 27th of January 1939 there was a debate in the Council of State on a motion for adjournment in connection with the Hazaribagh disaster. The mover, the Hon'ble Mr. P. N. Saprú, urged that there should be a judicial inquiry; suggested some doubt as to whether it was sabotage (partly apparently because it was found there was no sabotage in the case of the Bihta disaster, partly because, it was suggested,

there was no time to remove the rail); if it was sabotage he thought the causes should be investigated; he mentioned that the accidents seemed to be confined to Bihar and inquired about retrenchment in the staff of the East Indian Railway and possible failure to take proper measures for guarding the track. Another speaker, the Hon'ble Mr. Hossain Imam, alleged that there was a difference of opinion between the Senior Government Inspector and the police as to the cause of the accident and also suggested a doubt as to its being a case of sabotage. On the other hand the Chief Commissioner for Railways said that Government were quite convinced that it was sabotage as in the case of the two previous derailments, which had been accepted as due to sabotage by the police of Bihar and the United Provinces.

There was a debate in the Legislative Assembly on the 3rd of February 1939, also on a motion for adjournment. The mover, Mr. Mohan Lal Saksena, stressed the need for an impartial tribunal to restore public confidence and confirm the findings of the Senior Government Inspector. He challenged the Senior Government Inspector's report and the theory of sabotage, mainly because the engine jumped the gap in the line. He referred to the fire and to the alleged failure to assist the injured, matters with which this tribunal is not concerned. Other speakers suggested that the theory of sabotage was a mere myth and that the real cause was excessive speed or defective track or even a drunken driver. There was strong criticism of the railway administration in the style of 'sack the lot'. The Hon'ble Sir T. Stewart, after answering the objections which had been made to the sabotage theory, explained why Government had decided to have a judicial inquiry. He said: "This is not an isolated instance. It is one of a series of four incidents in which there is the very strongest evidence that attempts have been made to wreck railways. This is a matter that has caused to the Government of India the greatest perturbation. They realise too that in the minds of the travelling public there must be the greatest apprehension and for that reason the Government have decided to set up a judicial tribunal".

In Bihar there was a resolution of the Legislative Assembly urging the Government of India to order an independent inquiry, and on the 6th of February 1939 there was a debate on the subject in the Legislative Council on a motion for an adjournment of the House. Although the Hon'ble Mr. Sinha in winding up the debate appeared to think that it was an open question whether the accidents were due to sabotage (by criminals or disgruntled railway employees) or to some defect in the track, the general view as expressed in the debate seems to have been that there was little doubt as to the cause being sabotage and that what was necessary was to discover the root of the evil, *i.e.*, what led to the sabotage, and take the necessary steps to prevent a recurrence of the accidents.

4. The criticism of the East Indian Railway administration by speakers in the Legislative Assembly found even more violent expression in some of the newspapers dealing with the Hazaribagh disaster. There was a tendency to regard sabotage as a mere excuse put forward with the object of shifting the responsibility for this series of disasters from the shoulders of the railway authorities. The real cause, it was alleged or insinuated, was excessive speed, or reduction of the permanent way staff to a dangerous extent, or technical flaws such as the unsuitability of the track for the type of engines used, or "the inevitable self-satisfied complacency induced by red-tape and routine", or even "the notorious proclivity of Anglo-Indians to drink," and generally "the deplorable lack of supervision". The press campaign seems to indicate that the East Indian Railway is at present an unpopular line, quite apart from these accidents. It is no concern of ours to inquire into the causes of this unpopularity, if it exists. We only mention it because it may explain, what otherwise is rather difficult of explanation, the reluctance to accept the results of the Government Inspector's inquiries into the cause of the derailments.

Of course it is also to be borne in mind in this connection that a finding that the accidents were due to negligence of the railway authorities, directly or indirectly, might have an important bearing on the question of compensation to the injured and the families of the killed.

5. The members of the Tribunal assembled in Calcutta by the 20th of March and held a preliminary meeting on that day. In order to insure full publicity and if possible to obtain evidence not available otherwise we decided to publish a notice inviting all persons willing to give evidence to send a brief statement of the facts within their knowledge, so that if necessary they might be called for oral examination. This notice was published in nine newspapers in Calcutta, Bihar and the United Provinces. In view of the exhaustive inquiries already made on the spot it was perhaps hardly to be expected that any additional evidence of value would be obtained in this way. There was in fact not much response from any quarter and very little indeed from persons claiming personal knowledge of facts bearing on the causes of the derailments in question. The only volunteer witnesses we thought it worth while to examine were Dr. Kornl, a passenger by the Dehra Dun Express injured in the Hazaribagh accident and two other passengers on the same train, Messrs. Sarkar and Chaudhuri, whose evidence will be referred to in due course.

6. The East Indian Railway was represented before us by Mr. Clough and Mr. Sanyal of the Calcutta Bar. Mr. Sahay held a watching brief for the Government of Bihar. The position taken up by the East Indian Railway was that the three actual derailments, which are the most serious matters requiring investigation, have already been inquired into by the Senior Government Inspectors at the actual site of the occurrences, that the reports of these officers show beyond any reasonable doubt that the derailments were due to sabotage, and that the railway administration takes its stand upon these findings. Mr. Clough was perfectly prepared to prove independently the facts on which the reports are based, but submitted that the reports should in the first instance be accepted as *prima facie* evidence of these facts. Additional evidence would be available as to any matters requiring further elucidation.

7. Mr. Sahay said at the outset that he did not wish it to be supposed that he was taking up a position hostile to the East Indian Railway. He had at first not read the reports of the Government Inspectors. After reading them he informed the Tribunal that he accepted the Senior Government Inspector's finding of sabotage so far as the Muthroopore-Sankarpur derailment is concerned. He suggested that the evidence relating to the tampering with the rail at Jamcoee was not sufficient to establish that there was a deliberate attempt to derail a train. It might have been done with the idea of reporting the matter and obtaining a reward. As regards the Hazaribagh case he did not wish to commit himself to any definite view until certain features in the evidence, which he thought difficult to reconcile with the theory of sabotage, had been explained. He did not propose to say anything about the derailment and alleged attempted derailment at Bhadaura and Kylaht as these were in the United Provinces, and he did not propose to call any witnesses of his own with regard to any of the cases.

8. We did not consider that the terms of our appointment made it in any way incumbent on us to duplicate the inquiries already made by the statutory authorities, or to re-examine the witnesses examined by them. To attempt to hold an inquiry *de novo* at this length of time would, it seemed to us, probably be quite useless and merely lead to confusion. This is not a case like the Bihta case where the experts differed and the Government Inspector's explanation of the cause of the accident was not accepted by the railway authorities. We decided, after hearing counsel for the only parties who had appeared before us, that it was reasonable to regard the reports of the Government Inspectors as *prima facie* evidence of the facts (though not necessarily of the conclusions) stated therein; that we would examine those officers themselves, and any persons volunteering to give evidence who appeared to be in a position to render material assistance; but that we would not call for evidence of our own motion or require witnesses to be produced, unless of course the inquiry should lead to any doubt being thrown on the accuracy of the reports which required to be cleared up. In the end we did not find it necessary to examine any witnesses except the two Senior Government Inspectors, Messrs. Casement and Joscelyne, Mr. Sinha of the C. I. D., Bihar, the Chief Engineer and the General Manager of the East Indian Railway, and the three passengers by the Dehra Dun Express whose names have been already given.

9. After the inquiry had proceeded for nine days, and most of the witnesses above-mentioned had been examined by the Tribunal, a solicitor's letter was received on the 29th March on behalf of six residents of Calcutta, civil engineers and business men, who claimed to be interested in the proceedings by reason of the fact that they frequently travel on the East Indian Railway. The Tribunal was requested to adjourn the inquiry and to summon the witnesses on whose evidence the reports of the Government Inspectors were based. We heard Counsel, Mr. K. K. Basu, on their behalf but declined to accede to this request. There was nothing to prevent these gentlemen from applying at an earlier date if they wished to be represented. The object of our issuing a notice was to obtain evidence of persons with first-hand knowledge of facts bearing on the subject matter of the inquiry. These gentlemen admittedly had no such knowledge nor any special interest in the proceedings. The witnesses examined by the Government Inspectors had been allowed to go before the application was received. Some of them were proceeding on leave. We considered, moreover, that it would be waste of time to examine them, because we had examined the Government Inspectors and proposed to rely, or not to rely as the case might be, on the evidence of those officers themselves and on what they themselves saw and did, and not on statements made to them by other persons. However, in spite of the late stage at which the application was made, we furnished copies of the Government Inspectors' reports and of the evidence of Messrs. Casement and Joscelyne to Mr. Basu and intimated our willingness to consider any representation he might wish to make with regard to them. We heard him accordingly on the 3rd April, after the evidence of the last two witnesses was concluded.

10. Mention should also be made of an application which was received late on the afternoon of the 1st April on behalf of a body calling itself the Upper India Association, which wished to be represented in the inquiry. Counsel Mr. B. Das appeared to support the application on the 3rd April. He told us that the Association represents the general public in Bihar and the United Provinces and claimed the right to appear in the inquiry. He relied, as also did Mr. Basu, on the fact that the *Gazette of India* Notification by which the Tribunal was appointed invited any person desiring to tender evidence or to make representations to the Tribunal to communicate in the first place with the President. We did not consider that this gave the right to all and sundry to take part in the inquiry, still less that it gave a right to persons who did not think fit to appear until the inquiry was nearly concluded to demand that it should be reopened and begun all over again, which was really what Mr. Das appeared to want. If Mr. Das, or Mr. Basu for that matter, had appeared at or near the beginning of the proceedings it is very probable that we should have allowed them to take part. As it was we declined Mr. Das's request and the inquiry terminated with the addresses of Messrs. Sahay and Clough on the 4th April.

11. The evidence on which our report is based consists, therefore, mainly of the report of Senior Government Inspector Casement on the Muthroopore—Sankarpur case, the reports of Senior Government Inspector Joscelyne on the Bhadaura and Hazaribagh cases, the oral evidence of these two officers, the report of the Senior Officers' Joint Inquiry on the Kylahat case and the police reports relating to all five cases. (In the case of the alleged attempt at derailment at Jamoee the police reports are the only evidence).

12. Before discussing the various reports we may mention the statutory provisions under which they are submitted. The Government Inspectors are appointed by the Governor General in Council under section 4 of the Indian Railways Act. Their duties include inquiry into the cause of any accident on the Railway. Under sections 5 and 6 of the Act they are given special powers and facilities. Under section 83 serious accidents are to be reported to the Local Government, the Government Inspector, the District Magistrate and the Officer in Charge of the nearest police station. Rule 7 of the rules made under section 83 requires the Government Inspector to hold an inquiry into all serious accidents. Rule 18 prescribes inquiries by Railway Officers (either a joint inquiry or a departmental inquiry) which may be dispensed with if the

Government Inspector is holding one. Rule 22 empowers the District Magistrate or other Magistrate to hold a judicial inquiry into the causes of an accident. Rule 28 empowers the Railway police to make an investigation into the causes of an accident if there is no magisterial inquiry. Under rules 25 and 32 the results of all such inquiries and investigations are to be communicated to the Agent or Manager and to the Government Inspector.

13. Mr. Casement has been a Government Inspector for nearly four years. He has been so employed in Calcutta for a year, out of which time he had charge of No. 1 Circle, in which the East Indian Railway is included, for $7\frac{1}{2}$ months. Before he was appointed he was Divisional Superintendent on the East Indian Railway for about 3 years. He began his Indian Service on the North Western Railway in 1910 and in the course of his service has been employed in various capacities under the Railway Board, including short periods as Assistant Secretary. Mr. Joscelyne acted as Government Inspector for a few months in 1934 and has held the post permanently since October 1935. He has been in charge of No. 1 Circle, Calcutta, all the time. He also joined service in 1910, on the East Bengal Railway. He ended up as Deputy Chief Engineer, having acted as Chief Engineer. He has never had any connection with the East Indian Railway, save in so far that since he became Government Inspector that Railway has been one of those under his charge.

The suggestion has been made in certain quarters that these Government Inspectors should be regarded as in a sense partisan witnesses, on the ground that it may be to their interest to fall in with the views of the railway administration, and that their training and previous connection with railway work in India may dispose them to accept sabotage as the explanation of an accident rather than some cause reflecting discredit on those responsible for the working of the line. We think it right to say emphatically that we are not at all impressed with this insinuation. In one particular, not as it happens of material importance, we think that Mr. Casement might have extended his personal examination of evidence further than he did. But having scrutinised the reports of both officers with the utmost care, and having considered their evidence given before us, we are perfectly satisfied that they have done their duty honestly and conscientiously. It is hardly necessary to point out that an officer without experience of railway work in India would be useless as an inspector. It is worthy of note that Mr. Joscelyne, who impressed us as an exceptionally good and reliable witness, was the officer who held the inquiry in the Bihta case, and on that occasion his report was directly at variance with the views of the railway administration.

14. The Muthroopore-Sankarpur derailment took place, as already stated, at 23 minutes past 11 p.m. on the 7th June. Mr. Casement arrived on the scene at 8-15 a.m. on the 8th along with the Chief Engineer of the railway. There are quite convincing reasons for holding that the condition of the track on his arrival was in all material respects the same as immediately after the derailment, and nothing had been moved or disturbed. Mr. Casement says that what he found tallied with the description given to him by the guard of the train, a spare guard who was also travelling in the brake van, a Sub-inspector of police who was among the passengers, and the Assistant Engineer and Permanent Way Inspector who had arrived about two hours after the accident. Apart from this there were also among the passengers a military doctor and eight British soldiers of the K. O. Y. L. I. who (as stated in the police report) attended to the injured and guarded the property of passengers and the mail. Under the circumstances it is practically incredible that there should have been any tampering with the evidence at the scene of the accident, even supposing that any one had a motive for doing so. The police report records that a Sub-inspector of the Government Railway Police arrived at 0-20 hours and commenced investigation at once. Other police officers, including the D. I. G., C. I. D., Bihar, arrived soon after Mr. Casement.

15. On the 8th Mr. Casement made his personal inspection, walking all round the train, observing the track at the scene of the accident, and also examining the track leading up to the point of derailment, testing the gauge in several places. The formal inquiry was held on the 9th in the presence of many railway and police officers whose names are given in the report. A preliminary report was submitted on the 10th June and the final report on the 21st.

16. The salient points appearing from the report and Mr. Casement's evidence are these. One rail on the left of the track (that is on the side nearest the embankment) had been disconnected. The rail behind the displaced rail was undamaged and in its normal position, but the fish-plates at the forward end had been removed and placed at right angles. These fish-plates were quite undamaged. The displaced rail was on its side, with the rear end pushed outwards $3\frac{1}{2}$ feet to the left. The marks along the top of the rail suggested that at the time of derailment it was upright and close to the track, so that it may have been pushed out by some part of the train. Another pair of fish-plates was lying near the forward end of the displaced rail. Thirty rail screws holding the rail to the wooden sleepers had been removed. Twenty-three of these and six fish-bolts were found at various places on the bank to the left of the track. There were some marks on the first sleeper in the gap, about one foot from the end of the preceding undamaged rail, which were apparently caused by some of the wheels of the train—it is impossible to say which. The rail ahead of the displaced rail showed marks of the impact of the engine on its rear end. It had been torn from its fastenings and broken into two pieces. In front of the three rail-lengths to which reference has been made the track was distorted and dislocated, obviously in consequence of the initial derailment. Up to the point of derailment the track was in good order in all respects.

17. The track in this case consisted of 36 ft. 90 lb. rails (*i.e.*, weighing 90 lbs. per yard) on wooden sleepers. It will help towards the understanding of the evidence if we explain that the rails in this type of track rest directly on the sleepers. There are no chairs. The rail screws are driven into the sleeper close up to the rail and bearing down on the foot of it. Each length of rail is connected to the next by a pair of fish-plates having four bolts passing through holes in the rails, two in each, and secured by nuts.

18. It is stated in Mr. Casement's report that all the fish-plates, fish bolts and rail screws belonging to the rail which had been displaced were undamaged. From his evidence before us it appears that this statement is not entirely based on his own observations. He personally examined one pair of fish-plates (the pair which was found at right angles to the track at the beginning of the gap), two fish-bolts and five or six rail screws. We might have found it necessary to take evidence as to the condition of the rest of the fastenings of this rail, had it not been for the fact that the police took possession of all of them; they are still in their possession; and the police report states that there is no mark on any of them. There can therefore be no doubt about the matter. It may also be noted that Mr. Marriott, the Chief Engineer, who went to the scene with Mr. Casement, has deposed that he examined the sleepers in the gap where the rail was removed. About two-thirds of them had been badly smashed, but the screw-holes so far as they were visible were clean and undamaged.

19. Mr. Casement's finding was that the derailment was caused by the wilful removal of a rail. This conclusion was agreed to by the police and, as we have mentioned already, Mr. Sahay conceded in these proceedings that this was a case of sabotage.

20. The D. I. G., C. I. D., ordered the institution of a case under section 126 of the Indian Railways Act. The investigation was carried out by C. I. D. officers, both crime and special branch, and the Bihar Government Railway Police, with the co-operation of the police in Bengal and the United Provinces. Sub-inspector Osmand of the Government Railway Police was in charge. Eight "probable theories" were examined, namely that the crime might have been committed by (1) train-wreckers in Bihar, Bengal and the United Provinces (2) revolutionaries (3) strikers (4) persons suspected in previous cases (5) local people aggrieved with the railway staff (6) railway thieves belonging to certain well-known gangs (7) disgruntled and discharged railway servants (8) Santals. No evidence whatever was found to support any of these theories except Nos. 6 and 7. The conclusion arrived at by the police was that the crime was probably carried out by members of a gang of railway criminals operating in that part of Bihar, with the assistance of friends among the railway gangmen. Possible motives, it was suggested, were (1) to establish a defence in a Bad Livelihood case proceeding against some members of

the gang by refuting the suggestion that their arrest had put an end to crime : (2) to pay off scores by bringing an unpopular gangman into trouble. A good deal of evidence of sorts was collected, including a confession (afterwards retracted). Eight persons were arrested between the 22nd September and the 1st November. But the evidence was not sufficient to justify bringing anyone to trial under section 126.

21. According to the report a Bad Livelihood case is contemplated against one man. The rest have been released, though it has been suggested that they should be kept under surveillance, and the railway authorities have been written to for departmental action against certain of their employees. The Chief Engineer has told us that at first he objected to taking disciplinary action on mere suspicion, he himself not being satisfied of the complicity of these men. But the police pressed the point and finally, after consultation with the General Manager, it was decided to get rid of them, if only (as Mr. Marriott says) to show that they were fully co-operating with the police.

22. Coming now to the derailment at Bhadaura, Mr. Joscelyne arrived on the scene on the early morning of the 17th October, the day after the accident. Some of the Bihar police appear to have been on the spot within two hours of the accident, the United Provinces police from Ghazipur coming later in the day. Mr. Joscelyne has noted in his report that an immediate guard was placed over the track and wreckage until his arrival. That is what the train staff would naturally do. There was a party of ticket checkers on the train who helped the train crew in attending to the casualties, so that there would seem to have been no difficulty in finding a guard until the police came. From a note made by the Crime Assistant, C. I. D., Bihar, who assisted the United Provinces Police in the case, it appears that some people living in the neighbourhood insinuated that the appearance of a rail having been removed might have been stage-managed by subordinate officers of the railway. The only ground alleged for this insinuation was that outsiders were not allowed to approach the scene of the accident in the early morning, but that of course was quite natural and proper. Presumably the matter was investigated and no evidence found in support of the theory. We think there is no more reason to suspect tampering with the evidence than in the Muthroopore case.

23. Mr. Joscelyne, after studying the scene and all the features of the accident, held his inquiry the same morning, in the presence of railway officers and the District Magistrate and Police Superintendent of Ghazipur. He submitted his preliminary report on the 21st October and his final report on the 16th November. His inspection included a thorough examination of the track before the point of derailment. He trolleyed up the line for about 100 yards and walked back, checking gauges and cross-levels. He found the track in good condition in every respect.

24. The track at this place consisted of 36 ft. 88½ lb. rails laid on D. & O. (Denham and Olphert) cast-iron sleepers at 14 per rail length. With these sleepers the head of the rail is supported by two jaws, inner and outer. The inner jaw is removable and held in position by a cotter. The outer jaw is part of the metal plate which passes underneath the rail and carries the inner jaw. The plates on each side are connected and held in position by a metal rod called a tie-bar. This explanation holds good for all the other cases with which we are concerned.

25. The salient facts found in the inquiry were as follows : The track was damaged for a distance of 650 feet by the derailed wheels. At the commencement of the damaged portion on the left hand side one rail was lying on its side but still in alignment. There were marks of the flanges of wheels on the web of the rail, i.e., on the concave part joining the head and the foot. All the inner jaws of the sleepers and the fish-plates at the ends of the rail had been removed. The missing parts, jaws, fish-plates, bolts, etc., were all found in the vicinity, except 8 cotters. They were all undamaged. Mr. Joscelyne personally verified this. Two fish-bolts actually had the nuts rethreaded on them, "a clear indication" (to quote from the report)

“ that the rail had been released by means of proper tools and probably by experienced men.” The end of the following rail had been depressed and flattened by the treads of the wheels as they mounted it, and also dented by the flanges of the wheels. Mr. Joscelyne found that the only possible conclusion was that the accident was deliberately caused by malicious tampering with the track.

26. The police reports and the note of the Crime Assistant show that the police saw no good reason to differ from the Government Inspector's opinion. As in the Muthroopore case they suspected that the sabotage was the work of some disgruntled menial servants of the railway. Reference is made in the report to the removal of some fish-plates at the very same spot in the previous July, when a keyman had been suspected. This and other lines of inquiry were followed up, but without any success. The last report, which is dated 13th February 1939, says that no progress had been made. The final report has not yet been submitted.

27. In the Hazaribagh case Mr. Joscelyne arrived at 3-30 in the afternoon of the day of the accident and began the inquiry at 4-30 in the presence of the Chief Engineer and other officers of the Railway, the Superintendent of the Railway Police, the Deputy Commissioner, Hazaribagh, the D. I. G. of Police and Mr. Sinha of the C. I. D. He sent his preliminary report on the 16th and his final report on the 25th January. There are special and quite convincing reasons in this case for holding that the state of things which the Government Inspector found, and on which he based his conclusion that this was another case of malicious tampering with the track, could not have been manufactured after the event by persons, if any such persons there were, interested in making it appear that it was a case of sabotage when it was not. That aspect of the case is dealt with in a later paragraph.

28. What Mr. Joscelyne did find was this. One rail on the left of the track had been disconnected and was lying on its side towards the middle of the track, under the last coach (which, as already explained, was standing upright with the trailing bogie at the end still with all four wheels on the rails). This rail was unmarked, except for finger-prints, and according to Mr. Joscelyne's conclusion must have been pushed into the middle of the track before the arrival of the train. Four fish-bolts, apparently part of the fastenings of this rail, were lying on the ballast with the nuts carefully unscrewed and undamaged. One fish-plate was lying outside the track unmarked. Fourteen sleepers had all their inner jaws carefully removed. Almost every one of these was found undamaged alongside, and most of the cotters were also found undamaged. (Mr. Joscelyne has told us in his evidence that he inspected these things, examined some items, and personally took the photographs, all except one, which are attached to the report). After the last coach was pulled back, and the wreckage of the next coach was lifted out of the way, another absolutely unharmed nut and bolt were found in the ballast. Mr. Joscelyne is corroborated as to this important fact by the police report.

At one stage of the proceedings Mr. Sahay stated that a fish-plate the holes in which had been damaged was found near the second joint, *i.e.*, at the further end of the gap where the rail was missing. He put this to Mr. Joscelyne, the suggestion being that the damage to the holes indicated that the fish-plate had been still in position at the time of the accident. Mr. Joscelyne said that he had no recollection of any such damaged fish-plate being found there, and Mr. Sahay afterwards corrected himself and said that the holes in the fish-plate in question were not in fact damaged.

29. In marked contrast to the rail lying in the middle of the track, the next rail, which appeared to have been struck by the wheels of the engine as in the Bhadaura case, was forced out of position and found lying half way down the bank, badly bent and twisted and with the marks of heavy blows on the cut end of the top table. At the opposite end of this rail the fish-bolt holes showed signs of the force with which the fish-plates were stripped off when the bolts were sheared. In his report Mr. Joscelyne dealt very fully with what seems to have been regarded at one time as an extraordinary feature, namely the fact that the engine, and the engine only, managed to cross the gap and re-rail itself. The point never caused any difficulty to experts and nothing has been said about it in this inquiry. The difference between this case and

the Bhadaura case, in respect of what happened to the train after the derailment, was due to the fact that the rail was not only disconnected but pushed out into the middle of the track. The engine had the rail on the right to keep it straight as well as the outer jaws of the sleepers on the left. After these outer jaws had been smashed to pieces by the engine (as they all were, except the first one) there was nothing to keep the tender and coaches on the line.

30. In his evidence before us Mr. Joscelyne explained rather more fully than in his report why the rail must have been removed before the derailment took place. If it had been in its proper position and had got into the position in which it was found (under the last coach) as a result of the accident, it must have received severe damage in the process. There was not a mark on it, and the fish-plates, bolts and nuts belonging to it were also undamaged. On the other hand the following rail, which was found severely battered half way down the bank 30 feet away, had obviously been displaced by the accident. In order that it should receive such damage, evidently caused by wheels, the previous protecting rail must have been removed.

31. It appears that the trailing wheel of the leading bogie and the leading wheel of the trailing bogie of the last coach under which the rail was lying are 38 feet apart. The length of the rail is 36 feet only. If it had been in its right position after the accident it would have been between these wheels with no wheel resting on it. Relying on this fact Mr. Sahay put it to the witness that the rail might have been put there after the accident. Mr. Joscelyne said that could not have been done because the fore end of the rail was embedded in the ballast. It seems however that it was not exactly embedded. It was covered with ballast but not under the tie-bars of the sleepers. We saw for ourselves at a demonstration in Howrah Station Yard that it is possible for two or three men to lever a length of rail out into the middle of the track without much difficulty. But, as already explained, this length of rail cannot have been in its right position at the time of the accident for in that case it must have been damaged. The theory that it was put there after the accident really implies this, that a length of undamaged rail was obtained from somewhere else, carried there and thrown under the last coach, and the damaged rail somehow removed and disposed of. The evidence is that there were no spare rails available in the neighbourhood. Apart from that the rail weighs 1,200 lbs. (the track there consisting of 36 feet 100 lbs. rails), and Mr. Joscelyne says that it would have taken 8 or 10 men even with slings to do what was necessary. The suggestion seems to us not to deserve serious consideration. Nor does a variation of this theory which seems to have been hinted at, namely that the last coach really stopped some distance before the point of derailment, so that there was a length of undamaged rail which these mysterious tamperers with the evidence could play about with. That would imply that they must then have proceeded to smash up the track in front to produce all the effects of a derailment at that point—an incredible suggestion.

32. Mr. Sahay put a number of questions to the Senior Government Inspector by way of interrogatories. These questions and Mr. Joscelyne's answers to them are given in full in an appendix to this report. Apparently most of the answers were considered satisfactory and the points were dropped. We propose to mention only those matters which were put to Mr. Joscelyne in the witness box. One of the photographs taken by him (B in Appendix D to his report) shows that the outer jaw of the first sleeper after the point of derailment, which is about a foot from the end of the preceding rail, was not smashed to pieces as all the other outer jaws in the gap were, but was only marked by wheels and broken through at the base. Mr. Sahay suggested that this was inconsistent with the case that the rail had been removed before the accident, because the last few coaches must have dropped off the end of the rail rather slowly, and that being so this outer jaw ought to have been smashed like the others. He also drew attention to the fact that the ballast at this point did not show any particular sign of disturbance. The ploughing up of the ballast began about two feet from the end of the rail. Mr. Sinha of the C. I. D., whom we examined, also felt a difficulty over this feature of the case.

33. According to Mr. Joscelyne, the reason why the first of the outer jaws was only slightly damaged was that the first wheels, when the train was travelling at speed, would miss it altogether, and only the last of the vehicles when the train was slowing down would strike it a glancing blow. In his opinion the condition of this outer jaw and of the ballast was not at all inconsistent with the view that a rail had been removed. Our expert advisers agree with the Senior Government Inspector. There may be some little difficulty in explaining how it happened. It is impossible to dogmatise about the way a derailed train will behave in small matters of this kind. As the experts feel no difficulty in this connection, and Messrs. Sahay and Sinha make no claim to be experts, we think that no more need be said. Mr. Sinha in his evidence has frankly admitted that most of the features of the case point strongly to sabotage, and that although he is still puzzled by a few of them, particularly this point about the first outer jaw, he is not disposed to raise any further objection on that score.

34. As in the Bhadaura case Mr. Joscelyne's inquiry included a thorough inspection of the track before the point of derailment. He says that, accompanied by the Chief Engineer, he trolleyed over the whole section between Hazaribagh and Chichaki on the down line. From Chichaki he trolleyed slowly $1\frac{1}{2}$ miles up to the scene of the accident, stopping at every telegraph post in the last mile, checking gauges and cross-levels with instruments and inspecting the packing throughout. He found that the track was in very good condition indeed.

35. Mr. Joscelyne, having held the inquiry into the Bihta disaster, was quite alive to the fact that in certain circumstances an engine may derail itself. He says, however, that the circumstances of this case in no way resembled those of the Bihta case. When an engine owing to some peculiarity distorts the track, and derailment takes place because this distortion causes the track to give way, there must be distortion for some distance before the derailment, even if only for one rail length. Mr. Joscelyne says that in the whole of his long experience he has never known of a case of this kind where there has not been a length of track distorted behind the last vehicle of the train. But at Hazaribagh there was no distortion whatever right up to the point of derailment. The line was perfectly straight.

36. We have dealt very fully with the evidence of the Senior Government Inspector in this case because it is only in the case of the Hazaribagh accident that there has been any serious dispute about the cause. It remains to refer to the evidence of the three passengers by the Dehra Dun Express whom we examined. Dr. Korn's story is that the first-class carriage in which he was travelling rattled and jolted (or rather swayed) violently on three occasions between the time the train left Howrah—9-12 Calcutta time—and the time of the accident. There are discrepancies as to the times when this occurred, and indeed as to several other matters, between the statement he made to Mr. Joscelyne on the 15th January and the written statement he submitted to us. He told Mr. Joscelyne that the rattling and swaying occurred first half an hour after leaving Howrah, then at 1 A.M. and again at sometime after that. In the written statement the first occasion is given as half an hour after starting, the second as an hour after that, and the third at 1 A.M. But he frankly admits that he did not look at his watch and cannot be sure about times. He was twice thrown off his balance, once when he was coming out of the lavatory and had to clutch the door to support himself, and once when he was sitting on the edge of the bunk and was thrown forward against the partition wall of the carriage. (In the statement to Mr. Joscelyne he said that he was thrown to the ground on the first occasion, and in his written statement he says that he was thrown out of his bunk. But he is a Russian; his English is not very good; and he made it plain to us that this was not the proper way of describing what happened to him). He has not expressed any definite opinion as to the cause of the derailment, but he says that the carriage in which he was travelling was too light for the speed at which the train was going, which he puts at 50—60 m.p.h., or that the next carriage was too light.

37. Neither Mr. Joscelyne nor the police regarded Dr. Korní as a reliable witness and we cannot say that he made a good impression on us. It appears that there was some little difficulty over a bridge which he designed for the East Indian Railway on behalf of his firm. We do not attach very much importance to that, but the fact remains that his demeanour as a witness was not very satisfactory. It may well be that he had an uncomfortable journey, quite apart from the fact that he was involved in the accident and injured. But we are not satisfied from what he says that there was anything abnormal about this rattling and swaying, or that his evidence throws any light at all on the cause of the derailment. Even if there was anything defective about the carriage we agree with the Senior Government Inspector that it would not explain the derailment of the tender. Even if the rattling and swaying indicated some defect in the track, it was nowhere near the scene of the accident, which was quite obviously, we think, not due to any such defect. It is hardly necessary to point out that Dr. Korní's experiences afford no answer to the evidence pointing to the removal of a length of rail by hand.

38. One of the points that seems to have caused difficulty to Mr. Sahay in connection with this case was that there was no sign of damage to the rail preceding the one that was disconnected. He suggested that when the vehicles at the end of the train, moving slowly, dropped off the end of this rail on to the ballast some bending of the end of the rail would be likely to result. This suggestion was put to Dr. Korní, who gave a very qualified support to it. He thinks it is a possibility. It does not appear that he is an expert in matters of this kind. Mr. Joscelyne, who is an expert, says that the absence of any injury to this rail caused him no surprise as he would not expect any. Mr. Marriott has told us that the maximum axle-weight that could have passed over this rail-end was 11 tons, which is well below the elastic limit of the rail. Neither in the Muthroopore case nor in the Bhadaura case was any damage caused to the end of the preceding rail. We think there is nothing in this point at all.

39. Messrs. Sarkar and Chaudhuri were travelling in the sixth coach of the train. The former has told us that there was more than the usual amount of shaking and the latter that there was some jolting and jerking in the course of the journey before the accident took place. But they were asleep most of the time and evidently this vibration, which they did not think worth mentioning in their written statements, was not at all a serious matter. They have given a very full and graphic account of what happened when the train went off the line and of their nerve-wrecking experiences, but for our purposes the only importance of their evidence is that they made some examination of the track with the object of ascertaining, if they could, the cause of the accident, and Mr. Sarkar after his return to Calcutta on the 15th January made a sketch plan showing what they saw. This might have been rather useful, even though it is not drawn to scale and no notes were made on the spot. But unfortunately what these witnesses inspected was simply the damage done to the track by the derailment itself. This is clear both from the plan and from what the witnesses have told us. They walked from the place where their coach was in the direction of the engine. They did not examine the last coach where the point of derailment was, and that being so Mr. Sarkar's statement that he did not notice any gap in the line is of no importance. Mr. Sarkar also furnished us with a graph showing train timings, from which according to him it would appear that the train must have been running 6 or 7 minutes late, and not 3 minutes late as estimated by Mr. Joscelyne. But the timings are simply taken from the Time-Table and may vary from the actual timings. In any case the point cannot be regarded as of any consequence.

40. The police papers include a report by Mr. Sinha of the C. I. D. dated 14th January which shows that at that time at any rate he saw no good reason to differ from the conclusion of the Government Inspector that the disaster was due to sabotage, that is the removal of a rail by human hands. Later reports speak of the cause of the accident not being clear and refer to alternative theories, all of which however seem to have dropped as untenable. A case under section 126 of the Railways Act was instituted and investigation

was carried out promptly, and to all appearances thoroughly, both by the Railway Police and the District Police. Information was received that the tool box at one of the gate-houses a mile from the scene of the accident had been tampered with and that a spanner was missing. A spanner was found under a tree 125 yards to the south of the track. But on examination the story about this spanner was found to be suspicious and the police thought it had been got up. The finger prints on the displaced rail were photographed and compared with those of old criminals, especially those connected with crimes on the railways, but so far nothing useful has been discovered. As usual, investigation was directed towards disgruntled railway men. A list of men who had been punished or discharged for bad work was obtained from the Permanent Way Inspector, but nothing useful came to light. Enquiries were made about the movements of suspicious persons in the neighbourhood, without any result; also about the activities of certain criminal gangs. On 7th February 1939 it was reported to Government that the physical evidence supporting the theory of sabotage was "more or less un rebuttable", and that the outstanding motives appear to be either loot or an attempt at discrediting the Railway Administration by disgruntled railwaymen or both. The last report dated 4th March 1939 said that inquiries were still proceeding in various directions. The final report has not yet been submitted.

41. The Tribunal was informed by Mr. Sahay that what the Government of Bihar and their police mainly desire is that the Senior Government Inspector's conclusions should be scrutinised and verified by independent experts. We have accordingly requested our assessors, Messrs. Lean and Sims, to prepare a detailed appreciation of the causes of the three accidents, and this is given in Appendix II to this report. Those who want all the details should refer to this Appendix. In the body of the report we propose to set out the more important of the reasons on which our finding is based, and they are as follows.

42. In each of the three cases, Muthroopore-Sankarpur, Bhadaura and Hazaribagh, there was a gap in the line caused by a length of rail being disconnected. It could not have been forced out at the time of the derailment for in that case the fittings and fastenings belonging to it and connecting it with the preceding and following rails must have been twisted and damaged. In each of the three cases the fish-plates, bolts, nuts, etc., belonging to the disconnected rail were found lying in the vicinity quite undamaged. In one case two of the nuts had actually been rethreaded. Moreover the nature of the marks on the disconnected rail in the first and second cases, and the absence of any marks at all except finger marks in the Hazaribagh case, equally show that the rail cannot have been in its proper position at the time of the derailment. The nature of the damage caused to the following rail, which could not have occurred if the displaced rail had been there to protect it, points to the same conclusion. The suggestion that the rail length may have been disconnected after the derailment is completely untenable, not only for these reasons but for others which we have explained in the course of our report. Therefore the rail must have been moved by hand, and it must have been done before the accident. The inference that it was done maliciously, with the deliberate intention of derailing the train, is irresistible.

43. This evidence is itself conclusive, but there are other corroborative circumstances. There is a remarkable similarity in important features in the three cases which cannot be the result of mere coincidence. In each case a rail was found disconnected on the left side of the track, on the side nearest to the embankment. In each case the accident occurred at night or in the small hours, when there was no moonlight, at a dangerous place (Bhadaura perhaps is an exception) and a lonely place. In each case it was an important passenger train that was derailed. No explanation other than sabotage will bear examination. There is no evidence that the speed was excessive. There is no evidence that the track was defective. On the contrary we are satisfied that it was in very good condition. There is no evidence worth the name that the rolling stock was defective. There was no distortion of the track before the point of derailment, and therefore no "hunting" or other peculiarity of the engines (as to which in any case there is no evidence) could have been the

cause of the accidents. Moreover, as our technical advisers tell us, and we fully believe, no engine which had caused its own derailment could, except by a miracle, put itself on to the rails again. Lastly, none of the alternative theories will explain what was found at the scene of the occurrences, except on the untenable hypothesis that the evidence was faked.

We have not the slightest hesitation in finding that the cause of the derailment in each of the three cases was malicious tampering with the track by disconnecting a length of rail.

44. The Jamooee and Kylaahat incidents may conveniently be dealt with together. Mr. Hamid, Superintendent of Railway Police, Patna, was informed of the Jamooee case at 11-30 A.M. on the 23rd January and visited the place on the morning of the 24th. He found that four pairs of fish-plates, those belonging to two opposite lengths of rail, had been removed and were lying near their respective joints. The corresponding bolts and nuts, all except one bolt and one nut, were found nearby, mostly collected in two heaps to the left of the track. The rails themselves had not been otherwise tampered with. The matter had been reported by gangmen early in the morning, but it was impossible to discover exactly when the track was tampered with. Seven trains had passed the place after midnight and some of them at least must have passed after the removal of the fish-plates, which was not sufficient in itself to derail a train.

45. An investigation was carried out by the Railway Police and District Police in co-operation. All the usual lines of inquiry seem to have been followed up. The gangman who first discovered the tampering, the gateman to whom he reported and who in turn reported to the Station Master at Gidhaur, and other gangmen were interrogated. A list of discharged and retrenched hands was obtained and inquiries made about them, but nothing important came to light. Detailed inquiries were made about persons concerned in previous train-wrecking cases, and about strangers and outsiders being in the neighbourhood, also without any success. There were no finger-prints. The final police report dated 9th March says that as there was no hope of detection the investigation was being closed.

46. The Senior Officers' Joint Inquiry into the Kylaahat case was held on the 28th February, in the presence of the City Magistrate and Superintendent of Police, Mirzapore, and an Inspector of the C. I. D. A number of witnesses were examined and it was evidently a very thorough inquiry. In this case two pairs of fish-plates had been removed, one at each end of a length of rail on the left of the track. The first sleeper, that is the one at the Howrah end, was intact, neither the inner jaw nor the cotter having been removed. One sleeper had the cotter removed but not the inner jaw. There seems to be a discrepancy between the report and the sketch plan accompanying it as to whether this was the second sleeper or one near the middle of the rail. The remaining 13 sleepers had both inner jaws and cotters removed. The D. & O. plate at the Delhi end was smashed, as also was the outer jaw, the rail at that point being slightly disturbed and out of alignment by about half an inch. The fish-plates at the Delhi end were heavily marked; those at the Howrah end only slightly so. A chisel bar about one inch square and two feet long was found on the path by the side of the track. Here again it is impossible to fix the exact time of the tampering, but the Committee were satisfied that at least one train, a goods-train, and perhaps other trains had passed over the place without being derailed. The marks on the fish-plates were apparently caused partly by efforts to remove them and partly by vehicles striking them in passing. The finding was tampering with malicious intent to derail a train. The Committee held that there was no evidence to implicate the permanent way staff.

47. The police papers show that the scene of the incident is a lonely place with no habitation within three-quarters of a mile. Inquiries have been and are being made about suspicious characters, the existence of any enmity or disaffection among railway employees or ex-employees, etc. "Every aspect of the case is being looked into" according to one of the reports. Another report mentions that there was a certain amount of friction in one of the gangs, but nothing out of the ordinary, and that one

man suspected had both opportunity and technical knowledge but apparently no possible motive. The final police report has not yet been submitted.

48. As has been mentioned already, Mr. Sahay's contention is that the Jamooee case was not a deliberate attempt at train wrecking but that the tampering with the track was done by one or more gangmen in order to obtain a reward for reporting the matter. This sort of thing, it seems, has been done in the past. Mr. Marriott, the Chief Engineer, has told us that it is not the practice to give rewards in such cases, it being obviously part of a railway servant's duty to report anything of the kind. But rewards have occasionally been given in special circumstances, and he has personal knowledge of one case of tampering with the line, in 1929, when the suggestion now put forward by Mr. Sahay was found to be the only feasible explanation.

49. It may perhaps be said to be in favour of this view, not only in the Jamooee case but in the Kyalahat case also, that the matter was in fact reported, though apparently no reward was given or asked for. A much more important fact is that in each case the tampering was not sufficient to cause actual derailment, although a very little more would have been enough to cause a serious disaster. The suggestion has been made that the culprits may have been disturbed and therefore left their work incomplete. We are not much impressed by this, however. It would only have been a matter of seconds, or minutes at most, to finish the job, and deliberate train-wreckers, even if disturbed, would probably have concealed themselves and come back. It is no doubt an argument, and a rather strong argument, on the other side that the police have been unable to discover any evidence connecting any railway employees in any way with these incidents, and there are some common features which may point to a connection between them and the three derailments. But it cannot be said that the evidence excludes the possibility that these may not have been deliberate attempts at wrecking trains, and, that being so, we have no option but to say, both in the case of Jamooee and Kyalahat, that the cause of the tampering with the track cannot be ascertained. Of course it is perfectly clear that the track was tampered with, by human agency.

50. The terms of reference require us to go beyond the causes of these incidents and to report upon the circumstances leading up to them. Had we found the cause to be almost anything except sabotage it would probably not have been difficult to arrive at some useful conclusions in this connection. At any rate it would have been possible to say with some certainty what circumstances were relevant as contributing to the cause and we should have known where to look for the evidence. But as in fact we have found, without any hesitation, that the cause was sabotage (in the three cases of actual derailment), we are faced with the fundamental difficulty that the perpetrators of the crimes have not been discovered. That is obviously a matter for the police. There appears to have been a thorough investigation in each of the cases. We have no reason whatever to suppose that the police are lacking in efficiency or that they left any stone unturned in their endeavours to ascertain the truth. In any case we are not competent to hold an investigation in the nature of a police investigation ourselves, and as the police have failed so far to find any certain clue to the identity of the offenders or even to establish beyond doubt the class or classes to which they belong, we cannot carry the matter any further. Judicial tribunals are, for obvious reasons, loath to take any account of mere suspicion or to commit themselves to any findings on purely hypothetical points. We might on these grounds have ruled out as inadmissible a good deal of the evidence which has been given before us.

51. On the other hand we have felt the fullest sympathy with the public anxiety and the very natural dissatisfaction at a position of affairs in which serious disasters of this kind may occur repeatedly without those responsible being discovered and brought to book. While, therefore, we firmly declined to protract the inquiry indefinitely by allowing ourselves to be led into the field of pure speculation, we let in evidence as to a few matters alleged but not strictly proved to have some connection with this evil of sabotage. We did so partly because until we had considered this evidence

we could not be quite sure that it might not be sufficiently relevant for the purposes of an inquiry of this kind, partly because we hoped that some facts might be elicited which would be useful to those responsible for securing the safety of the travelling public and maintaining law and order.

52. The suggestion has been made that some employees or *ex-employees* of the East Indian Railway, probably permanent-way gangmen, were responsible for or privy to these outrages. If the suggestion had been made merely in the newspapers or by irresponsible persons we should not have considered it necessary or proper to examine it. But apparently the Government of Bihar, and certainly the Bihar Police, regard it as a probable theory, and even a probable theory may perhaps be brought within the ambit of our terms of reference. It has been supported on two main grounds, firstly that the tampering with the track required a certain amount of technical skill, and secondly that in a considerable number of train-wrecking cases railway employees have been suspected, and in some cases have been convicted. In addition, discontent arising from reduction in the permanent way staff has been put forward as a possible motive.

53. The question of the amount of technical skill necessary to do what was done at Muthroopore, Bhadaura and Hazaribagh has been gone into carefully by our expert assessors, and the results of their examination of the evidence are given in Appendix IV to the report. It appears that there is very little in the argument. A very elementary training in mechanics would be sufficient, and the use of railway tools cannot be regarded as a *sine qua non*.

54. The General Manager in his evidence was not prepared to accept a correct the statement that railway employees are suspected in a great many cases of train-wrecking or attempted train-wrecking, or that they are convicted in any appreciable number of cases. He had analysed the cases reported on his line in the last ten years and, according to him, out of 131 cases (of which 46 were in Bihar) railway men were suspected in 34 and convicted in two only. Unfortunately the compilation from which Mr. Bell took his figures was not guaranteed to be perfectly accurate and complete. Mr. Sahay was able to find four more cases in Bihar and Mr. Bell was not prepared to deny that railway men may have been suspected in 29 out of the 50 cases. That, of course, would be a very large proportion if one knew what weight was to be attached to the suspicion. The case for the Railway is that the police almost as a matter of routine suspect what they call "disgruntled" railway men, but that the railway officials do not by any means always share the suspicion. Without complete and accurate statistics for the whole of India, which we have not been able to obtain, we feel that we are on very doubtful ground. Even if we could have got them we should probably have been little better off, as it seems that in the great majority of cases of sabotage on the railways no clue whatever is discovered.

55. The motive suggested for sabotage by railway employees, namely discontent at reductions in the permanent way staff, necessitates some consideration of the much canvassed question of retrenchment on the East Indian Railway. From the evidence of the Chief Engineer, Mr. Marriott, and the documents put in by him the following facts appear to be established. Prior to 1930-31 the permanent way staff employed on this railway was considerably in excess of that on most Class I railways. In 1931 the Railway Board appointed a special officer to investigate the question of permanent way maintenance on these railways, with the object of seeing what economies could be effected in men and material and working out a unit of strength per track mile which would serve as a criterion and means of comparison between the different railways. As a result of this, reductions amounting to about 28 per cent. were effected on the East Indian Railway between 1931 and 1935. There were heavy reductions among the gangmen and some reductions in mates and keymen. The report of the Indian Railway Inquiry Committee of 1937 shows that in 1935-36 the number of men (mates, keymen and gangmen) per track mile on the East Indian Railway was 2.6 as against 3.6 in 1929-30. This figure, however, is still just above the average for eight principal Class I Railways, which is 2.5. All these lines, except the East Bengal and South Indian, show some reduction as

compared with 1929-30. The reduction in the case of the East Indian Railway was heavier than in the case of any of the lines except the North Western, but that appears to be accounted for by the fact that the East Indian Railway was definitely over-staffed before.

56. The reduction in the permanent way staff was partly effected by lengthening the gang charge for the keymen, who supervise the work of the gangs under the gang-mates and the Permanent Way Inspector. The keyman was given two gangs instead of one, so that he might in some cases have as much as 8 miles to patrol. This system was found to be unsatisfactory, and in May 1938 Mr. Marriott issued instructions that the old system should be restored and a keyman provided for each gang. The orders, however, were not given effect to immediately on all parts of the line. In the section where the Bhadaura derailment occurred there was a keyman for each gang-length of three miles. In the other two cases the gang-length was three miles and the keyman's length four miles.

57. There has been no reduction of permanent way staff since 1935. There has latterly in fact been a small increase. Discontent caused by retrenchment must, therefore, be ruled out as a motive for sabotage. It is unreasonable to suppose that reduction of the establishment in the period 1931 to 1935, even though it was on a considerable scale, can possibly account for an outbreak of train-wrecking in 1938-39. It appears, therefore, that the contention that the railway employees or *ex-employees* were responsible for these outrages is supported by no legal evidence and by very little that can be regarded as evidence in any sense. It is rather straining language to call it a probable theory, although we are not prepared to say that it can safely be ruled out altogether as a possible factor in the situation. There are black sheep in every large body of men, and though the gangmen as a whole may be (as Mr. Marriott says, and we are content to take his word for it) a loyal and law-abiding class, that hardly affects the question. If by any chance any gangmen were concerned in these acts of sabotage it would naturally be the black sheep among them.

58. It has been argued that the question of retrenchment is relevant to this enquiry from other points of view also. The permanent way staff is now insufficient, it is suggested, for the maintenance of the track in good condition. But the strength of the staff is adequate according to the standards laid down by the Railway Board. There is a very elaborate system of supervision, the details of which are set out in a note prepared by the Chief Engineer. Neither in this respect nor in the methods of recruitment of Permanent Way Inspectors and gangmen does there appear to be any material difference between the East Indian Railway and other principal railways. We see no reason to believe, in fact, that the track on this railway is not properly maintained, as a general proposition; and in any case the matter is really quite irrelevant for the purposes of the present inquiry, because the evidence leaves no room for doubt that the track was at any rate in perfectly good condition in each of the three cases of derailment with which we are concerned.

59. But, it has also been suggested, there is not sufficient supervision to prevent sabotage, and this is the result of retrenchment. The answer to that—and a very good, if not altogether a conclusive answer—is that the railway administration is responsible for maintaining the line in good condition, so that the trains may run safely, but is not responsible in the ordinary way for taking measures in the nature of police measures to prevent malicious tampering with the line. When the police require it patrols are furnished, but the railway authorities do not do this of their own initiative, and the permanent way staff is not supposed to be adequate to undertake such police work as a part of its ordinary duties.

60. We believe that the position taken up by the East Indian Railway to be correct—and it has not been challenged before us—but we think the doctrine that the railway is not responsible for policing the line is subject to this qualification. A railway administration, like any other employer of labour, may fairly be expected to provide such supervision for its employees as will not only ensure that they do their work properly, but will prevent them doing damage to the property of the employer, particularly when,

as in the case of a railway, damage to the property of the employer may mean a grave public calamity. If it is impossible to prevent it altogether (and in the case of a great railway that may be excessively difficult and costly), there should at least be such control of possibly dangerous components of the establishment as will make sabotage a difficult business to carry out without detection. There is, as we have said, no proof that railway employees were concerned in these cases. There is only suspicion, the precise force of which we are not in a position to estimate. But it does appear to us to be a question, worthy of consideration by the authorities concerned, whether the standard strength of supervising staff makes sufficient allowance for the necessity for the kind of control we have indicated.

61. That the management of the East Indian Railway has been alive to the seriousness of the sabotage problem for some years past is shown by a letter written by Mr. Bell, the General Manager, to the Governments of Bengal, Bihar and the United Provinces in August 1936. He forwarded a statement of malicious attempts to derail trains during the previous two years and urged that the matter should be considered by the Local Governments, with a view to further preventive measures being taken. There ensued a long correspondence between Mr. Bell and the Chief Secretary of the Bihar Government, the more important portions of which have been put in evidence at the request of counsel for both the Local Government and the railway. Summarising it briefly, it appears that the Local Government was disposed to think that Mr. Bell somewhat exaggerated the danger of the situation, and it did not consider that any special measures were called for except a return to the system of surprise patrols at irregular intervals, which had been introduced in consequence of a conference of railway and police officers in 1933, but was discontinued after some time. The Local Government was of opinion that this system was preferable to the system usually followed by the railway, which involved the employment of temporary hands, either for the work of patrolling or to replace permanent hands taken up for that work. It was suggested that this system might afford an inducement to persons living along the line to create conditions in which patrolling would be necessary.

62. Mr. Bell's view, for which we think there may perhaps be some justification, is that the Local Government overlooked the fact that railway administrations do not, as a regular and permanent measure, maintain patrols for the purpose of preventing sabotage. Whenever required to do so by Government or the police they furnish patrols and take such other preventive measures as they are directed to take. On those occasions everything is settled in consultation with the railway police, who may, if they choose, arrange for surprise visits to any part of the line. The system of surprise patrols introduced in 1933 was, according to Mr. Bell, a temporary measure in view of a specific threat. It was introduced in consequence of the derailment of 2 Down Mail on the 2nd May 1933, in consultation with the police, and was discontinued with the concurrence of the police in 1934. What Mr. Bell desired the Local Governments to consider was the general case as opposed to the specific, *i.e.*, he wanted them as the authorities responsible for law and order to come to some understanding with the railway authorities as to the preventive measures necessary to ensure the safety of railway travel.

63. Whether there was any misunderstanding or not, the railway authorities at any rate made their position quite clear. They were prepared to cooperate with the police and to carry out any orders that might be given to them, but they looked to the Government to issue the orders. They were not asked to furnish patrols after Muthroopore. After Bhadaura the United Provinces Police asked for a patrol over a limited area and it was furnished. After Hazaribagh no patrol was asked for. After Jamoee a patrol was asked for and supplied. These patrols have been constituted by withdrawing some men from the permanent way staff and taking some from the Watch and Ward Department, so as to avoid as far as possible employing temporary men, which the Local Government considered dangerous. The present position is that, at the request of the Bihar and United Provinces Governments, the railway with the assistance of the police is patrolling the whole of the main line which passes through Bihar and as far as Allahabad.

64. It appeared as though each of the parties before us relied upon this correspondence as showing some negligence in the other, although Mr. Sahay at any rate was careful to say that he had no intention of formulating any definite charge. In our opinion negligence cannot fairly be imputed to either party. The General Manager of the Railway drew attention to what he considered a dangerous situation and suggested the advisability of the Local Governments taking preventive measures to cope with it. He showed himself willing and anxious to co-operate and did in fact co-operate whenever he was called upon to do so. He cannot be blamed, we think, under the circumstances for not introducing, as a permanent and general measure, the system of surprise patrols which was tried as a temporary measure in a limited area in 1933. Opinions differ, evidently, as to the value of these patrols. On the other hand, although it would be a truism to say, that if measures similar to those which have been taken since Jamooee had been introduced in 1936 or 1937 the grave disasters of 1938 and 1939 would probably have been prevented, the Local Government can hardly be blamed for not realising the necessity for such extraordinary precautions. It is easy to be wise after the event, but the recent epidemic of serious railway crime could not very well have been anticipated.

65. It has to be remembered that train-wrecking is an evil which is chronic in India and affects practically all railways. It is quite a mistake to suppose that it is in any way confined to the East Indian Railway or to Bihar. In Appendix V to our report we have given statistics, compiled from the Annual Reports of the Railway Board, showing the number of cases of train-wrecking and attempted train-wrecking on the principal railways for a period of seven years up to and including 1937-38. The figures are both interesting and disquieting. So far as cases of actual train-wrecking are concerned, the East Indian Railway comes 4th with 11 cases. The G. I. P. had 54 and the B., B. & C. I. 31. As regards attempts, the E. I. R. was second with 96. There were 151 on the M. & S. M., 81 on the Bengal Nagpur, 78 on the Assam Bengal and 73 on the Eastern Bengal. Many of the so-called attempts at train-wrecking may be the work of mischievous youths with no definite criminal intention, and the railway administrations may perhaps differ in their practice as to the kind of acts reported under the head of train-wrecking. But, making all allowance for that, the statistics undoubtedly show that tampering with the railway lines is a very widespread evil. Apart from the fact that there happened to be three successful cases of sabotage with serious loss of life occurring within a period of seven months on the East Indian Railway, there would have been no reason to suppose that that railway was more obnoxious to this evil than several others. Even if railway employees were responsible, directly or indirectly (which there is no very good reason to believe, as we have shown), the evidence does not indicate that there were any special circumstances existing at the material time, or any circumstances peculiar to the East Indian Railway, which would account for this series of outrages.

66. In his concluding argument Mr. Sahay put forward, apparently with all seriousness, the suggestion that the railway authorities ought to dismiss or punish their employees whenever the police find grounds for suspecting them, even though there is no evidence to justify a prosecution. Now it may well be that the ordinary law of master and servant is qualified by the fact that the East Indian Railway is a State Railway and its employees technically servants of the Crown. We do not propose to go into that rather difficult question, which was not argued before us. But whatever the strict letter of the law may be, it is obvious that it would be a serious matter for the railway authorities to take action as suggested at the instance of the police, on grounds of suspicion which they cannot establish. There may be cases when a grave public danger may require such action to be taken, even at the risk of injury to innocent persons. Evidently the management of the East Indian Railway considered that that was so in the Muthroopore case. But as a general proposition we are certainly not prepared to endorse Mr. Sahay's contention, which indeed we were rather surprised to hear put forward on behalf of a Local Government. We would venture to say, in this connection, that it is the function of the police, not merely to suspect criminals, but to catch them. Whether, in view of the prevailing epidemic of train-

wrecking, it is not necessary to reinforce the railway police is another of the questions which will doubtless be considered by the powers that be.

67. The railway authorities, we understand, incline to the view that the outrages are as likely as not to be the work of revolutionaries, and some importance seemed to be attached to the fact that certain persons sentenced in 1932 for train-wrecking from revolutionary or terrorist motives were released three weeks before the first of the derailments with which we are concerned. The Bihar Government, *teste* Mr. Sahay, opine that there are no revolutionaries any more. That is as may be; but anyhow it appears to be admitted that the people referred to cannot have had anything to do with these derailments, and there is not a shred of evidence against any other political criminals. The theory put forward in one of the police reports, that terrorists or people of that kidney might have intended to attack the Government (what Government?) through the railway, not only has nothing to support it but seems to be opposed to the facts of the case. There were no threats or propaganda. There was, as far as can be seen, no possible political motive for selecting those particular trains for attack. The usual incidents of revolutionary crime are altogether lacking.

68. We have found that the derailments at Muthroopore, Bhadaura and Hazaribagh were brought about by malicious tampering with the railway line, with the deliberate intention of wrecking trains. We hope that we have established this fact beyond the possibility of further dispute. As regards the incidents at Jamoee and Kylaht, they may or may not have been attempts at committing similar crimes. The evidence is insufficient for a decision. As regards the latter part of the terms of reference, we have to confess that, in the absence of reliable evidence as to the identity of the criminals, we have not been able to ascertain the circumstances leading up to these occurrences, neither the motive for the crimes nor the conditions which induced or contributed to them. We regret that in this respect our inquiry is so lacking in definite results. But we have done the best we could with the materials available, and we cannot make bricks without straw.

69. It is not our province to make recommendations as to how these crimes may be prevented, though in paragraphs 60 and 66 of our report we have ventured to put forward certain suggestions. It obviously did not require the appointment of a judicial tribunal to point out that the situation created by this epidemic of dangerous sabotage calls for extraordinary measures, which must be continued as long as there is any danger of a recrudescence. The nature of the measures to be taken, whether temporary or permanent, is a matter which must be settled by the Local Governments and the railway administration, or by higher authority.

70. We desire to place on record our appreciation of the invaluable assistance rendered to us by our assessors, Messrs. Lean and Sims, without which it would have been difficult, if not impossible, for us to deal with the technical points involved in the inquiry.

Our acknowledgments are also due to the clerks from the High Court of Calcutta, whose services were lent to us by courtesy of the Chief Justice. Mr. John Durnford, who acted as Court Officer, was present throughout the inquiry and carried out his duties very efficiently. Mr. Donald Smith did very useful service by typing out the report for us in the Easter holidays.

R. S. BROOMFIELD,

M. V. VELLODI,

DIN MOHAMMED.

CALCUTTA ;
10th April 1939.

APPENDIX I.

CUTTING FROM GAZETTE OF INDIA, DATED 18TH MARCH 1939.

No. E.-39-C. O.-1.—The Government of India have been seriously concerned at the frequency of incidents on the East Indian Railway during the past year which, on investigation by the Senior Government Inspector of Railways, point to deliberate attempts at train wrecking by the removal of essential parts of the permanent-way. In three instances, namely :—

(1) on the 7th June 1938 between Muthroopore and Sankarpur ;

(2) on the 16th October near Bhadaura ;

(3) on the 12th January 1939 between Chichaki and Hazaribagh Road ;
derailments have occurred which were attended by loss of life. Two subsequent cases occurred, namely :—

(1) near Jamoore on 23rd January 1939 ;

(2) between Kylaht and Chunar on 15th February 1939 ;

when serious disaster was only prevented by timely discovery of the damage to the track. Government also recognize how profound must be the anxiety and apprehension which this series of incidents has created in the public mind and their gravity from the point of view of the Railway Administration. They have, therefore, decided to set up a tribunal which will inquire into the causes of, and circumstances leading up to, these incidents and which after examination of all relevant evidence will report thereon. The Tribunal will consist of :—

(a) Mr. Justice Broomfield, Judge, High Court, Bombay—(President),

(b) Dewan Bahadur M. V. Vellodi, Collector, South Kanara, Madras—(Member),

(c) Khan Bahadur Shaikh Din Muhammad, Sessions Judge, Punjab—(Member),

to assist the Tribunal in appreciating the technical considerations relevant to the inquiry, it will have as Assessors—

(a) Mr. R. Lean, Chief Mechanical Engineer, M. & S. M. Railway.

(b) Mr. A. M. Sims, Deputy General Manager, N. W. Railway.

The meetings of the Tribunal will be held in Calcutta and will commence on March 20th, 1939. Any person desiring to tender evidence or to make representations to the Tribunal should, in the first place, address the President, East Indian Railway Accidents Tribunal, Calcutta, c/o General Manager, East Indian Railway, Calcutta.

APPENDIX II.

APPRECIATION OF THE CAUSES OF THE THREE ACCIDENTS WHICH OCCURRED ON 7TH JUNE, 1938,
16TH OCTOBER, 1938, AND 12TH JANUARY, 1939.*Deraiment of 7th June, 1938.*

Behind the first mark on the sleepers due to the derailment the track appears to have been in perfectly good normal condition. The derailment could, therefore, not have occurred before this point.

The first rail not found in its proper position in the track was only slightly bent and was found lying with one end about 3½ feet towards the outside of the track. For this rail to have got into this position, as a result of a derailment from any other cause than its removal prior to the occurrence, it would have been necessary for the fish bolts to have been sheared which would have led to the fish bolt holes being damaged, the rail screws being bent and probably partly torn out from their holes in the sleepers. The rail and fastenings would have been damaged in such a way as to show clearly that the damage had been caused by the wheels and other parts of the train passing over them. This is made abundantly clear by the position and condition of the rails, sleepers and fastenings immediately ahead of this rail. In addition to this the four fish plates by which this rail would normally have been joined in the track to the other rails were found undamaged with six undamaged fish bolts and 23 undamaged rail screws.

The impact mark on the end of the piece of the next rail immediately ahead indicates very clearly that it had been struck by one of the engine wheels, probably the leading bogie. The fact that this rail was broken is accounted for by the wheel striking it while running on the wooden sleepers at a level of about 5 inches below the running surface of the rail. The wheel being at such a depth, the rail would have received an extremely heavy blow so that it was distorted and twisted before the wheel could have any chance of mounting on to it. In fact it was actually broken and the end which received the blow was thrown forward clear of the subsequent passage of the derailed train.

The marks on the first sleeper could not have been caused by the leading bogie wheels and probably not by any of the engine wheels, because at a speed of 40 miles per hour the wheels would have travelled a distance of over 8 feet before falling low enough to strike the sleepers. The marks on the first sleeper were probably caused by some of the wheels of the last vehicles derailed shortly before the train came to rest. The reason for mentioning this will become clear when the circumstances of the derailment of 9 Up are considered.

Deraiment of 16th October, 1938.

Behind the first sign of damage to the track, the permanent way was found to be in good normal condition. The derailment cannot, therefore, have occurred before this point.

The first rail not in its normal position in the track was found lying on its side but almost in its correct alignment. This rail could not have got into this position as a result of derailment or from any other cause than its having been placed deliberately as found, prior to the occurrence. The reasons for this are that the cast iron inner jaws of the D. and O. plate sleepers must have been broken if the rail had been displaced as a result of accident. In addition to this the fish plate bolts would have been broken or the nuts stripped from the bolts with the consequence of complete destruction of the threads and also damage to the fish plates. This rail would also have had to move against the flanges of the wheels. The four fish plates, all the jaws and three fish bolts were found undamaged. It is inconceivable that the fastenings could have got into such a position and also been found undamaged as the result of an accident.

On the end of the next rail there were marks such as can be accounted for by the mounting of the wheels as the engine (with the exception of two pairs of wheels) and most of the train rerailed. It may be noted that the passing over the outer jaws of the D. and O. plates by the leading bogie wheel, even if while doing so the jaws were broken, would lift the wheel on this side to an extent which would enable it to mount comparatively easily the 1 3/8 inches of difference in level. The marks on the web of the displaced rail can be accounted for by the flanges of the following wheels after the breakage of the jaws.

Deraiment of 12th January, 1939.

Up to the gap in the track where the derailment apparently began no defects could be found. Derailment could not, therefore, have taken place before this point.

The first rail not found in its correct position was entirely undamaged lying on its side roughly in the middle of the track, its forward end being covered with ballast. To have got into this position as a result of accident, when it is clear from the paragraph above that no previous derailment had taken place, the rail would have had to move against the flanges of the wheels. This would only have happened between the trailing wheel of the leading bogie of a coach and the leading wheel of the trailing bogie of the same coach, in other words at a time when the rail was carrying no direct load and, therefore, with no tendency to lateral displacement. The fish bolts must have been broken and the fish plates forced off the joints, in which case evidence of this would have been unmistakable. The removable inside jaws would also either have been broken or the cotters must have sheared; both or either of these would leave unmistakable evidence.

One undamaged fish plate lying outside the track and four fish bolts with nuts removed and showing no sign of damage were found lying on the ballast. Of even greater significance is the fact that one fish bolt and nut and one D. and O. Cotter were found in the ballast undamaged after removal of the rearmost coach. Practically all the loose jaws and cotters of the first displaced rail were found undamaged close alongside the track. The rail beyond the undamaged displaced rail was found half way down the bank bent and twisted with distinct marks of blows from wheel treads and, in addition, marks apparently caused by blows from wheel flanges.

It is certain that in running over the outer fixed jaws of the D. and O. plate sleepers, the leading bogie wheels of the engine, if falling freely, would have dropped the distance from the surface of the rail to the top of the fixed jaws at a train speed of about 55 M. P. H. in a distance of over 6 feet. They would have struck the top of the jaws at an angle not exceeding 2° with the horizontal. At the same speed the drop of the bogie wheels between the fixed jaws would not have been greater than about $5/16$ inch. It is quite clear, therefore, that no particular difficulty could arise in the leading bogie wheel of the engine re-railing.

The first wheel of the tender bogie separated from the trailing coupled wheels of the locomotive by a distance of 10 feet 9 inches and the fact that the tender was carried on two bogies both free to turn on their centres relatively to the tender and also that the coupling between engine and tender is not rigid, the tender would not necessarily follow the same path as the locomotive.

There is little doubt that the passage of the locomotive must have broken most of the outer jaws of the D. and O. plate sleepers and considerable resistance to the passage of the left side wheels of the tender would then have resulted. These wheels must have travelled over broken jaws and loose ballast and would have considerably less chance of re-railing than had the locomotive. Note in this connection the leading tender wheel derailed in the Bhadaura case, although this was a 6-wheeled tender with rigid wheel base.

It does not appear possible to say which wheels behind those of the locomotive actually struck the rail beyond the gap throwing it from its place in the track.

Note.—General to the above three derailment cases. In none of the three cases is there any indication whatsoever that damage to track was caused by the locomotives or the rolling stock before actual derailment occurred.

The circumstances as set forth in each case show that the displacement of the particular rail which caused the accident could not have been the result of defects in the locomotives or rolling stock.

R. LEAN.

A. M. SIMS.

The 4th April 1939.

The 4th April 1939.

APPENDIX III.

INTERROGATORIES RELATING TO HAZARIBAGH ACCIDENT PUT TO THE SENIOR GOVERNMENT INSPECTOR OF RAILWAYS BY MR. SAHAY ON BEHALF OF THE BIHAR GOVERNMENT AND THE REPLIES OF THE SENIOR GOVERNMENT INSPECTOR THERETO.

In paragraph 31 of the Report submitted by the Senior Government Inspector we find that the derailment was due to the removal of a rail from the track. In support of this theory he has described the exact position in which this rail was found after the derailment by the P. W. I. Relying on this evidence he has discussed the various points leading to the conclusion that the derailment had started from this joint. In this connection, however, the following points are not clear either from this report or from the other record of investigation and their elucidation by Expert's opinion seems necessary:—

(I) Is it possible that no mark will be left at the end of the rail just behind the one which is said to have been removed before the accident?

(I) The removal of a rail can in no way affect the action of a train on the previous rail. To effect damage or injury to that rail force must be applied. No abnormal forces have been applied in this case the train merely runs off the rail and into space. If the rail end is left unsupported in this manner for a sufficiently long period it will eventually attain a permanent deflection downwards. No mark can possibly be left on the rail.

(II) Photograph F shows distorted fish bolt holes. According to the finding of the Senior Government Inspector these holes were without bolts at the time of accident. Is such distortion possible when the holes were without bolts? What shape these holes could possibly have taken or what injury they could have sustained if bolts were there in the holes?

(II) Had the bolts been in the holes and presumably the fishplates in position there could have been no bending of the rail and consequently no distortion of the holes. The distortion could only be possible when there were neither fishplates nor bolts.

(III) On going through paragraphs 37 and 38 of the printed report of the S. G. I. we find that in his opinion the engine wheels on the left side travelled almost in air rattling on the outer jaws without being out of alignment and having mounted the 2nd rail went further without derailment and gave impact to the rear vehicles. This shows that the wheels of the engine did not touch the ballast between the gap caused by the removal of the first rail. Contrary to this we find in the case diary of S. I. Osmond dated 13th January 1939 that the tyres of the left wheels of the engine had marks of crushed ballast. A question arises at what other spot these tyres crushed the ballast when they did not come in contact with the ballast in the gap of the first rail.

(III) Ballast is packed on the outside of the rail to the level of the top of the outer jaws, i.e. just below the rail head. The report states that the wheels rattle along the outer jaws *until they are pulverised*. The impact and passage of the bogie wheels alone would be sufficient to break every jaw. They would be kept straight in doing so and so keep the engine and its driving wheels also straight when traversing the gap. The driving wheels and possibly the rear bogie wheel by no means had unbroken jaws to travel over they had a mixture of jaws and ballast. Nowhere has it been stated in the report that the tyres of the driving wheels did not come in contact with ballast in the gap of the first rail.

(IV) From paragraph 38 of the report of the S. G. I. we find that the impact of the wheels of the engine would be communicated to the first joint, viz. tender coupling and it is unlikely that the tender or coaches following would run as straight as the engine did and in fact they did not. When this impact was communicated to the vehicles following the engine, the bogies must be on the rails behind the first rail. A question arises whether those rails would remain in tact or would be distorted.

(IV) An awkward matter to explain. The paragraph in the report merely shows why the tender was not likely to run as straight as the engine not being of one piece with it and being united by a central coupling only. The tender having run askew the coaches following would also run askew. In answer to the question in the last sentence it is only possible to refer to Newton's Law of Motion. 2nd Law:—Change of motion is proportional to, and in direction of, the impressed force. The whole momentum of the train is in a forward straight line. When a head-on obstruction is met with there can be no lateral forces transmitted along the train. Distortion of track by the trailing vehicles of a train stopping in emergency or collision can never distort the track by side action nor have they ever done so.

N.B.—It is very doubtful in this case whether the passengers felt much impact. They probably only felt the violent motion of each coach as it derailed.

(V) In case diary No. 1, dated 13th January 1939 of S. I. Osmond we find that one fish plate with marks of injury in the holes were found near the 2nd joint. It had also marks of crushed ballast. This is suggestive of the fact that this fish plate was of the 2nd joint. Does not the injury in the holes indicate that it was received during the course of derailment when it was attached to the joint.

(V) The records and sketch as signed by the police at site shew nothing of any fishplates having been found at the 2nd joint. If found later it was not reported. Whatever fishplate it is it could not possibly have been forcibly burst off from the junction of the first rail and the 2nd rail.

N.B.—Mr. Sahay afterwards informed the Tribunal that the holes in this fishplate were not in fact damaged and the point was dropped.

(VI) In the same diary as mentioned above we find that one nut and one bolt were found at 6'8" from the 2nd joint without any injury. How the presence of this bolt and the nut in the locality of the 2nd joint can be explained. Is this not suggestive of the presumption that they were left behind through oversight on the previous day when repacking was going on there?

(VI) No, it is extremely unlikely that this bolt and nut were left out by oversight by anybody any more than that the same might be the case with the four nuts and bolts from the other end. As a matter of fact when packing is done the joints are not opened out. This is only done once a year for the greasing and oiling of the plates.

(VII) What was the exact condition of the ballast in the gap of the first rail?

(VII) Good, but ploughed through where the wheels of derailed vehicles had travelled.

(VIII) What was the extent of injury on the outer jaws of the first rail?

(VIII) The outer jaws of the first rail left hand side were all broken. The first jaw which received only a glancing blow on the top was broken through at the base and remained in position, the next two were more badly broken and the rest were smashed up.

(IX) Did the inner and outer jaws of the right rail parallel to the rail alleged to have been removed receive injuries?

(IX) Almost all of the inner jaws of the outer rail were smashed off after the first two or three. The outer jaws were some of them bruised.

(X) What was the condition of the tie bars in the gap?

(X) The tie bars in the gap were all bent and broken except the first two.

(XI) 6 or 8 jaws were found arranged in a line on the embankment opposite the first rail. Apart from the question as to who recovered the jaws and when, what was the point in arranging them in a line?

(XI) About 14 jaws were actually found altogether, if six or eight were in a line the rest were not, there could be no point in arranging them in a line. They were probably merely placed casually at the toe of the ballast thus forming a fairly straight line.

(XII) The length of rail was 36 ft. The space between the wheels of the two trollies of the bogies was 38 ft. The rear wheel was about a foot away from the first joint on the rail behind it. The front wheels would then stand on the 2nd rail. The first rail therefore should be free from pressure. This also suggests the possibility of its removal after the accident. Is there any evidence to rebut it?

(XII) The 2nd rail being cast down the bank and the leading bogie of the last coach being derailed and imbedded in the ballast and out of alignment so of course there could be no pressure on the first rail after the accident was over. It was pulled out with comparative ease. It is impossible that all outer jaws could be smashed up and the end of the 2nd rail have been hammered as it was had the first rail been in position before the accident, it could not possibly have remained clean straight and unmarked as it was but must also have been bent and battered.

(XIII) The screening and repacking of the portion of the track was done on the two successive days previous to the night of occurrence. No test of this repacking was made. The mate of this section has a previous record of punishment for slack packing. There is embankment and clay is soft. What is the evidence to prove with certainty that there was no low joint at the site of accident?

(XIII) If recently repacked it was certainly in better condition than before being attended to. Presumably the 2nd joint is the one in question. Low joints do not derail trains. The bank is neither of clay nor is it soft. The track was carefully checked for a full mile and no defective joints or bad condition was found.

(XIV) It has been established in judicial enquiry of Bihta case that low joint is possible even on well maintained track. It has also been proved that X class Engines are severe to the track and readily discover the weak point. It is also proved that due to lurching and the lateral force of the engines having heavy axle load, the line can be slewed. 4 XE Class Engines having 21 tons axle load passed over this line. We don't know the history and the natural tendencies of these engines. 3 H. P. S. class engines also passed over this line during the night. The last one of ill-fated train was 1163 H. P. S. This engine was twice booked within a period of 6 months for its hunting and swaying tendencies which was revealed during the course of Bihta Enquiry. Since then the history of the engine is not known to us. Was any enquiry made by the S. G. I. on this line and was this point considered in coming to the finding to the cause of accident.

(XIV) It has not been proved that X Class engines are severe on track and readily discover weak points. This is a feature of XB class and to a lesser extent XC class. XE are an entirely different class of engine being much heavier, more powerful and slow goods engines. There has never been any suggestion that one of these goods engines has ever affected the track.

In regard to 1163 EPS all engines hunt and sway at times. Very occasionally and rarely there is distortion of track.

In reply to the query in last sentence—No, this line was not within the realms of common sense there being no sign of distortion of track.

(XV) From paragraphs 37 and 38 of the S. G. I.'s report it appears that the wheels of the engine mounted on the 2nd rail after giving terrific blow at its head. The other vehicles following having been derailed passed along the left side of this rail. This rail was found thrown on the left side at a distance of about 30 ft. from its original place, a derailed bogie intervening. A question arises how it was physically possible for this rail to have been thrown to such a distance on the left side under the circumstances. If it is suggested that the point of derailment started at the 2nd joint due to low packing and previous deformation and this rail was thrown off by the very first stroke of the wheel of the engine and the engine passed the gap in the manner described in paragraph 37 of the report of S. G. I. What are the evidence to rebut this suggestion?

(XV) There is nothing wonderful in a rail being cast down the bank or carried such a small distance as 30' in such an accident once its fastenings had been destroyed.

In regard to the suggestion there are too many obvious difficulties.

(1) To receive the first stroke the end of the rail must be bare and unprotected.

(2) All the sleeper fastenings must be already opened out before it received the blow if the rail is to fly off into space when touched by the engine bogie wheels.

(3) The appearance of the rail rebuts the whole suggestion. It was hit and scrapped along by wheels many more times than once before it was dislodged and cast aside *vide* photo.

APPENDIX IV.

NOTE ON THE METHOD OF DISCONNECTING THE PERMANENT WAY IN THESE CASES AND TECHNICAL KNOWLEDGE REQUIRED.

1. Any attempt at train-wrecking which is made by tampering with the track must mean that the persons involved in such mischief have a certain amount of knowledge connected with mechanical fitting involving the use of simple engineering tools. In the three cases of derailment resulting in loss of life, in order to open out the track in the condition as ascertained for each case, some knowledge of the following points would be required.

2. In order to open up the fish bolts, it is necessary to use a long and heavy spanner of about the correct size. The length would have to be about two feet in order to obtain the necessary leverage. Owing to the tight fitting of the nuts on the threads required by the usual specification, it frequently happens that the bolt tends to turn when attempts are made to loosen the nut. The head of the bolt must then be held from turning, if there is no projection on the fish plate, by another spanner or by a wedge. This means the possession of elementary mechanical knowledge.

3. When the four fish bolts of the ordinary joint are taken out, the fish plates cannot generally be removed without being levered off by a bar placed behind them bearing on the rail or unless they are knocked off by a heavy hammer.

4. After the fish bolts and plates have been taken off, the rail cannot be released until the sleeper fittings are opened out and removed. In the case of the derailment on 7th June, 1938, the flat footed rail was held, before the tampering with the track, to the wooden sleepers by rail screws. To any person unacquainted with permanent way, or not possessing a knowledge of mechanical fitting, it might not appear, from the heads of these rail screws, that these fastenings were screwed into the wooden sleepers, but there is no evidence of these rail screws being forced or prised out from the sleepers and it would appear that the rail screw holes were intact with their threads in the wood in those sleepers which were not broken by the derailment. In order to extract these rail screws quickly and silently a proper box spanner is required or a heavy adjustable spanner of good quality. If these screws were thought to be plain spikes, it would be expected that evidence would be found of attempts to force them out with claw bars or in some other way, but there were no such indications. Such a method would also create a certain amount of noise. It is not necessary to withdraw the screws on both sides of the foot in order to release the rail; it would be sufficient for this to be done on one side only, but the fact that the screws were removed on both sides would indicate the possession of mechanical knowledge but some lack of technical familiarity with the details of permanent way.

5. The weight of a 36 feet rail, at 90 lbs. per yard, is approximately half a ton. It would require three or four men to lever it aside when freed from the track. In order to lift such a rail manually it would be necessary to have about fifteen or sixteen men present. It is to be noted that in the accident on 7th June, 1938, the rail was moved originally towards the outside of the track on the wooden sleepers, but in the cases which occurred on 16th October, 1938, and 12th January, 1939, the rails were on the inside of the track because in the latter two cases it would have been necessary to lift the rails over the outer jaws of the D. and O. plate sleepers if they had been moved to the outside. This would indicate that only a few men, say 3 or 4, were involved in each case.

6. In order to release the rail from the D. and O. plates, after removing the fish bolts and plates as described in paragraph 2 above, a knowledge of the position of the cotter ends is required. Frequently these would be covered with ballast which would have to be removed before the cotters could be knocked out. A particular end of each cotter would also have to be selected for each to be driven out. It would also have to be known that the inside jaws of the D. and O. plates are loose and can be removed only after the cotters have been released. The rail can only be freed after the removal of the inner jaws.

7. In all the three cases of derailment the work of tampering with the track was done during the night, either in the darkness or, perhaps, with the aid of feeble lights of some kind. This would indicate a knowledge of the position of the fittings and, in any case, some time would be required to do the work silently in order to remove the rails. In each of these cases it is significant that there was no moon or it was of no practical assistance. Some selection of the nights on which the derailments were effected would appear to have been made with the intention of affording little chance of observation and of avoiding detection. The relation between each night, when the derailments and attempts at derailment were made, and the moon is indicated below:—

- (i) The derailment on 7th June, 1938, took place six days before full moon.
- (ii) The derailment on 16th October, 1938, took place seven days after full moon.
- (iii) The derailment on 12th January, 1939, took place seven days after full moon.
- (iv) The attempt on 23rd January, 1939, took place twelve days before full moon.
- (v) The attempt on 15th February, 1939, took place eleven days after full moon.

8. In nearly every village scattered along the railway lines in India it is probable that there are some few men who have either worked on the permanent way at one time or another or are familiar to some extent with track details. There are found to be one or two men in nearly every permanent way maintenance gang who are constantly changing for one reason or

another. Near the larger towns there are likely to be fitters or blacksmiths who have been employed in workshops of one kind or another, though they may never have been employed by a railway. Men of these categories would be capable of disconnecting the track in one way or another, if they made themselves somewhat familiar with the fittings of the rails and sleepers. The possession of the necessary tools would not be a difficult problem to men with knowledge of this kind.

9. In each of the three cases of derailment the technique was the same in that a rail was removed (on each occasion). The rail was also on the left hand side of the track in each case, so that it would seem to be expected that the train would plunge down that side of the bank and away from the other line of a double line section. The methods adopted in each case, particularly in view of the removal or attempted removal of a rail on each occasion, would indicate that the attempts were made by men of limited intelligence, since there are other and more expeditious ways of upsetting the track which would be known to the permanent way subordinate supervising staff and to the engineers responsible for the maintenance of the track.

The 4th April 1939.

The 4th April 1939.

R. LEAN.

A. M. SIMS.

APPENDIX V.

Table showing the number of accidents classified as "Train Wrecking" and "Attempted Train Wrecking" on certain class I Railways from 1931-32. (Compiled from the Railway Board's Annual Reports.)

Year.	Assam Bengal Railway.		Bengal and North Western Railway.		Bengal Nagpur Railway.		Bombay, Baroda and Central India Railway.		Eastern Bengal Railway.		East Indian Railway.		Great Indian Peninsula Railway.		Madras and Southern Mahratta Railway.		North Western Railway.		South Indian Railway.	
	Train Wrecking.	"At-tempted Train Wrecking."	Train Wrecking.	"At-tempted Train Wrecking."	Train Wrecking.	"At-tempted Train Wrecking."	Train Wrecking.	"At-tempted Train Wrecking."	Train Wrecking.	"At-tempted Train Wrecking."	Train Wrecking.	"At-tempted Train Wrecking."	Train Wrecking.	"At-tempted Train Wrecking."	Train Wrecking.	"At-tempted Train Wrecking."	Train Wrecking.	"At-tempted Train Wrecking."	Train Wrecking.	At-tempted Train Wrecking."
1931-32 .	..	15	..	..	..	9	18	2	2	14	3	9	3	20	1	21	4	11	..	2
1932-33 .	..	16	2	1	..	15	6	7	..	11	1	16	8	8	2	24	4	2	..	..
1933-34 .	..	8	..	1	..	16	4	11	..	12	2	19	11	8	..	17	1	3	..	..
1934-35 .	..	16	..	1	..	8	3	..	..	11	2	19	9	5	..	23	1	3	1	..
1935-36 .	..	12	..	2	..	12	..	4	1	14	2	16	3	2	..	19	2	2	2	1
1936-37 .	..	8	1	6	..	9	..	2	..	6	..	8	13	2	1	16	1	4	..	..
1937-38 .	..	4	..	..	..	12	..	1	..	..	1	9	7	1	5	31	1	5	..	2
7 years' totals.	..	78	3	10	..	81	31	27	3	73	11	96	54	46	9	151	14	30	3	5

7 years' grand total—"Train Wrecking" 128

7 years' grand total—"Attempted Train Wrecking" 597

An examination of the references in the Railway Board's Annual Reports of accidents due to train wrecking since 1927-28 shows that only in the two cases mentioned below is there any reference given to the culprits being apprehended.

- (1) In 1928-29 there were two cases on the South Indian Railway on 21st and 23rd July, 1928, of tampering with the track causing serious accidents. In the second case a permanent-way gang coolie, a shunter and a goods shed porter were convicted. There was a serious strike on the South Indian Railway at this time.
- (2) In 1929-30 on the Bengal and North Western Railway 57-Up was derailed on 1st August, 1929, owing to tampering with the track. In this case three of the permanent-way staff were convicted.

Explanatory note by the Railway Board on Appendix V of the Report.

For statistical purposes, the term "train wrecking" has been defined as "accidents to trains caused by wilful tampering with the permanent-way or by other means with the intention of wrecking trains". The term "accident" includes *all* mishaps to trains from serious disasters to cases involving perhaps only slight damage to engines, rolling stock or track.

2. It should not, therefore, be assumed that the "train wrecking" figures, which are shown as totalling 128 in the 7-year period, all refer to actual disasters. They include many minor accidents which occurred as a result of what was considered to be sabotage.

3. It has come to notice that in practice the term "train wrecking" has not been uniformly interpreted in the past. The actual number of cases in which trains were wrecked or derailed, with or without fatalities, on Class I Railways during this period of seven years were:—

A. B.	Nil
B. & N. W.	Nil
B. N.	Nil
B., B. & C. I.	Nil*
E. B.	3
E. I.	9
G. I. P.	3
M. & S. M.	9
N. W.	2†
R. & K.	1
S. I.	5

*These relate to a 4-year period ending 1937-38.

†N. W. Ry. records for the years 1931-32 to 1933-34 have been destroyed.